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CAPITAL AS POWER

A Study of Order and *Creorder*

Jonathan Nitzan and Shimshon Bichler

RIPE SERIES IN GLOBAL POLITICAL ECONOMY

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Capital as Power

Conventional theories of capitalism are mired in a deep crisis: after centuries of debate, they are still unable to tell us what capital is. Liberals and Marxists both think of capital as an 'economic' entity that they count in universal units of 'utils' or 'abstract labour', respectively. But these units are totally fictitious. Nobody has ever been able to observe or measure them, and for a good reason: they don't exist. Since liberalism and Marxism depend on these non-existing units, their theories hang in suspension. They cannot explain the process that matters most – the accumulation of capital.

This book offers a radical alternative. According to the authors, capital is not a narrow economic entity, but a symbolic quantification of power. It has little to do with utility or abstract labour, and it extends far beyond machines and production lines. Capital, the authors claim, represents the organized power of dominant capital groups to reshape – or *creorder* – their society.

Written in simple language, accessible to lay readers and experts alike, the book develops a novel political economy. It takes the reader through the history, assumptions and limitations of mainstream economics and its associated theories of politics. It examines the evolution of Marxist thinking on accumulation and the state. And it articulates an innovative theory of 'capital as power' and a new history of the 'capitalist mode of power'.

Jonathan Nitzan teaches political economy at York University in Toronto.

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Capital as Power

A study of order and *creorder*

Jonathan Nitzan and
Shimshon Bichler

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To our lovely daughters – *Elvire*, *Maryse* and *Isabelle*

Thus, the birth of philosophy is not just coincident, but equisignificant with the birth of democracy. Both are expressions, and central embodiments, of the project of autonomy.

Night has fallen only for those who have let themselves fall into the night. For those who are living, [says Heraclitus], *helios neos eph'hemerei estin* – the sun is new each day.

—Cornelius Castoriadis, The "End of Philosophy"?

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Acknowledgements

This volume was written in relative isolation, and after reading it you'll see why. The book questions the very foundations of mainstream and Marxist political economy, and it goes further to offer a totally new alternative. Going against the grain is hardly the best way to make friends, and, as the history of science tells us, those who try to innovate often face a wall of silence.

But the silence is never complete. There are always free spirits who look for new directions, and we have been fortunate to cross paths with some of them. Our work has benefited from the friendship of Allen Fenichel, Tom Naylor and Robin Rowley, who helped us stand against the academic church; from the thoughtful interventions of Randy Germain, who helped and encouraged us at various stages of the publication journey; from Jeffrey Harrod, whose grassroots analysis shed light on aspects that our power theory had overlooked; from Doug Henwood and Michael Perelman, whose LBO and PEN-L internet lists we found invaluable; from years of discussions with Gibin Hong, who also translated the early incarnation of this manuscript into Korean; from Bob Jessop, who engaged with and supported our work even when our opinions differed; from Moshé Machover, whose personal honesty, clarity of thinking and path-breaking politics one cannot but admire; from Ulf Martin, whose sharp observations and penetrating questions always kept us on edge; from many debates with the colourful members of MISS-Q, whose arguments often gave us food for thought; from the unmatched editorial skills of Daniel Moure, who polished our English and compiled our index; from Akiva Orr, whose deep insights into philosophy and science we found enlightening; from Jeffrey Rudolph, who managed to mix accounting with curiosity; from Herman Schwartz, whose brilliance offered an antidote to academic mediocrity; and, last but not least, from Genevieve Thouvenot, whose expertise in ancient languages saved us from drawing silly conclusions, and whose suggestions often helped us find the answer right under our nose.

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Finally, we wish to thank the three anonymous referees who read the early version of the manuscript; the Social Sciences and Humanities Research Council of Canada for its financial assistance; and our students, whose desire to think for themselves made writing this book worthwhile.

1 Why write a book about capital?

> There is no joy more intense than that of coming upon a fact that cannot be understood in terms of currently accepted ideas.
>
> —Cecilia Payne, *An Autobiography and other Recollections*

Capitalism without capital

We grew up in the 'affluent society' of 1950s and 1960s. As children and then as young adults we rarely heard the word 'capitalism'. It was the Cold War, and speaking about capitalism, although not strictly taboo, was hardly a popular pastime. The term smelled of extremist ideology; it connoted communist rhetoric; it conjured up bygone debates and obsolete ideas.

As a theoretical concept, capitalism seemed hopelessly unscientific. It was a remnant from a different era, from a time when people, haunted by 'scarcity', still viewed society through the hazy spectacles of political economy. The new social sciences – and particularly the science of economics – boasted far better and more precise categories.

These categories were grouped under a new buzzword: 'modernization'. Talk of modernization opened all the right doors. It invited American aid, it paved the road to development and it helped academic promotion. The word 'capitalism' became redundant, if not counterproductive. Gradually, it vanished from the lexicon.

But beginning in the early 1990s a strange thing happened: capitalism staged a remarkable comeback. Suddenly, social scientists and post-scientists alike wanted to talk of nothing else. The capitalist world, capitalist markets, capitalist governance, capitalist culture, capitalist institutions, capitalist wars, capitalism and race, capitalism and gender, capitalism and libido – no matter where you turn, you cannot escape the C-word.

Debate over capitalism is everywhere. The newspapers, radio, television and the internet overflow with talk of neoliberal globalization and crisis, imperialism and post-colonialism, financialization and government intervention. Experts preach the gospel of capitalist productivity, while alter-globalization protestors blame the IMF and transnational companies for

many of our social ills. Some view capitalist growth as a magic bullet; for others it spells ecological disaster. Some celebrate the deregulation of the capitalist state and the fall of Keynesianism; others mourn the decline of the welfare state and the rise of zapping labour. Many interpret the new wars of the twenty-first century as serving capitalist interests and the rise of Islamic fundamentalism as a backlash against Western liberalism. For some, capitalism means the end of history, for others a source of conflict and an engine of change. No aspect of capitalism seems to escape debate.

Or perhaps we should say almost no aspect. Almost, because something really important is missing. In all the commotion, we seem to have lost sight of the concept that matters most: capital itself. Capital is the central institution of capitalism – and yet, surprisingly, we do not have a satisfactory theory to explain it. In fact, we do not know precisely what capital is. And worse still, there is little or no discussion on what this omission means or how it can be rectified.

The issue is crucial. Without a clear concept of capital, we cannot hope to understand how capital operates, why it accumulates or how it drives the capitalist order. Until we understand capital, we are destined to misconceive our political institutions, misjudge our alternatives and have trouble imagining the way to a better future. In short, in order to debate capitalism we first need to debate capital itself.[1]

This book is *not* about economics

Many people who are otherwise keenly interested in society get cold feet when confronted with 'economics'. The symbols seem mysterious, the logic baffling, the language incomprehensible, even threatening. The dread is real. Ever since Thomas Carlyle, the 'dismal science' has been frightening most people.

But that fear is irrelevant to our book. Our subject is not economics; it is capital. And capital, as we hope to show, is not an economic entity.

It should be noted upfront that economics – or, more precisely, the neoclassical branch of political economy – is not an objective reality. In fact, for the most part it is not even a scientific inquiry into objective reality. Instead, neoclassical political economy is largely an *ideology in the service of*

1 Of course, not everyone shares this sense of urgency. Quite the contrary. These days, many academics tell us that, in fact, there are no facts (in a conversation or a speech, a speaker will typically use her fingers to encapsulate the word 'facts' with invisible inverted commas, pointing to its obvious ambiguity). In postmodern space, these academics explain, there is nothing much to 'know' (again in inverted commas). Everything – including capital – is merely a 'narrative'. Capital is a 'discourse' that cannot be known, only 'deconstructed'. And who knows, since nobody 'really' knows, maybe that is indeed the best way to conceal capital. This convenient conclusion, though, begets a somewhat embarrassing question: if capital is merely a discursive text, one faith among many, what is the point of talking about – let alone criticizing – capitalism? And if there is no point in such critique, who needs the postmodern critics?

the powerful. It is the language in which the capitalist ruling class conceives and shapes society. Simultaneously, it is also the tool with which this class conceals its own power and the means with which it persuades others to accept that power.

Our book puts power back in centre stage. Notice the metaphoric equality in the title: 'Capital as Power'. We use not *and*, but *as*. We do not speak of capital and power; of capital in the service of power, or vice versa; of capital in relation to state; of capital with or against politics; of capital in contradistinction to violence; or of capital and ideology. We refer not to a relation, connection, function, or juxtaposition, but to a figurative identity. Capital does not relate to power. It is, in itself, a mode of power.

The purpose of this book is to explain capital as power. The first step toward understanding our argument, therefore, is to stop thinking of capital and capitalism as 'economic' entities. But that is just the start. The second step is to be willing to take on the dogma that makes capital and capitalism 'economic' entities in the first place.

How and why

Young children are obsessed with the question 'why?' 'Why do I need to brush my teeth?' 'Why do birds fly and dogs don't?' 'Why does mommy have to go to work?' The quest is universal, but it doesn't last for long. Children quickly learn that grownups dislike the question and often don't know how to answer it, and they realize that one 'why?' inevitably leads to another, followed by further hassle and endless aggravation. So they grow up. By the age of five or six, they abandon the 'why?' in favour of the more practical 'how?' They stop questioning the world and try to fit into it. They become adults, and they usually remain so for the rest of their lives.

But not everyone grows up. As Mark Twain (1881) reminds us, some people stay young no matter how old they become. And the youngest of all are those who never stop asking 'why?' This book is written for these young people of all ages. We write it for those who feel their future is at stake and wish to do something about it; for those who sense that there is something deeply wrong with the conventional creed but don't know exactly what it is; and, above all, for those who simply dislike dogma and want to think for themselves.

Perhaps the key problem facing young people today is a *lack of theoretical alternatives*. A new social reality presupposes and implies a new social cosmology. To change the capitalist world, one first needs to *re*-conceive it; and that re-conception means new ways of thinking, new categories and new measurements. And yet, many contemporary critics of capitalism seem to believe that they can challenge this social order without ever asking how it operates, let alone why.

With some obvious exceptions, present-day leftists prefer to avoid 'the economy', and many are rather proud about it. To prioritize profit and

accumulation, to theorize corporations and the stock market, to empirically research the gyrations of money and prices are all acts of narrow 'economism'. To do these things is to fetishize the world, to conceal the cultural nuances of human consciousness, to prevent the critic from seeing the true political underpinnings of social affairs. Best to leave them to the dismal scientists.

And, so, most self-respecting critics of capitalism remain happily ignorant of its 'economics', neoclassical as well as Marxist. They know little about the respective histories, questions and challenges of these theories, and they are oblivious to their triumphs, contradictions and failures. This innocence is certainly liberating. It allows critics to produce 'critical discourse' littered with cut-and-paste platitudes, ambiguities and often plain nonsense. Seldom do their 'critiques' tell us something important about the forces of contemporary capitalism, let alone about how these forces should be researched, understood and challenged.

Most importantly, though, this stale context conditions students to stop asking 'why?' The big questions about capital are pushed under the rug, and as the young generation gets older and becomes established, the questions are forgotten altogether. Occasionally, an untamed spirit, having discovered an old debate in an outdated book, raises a naïve 'why?' But these spontaneous fires are quickly isolated and extinguished. Ridiculed by know-all professors and hushed by acolyte students, the outlier is forced to relinquish or perish. There is no alternative, and the safest thing for an academic is to never wonder why.[2]

Our book defies this dogma. We provide a new conceptual framework for capital – along with the context that this framework negates and the means by which it is articulated. 'There is no empirical method without speculative concepts and systems', writes Einstein in the forward to Galileo's *Dialogue*

---

2 As a first-year economics student at Tel-Aviv University, one of us (Nitzan) challenged the professor with questions about the assumptions. Economists make plenty of those, so there were many questions to ask. Initially, the professor was happy to engage. But two weeks into the course, the questions became more difficult to answer, the students grew annoyed with my interventions, and the professor began to apply the usual stalling tactic. 'Yours is a very interesting question', she would say, 'but it's too early to deal with it. Please raise it later, when we deal with this topic in greater detail'. This method is popular among economics instructors, and it works particularly well when combined with a heavy dose of 'problem-solving' exercises. The seemingly 'practical' drill forces students to accept the underlying premises, and when the premises are accepted the questions quickly disappear. But I persisted, so the professor had no choice but to shut me off altogether. When I inquired why I was being ignored, her reply was short and informative: 'You don't know how to ask questions'.

Many years later, an undergraduate student in one of my political-economy classes summarized the same dilemma from a different angle: 'Your class makes me sooo nervous. With all my other professors, I can write pretty much what I want as long as I stick to the syllabus and properly cite the readings. But your class doesn't work this way. Not only do I have to do my own research, I also need to invent the research question. And in the end, I can still be wrong!'. . . . What a terrifying thought.

Concerning the Chief Two World Systems (Galilei 1632). But, also, 'there is no speculative thinking whose concepts do not reveal, on closer investigation, the empirical methods from which they stem' (p. xvii). The two processes are dialectically intertwined. And, so, together with our theoretical schemes, we introduce new research methods; new categories; new ways of thinking about, relating and presenting data; new estimates and measurements; and, finally, the beginnings of a new, disaggregate accounting that reveals the conflictual dynamics of society. We show that there can be many alternatives, provided we never stop asking why.[3]

Clearly, we would be happy to convince our readers with our specific arguments, but that goal is secondary. The more important goal is to encourage readers to develop their *own* research. As the book will amply show, social facts are indispensable but never 'self-evident', and since the emperor is so often naked, we shouldn't be afraid to ask why. There is a lot to suspect in the world of the 'obvious', so try to distrust the 'experts' and 'authorities' – be they mainstream or critical. In the final analysis, the only way to develop your *own* opinion – instead of adopting the opinions of others – is to always ask why and constantly *re*-search your own answers.

What's wrong with capital theory?

Begin with the monetary magnitude of capital. This magnitude is readily observable. We know how much it costs to buy existing capital on the stock and bond markets, just as we know how much it costs to set up a new company, or to put in place new plant and equipment. But what determines these monetary magnitudes? What are the forces that lie beneath the earthly appearance of capital? Why is Microsoft worth $300 billion and not half that much? Why does Toyota pay $2 billion rather than $4 billion for a new car factory? Why do these magnitudes tend to grow over time? What sets their pace of growth?

Economists – both liberal and radical – claim to have answered these questions. Capital, most would say, is an economic category anchored in material reality. In the final analysis, the monetary value of capital derives from and reflects the underlying processes of consumption and production.

Mainstream neoclassical economists view this determination from the output side. Capital for them is made of tangible capital goods (and now also of intangible knowledge or technology). The magnitude of capital in money terms is proportionate to its productivity – namely, to its ability to produce goods and services that satisfy human wants and generate happiness. This transmutation is meaningful because both capital and its productivity are

3 On the clash between modern academia and the scientific endeavour, see our unpublishable manuscript 'The Scientist and the Church' (Nitzan and Bichler 2005). The paper can be downloaded for free from http://bnarchives.yorku.ca/185/.

counted in the same universal unit, the elementary particle of economics: the 'util'.

Marxists see things rather differently. Capital for them is not a material substance per se, but a social relation embedded in productive, material entities. In order to understand capital, they argue, we have to look behind the hedonic veneer of liberal ideology and examine the industrial essence of the system. From this viewpoint, the key issue is not the utility that the capital produces, but the social process by which capital itself gets produced. Consequently, the proper way to approach capital is not from the output side, as per the neoclassicists, but from the input side – the side of labour.

Marxists, too, count capital in universal units: the units of 'abstract labour'. This is the elementary particle of Marx's cosmology. Quantitatively, the dollar value of capital in the Marxist scheme is proportionate to its cost of production, and, specifically, to the amount of abstract labour socially necessary to produce that capital.[4]

Unfortunately, both explanations fail. In the end, neither the neoclassicists nor the Marxists are able to answer the question of what determines the magnitude of capital and its rate of accumulation.

Many reasons conspire to produce this failure, but the most important one concerns the basic units of analysis. As we shall see, utils and abstract labour are deeply problematic categories. They cannot be observed directly with our senses, and they cannot be examined indirectly through intermediation. Their 'quantity' cannot be calculated, even theoretically. In fact, they are not even logically consistent entities. These shortcomings are very serious, and the last one potentially detrimental.

It is of course true – positivism notwithstanding – that a scientific theory does *not* require all of its elementary particles to be observable, whether directly or indirectly. To mention the obvious, atoms were deemed unobservable till the early twentieth century, many subatomic particles are still elusive, and entities such as strings will perhaps stay so forever (or at least for a while longer). Yet the 'invisibility' of these elementary particles has hardly diminished the scientific footing of modern physics.[5] Indeed, one may argue that, since Galileo, the strength of science lies precisely in its ability to explain observed magnitudes by unobserved ones.[6]

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4 This is the view of classical Marxists, but not of neo-Marxists. Although the latter accept many of Marx's assumptions and analyses, they no longer use abstract labour as a basis for understanding contemporary capitalism and modern accumulation. The difference between the two approaches has significant implications, which we explore in Chapters 4 and 8.

5 On the concept of 'observation' and its intricacies, see Shapere (1982).

6 According to Zev Bechler, one of Galileo's chief contributions to the scientific revolution was the rejection of Aristotle's anti-informativism in favour of informative theories. In his *Two New Sciences*, Galileo suggested that, 'Since I cannot do more at present, I shall attempt to remove, or at least diminish, one improbability by introducing a similar or a greater one, just as sometimes a wonder is diminished by a miracle' (quoted in Bechler 1991: 131). In other words, modern science advances not by insisting on logically complete and therefore

The situation is quite different with neoclassical utils and Marxist abstract labour. These units are unlike atoms, electrons, or strings. The latter may be unobservable to us, but that shortcoming – at least in principle – could be attributed to our own limitations. Theoretically, atoms, electrons and strings are logically consistent entities with a definite set of quantities, whether deterministic or probabilistic. By contrast, utils and abstract labour are invisible not because of our own shortcomings, but because they do not – and *cannot* – posses a definite magnitude in the first place. They have pseudo-quanta. Even if we could somehow 'see' them, there would be nothing to measure. And 'quanta' that cannot be measured – no matter how important they might be otherwise – cannot form the basis for *quantitative* analysis.

The consequence is that neoclassical economics and Marxist political economy lack a basic unit. And without a basic unit, we remain right where we started. We know the price of capital in dollars and cents, but not how many utils or hours of abstract labour this value supposedly represents. We know that capital accumulates, but not why it accumulates or what this accumulation means.

Toward a new theory of capital

The secret to understanding accumulation, this book argues, lies not in the narrow confines of production and consumption, but in the broader processes and institutions of power. Capital, we claim, is neither a material object nor a social relationship embedded in material entities. It is not 'augmented' by power. It is, in itself, a *symbolic representation of power*.

The starting point is finance. As we shall see, Marx classified finance as 'fictitious' capital – in contrast to the 'actual' capital embedded in the means of production. This classification puts the world on its head. In fact, in the real world the quantum of capital exists as finance, and only as finance. This is the core of the capitalist regime.

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empty explanations, but, on the contrary, by solving existing puzzles through the introduction of new puzzles. Werner Heisenberg tells of a conversation he had with Albert Einstein in 1926 on this very inevitability:

> I pointed out [to Einstein] that we cannot, in fact, observe such a path [of an electron in an atom]; what we actually record are frequencies of the light radiated by the atom, intensities and transition probabilities, but no actual path. And since it is but rational to introduce into a theory only such quantities as can be directly observed, the concept of electron paths ought not, in fact, to figure in the theory. To my astonishment, Einstein was not at all satisfied with this argument. He thought that every theory in fact contains unobservable quantities. The principle of employing only observable quantities simply cannot be consistently carried out. And when I objected that in this I had merely been applying the type of philosophy that he, too, had made the basis of his special theory of relativity, he answered simply: 'Perhaps I did use such philosophy earlier, and also wrote it, but it is nonsense all the same'.
>
> (Quoted in Weinberg 1992: 180)

The modern corporate owner does not view capital as comprising tangible and intangible artefacts such as machines, structures, raw materials, knowledge and goodwill. Instead, he or she is habituated to think of capital as equivalent to the corporation's equity and debt. The universal creed of capitalism defines the magnitude of this equity and debt as *capitalization*: it is equal to the corporation's expected future profit and interest payments, adjusted for risk and discounted to their present value.

Faith in the principle of capitalization now has more followers than all of the world's religions combined. It is accepted everywhere – from New York and London to Beijing and Teheran. In fact, the belief has spread so widely that it is now used regularly to discount not only capitalist income, but also the income of wage earners, governments, and, indeed, society at large.

But as often happens with religion, the greater the belief the fewer the questions. And, indeed, those who obey capitalization are so conditioned that they rarely if ever enquire into its origin and implications. So maybe it isn't too much to stop and ask: What exactly is the meaning of capitalization? Where does it come from and why has it become so dominant? What are the forces that propel it, and how do they shape the broader process of capitalist development?

As this book will show, the elements of corporate capitalization – namely the firm's expected earnings and their associated risk perceptions – represent neither the productivity of the owned artefacts nor the abstract labour socially necessary to produce them, but the *power of a corporation's owners*.[7] In the capitalist order, it is power that makes the owned artefacts valuable to begin with. Moreover, the power to generate earnings and limit risk goes far beyond the narrow spheres of 'production' and 'markets' to include the *entire state structure of corporations and governments*.

This perspective is unlike that of conventional political economy. Liberal ideology likes to present capital and state as hostile, while Marxists think of them as complementary. But in both approaches, the two entities – although related – are *distinctly* instituted and organized.

Our own view is very different. As we see it, the legal–organizational entity of the corporation and the network of institutions and organs that make up government are part and parcel of the same encompassing mode of power. We call this mode of power the *state of capital*, and it is the ongoing transformation of this state of capital that constitutes the accumulation of capital.

The conventional creed incessantly fractures this encompassing process into a kaleidoscope of multiple interpretations. It conditions us to think of a bank as part of the 'economy', of the army as a component of 'politics' and of a television network as an aspect of 'culture'. We expect the 'sports' section of the newspaper to be separate from the sections that deal with 'international

7 For simplicity, we refer here to corporate capitalization only. Later in the book we treat capitalization more generally.

news' and 'education'. We split our life into distinct functions such as 'family', 'work', 'consumption' and 'entertainment'. We put each entity in a different realm.

And yet, occasionally, a small miracle happens. Like in the opening of Maurice Ravel's *La Valse*, where the dissociated, fragmented sounds gradually interlace and fuse into a single musical march-dance, our mind, in a flash of negation, unites the seemingly distinct social regions into a single hologram. Although often no more than a fuzzy silhouette, this hologram shows us the whole picture. The fractured human beings, the infinite threads that tie them to one another, the different 'spheres' between which they move – all those converge into one *totalizing* logic: the logic of capital.[8]

The reason that this logic is so totalizing can be sketched as follows. The capitalist mode of power is counted in prices, and capitalization, working through the ever more encompassing price system, is the algorithm that constantly restructures and reshapes this order. Capitalization discounts a particular trajectory of expected future earnings. For any group of capitalists – typically a corporation – the relative level and pattern of earnings denote differential power: the higher and more predictable these earnings are relative to those of other groups of companies, the greater the differential power of the corporation's owners.

Note that this is not 'economic power'. Neither is it 'political power' that somehow 'distorts' the economy. Instead, what we deal with here is *organized power at large*. Numerous power institutions and processes – from ideology, through culture, to organized violence, religion, the law, ethnicity, gender, international conflict, labour relations, manufacturing techniques

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8 The yearning for a totalizing picture in the face of relentless disciplinary fracturing is described in the childhood reminiscences of Arnold Toynbee:

> When I was a child I used to stay from time to time in the house of a distinguished professor of one of the physical sciences. There was a study lined with bookshelves, and I remember how, between one visit and another, the books used to change. When first I knew the room, many shelves were filled with general literature, with general scientific works, and with general works on that branch in which my host was an expert. As the years passed, these shelves were invaded, one after another, by the relentless advance of half a dozen specialized periodicals – gaunt volumes in grim bindings, each containing many monographs by different hands. These volumes were not books in the literary sense of the word, for there was no unity in their contents and indeed no relation whatever between one monograph and another beyond the very feeble link of their all having something to do with the branch of science in question. The books retreated as the periodicals advanced. I afterwards rediscovered them in the attic, where the *Poems* of Shelley and *The Origin of Species*, thrown together in a common exile, shared shelves of a rougher workmanship with microbes kept in glass bottles. Each time I found the study a less agreeable room to look at and to live in than before. These periodicals were the industrial system 'in book form', with its division of labour and its sustained maximum output of articles manufactured from raw materials mechanically.
>
> (Toynbee 1972: 30)

and accounting innovations – all bear on the differential level and volatility of earnings. When these earnings and their volatility are discounted into capital values, the power institutions and processes that underlie them *become* part of capital. And since capital is a vendible commodity, available for purchase and sale on the stock and bond markets, its relative value represents the *commodification of power.*

From this viewpoint, we can no longer speak of 'economic efficiency' versus 'political power', or distinguish 'economic exploitation' from 'political oppression'. Instead, there is a single process of capital accumulation/state formation, a process of restructuring by which *power is accumulated as capital.* To study the accumulation of capital is to study the formation and transformation of organized power under capitalism. This is the starting point of our book.

A brief synopsis

The book itself consists of five parts. Part I situates the emergence of capital within the broader development of political economy. Part II dissects the liberal and Marxist conceptions of capital. Part III explains why theorists of capital have been barking up the wrong tree, trying to equate accumulation with machines and production instead of capitalization and finance. Part IV lays the foundations for an alternative theory of accumulation based on power. And Part V articulates our own theory of capital as power.

On the face of it, this layout may seem to separate neatly our 'critique' of existing theories in the first three parts of the book from the 'gist' of our story in the last two. But don't be tempted to take a shortcut and jump over Rhodes. Substantively, there is no split in the book. The early parts of the book are crucial to the dialectical development of our argument, and unless you read them you won't understand what follows.

The sections below highlight the key themes of each of these parts, listing some of the questions we ask and sketching the paths we follow as we research the answers. We write them less as a summary and more as an appetizer. Hopefully, they will lure you to read the whole book.

Part I: dilemmas of political economy

The first part introduces some of the key dilemmas of political economy. Chapter 2 identifies the two central dualities of political economy: (1) the separation between politics and economics, and (2) the further distinction, within economics, between the real and the nominal. These bifurcations, accepted by both liberals and Marxists, define what political economy does – and what it *cannot* do. And the most important handicap they impose is the inability to deal with power.

The dualities themselves are hardly accidental. As Chapter 3 explains, they were part and parcel of a triple revolution that swept eighteenth-century

Europe: the ascent of modern science, the emergence of liberal politics and the rise of capital accumulation. This triple revolution undermined the religious–authoritarian cosmos. The hierarchical rule of God and his ordained subcontractors was replaced by a flat law of nature, a secular–universal mechanism that regulated and equilibrated both heaven and earth. This new worldview made the 'economy' a natural process, independent of the 'politics' of king and church; and it made the 'nominal' incomes of the different classes a consequence of 'real' production and consumption rather than naked power and sanctified violence.

But whereas the dualities undermined the power of the *ancien régime*, they were far less effective in concealing (or revealing) the power of capital. Initially, the problem didn't seem serious enough, and most political economists were totally oblivious to its consequences. The liberals were all too happy to emphasize the liberating aspects of the market and its separation from state, and they therefore had no reason to drag capitalist power into the open. By contrast, the Marxists emphasized the exploitative and oppressive nature of the system; but having banked on the economy's historical laws of motion to dialectically implode the system from within, they, too, felt no need to complicate the picture with the voluntarist indeterminacies of power. And so 'politics' remained happily separate from 'economics' and the 'nominal' distinct from the 'real'.

But that situation started to change in the late nineteenth and early twentieth centuries. First, the growth of large units – big business, large government and organized labour – upset the presumed automaticity and self-regulating tendencies of capitalism. Second, there emerged a whole slew of new power processes – from militarization and imperialism, to finance and inflation, to collectivism and fascism, culture and mass psychology, industrial regulation, monopoly and macroeconomic stabilization – developments that no longer fit the equilibrium theories of mechanical liberalism and the historical inevitabilities of dialectical Marxism. And third, political economists started to empirically quantify accumulation – only to find that, in the absence of equilibrium and the presence of power, capital no longer has an 'objective' magnitude.

Chapter 4 examines the different ways in which political economists attempted to tackle the problem. The solutions are very different, but they all have one thing in common: they try to have their cake and eat it too. The liberals do so by elimination. They break their economy into two separate domains: 'micro' and 'macro'. The micro sphere is drained of all power, creating a showcase where the laws of economics function smoothly and automatically. Some of the drained power is classified as 'imperfections' and tacked on to textbooks as better-to-skip chapters. But the bulk of it – particularly the power of 'government intervention' – is exported to the macro field, where 'distortions' reign supreme. This solution helps keep the pristine simplicity of liberal theory intact – but at a rapidly mounting cost. Power is now recognized as an unfortunate yet permanent feature of the actual

economy. And as the power-free models start to fail, liberal economists find themselves increasingly reliant on 'extra-economic shocks', 'selfish unions' and 'short-sighted politicians' to explain what their eternal theories cannot.

Unlike the elusive liberals, Marxists try to deal with power head on – yet they too end up with a fractured picture. Unable to fit power into Marx's value analysis, they have split their inquiry into three distinct branches: a neo-Marxian economics that substitutes monopoly for labour values; a cultural analysis whose extreme versions reject the existence of 'economics' altogether (and eventually also the existence of any 'objective' order); and a state theory that oscillates between two opposite positions – one that prioritizes state power by demoting the 'laws' of the economy, and another that endorses the 'laws' of the economy by annulling the autonomy of the state. Gradually, each of these branches has developed its own orthodoxies, academic bureaucracies and barriers. And as the fractures have deepened, the capitalist *totality* that Marx was so keen on uncovering has dissipated.

Part II: the enigma of capital

These unsolved dilemmas left accumulation in a no-man's land. The dismal scientists insisted that capital is an 'economic' entity and quickly appropriated the exclusive right to theorize, justify and criticize it. But as often happens with uncontested monopolies, the service hasn't been something to write home about. It has now been more than two centuries since economists started to work on capital, and they have yet to figure it out. . . .

Chapter 5 examines the liberal debacle. The key purpose of neoclassical economics is to justify the profit of capital; and it does so by making the income of capitalists equal to the productivity of their capital. This justification, though, faces two insurmountable obstacles. First, according to its own prerequisites, the theory can work only under the strict conditions of a perfectly competitive economy untainted by politics and power. Ironically, though, this explanation emerged at the end of the nineteenth century, precisely when oligopoly replaced 'competition'; and it gained prominence after the Second World War, exactly when governments started to 'intervene' in earnest. Second, and more importantly, even if pure competition did prevail and there was no government in sight, the theory would still fall flat on it face. In order to explain profit by the productivity of capital, we first need to know the quantity of that capital. Yet it so happens that in order to know the quantity of capital, we first have to know the amount of profit! And since there is no way to tell the chicken from the egg, the neoclassicists continue to run in circles.

Unlike liberals, Marxists do not try to justify profit. On the contrary, their entire effort aims at showing that capitalists can accumulate only by exploiting workers. And yet, since their notion of capital, just like the neoclassical one, is anchored in the 'economy', they end up falling into the same materialistic traps. These traps are crucial – so crucial, in fact, that they

undermine Marx's entire theory of accumulation. And since most people who are otherwise sympathetic to Marx's critique of capitalism are unaware of these difficulties, we devote two full chapters – 6 and 7 – to their examination.

The commodified structure of capitalism, Marx argues, is anchored in the labour process: the accumulation of capital is denominated in prices; prices reflect labour values; and labour values are determined by the productive labour time necessary to make the commodities. This sequence is intuitively appealing and politically motivating, but it runs into logical and empirical impossibilities at every step of the way. First, it is impossible to differentiate productive from unproductive labour. Second, even if we knew what productive labour was, there would still be no way of knowing how much productive labour goes into a given commodity, and therefore no way of knowing the labour value of that commodity and the amount of surplus value it embodies. And finally, even if labour values were known, there would be no consistent way to convert them into prices and surplus value into profit. So, in the end, Marxism cannot explain the prices of commodities – not in detail and not even approximately. And without a theory of prices, there can be no theory of profit and accumulation and therefore no theory of capitalism.

And that isn't the end of the story. Chapter 8 shows that political economists are having trouble explaining not only how and why capital accumulates, but also *what* accumulates. As noted earlier in the introduction, neoclassicists pretend to count capital in 'utils' and Marxists in hours of 'abstract labour'. Unfortunately, though, there can be no 'economy' distinct from politics and other aspects of society; and even if the 'economy' were an independent sphere, its production and consumption could not be 'objectively' given. These two impossibilities turn the search for universal material–economic units into an exercise in futility.

Part III: capitalization

That capital theorists remain so hooked on production and consumption is all the more perplexing given that capitalists themselves are not. Whereas political economists are focused on capital goods, capitalists think of capitalization. The theorists, both mainstream and critical, are nonchalant about this difference. Capitalization, they say, is merely a 'nominal' reflection – sometimes accurate, other times distorted – of the 'real' economy. Capitalists certainly care about their money assets, but the only way to understand the accumulation of such assets is by theorizing their material underpinnings.

Well, it turns out that this isn't really the case. Chapter 9 begins our exploration of capitalization, tracing its evolution from its modest beginning in the fourteenth century to its world dominance in the twenty-first. It shows that capitalization not only predates 'industrialization' by a few hundred years, but also that it is far more encompassing than is typically assumed – so encompassing, in fact, that in our own day and age it has penetrated every

corner of society and absorbed many of its power processes. Production, narrowly defined, has become merely one of the many faces of capitalization.

But if production is only one aspect of capitalization, how can it serve to explain it? The answer is that it doesn't. Chapter 10 contrasts the 'nominal' process of capitalization with the so-called 'real' augmentation of capital goods. It demonstrates that the money value of 'capital goods' is a very small fraction of the overall value of capitalization, and that their ratio varies widely over time. But most disturbingly, it shows that the rates of growth of the two magnitudes move in *opposite* directions: when the growth of the 'capital stock' accelerates, the growth of capitalization decelerates and vice versa!

Faced with these facts of life, particularly the last one, the theorists must make a choice: stick with the so-called 'real economy' and treat capitalization as a distorted mirror if not a mere fiction; or stay focused on what drives the capitalists and try to develop a social theory of capitalization that transcends the fetish of material production and capital goods. Most political economists have taken the first route. We choose the second.

Chapter 11 unzips the capitalization process. We identify the different 'elementary particles' that make up the capitalization formula, examine their actual and ideological histories, dissect their properties and study their interrelations. This analysis provides a broad framework on which we can build an alternative theory of capital as power.

Lineages

Before outlining this theory, though, a few words about origins and influences. Although critical of Karl Marx's theory of value, we are deeply influenced by his general approach, primarily his notion of capitalism as the *political* regime of capital. In the twentieth century, Marx's followers have modified and adapted his insights to the changing nature of capitalism, and debating their theories has helped us shape our own.

In addition to Marx and his followers, we draw on the largely neglected if not forgotten writings of Thorstein Veblen, Lewis Mumford and Michal Kalecki. Veblen was perhaps the first thinker to seriously consider absentee ownership, finance and credit as the central power mechanisms of capitalism. He was also the first to ponder the implications of power – or 'sabotage', as he called it – for the concept of capital.

Mumford, who was a student and colleague of Veblen, provided a unique history of technology as power. The first machines, he argued, were social rather than material. They made their initial appearance in the ancient delta civilizations in the form of a mechanized social order – the mega-machine. According to Mumford, the social mega-machine provided the model for all subsequent material and social mechanization – a claim with far-reaching consequences for the study of capitalism.

Kalecki, one of the founders of neo-Marxian economics, developed novel

research methods, both theoretical and empirical. Of these, perhaps the most innovative is the notion of the 'degree of monopoly': the idea that the distribution of income is not merely the consequence of economic power, but its very definition.

Taken together, these views – particularly Marx's emphasis on the political regime of capital, Veblen's linking of financial capitalization and industrial sabotage, Mumford's notion of social organization as a power machine and Kalecki's distributive measurement of power – constitute our starting point. We use them, critically if we can, as stepping stones for our own theory of capital.

However, these influences do not make us members of any 'school'. Although we have been inspired by Veblen, we consider ourselves neither Veblenians nor institutionalists. Similarly with Marx. Our critique of his schema – particularly his labour theory of value and his notion of surplus value – 'disqualifies' us from being Marxist. That said, though, the general thrust of our project is very much in line with Marx's. Like Marx, we too try to confront the concrete capitalist reality; to examine its actual gyrations, ideologies and justifications; and, above all, to decipher its central architecture: the accumulation of capital. In our opinion – again in line with Marx's – investigating the capitalist reality is the first prerequisite for changing it.

Needless to say, this type of analysis is antithetical – in method, spirit and aim – to the institutionalism and system approach of Max Weber and Talcott Parsons. It also has nothing to do with the so-called 'new institutionalism' of Ronald Coase, Douglas North and Oliver Williamson. The latter school subjugates the logic of organizations and institutions to the marginal calculus of neoclassical utility. The very idea would have made Veblen flip in his grave.

Part IV: bringing power back in

Chapter 12 begins our examination of power with a focus on capital and the corporation. The starting point is Veblen. His theoretical framework, articulated at the turn of the twentieth century, was radically different from the orthodoxy of his time (and of our own time still). 'Industry' and 'business', he argued, are not synonyms, contrary to what conventional political economy would have us believe. On the contrary, they are opposing realms of human activity: industry is the sphere of material production, while business is the domain of pecuniary distribution, and the link between them is not positive but negative.

Industry is a *collective* endeavour. Its success hinges on societal creativity, cooperation, integration and synchronization. In capitalism, however, industry is carried out not for its own sake but for the purpose of business. And the goal of business isn't collective well being, but pecuniary profit for *differential* gain.

Now the critical bit here is that industry and business are *inherently*

distinct. Modern capitalists are removed from production: they are *absentee* owners. Their ownership, says Veblen, doesn't contribute to industry; it merely controls it for profitable ends. And since the owners are absent from industry, the only way for them to exact their profit is by 'sabotaging' industry. From this viewpoint, the accumulation of capital is the manifestation not of productive contribution but of organized power.

To be sure, the process by which capitalists 'translate' qualitatively different power processes into quantitatively unified measures of earnings and capitalization isn't very 'objective'. Filtered through the conventional assessments of accountants and the future speculations of investors, the conversion is deeply inter-subjective. But it is also very real, extremely imposing and, as we shall see, surprisingly well-defined.

These insights can be extended into a broader metaphor of a 'social hologram': a framework that integrates the resonating productive interactions of industry with the dissonant power limitations of business. These holographic spectacles allow us to theorize the power underpinnings of accumulation, explore their historical evolution and understand the ways in which various forms of power are imprinted on and instituted in the corporation.

Our inquiry paints a picture that is very different from – and often inverts – the canonical images of political economy. It shows that business enterprise diverts and limits industry instead of boosting it; that 'business as usual' needs and implies strategic limitation; that most firms are not passive price takers but active price makers, and that their autonomy makes 'pure' economics indeterminate;[9] that the 'normal rate of return', just like the ancient rate of interest, is a manifestation not of productive yield but of organized power; that the corporation emerged not to enhance productivity but to contain it; that equity and debt have little to do with material wealth and everything to do with systemic power; and, finally, that there is little point talking about the deviations and distortions of 'financial capital' simply because there is no 'productive capital' to deviate from and distort.

Now, the notion that power is the means of accumulation is only half the story; the other half is that power is also the *ultimate end* of accumulation. Chapter 13 broadens this notion by offering to think of capitalism not as mode of production, but as a *mode of power*. The argument proceeds in two steps. First, we rewind the story back to the ancient power civilizations, where, according to Lewis Mumford, the first large-scale machines had been assembled. As noted, these mega-machines were not physical contraptions; they were social structures. And their goal, says Mumford, wasn't production but the very exertion of power.

The same view, we argue, applies to capital. Political economists are not entirely wrong to see capital as a 'machine'. But this machine isn't material

9 The term 'autonomy' here should not be interpreted literally. As we shall see, 'price makers' are just as subservient to the logic of accumulation as 'price takers' are, and they too tend to move in herds – only that the path they trot tends to upset the expectations of economists.

but social: it is a modern mega-machine. Ultimately, capitalists are driven not to produce things but to control people, and their capitalist mega-machine exerts this power with an efficiency, flexibility and force that ancient rulers could not even fathom.

The capitalist mega-machine defines the capitalist mode of power; and a mode of power, we argue, constitutes the 'state' of society. The second part of Chapter 13 historicizes this proposition. It begins with the feudal mode of power from which capitalism emerged; it traces the process by which the feudal mode of power gave way to a capitalist mode of power; and it examines how the logic of capital has gradually penetrated, altered and eventually become the state – the state of capital.

This state is not an 'actor' that stands against or with capital. Nor is it an eternal Newtonian space that simply 'contains' different actors at different times. As we see it, the state of capital is a historically constituted Leibnitzian space, an ever-changing structure of power defined and shaped by the concrete entities and relationships that comprise it.

Part V: accumulation of power

Social power is commonly sanctified by the heteronomous dictates of God or Nature. These pronouncements of power, coming from 'outside' society, seem inevitable, and the tangible symbols in which they are expressed – temple, palace, army, slaves and material wealth – make them look absolute. But social power is autonomous, not heteronomous. It comes from within society, not from without. And for that reason, behind the absolute symbols of power there is always a deeper, *relative* reality.[10]

In the final analysis, power is *confidence in obedience*. It expresses the certainty of the rulers in the submissiveness of the ruled. When this confidence is high, the rulers *actively* shape their society. They view its trajectory as customary and natural, while treating revolts, uprisings – even revolutions – as mere disturbances. By contrast, when this confidence is low, the rulers tend to *react* rather than initiate. Social development loses its coherence, while revolts, uprising and revolutions suddenly become manifestations of systemic chaos.

In our own epoch, the central relationship between confidence and obedience is embodied in capital. The process of accumulation represents the changing ability of *dominant capital* – namely, the leading corporations and key government organs at the epicentre of the process – to control, shape and transform society against opposition. The conflictual underpinnings of this process make capital a relative entity; and that relativity means that we need

10 The difference between heteronomy and autonomy is developed in the social and philosophical writings of Cornelius Castoriadis – see, for instance, his *Philosophy, Politics, Autonomy* (1991b).

to think not of absolute accumulation but of *differential accumulation* – the ability of dominant capital to accumulate faster than the average.

The fifth section of the book builds on the twin notions of differential accumulation and dominant capital to develop a concrete theory of capital as power. We begin by defining historical society as a creation of order, or *creorder* – a word that connotes the paradoxical fusion of being and becoming, state and process, stasis and dynamism. The algorithm of the capitalist *creorder* is capitalization. This is the mechanism through which capitalist power is commodified, structured and restructured. The static architecture of this power is defined by differential capitalization. At any point in time, the distribution of capitalized values maps the division of power among the different owners. But the capitalist *creorder* compels owners not only to retain their power, but to try and augment it; not only to protect their differential capitalization, but to increase it through differential accumulation.

The result is a strong gravitational force. This force – anchored in power rather than productivity – pulls the independent units of capital closer together. It causes them to join, coalesce and fuse into ever larger units. Eventually, it gives rise to tight constellations of large corporate–government alliances. These constellations constitute what we call dominant capital.

Chapter 14 examines the general contours of this process in the United States and comes up with seemingly paradoxical results. Most critical observers associate the past half-century with a protracted accumulation crisis. And yet, during that very period, dominant capital appears to have enjoyed virtually uninterrupted differential accumulation. How can this stellar performance be reconciled with notions of capital in distress? What are the underlying power processes that make differential accumulation feasible in the first place? How have these conflictual processes panned out historically to generate such a remarkable feat? And why haven't political economists noticed any of this?

To answer these questions, we develop the notion of *differential accumulation regimes*. Dominant capital can increase its differential earnings and capitalization in two principal ways: (1) by increasing the relative size of its organization, which we call *breadth*; and (2) by increasing the relative elemental power of its organization, which we label *depth*. Chapters 15 to 17 examine the salient features of these power regimes and in the process deflate some of the more cherished beliefs of political economists.

One of these beliefs is that capitalism is hooked on economic growth. This conviction is shared by liberals and Marxists alike, and it is so strong that many now conflate growth and accumulation as if they were one and the same. But they are not the same, and Chapter 15 shows why. From the viewpoint of dominant capital, green-field growth is a double-edged sword. It can both undermine and augment the power of dominant capital – and in so doing hinder as well as assist differential accumulation. But green-field isn't the only route. Dominant capital can also grow 'inorganically', via mergers

and acquisitions. And unlike green-field growth, the impact of amalgamation is decidedly positive: it boosts the organizational size and power of dominant capital, it augments its differential accumulation and it does both with enormous thrust.

This power rationale explains why, over the past century, mergers and acquisitions have grown exponentially while green-field growth has decelerated. Moreover, since amalgamation is a change in ownership and therefore a transformation of power, the merger process tells us plenty about the changing nature of capitalist politics at large. It explains the sequential breaking of sectoral envelopes, as dominant capital transcends its original corporate universe seeking to expand into bigger universes; it accounts for the social transformation that accompanies these leaps; and it unveils the conflictual underpinnings of capital flows and the power politics of global ownership.

A second cardinal belief among political economists is that capital loves price stability and hates inflation. Yet this conviction, too, doesn't stand up to the facts. Chapter 16 shows that although capitalists constantly try to cut their costs, this endeavour merely keeps them running on empty. The way to beat the average is not to cut cost but to increase prices. Those who inflate their prices faster than the average end up redistributing income in their favour – and in so doing augment the elemental power of their organization and boost their differential accumulation.

The inflationary path to differential accumulation is highly conflictual and therefore anything but smooth. And, sure enough, contrary to the theories and instincts of most economists, inflation tends to appear as *stagflation*: it comes not with growth and stability, but with stagnation and crisis. This fact makes the depth route uncertain and seemingly far more risky than breadth. Yet return is often commensurate with the risk, and when dominant capital finds itself gravitating toward conflictual inflation, the common result is accumulation *through* crisis.

And so emerges a very different reality of accumulation. Whereas liberals and Marxists emphasize the capitalist quest for growth and price stability, dominant capital seems to thrive on amalgamation and stagflation. Chapter 17 ties the final knots by bringing together these two key regimes of differential accumulation. It relates the long histories of breadth by amalgamation and depth through stagflation; it examines how these regimes shaped the twentieth century of capital as power; and it closes by speculating on what their relationship may imply for the future.

The capitalist *creorder* and humane society

We are now ready to start our exploration, but before doing so we should perhaps say a few words on the limits of our journey. The study of capital as power does not, and cannot, provide a *general theory of society*. Capitalization is the language of dominant capital. It embodies the beliefs, desires and fears of the ruling capitalist class. It tells us how this group views the

world, how it imposes its will on society, how it tries to mechanize human beings. It is the architecture of capitalist power.

This architecture, though, tells us very little about the human beings who are subjected to its power. Of course, we observe their 'behaviour', their 'reaction' to capitalist threats, their 'choice' of capitalist temptations. Yet we know close to nothing about their consciousness, awareness, thoughts, intentions, imagination and aspirations. To paraphrase Cornelius Castoriadis, humanity is like a 'magma' to us, a smooth surface that moves and shifts.[11] Most of the time its movements are fairly predictable. But under the surface lurk autonomous qualities and energies. The language of capitalist power can neither describe nor comprehend these qualities and energies. It knows nothing about their magnitude and potential. It can never anticipate when and how they will erupt.

Consider that none of the pundits – communist or anti-communist – foresaw the collapse of the Soviet bloc (although, in retrospect, the victory of liberalism was of course 'inevitable'). Similarly with the May 1968 revolution in France. This was arguably the most important revolution of the twentieth century. And yet, even a few days before its explosion, no sociologist – conservative or radical – had a clue as to what was coming (Anonymous 1968; Orr 2003). The story repeats itself with the first Palestinian *Intifada* that started in 1987. The uprising took everyone by surprise, including the critical 'orientalists' and the orthodox PLO establishment. The list goes on.

These revolutionary instances cannot be theorized easily, and for a good reason. They are rooted in the *original* spark of free human creativity. '[M]en cannot be treated as units in operations of political arithmetic', observes Arthur Koestler, 'because they behave like the symbols of zero and the infinite, which dislocate all mathematical operations' (1949: 76). Their originality and creativity cannot be modelled or reduced to historical laws of motion. They cannot be predicted systematically. They do not follow a clear pattern. They are unique.

Karl Marx, the first to investigate the dynamic architecture of capitalism, tried to fuse the two movements of power and resistance to power into a single language. For him, the power of capitalists to accumulate and the political struggle of workers against that power could both be derived from and analysed by one basic logic: the labour theory of value.

In our view, this fusion is impossible to achieve. It is impossible to impose the logic of labour (and of human activity in general) on capitalists. We cannot denominate the pecuniary architecture of capitalization in homogenous units of abstract labour. Capitalization and productivity/creativity are two distinct processes, each with its own separate 'logic'. The destructive clash of these two processes is the engine of the capitalist dialectic, but the dialectic itself cannot be understood with one common language.

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11 Castoriadis develops the ontology of the magmas in Chapter 7 of *The Imaginary Institution of Society* (1987).

Instead, we prefer to imagine two general 'entities'. The first entity is the *capitalist creorder*, whose pattern is imposed on society. The gyrations and development of this *creorder* can be subjected to a systematic, quantitative theory of power. The second entity is a stealthy *humane society*. This society exists mostly as an unknown potential. Usually, it is dormant and therefore invisible. Occasionally, though, it erupts, often without warning, to challenge and sometimes threaten the institutions of capitalist power. These eruptions – and their consequences – do not follow a pre-set pattern. They cannot be systematically theorized.

For this reason, we do not pretend to offer a general theory of capitalist society. We limit ourselves to the study of the capitalist *creorder* only, the dynamic order of those who rule. To rule means to see the world from a singular viewpoint, to be locked into a unitary logic, to be subservient to your own architecture of power. Dominant capital cannot deviate from the boundaries of this architecture, even if it wants to. Its individual members are forced to accept the very logic they impose on the rest of humanity. And the more effective they are in imposing that logic, the more predictable they themselves become. This is why their world can be theorized and to some extent predicted.

Over the past century, the power logic of capitalism has been incarnated in the process of differential capitalization; that is to say, in the belief that there is a 'normal rate of return' and that capitalists are obliged to 'beat' it. This is the gist of the new capitalist cosmology. Instead of the Holy Scriptures, we now have the universal language of business accounting and corporate finance. The power of God, once vested in priest and king, now reveals itself as the power of Capital vested in the 'investor'.

And as the capitalization of power spreads and penetrates, the world seems increasingly 'deterministic'. The determinism of capitalization is now the 'natural state of things', the benchmark against which one can estimate 'deviations' 'distortions', 'risk' and 'return'. It is a logic that looks unquestionable to those who rule and omnipotent to those who are being ruled.

But this determinism of capitalization has nothing to do with 'laws of nature', or the 'inevitable' progression of history. It is the *determinism of the ruling class, and only of the ruling class*. It works only insofar as the ruling class rules. Admittedly, that happens most of the time. However, human beings do have the capacity to understand the autonomous nature of this 'determinism'. And when they realize that the rules are imposed on them by *other* human beings, determinism disappears, replaced – if only for a historical instant – by the humane promise of autonomy–democracy–philosophy.

Part I

Dilemmas of political economy

2 The dual worlds

> He was so eager to know what was going on in heaven, that he could not see what was before his feet.
>
> —Socrates on Thales, *Plato's Theaetetus*

The bifurcations

Capitalism is characterized by several related antinomies and contrasts, basic dualities that resemble the ancient paradoxes of Hellenic philosophy. Of these dualities, the most important are the distinction between politics and economics and the separation of the real from the nominal.

The first duality – the bifurcation of politics and economics – is hardly new. Pre-capitalist history was marked, almost invariably, by a socio-ecological reality that separated political rulers from their producing subjects. The concepts of course were markedly different. There was no such thing as 'the economy', and the notion of 'politics', although dating back to ancient Athens, had little meaning in an authoritarian context. But terminology aside, there was a fairly clear separation between social rule and material provision. The common pattern of power consisted of state or quasi-state entities using organized military force to control dispersed agricultural cultivators. Politically, production was subjugated to state rule; but ecologically, the two spheres were by and large distinct – and, in the extreme case of oriental despotism, entirely alienated.

This duality was heightened by the rise of the autonomous European bourg beginning in the twelfth century. The bourg – although initially embedded in and dependent on feudalism – offered a new alternative. It fashioned a peace-seeking civil society of merchants, artisans and industrialists, a model that stood in sharp contrast to the violent, war-making feudal fiefdoms and states. Bourgeois production and trade, much like feudal agriculture, remained distinct from princely politics. But the bourgeoisie demanded more. It wanted its 'new economy' to be not only distinct from but also *independent* of princely and feudal rule.

This original demand still echoes today. Whenever we contrast civil society with state authority, free contract with organized hierarchy, horizontal markets with vertical power, or, more broadly, economics with politics – we reproduce the early demand of the bourgeoisie: the demand for particular *libertates*. This quest for personal exemptions, individual immunities and specific protections from the organized violence of feudalism is the forerunner of modern liberalism and its assertion of universal liberty.[1]

The first to openly challenge the alleged separation of production from power was Karl Marx. This separation, he argued, was a manifestation of bourgeois 'false consciousness'. Liberals emphasize the voluntary nature of market exchange, which makes their economics seem like the domain of freedom. But under the gloss of market exchange lies the reality of production – and in the realm of production, it is exploitation, not equality, that rules. In this way, the market merely serves to conceal the underlying power nature of capitalism.

This challenge was important but ultimately insufficient. According to Marx, capitalist power works through two mechanisms: *economic exploitation* and *political oppression*. The first mechanism is responsible for extracting the surplus, the second for sustaining the capitalist mode of production as a whole. The crucial point here, which we explain in the next section, is that, according to Marx, capitalist power requires that the two mechanisms be related – yet distinct. In this sense, Marx's insistence that power pervades the system does not reject but rather necessitates the liberal duality of politics and economics.

The second capitalist duality occurs within economics proper. The ancient ontological distinction between the Thing and its Idea is resurrected here in the two parallel worlds of liberal economics: the real and the nominal. The real world is the material sphere of production and consumption; the nominal world is the mirror image of prices, money and credit. Capital in this context has two faces: a real face made of capital goods and a nominal imprint called finance. The material means of production are recorded on the left-hand side of the balance sheet; the nominal symbols of debt and equity are entered on the right-hand side. The Thing on the left faces its Idea on the right.

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1 It should be noted that this historical description, written in the spirit of Marx, is very much out of style – particularly when compared with the fashionable hype of postmodernity. For the typical postist, our historical view here is no more than 'Eurocentric' arrogance, a remnant of the imperial mindset and its postcolonial successor (see for example Turner 1978). Although we'll occasionally mention it, we have no intention of arguing with this fashion. There is simply no point. The postists deny the possibility of a universal logic – which pretty much eliminates the possibility of debate. And they are hostile to scientific thinking – which makes impossible if not meaningless any attempt to examine, verify or reject their slogans, narratives and battle cries (including those lifted gratis from past Marxist studies).

Marxian economics, although very different from its liberal counterpart, adopts a similar conceptual division. Here, too, we find the contrast between the real and the nominal – a distinction between the material base of value, where labour, production and exploitation occur; and a monetary superstructure of prices and credit through which politics, ideology, the law and sheer force penetrate and reshape the accumulation process.

Let's examine these two dualities of capitalism a bit more closely, beginning with politics versus economics.

Politics versus economics

The liberal view

For the neoclassicists, politics lies *outside* the realm of capital. The institutions and organizations of the state, electoral parties, the legal system, the organized use of force and international relations certainly impact capital for better or worse (mostly for the worse). But the impact is inherently external. The common language speaks of exogenous 'shocks', of political 'intervention' and 'interference' that 'disturb', 'distort' and 'constrain' the economic system. These external shocks may hold back the pace of capital accumulation or change its direction; but whatever their impact – and here we come to the critical part – they cannot alter the basic *meaning* of capital. According to the neoclassicists, capital is the utilitarian manifestation of multiple individual wills, expressed freely through the market and incarnated in an objective productive quantum. As a voluntary, material substance, capital itself is orthogonal – and therefore impermeable – to power politics, by definition.

This view is complemented by the liberal theory of politics. According to neoclassical historiography, the logic of capital accumulation, although inherent in the human psyche, was manifested only after civil society began its revolt against feudal and state tyranny. Gradually, the flat principle of free will, the relentless mechanism of the market and the new creed of growth undermined deference to political hierarchy and the stationary economy of feudalism. In this context, it was only natural for the utilitarian calculus of capital accumulation to become the blueprint for political democracy.

In this blueprint, the ideal political system is one that intervenes the least, and the best way to guarantee minimal intervention is to make politics itself operate as a free market. That is the gist of liberalism.

The metaphors of political liberalism – like those of neoclassical economics – are clearly Newtonian (a point to which we return in Chapter 3). The various political particles – interest groups, electoral parties, coalitions, NGOs and contending state organs – all act and react on one another. Each particle tries to maximize its own utility. But because the particles are all relatively small, the political bourse remains competitive, the different

demands tend to countervail each other, and the result converges to the least harmful political equilibrium.[2]

The Marxist perspective

Despite their mutual hostility, Marxists share with neoclassicists the view that capital is an economic magnitude. The difference is that, in contrast to the neoclassicists, Marxists deny that capital can exist independently of politics. The relations of production, they argue, are not separate from, but intertwined with politics and the state – and have been so throughout history. The interesting question is not whether politics affects economics, but the way in which their interaction has evolved over time. And here capitalism indeed seems unique.

Capitalism, argue the Marxists, is the first social order to introduce a clear legal and ideological demarcation between public politics and state on the one hand, and private economy and market on the other. Liberal politics is based on the belief in universal equality: a society governed by the voluntary exchange of private property presupposes and implies equality before the law. By contrast, the accumulation of capital, despite its voluntary appearance, requires inequality. This necessity, argue the Marxists, is inherent in the very nature of capitalism: the means of production are owned by capitalists who

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2 A typical view of politics as a free market is portrayed by Anthony Downs (1957). According to Downs, politics is a form of competition among firms (political parties) over the hearts, minds and pockets of sovereign consumers (voters). Just like in every other market, here, too, each actor seeks to maximize his or her own utility. The voters try to maximize their net political utility (or minimize their net political disutility) by choosing the optimal ratio of public services to taxes. Similarly for the politicians. Their purpose is to maximize their net political assets: more votes, more seats, more spoils.

This vision of politics as a free market is now deeply embedded in the everyday practice of liberalism. Political parties in the United States and elsewhere make extensive use of the Voter Vault, a massive collection of up to 50,000 databases packed with detailed consumer/voter information. According to the *Financial Times,* this information, filtered through various algorithms, enables politicians to tailor their messages to the 'preferences' of specific groups of voters:

> The technique, known as 'micro-targeting' on the right and 'modelling' on the left, is a sign of how far modern political campaigning has become a marketing exercise, with techniques that were traditionally used in broadcast advertisements applied to political communications. Nowadays political consultants tout 'turnout scores', 'clusters' and 'micro-targeted messages'. In the US, generic electoral constituencies such as 'soccer moms' and 'Reagan Democrats' are broken down into even more forensic clusters. There are different algorithms to weigh cultural differences between West and East Texas. Strategists target finer demographic slices such as 'high-income, God-respecting, terrorism-fearing Republicans' or 'white women aged 35–45 with college educations, who are Catholic or Protestant and pro-life, with median incomes over Dollars 35,000 and live in Dollars 150,000-plus homes'.
>
> (*Financial Times* October 13, 2006, p. 11)

do not work, while labour is performed by workers who do not own. Since value is produced only by workers, capitalists can extract, appropriate and accumulate the surplus part of this value only through exploitation. And exploitation, by definition, negates equality.

This duality of political equality and economic inequality produces a destructive contradiction. Recall that, according to Marxists, capital accumulates in the economic–productive sphere. This is where class conflict is generated, labour exploited and surplus value expropriated. But the economic process cannot occur independently of politics. Accumulation, because it is based on exploitation, cannot be sustained at the level of the individual producer-employer alone. It requires legal, ideological and cultural institutions; it needs state organs and other power organizations; it has to be framed, shaped and contained from above. In short, it requires the political power of a (nation) state. In this way, the institutions and organizations of power – although unproductive in the direct economic sense – are nonetheless indispensable for maintaining and reproducing the economic order as a whole. At the same time, these very institutions and organizations are nourished by and depend on the surplus extracted in the economic sphere. In this sense, the economic base of exploitation can exist only under a political superstructure of oppression, and vice versa.

But that requirement makes capitalist politics inherently contradictory: liberal politics has to be equal in ideology and theory, yet unequal in practice. And since this contradiction is produced by the very nature of capitalism, the only way to resolve it is to overthrow the system altogether. Eliminating the exploitation of workers by capitalists will simultaneously eliminate the duality of politics and economics. (Marxists, of course, express both the contradiction and its resolution dialectically rather than mechanically as we have done here, and certainly with far greater finesse; but their political conclusion is essentially the same.)

Capitalism from below, capitalism from above

To sum up, then, both neoclassicists and Marxists separate politics from economics, although for different reasons. The neoclassicists see the separation as desirable and, if handled properly, potentially beneficial. By contrast, Marxists view the distinction as contradictory and, in the final analysis, destructive for capitalism. Yet, both conclusions, although very different, are deeply problematic – and for much the same reason.

The difficulty lies less in the explanation of the duality and more in the widespread assumption that such a duality exists in the first place. Even E. P. Thompson, a brilliant historian who was otherwise critical of Marxist theoretical abstractions, seems unable to escape it. Writing on the development of British capitalism from the viewpoint of industrial workers, he describes the class socialization of workers as 'subjected to an intensification of two intolerable forms of relationship: those of economic exploitation and of political

oppression' (1964: 198–99). In this dual world, the industrial labourer works for and is exploited by the factory owner – and when he organizes in opposition, in comes the policeman who breaks his bones, the sheriff who evicts him and the judge who jails him.

Now, this bifurcation is certainly relevant and meaningful – but only up to a point. From the everyday perspective of a worker, an unemployed person, a professional, even a small capitalist, economics and politics indeed seem distinct. As noted, most people tend to think of entities such as 'factory', 'head office', 'pay cheque' and 'shopping' differently from the way they think of 'political party', 'taxation', 'police', 'military spending' and 'foreign policy'. Seen from below, the former belong to economics, the latter to politics.

But that is not at all what capitalism looks like from above. It is not how the capitalist ruling class views capitalism, and it is not the most revealing way to understand the basic concepts and broader processes of capitalism. When we consider capitalist society as a whole, the separation of politics and economics becomes a pseudofact. Contrary to both neoclassicists and Marxists who see this duality as *inherent* in capitalism, in our view it is a theoretical impossibility, one that is *precluded* by the very nature of capitalism. To paraphrase David Bohm (1980), from this broader perspective, the politics–economics duality is not a useful division, but a misleading fragmentation. It cannot be shown to exist – and if it did exist, profit and accumulation would cease and capitalism would disappear.

The consequences of this entanglement for capital theory are dramatic. As we shall demonstrate, without an 'economy' clearly demarcated from 'politics' we can no longer speak of quantifiable utility and objective labour value; and with these measures gone, neoclassical and Marxian capital theories lose their basic building blocks. They can observe that Microsoft is worth $300 billion and that Toyota pays $2 billion for a new factory, but they cannot explain why.

Real and nominal

The classical dichotomy

As noted, underneath the broad duality of politics and economics lies the further bifurcation of the economy itself. Following the so-called Classical Dichotomy, first suggested in the eighteenth century by British philosopher David Hume, neoclassicists separate economic life into 'real' and 'nominal' domains. Of the two, the real sphere is primary, the nominal secondary. The real sphere is where production and consumption take place and relative prices and distribution are determined. The nominal sphere is the domain of money and absolute prices, and it both lubricates and reflects the input–output processes of the real economy.

At the root of this duality lies an attempt to justify capitalist profit and wealth. The liberal claim – first voiced in the European city-states of the thir-

teenth and fourteenth centuries and later formalized in John Locke's *Two Treatises of Government* (1690) – is that private property emerges from one's own labour. This claim makes the bourgeoisie unique: earlier dominant classes looted their wealth and therefore needed religion to sanctify it; the capitalists, by contrast, produce their wealth with their effort and hence have a natural right to own it.[3]

Nominal income and assets, therefore, are derivative not of mercantilist plunder but of actual production with real capital goods, and that makes them fully justified. The productivity of the capitalist, intertwined with his existing capital goods, results in monetary earnings. These earnings in turn are ploughed back into producing more capital goods, leading to more monetary wealth, more capital goods, more earnings, and so on in an ever-expanding spiral. In this way, the money value of finance, measured in dollars and cents, reflects and manifests the physical capital stock created by the capitalist.

Of course, the correspondence is far from perfect. As it turns out, the ups and downs of the stock and bond markets are rather difficult to correlate with changes in the capital stock – particularly since, as we shall see in Chapter 10, the two measures tend to move in *opposite* directions. But this mismatch hasn't been much of a concern. Liberals have solved it by putting into work an army of 'distortionists' – theorists, strategists and analysts who pry on 'institutional imperfections' and 'exogenous shocks'. The theory, argue the distortionists, is perfectly fine. The problem is with the extra-economic forces – the shocks that constantly besiege the otherwise pure economic system, contaminate its real and nominal spheres and fracture their pristine correspondence. Once you account for these distortions, it becomes clear why finance is always dependent on – yet forever delinked from – its true material essence.

The Marxist mismatch

Although the Marxist logic on this subject is radically different, its conclusions are surprisingly similar. Contrary to the liberals, Marx sought to annul the bourgeois justification for profit. He agreed that value is created in the material sphere – but instead of multiple factors of production, he insisted that there is only one: labour. The value of all commodities – including that of capital goods – is determined by productive labour alone.

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3 Perhaps the first to explicitly associate income with productivity were the university professors. Knowledge (*scientia*) was the gift of God and therefore could not be sold, but the new urban intellectuals found a better leverage: the notion that all work deserves a salary. 'We find it irrational that the worker not profit from his work', argued the doctors of law in thirteenth-century Padua, and then went on to conclude that 'the master may accept the money of students – the *collecta* – as the price of his work, of his trouble' (quoted in Le Goff 1993: 94–95).

In this scheme, not all capitals are created equal. The so-called industrial capitalist, the employer of productive labour, does possess real capital. But the commercial and financial capitalists – insofar they employ only unproductive labour and therefore produce neither value nor surplus value – do not own real capital. Although they accumulate moneyed capital, they do so merely by appropriating some of the surplus value generated by industrial capitalists. The resulting intra-capitalist redistribution creates a mismatch. It means that the nominal magnitude of any particular capital is likely to differ from its underlying real magnitude: for the industrialist the nominal will be lower than the real, while for the commercial and financial capitalist the nominal will exceed the real (which may well be zero).

The nominal–real mismatch is further amplified by the forward-looking nature of financial markets. Stock and bond prices represent the present value of expected future earnings. Because we deal with expectations, these future earnings may or may not be 'realized'. And since the earnings are merely tentative, there is no reason why finance should be equal to – or even correlate with – capital goods that already exist here and now. For this reason Marx considered financial assets to be 'fictitious capital' – in contrast to the 'real capital' anchored in the dead labour of realized surplus value.

And, here, too, the Marxists find themselves stuck in a liberal duality. They portray a world in which the parasitic capitalists of commerce and finance suck in surplus from the productive capitalists of industry, where speculative market bubbles inflate and deflate around the fundamentals of production, where the fiction of finance distorts the true picture of real accumulation. The specific categories and theories differ from those of the liberals, but the real–nominal bifurcation that underlies them is the same.

Quantitative equivalence?

Separating the real from the nominal enables the theorist to play both cards. On the one hand, he can stand by the theory, insisting that in the final analysis nominal finance derives from the reality of capital goods. On the other hand, when the difference between finance and capital goods gets too larger, he can suspend the theory – at least temporarily, until the 'distortions' go away.

This convenient doublespeak serves to conceal a deep ontological difficulty. At issue here is the very assumption of *quantitative equivalence*. Both neoclassicists and Marxists believe that capital has two quantities – one nominal, the other material. And they further believe that, under ideal circumstances – without intervening factors and other extra-economic distortions – these two quantities are equivalent.

As we shall show, this assumption rests on foundations of sand. Its first component – the belief that capital has two quantities – falls flat on its face. Capital certainly has a nominal quantity. We know its price in dollars and cents. But capital does not have – and indeed cannot have – a material

quantity. The second belief, namely that the two quantities of capital are equivalent, is also seriously problematic. Even if capital goods did have a material quantity, why should this quantity have anything to do with the nominal value of capital? Capital, this book argues, is not a productive economic entity; it is a broad power institution. And if that is the case, what could the 'mass' of machines – even if it had a calculable quantity – tell us about the social dynamics of power?

3 Power

> Force is nothing apart from its effect.
>
> —Herbert Marcuse, *Reason and Revolution*

The pre-capitalist backdrop

To understand the origin and rationale of the capitalist dualities, it is useful to begin with some observations on the pre-capitalist world. As we have seen, prior to the emergence of liberalism all state and quasi-state regimes – or 'cultures' in today's lingo – were marked by a binary structure: an inescapable conflict between mastery and slavery, between rulers and ruled. The material bedrock was agricultural. In economic parlance, there were two 'factors of production': land and labour. Politically, these factors corresponded to two classes: the nobility and the peasantry. The nobility owned the land and imposed its rule. The peasantry – save for the occasional revolt – passively submitted to the nobility's rule.

This early mode of production, to use Marx's language, unfolded through multiple forms of authoritarianism, despotism and tyranny – from the Carolingian state of Europe and the Caliphates of the Middle East to the Moguls of India and the empires of China and Japan. The histories of these dictatorships varied greatly. Some relied on peasant-slaves, as in the ancient empires; others were based on farmer-tenants, as in the Middle East; and still others were built on serfs tied to princely fiefdoms, as in Europe and Japan. But the underlying principle was always the same: redistribution through confiscation. The nobles would rob the peasants, each other, or both.[1]

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1 The dominant postmodern fashion loves to reject this universal history (or should we rather say 'narrative') – in favour of a much more politically-correct protestation. The postists not only decry the oppression of the 'East' by the 'West', but also insist that the so-called 'Western scientific revolution' in fact originated in the . . . 'Orient' (see for instance, Hobson 2004).

According to this universal Orient-centrism, it turns out that the 'West' (in its totality) took off largely thanks to the knowledge of the 'East' (in the aggregate). The 'East' generously made its 'knowledge portfolio' available to the 'West'; the 'West' used this precious portfolio in order to industrialize and capitalize (which amount to the same thing); and then,

There was no alternative. The agricultural cycle was slow, productivity low and innovation shunned. There wasn't any growth. The only way to get ahead was to deprive someone else.[2]

Appropriately, the rulers' worldview was static and circular. It glorified the past and idealized the present. Happiness, riches and glory, it claimed, depended on miracle and magic. Any change – for better or worse – was to come from outside society, delivered by extra-terrestrial envoys (such as the Persian-Jewish-Christian Messiah), supercharged emissaries (like the Jewish-Muslim-Christian Satan/Devil), or resurrected dead (another Persian technology).

In order to legitimize their naked violence, the rulers needed a mediating factor, an external force that would justify and conceal their inherent conflict with their subjects. This external force usually appeared as an awe-inspiring, superhuman entity – Baal, El, Aton, Zeus, Jehovah, Allah, Jesus, Inti, Itzamna. In due course, the rituals associated with these deities would develop into ruthless, centralized religions that sanctified the status quo and punished deviations. Although often wrapped in a language of blessing, compassion and generosity, these religions served to terrorize and oppress the peasants and slaves. Their promise to the laity was surprisingly uniform: suffer and pay in this world, get reimbursed in the next. No wonder insurance companies found this scheme inspiring.

The tillers of the land were left with little choice. Faced with rulers who owned not only the land and the weapons, but also the keys to Heaven and Hell, what else could they do but obey?[3]

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toward the end of the process, the 'West' turned back to take over, oppress and eviscerate the 'East'.

There is no doubt. Albania, Bulgaria, Ukraine, the Baltic countries and other such 'Western' states grew and prospered largely due to the scientific methods and knowledge given to them by Genghis Khan, the Indian Mughals and the enlightened Ottoman tribesmen that took over Asia Minor, Greece and Hungary. Similarly, it is crystal clear that the Indian caste system, much like the abject poverty that debilitated much of South and East Asia for generations, is all due to the oppression imposed by the 'West'. Finally, it needs no mentioning that the 'East' – and particularly 'Islam' – developed pristinely. There was no oppression, indoctrination, confiscation, robbery, looting and mass murder. There were no armies and there was no centralized power. The tolerant Islamic culture emerged just like that, out of nowhere, to bring democracy, science and freedom to one quarter of the world.

2 For more on the early emergence of stratification and redistribution, see the debate in Gilman *et al.* (1981).

3 These patterns seem to cut across the monotheistic religions. The word 'Islam', for example, denotes acceptance of and surrender to God's power as administered by his exclusive representatives. Refusal is blasphemy, leading to punishment, humiliation and subjugation.

The contemporary rabbinate church may seem less demanding, but that wasn't always the case. During its early phase of kingship in the first millennium BCE, the Judaic religion held a rather uncompromising position, demanding exclusivity backed by force. This position was modified after the destruction of Judah and Israel in the seventh and sixth centuries BCE. Having lost the institutionalized backing of state violence, the rabbinate church could no

The new cosmology

The binary structure of the land–labour regime was first broken in Europe during the seventeenth and eighteenth centuries. A new social formation had emerged. The hallmark of this new formation was a third 'factor of production' – the industrial machine – and a new class of owners – the capitalists. The owners and their factories marked the beginning of a new political order – the regime of capital.

The new capitalist order was an outgrowth of a triple revolution: the scientific revolution, the industrial revolution and the French revolution. The forbearers of this revolution were Nicolò Machiavelli, Johannes Kepler, Galileo Galilei, René Descartes, Thomas Hobbes, John Locke, David Hume, Gottfried Leibnitz and, most importantly, Isaac Newton. These thinkers offered a totally novel staring point: a *mechanical* worldview. The cosmos, they argued, is like a machine. In order to understand it – *kosmeo* in ancient Greek means to 'order' and to 'organize' – you need to take it apart, identify its elementary particles and discover the mechanical forces that hold these particles together and regulate their interaction. For the first time there emerged a *secular* understanding of force, one that stood in sharp contrast to the earlier, religious manifestations of force.[4]

This secular cosmology developed hand in hand with a new vision of society. Human consciousness, says Friedrich Hegel (1807: 183–88), cannot grasp force in the abstract. Force is not an isolated thing, but a *relationship*, and as such it can be understood only through its *actual, concrete manifestations*. The main relationship is *negation*: we comprehend force through its specific contradictions and forms of resistance. Perhaps the most important of these is the negation of subject and object. Stated simply and without sounding pompous, we can say that human beings understand themselves as subjects by investigating the world around them. And as they discover/create

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longer use force to keep the laity in line and instead had to resort to indirect manipulations and virtual threats (a subject on which Spinoza's 1690 *Theological-Political Treatise* remains unparalleled). But the statist void did not last forever. After the establishment of Israel, the rabbinate church, realigned with its former Zionist enemy, showed little hesitation in resurrecting its original version of violent ethno-tribalism.

Similarly with Christendom. Christianity began as a submissive oriental religion in the Roman Empire. Three centuries later it already operated as a full-fledged imperial church, complete with violent diplomacy, deceit and mass murder. During the millennium of the so-called Middle Ages, Christian priests and monks helped ensure that European peasants accepted the rule of their kings and princes – or risk the wrath of God and his servicemen. The lot of the indigenous peoples of the Americas wasn't much better. Beginning in the sixteenth century, they were compelled to abandon their local deities in favour of the Christian Lord, whose superior power was convincingly demonstrated by the lethal efficiency of his Catholic soldiers. The massacres committed by these soldiers of faith surpassed anything previously seen in the empires of the Aztecs, Mayans and Incas.

4 The mechanical worldview, its history and heroes are examined with great imagination by Arthur Koestler in *The Sleepwalkers* (1959).

their own social being, they articulate nature based on the power relations of their own society. In this sense, their cosmology is the *politicization of nature*. The power relations that organize their society also order their universe.[5]

Thus, in pre-statist societies force took the form of naming natural objects and phenomena – moon, thunder, birth, flood. In 'anarchic' cultures, these objects and phenomena got embedded in a plethora of rituals and gods. Hellenic legends speak of relatively egalitarian cities, some with popular, communal rule. Pre-historical hunters and gatherers lived in similarly flat structures. In such societies, the gods tended to be relatively equal, more familial, often matriarchal, and not particularly vengeful. They were neither all-knowing nor terribly rational. They were more like capricious bullies who demanded respect and occasional appeasement.[6]

The transition to centralized, statist societies brought a new cosmology of force. Hierarchical political rule introduced a rigid pantheon of god-kings and, eventually, an omnipotent god-emperor. Multiplicity gave rise to singularity and the rituals became centralized and exclusionary. Nature was increasingly objectified and the gods grew alien. Although their logic was still mysterious, the gods now began to plan and calculate. They threatened, blamed and retaliated. They demanded complete obedience and punished with unforgiving violence.

The emerging scientific approach of the sixteenth century, along with its new creature – later to be named 'scientist' – challenged this religious cosmology.[7] Although many of the new scientists continued to believe in the guiding hand of God, that guidance was considered a singular event. When Laplace presented Napoleon with his magnum opus on celestial mechanics, *System of the World*, the emperor inquired why it did not mention God. Laplace replied: 'Sire, I have no need of that hypothesis'. God may have invented the universe, but once the blueprint was finished and the cosmos assembled, he locked the plans and threw away the key.

For the new scientists, God was universal force. This force – whether embedded in Machiavelli's secular Prince, in Hobbes' Leviathan or in the celestial movements of Galileo and Newton – is concentrated, deterministic and balanced. It never disappears. It is embedded in the mutual attraction and repulsion of all bodies. As universal force, God has no interest in princely politics and statist diplomacy. It doesn't care about the church and needs no representatives on earth or elsewhere. It has no quirks and doesn't act on impulse. God is permanent rationality and eternal order – or simply *law*. The

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5 We prefer to bypass in silence here Louis Althusser's post-Stalinist interpretation of the dialectical method of Hegel and Marx, as well as his writings on power institutions and political organizations.

6 A feminist interpretation of the archeological evidence is given in Stone (1976). The myths are narrated and analysed in Graves (1944; 1957).

7 The term 'scientist' was coined only in the 1830s, by William Whewell, but the early scientists understood the novelty of their position well before it was given a special name.

purpose of science is to discover this abstract rationality and order, to uncover the universal 'laws of nature'. And since the harmony of natural laws is the invention of God, the best society is the one that reproduces those laws in its own politics.[8]

The new science of capitalism

The science that articulated this new society was political economy. The term itself had already been coined in the early seventeenth century, but it was only in the late eighteenth century that political economy came into its own.[9] Its founding text, *The Wealth of Nations*, was written in 1776 by Adam Smith. It is easy to discover Newton in this text. Smith treats human beings as isolated bodies. They relate to one another not organically, but mechanically, through force and counter-force. The process is energized by scarcity, the gravitational force of the social universe, and is mediated through the mechanical functions of demand and supply – the earthly manifestations of Newton's attraction and repulsion. To the naked eye, the interaction seems accidental, a matter of chance for better or worse. But in fact, there is logic, and indeed order, in the chaos.

The hierarchical, dependent structure of the *ancien régime* is replaced here by the flat mechanism of *inter*-dependence. Social order, which previously had been imposed by God through the clergy and the royalty, is now created by the 'invisible hand' of competition. It is just like in nature. The anarchic interaction of natural bodies leads not to chaos but to equilibrium, and the same holds true in society. In the natural state of things, human beings constantly collide and act on each other through production and consumption. Like natural bodies, they, too, are numerous and relatively small, and therefore none can take over and swallow the others. There is no visible guidance, and none is called for. The system functions like clockwork, on its own. Indeed, it is outside intervention – particularly by monarchs and commercial monopolies – which upsets the spontaneous social order. And since this spontaneous order is the ultimate source of wealth, government intervention and

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8 This notion that there exists an external rationality – and that human beings can merely *discover* this external rationality – was expressed, somewhat tongue in cheek, by the number theorist Paul Erdös. A Hungarian Jew, Erdös did not like God, whom he nicknamed SF (the supreme fascist). But God, whether likable or not, predetermined everything. In mathematics, God set not only the rules, but also the ultimate proofs of those rules. These proofs are written, so to speak, in 'The Book', and the mathematician's role is simply to decipher its pages (Hoffman 1998). Most of the great philosopher-scientists – from Kepler and Descartes to Newton and Einstein – shared this view. They all assumed that the principles they looked for – be they the 'laws of nature' or the 'language of God' – were primordial and that their task was simply to 'find' them (Agassi 1990).

9 The term 'political economy' first appeared in 1611 in a work on government by Louis de Mayerne-Tuquet, and again in 1615 as part of the title of a French book by Antoine de Montchretién (see King 1948).

other restrictions are necessarily harmful and should be minimized. The best system is one of *laissez faire*.

And so Newton's horizontal notion of force and counterforce became the substitute for vertical hierarchy – in the heavens as well as on earth. In France, Voltaire and Montesquieu found in his ideas a powerful alternative to the oppressive French monarchy. Benjamin Franklin and other tourists and exiles imported these ideas to the United States under the guise of 'checks and balances', which later reappeared as 'countervailing powers'.[10]

During the nineteenth century, Newton's notion of a 'function' invaded every science, natural and social. More and more phenomena were thought of in terms of a mutual interdependency between two otherwise distinct bodies. In neoclassical political economy, the key function became the relationship between price and quantity. The discipline, which emerged at the end of the nineteenth century and later consolidated into a new orthodoxy, anchored the relationship of price and quantity in Jeremy Bentham's 'calculus of pleasure and pain', turning it into the main tool for understanding the fate of human societies.

It was a complete cosmological break. Instead of visible, hierarchical power, legitimized by wilful gods, there emerged a new ideology based on invisible, horizontal force, anchored in objective science.

The promise was huge. Socially, the new order undermined authoritarian rule. From now on, everyone – that is, every bourgeois citizen – could own property and be elected to public office. Materially, the new order helped break the uncompromising limits of nature. Wealth no longer depended on religious sanctity and princely robbery. It no longer hinged on redistribution. Instead, it was generated through a totally novel process: economic growth.

For the first time in history, society did not have to cycle in a closed loop. The material envelope, previously defined by fixed resources, stationary technology and subsistence reproduction, was finally breached. Science and mechanized production created a new possibility: the expansion of the pie itself. Improving one's lot no longer required conflict, war and violence – or, alternatively, compliance with Confucius' 'Third Way'. On the contrary, growth was most likely to occur in the context of equilibrium, peace and mutual interest.

The principal agent of this revolutionary change was capital. It was in capital that the new sciences, the new techniques and the new political promise were jointly embedded. Capital was both the engine of growth and the vehicle of liberation.

But in order for capital to deliver, the political regime had to be entirely transformed. Divine right had to give way to natural right, sanctified

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10 Of course, the metaphors go both ways. Smith's imposition of Newton's natural cosmos on society was subsequently re-inverted by Darwin, who imposed Malthus' social selection on nature.

ownership to private property, religion to rationalism, paternalism to individualism, obedience to self-interest and utility, hierarchical power to competition, absolutism to constitutionalism. It was a massive transition, and it could be realized – at least in theory – only through *laissez faire*. The new private economy had to be liberated from the shackles of the old politics. That was the mission of political economy.

Separating economics from politics?

Unlike the mission of the natural sciences, though, the mission of political economy was finite, by definition. If the purpose was to isolate the economy from the intervening hand of political rulers, it follows that once that purpose was achieved political economy would no longer have reason to exist. Independent of each other, economics and politics could now be studied and analysed separately, as two distinct spheres of human activity.

But that was easier said than done. As it turned out, political economy *cannot* self-destruct – and for a reason that, paradoxically, lies in its very purpose.

The explanation is simple enough. Conceived of independently of politics, the economy is a closed system. It has its own units of labour time and commodities; it has its own structure of inputs and outputs; and it comes with a theory that fully explains the level of production, consumption and relative prices. This self-contained description, though, holds only for a stationary economy. But capitalism is anything but stationary. As political economists themselves emphasize, capitalism is a growing system. It generates an ever-increasing 'surplus' – an output that is over and above what is necessary to merely reproduce society at a given level of production and consumption. And this ever-growing surplus creates a huge theoretical problem: it cannot be fully explained by the economy alone.

How big is the surplus? Who ends up getting it? How does it accumulate? How does it impact the functioning of capitalism? These are questions which 'pure' economics cannot answer. The only way to address them is to bring conflict and power back into the picture – that is, to *reintegrate* politics and economics – which brings us right back to where we started.

Political economy can never achieve its ultimate purpose. It cannot make economics separate from politics simply because the very questions economics seek to answer are *inherently* political.[11]

Initially, few political economists realized this logical impossibility. Most remained convinced that economics and accumulation could be – and eventually would be – separated from politics and power. This theoretical conviction was greatly facilitated by the paucity of social statistics and limited

11 For a clear exposition of this dilemma – although with conclusions different from our own – see Caporaso and Levine (1992: 46–54).

empirical analysis. The early political economists did not feel compelled to empirically define and measure their pure economic concepts. And since they rarely subjected their concepts to empirical verification, they remained oblivious to the methodological time bombs buried in those concepts.

The above paragraph is not a reprimand. Until the mid-nineteenth century, European societies, including Great Britain, were still predominately agricultural, highly fractured and, consequently, lacking a clear sense of their totality. There was no common yardstick. The universal metre was measured in the late eighteenth century, but the metric system was yet to be enforced, with France alone still boasting no less than 250,000 different weights and measures (Alder 2002). Macro concepts that today we take for granted – such as 'national aggregate', 'social average', 'industrial sector', and the 'total capital stock' – were just beginning to emerge. It is true that the mechanical–scientific revolution introduced various laws of conservation, replacing religious miracles with clear, finite boundaries. It is also true that these natural laws and boundaries started to find their way into social theory. But the actual process of estimating aggregate statistics, collating national data and measuring sectoral averages was still very much in its infancy.[12]

Most nineteenth-century political economists – as well as their chief critic, Karl Marx – had little or no knowledge of the macro facts. There is little wonder that their discussion of surplus and capital was largely theoretical. And, at the time, few theorists thought something was missing. The very idea of 'testing' social theory with empirical evidence was not even on the radar screen.

In this social context, the notion that capital was a purely economic category hardly seemed problematic. With economics considered separable from politics, with aggregate concepts yet to be invented and diffused, and with the basic social data still to be created, it was possible to believe that capital was an objectively defined economic entity with a readily measurable quantity. There was really nothing to contest that belief.

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12 The first attempts to collate aggregate economic statistics were made in the 1660s, by William Petty in England. These attempts were motivated by the need to assess the material strength and taxable capacity of England versus France and Holland. Subsequent attempts introduced additional innovations, including time series (Gregory King in England, 1696); input–output matrices (François Quesnay in France, 1764); estimates based on production data rather than fiscal sources (Arthur Young in England, 1770); value added (Antoine Lavoisier in France, 1784); income distribution (Henry Beeke in England, 1799); national aggregates (Patrick Colquhoun in England, 1814); constant price estimates (Joseph Lowe in England, 1822); national debt burden (Pablo de Pebrer in England, 1831); rudimentary national income and product account broken down by industry and state (George Tucker in the United States, 1840); and gross versus net income (Alfred Marshall in England, 1879). But whereas the inventions were long in coming, their implementation was slow and limited. It was only in the 1920s, and particularly with the 'aggregate revolution' of the 1930s, that these individual initiatives started to be organized, institutionalized and systematically estimated by national statistical services (the signposts in this footnote are taken from the detailed history of Kendrick 1970).

Enter power

The turning point came at the end of the nineteenth century. Recall that classical political economy differed from all prior myths of society in that it was the first to substitute secular for religious force. But note also that this secular notion of force was similar to its religious predecessor in that it was still heteronomous. It was *external* to society. For the political economist, economic forces were as objective as natural laws. They were determined *for* human beings, not by human beings.

This external perception of force began to crack during the second half of the nineteenth century. More and more processes seemed to deviate from the automaticity implied by the natural laws of economics. Increasingly, force was subjectified by society, seen as determined *for* human beings, *by* human beings. Challenged and negated, heteronomous force gradually re-emerged as autonomous power.

The change in perception was affected by several important developments. First, the rise of large governments and big business undermined the Newtonian logic of competitive markets and political equilibrium. At the turn of the twentieth century, it was already clear that the guiding hand of the market was not always invisible and that liberal politics was far from equal. Power now was much more than a theoretical addendum needed simply to 'close' an otherwise incomplete economic model; it was an overwhelming historical reality, one that seemed to define the very nature of capitalism. This recognition cast further doubt on the possibility of purely economic categories.

Second, the emergence of the aggregate view of the economy, the development of national accounting and the requirements of statistical estimates revealed serious difficulties with the measurement of capital. For the first time, political economists had to put the concepts of utility and abstract labour into statistical practice, and the result was disastrous.

According to received doctrine, the 'real' quantity of capital is denominated in units of utility or abstract labour. But there is a caveat. As we shall see later in the book, such measurements are meaningful, if at all, only under conditions of perfectly competitive equilibrium. This qualification creates a bit of a headache since, by definition, perfectly competitive equilibrium evaporates when infected by power. And given that even orthodox economists now agree that power is everywhere (if only as a 'distortion'), it follows that the theoretical units of 'real' capital are meaningless and that their practical measures break down. In fact, it turns out that even when we assume perfectly competitive equilibrium it is still logically impossible to observe and measure the utility or abstract labour contents of capital. And so, by attempting to measure the so-called 'real' quantity of capital, economists ended up exposing it for what it was: a fiction hanging by the threads of impossible assumptions and contradictory logic.

Third, and more broadly, the new reality of the twentieth century didn't quite fit the traditional way in which liberals and Marxists separated

economics from politics. There was a massive rise in the purchasing power of workers in the capitalist countries, an uptrend that contradicted the cyclical patterns suggested by Malthus, Ricardo and Marx, and that therefore blurred their basic notion of 'subsistence'. Many types of labour became complex and skilled, rather than one-dimensional and simple as Marx had anticipated – a development that made the notion of 'abstract labour' difficult if not impossible to apply. And in contrast to the expectations of many radicals, profit cycles failed to implode capitalism, while the profit rate – although oscillating – trended sideway rather than down. Culture, media and consumerism became no less crucial for accumulation than production was. Inflation supplemented cost cutting as a key mechanism of redistribution, while finance took over the factory floor as the locus of power. Emerging categories of technology, corporate planning and public management could not easily be classified as either economic or political. It became increasingly clear that free competition and bourgeois ownership were insufficient, even as a starting point, to explain the nature and development of modern capitalism.

The very notion of class became contested. As an analytical tool, class originally emerged from a triple fusion of Ricardo's theory of labour value, Comte's industrial management and Marx's capital accumulation. The emphasis of class analysis on capitalists and workers was unmediated and obvious; it was materially embedded, ideologically accepted and legally enforced; and until the late nineteenth century it served both the liberal mainstream and its Marxist critiques.

But by the early twentieth century, the vision of class analysis had become blurred. Although still linked in some sense to material reality, class was now increasingly intertwined with political organizations and parties, culture, mass psychology and sociology. It was no longer immediate or obvious. It required subtle articulation. It became a speculative concept.

Worse still, class was now competing with new concepts, particularly the 'masses'. The twentieth century brought fascism, a new regime that rejected the Enlightenment, cast off rationalism and shifted the entire ideological emphasis of social theory. Instead of production, fascism accentuated power; in lieu of class, it spoke of state, organization and oligarchy. Following fascism, social scientists began to emphasize a new set of categories – 'mass', 'crowd', 'bureaucracy', 'elite' and, eventually, the 'system' – categories that appeared more flexible and better suited to the changing times than the rigid and anachronistic class demarcations of political economy.

Fourth and finally, the objective–mechanical cosmology of the Newtonian and liberal revolutions started to fracture. In its stead came an indecisive worldview of uncertainty, risk and probability, of relative time/space, of an unsettling entanglement of particles and of a rather hazy separation between observer and reality. These developments have been used to justify further movements away from the scientific–universal principles of political economy. Vitalism, ethnic identity and racism have all flourished in the name of cultural pluralism. Anti-scientists have challenged the so-called

binary 'essentialism' of 'Eurocentrism'. Lord Bacon was dead. Ignorance has become strength.

Suddenly, power was everywhere, and it contaminated everything. The anonymous market, measurable capital and class have all become suspect. The old categories seemed to be melting, along with the determinism that held them together. Political economy had entered a new, uncharted territory.

4 Deflections of power

> 'Why don't you make everyone an Alpha Double Plus while you're about it?' asks the Savage. 'Because we have no wish to have our throats cut', answers Mustapha Mond, the Resident World Controller for Western Europe.
>
> —Aldous Huxley, *Brave New World*

The new realities of power posed a dilemma for twentieth-century political economists. There were two options, both unpalatable: ignore reality in order to protect the theoretical duality of politics and economics, or sacrifice the theoretical duality in order to better deal with reality. In general, mainstream theorists have taken the first path, trying to keep power out of their analysis. The result: a shrinking domain of admissible questions complemented by a widening range of ad hoc explanations. Marxists have tended to move in the opposite direction, seeking to incorporate power into their theories. But as they opened up their models, what they gained in practical insight and political expediency they lost in scientific cohesion, consistency and accuracy. Their explanations, although often illuminating and politically purposeful, served to fracture Marx's theoretical framework and undermine its original unity.

And so, in the end, power got deflected. Most theorists ignore it, and even the few who address it keep it safely outside the concept that matters most: capital itself. The reason isn't difficult to see. To put power in capital means the end of determinism and the beginning of autonomy. It undermines the foundations of existing models. It calls for a fundamental rethinking of political economy. To paraphrase Huxley, it is like opening a Pandora's Box in a Cyprian colony of Alpha Double Plus theorists. And since nobody likes having their theoretical throat cut, it is much safer to leave the matter locked in the box.

The purpose of this chapter is to highlight these deflections of power and assess their consequences for the development of political economy. This emphasis implies two important biases. First, our concern here is not the evolution of modern political economy as such, but how this evolution has been shaped in relation to power. Consequently, we make no attempt to be

comprehensive. Since our aim is conceptual, we focus on seminal contributions and important turning points, at the obvious expense of secondary sources and subsequent variations. Second, since liberal analyses tend to avoid power while Marxist theories to endorse it, we naturally pay more attention to the latter than the former.

Liberal withdrawal and concessions

Liberal theorists, being increasingly on the defensive, have generally opted for the first choice: protecting the duality by sidestepping reality. Toward the end of the nineteenth century, their fighting spirit withered and eventually mutated into neoclassical apologetics. By the beginning of the twentieth century, they began a mass retreat into the make-believe world of perfectly competitive equilibrium, a heavily subsidized twilight zone in which power could be safely ignored. They zealously excluded from their pure economic framework the capitalist state, wars, large corporations, classes, collective action, ideology and every other power process, organization and institution that could not easily be reduced to the atomistic logic of utility maximization. They ended up with a very narrow domain populated by fictitious 'actors', all small, rational and powerless. In this imaginary world, *laissez faire* interactions continued to yield an optimal utilitarian equilibrium, as the theory dictated.[1]

The global crisis of the 1930s forced liberals to make a major concession. Following John Maynard Keynes' *General Theory* (1936), they conceded that in fact there was not one, but two economic realities: a competitive microeconomic sphere where the interaction of atomistic consumers and producers generates the efficient outcome stipulated by neoclassical manuals; and another macroeconomic realm that unfortunately produces occasional market failures. The first reality works exactly as it should and therefore must be kept free of political intervention. But the second reality has a built-in imperfection and sometimes needs the oversight of governments. Power,

1 After the Second World War, neoclassicists embarked on a counter-revolution that other social scientists decried as 'economic imperialism'. This intellectual imperialism, which emanated mostly from the Chicago School, argues that, no matter what you do, you simply can't beat the market. According to this view, distortions of 'perfect competition', such as oligopoly and labour unions, are more apparent than real, and those that do exist are politically motivated and therefore reversible. Furthermore, many so-called non-economic phenomena – from marriage, through unemployment, to war – are in fact based on utilitarian decisions and therefore reducible to 'economic' reasoning (Stigler 1988: Ch. 10, 'The Chicago School'). In parallel, neoclassical economists have tried to hide the dogma's underlying assumptions by developing models that presumably do not need such assumptions (see for example Arnsperger and Varoufakis 2005). Of course, these deviations are mostly lip service. If they were ever to become the rule, the dogma would become logically subversive and hence ideologically useless.

although merely 'political', was thus brought into economics through the back door.

Few liberals care to admit it, but this introduction of power has thrown their economics into disarray. Previously, neoclassicists could pretend that extra-economic distortions were local, or at least temporary, and therefore redundant for theoretical purposes. But how do you assume away the permanent presence of a large government that directly accounts for 20–40 per cent of all economic activity and that regulates and meddles with much of the rest? And with the government always in the picture, what remains of the assumptions of perfect competition, efficient allocation and the primacy of individual choice? Most importantly, with state officials now setting the rules and making many of the big decisions, how could one continue to talk about spontaneous equilibrium? And if the autonomy of individual 'agents' and their equilibrium are thus contaminated, what is left of the textbook reality of microeconomics?

The answer is very little. Alfred Marshall's 'representative' firm – a transmutation of Descartes' *corps hypothétique* – has little to do with the likes of Exxon and Microsoft, Bechtel and Pfitzer, Mitsui and Adia. Given that the latter not only operate in a highly concentrated business structure, but are also embedded in an *integrated* corporate–statist space, liberal economists no longer have the tools to analyse them. They cannot tell us whether the profit and capitalization of these firms belong to the micro or macro spheres, what yardstick we should use to separate these two spheres, or if such separation is possible to begin with.

Neo-Marxism

In contrast to the liberals, Marxists addressed the new power reality head on. Their rethinking of power already began with Friedrich Engels, who, by the 1890s, established himself as the unofficial patriarch of the social-democratic church with the final say on all matters theoretic. These early revisions marked the birth of neo-Marxism, a multifaceted attempt to revisit and adapt Marx to the twentieth century.

The basic rationale of neo-Marxism rested on several related observations. First, the transition from competitive to monopoly capitalism made Marx's labour theory of value impractical. The problem was not only that monopolistic market prices were set 'arbitrarily' and independently of labour time, but also that the value of labour power itself was no longer kept at subsistence.

In fact, there emerged what anarchist Mikhail Bakunin first referred to as an 'aristocracy of labour', a relatively well-paid, 'semi-bourgeois layer of workers' (1872: 294). Engels still tried to work around this 'aristocracy in the working class', arguing that although manufacturing and unionized workers saw their income rise, these gains were the exception, and that Marx's subsistence law of wages was still valid (cited in Howard and King 1989: 9–10). But

the floodgates were now open and the idea of a two-pronged labour force spread quickly, including into radical utopian literature.[2]

By the early twentieth century, the existence of a labour aristocracy had become a key assumption underlying Lenin's domestic and international strategy. In his famous tract on *Imperialism* (1917), he announced that, unlike in Russia, in Western Europe the workers and social democratic parties had been co-opted into collaborating with the imperialists against the proletariats of the periphery, and that this development completely changed the nature of the class struggle (as we explain below).[3]

Second, capitalism, argued the neo-Marxists, had been 'financialized'. The 'industrial' capital that dominated Marx's analysis had given rise to 'finance capital', a fusion of the leading banks, commercial oligopolies and leading industrialists. Contrary to its competitive precursor, finance capital applied output constraints, manipulated financial markets and forced capitalist governments into protectionism, wage controls and militarized expansion of foreign markets (Engels 1894; Hilferding 1910).

Third, the nature of capitalist crisis had changed. Marx focused on cyclical crises, which he attributed to the anarchy of inter-capitalist competition. Monopoly capitalism, by contrast, was seen as suffering from a persistent lack of markets: chronic underconsumption mirrored by chronic overproduction (Engels 1886; Hilferding 1910; Sweezy 1942: Chs XII and XV).

Fourth, as a consequence of these developments, capitalists changed their attitude toward the state. In the competitive phase, they preferred a small government financed by minimal taxation and whose sole purpose was to protect their property and prevent workers from revolting. But now finance capital needed a strong state – one that would generate sufficient demand, regulate internal politics and support the export of excess capital.

Fifth and last, the combination of monopoly capitalism and a strong state undermined the original liberal idea of peaceful accumulation. During the first part of the nineteenth century, international conflict appeared to be declining. But in the second half of the nineteenth century increased struggle for colonial extension caused bellicosity and violence to soar, and in the twentieth century militarization and expansionism already dominated. It seemed as if capitalism inevitably culminates in imperialism.

Together, these developments engendered a fundamental rethinking of the nature of conflict in capitalism. According to Marx, the central capitalist process is a class struggle between industrial workers and capitalist owners. Their conflict is waged over the productive process; its conceptual arena is the

2 In his novel *The Iron Heel* (1907), Jack London describes how the capitalist oligarchy bribes the large unions into submission, eventually leading to the creation of hereditary labour castes that align with the oligarchs against the rest of the working class.

3 It is perhaps worth noting that, in discussing the peripheral proletariat, Lenin and his successors tended to avoid mentioning the many millions of Soviet workers who populated the abstract gulags of simple labour.

factory; and its geographical epicentre is the advanced capitalist nations of Western Europe and the United States.

The neo-Marxists shifted the focus from class to state. Many now argued that, in the twentieth century, the key conflict was no longer between capitalists and workers per se, but between the developed capitalist states of the centre and the 'dependent' countries and regions of the periphery – or, in the Stalinist version, between the United States and the Soviet Union. For communists to participate in the anti-capitalist struggle now meant to blindly obey the party line dictated by Moscow.

All in all, very little was left of Marx's original science. In the process of coming to terms with power and adjusting their politics to the changing world, neo-Marxists have had to abandon the elegance and comprehensiveness of Marx's model. The labour theory of value, the inherent crisis tendencies of capitalism, the nature of the class conflict – and, indeed, the very duality of politics and economics – were all put into question.

The three fractures

Stalinism in the Soviet Union, fascism in Europe and Keynesianism in the capitalist countries forced Marxists to rethink the intertwined nature of state and capital and the growing importance of 'bureaucratization'. This rethinking was certainly influenced by the work of Max Weber and Robert Michels; but perhaps the strongest catalyst, particularly among the Trotskyites, was the self-published monograph of Bruno Rizzi (1939).

According to Rizzi, the Soviet Union represented a new social order of *bureaucratic collectivism*. It was a different mode of production, one whose class structure and relations of production set it apart from both capitalism and socialism. Although this mode of production was for the time being unique to the Soviet Union and the fascist countries, its essential bureaucratic elements were already apparent – if only embryonically – in the capitalism of the New Deal. The famous works of James Burnham (1941), Milovan Djilas (1957), Max Shachtman (1962) and John Kenneth Galbraith (1967) reproduced Rizzi's argument in different forms.

Bureaucratization melted the traditional definitions of politics and economics. This ambiguity, amplified by the chaos and confusion of the 1930s and 1940s, led Marxists to draw different (and often diametrically opposed) conclusions about the changing nature of capitalism.

On one side were those who emphasized the 'politicization' of capitalism (as if capitalism can be anything but political). The extreme position, held by Friedrich Pollock of the Frankfurt school, was that economics in fact had come to an end. Private capitalism, he argued, was being replaced by 'state capitalism', whether democratic or totalitarian. This new order 'signifies the transition from a predominately economic to an essentially political era', an era in which the will to political power supersedes the profit motive. And since according to Pollock there are no 'economic laws' to prevent this new

state capitalism from taking hold, it follows that 'economics as a social subject has lost its object' (Pollock 1941: 78, 86–87).

An opposite perspective was offered by Pollock's colleague, Franz Neumann. In his classic study of National Socialism, *Behemoth* (1944), Neumann argued that fascism was neither a post-capitalist nor a post-economic phenomenon, but rather an extreme form of capitalist dictatorship. What Pollock mistakenly referred to as 'state capitalism' was in fact 'totalitarian monopoly capitalism', an economic order in which the large capitalist organizations subjugate state organs to their own ends.

The wide gulf between these opposing interpretations signalled the end of universal Marxism. With no agreement on what constituted 'economy' and 'state', there could be no agreement on the source of value; and without a theory of value, Marxism lost its unifying basis.

The neo-Marxism that emerged from this breakdown was therefore necessarily fractured. It sometimes offered penetrating insights, but these insights were inherently partial and disjoined. Over time, the fracture developed into three distinct theoretical strands: (1) an attempt to rework Marxian economics; (2) a cultural critique of capitalism; and (3) a new theory of the capitalist state. We deal with each of them in turn.

Neo-Marxian economics: monopoly capital

The key hallmark of neo-Marxian economics is the explicit incorporation of power into 'economics' proper. This incorporation opens up new theoretical and empirical horizons, but it is also costly: it requires the abandonment, explicit or implicit, of the labour theory of value.

Kalecki's degree of monopoly

The post-war revitalization of Marxian economics owes much to the pioneering work of Michal Kalecki. Writing during the 1930s and 1940s, when much of Marxian economics was still stifled by Leninist–Stalinist dogma, Kalecki was breaking new ground on several fronts. He offered a triple theoretical synthesis, one that integrated Marxist class analysis, the new literature on oligopoly and big business and the aggregate view of Keynesianism.[4] He was also one of the first Marxists to incorporate into his research new mathematical and statistical techniques that were only beginning to make their way into mainstream economics.

In his articles from 1939 to 1943, collected posthumously in his *Selected Essays on the Dynamics of the Capitalist Economy, 1933–1970* (1971), Kalecki identified what he called the 'degree of monopoly': a quantitative proxy for economic power whose effect is registered on the profit markup. By extending

4 In fact, several of Kalecki's writings, published in Polish during the early 1930s, anticipated the essential argument of Keynes' *General Theory* (see Kalecki 1971: vii).

this notion to the economy as a whole, Kalecki showed how changes in the structure of power are linked to the class distribution of income – and from there to broad patterns of consumption, investment, the business cycle and economic policy.

From surplus value to economic surplus

Kalecki's work had a significant influence on the Monopoly Capital school affiliated with the New York-based journal *Monthly Review*.[5] Capitalism, the theorists of this school claimed, had moved from a competitive to a monopolistic footing, and that qualitative transition annulled Marx's capitalist laws of motion. Since power now varied across firms/sectors and changed over time, there was no longer a tendency for rates of profits to equalize, no longer a tendency for market prices to be proportional to labour values, and no longer a tendency for surplus value to be equal to profit.[6]

Instead of Marx's surplus value, Baran and Sweezy proposed a new category: the *economic surplus* (Baran 1957; Baran and Sweezy 1966).[7] The two concepts differ markedly. First, whereas surplus value is denominated in terms of abstract labour time, the economic surplus is counted directly in prices. Second, the two concepts have very different boundaries. The limit of surplus value is given by subtracting from maximum efficient production the subsistence wage of productive workers. In comparison, the notion of economic surplus is both broader and looser in that it also incorporates bygone production – due to inefficiency, unutilized capacity and wasteful spending. Finally, the two magnitudes have different determinants. Surplus value is created in the productive sphere, subject to Marx's tendency of the falling rate of profit. The economic surplus, by contrast, is affected by both production and demand and has a tendency to rise.

Realization and institutionalized waste

The tendency of the economic surplus to rise, though, is only latent and has to be 'realized'. On the one hand, the power of big business and its oligopolisitic interdependencies create an upward price bias: they make prices

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5 Key contributions to this school include Josef Steindl (1952), Shigeto Tsuru (1956), Paul Baran (1957), Paul Baran and Paul Sweezy (1966), Harry Magdoff (1969) and Harry Braverman (1975).

6 This conclusion, Sweezy (1974) would later argue, did not invalidate the existence of labour values. It merely asserted that labour values are modified under monopoly capital and that this modification called for a new Marxist theory of capitalist development. As we shall see in Chapters 6–8, the problem with this solution is that labour values are impossible quite independent of monopoly power, and that impossibility leaves nothing to 'modify'.

7 There are in fact not one but three theoretical versions of the economic surplus – planned, potential and actual – along with a fourth, 'practical' measure that Baran and Sweezy use in their empirical estimates in *Monopoly Capital* (1966). In this paragraph, we deal with the features common to all versions.

move up or sideways, but rarely down. On the other hand, large-scale production helps cut costs faster than ever. As a result of this divergence, profit margins tend to widen – but this widening is merely the first step. In order for the surplus to actually increase (be 'realized'), it has to be 'absorbed' into or 'offset' by profitable spending outlets. And here lies the problem.

In competitive capitalism firms are compelled to constantly invest lest they perish, which means that realization is rarely a lasting problem. Not so in monopoly capitalism. As large firms add new capacity, eventually the additions begin to lower their rate of return on *existing* assets. Investment, therefore, continues only as long as it is expected to boost *average* returns. The problem is masked during periods of 'epoch-making innovations' that amplify obsolescence on the one hand and propel profit expectations on the other, and in so doing fuel an investment-led boom. But in the absence of such innovations, Baran and Sweezy argued, monopoly capitalism requires *wasteful* expenditures – wasteful in the sense that they absorb more surplus that they create.[8] This waste can be generated, among other things, by a systemic sales effort, by the erection of a financial superstructure, and particularly by military spending. Without such institutionalized waste, the rising tendency of the surplus manifests itself as chronic stagnation.

The limits of neo-Marxian economics

The explicit emphasis on power thus helped provide an alternative, neo-Marxian framework. It allowed the theorists of Monopoly Capital to chart the path of American capitalism in the second half of the twentieth century and shed light onto similar processes in other capitalist countries. During the 1950s and 1960s, their framework seemed consistent with the dominance of big business and government regulation, with high military spending and the aggressive posture of US neo-colonialism, and with the long economic boom and the apparent disappearance of economic crisis (Sweezy 1972).

Needless to say, classical Marxists didn't like this new theoretical trajectory. They criticized the neo-Marxian concepts as imprecise, subjective and – ultimately – 'non-Marxist'. Their critiques began to resonate during the 1970s and 1980s. Despite the persistence of massive institutionalized waste, the long boom had ended and profits margins declined. Growth had given rise to stagflation, the global economy had opened up and international competition intensified. The models of Monopoly Capital and Military Keynesianism no longer seemed very persuasive.[9]

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8 Baran and Sweezy noted their indebtedness to Thorstein Veblen, who was probably the first to identify the role of institutionalized waste in the new order of business enterprise.

9 For critiques of Monopoly Capital, under-consumption theories and 'Military Keynesianism', see for instance Bleaney (1976), Shaikh (1978) and Weeks (1981: 149–69). For an attempt to reconcile Monopoly Capital with the classical (or 'fundamentalist') position, see Sherman (1985).

The classical Marxists, though, haven't offered a new alternative to Monopoly Capital and instead have called for a 'return to Marx'. The transformation from competitive to monopoly capitalism – if it ever happened – was merely a historical blip, they have argued, and the tendencies for crisis and for the rate of profit to fall remain intact. Consequently, the way forward is not to dilute Marxism with subjective concepts, but rather to re-examine and sharpen Marx's objective analysis.

This solution is unsatisfactory. To go back to Marx's original framework is to retain its conceptual problems, and that leaves us pretty much right where we started. It is true that the key contribution of the neo-Marxists – the explicit introduction of power into economics – is problematic. But the problem is not that neo-Marxists went too far. It is rather that they did not go far enough. They introduced power – yet retained the assumptions that power makes logically impossible. Specifically, they maintained the formal bifurcation between politics and economics, they kept the division between production and finance, and, most importantly, they continued to treat capital as a productive/economic entity.

The net result is a theoretical void. The neo-Marxists have abandoned Marx's labour theory of value, at least as a practical guide for understanding the pecuniary dynamics of capitalism. But to this day they haven't replaced it with a different theory of value.

The culturalists: from criticism to postism

During the 1930s, orthodox Marxism came under a parallel cultural attack. The disappointment with Stalinism, the apparent triumph of Nazism and the authoritarian nature of capitalist mass culture all pointed to the limits of 'materialist' analysis. At stake now was the very method of Marxist inquiry, and the first to systematically re-examine this method were the writers of the Frankfurt School.[10]

Although deeply revolutionary in aim, these writers took Marx's assumptions and methods merely as a starting point that must be re-examined – and, if need be, discarded. They challenged positivism and scientism – including their penetration into Marxism – and re-examined the meaning of what constitutes truth. Following Marx, they argued that theory – both social and natural – is part of the very constitution of society and therefore cannot be seen as something that stands entirely 'outside' of society. At the same time, and perhaps contradictorily, they also insisted on the autonomy of theory.

10 Originally founded in 1923 as the Institute for Social Research in Frankfurt University, the Frankfurt School later came to indicate a general approach rather than a physical location. The first-generation founders of the Frankfurt School included Friedrich Pollock, Max Horkheimer, Theodor Adorno, Walter Benjamin, Herbert Marcuse, Erich Fromm and Franz Neuman.

In particular, they warned against the subjugation of theory to the alleged interests of the proletariat and the dictates of the Communist Party.

The early writings of the Frankfurt School spawned a radical literature that questioned the 'reified' nature of the economy, if not its very existence, and that focused instead on the oppressive cultural powers of capitalism. Initially, these questions were addressed as part of a re-examination of the young Hegel, the young Marx, Luckács and Gramsci. But since the 1970s, the inquiry drifted in an entirely different direction, situated somewhere between Foucault and Derrida.

This new fashion, originally nourished in France and California, is often based on the cynical plagiarism of Marx, Hegel and particularly Marcuse, usually in the guise of original radical thought. The adherents of this fashion pretend to offer an anti- or postmodern examination of capitalism. But unlike the early critical theory of the Frankfurt School, the posture of this literature is largely anti-socialist, and its methods derive, often directly and consciously, from the intellectual depths of Nazism.[11]

Although ground-breaking in its insight into the cultural dimensions of capitalism, the critical theory of the Frankfurt School had one glaring deficiency: it had given up on the 'economy'. Since the economic laws that Marx identified were supposedly 'politicized' and therefore annulled as an 'objective' force, and since the very possibility of objective social facts was put into question, there was really little that critical theory could say on the *systematic* patterns of capital accumulation.

This original bias has been amplified many times over by the postists. The latter have been only too happy to abandon the systematic study of capitalist reality altogether and instead delve into the deconstruction of post-structuralism, identity, race and gender.[12] The capitalists, for their part, have been keen on subsidizing this promising line of 'critical research'. And why wouldn't they? The investment carries hefty dividends.

As capitalism spread throughout the world and the rule of capital grew into a truly universal force, so did their potential *negation*. This negation is the counterforce that the young Hegel was perhaps the first to write about, if only opaquely: the possibility of democratic opposition, of democratic sharing, of democratically planning the good life. For capitalism to remain dominant, this potential negation had to be fractured, ridiculed and defused. And the best way to achieve these ends was to make capital itself invisible.

By spreading ignorance, the postists have helped keep the central power relations of capitalism unknown and therefore difficult to oppose. And with the intellectuals neutralized and the laity stupified, there has been little to prevent the wholesale spread of capitalism. Since the 1970s, the public autonomy of the welfare state, limited as it was to begin with, has been signifi-

11 For a scathing critique of this anti-philosophy, see Castoriadis (1991a).

12 For a critical survey of this transition, see Eagleton (2003).

cantly diminished. Large chunks of the public domain have been privatized and handed over to the capitalists. And oppressive regimes around the world have been legitimized in the name of 'cultural pluralism' and 'post colonialism'.

Statism

The third fracture of neo-Marxism focuses on the state. The need for such a focus became evident early in the twentieth century. It was clear that a new statist reality, totally unknown to Marx and his contemporaries, had emerged. First, the state not only grew to unpredicted proportions, it also became deeply integrated with – indeed, seemingly embedded in – the capitalist process. Second, the scale of military conflict had changed, with war becoming both total and global. And third, war seemed to have become endemic and permanent – whether in the guise of an arms race between the superpowers, local ethnic conflicts, civil wars, wars of culture or clashes of civilization.

Neo-Marxists, of course, were not the only ones to grapple with this new reality. In the twentieth century, we could speak of three basic ideologies of power, all focused more loosely or more tightly on the state. One ideology is the *techno-bureaucratic state* associated with Comtean positivism, Weberian institutionalism and twentieth-century managerialism. A second speaks of an *autonomous state* that allegedly seeks power for its own sake. And a third, dealing with the *capitalist state*, criticizes and complements neo-Marxist economism.

Although these three ideologies have had different beginnings and purposes, their progressive academization has drawn them closer together – so close, in fact, that it is often difficult to differentiate their methodologies and sometimes even their conclusions. All three views – with the possible exception of some Marxist variants – tend to see the state as the centre of social power and the dominant force in human history. Some go even further to consider the state as the 'unity' or 'totality' that contains and shapes its inner economic and social components. And whatever their inclination, all seems to agree that, by the twentieth century, the state – regardless of its origins – had become the key force in domestic and international developments.

Given these overlaps, it seems useful to broaden the vista here beyond the Marxist analysis of the capitalist state and to consider, if only cursorily, also the mainstream approaches to the techno-bureaucratic and autonomous state.

The techno-bureaucratic state

During the Cold War, the debate was dominated by technological determinism. Key contributors such as Ralf Dahrendorf (1959), John Kenneth Galbraith (1967) and Daniel Bell (1973), although starting from different

perspectives and using distinct terminologies, all speak of technological–bureaucratic imperatives. Modern societies, they argue, require massive research and development, complex planning and social stability, and therefore necessitate giant organizations and intricate bureaucracies.

During the nineteenth century, these requirements were only beginning to take shape and hence were easy to misunderstand. What political economists mistakenly referred to as 'capitalism' was in fact the unorganized precursor of a coming industrial – and, eventually, post-industrial – order. By the early twentieth century, the unplanned market system was beginning to wither, together with the class conflicts and social struggles that socialists erroneously considered inherent. The capitalists and bankers were demoted, replaced by managers and technocrats.

The move from anarchic market coordination to industrial and post-industrial society, went the argument, necessarily gives rise to bureaucratic statism, a system ruled by rationality and governed by technostructures. In the words of Daniel Bell:

> If the dominant figures of the past hundred years have been the entrepreneur, the businessman, and the industrial executive, the 'new men' are the scientists, the mathematicians, the economists, and the engineers of the new intellectual technology. . . . In the post-industrial society, production and business decisions will be subordinated to, or will derive from, other forces in society; the crucial decisions regarding the growth of the economy and its balance will come from government, but they will be based on the government's sponsorship of research and development, of cost-effectiveness and cost-benefit analysis; the making of decisions, because of the intricately linked nature of their consequences, will have an increasingly technical nature.
>
> (Bell 1973: 344)

From this post-capitalist perspective, power can no longer be seen as possessed by private owners. Even social democrats such as Ralf Dahrendorf and radicals like Charles Wright Mills succumbed to Weberianism, seeking to replace an analysis of class division with a broader theory of statist–bureaucratic power.

According to Mills (1956), the class-based approach of Marxism had become insufficient; specifically, it was unable to explain the apparent ascent of governmental-military organizations in the post-war United States. Mills' own solution, partly influenced by the managerialism of James Burnham and the institutionalism of Thorstein Veblen, was to abandon the notion of a capitalist ruling class in favour of three-way power structure. There are three basic scarcities, he argued – a scarcity of power, a scarcity of wealth and a scarcity of prestige – to which there corresponds a tripartite 'power elite'. Each segment of this elite leverages its power through the effective control of key organizations and institutions:

> . . . the elite are not simply those who have the most, for they could not 'have the most' were it not for their positions in the great institutions. For such institutions are the necessary bases of power, of wealth, and of prestige, and at the same time, the chief means of exercising power, of acquiring wealth, and of cashing in the higher claims for prestige. By the powerful we mean, of course, those who are able to realize their will, even if others resist it. No one, accordingly, can be truly powerful unless he has access to the command of major institutions, for it is over these institutional means of power that the truly powerful are, in the first instance, powerful. Higher politicians and key officials of government command such institutional power; so do admirals and generals, and so do the major owners and executives of the larger corporations.
>
> (Mills 1956: 9)

This view provided fertile ground for empirical research, primarily by sociologists, such as William Domhoff, who have laboured to meticulously document the structure and behaviour of the power elite, the operational arm of the 'higher circles' (see for example Domhoff 1967, with four subsequent editions, the latest of which was issued in 2005; earlier editions include 1970 and 1979).[13]

The techno-bureaucratic approach, however, still treats the state (or the overlapping networks of power in Mann's formulation) mostly as an arena, a framework that organizes and governs society. This perspective started to change during the 1970s, with new studies that emphasized the state as an autonomous institution and a personated actor.

The autonomous state

The instrumental and class-based approaches, some writers now argued, serve to conceal the true nature of the state. The state, they maintained, is not a capitalist means or a social instrument. Rather, it is an actor that stands in its own right, having its own logic and, indeed, its own interests.

The conceptual framework of this view contains three basic entities: (1) the state, (2) economic resources, and (3) an amorphous collection of individuals

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13 An outlier of the techno-bureaucratic approach is Michael Mann's work on *The Source of Social Power* (1986; 1993). Mann rejects the notion of a 'unitary totality'. Society, he argues, is not a well-defined system that can be divided into subsystems such as state, culture and economy, or a clearly bounded entity that has dimensions, levels and factors. Instead, he offers to think of societies and their histories as an overlapping network of interactions between four sources of social power: ideological, economic, military and political. The focus of his inquiry, though, is still Weberian. His concern is the organizational means associated with each source of power, and how these develop and change in relation to each other. Earlier in history, he says, political and sometimes military means were primary, whereas in recent times economic power, along with its 'class' relations, has become paramount.

and groups, called society. In this structure, the state holds a unique position: it monopolizes the organized means of violence. The state mobilizes economic groups – be they industrialists, merchants, rentiers, or farmers – in order to obtain economic resources. And it then uses these resources to organize and control its society, as well as to fight and defend itself against other states.

This view is evident in the historical account of Charles Tilly (1975; 1992). The origin of the autonomous state, he argues, goes back to the twilight of feudalism in the second millennium AD. The state was invented not by the bourgeoisie to serve capital accumulation, but by political elites who sought to consolidate their power. The key purpose of the state – from its princely feudal beginnings, through its absolutist and monarchic phase, to its present national form – has been twofold: to organize and finance increasingly expensive wars and to discipline tax payers. Capitalism from this viewpoint is merely the economic means that supplies the military and strengthens the state apparatus.

A similar history is told by Theda Skocpol (1979; 1985), who argues that the European and American revolutions were the result not of class struggles but of political weakness in the face of inter-state conflicts. Her argument, although rich in historical detail, boils down to fiscal–organizational determinism. The *anciens régimes*, she notes, were burdened by excessive and inefficient taxation that strained their access to material resources and limited their ability to finance organized violence; therefore, they were replaced by more rational states with streamlined tax structures and superior war-making capabilities.

In the final analysis, then, history is the cunning of the state. The liberal and Marxist theses, according to which the state serves its citizens, the bourgeoisie, or capital accumulation more generally, are mere fantasies. The state develops in its own right and for its own sake. It inevitably grows and centralizes. It is driven not by an external economic determinism, but by its own statist determinism.

The capitalist state

Marxists began to re-evaluate the role of the state in capitalism around the same time as the 'autonomists'.[14] The post-war era brought new developments – from the ascent of social democratic parties in Europe, through the student movements, to the rise and demise of Keynesianism – and these developments called for new explanations. It was no longer possible to treat the state as a simple extension of the 'capitalist interest'. The state had clear limitations, it had a concrete history, and it was being heavily dissected by competing bourgeois theorists. It was time for Marxists to re-examine their own views.

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14 For critical reviews of Marxist state theory, see Holloway and Picciotto (1978b), Block (1987), Jessop (1990; 2002), Clarke (1991), Mann *et al.* (2001–2) and Anievas *et al.* (2007).

The state imperative

Beyond their many disagreements, all Marxists seem to accept that capitalism requires a state for four main reasons. First, the state helps prevent the inherently conflictual nature of capitalist production from becoming overtly politicized. The capitalist class, argues Gerald Cohen (1978), has 'power' over every worker, but the 'right' over none. It has the systemic ability to act in its own interest, but it lacks the normative, moral and legal sanction that makes such action acceptable. This sanction is provided by the state. Second, the state can help counteract the anarchic, crisis-prone nature of capitalism. Whether the tendency for crisis comes from production or realization, history suggests that the state is able, within limits, to mitigate it (Miller 1987). Third, the state serves to absorb, temporarily or permanently, the bloating social cost of accumulation (O'Connor 1973). Fourth and finally, at the global level, the state system mediates the conflicting and mutual interests of capitalists as well as their relation with non-capitalist entities, although the precise nature of this mediation as well as its logical necessity remain heatedly debated (Mann *et al.* 2001–2; Callinicos 2007).

Marxist state theorists further agree that the state needs to be sufficiently *separate* from capital. This is the common point of departure. The debate is over the precise nature and extent of this separation, and here there seem to be two distinct views. The first, 'flat' approach is to treat capital and state as belonging to two interdependent yet distinct spheres – economics and politics – and to consider each sphere as having a separate and equally significant logic. The other, 'hierarchical' approach is to consider the logic of capital as primary, and then derive the state from the broader imperatives and contradictions of accumulation.

The flat approach

The flat approach underlies the famous debate between Ralph Miliband and Nicos Poulantzas over the 'autonomy of the state'.[15] The two begin from seemingly different assumptions. Miliband considers the state as an instrument of the capitalist class, whereas Poulantzas sees it as rooted in the objective structure of capitalism. Yet both cast their argument in purely political terms. This exclusively political language can be traced back to Friedrich Pollock's 'end of economics' – and, indeed, references to the autonomy of the state have been criticized as neo-Ricardian. The neo-Ricardians have rejected Marx's labour theory of value along with his laws of motion. And since this rejection eliminates economic inevitability (at least in the immediate term), the state is left economically indeterminate (at least for the time being).[16]

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15 See Miliband (1969; 1970; 1973) and Poulantzas (1969; 1973; 1975).

16 A neo-Ricardian critique of Marx's analysis of production is given in Gough (1972), and its implications for the state are articulated in Gough (1975). For counterarguments, see Fine and Harris (1976b; 1976a) and Holloway and Picciotto (1978a).

For Miliband, economic indeterminacy means that the state can serve the immediately observed interests of the capitalists, whatever they may happen to be. For Poulantzas, the state lives a more complicated double life – economic in principle, political in practice. In theory, the state is certainly 'determined' by the economy. This determination, though, happens only in the Althusserian 'last instance' – an asymptotic concept that Poulantzas leaves conveniently opaque and safely out of sight. In the interim the key is politics, which means that in its day-to-day operations the state enjoys a 'relative autonomy' to act as it sees fit.

The result is acute schizophrenia. Given that any state action affects both the immediate and 'last' instances (and every instance in between), the state must constantly juggle its own short-term autonomy against the long-term structural interests of the economy. But, then, Poulantzas, whom taxonomists for some reason like to classify as a 'structuralist', is completely silent on the economics of the 'last instance'. And since this silence leaves the structural imperatives of capitalism undefined, it is rather unclear what exactly it is that the state tries to achieve. For his part, Poulantzas informs us, with emphasis in the original, that 'the State is precisely *the factor of cohesion of a social formation and the factor of reproduction of the conditions of production of a system* that itself determines the domination of one class over the others. . .' (1969: 73), and it is obviously to our own demerit if we don't quite understand what this sentence is supposed to mean.

The hierarchical approach

The alternative, vertical approach is different in that it considers capital and state as conceptually unequal. The engine of capitalist history is the economic accumulation of capital. The capitalist state is merely part of that process. Writers who follow this approach are often labelled 'fundamentalists'. They emphasize the deep logic and inherent contradictions of capitalist production as articulated by classical Marxism – this in opposition to the neo-Ricardians who, they argue, deal with the secondary, surface phenomena of 'circulation', market structure and monopoly capital.[17]

The contradictory logic of accumulation gives the state its concrete history. Thus, according to Perry Anderson (1974), the capitalist state was never functionally autonomous. In Europe, he argues, state formation was deeply intertwined with the underlying transformation of the mode of production. The feudal and absolutist states prepared the conditions for capitalist accumulation and, eventually, also for the political rule of the bourgeoisie. Seen from a functionalist viewpoint, the state doesn't have – and never had – an

17 It should be noted that, in practice, the differences between the two analyses of the state are not that clear cut. Fundamentalists customarily rely on 'surface phenomena', while circulationists often make references to 'inevitable contradictions' (see also footnote 9).

independent role. It merely shapes the requirements of the ruling class, a class that is, in itself, is a creature of the contemporary mode of production.

At a later stage, economic restructuring, driven either by the centralization of capital or the intensification of competition, further transforms the capitalist state. Gabriel Kolko (1963), for example, maintains that the growth and strengthening of the American state were largely a consequence of a political alliance of big business. The large industrial owners, he says, did not enjoy greater monopoly power. On the contrary, they suffered from mounting competition. They solved the problem with government regulation, for which they needed a big state – hence the emergence of 'political capitalism'.

Whatever the reason, the assent of the state is unavoidable. In the hyped language of Ernest Mandel,

> Capitalist private property, the private appropriation of surplus-value and private accumulation increasingly become an obstacle to the further development of the forces of production. *State (and supra-national) centralization of part of the social surplus product has once again* – as in numerous pre-capitalist societies – *increasingly become a material precondition for the further development of the forces of production*. . . . The strengthening of the State in late capitalism is thus an expression of capital's attempt to overcome its increasingly explosive inner contradictions, and at the same time an expression of the necessary failure of this attempt.
>
> (Mandel 1975: 580–81, original emphases)

And now in simple words: capitalism is born an economic–industrial creature, generating surplus value that accumulates in the form of means of production (counted in undefined units of abstract labour). This process continues for a while, but sooner or later something goes wrong. There is a decline or intensification of competition, an increase in the organic composition of capital, or some other inevitable development that causes *normal* accumulation to turn into *over*-accumulation (or *normal* production to become *over*-production or *under*-consumption – all fuzzy distinctions which the theorist commonly pays lips service to and quickly glosses over). As a consequence of this mishap, capitalism takes a quantum leap and becomes 'political' (which means that previously it was *a*-political). The capitalists turn the 'night-watchman' state into a 'regulating' state (a transition that both proves and refutes the ability of the system to survive), and the writer puts the full stop after the QED.

Political Marxism

In a certain important sense, the analysis of the capitalist state has become a fetter on Marxist theory. The problem is that the state – whether equal to capital, subordinate to capital, or derived jointly with capital from a broader

materialist history as argued by the German 'state derivation debate' – always ends up fracturing the overall picture.[18] Because the state is assumed to be inherently and necessarily *separate* from accumulation, we end up with two distinct appearances: one of economics and the other of politics.

Some 'political Marxists' have attempted to transcend the problem by redefining the politics/economics duality in continuous rather than binary terms. According to Ellen Meiksins Wood (1981), capital is the 'privatization of politics' insofar as it gives private owners the authority to organize production. Meiksins Wood accepts the existence of the 'economy', complete with Marx's laws of capitalist development, etc. The novelty is that the boundaries of her economy are not rigid, but supple:

> 'Political Marxism', then, does not present the relation between base and superstructure as an *opposition*, a 'regional' separation between a basic 'objective' economic structure, on the one hand, and social, juridical, and political forms, on the other, but rather as a continuous structure of social relations and forms with *varying degrees of distance* from the immediate processes of production and appropriation, beginning with those relations and forms that constitute the system of production itself.
>
> (1981: 78, original emphases)

Although this formulation sounds tempting, it really does little to square the circle. First, there is a confusion of terms. Meiksins Wood is right to argue that capital is the privatization of politics. But the private/public distinction is not the same as the distinction between economics and politics. And since capital is not an 'economic' entity, the fact that it privatizes power tells us nothing about the relationship between the 'economic' and the 'political'.

This confusion becomes evident when we consider Meiksins Wood's definition of the economy: she doesn't have one. Meiksins Wood never tells us what she means by the 'immediate processes of production and appropriation', what constitutes the 'system of production itself', or how we can measure the 'degree of distance' from these yardsticks.

Perhaps these concepts had a clear enough meaning during the transition from the fields and meadows of pre-capitalist Europe to the factories of early industrialization. But as we shall see later in the book, this clarity has been lost since then, leaving us with a set of empty formulations. What exactly are the 'immediate' processes of production and appropriation of a modern pharmaceutical drug, of a jet fighter, of an automobile, of a complex software

18 The German 'derivationists' reject the orthodox 'fundamentalist' notion according to which the economic is somehow prior to the political, and instead seek to treat both as part of the same materialistic development. This rejection, though, seems largely semantic, since the deriviationists do not offer any meaningful rethinking of Marx's original category of capital. For a recent statement of the derivation approach, see Altvater and Hoffman (1990).

system, of an insurance system, or of health care? Where do these complex processes start and where do they end? Can the 'immediate' processes of production and consumption be delineated, even roughly, from those that are 'less immediate'? If this delineation is impossible to make, what constitutes the system of production 'itself'? And if the 'system of production' remains unspecified, what does it mean to say that the economy and politics are 'distinct', whether the distinction is rigid or supple?

The capitalist totality

As Marx himself put it, if there were nothing behind the 'thing', there would be no need for science. If we accept that the politics–economics fracture is merely the 'appearance' of capitalism, we need to see what lies behind this fracture. Physicists tell us that behind the separate appearance of colours lies the unifying logic of the wave length. Likewise, Marx tells us that behind the distinct appearances of economics and politics, of production and state, of exploitation and oppression, lies a single *capitalist totality*.

And yet, Marxists do not have a theory to explain this totality. They have an explanation for why the world seems bifurcated between factory and state, and for why this separation is cunning, misleading and alienating. But they offer no unified science to transcend the bifurcation, no alternative totality to stand against capitalism.

The flat, 'autonomous' explanations give up the possibility for such a unified science altogether by accepting from the start that politics and economics obey two semi-independent logics. By contrast, the hierarchical, 'structuralist' explanations do try to devise a single theory in which the state is derived from the material basis of accumulation. Yet they, too, cannot go very far: their conception of capital adheres to Marx's notion of abstract labour value, and this loyalty keeps them entangled in the same logical and historical impossibilities that have haunted Marxism for more than a century.

The result is a dead end. Since labour values cannot be observed and calculated, it follows that structuralist theories – no matter how sophisticated – cannot know anything about the *actual* accumulation of labour values. And given that the value reality of accumulation remains unknown, structuralists have no *concrete* basis from which to 'derive' the state.

This entanglement serves to explain why structural Marxism has plenty to say on the logic of the capitalist state but little on its *contemporary reality*: fiscal and monetary policies, military spending and war, financial markets and workers' pensions, the debt and energy policies of the American empire – these are all issues that structuralists can do little more than speculate about (Block 1987: Part I).

During the early twentieth century, the meaning of 'socialism' was pretty clear. It was an alternative to the logic of capitalism and the reality of the capitalist state. Socialism represented a new way of democratically articulating the good of society, of scientifically assessing its possibilities, of

systematically planning its production and consumption. But after a century of Stalinist abuse and academic fracturing, this vision has dissipated. We have neo-Marxian economics, cultural studies and state theory – but we no longer have a theory of the capitalist order as a whole. Marxism has been unable to either save the labour theory of value or come up with a different theory of value in its stead. There is no university, academy or forum where Marxists systematically study, debate and prepare an alternative democratic future. Today, no serious Marxist would claim to have a systematic alternative to capitalism. And the ruling class knows it: 'Even in crisis, capitalism remains fortunate in its enemies', concludes the ironic *Financial Times* commentator (Skapinker 2008).

As we shall see in the next part of the book, the reason for this vacuum is the lingering enigma of capital. Political economy, both mainstream and critical, lacks a *coherent* conception of capital. And it lacks such a theory because it deflects the issue of power. The liberals analyse capital *without* power, while the Marxists explain capital *and* power – but what we need is to theorize capital *as* power.

Part II

The enigma of capital

5 Neoclassical parables

> The price is determined by the market, what we try to do is to make the market balanced. Today there is disequilibrium between supply and demand. Today we are trying to get the market to the normal equilibrium and the price will take care of itself.
>
> —Ali Al-Naimi, Saudi Arabia's Oil Minister

The principal casualty of separating economics from politics is the theory of capital. Academic departmentalization placed it firmly in the hands of economists, leaving political scientists, sociologists and anthropologists with practically no say. The economists have chosen to emphasize material considerations and to all but ignore power, yet that choice has hardly cleared the water. In fact, despite their complete monopoly, economists have been unable to even define what capital means.

While all agree that capital is monetary wealth, figuring out what makes this wealth grow has proven much harder. 'What a mass of confused, futile, and downright silly controversy it would have saved us', writes Joseph Schumpeter (1954: 323), 'if economists had had the sense to stick to those monetary and accounting meanings of the term instead of trying to "deepen" them!'

Of course, the problem lies not in the desire to deepen, but in the direction economists have gone digging. Their main goal has been to link accumulation with productivity, but with social production having grown in complexity the link has become increasingly difficult to pin down. And the difficulty persists precisely because economists insist it is exclusively theirs. According to Bliss (1975), once economists agree on the theory of capital, 'they will shortly reach agreement on everything else'. But then how could they agree on this theory, if capital, by its very nature, involves power, which they view as lying *outside* their domain?

The material basis of capital

Despite their pivotal significance, the definition of capital and the meaning of accumulation remain unsettled.[1] Historically, the principal contention stemmed from trying to marry two different perceptions of capital – one quantitative, the other qualitative. Originally, capital was seen as an income-generating fund, or 'financial wealth', and as such it had a definite quantity. It was also viewed as a stock of physical instruments, or 'capital goods', characterized by a particular set of qualities (Pasinetti and Scazzieri 1987). The key question concerned the connection between these two incarnations: are 'capital goods' productive, and if so, how does their productivity affect their overall magnitude as 'capital'? (Hennings 1987).

Mainstream economics has been trying to show that capital goods indeed are productive and that this positive attribute is what makes capital as a fund valuable. The marriage, though, hasn't work well, partly due to a large age difference: the concept of capital predates that of capital goods by a few thousand years, suggesting that their overlap is not that self-evident.

The older partner, capital, comes from the Latin *caput*, a word whose origin goes back to the Fertile Crescent in the Middle East. In both Rome and Mesopotamia capital had a similar, unambiguous economic meaning: it was a monetary magnitude. There was no relation to produced means of production. Indeed, *caput* meant 'head', which fits well with another Babylonian invention – the human 'work day' (Schumpeter 1954: 322–23; Bickerman 1972: 58, 63).

The younger partner, capital goods, was born millennia later, roughly together with capitalism. The growing significance of mechanized instruments captured the attention of pre-classical writers, but initially these were referred to mostly as 'stocks' (Barbon 1690; Hume 1752). The first to give capital a productive role were the French Physiocrats, and it was only with François Quesnay and Jacques Turgot during the latter half of the eighteenth century that the association between capitals (as monetary advances) and mechanized production started to take shape (Hennings 1987).

Since then, the material–productive bias has grown ever more dominant. Thus, Adam Smith speaks of 'stocks accumulated into capital' which is 'necessary for carrying on this great improvement in the productive powers of labour' (1776: 260–61); similarly with David Ricardo, who equates capital with 'that part of the wealth of a country which is employed in production, and consists of food, clothing, tool, raw materials, machinery, &c. necessary to give effect to labour' (1821: 85); Karl Marx talks about 'constant capital' represented 'by the means of production, by the raw material, auxiliary material and instruments of labour' (1909, Vol. 1: 232); John Bates Clark asserts that 'Capital consists of instruments of production', which 'are always

1 For the deep sense of unease regarding the definition of capital, see Schumpeter (1954: 322–27) and Braudel (1977; 1985, Vol. 2: 232–49).

concrete and material' and whose appearance as value is 'an abstract quantum of productive wealth' (1899: 116, 119); Irving Fisher takes capital as equivalent to the prevailing stock of wealth (1906: 52); Frank Knight sees capital as 'consisting of non-human productive agencies' (1921: 328); while Arthur Pigou conceives of capital as a heterogeneous material entity 'capable of maintaining its quantity while altering its form' (1935: 239). Summing it all up, Joseph Schumpeter naturally concludes that, in its essence, 'capital consisted of goods', and specifically of 'produced means of production' (1954: 632–33). No matter how you twist and turn it, fundamentally capital is a material entity.

Yet, the classical political economists did not have a complete theory of capital. Recall that these new scientists of society started to write when industrialization was still in its infancy, smokestack factories were few and far between, and the population was still largely rural. They therefore tended to treat the amalgamate of capital goods as a 'fund' or 'advance' whose role, in their words, is merely to *assist* the 'original' factors of production – labour and land. Although the general view was that capital goods were valuable due to their productivity, no attempt was made to quantify their 'amount'. The link between capital goods and capital therefore was left unspecified.

In hindsight, the principal obstacle in establishing this link was that the classicists still viewed capital goods as a secondary input, and in that sense as *qualitatively* different from the original primary inputs. This belief, though, proved no more than a temporary roadblock.

The production function

Taking the classical lead but without its associated inhibitions, the neoclassicists followed the Earl of Lauderdale (Maitland 1804) in making capital goods a fully independent factor of production, on par with labour and land. Their view of capital, articulated since the latter part of the nineteenth century by writers such as Phillip Wicksteed, Alfred Marshall, Carl Menger and, primarily, John Bates Clark, emphasized the *distinct* productivity of capital goods, and by so doing elevated these goods from mere accessories to requisites.

The two assumptions

In his book, *The Distribution of Wealth* (1899), Clark used this newly found symmetry among the factors of production to offer an alternative theory of distribution. The theory stipulates a two-step mathematical link between income and production.

The first step asserts the existence of a 'production function'. The level of output, Clark argued, is a function of quantifiable 'factors of production', each with its own distinct productive contribution. This assertion assumes that labour, land and capital are observable and measurable (so for instance,

we can see that production uses 20, 10 and 15 units of each factor, respectively); it argues that the way these factors interact with one another in production is similarly straightforward (so we know exactly what factors enter the production process and how they affect the productivity of all others factors); and it posits that we can associate definite portions of the output with each of the factors (for example, labour contributes 40 per cent, land 15 and capital goods 25).

The second step uses the production function to explain the distribution of income. Clark claimed that, under conditions of perfect competition ('without friction', in his words), the income of the factors of production is proportionate to their contributions – or more precisely, to their marginal contributions (so that the wage rate is equal to the productive contribution of the last worker added to production, the rent is equal to the contribution of the last hectare of land, and the profit rate is equivalent to the contribution of the last unit of capital).

Where does profit come from?

Formulated at a critical historical junction, the new theory combined a powerful justification with a seemingly solid explanation. And there was certainly need for such theory. The emergence of US big business during the latter part of the nineteenth century accelerated the centralization of capital, raised profit margins and heightened income inequality – much along the lines anticipated by Karl Marx – and these developments made earlier profit theories look hopelessly irrelevant.

Chief among these theories were the notions of 'abstinence' as argued by Nassau Senior (1872) and of 'waiting' as stipulated by Alfred Marshall (1920). According to these explanations, capitalists who invest their money are abstaining from current consumption and therefore have to be remunerated for the time they wait until their investment matures. By the end of the nineteenth century, though, the huge incomes of corporate magnates, such as Rockefeller, Morgan and Carnegie, enabled them to consume conspicuously regardless of how much they ploughed back as investment; and even when these magnates chose to be frugal, usually they did so in order to augment their power, not their future consumption.

Other theorists, such as Herbert Spencer (1904), William Sumner (1920; 1963) and later Ayn Rand (1966), took a more 'biological' path, claiming that profit was simply due to superior human traits. This version of financial Darwinism was happily underwritten by large US capitalists eager to make their blood turn blue. But the basic theoretical and moral problem remained.

Even if this 'science of remuneration' were all true, and even if capitalists indeed were superhumans whose waiting in abstinence had to be compensated, the *magnitude* of their remuneration remained unexplained. Why should the pay on their investment be 20 per cent rather than 5 or 50? What

caused the return to fluctuate over time? And why did some capitalists win the jackpot while others, despite their merit and patience, ended up losing money? Clearly, there was a pressing need for a more robust ideology, and this is where Clark's theory of marginal productivity came into the picture.

Contrary to the Marxist claim, Clark insisted that capital is not in the least parasitic: much like labour, it too receives its own marginal productivity, an income which therefore is essential for the growth process. Indeed, since income is proportionate to productive contributions, it is rather clear that capitalists, through their ownership of capital, in fact are more productive than workers. That must be so – for otherwise, why would their earnings be so much greater?[2]

The birth of 'economics'

The marginal productivity theory enabled neoclassicists to finally remove their classical shackles and finish the liberal project of de-politicizing the economy. The classicists, whether radical or liberal, were interested primarily in well-being and distribution. Production was merely a means toward those higher ends. Clark helped reverse this order, making distribution a corollary of production. And indeed, since the turn of the twentieth century, attention has gradually shifted from the causes of income inequality to its ramifications, a subject economists felt they could safely delegate to sociologists and political scientists. The old ideological disputes of political economy were finally over. From now on, announced Alfred Marshall, we have a new science: the science of *economics* – complete with both the rigour and suffix of mathematics and physics.

In fact, Clark and his contemporaries not only de-politicized the economy, they also 'de-classed' it. Instead of workers, capitalists, rentiers and the state – differentiated entities whose struggles loomed large in the classical canons – the neoclassical landscape is populated by abstract individuals – 'actors' who can choose to be workers one day, capitalists the next, and voluntarily unemployed the day after. These individuals live not in society as such, but in a special space called the 'economy'. Their sole preoccupation is to rationally maximize pleasure from consumption and minimize the pain of work. Indeed,

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2 The productive origin of profit is now an all prevalent logic. A typical example is provided by the recent debate over the resurgence of leverage buyouts. Supporters of the trend argue that private firms are more productive than those listed on the stock market, while its critics maintain that delisting is driven by manipulators and asset strippers. 'So who is right?' asks Martin Wolff, chief economist of the *Financial Times*. 'An obvious answer is that private equity is a growing activity in which willing sellers meet willing buyers. If it prospers, it must be profitable. If it is profitable, it should also be adding value' (Wolf 2007). This rule can be frustrated by 'market imperfections', but its underlying logic is taken as self-evident.

society for them is an external and largely irrational sphere which constantly threatens to prevent their 'economy' from reaching its collective orgasm of Pareto Optimality.[3]

With so much going for it, the marginal productivity theory was quickly endorsed by professional economists – and, of course, by their captains of finance. The latter used and abused the theory partly for what it said, but especially for what it didn't.

Marginal productivity theory in historical context

It turns out that Clark's theory of distribution could say very little about the reality in which it developed – and this for a simple reason: the theory rose to prominence precisely when the conditions necessary for it to work disappeared.

Recall that, in liberal theology, everyone is equal before mother competition and father market. No single person can affect the market outcome. This conclusion (or assumption) is formalized in neoclassical manuals through the properties of demand and supply. Individual consumers are said to face a supply curve which they cannot alter (a flat schedule equal to the market price); similarly, individual producers confront a flat demand curve over which they have no control (also equal to the market price). This convenient setting makes the *market* demand and supply independent of each another. And this independence in turn leads to a unique equilibrium – a spontaneous yet stable 'one dollar, one vote' democracy.

The end of equilibrium

By the beginning of the twentieth century, however, when this vision became the canon, the assumption of independent supply and demand – as well as of the autonomy of consumers, the anonymity of sellers and the absence of government – was no longer tenable. It turned out that perfectly competitive equilibrium was no longer possible, even on paper.

There were three basic reasons for this impossibility. First, oligopoly substituted for 'free' competition, and that changed pretty much everything. In oligopolistic markets sellers become *inter*-dependent, and this interdependence – even if we pretend that consumers remain fully rational, knowledgeable and autonomous – makes the individual firm's demand curve

3 Pareto Optimum, a neoclassical mantra named after the Italian thinker Vilfredo Pareto, refers to a situation in which no individual can be made better off without another individual becoming worse off. This situation is said to exist when the overall pie cannot be made any bigger – that is, when the economy works at full employment and in maximum efficiency. Of course, since no one has thus far been able to identify such an Optimum, the mantra is of little practical significance. But its ideological importance is considerable: if maximum output is already optimal, why worry about its distribution?

indeterminate. In the absence of a clear demand curve, firms don't know how to maximize income. And without this unambiguous yardstick for action the oligopolistic market as a whole becomes clueless, lacking a clear equilibrium point on which to converge.[4]

Second, by the end of the nineteenth century there emerged an obvious asymmetry between the buy and sell sides. While individual consumers remained powerless to alter market conditions and therefore had to obey them, the giant corporation enjoyed far greater flexibility. For large firms, the 'demand curve' was no longer an external condition given by sovereign consumers, but rather a malleable social context to be influenced and shaped relentlessly as part of the firm's broader investment and pricing strategy.[5] Of course, in public big business continued to talk about the 'market discipline' to which it was presumably subjugated. But that was doublespeak, the use of mythical forces to conceal real power. In private, large firms saw themselves not only as 'price makers', but also as 'market makers'.[6]

These two developments marked the end of spontaneous equilibrium. Originally, economics had two unknown variables and two independent functions with which to explain them: jointly solving the demand and supply equations yielded unique values for price and quantity. But with the introduction of power into the picture, demand became dependent on, if not subsumed by, supply, leaving economics with only one (combined) equation to explain the two unknowns. In one swoop, economics lost its 'degree of freedom'.

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4 To illustrate this conclusion with a hypothetical example, consider a price change by Nokia. This price change will elicit responses from Nokia's oligopolistic rivals, such as Motorola, Samsung and Panasonic, and these responses will in turn change the demand curve for Nokia's own product. Since the direction and magnitude of these responses are open-ended, the eventual position of Nokia's demand curve becomes unclear. And given that Nokia cannot foretell this eventual position, it cannot know the profit maximizing price and therefore cannot know how to act. Game theorists have managed to solve this problem a million times over – but only by imposing predetermined theoretical rules that real oligopolists such as Nokia and its rivals are perfectly free to ignore.

5 The concept of 'consumer sovereignty' also depreciated due to the immense increase in the complexity of production and consumption. We can perhaps fathom an independent farmer in the United States of the mid-nineteenth century assessing the marginal benefit of growing corn and cabbage instead of beets and tobacco, or of a slave hunter contemplating the marginal rate of substitution between the income from seizing an additional escapee and a week of idle leisure. But these types of computations are rather difficult to make in a world loaded with millions of different commodities and endless 'choices'. It is no wonder that instead of the individualist ethos of the nineteenth century we now refer to consumers as 'masses' and to investors – even the most sophisticated – as 'herds'.

6 These concepts were already part of common business parlance at the turn of the twentieth century. For early analyses of firms as 'price makers', see the works of Brown (1924) on General Motors, of Means (1935a) on administrative prices and of Hall and Hitch (1939) on business behaviour. On the broader politics of 'market making', see Kaplan *et al.* (1958). The nineteenth-century precursors of anti-market corporatism (including the young J. B. Clark) are examined in Perelman (2006). The power aspects of pricing will be examined in Chapter 12.

From now on, there could be any number of price/quantity outcomes, all perfectly consistent and none necessarily stable. And if the real world did appear stable, the reason was not the invisible hand of the market but the visible hand of power.[7]

The third development, which we already alluded to in previous chapters, was the rise of big government and, later, of active economic policy. This development presented another serious difficulty for mainstream economics. On the one hand, large governments have become integral if not necessary to the process of capital accumulation. On the other hand, their existence has 'contaminated' economics with power, annulling the invisible hand and leaving the notion of spontaneous equilibrium hanging on the thread of denial.

Public management

As noted in Chapter 4, economists have partly managed to ignore this dilemma by keeping the study of macroeconomics as separate as possible from microeconomics, nested uneasily in what Paul Samuelson called the 'neoclassical synthesis' and John Ruggie later labelled 'embedded liberalism'. But that wasn't enough. It was also necessary to ascertain that the public sector, no matter how large and active, remained subservient to the logic of *laissez faire* individualism and the interests of its large capitalists.

This requirement was greatly assisted by the founding of 'public management' – a new social science that would imitate, at least nominally, the principles of Frederick Taylor's 'scientific management' (1911). We say nominally, since unlike the so-called scientific management of private enterprise, public management lacked from the beginning any clear yardstick for success.

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7 For those who care to read further, we should add that demand and supply are unlikely to be independent of each other even in the absence of power. The basic reason is that any change in the supply price of a given commodity redistributes income between buyers and sellers of that commodity. This redistribution in turn shifts the respective demand curves of those buyers and sellers. And since different buyers have different preferences, the redistribution of income works to alter the overall market demand curve. This simple logic implies that movements along the supply curve are accompanied by shifts of the demand curve – leading not to one, but to *multiple* equilibria.

Neoclassical economists solve this problem by making two assumptions. First, they ask us to forget about the liberal ideal of individual freedom and think of all consumers as drones, each one identical to the 'representative consumer' and therefore possessing the same set of preferences. Second, they ask us to further believe that these drones have a mental fix, such that the proportion of their income spent on various items is independent of their income level (a consumer spending 30 per cent on food when her annual income is $10,000 will also spend 30 per cent on food when her income is $10 million). These two assumptions – known as the Sonnenshein–Mantel–Debreu conditions – indeed imply that redistribution of consumer income leaves the market demand curve unchanged. But since these assumptions are patently impossible, they also imply that neoclassical consumer theory has practically nothing to say about any real world situation.

The dilemma is simple. The administration of business, neoclassicists argue, is guided by a single goal: the maximization of profit. According to Clark's marginal productivity theory, the more profit the corporation earns, the greater the well-being it must have generated, by definition. Public administration, though, has no comparable rule. Since public services commonly do not have a market price, and since public officials do not normally profit from the services they administer, there is no 'natural' way to tell how much utility is being generated. Unlike in the private sphere, here you have to *decide* what the utility is. But then utility is subjective, so how can public administrators ever hope to mimic the objective market?

There are two solutions to the problem. The first, used mostly to justify higher budgets, is to keep a straight face, pretend that the public sector behaves just like a free market, and subject it to the neoclassical mechanics of indifference curves, budget lines, production functions and possibilities frontiers. The absurd, albeit politically effective, outcome of this venue is best illustrated by marginalist analyses of 'national defence' – the arena most removed from the neoclassical fantasy land (Hitch and McKean 1960). The second solution, ideal for periods of 'belt tightening', is to simply reiterate the basic maxim of liberalism: if in doubt, minimize. Since the public sector is a necessary evil, an authoritarian wasteful institution whose sole purpose is to ameliorate temporary 'market failure' and counteract communist ideology, the best yardstick for its success is the extent to which we can *limit* its intervention.[8]

Many of the key institutions of the welfare state were originally established and run by people schooled in and conditioned by neoclassical maxims. Although they all spoke of 'public policy' and 'government intervention', they tended to think of such activities as necessary 'distortions'. With a few exceptions, mostly in the Nordic countries, there was never a systematic attempt to develop the public sector into a humane form of democratic planning.

And it is not as if the possibility wasn't there. As a new discipline – and one that emerged after the chaos and misery of the Great Depression and two world wars – public management could have opened the door to new ways of thinking about and organizing society. It could have introduced truly democratic budgeting, new ways of assessing public projects, new frameworks for

8 The inferior status of the public sector is evident in the theory and practice of the national accounts. In these accounts, government expenditures on goods and services are (reluctantly) treated on par with private spending: both are considered additions to GDP. But the treatment of interest payments – paid usually to capitalist owners of the public debt – is different. Interest on private debt (to finance the production of cosmetics, cigarettes and fast food, say) is counted as payment for a productive service and is therefore made part of the national income. By contrast, interest on the public debt (for instance, to finance education, war and health services) is considered a mere 'transfer', a one-sided transaction like welfare or unemployment insurance payments. Presumably, no service is being rendered, and therefore there is no reason to treat such interest payments as part of the national income.

ecological planning, new pension schemes, a new architecture for public credit, mass housing for the benefit of inhabitants rather than contractors, effective public transportation, non-neoclassical conceptions of intergenerational transfers, and perhaps even a new, democratic theory of value.

But that never happened. Instead of transcending neoclassical dogma and the business creed, much of the post-war effort went into making sure people didn't even think in such directions. As a rule, public-sector salaries were kept low, public processes were presented as inefficient and corrupt, the status of public activity was demeaned and public officials were commonly criticized and mocked. And indeed, once communism collapsed in the late 1980s, government officials and politicians around the world seemed all too eager to dismantle their own welfare states. The neoclassical Trojan horse has achieved its purpose. The commanding heights again are controlled by the free marketeers. It is as if the Great Depression had never happened.

The best investment I ever made

And so, although Clark's distribution theory was out of sync with the new reality of power, paradoxically, it has proven immensely useful in both concealing and manipulating that very reality. The theory helps protect the belief in perfect competition despite the massive gravitational force created by large governments and big business. It helps hide the fact that oligopolistic interdependence nullifies the notion of spontaneous equilibrium while simultaneously enabling oligopolies to mould their consumers and impose their own outcomes. And it helps use the public sector for capitalist ends while preventing that sector from ever generating a democratic alternative to capitalism.

Given these tall achievements, it is only fitting that the most generous sponsors of this ideology were no other than the Rockefellers – a family whose members invented every possible trick in limiting competition and output, in using religious indoctrination for profitable ends, in rigging stock prices and bashing unions, in enforcing 'free trade' while helping friendly dictators, in confiscating oil-rich territories and in uprooting and destroying indigenous Indian populations (Colby and Dennett 1995). The clan's founder, John D. Rockefeller, donated $45 million to establish the Baptist University of Chicago, where Clark's production function would later become gospel. Eventually, Chicago became the bastion of neoclassical economics – and the neoclassical economists in turn helped make Rockefeller and his like invisible. According to Rockefeller's own assessment, 'it was the best investment I ever made' (Collier and Horowitz 1976: 50).[9]

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9 Chicago, like most other universities, was only too happy to serve the new capitalist benefactors:

> In the world of learning, the janissaries of oil or lard potentates, with a proper sense of taste and fitness, sought consistently to sustain the social structure, to resist change, to

Some very unsettling questions

The difficulty with Clark's logic, though, goes much deeper than indicated in the previous section. In fact, even if we ignore the external reality of power and assume away governments, oligopolies and all other contaminating factors, the theory still doesn't stand.

The quantity of capital

The central problem, identified already by Wicksell at the turn of the century, is the very 'quantity' of capital (Wicksell 1935, Vol. 1: 149, originally published in 1901–6). According to received convention, a given capital usually is associated with *different types* of capital goods. This heterogeneity means that capital goods cannot be aggregated in terms of their own 'natural' units.[10] The only way to 'add' a machine producing aircraft parts to one making shoes to another making biscuits is by summing their values measured in *money*. The money value of any capital good – that is, the amount investors are willing to pay for it – is the present value of its expected future profit (computed by discounting this profit by the prevailing rate of interest, so *value = expected profit / rate of interest*).[11]

Now, as long as our purpose is merely to measure the money value of capital, this method is hardly problematic and is indeed used regularly by

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> combat all current notions which might thereafter "reduce society to chaos" or "confound the order of nature". As a class, they shared with their patrons the belief that there was more to lose than to gain by drastic alterations of the existing institutions, and that it was wisest to "let well enough alone". While ministers of the Baptist Church defended the Trusts as "sound Christian institutions" against "all these communistic attacks", the managers of Rockefeller's Chicago University also championed the combinations year by year. . . . [One] teacher of literature ostensibly. . . declared Mr Rockefeller and Mr Pullman "superior in creative genius to Shakespeare, Homer and Dante". . . . [while] Professor Bemis, who happened to criticize the action of the railroads during the Pullman strike in 1894 was after several warnings expelled from the university for "incompetence".
>
> (Josephson 1934: 324)

Syracuse University, endowed by Mr John Archbold of the Standard Oil combine, similarly dismissed John Commons, a young economics instructor who revealed too strong an interest in the rising labour movement (p. 325).

10 Although labour and land are not homogenous either, their heterogeneity is fundamentally different from that of capital goods. The so-called quality of labour can be moulded through education, whereas land can be improved through cultivation. Capital goods, in contrast, are rarely that supple, and once made they can seldom be converted for new tasks. This difference, though, doesn't get labour off the hook. As we shall see later in our discussion of Marx, the transformation of labour also faces insurmountable aggregation problems.

11 As we have already mentioned in Chapter 1 and will elaborate further in Chapters 9 and 11, the discounting formula is more complicated, having to take into account factors such as varying profit flow, end-value and risk perceptions. These additional factors can be ignored for our purpose here.

investors around the world. The difficulty begins when we interpret such value as equivalent to the 'physical' quantity of capital.

Circularity

To see the problem, suppose that the rate of interest is 5 per cent and that a given machine is expected to yield $1 million in profit year after year in perpetuity. Based on the principle of present value, the machine should have a physical quantity equivalent to $20 million (= $1 million / 0.05). But then what if expected profit were to go up to $1.2 million? The present value should rise to $24 million (= $1.2 million / 0.05) – yet that would imply that the very same machine can have more than one quantity! And since a given machine can generate many levels of profit, there is no escape from the conclusion that capital in fact is a 'multiple' entity with an infinite number of quantities. . . .

As it turns out, Clark's productivity theory of distribution is based on a *circular* notion of capital: the theory seeks to explain the magnitude of profit by the marginal productivity of a given quantity of capital, but that quantity itself is a function of profit – which is what the theory is supposed to explain in the first place! Clark assumed what he wanted to prove. No wonder he couldn't go wrong.

These are logical critiques. Another perhaps more substantive *social* challenge to the notion of physical capital came around the same time from Thorstein Veblen, to whom we turn in Chapter 12. Yet, for almost half a century Clark's theory remained resilient, and it was only during the 1950s that the early criticism against it began to echo.

Reswitching

The first shots were fired by Joan Robinson (1953–54) and David Champernowne (1953–54), followed by the publication of Pierro Sraffa's seminal work, *Production of Commodities by Means of Commodities* (1960). Sraffa's book, which was forty years in the making, had only 99 pages – but these were pages that shook the world, or at least they should have. In contrast to earlier sceptics who rejected the 'quantity of capital' as a circular concept, Sraffa began by assuming that such a quantity actually existed and then proceeded to show that this assumption was self-contradictory. The conclusion from this contradiction was that the 'physical' quantity of capital – and, indeed, its very objective existence – was a fiction, and therefore that productive contributions could not be measured without prior knowledge of prices and distribution – the two things that the theory was supposed to explain in the first place.

Sraffa's attack centred on the alleged connection between the quantity of capital and the rate of interest. As noted, because capital goods are heterogeneous, neoclassicists have never been able to directly aggregate them into

capital. But this aggregate, they've argued, nonetheless can be quantified, if only indirectly, by looking at the rate of interest.

The logic runs as follows: the higher the rate of interest – everything else being the same – the more expensive capital becomes relative to labour, and hence the less of it that will be employed relative to labour. According to this view, the 'capital intensity' of any productive process, defined as the ratio between the (indirectly observable) quantity of capital and the (directly observable) quantity of labour, should be negatively related to the rate of interest: the higher the rate of interest, the lower the intensity of capital, and vice versa. Of course, the relationship must be *unique*, with each 'capital intensity' associated with one and only one rate of interest. Otherwise, we end up with the same capital having more than one 'intensity'.

And yet that is exactly what Sraffa found.

His famous 'reswitching' examples demonstrated that, contrary to neoclassical theory, 'capital intensity' need not have a unique, one-to-one relationship with the rate of interest. To illustrate, consider an economy with two technologies: process *X*, which is capital intensive, and process *Y*, which is labour intensive (i.e. less capital intensive). A rise in the rate of interest makes capital expensive relative to labour and, according to neoclassical theory, should cause capitalists to shift production from *X* to *Y*. However, Sraffa showed that if the rate of interest goes on rising, it is entirely possible that process *Y* once again will become the more costly, causing capitalists to 'reswitch' back to *X*. Indeed, since usually there are two or more ways of producing the same thing, and since these methods are almost always *qualitatively different* in terms of the inputs they use and the way they combine them over time, reswitching is not the exception, but the rule.[12]

The result is a logical contradiction, since, if we accept the rate of interest as an inverse proxy for capital intensity, *X* appears to be *both* capital intensive (at a low rate of interest) and labour intensive (at a high rate of interest). In other words, the same assortment of capital goods represents *different* 'quantities' of capital. . . .

The consequence of Sraffa's work was not only to leave profit in search of an explanation, but also to rob capital goods – the basis of so much theorizing – of any fixed magnitude.

The Cambridge Controversy

These writings marked the beginning of the famous 'Cambridge Controversy', a heated debate between Cambridge, England, where Robinson and Sraffa

12 The qualitative differences between production techniques generate inflections that make reswitching possible. For a clear exposition of how reswitching works and why it would tend to infect neoclassical production models (save for those protected by special assumptions), see Hunt (1992: 536–48).

taught, and Cambridge, Massachusetts, the home of many neoclassical economists (the controversy is summarized in Harcourt 1969; 1972). Eventually, the neoclassicists, led by towering figures such as Nobel Laureate Paul Samuelson, conceded that there was a problem, offering to treat Clark's neoclassical definition of capital not literally, but as a 'parable' (Samuelson 1962). A few years later, Charles Ferguson, another leading neoclassicist, admitted that because neoclassical theory depended on 'the "thing" called capital' (1969: 251), accepting that theory in light of the Cambridge Controversy was a 'matter of faith' (pp. xvii–xviii).[13]

Yet faith was hardly enough. The realization that capital does not have a fixed 'physical' quantity set off a logical chain reaction with devastating consequences for neoclassical theory. It began by destroying the notion of a production function which, as we noted, requires all inputs, including capital, to have measurable quantities. This destruction then nullified the neoclassical supply curve, a derivative of the production function. And with the supply curve gone, the notion of equilibrium – the intersection between supply and demand – became similarly irrelevant. The implication was nothing short of dramatic: without equilibrium, neoclassical economics fails its two basic tasks of explaining and justifying prices and quantities.

Clearly, this was no laughing matter. For neoclassical theory to continue and hold, the belief that capital is an *objective–material* thing, a well-defined physical quantity with its own intrinsic productivity and corresponding profitability, had to be retained at all costs. And so the rescue attempts began.

Resuscitating capital

The first and most common solution has been to gloss the problem over – or, better still, to ignore it altogether. And as Robinson (1971) predicted and Hodgson (1997) confirmed, so far this solution seems to be working. Most economics textbooks, including the endless editions of *Samuelson, Inc.*, continue to 'measure' capital as if the Cambridge Controversy had never

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13 These machinations are typical of a faith in trouble. In *The Birth of Europe*, Robert Lopez describes similar challenges to the Christian dogma during the twilight of feudalism – along with the Church's response:

> In general, faith is still sufficiently adaptable in the thirteenth century for the great majority of Catholic thinkers to feel no more bound by its dogmas than the confirmed liberal or marxist today feels fettered by the basic principles of liberalism or marxism. . . . Conflict between faith and reason cannot always be avoided but in most cases it is successfully solved by an *allegorical interpretation* of the sacred writings. . . . St. Augustine. . . suggested that 'if we happen across a passage in Holy Scripture which lends itself to various interpretations, we must not. . . bind ourselves so firmly to any of them that if one day the truth is more thoroughly investigated, *our interpretation may collapse, and we with it*'. The early mediaeval writers, as we have seen, seized upon allegory with the typical enthusiasm of ages poorly equipped with exact information and clear ideas. . . .
>
> (Lopez 1967: 361–62, emphases added)

happened, helping keep the majority of economists – teachers and students – blissfully unaware of the whole debacle.

A second, more subtle method has been to argue that the problem of quantifying capital, although serious in principle, has limited practical importance (Ferguson 1969). However, given the excessively unrealistic if not impossible assumptions of neoclassical theory, resting its defence on real-world relevance seems somewhat audacious.

The third and probably most sophisticated response has been to embrace disaggregate general equilibrium models. The latter models try to describe – conceptually, that is – every aspect of the economic system, down to the smallest detail. The production function in such models separately specifies each individual input, however tiny, so the need to aggregate capital goods into capital does not arise in the first place.

General equilibrium models have serious theoretical and empirical weaknesses whose details have attracted much attention.[14] Their most important problem, though, comes not from what they try to explain, but from what they ignore, namely capital. Their emphasis on disaggregation, regardless of its epistemological feasibility, is an ontological fallacy. The social process takes place not at the level of atoms or strings, but of social institutions and organizations. And so, although the 'shell' called capital may or may not consist of individual physical inputs, its existence and significance as the central social aggregate of capitalism is hardly in doubt. By ignoring this pivotal concept, general equilibrium theory turns itself into a hollow formality.[15]

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14 First, the production theatre becomes infinitely complex, making identification and quantification impossible. Second, without aggregation some input complementarity is inevitable, so the corresponding marginal products cannot be derived, even on paper. Third, because rationality and utility maximization alone do not guarantee downward-sloping excess demand functions, general equilibrium models need not be 'stable' (see for example Risvi 1994). And fourth, the theory is inherently static and hence can say little on the dynamic gist of accumulation.

15 Aware of the inherent circularity of 'tangible' marginalism, the Austrian economists sought to circumvent the problem altogether by substituting *time* for capital goods. Following Jevons (1871), who formulated his production function with time as an input, writers such as Böhm-Bawerk (1891), Wicksell (1935) and later Hicks (1973) reinterpreted capital goods as stages of a temporal production process. Capital here is counted in units of the 'average period of production', itself a combination of original inputs and the time pattern of their employment. In general, it is believed that 'roundabout' processes (which are longer, more mechanized and indirect) are more productive, and that lengthening the average period of production therefore is tantamount to raising its 'capital intensity'.

The Austrian theory has two main drawbacks. First, it's politically risky. The early Austrians sought to undermine the labour theory of value – but like Balaam in the Book of Numbers ended up bolstering it. Their emphasis on original inputs – to the exclusion of tangible capital goods – is dangerously close to Marx's, something the neoclassicists have been more than eager to avoid. Second, the theory's focus, including its link to the time preferences of consumers, remains exclusively materialistic. It tries to establish a positive relationship between an aggregate quantity of capital on the one hand and productivity/utility on the other. Its route therefore is not that different from Clark's, and indeed this theory too falls into the 'reswitching' trap (on this last point, see Howard 1980; Hunt 1992, Ch. 16).

The measure of our ignorance

Of course, ignoring problems does not solve them. The inconvenience is evident most vividly in empirical neoclassical studies, in which production functions are used to explain changes in output. The results of such studies are usually highly disappointing. Commonly, only part of the output variations – and often only a small part – is explained by the 'observed' variations of the inputs, leaving a sizeable 'residual' hanging in the air (a term commonly attributed to Solow 1957).

As we elaborate later in the book, one possible reason for this failure is that production is a holistic process and hence cannot be expressed as a function of individual inputs in the first place. Neoclassicists do not even consider this possibility. Instead, they prefer to circumvent the problem by separating inputs into two categories – those that can be observed, namely labour, land and capital, and those that cannot, lumped together as technology, or 'total factor productivity'. This by-pass, suggested by Marshall (1920) and popularized by Galbraith (1958; 1967) and Drucker (1969), enables neoclassicists to avoid the embarrassment of a large output residual. To paraphrase Henri Poincaré, this residual is simply a 'measure of our ignorance' (Abramovitz 1956: 10). The problem, they argue, is not theoretical but practical. It lies not in the production function but in the fact that we do not know how to measure technology. Did we know how, and could we incorporate the 'quantity' of technology into the production function, the residual most surely would disappear.[16]

Unfortunately, this phlogiston-like argument is only too convenient, in that it can never be falsified, let alone verified. Theories that claim to explain reality should be tested on how well they do so – the smaller the 'error', the more convincing the theory.[17] Here, however, the problem is not the theory but the facts, so the error does not matter. . . .[18]

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16 The hopes and frustrations of those involved in this quest are echoed in the brief history of the 'residual' written by true believer Zvi Griliches (1996).

17 For a discipline that takes its cue from physics, the following words of Nobel Laureate Robert Laughlin should ring loud: 'Deep inside every physical scientist is the belief that measurement accuracy is the only fail-safe means of distinguishing what is true from what one imagines, and even of defining what true means. . . . in physics, correct perceptions differ from mistaken ones in that they get clearer when experimental accuracy is improved' (Laughlin 2005: 15).

18 Consider two hypothetical production functions, with physical inputs augmented by technology: (1) $Q = 2N + 3L + 5K + T$ and (2) $Q = 4N + 2L + 10K + T$, where Q denotes output, N labour, L land, K capital, and T technology. Now, suppose Q is 100, N is 10, L is 5 and K is 4. The implication is that T must be 45 in function (1) and 10 in function (2). Yet, since technology cannot be measured, we will never know which function is correct, so both can safely claim scientific validity.

The victory of faith

Neoclassical theory remains an edifice built on foundations of sand. The most questionable of these foundations is the notion that capital is a material entity, measurable in physical units and possessing its own intrinsic productivity. In fact, capital fulfils none of these requirements. The result is that the theory is unable to convincingly explain not only the structure of prices and production, but also the distribution of income which supposedly results from such structure.

In *The Structure of Scientific Revolutions*, Thomas Kuhn (1970) claimed that the accumulation of anomalies in science tends to engender a paradigmatic breakdown, opening the door to new theories and, eventually, to a new paradigm. Nothing of the sort has ever happened to neoclassical political economy. Although suffering from deep logical contradictions and serious empirical anomalies, neoclassical theory hasn't broken down. On the contrary, it has only grown stronger. Its overall structure has remained more or less intact for more than a century – a feat unparallel by any other science – and it has managed, with the help of massive business and government subsidies, to strangle pretty much all of its theoretical competitors.

But then, this victory shouldn't surprise us, simply because neoclassical political economy is not a science, but a church. And like every church with forged scriptures, the neoclassical priests go on with their daily business, spreading the faith by building 'elegant-seeming arguments in terms which they cannot define' and searching for 'answers to unaskable questions' (Robinson 1970: 317).

6 The Marxist entanglement I
Values and prices

> . . . the whole substance of the bread is changed into the whole substance of Christ's body, and the whole substance of the wine into the whole substance of Christ's blood. Hence. . . it can be called 'transubstantiation.'
>
> —Thomas Aquinas, *Summa Theologica*

As radical thinkers, we find it far more difficult to criticize Marx than the neoclassicists. So much of our thinking about capitalism originates from his writings. The very concept of the 'capitalist system'; the view of capital as a political institution and of political critique as part of the class struggle; the emphasis on the ruling class and the socio-historical context in which it emerges; the dialectical development of history in general and of capital accumulation in particular; the imperative of empirical research; the universalizing tendencies of capital – these ideas and emphases are all due to Marx. It is hard to approach contemporary social phenomena – from globalization, to economic crisis, to militarization, imperialism, ecology, price movements, the modern corporation, cultural development, elite dynamics and technical change, to name a few – without feeling indebted to Marx and the controversies he opened up. His insights, along with the debates among his followers and critics, are deeply embedded in our current thinking.

But then it is precisely this crucial importance of Marx – along with his emphasis on dialectical thinking – that forces us to re-examine his underlying framework. Capitalism, he argued, is a system of commodities, driven by the accumulation of capital and denominated in prices. To decipher the secrets of this process is to look behind the front window of prices, and to do so we need a *theory of value*. This is the starting point, the 'algorithm' that Marx uses to develop much of his subsequent concepts and analysis. Marx chose to develop a value theory based on *labour*, and it is here that his analysis went wrong. Our purpose in this and the next chapter is to examine why. What are the inconsistencies in Marx's logic, how has the development of capitalism undermined that logic, and most importantly, what can we learn from these theoretical and historical considerations as we seek to develop a radical alternative?

Content and form

Throughout *Das Kapital* there is no 'analytical' definition of capital, perhaps for a good reason. In contrast to his classical predecessors, Marx saw capital not as a 'thing', but as a comprehensive social relation whose description was intertwined with its explanation. The context of capital included the production process, the division of labour and technological progress, as well as the institutional and power arrangements shaping the collective consciousness. According to Erik Olin Wright (1977: 198), the notion that capital accumulation involves merely the tangible augmentation of machinery, buildings, raw materials and alike is alien to Marxist thinking. Instead, he maintains, 'capital accumulation must be understood as the reproduction of capitalist social relations on an ever-expanding scale through the conversion of surplus value into new constant and variable capital'. Emphasizing this aspect of Marx's writing, Anwar Shaikh (1990: 73) similarly reiterates that 'capital is not a thing, but rather a definite set of social relations', and that in order to understand it we must 'decipher its character as a social relation'.

Marx started with three fundamental principles. The first was that human history is driven largely by a struggle over surplus. The second was that production and redistribution are inseparable: surplus presupposes a class society, and classes mean a struggle over how this surplus is created, who is going to get it and how it is to be used and abused. The third principle was that, regardless of its particular form, surplus is always generated through the labour process. The analysis of every class society therefore has to begin with the underlying process of production: 'A distinct mode of production thus determines a specific mode of consumption, distribution, exchange and the specific relations of these different phases to one another' (Marx 1859: 205). This latter conviction created the infamous 'materialistic' bias underlying Marx's theory of accumulation.

The consequence of this bias was an over-preoccupation with content and less attention to form. The content of capitalism is the concrete technological fusion of workers and instruments through an ever-expanding social process of production and consumption. The form of capitalism is capitalist control; that is, the manipulation of human beings via the quantitative accumulation of universal ownership titles. As a historian of capitalism, Marx repeatedly emphasized the inherent interdependence of these two aspects. As a theoretician, though, he failed to integrate this interdependence into his analytical framework of accumulation. When it came to describing accumulation in *abstract* terms, his attention was focused almost solely on a relatively narrow understanding of production, leaving much of the power dynamics ignored. And so although Marx saw accumulation as an antagonistic social process, in the end his theorizing got entangled in the same 'materialistic' trap that would later confound the neoclassicists.

The labour theory of value

For the capitalist, accumulation is a simple process in which 'money makes money'. The capitalist invests M dollars, ends up with $M+\Delta M$ dollars, and the key challenge is how to make ΔM as big as possible. For Marx the question is different. He asks not so much how, but *why*: where does ΔM come from? And the answer, he argues, can be given only by looking over the capitalist's shoulder, peering beyond the phenomenon and into the kernel.

What appears on the surface as the self-expansion of money, in fact, is a reflection of a social process. Money can 'make' money, Marx says, only through the exploitation of productive labour.

Conceptually, the process of capital accumulation can be represented by the following expression:

$$1. \quad M \rightarrow c + v \rightarrow Production \rightarrow c + v + s \rightarrow M + \Delta M$$

The capitalist uses money (M) to buy constant capital (c) and variable capital (v). The first of these capitals consists of used-up raw materials and semi-finished goods, as well as machinery and structures that depreciate during production; the second form of capital comprises labour power. All commodities, including c and v, are assumed to be exchanged at prices proportionate to their value; that is, proportionate to the socially necessary abstract labour-time required for their reproduction (a concept which we define in the next section and examine more closely in Chapter 8).

Constant and variable capital nevertheless differ in that, when they go through production, c simply transfers its own value to the new products and in that sense remains 'constant', whereas v transfers its own value as well as generates *new* value, which is why it is called 'variable'. Once the product is sold on the market, this new value, denoted by s for 'surplus' value, is realized by the capitalist in the form of money profit (ΔM).

How is surplus value created? The answer is based on the distinction between *labour power* and *labour*. Labour power is the ability to work, which is what the worker sells. By contrast, labour is the actual time he or she ends up working for the capitalist. Since labour power is treated as a commodity, its price, like that of every commodity, is proportionate to the socially necessary cost of its own reproduction. In this case, it is proportionate to the average cost, counted in labour time, of having the worker replenish herself or himself for yet another day of labour.[1]

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1 Some, like Karl Polanyi (1944: Ch. 6), argue that labour (or labour power from a Marxist perspective) is really a fictitious commodity, since, unlike true commodities, human beings generally are not produced for the purpose of sale on the market. This reasoning is vulnerable on three counts, all related to the notion of 'purpose'. First, it is not at all clear that labour power *isn't* produced for the market (aren't capitalist institutions geared very specifically for the production and reproduction of human workers, and isn't it true that most people in capitalist societies indeed raise their children with an eye to their future

But this price of labour power, when measured in labour time, is, as a rule, smaller than the actual labour time the worker works for the capitalist. And here lies the crux of the matter: the secret of accumulation rests on the unique ability of labour power to create surplus value – a surplus which the institution of private property then allows the capitalists to appropriate.

Three challenges

This elegant exposition of both the social character of production and the conflictual–exploitative basis of accumulation enabled Marx to excite generations of followers and alter the course of history. And yet Marx's conception of capital – particularly his Smithian emphasis on production as the engine of accumulation and his Ricardian belief that labour values reflect the inner quantitative code of the process – was far too restrictive and, in the final analysis, misleading.

Socially necessary abstract labour

The problem is threefold. The first difficulty concerns the underlying unit of measurement: *socially necessary abstract labour time*.[2] Marx was appalled yet fascinated by the 'mechanized' order of capitalism, a social system that objectifies its human subjects and fetishizes their social interactions. His method reflected this double-sided sentiment. On the one hand, he subjected the transformations of capitalism to dialectical analysis. On the other hand, he viewed capitalist processes as obeying historical 'laws of motion' and therefore as amenable to scientific inquiry. This latter view was deeply influenced by the contemporary revolutions in physics and chemistry, and it drove Marx, just as it drove natural scientists, to search for basic units. He looked for the underlying building blocks, for the simplest elements with which the complex processes of capitalism are socially constructed and ideologically articulated.

The visible building block of capitalism, he argued, is the commodity. On the face of it, commodities are qualitatively different from each other and in that sense incommensurate: a meal in a restaurant is different from a barrel of oil, and both are unlike an automobile. And yet all commodities share a common denominator: their price. A meal may cost $50, a barrel of oil $100 and an automobile $20,000. Although incommensurate qualitatively, they

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saleability?). Second, it isn't clear *whose* purpose counts here: the purpose of the worker's parents? Of the worker herself? Of her employer? Of the capitalist class more broadly? Finally, why is the *original* purpose of conceiving a child of any significance – given that most people end up selling their labour power regardless of anybody's intentions?

2 Marx commonly refers to 'socially necessary labour' as shorthand for 'socially necessary *abstract* labour'. Although Marx himself didn't, we use the latter expression since, as we shall see, only abstract labour can be added up.

nonetheless display a strict quantitative relationship, expressed by their price ratio of 1:2:400.

How is it possible for qualitatively different commodities to have quantitatively comparable prices? Marx isn't puzzled. Commodities, he admits, indeed differ in their use value. But they nonetheless share one property in common: they are all products of human labour. And it is this human labour – understood as an *undifferentiated universal quantum* – that gives commodities their value and makes them commensurate. Marx defined this universal quantum as socially necessary abstract labour. This is the *elementary particle* of his system, the hidden entity that both underlies and embodies the entire architecture of the capitalist order.[3]

The significance of socially necessary abstract labour can hardly be overstated. Capitalism is a system organized through prices, and, according to Marx, socially necessary abstract labour time – mediated through the labour theory of value – provides the ultimate code of prices. It is the basic unit that gives commodities quantity and capital magnitude and, therefore, the common denominator with which all the important ratios of capitalism are expressed. It is crucial for understanding the profit rate of capitalists, the subsistence wage of workers, the distribution of income and the balance of class power. It is essential for explaining the historical development of capitalism, its short-term crises and long-term tendencies. It underlies the system's eventual demise. Without this universal unit, it is doubtful that Marx's grand theory can remain standing. Although Marx's insights go beyond his labour theory of value, the hallmark of his system lies in its *completeness*: the claim that there is a single, universal logic that underlies the entire order of capitalism. And this latter claim depends crucially on abstract labour.

It turns out, though, that this elementary particle, the unit on which everything else stands, is deeply problematic. The key difficulty is that this particle – like God or the Ether – is forever beyond our reach. We can observe actual labour, but that still tells us nothing about socially necessary abstract labour. The latter term differs from the former on two counts. First, socially necessary labour time refers not to the specific time a given capitalist enterprise takes to produce the commodity, but to the *average* time society requires to produce this type of commodity. This is the 'socially necessary' aspect of the term. Second, socially necessary labour time is counted not in heterogeneous

3 'Value, therefore, does not stalk about with a label describing what it is. It is value, rather, that converts every product into a social hieroglyphic. Later on, we try to decipher the hieroglyphic, to get behind the secret of our own social products; for to stamp an object of utility as a value, is just as much a social product as language. The recent scientific discovery, that the products of labour, so far as they are values, are but material expressions of the human labour spent in their production, marks, indeed, an epoch in the history of the development of the human race, but, by no means, dissipates the mist through which the social character of labour appears to us to be an objective character of the products themselves' (Marx 1909, Vol. 1: 83).

units of concrete labour, but in *homogenous* units that can be added up. This is the 'abstract' dimension of the concept. The problem is that both conversions – from actual to socially necessary and from concrete to abstract – are difficult if not impossible to perform. As noted, this is a make-or-break predicament – for, if we cannot perform these conversions, we don't have a basic unit to work with and therefore no theory at all.

Production

The second difficulty concerns the concept of 'production'. Even if we can agree on what constitutes socially necessary abstract labour, there is still the issue of which labour is relevant and which is not. Although all values derive from the productive labour of workers, not all labour is productive. According to Marx, there are two types of workers: productive workers who create value and unproductive workers who do not. In order to render the labour theory of value meaningful, we need to count only the former and ignore the latter. Now, this selection assumes that we can *distinguish* between these two types of workers in the first place – and it is here that the theory runs into a second roadblock. It turns out that there is no objective basis, *a priori* or *a posteriori*, on which to decide that the labour of a Volvo engineer or Fluor crane operator is productive, while that of a government accountant or a stock broker is not.

Transformation

And there is a third problem. Even if we could somehow identify and measure the socially necessary abstract labour time of productive workers, there is still the issue of 'transforming' the resulting labour values into money prices. The transformation has two steps. The first, analytical, step is to translate labour values into so-called production prices. The purpose here is to show how labour values determine equilibrium prices in a perfectly competitive capitalist economy. This step, though, takes us only half way. A real capitalist economy is neither perfectly competitive nor equilibrated, so we need an additional conversion to translate theoretical production prices into actual market prices. Attempts to achieve these transformations began with Marx himself, and the fact that they still continue today attests to their degree of success.

The road ahead

Together, these three problems make for a rather treacherous path. The value theorist is forced to begin with a highly ambiguous unit of abstract labour; to continue by applying this unit to a non-delineable sphere of production; and to conclude by converting the labour values that emerge from this procedure into prices, using a dubious if not circular calculation. Marxists have written thousands of learned books and articles to evade and bypass the hazards of

this journey, with the effect of making Marx's original value theory practically impenetrable to the laity.

This chapter and the following two explore this journey – in reverse. Our starting point is the observed phenomenon of actual prices. From there, we trace our way backwards to the underlying relationships and, eventually, to the elementary concepts of the theory. We begin in this chapter with the transformation of labour values into prices. We continue in Chapter 7 with the delineation of production. And we conclude in Chapter 8, which deals with the elementary particle of abstract labour, along with the elementary particle of the liberal universe – the util.

The second transformation

As noted, Marx's labour theory of value requires a double transformation in which labour values are first converted into production prices, and then into market prices:

2. *labour values* ❶→ *production prices* ❷→ *market prices*

The first step is analytical. It implies a mathematical relationship between values and prices, one that ostensibly exists in a perfectly competitive capitalism. In this context, if we take two commodities – say a computer chip and a bag of potato chips – having a labour-value ratio of (lv_1/lv_2), the ratio of their prices of production (pp_1/pp_2) would be given by:

$$3.\quad \frac{pp_1}{pp_2} = \mu \frac{lv_1}{lv_2}$$

with μ representing a known coefficient reflecting differences in the 'organic compositions', or the c/v ratios, across the various sectors of the system.

This first step of converting production prices into market prices, although merely analytical, is far from trivial and – in the opinion of many Marxists – in fact impossible to make. However, we postpone these doubts for later in the chapter and assume, for the time being, that the first transformation is logically consistent and practically feasible. So if we know relative values, we also know relative production prices.[4]

This assumption, though, takes us only half way. We still have to take the second step and show that the production prices of a hypothetical perfectly competitive capitalism explain the market prices of an actually functioning capitalism. And here we run into a significant problem. As it stands, Marx's labour theory of value does not even try – and indeed *refuses* – to take this step.

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4 Knowledge of prices enables computation of the various stock and flow ratios of the price system, such as the money rates of profit and exploitation, money income shares, the money rate of accumulation, etc. Hence, for the sake of brevity, whenever we refer to prices we also refer to the ratios that can be derived from them.

Why only labour?

This latter point was made early on by one of Marx's fiercest critics, the Austrian economist Eugen von Böhm-Bawerk (1884; 1896). Marx wasn't incorrect to search for the common property of commodities, Böhm-Bawerk conceded. But his insistence that this common property consists *only* of labour – to the exclusion of all other properties – was logically indefensible.

Commodities, argued Böhm-Bawerk, can also vary in other respects. They can differ in the degree of their 'scarcity' as expressed by supply and demand, in whether they are produced by people or gifted by nature, and in the extent to which their temporal production and consumption profile makes them sensitive to the discounting impact of interest rates.

Now, unlike the neoclassicists who translate all such factors into the language of utility, Marxists exclude them from their explanation on the ground that they are 'subjective', or otherwise external to the commodity itself. But since they also acknowledge that these factors do affect market prices, their theory becomes incomplete, by definition.

Excluding power

In fact, the theory is incomplete in ways that extend beyond Böhm-Bawerk's utilitarian individualism. Note that the labour theory of value requires perfect competition. Firms and workers have to be 'price takes', unable to individually affect prices and wages – for otherwise, market prices could be set 'arbitrarily' without any necessary link to production prices. Moreover, capital and labour must be able to move freely between industries in order to equalize the rates of profit and exploitation across different sectors (for instance, Sweezy 1942: 270–74; and Howard and King 1992: 282).

And yet, these conditions of perfect competition do not – and, as we argue later in the book, cannot – exist in the capitalist reality. Instead of atomistic competition in the so-called economic sphere, the history of capitalism impresses on us a broader myriad of restrictive social institutions and power processes. These include, among others, big business, big bureaucracies and big armies, redistribution and restructuring by government, international struggles, segmented labour markets, core-periphery interactions, ideological persuasion, material cooptation and, last but not least, the extensive use of force and violence at every level of society.

The existence of these power institutions and processes makes labour values (and therefore prices of production) practically useless for the study of actual prices and accumulation. In fact, under such conditions, the value of labour power – the basic input in all production processes and the ultimate anchor of accumulation – is already contaminated by power relations (a point to which we return in Chapter 8).

Ironically, Marx was the first to predict these deviations from competition, particularly the centralization of capital and the growth of state power – yet

he did not explore their detrimental implications for his own labour theory of value. Part of the reason was that these phenomena were only starting to emerge and therefore were still difficult to examine with some rigour. But there was a deeper cause.

Marx's analytical framework, like that of the neoclassicists, was hostage to the mechanical worldview of static equilibrium. The neoclassicists, whose purpose was to eviscerate history from their positive economics and demonstrate the eternal harmony of capitalism, found mechanical equilibrium useful. But Marx tried to do the very opposite. He attempted to understand the transformative dynamics of social conflict – the very antithesis of mechanical equilibrium. The result was a lingering dissonance between his dialectical analyses of capitalist development and crisis, on the one hand, and his attempts to mimic physics and chemistry in his labour theory value, on the other. The former uses as its raw material the full plethora of power relations; the latter expunges power to retain the determinism of labour time.

Omitting capitalization

Finally, as we shall see in Part III, labour values and production prices can tell us very little about what really matters to capitalists: the capitalization of their assets on the stock and bond markets. Marx, who didn't know exactly what to do with these forward-looking assets, got himself off the hook by dubbing them 'fictitious capital'. It was a choice of words for which his adherents were to pay dearly.

Following Marx's death, the trajectory of financial markets has diverged from the underlying amassment of (what Marx considered) 'real' capital. As will be amply demonstrated in Chapter 10, nowadays the corporation's market value commonly is much bigger than the price of its underlying plant and equipment (however estimated). Similarly, comparing any two corporations, we usually find the ratio of their market values to be markedly different from the price ratio of their plant and equipment (however measured).

As a result of these developments, those who have accepted Marx's classification and exclude 'financial' capitalization from their 'materialist' labour theory of value now find themselves boxed into a corner. Being unable to explain the trajectory of financial markets with Marxist tools, they face the unpalatable choice of dismissing their movements as irrelevant, classifying them as 'distortions' or simply surrendering to the bourgeois theory of corporate finance and injecting its neoclassical econometrics into their Marxist dialectics.

What does the labour theory of value theorize?

The ambivalence of Marxists toward subjective considerations, power and 'fictitious' capital has had an important consequence: by excluding the role of these factors in principle while recognizing it in practice, they have made their

labour theory of value logically 'weightless'. As it stands, there is nothing in the theory itself to tell us whether labour values explain 1 per cent of prices, 99 per cent, or anything in between, and whether this explanatory power remains stable or changes over time.

This predicament hasn't been lost on Marxists, and rather than fight a losing battle most have opted out. Marx's labour theory of value, many now argue, is not a 'price theory' – at least not in the conventional liberal sense. Marx was primarily a *critic* of classical political economy, they say, and as such, he wasn't concerned with the precise determination of price levels:

> Whatever may be the way in which the prices of various commodities are first fixed or mutually regulated, the law of value always *dominates* their *movement*. If the labor time required for the production of these commodities is reduced, prices fall; if it is increased, prices rise, other circumstances remaining the same.
>
> (Marx 1909, Vol. 3: 208, emphases added)

Note the emphases: value does not determine but merely dominates market prices, and it affects not their level but their movement. More broadly, according to this view Marx was not really interested in the price of chewing gum or the day-to-day fluctuations of a particular sector. These were epiphenomenal:

> Magnitude of value expresses a relation of social production, it expresses the connection that necessarily exists between a certain article and the portion of the total labour-time of society required to produce it. As soon as the magnitude of value is converted into price, the above necessary relation takes the shape of a more or less accidental exchange-ratio between a single commodity and another, the money-commodity.
>
> (Marx 1909, Vol. 1: 114)

For Marx, then, the issue was not individual prices but the *general tendencies* of capitalism. And this broad emphasis shouldn't be surprising. The period he was writing in had witnessed great strides in probability and statistics. The concept of least-squares deviations from mean, developed by both Gauss and Legendre in the late eighteenth century, was already widely used, while Galton's reversion to mean was just around the corner. The notion of approximating the underlying truth from multiple imprecise measurements, first applied in the geodesic derivation of the standard metre, was gaining adherents in every science.[5]

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5 On the intertwined evolution of probability and statistics, scientific measurements and liberal political economy, see Hacking (1975; 1990), Porter (1995), Alder (1995; 2002) and the collection of Klein and Morgan (2001).

In line with these developments, Marx, too, was searching for the long-term 'fundamentals', the mean equilibrium values around which prices oscillate and to which they ultimately revert:

> The assumption that the commodities of the various spheres of production are sold at their value implies, of course, only that their value is the center of gravity around which prices fluctuate, and around which their rise and fall tends to an equilibrium.
>
> (Marx 1909, Vol. 3: 210)

Now, here we have a possible re-entry point. Marx's pronouncement was difficult to corroborate in his own time, but nowadays, with abundant statistics and cheap computing power, it shouldn't be too hard to assess. All it takes is a simple chart. You plot the historical trajectories of labour values and prices of production; on these you superimpose the historical movement of actual prices; and then you look and see. The resulting pattern, mediated if need be by statistical paraphernalia, should be able to tell you both the extent to which the law of value governs prices – with short-term precision, in the long run only, or not at all – and how this pattern may have changed over time.

And, indeed, as we shall see in the next section, Marxists have taken on this task. Since the late 1970s, they have subjected the labour theory of value to rigorous testing – with results that seem to prove more than Marx could ever have hoped for. In general, the studies show that values govern prices not only in the long run, but also in the fairly immediate term, and that they do so very tightly and consistently across space and over time.

And so, in the end, everything falls into place. Although we do not live in a perfectly competitive capitalism, and although prices are subject to the impact of numerous factors other than labour time, none of this matters a great deal. In the final empirical analysis, Marx was right. Capitalism does seem to obey his law of value.

Or does it?

Testing the labour theory of value

The problem is surprisingly simple. The purpose of testing the labour theory of value is to show that market prices are positively correlated with labour values (or with their corresponding prices of production). Now, irrespective of how one approaches this task, two things must be known beforehand: prices and values. And yet it turns out that these seemingly trivial magnitudes are not so easy to 'know' and that, contrary to their explicit proclamation, the empirical studies do not appear to even *try* to correlate prices and values.

The price of what?

Begin with prices. Most people think of these as attributes of *individual* commodities – the price of a Toyota Corolla, the price of a bushel of wheat, the price of a United Airlines flight from New York to Tokyo. Price could also be an attribute of a *group* of commodities. The GDP deflator of the beverage industry, for instance, denotes the weighted average price of all newly produced commodities in that industry, while similar deflators express the weighted average price for entire sectors such as consumer and investment goods, or even the economy as a whole.

Marxist studies of price–value correlations, however, deal with neither of these concepts. Instead of looking at the price of a single commodity or the average price of a group of commodities, they focus on the *price of total output* – that is, on the unit price of the commodity *multiplied* by its quantity. Typically, the researcher divides an economy into a few dozen sectors as delineated by the national statistical service, estimates the price and value of total output in each of these sectors, and then correlates these two magnitudes across sectors for one or more years.

This shift in focus has significant statistical implications. Correlations measured in this way reflect the co-variations not only of unit prices and values, but also of their associated quantities. Now, note that the unit value and unit price of each sector are multiplied by the *same* output. This fact means that, all other things being equal, the greater the size-variability of output across the different sectors, the tighter the correlation between their total price and total value.[6] And since different sectors do vary in their output size, the common result is to make the *overall* correlation bigger than the underlying correlation between *unit* prices and values. The extent of this impact is revealed when sectors are controlled for their size: the value–price correlations usually drop sharply, often to insignificant levels.[7]

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6 Denote, for the i-th sector, unit market price by mp_i, unit labour value by lv_i and the level of output by q_i. The correlation across sectors between unit price and unit value associates $mp_i \leftrightarrow lv_i$, whereas the correlation across sectors between the total price of the output and the total value of the output associates $q_i \times mp_i \leftrightarrow q_i \times lv_i$. Note that in the latter correlation q_i is common to both magnitudes.

7 On the issue of spurious correlation, see Freeman (1998) and the debate between Kliman (2002; 2005; 2007: Ch. 11) and Cockshott and Cottrell (2005). The latter writers argue that, since commodities have no universal quantities (a box of breakfast cereal cannot be directly compared to a passenger aircraft), the correlation between their unit price and unit value is meaningless. This problem of incomparable units could easily be bypassed by correlating *relative* prices with *relative* values. In our example here, we would correlate the ratio between the price of cereals and the price of aircraft on the one hand with the ratio between the value of cereal and the value of aircraft on the other.

Absence of value

The other problem with empirical studies has to do with values – or rather the lack thereof. To our knowledge, all Marxist models that purport to correlate prices with values *do no such thing*. Instead of correlating prices with values, they in fact correlate prices with . . . prices!

The reason is simple enough. Recall that, according to Marx, the value of a commodity denotes the abstract labour time socially necessary for its production. Yet, as we already mentioned and elaborate further here and in Chapter 8, this quantum is impossible to measure. And so the researcher makes assumptions.

The most important of these assumptions are that the value of labour power is proportionate to the actual wage rate, that the ratio of variable capital to surplus value is given by the price ratio of wages to profit, and occasionally also that the value of the depreciated constant capital is equal to a fraction of the capital's money price. In other words, the researcher assumes precisely what the labour theory of value is supposed to *demonstrate*.[8]

Duncan Foley tries to put on a brave face on this circularity by describing it as a matter of convenience:

> . . . the choice of an embodied labor coefficients [sic] or a market price accounting system does not make much practical difference to estimates of Marxian categories like the rate of exploitation, or the ratio of unproductive to productive labor in real economies. Given the wide availability of market price accounting data in financial and government sources, and the expense, difficulty, and possible error involved in reconstructing embodied labor coefficients for many periods and economies from input/output tables, most empirical work. . . will use market price data as a first approximation to an embodied labor coefficients system of accounts.
>
> (Foley 2000: 35)

But this account is misleading. The issue isn't convenience, it's necessity. The imperative of this procedure was succinctly if opaquely stated in one of the first statistical studies:

> In order to compute the rate of surplus value, input/output flows in market prices (hereafter prices) must be *converted* into input/output flows in labor time (hereafter values).
>
> (Wolff 1975: 936, emphasis added)

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8 To avoid undue attention, these assumptions are often tucked in endnotes and technical appendices. Commonly, the researcher will state them cryptically, with minimal discussion and seldom with an apology. See, for example, Wolff (1975: 936), Ochoa (1989: 427–29), Shaikh and Tonak (1994: 80–81), Alemi and Foley (1997: 2) and Cockshott and Cottrell (2005: 312).

In short, we have to pretend. Since values are forever unknown, we need to first convert prices into 'values' and then correlate the result with prices. It seems reasonable to expect the outcome to be positive and tight. After all, we are correlating prices with themselves. What remains unclear is why one would bother to show this correlation and, more puzzling still, how the whole excise relates to the *labour* theory of value.[9]

Recap

All in all, then, it seems that the second transformation does not take us very far, and that values and prices of production in fact tell us very little about actual prices. To summarize the difficulties: most Marxists concede that market prices are affected by an array of factors other than values; they nonetheless insist on excluding these factors from their theory and therefore make the theory logically incomplete to an unknown extent. Some researchers have tried to circumvent this problem statistically, by showing prices and values to be consistently and tightly correlated in practice. Their methodology, though, is highly questionable for two reasons. First, they usually focus not on individual commodities but on total output, and second, their 'value' data are in fact nothing but converted prices. The consequence is that the estimated correlations, no matter how tight, are irrelevant to the labour theory of value.

The first transformation

So far we have focused on moving from production prices to market prices, assuming that the former were merely transformed labour values. This assumption, though, isn't trivial. In fact, most of Marx's followers agree with his critics that this first step is impossible to take.

To explain the problem, begin with Marx's value equation:

4. $lv = c + v + s$,

where the commodity's labour value is given by lv, the value of constant capital by c, the value of variable capital by v and surplus value by s.

Marx used these categories to spell out a definite relationship between three ratios across the political economy, a relationship that in turn bridges labour values with prices of production. The first is the rate of profit (π), given by the ratio of surplus value to the sum of constant and variable capital:

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9 Some Marxists have questioned the wisdom of empirically testing the labour theory of value, lest the results prove inconclusive: 'Suppose, for example, that the correlations between embodied labor coefficients and market prices had turned out to be much lower, or to fall over time, or to be low in certain capitalist economies. Are we to conclude that the labor theory of value does not hold, or is weakening over time, or holds only in some capitalist economies?' (Foley 2000: 20). The writer leaves these questions unanswered.

$$5. \quad \pi = \frac{s}{c + v}$$

The second is the rate of exploitation (ε), denoted by ratio of surplus value to variable capital:

$$6. \quad \varepsilon = \frac{s}{v}$$

And the third is the organic composition of capital (θ), defined as ratio of constant to variable capital:

$$7. \quad \theta = \frac{c}{v}$$

Dividing the numerator and denominator on the right-hand side of Equation (5) by v, and then substituting ε for s/v and θ for c/v, gives us the three-sided relationship between the rate of profit, the rate of exploitation and the organic composition of capital:

$$8. \quad \pi = \frac{s/v}{c/v + 1} = \frac{\varepsilon}{\theta + 1}$$

According to Marx, competition among capitalists pushes capital from low-profit to high-profit industries, creating a tendency for the rate of profit (π) to equalize across the economy. Similarly, competition between workers triggers labour mobility, causing a parallel equalization tendency of the rate of exploitation (ε). Now, if these two rates tend to equality across different industries, by definition so must the organic composition of capital (θ).

And yet, unlike the first two movements, the third one has no reason to happen.[10] On the contrary: the ratio of constant to variable capital depends not on competition, but on the technical nature of production and therefore tends to *differ* across industries (the organic composition of capital in the computer industry, for instance, may be lower than in the steel industry, in dairy farming lower than in microchip production, in banking lower than in automobiles, and so on).

The only way to square the circle is to accept that prices of production and money profits in different industries are not proportionate to their respective labour values and surplus values. Specifically, industries with a higher-than-average organic composition of capital will have prices and profits that are higher than their respective labour values and surplus values, while in industries with a lower-than-average organic composition of capital the opposite will be the case.

10 In fact, it is not entirely clear why labour mobility should equalize the rate of exploitation rather than the wage rate only, although for some reason this question has attracted relatively little attention.

The theory therefore isn't true to the letter, but the damage is limited. Recall that Marx emphasizes the overall processes of capitalist development, and in that regard, argue his followers, his theory remains intact and, indeed, indispensable. The reason is that, although prices and profits differ from their respective labour values and surplus values in *individual* industries, their *aggregates* remain the same.

These aggregate equalities are crucial. Since, according to Marxists, the sum of all profits is equal to the sum of all surplus values, and since the sum of all prices is equal to the sum of all labour values, the rate of profit in price terms is equal to the rate of profit in value terms. It is through this determination of the rate of profit that the value system *anchors* the price system. Compared with this overall causality, price–value and profit–surplus inequalities across the individual industries are secondary. They represent a mere redistribution of the overall equalities, and ones that could be fully explained with value categories.

Inconsistency, redundancy, impossibility

The dual system

This understanding of 'pulling and redistributing' labour values was dominant among Western and Russian socialists until the Second World War. There were early challenges to this view, but Nazism and Stalinism helped keep them obscure. It was only in the 1940s, with the introduction to English readers of the work of German statistician Ladislaus von Bortkiewicz, that the problem with this view became widely recognized.[11]

Bortkiewicz (1907a; 1907b) demonstrated that Marx's solution of pulling and redistributing is logically inconsistent. It turns out that, as we move from labour values to prices of production, the results do not 'add up': the outputs of the price system generally differ from its inputs.[12] According to Bortkiewicz, the inconsistency occurs because Marx's transformation is incomplete. It converts surplus value counted in labour time into profits counted in prices, but it does not do the same for constant and variable capital. The resulting price system therefore is half-baked – partly price denominated, partly value denominated.

Capitalists and workers, though, buy and sell commodities in prices rather than values, so it makes sense to specify two *distinct* systems – one

11 Bortkiewicz's arguments were summarized in Paul Sweezy's *Theory of Capitalist Development* (1942) and later included in his translated collection, *Karl Marx and the Close of his System* (1949).

12 Save for special assumptions, this inequality means that in simple reproduction the overall price of the wage goods produced by the system differs from the total value of wages (so workers consume less or more than capitalism makes available to them); that the overall price of investment goods differs from the total value of the used up constant capital (so there is net investment or divestment); and that the overall price of luxuries is different from the total profits of capitalists (so they must save or dissave).

denominated in values, the other in prices of production. And, indeed, with a dual-system specification, Bortkiewicz showed the transformation of values into prices of production to be mathematically consistent.

But there was a hefty price to pay for this consistency: the dual system no longer satisfies Marx's aggregate conservation principle. With separate systems for prices and values, there is no longer a single μ that would satisfy Equation (3) for all commodities. The result is that total prices need not be equal to total labour values and total profit does not have to be the same as total surplus value. And given these inequalities, the rate of profit denominated in price terms is no longer the same as the rate of profit calculated from labour values.

This was no longer a secondary problem. Marx claimed his theory to be superior to the bourgeois alternatives, partly because it did something they couldn't: it *objectively* derived the rate of profit from the material conditions of the labour process.[13] Bortkiewicz turned this asset into a liability: he showed that Marx's original framework was logically inconsistent and that it could be fixed only by making the rate of profit independent of the value system.

The complicating detour

Adding insult to injury, in 1957 Paul Samuelson demonstrated that, mathematically, the first transformation was a pointless 'complicating detour'. Whether consistent or not, the theory was largely irrelevant. Marx stipulated a two-stage analytical process, moving from the conditions of production to labour values, and from labour values to prices of production. In fact, argued Samuelson, the process requires only one step – from the conditions of production to prices of production – without any intermediate resort to labour values. 'Marxolaters, to use Shaw's term', he suggested triumphantly, 'should heed the basic economic precept, valid in all societies, cut your losses' and dump the labour theory of value (1957: 892).

Many Marxists, although silent on Samuelson's mathematics, rejected his conclusion as typical bourgeois misunderstanding. The crux of value analysis, they argued, was never to explain prices per se, but to emphasize the underlying social essence of their formation – the class conflict in production, the social imperative of technical change and the workings of the capitalist mode of production as whole. According to Sweezy (1942: 129), value analysis, despite its many problems, is necessary in order to 'look beneath the surface phenomena of money and commodities to the underlying relations between people and classes'.[14]

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13 Prices of production, writes Marx, 'are conditioned on the existence of an average rate of profit' which itself '*must be deduced out of the values of commodities*. . . . Without such a deduction, an average rate of profit (and consequently a price of production of commodities), remains a vague and senseless conception' (1909, Vol. 3: 185–86, emphasis added).

14 For reiterations of this view, see also Mattick (1972), Baumol (1974), Fine and Harris (1979: Ch. 2) and Harvey (1982: 35–38).

What remains unclear, though, is why *only* the analysis of labour time can do the job. Why should we assume that the logic of class conflict, technical change and the interaction between production, circulation and distribution must all be anchored in the *quantitative combination of labour inputs* – particularly when this combination is entangled in logical contradictions and sheer impossibilities? Surely, there *could* be other explanations – or are labour values necessary here, by definition?

Joint production

The picture was clouded further in the 1970s. Building on Sraffa's *Production of Commodities by Means of Commodities* (1960), Ian Steedman (1975; 1977) and others claimed that the labour theory of value is not only inconsistent and redundant, but also impossible. The basic problem comes from 'joint' production processes, where multiple inputs jointly produce multiple outputs. Such jointness makes it difficult to identify which inputs are 'responsible' for which output, leading to strange mathematical results, with labour values becoming indeterminate, nil, or even negative!

This predicament, to which we return in Chapters 8 and 12, arises because, quantitatively, production is forever a black box. Even if we could identify its inputs and outputs (itself a questionable proposition), we could never examine the inner process by which the former quantitatively 'generate' the latter. The only way to attribute outputs to inputs is indirectly – first by finding a unique mathematical relationship between them, and then by *assuming* that this relationship represents the productive transformation occurring inside the black box. This superficial solution works well when there is only one output and therefore a single mathematical equation. But it tends to fail with joint production. The latter requires simultaneous equations, and there is nothing inherent in joint production to guarantee that these equations could be solved with unique and positive labour values.

The existence of joint production is potentially devastating for the labour theory of value. Since everything in that theory depends on labour values being positive, the possibility that they could be undefined, nil, or negative undermines Marx's 'laws of motion' and, indeed, the very meaning of exploitation. These implications are all the more serious since joint production is the rule rather than the exception. In fact, even when there is only one sellable output, the process is still joint insofar as it also generates a (somewhat) depreciated constant capital.

Some Marxists have tried to minimize the significance of jointness by arguing that modified (i.e. depreciated) constant capital is not produced for the market and therefore should not be counted as a commodity (for instance, Fine and Harris 1979: 41–42).[15] The basis of this claim, though, is difficult to

15 The question of whether or not commodities are 'purposely' produced for the market and the relevance of such purposiveness for political economy are discussed in footnote 1 above.

comprehend. Entire firms are constantly bought and sold on the market for real dollars; indeed, some firms, particularly in research and development, are formed with the sole purpose of being sold to the highest bidder. And with that being the case, why should we consider second-hand machinery and structures as non-commodities? Alternatively, if we are to accept Fine and Harris' position, should we not, just to be consistent, classify *all intermediate products* as non-commodities?

Another escape route is to argue that capitalist specialization tends to reduce jointness, so that eventually, if not immediately, theory will prevail over reality (ibid.). Specialization, however, is not the same thing as jointness. The former is about division, the latter about interaction, and more of one does not imply less of the other. To illustrate this point, consider the fact that General Electric has hundreds or thousands of different job descriptions, that its different corporate segments are formally associated with different types of output, and that these outputs are not the same as those of Ford and Exxon. These divisions attest the heightened specialization of contemporary capitalist production, but what do they reveal about the *interaction* of its different processes?

Do these divisions tell us what portion of the labour of a General Electric accountant, engineer, or driver goes into a GE pump? And when General Electric sells this pump to Ford, can we know – based on these divisions and without resorting to prices – how much of that labour is being 'transferred' to a typical Ford car? How will our answer differ if the plant using the pump jointly produces two types of automobiles rather than one? And what if the entire process were to be 'internalized' by Ford taking over GE's pump division? Would such a takeover make the process less or more joint? Labour-value theorists cannot answer these questions; and as long as the issue of jointness hangs, the input–output structure stays unspecified and the theory remains stuck.

Capitalism sans values?

According to Cornelius Castoriadis (1988, Vol. 1: 20), Marx's acceptance of wage inequality during a socialist transition to communism – 'to each according to his work' – shows how much he had bought into the 'self-evident facts' of bourgeois common sense; that is, into the presumption that we can somehow impute a product to its 'producer'. As a 1958 AFL-CIO document on *Automation and Technological Change* puts it, this assumption can no longer be made, even in a socialist world: 'Automation in its largest sense means, in effect, the *end* of measurement of work. . . . With automation, you can't measure output of a single man', and there is no longer 'any reason at all to pay a man by the piece or pay him by the hour' (cited in Tsuru 1993: 7, original emphasis).[16]

16 As we shall see later in the book, according to Veblen the issue is not automation but the

Paradoxically, Marx was remarkably prophetic in anticipating the demise of his own labour theory of value, and for this very reason. His insight is worth quoting at some length:

> As large-scale industry advances, the creation of real wealth depends less on the labour time and quantity of labour expended than on the power of the instrumentalities set in motion during the labour time. . . . Human labour then no longer appears enclosed in the process of production – man rather relates himself to the process of production as supervisor and regulator. . . . He stands outside of the process of production instead of being the principal agent in the process of production. In this transformation, the great pillar of production and wealth is no longer the immediate labour performed by man himself, nor his labour time, but the appropriation of his own universal productivity, i.e. *his knowledge and his mastery of nature through his societal existence* – in one word, the development of the *societal individual*. . . . As soon as human labour, in its immediate form, has ceased to be the great source of wealth, labour time will cease, and must of necessity cease to be the measure of wealth, and the exchange value must of necessity cease to be the measure of use value. . . . The mode of production which rests on the exchange value thus collapses.
>
> (Grundrisse der Kritik der politischen Oekonomie: 592f, translated from the German by Marcuse 1964: 35–36, emphases added)[17]

And, from there,

> . . . with the abolition of the basis of private property, with the communistic regulation of production. . . the power of the relation of supply and demand is dissolved into nothing, and men get exchange, production, the mode of their mutual relation, under their own control again. . . .
>
> (Marx and Engels 1970: 55)

This intriguing idea is typical of Marx's search for inherent contradictions: the very development of the forces of production set against the relations of production is certain to undermine the quantitative logic of capitalism. In a complex socio-technological setting, he argues, the direct relationship between labour inputs and final prices is bound to break down. When that happens, price setting becomes increasingly arbitrary; capitalists lose their moral conviction and business compass; and with their sense of hegemony thus undermined, their system becomes vulnerable and eventually unsustainable.

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holographic nature of production. The fact that production is *social* means that we cannot impute output to 'its' producer even in the simplest of social settings.

17 We much prefer Marcuse's translation to the official one given in Marx (1857: 704–5).

Marx of course was proven wrong in believing that the demise of his own theory would bring capitalism down. Perhaps, contrary to his conviction, labour values are not a prerequisite for a functioning capitalism in the first place. However, his insight into the *societal* nature of production and into the insurmountable problems it creates for the theory of political economy was prescient.

The transformation so far

As our brief journey so far suggests, labour values cannot easily be transformed into prices. To recap, again, the transformation involves two parts: a first, logical step from labour values to prices of production and a second, logical/empirical step from prices of production to market prices. Beginning from the end and assuming that the first step is feasible, we saw that labour values still shed little light on the actual trajectory of capitalism. The reason is that the second step is inherently incomplete: Marxist value theorists readily agree that there is more to market prices than prices of production, yet deliberately refuse to theorize anything other than those prices. And since the theory itself gives no indication of how important these additional factors may be, its significance cannot be assessed.

Some Marxists have tried to settle the issue with statistical analysis. Their results seem very robust – but only because the dice in their tests are loaded and the tests themselves are circular. These studies tend to measure the value–price correlation not of individual commodities, but of total sectoral outputs. Worse still, given that labour values cannot be observed, the researchers commonly 'derive' them from market prices. The result is to have us go in a circle. We are shown that market prices (presented as values) are tightly correlated with market prices, but it isn't clear how this revelation vindicates the labour theory of value.

The problem, however, begins much earlier, with the logical conversion from labour values to prices of production. First, this conversion is logically inconsistent – and can be made consistent only at the cost of casting out many of Marx's key conclusions. Second, even if perfectly consistent, the conversion is mathematically redundant in that it adds little to what we know to start with. And finally, once we enter the realm of joint production, it becomes difficult if not impossible to even *specify* the labour values to be converted.

New solutions, new interpretations

Value theorists have responded to these challenges with a voluminous literature of new solutions. Most have accepted that Marx's own transformation was problematic and that the subsequent critiques needed to be addressed. But they've also insisted that the difficulties can be overcome – by modifying one or more of Marx's assumptions.

Changing the assumptions

Michio Morishima, for example, examined the so-called Fundamental Marxian Theorem, according to which a positive rate of profit both implies and is implied by a positive rate of exploitation. He argued that the Theorem is valid – but only if we valuate commodities differently than Marx. Whereas for Marx value is based on *average* labour time, Morishima claimed that the Theorem would hold only if value is counted in *minimum* labour time (Morishima 1973; Morishima and Catephores 1978). Another approach was offered by David Laibman (1973–74). Laibman correctly observed that the class struggle rages not over the rate of profit, but over the distribution of income; and he therefore concluded that it is the rate of exploitation rather than the rate of profit that tends to equalize across industries.

A very different and highly original solution was developed and empirically examined by Emannuel Farjoun and Moshé Machover (1983). Conventional Marxist models, they argued, specify their variables as discrete, equilibrium magnitudes. But the competitive capitalist reality is inherently stochastic. Competition, they noted, tends to disperse rates of profit as well as equalize them. Of these two processes, the former is stronger, both within and across industries, and rates of profit, as a result, do not converge to equality but rather spread across a range. This tendency means that we should not expect the correspondence between market prices and labour values to be deterministic but probabilistic. And with determinism gone, the logical consistency of the system obviously is no longer an issue.

Complexity

Over time, the proliferation of different solutions, the restrictive nature of their assumptions and the heightened disagreements among their advocates have served to complicate and fracture Marx's original framework. Most value theorists, though, have remained unmoved by this increasing complexity.

According to Marx, the deviation of prices from values is *inherent* in the price-form itself. 'This is no defect', he insists, 'but, on the contrary, admirably adapts the price-form to a mode of production whose inherent laws impose themselves only as the mean of apparently lawless irregularity that compensate one another' (Marx 1909, Vol. 1: 115). From this viewpoint, the transformation problem undermines neither the value principle nor the insight it offers into capitalist relations. 'On the contrary', argues Laibman (2000: 314), the complicated process of converting values into the prices 'is a further development of a core insight: capitalist market relations mystify and obscure – *and thereby enable* – the class exploitation at the heart of the system' (original emphasis). Indeed, in this sense, says Laibman, the rejection of Marx's pulling and redistributing process merely serves to show that 'exploitation, far from taking place in mutually isolated sectors, is systemic and

inseparable from the entire web of interconnections in the structure of production and exchange' (ibid.).

The problem with this approach is twofold. First, it is hard to evaluate a theory whose purpose is *both* to explain and obscure reality (since a weaker explication implies greater mystification – and vice versa). Market prices may indeed seem chaotic and bourgeois theory certainly serves to mystify them. But it is doubtful that Marx wanted his own value theory to serve the same end. Second, all things being equal, tells us Occam's razor, the best solution is the simplest. Complicated explanations tend be intellectually unattractive and politically ineffective – a suicidal combination for a theory whose ultimate purpose is praxis.

Changing the definitions

And so there has emerged since the 1980s a different approach altogether, one that offers not new solutions, but new interpretations.[18] According to the new interpretationists, the theory that Marxists have laboured to fix for over a century is indeed logically inconsistent and plagued by insoluble problems – but that theory isn't Marx's. Interpreted correctly, they argue, Marx's texts yield a very different labour theory of value – one that is both internally consistent and fully congruent with all of his theoretical results.[19]

The new-interpretation literature has different variants, all sharing one thing in common: they *redefine* the meaning of labour value. In what follows, we focus on the version that departs most radically from received Marxism – the Temporal Single-System Interpretation, or TSSI.[20] According to the TSSI, Marx's 'true' value theory differs from the conventional interpretation on two main counts, which we consider in turn.

Recounting costs

First, the system is not simultaneous but temporal. To illustrate the difference, consider the production of a personal computer by Dell. The company purchases inputs, such as motherboards from Intel, hard drives from Toshiba, sound cards from Creative Labs, etc.; it assembles these components with its own workers; and then, three weeks later, when the process is complete, it sells the computer to the final consumer. According to the standard,

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18 Key collections and reviews of this literature include Freeman and Carchedi (1996), Foley (2000), Freeman, Kliman and Wells (2000) and Kliman (2007).

19 Andrew Kliman (2004: 23, Table 2.1) compares the different interpretations on how well they replicate Marx's theoretical claims.

20 For a concise exposition of the TSSI, see Kliman and McGlone (1999). Other versions include the particular 'New Interpretation' attributed to Foley (1982) and Duménil (1983) and the 'Simultaneous Single System Interpretation' associated with Wolff, Roberts and Callari (1982) and Moseley (1993), among others.

simultaneous approach, the value of these inputs should be recorded at *current* rates. They should be measured based on what they would have taken to produce now, at the end of the process, regardless of what they actually took to produce earlier in the process. This assumption guarantees that commodities that act both as inputs and outputs have a single value.

The TSSI disagrees. This logic makes no business sense, and certainly it isn't Marx's. The dollar costs are recorded when Dell purchases its inputs, not when it sells its output. To be consistent, argue TSSI advocates, the same temporal sequence must also hold for labour values. We need to record them when the inputs enter the process, not when the output leaves.

There is really no way to decide which of these two methods is 'valid'. According to Michael Perelman (1990), Marx himself left the issue open. He used antecedent (past) labour at the micro level of the firm and coexisting (current) labour at the macro level of capitalism as a whole – though without indicating why. Conventional accounting practices make a similar distinction between the LIFO and FIFO methods – and here, too, there is no 'right' or 'wrong'. With LIFO (meaning 'Last In, First Out'), Dell would calculate its costs currently, based on the price of its most recently purchased inputs. With FIFO (or First In, First Out), it would compute the cost historically, based on the price of the most dated inputs in its inventory. The two methods can have dramatically different financial consequences – depending on the rate of inflation, tax laws, transfer pricing, currency movements and other assorted considerations, including the duration of the production run and the path of technical change. But, then, there is *no objective yardstick* – that is, other than the laws, habits and customs of bourgeois society – to tell us which method to use. Now, unlike the accountants, who deal with observable prices, Marxists do not even know what abstract labour looks like. So it seems that their quest for the Holy Grail here is a bit presumptuous.

Theoretically, however, historical valuation is far more 'flexible' than a current one. Current valuation as used by the conventional approach requires all instances of a given commodity to have one and only one value, so that a barrel of oil has the same value whether it appears as an input or an output. By contrast, historical valuation as used by the TSSI allows each barrel of oil to have its own value – depending on its particular temporal position in the production process. This difference allows the TSSI to appear more theoretically 'robust' than its conventional alternative – but that appearance is misleading. Obviously, if the same commodity can have multiple values, the likelihood of the valuation system as a whole being logically inconsistent is much reduced.

Prices as values

Labelling these considerations 'theoretical', though, is somewhat misleading – for the simple reason that TSSI really is more of an accounting device than a scientific proposition. The definitional nature of the TSSI is evident from its

second assumption. According to this assumption, Marx had in mind not two systems, but one. Recall that, in the standard dual-system view as formalized by Bortkiewicz, labour values and prices of production are determined separately, each in their own distinct system, and that the question is whether or not the former can be mathematically 'transformed' into the latter. This question does not even arise in the TSSI. Here, there is only one system for both prices and values and therefore nothing to transform in the first place.

The language of the last sentence is a bit deceptive. In fact, the single system articulated by the TSSI does not have prices *and* values. It has prices *as* values. The distinction is crucial. The conventional Marxist approach argues that labour values are the *cause* of prices. This causal link is meaningful because the definitions of the two magnitudes are different. Prices are counted in money, whereas values are counted in labour time. The two magnitudes could be used interchangeably – but only if the theory is correct.

The setup of the TSSI is completely different. Here, there is no point in asking whether or not prices are equal to values, simply because values are *defined* by market prices. What the empirical studies do out of necessity and with much unease, the TSSI marshals with fanfare and as a vindication of Marx. The value of constant capital used by Dell is defined here as the market price the company paid for its (depreciated) capital, raw materials and semi-finished goods. Similarly, the value of the labour power it employs is defined as the money wages paid to its workers. Finally the company's surplus value is defined by subtracting from its current dollar revenues the constant and variable capital, as well as an unknown discrepancy that may arise from unequal exchange.[21] Labour is still held responsible, by definition, for the creation of all value in the aggregate. But it is no longer necessary for any of the underlying computations. Individual values are defined as the sum of market prices, with the result that the single-system equations no longer contain embedded labour coefficients.

New interpretationists do not see a problem with this circularity. Duncan Foley, for instance, argues that when Marxists define values by prices they do nothing different than Newton, who defined force by mass and acceleration ($F = m \times a$). In each instance the definition serves a purpose insofar as it 'decisively disciplines and directs scientific investigation in conceptual and fruitful ways' (2000: 28). And, of course, there is nothing wrong with definitions per se.

But there is an important difference between the two cases: whereas Newton offers one definition for force, the new interpretationists have *two* for value: one based on price, the other on labour time. And since value is made proportionate to *both* price and labour time, it follows that prices are proportionate to labour time and that the labour theory of value is true before

21 This discrepancy, although unknowable for individual commodities, disappears in the aggregate since, by assumption, unequal exchange cannot create value, only redistribute it.

we even begin. Kliman and McGlone (1999: 44) claim that this is a 'circular, Hegelian type' of explanation, although it isn't clear how this supposedly dialectical technique differs from the positive neoclassical habit of defining the quantity of capital by its price or the marginal product of labour by the wage rate. Given these considerations, it is perhaps little wonder that, while the definition of force enabled Newton to accurately describe, explain and predict the movement of actual bodies, the concepts of utils and labour values enable their theorists to say pretty much nothing about the actual movement of prices.

Proponents of the TSSI argue that this is what Marx had in mind. And maybe they are right. But if that was Marx's intention, it seems unclear why he would bother to call the result a *theory* of value, let alone a *labour* theory of value. The TSSI says nothing about labour, save for *asserting* that labour creates all values. And it is not a scientific theory in the sense of cause X (value) explaining consequence Y (price). It merely states the truism that current money prices are the sum of past money prices, plus a deviation.

Writers who advocate this approach emphasize that they do not claim Marx's value theory to be *empirically* valid. Their only purpose is to show that his framework is logically consistent and fully in agreement with his analytical claims. But in the process of achieving this purpose, they seem to have shifted into reverse. Whereas Marx's labour theory of value claims to reason phenomena according to their 'essence', the TSSI advocates move in the very opposite direction. Not only have they turned his theory into an irrefutable tautology, but by defining labour values in price terms, they have made it practically impossible to transcend the very appearance they wish to explain. They have ended up with a dogma.

7 The Marxist entanglement II

Who is productive, who is not?

> Their husbands, you know, are the two principal stock holders in the Mills. Like all the rest of humanity, those two women are tied to the machine, but they are so tied that they sit on top of it.
>
> —Jack London, *The Iron Heel*

So far, our discussion of Marxism has examined how production determines the quantitative architecture of capitalism – while taking production itself for granted. But, then, there is nothing very simple about production, certainly not in the way that Marx analyses it. Recall that his value equations concern *productive* labour only. They therefore presuppose that we can objectively distinguish labour that is productive from labour that is not. Yet, as we shall now see, differentiating the two types of labour is no simpler than transforming values into prices. And even if a line could somehow be drawn between them, its meaning and significance would be anything but clear.

Productive and unproductive labour

The question of 'productivity' dates back to the eighteenth-century conflict between the nobility and the bourgeoisie. The issue was who contributes more to society. François Quesnay's *Tableau économique* argued that it was the tillers of the land. The peasants were the sole producers, while the bourgeoisie merely circulated their product. The opposite position was marshalled by Adam Smith, who prioritized the industrial entrepreneur as the engine of economic growth and the wealth of nations. Marx leveraged the debate for his own purpose, arguing that only the industrial working class produced value.

In all three cases, the reasoning was based on Descartes' notion that cause cannot act at a distance. Leaves move when touched by wind, and the same must be true for productivity: Quesnay's peasants were closest to the land, Smith's capitalists pulled the levers of technical change and Marx's industrial workers were tied to the machines.

The problem in Marx is that not all workers are industrial, which means that the labour process itself needs to be bifurcated. Marxists classify production according to the type of wage labour employed. Many types of labour produce use value and many generate exchange value, but for Marx only labour that produces use value, exchange value *and surplus value* is productive in the capitalist sense. 'That labourer alone is productive, who produces surplus-value for the capitalist, and thus works for the self-expansion of capital', he writes (Marx 1909, Vol. 1: 158). Only labour that is 'directly consumed in the course of production for the valorization of capital' can generate surplus value and produce capital (Marx 1864: 1038). Other types of labour – such as those employed in domestic services (servants for example), in circulation (to convert one form of value to another) and in state organs (as public officials and service providers) – are all unproductive from the standpoint of accumulation. Although they may be important for the reproduction of capitalism as a whole, as well as for the realization of surplus value, they themselves do not create surplus value; in fact, their wages are paid from – and therefore eat into – that very surplus value.

Clearly, distinguishing between the two types of labour is crucial. Since productive labour boosts accumulation whereas unproductive labour hinders it, knowing which is which must be a first step in any investigation of capitalism. And yet this first step is not easy to take.[1]

For a start, Neo-Ricardian Marxists deny the very productive–unproductive distinction. Orthodox Marxists love to dismiss this denial as heresy, on the ground that Neo-Ricardians reject value analysis altogether and therefore are not 'true' Marxists. But even if we ignore the dissenters and assume for the moment that indeed there are two types of labour, we are still faced with the question of how to tell them apart.

According to Fine and Harris (1979: 56) the answer is simple. Paraphrasing Marx, they state that 'If labour directly produces surplus value it is productive; if not, it is unproductive'. This criterion looks straightforward, but in fact it puts the cart before the horse. If our final purpose in separating productive from unproductive labour is to identify surplus value – how can we begin by assuming we already know what surplus value is? Recall that surplus value, like utility and factor productivity, is a *theoretical* construct, not a directly observable quantum. So how can we know when it is being produced and when it is not?

Recognizing the problem, Fine and Harris, still in the spirit of Marx, offer an indirect litmus test: 'only labour which is performed under the control of capital (on the basis of the sale of labour-power from workers to capitalists),

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1 For various analyses and summaries of the issues involved in this distinction, including Marx's own inconsistencies, see Baran (1957: Chs 2–3), Morris (1958), Gough (1972), Harrison (1973), Hunt (1979), Laibman (1992) and Savran and Tonak (1999). Our discussion draws in part on these writings.

and in the sphere of production, is productive' (ibid.). In other words, to identify productive labour we must back-step and decide (1) what constitutes 'production', and (2) which aspects of production come under the 'direct control' of capital. Unfortunately, answering these two questions is not much easier than observing values.

Production versus circulation

Financial intermediation, advertising and insurance

The standard Marxist view is that production mediates the 'relationship of society to nature' – in contrast to circulation and to the reproduction of the social order, which affect the historically specific 'relations among human beings' (Savran and Tonak 1999: 122). Based on this nature–society distinction, the employees of companies such as Deutche Bank (diversified finance), InterRepublic Group (advertising), ING (insurance), Fannie Mae (mortgages) and CIGNA (real estate) are for the most part unproductive. Their labour, insofar as it is devoted to circulation, does not mediate the relationship between society and nature and therefore cannot, by definition, create surplus value.

But is it really that simple? Begin with the sphere of financial intermediation. Over the past century, credit has become the most important mechanism for directing social reproduction (or 'allocating resources' in neoclassical parlance). Despite this fact, Marxists do not consider financial intermediation as 'mediating society's relationship to nature', and therefore do not see it as productive. To be consistent, though, they should apply the very same criteria to R&D, cost accounting, industrial relations and strategic planning. After all, these activities – just like financial intermediation – help allocate resources in 'productive' corporations such as Toyota, ExxonMobil and Microsoft, and if credit is deemed unproductive these corporate activities should be unproductive as well. It is true, of course, that credit is intimately related to the redistribution of ownership and therefore to power; but could this aspect of credit be at all separated, even conceptually, from its other features that help guide reproduction?

Or take advertising. Undoubtedly, this activity is designed to promote sales. But what about the incessant remodelling of automobiles, clothing, detergents, cosmetics, architecture, news media and what not – remodelling that according to some estimates accounts for over 25 per cent of the cost of production?[2] Given that the main purpose here, much like in advertising, is to enhance circulation, shouldn't we consider the labour put into such

2 The 25 per cent estimate is taken from Fisher, Griliches and Kaysen (1962), the first to study the cost of automobile remodelling. Pashigian, Bowen and Gould (1995) claim that such remodelling has since become even costlier – to the point of forcing US-based firms to cut down the frequency of model changes.

remodelling to be unproductive as well? Paradoxically, even a positive answer would not solve the problem here. After all, *any* new product characteristic can persuade people to buy, so how do we distinguish between the advertising-like aspect of remodelling that merely circulates existing values and its productive aspect that by definition creates new values?

Finally, consider insurance, which Marxists commonly but erroneously classify as purely redistributional and therefore unproductive. Every production system requires some means of reducing uncertainty.[3] Historically, this reduction has been achieved through kinship commitments, community support organizations, state programmes like business and farm subsidies, welfare payments, unemployment insurance and pensions and, of course, capitalist insurance. Although all these methods are based on redistribution, they also serve to provide stability for production.

Similarly with business conglomeration and diversification. This strategy, which was first practised by the large trading companies of the seventeenth century and is presently exercised by most large corporations, tends to reduce uncertainty and therefore serves as a form of insurance. If we consider the labour involved in initiating, planning and managing corporate diversification as productive, we must treat the labour of private insurance employees in a similar manner. If the former creates value and surplus value, so does the latter.

Disaggregates in the aggregate

Marxists commonly bypass these ambiguities by conceding that circulation activities, like financial intermediation, advertising and insurance, do have an impact on production: they affect the reproduction of the social order as a whole, and therefore the *overall* magnitude of value and surplus value. But they also insist that such activities, because of their general character, do not bear on the relative magnitudes of *specific* values and surplus values. It is in this latter sense that circulation is deemed unproductive.

This claim is difficult to sustain for two basic reasons. To start with, financial intermediation, advertising and insurance – like every social activity – are invariably *differential*: they affect some aspects of production more than others. Changes to old-age security programmes or the shifting stance of monetary policy – just like the purchase of life insurance by a single employee or the extension of credit to a specific corporation – have different impacts on different sectors, firms and workers. The same with marketing: the overall

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3 In fact, the reduction of uncertainty has had an important, if understudied, impact on the very direction of social development. The pre-historic Australian population, for instance, became nomadic partly because of the continent's infertile soil and the dearth of domesticable plants and animals. But there was another crucial reason: El Niño made agricultural production intolerably unpredictable, in contrast to the relative security offered by the diversity and flexibility of nomadic hunting and gathering (Diamond 1999: Ch. 15).

sales effort creates what John Kenneth Galbraith (1967) called the 'propaganda on behalf of goods in general'. But the consequences of this general propaganda vary along the production chains, with some processes being affected differently and more extensively than others. Thus, if we are ready to accept that a certain social activity affects the production of value and surplus value in general, we also have to accept that this impact is distributed *unevenly* and therefore affects the *relative* structure of values and surplus values.

Unfortunately, though – and here we get to the second point – value and surplus value cannot be observed, detected or examined, so there is no way to ascertain the existence of these differential impacts, let alone their size. We cannot know if monetary tightening by the central bank alters the relative value and surplus value of microchips vs crude oil – and, if so, by how much. We don't know whether the effect of tax breaks to advertisers raises, reduces or leaves unchanged the value and surplus value of brand names relative to brandless commodities. We have no clue as to the impact of insurance legislation on the value and surplus value in the production of mobile homes relative to the production of university graduates.

But, then, if we are unable to say whether these so-called circulation activities are productive or not, let alone to what extent, how can we ever separate them from production 'proper'?

Objective exchange values?

Eating the cake and having it too

In the final analysis, the difficulty of identifying the so-called sphere of production is rooted in a basic theoretical schizophrenia: the attempt to deduce objective exchange values from subjective use values – while denying this very deduction in the first place.[4]

Marx believed that the boundaries of production were objectively delineated. They were given, he said, by 'the *definite* social form, the social relations of production, within which the labor is realized' (Marx 1863, Part I: 152, emphasis added). In practice, though, the categories that Marxists consider definitive and objective almost always rest on subjective criteria.

A recent taxonomy of productive and unproductive labour by Savran and Tonak (1999) illustrates this uneasy derivation. Following Marx, they emphasize the need to distinguish clearly between two types of circulation: the circulation of use value typical to all advanced socio-economic structures, and the specifically capitalist circulation of exchange value embedded in commodities, money and capital (p. 142). However, when they come to distinguish the circulation of exchange value from its creation, their criteria are based entirely on *use value*:

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4 This schizophrenia, of course, is hardly unique to Marxism. As we will see in Chapter 8, it underlies both the util of the neoclassicists and the abstract labour of Marx.

> [A] society can only increase its wealth through the purposeful transformation of nature and only that amount that has thus been produced can be distributed among the individual members or social classes of society. No amount of exchanging parts of the social product already produced can increase this product itself. . . . This means that any activity which is not directly necessary for humanity's intercourse with nature in order to transform aspects of it in accordance with human needs cannot be regarded as productive labour in general, nor therefore, as productive labour under capitalism.
>
> (143–44)

To see the difficulty, note that, according to this statement, any understanding of objective exchange value requires prior agreement on no less than five different questions: (1) the definition of the 'product itself'; (2) the 'amount of wealth' this product represents; (3) whether or not the production of this 'wealth' involves a 'purposeful transformation of nature'; (4) whether or not the transformation is 'directly necessary' for humanity's intercourse with nature; and (5) the 'human needs' the product is made to fulfil. Now, since the answers to these questions are all subjective to a lesser or greater extent, and given that they are nonetheless necessary for separating the production from the circulation of exchange value, it follows that exchange values cannot be derived *objectively* from production.

Capitalist answers, pre-capitalist questions

The difficulty here is one of historical mismatch. Simply put, we are trying to give capitalist answers to pre-capitalist questions. In the feudal-agricultural order, the separation between productive and unproductive activity seemed fairly clear cut. On the one hand, there were the peasants who tilled the land, along with the artisans who crafted with their tools and serviced with their skills. One could reasonably argue that their 'direct and purposeful intercourse with nature produced wealth in accordance with human needs'. It seemed rather evident – certainly to their coevals – that they were productive.

On the other hand, there were the nobility and the clergy who merely appropriated, along with the merchants, money lenders, usurers and taxmen who mostly 'exchanged and redistributed the already produced social product'. Since neither group participated in production as such, it wasn't too hard to conclude that they were unproductive. Even the Church found it difficult to deny what everyone could see.[5]

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5 A 1020 poem by Bishop Adalbero of Laon provides a succinct summary of the feudal division of labour: 'The community of the faithful is a single body, but . . . human law distinguishes two classes. Nobles and serfs, indeed, are not governed by the same ordinance. . . . The former are the warriors and the protectors of churches. They are the defenders of the people. . . . The other class is that of the serfs. This luckless breed possesses nothing except

There was relatively little ambiguity: the division between those who laboured and those who didn't was fairly trenchant; needs and subsistence were practically synonymous and wealth a self-evident residual; product diversity was miniscule and the items on offer fairly well-defined; joint production was limited and technical knowledge diffused. In this pre-capitalist context, use value seemed pretty straightforward – indeed, almost 'objective'. It was an obvious yardstick for separating the productive from the unproductive.

But these clear ecological, occupational and legal distinctions began to melt with the arrival of capitalism. Nowadays, use value is no longer evident, let alone agreed upon. It cannot be an 'objective' yardstick, or even a rough rule of thumb, for delineating what Marxists call the sphere of capitalist production. The remainder of this section illustrates the impasse.

The product itself and the amount of wealth

Take our first question regarding the notion of the 'product itself'. Even in the simplest cases, products are no longer well-defined. When a New York resident buys a loved one flowers flown in from Mexico, does she purchase just 'flowers' – or specifically 'Mexican flowers'? This distinction is crucial since the latter entails the additional costs of air transport, insurance and hedging against currency changes – expenses without which Mexican flowers would be unavailable in New York. If the 'product itself' is merely flowers, these additional costs are socially unnecessary and therefore count as unproductive circulation expenses. But if the product is Mexican flowers, these expenses are necessary costs of production. Now, which of these two definitions is correct? Do we have an objective basis to decide? And if we do not, what then constitutes the 'product itself'?

Next, turn to the second question, regarding the 'amount of wealth' products supposedly represent. What is the quantity of wealth contained in a modern anti-depressant drug, in a barrel of oil, or in software used in the production of nuclear missiles? Do these amounts exist as objective quanta? And if they have no objective quanta, how can we know what 'amount of wealth' is available for distribution?

The transformation of nature

The third question concerns Savran and Tonak's claim that a society can increase its wealth *only* through the purposeful transformation of nature. This delineation, meant to exclude purely social activities that merely circulate an

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at the cost of its own labour. . . . The serfs provide money, clothes, and food, for the rest; *no free man could exist without the serfs*. . . . We see kings and prelates make themselves the serfs of their serfs; *the master, who claims to feed his serf, is fed by him*' (quoted in Le Goff 1988: 255, emphases added).

already-transformed nature, is far trickier than it seems. To point out the difficulty, consider the service sector. Commodities ranging from health care and telecommunication, to tourism and entertainment, to engineering and personal services, now account for roughly two thirds of social reproduction in money terms. The production of these service commodities normally requires a certain transformation of nature, but it also has another component that is purely social.

And so, as Marxist researchers, we are now faced with a dilemma: when calculating the contribution of the service sector to social wealth, should we exclude the purely social component – and if so, how big should the deduction be? Is there an objective way to calculate this deduction – and if so, what is it? And if we end up excluding the purely social component from the production of services, shouldn't we do the reverse for the sphere of circulation? The latter includes, in addition to its purely social components, a certain purposeful transformation of nature. If we are to be consistent, don't we need to classify these latter components as productive?[6]

Human needs

The fourth and fifth questions concern the related notions that productive labour is one that is 'directly necessary' for the transformation of nature in accordance with 'human needs'. Activity that does not fulfil these two related conditions is supposedly unproductive. One issue, then, is how to decide what constitutes 'human needs'. Food is a human need, but is the daily consumption of a 10-ounce steak or of expensive caviar also a human need? Laughing and excitation are human needs, but does it follow that all forms of commercial entertainment fulfil a human need? Based on the popularity of crime and horror movies, violent sports and the daily news, should we conclude that aggression, cruelty and war are basic human needs – or are these merely the result of brainwashing and the anxiety of capitalist alienation? Alternatively, can't we say that all human activity is geared toward fulfilling human needs? And if we accept this latter proposition, wouldn't that make all labour productive? How do we choose between these alternatives?

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6 The notion that wealth is created only by *purposeful* transformations seems unnecessarily restrictive. Our quest for knowledge is driven, at least in part, by idle curiosity, and our learning about nature is often serendipitous. Since production ends up using this purposeless knowledge, should we prorate our measurement of wealth to include only the 'purposeful' part – or should we simply assume that a little bit of purpose somewhere in the process is enough to make the entire transformation intentional? Similarly, what do we do with negative transformations of nature – such as deforestation, pollution, the destabilization of the climate and the extinction of species? The dilemma here is that these transformations may represent a reduction of use value, so, on the face of it, they need to be deducted from our social wealth. At the same time, these latter transformations are often unintentional, so perhaps we should simply ignore them?

The other side of the problem is that, even if we can somehow agree on what constitutes human needs, we still need to know which labour activities are 'directly' necessary to fulfil those needs. Assuming that transportation is a human need, we may be tempted to conclude that the workers of Volkswagen and ChevronTexaco are directly necessary to its fulfilment. But, then, wouldn't universal public transportation fuelled by nuclear energy make these workers unnecessary? Can these questions ever be answered objectively?

Non-capitalist production

The slope becomes even more slippery when we move to identify the so-called 'non-capitalist' spheres of production, particularly the state. During Marx's time, the problem was easy to disregard. Until the late nineteenth century, state spending was miniscule by contemporary standards, as was the ratio of government to private employment. But the capitalist state has since expanded to account for a very significant portion of overall 'economic' activity, so the issue could no longer be ignored.

The classical Marxist position is that employees of the capitalist state may in certain cases be productive of use value, but usually not of surplus value. State activity is customarily divided into three categories: one that deals with the reproduction of the social order as a whole through the judiciary, police, army, taxation, etc., and is deemed unproductive of use value, exchange value and surplus value; a second, more ambiguous, category that provides useful social services like education and health care – yet remains unproductive of surplus value to the extent that it is not controlled by capitalists; and a third that comprises government-owned enterprises whose capitalist-like nature makes them productive of surplus value.[7]

Reproducing the social order

Consider the first category, the one responsible for reproducing the social order itself. Since this sphere produces no use value as such, it cannot, by definition, produce exchange value or surplus value, and it therefore must be deemed unproductive (a conclusion that is not very different from the liberal view, in which a parasitic public sector freely rides the productive private sector).

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7 Neo-Marxists, insofar as they abandon the labour theory of value, offer a rather different classification of state activity (see, for instance, O'Connor 1973). Alternatively, some classical Marxists, such as Michael Kidron (1974), take the unorthodox position that the state actually serves to boost accumulation. Kidron argues that surplus wasted on military expenditures is akin to the production of luxuries. The relative growth of such spending therefore offsets the expansion of productive capital, which in turn counteracts the tendency of the rate of profit to fall (a relationship first shown by Bortkiewicz 1907a). For a critical review of Marxist analyses of fiscal policy, see Miller (1986).

The difficulty with this assertion resembles our earlier discussion of circulation. For a start, it is hard to accept that this type of state employment produces no use value. It is certainly true that government taxation, expenditures and subsidies, the legal code and the organized use of violence are all matters of power. But don't these power activities also affect the organization of production and therefore the creation of use value? Indeed, is there a single historical example of a hierarchical social order without taxation and subsidies, without a legal or other code of conduct, and without the institutional use of force? What evidence do we have – from Neolithic cities, through ancient empires, to feudalism, capitalism and communism – that the production of so-called use value *is at all possible* without these broader institutions of power? And if we accept, as we should, that these institutions do have a use value, then isn't it possible that they also affect exchange values and surplus values?

Although Marxists may deny it, according to their logic the answer must be positive. The impact of these power institutions and processes, just like the impact of financial intermediation and commerce, is inherently differential. State spending and taxes affect not only the overall process of production, but also its minute details. Indeed, this is often their very purpose. And if that is the case, we should expect them also to bear on the value and surplus value associated with *individual* commodities.

To illustrate, take the example of electricity. Taxing coal-fuelled utilities while subsidizing windmills is bound to alter their respective cost and profit structures; this change would likely lead to diverging growth patterns in the generation of electricity; and as these different patterns reverberated throughout the chain of production, the result according to Marx's framework would be to alter the entire pattern of relative values and surplus values. In this sense, the labour involved in planning and administering the taxes and subsidies becomes part of the capitalist production process and therefore potentially a bearer of value and surplus value (we say *potentially* since, in order to create value and surplus value, labour needs to be not only productive, but also subjugated to capitalist authority – an issue with which we deal below).

Similar considerations apply to the law, propaganda, organized violence and other state policies. Regardless of how universal they seem, they all affect the allocation and pattern of societal activities. They alter the progress of science and knowledge, they bear on the choice of techniques, they modify the organization of production (however defined). From a Marxist perspective, therefore, they must be seen as affecting the creation of surplus value – not only in the aggregate, but also in detail. If we are to keep with Marx's own logic, we need to label employees who administer these institutions productive.

Social services

The second state category – made up of social services – is also deemed unproductive. Here, though, the services are considered useful, which means that if

the state were to produce them for profit – for instance, through the third category of government-owned enterprises – the labour involved would become capitalistic and therefore productive of surplus value (Savran and Tonak 1999: 139–40).

Let's examine this proposition with a hypothetical example. Suppose the government decided to 'go private' and instead of financing water services out of taxes on surplus value, sold them for a fee with an eye to making a profit. In order to actually earn this profit, the government would need to either cut the wages paid to water-service employees or otherwise mark up the price of water above its wage cost (which for simplicity we assume to be the only cost). According to the classical Marxist scheme, the first option is impossible since water-service employees, like all workers, are already paid their own value, so any reduction here will push their wages below subsistence. The only avenue therefore is to make the fee (price) higher than the wages.[8]

And here arises the puzzle. The shift from free to fee-based water services alters neither the use value of these services nor the labour producing them, which in turn means that, on its own, the redesignation of these services can create no surplus value. So where does the government profit come from?

One possible source is lower real wages elsewhere in the economy, as workers bear the brunt of the new fees (since consumer prices rise but wages do not). The problem is that such a decline would push these wages below subsistence, again violating the Marxist assumption that workers are always paid their value. The only route is for capitalists to allow overall wages to rise by the difference between the new fees and old taxes, and accept the consequent decline (of an equal amount) in their own profit.

Yet this possibility does not solve the puzzle either. Although the government now acts as a productive, profit-making capitalist for all intents and purposes, its workers are *not* productive of surplus value! Instead, they merely help their employer – in this case, the government – scoop up part of the surplus value produced by capitalists elsewhere in the economy.

What is non-capitalist?

Finally, we should consider, if only briefly, the meaning of *non*-capitalist production. Recall that, according to Marx, labour can be productive only if it is controlled by capitalists. It must be 'directly consumed in the course of production for the valorization of capital' – that is, tied to capital through the wage contract (Marx 1864: 1038). The problem is that, even if we accept that capitalist control is a prerequisite for the creation of value, it is not clear why the only gauge for such control is the wage contract.

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8 The Marxist subsistence wage, of course, is not carved in stone but rather 'socially determined'. This determination, though, is unaffected by our theoretical reclassification of government employees.

To clarify the difficulty, consider LockheedMartin, one of the world's largest military contractors. The owners of LockheedMartin certainly control the work performed by their employees. But don't they also have some impact on the work performed at the U.S. Defense Department, with obvious bearings on their own business? The latter impact may be indirect, but is it smaller than the former? Similarly with the US government. The government controls the employees of its own Defense Department, but doesn't it also control to some extent, through its laws and procurement policies, the employees of LockheedMartin?

The answers to these questions are crucial for the computation of labour values. For, if we accept that government workers are controlled by capitalists at least to some degree, we can no longer treat such workers as unproductive. And likewise, but in reverse, with privately employed workers: if we concede that they are not entirely controlled by capitalists, perhaps we should no longer treat them as strictly productive.

We can go on with such examples and queries, but by now the problem should be clear. There is no objective way to separate 'production' in general – and the sphere of 'capitalist production' in particular – from other forms of social reproduction. Consequently, the notion that surplus value and accumulation are rooted exclusively in this sphere has no definite meaning. Any theory of capital based on such an assumption becomes unbounded and impossible to implement.

A qualitative value theory?

Taken together, the challenges to the labour theory of value seem insurmountable. To recap, the theory depends on an objective definition of productive labour that is impossible to devise. It faces a trying dilemma of having to choose between logical consistency and meaningful explanation. It is inherently partial in that it recognizes but is unable to theorize the role of factors other than labour. And it is analytically and empirically impenetrable since labour values cannot be conceived and observed in the first place.

The retreat

With this onslaught of criticisms, many Marxists have chosen to retreat to the so-called qualitative labour theory of value. 'While the idea of value as an accounting tool or as an empirically observable magnitude plainly had to be abandoned', conceded David Harvey (1982: 36), 'it could still be treated as a "real phenomena with concrete effects". . . . It could be constructed as the "essence" that lay behind the "appearance", the "social reality" behind the fetishism of everyday life'.

This retreat isn't new. It had already begun with Engels' 'Law of Value and Rate of Profit' (1894), which defended the labour theory of value on historical rather than analytical grounds and gave rise to the 'value epoch' debate;

it continued with Hilferding's (1904) reply to Böhm-Bawerk, which emphasized Marx's 'conceptual revolution' while downplaying its quantitative shortcomings; and it received its seal of approval from Sweezy (1942: Ch. 7), who claimed that the qualitative implications of the theory are logically separate from its quantitative assertions.

The labour theory of value, Sweezy argued, is not essential for understanding the price structure of capitalism – a structure far better explained by bourgeois economics. But this quantitative deficiency, he continued, in no way undermines the qualitative significance of the theory. The notion of labour value, even if quantitatively flawed, is still essential to dialectically demystify the economy. It has the indispensable role of reminding us of exploitation, and that the only source of profit is unpaid labour.

And so developed a large literature focused exclusively on the qualitative nature of accumulation. The hallmark of this literature is its selectivity: it discards the quantitative conclusions of the theory while upholding its concepts. Labour value and surplus value, even if quantitatively meaningless, are nonetheless taken as a solid starting point for qualitative analysis. Armed with these truncated concepts, the qualitative theorist then proceeds to examine the many features and processes of capitalism – from the restructuring of production and class conflict, through alienation and the institutions of power, to the business ethos, political organization and the dynamics of culture, among others.

Very few Marxists see anything wrong with exclusively qualitative analyses. Most feel that removing Marx's quantitative theory leaves much of his broader conclusions and insights intact, if not enhanced (a claim laboured by Hodgson 1982). Some believe that the whole quantitative/qualitative debate has been misconceived, premised on the erroneous notion that Marx was trying to create a critical political economy 'intended to operationalize the law of value in order to explain the workings of the market' (Postone 1993: 133). And others take this point even further, arguing that Marx's isn't really a labour theory of value but rather a 'value theory of labour' (Elson 1979).

Marx's science

Needless to say, we do not find these arguments persuasive. The notion that Marx was concerned with the qualitative rather than quantitative aspects of capitalism seems to us apologetic and unfounded. More significantly, in our view the belief that his theory of capitalism – or any theory of capitalism for that matter – could be fractured into two *independent* subsets leads to a dead end.

Begin with the issue of Marx's emphasis. His work was certainly a critique of capitalist ideology. But it was much more than that. Marx tried to create an *alternative science*, a framework that could replace both bourgeois political economy and the positivist social management of Auguste Comte. This scheme stood on two main foundations. One was a dialectical history that

provided the basis for revolutionary consciousness. The other was a value theory that broke the front window of prices and offered a starting point for future democratic planning.

It is perhaps worth reminding ourselves that, unlike today, science was still highly rated in the nineteenth century. Marx followed Hegel in viewing the rise of science as part of the broader development of history. But that view never led him to treat science merely as a matter of fashion and power. He truly believed he could create a *new* science, one that would both debunk conventional political economy and explain the reality of capitalism.

The task was revolutionary, and revolutions cannot be achieved by mere critiques. Einstein transcended Newtonian physics partly by questioning its epistemology, but mostly by inventing a new one. And the same is true for Marx. To challenge bourgeois economics he needed to construct an alternative capitalist reality, and this new episteme required a different theory of prices. To argue that Marx was not concerned with prices is to argue that his key theses about capitalist development – including the tendency of the rate of profit to fall, the immiseration of the proletariat and the tendency of capitalism to generate recurrent profitability crises – were meaningless gibberish. These tendencies can be expressed *only* in terms of price ratios. To theorize them is to theorize prices, and that is precisely what Marx and many of his followers tried to do.

Indeed, for the nineteenth-century intelligentsia, the magic of Marxism lay precisely in the novelty of its scientific structure. Its historical laws of motion seemed as inevitable as the movement of the stars, pushing capitalism toward change, crisis and imminent collapse. Even with the advent of Leninism, when determinism was partly sacrificed in favour of political vitality and party discipline, the thirst for quantitative analysis remained unquenched. In this sense, the Bolshevik apparatus, particularly Lenin and the Comintern, calculated their historical moves just like today's financial strategists, trying to time the coming economic crash and the best entry point for their 'world revolution'. For this purpose, Lenin employed experts such as Nikolai Kondratieff, whose long-term technical analyses (denominated in prices, by the way) were supposed to identify the opportune moment (1926; 1928). Stalin executed Kondratieff and gave his job to Eugen Varga (1935). The latter, coming to his senses, ended up in a gulag. But the quest for the quantitative magic bullet has remained strong, as evident from the long-wave analyses of contemporary Marxists such as Ernest Mandel (1995).

The fact that Marx erred in trying to anchor prices specifically and somewhat mechanically in labour values is secondary. It certainly requires no cover-up or apology. Many eighteenth- and nineteenth-century physicists now seem dated, if not irrelevant. Yet, without their breakthroughs physics would not be where it is today. The same is true for Marx's labour theory of value. It was the first theory to put the study of society on a *systematic* footing. Had it not been for the stifling influence of the Soviet Union, the spirit of that theory would likely have kept Marxism a vibrant science.

Quality without quantity?

And here we come to the second and more fundamental point – the notion that we can somehow disconnect the quantitative and qualitative aspects of capitalism, and then discard the former and keep the latter. This path betrays a deep misunderstanding of the subject of inquiry. To study the rationalist order of capitalism without quantities is like studying feudalism without religion, or physics without mathematics. According to Marx, and here he was right on the mark, capitalism, by its very nature, seeks to turn quality into quantity, to objectify and reify social relations as if they were natural and unassailable. In this sense, a qualitative theory of value *necessarily implies* a quantitative theory of value; it means a society not only obsessed with numbers, but *actually shaped and organized by numbers*. This organization is the architecture of capitalist power. To understand capitalism therefore is to decipher the link between quality and quantity, to reduce the multifaceted nature of social power to the universal appearance of capital accumulation. The two aspects of the theory rise and fall together. If one is proven wrong, so is the other.

The question, therefore, is not which aspect of value to emphasize, but what the *basis* of value should be in the first place. The neoclassicists base their value theory on the util, whereas Marxists base it on abstract labour. As we shall see in the next chapter, these elementary particles are deeply problematic. And it is these insoluble difficulties that make both the utility and labour theories of value impossible to salvage.

8 Accumulation of what?

> *Una fides, pondus, mensura sit idem Et status illaesus totius orbis erit* – Let there be one single faith, weight and measure, and the world shall be free from harm.
>
> —Guillaume Budé (1468–1540)

> His labor took him about one minute to learn.
>
> —Upton Sinclair, *The Jungle*

Physicists commonly speak of five *fundamental quantities*: distance, time, mass, electrical charge and heat. These quantities are fundamental in the sense that every other physical quantity can be derived from them. Velocity is distance divided by time; acceleration is the time derivative of velocity; force is mass multiplied by acceleration; etc. The *elementary particles* of the physical world – be they electrons, quarks, taus, positrons or strings – as well as the relationships between them and the larger structures to which they give rise – are all characterized by these fundamental quantities.[1]

Political economy pretends to mimic this structure. Here, too, we have elementary particles: the neoclassical util and the Marxist abstract labour. Presumably, these are the basic particles that all higher entities of production, consumption and wealth are made of and can be reduced to. But there is a difference. As we shall see in this chapter, unlike the elementary particles of physics, utils and abstract labour are *not* counted in terms of fundamental quantities. On the contrary, their quantitative dimensions are derived from production, consumption and wealth; that is, they are *deduced from the very phenomena they are supposed to explain*. And as if to make a bad situation worse, even this reverse derivation is problematic, not to say impossible, since the assumptions it is based on are patently false.

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1 There is a debate on whether all five quantities are in fact 'fundamental', and indeed on the very existence of 'fundamental' quantities to begin with (see for instance Laughlin 2005). But these deeper questions need not concern us here.

These considerations serve to further deepen the enigma of capital. We have already seen that political economists find it difficult to theorize *why* capital accumulates. The measurement riddle shows that they don't even know *what* gets accumulated.

What gets accumulated?

To a lay person, the question may seem simple to answer: money. Capitalists accumulate when they grow richer; they decumulate when they become poorer. And that is certainly true, but not entirely. To see what is missing, suppose that the actual holdings of a capitalist haven't changed but that their prices have all risen by 10 per cent, thus making him 10 per cent richer. Now assume further that the overall price level – measured by the GDP price deflator – has also grown at the same rate of 10 per cent, so that the 'amount' of commodities the capitalist can buy with his assets remains the same. The capitalist has certainly accumulated in nominal terms, but this increase was merely a price phenomenon. Since the process has affected neither the 'productive capacity' of his assets nor their 'purchasing power', from a material perspective he has ended right where he started. For this reason, political economists – conservative and critical alike – insist that when measuring accumulation we ignore the price of capital and concentrate only on its material, or 'real', quantity.

There is, of course, nothing very unusual about this insistence. After all, political economy is concerned primarily with material processes, so it seems only sensible that the same emphasis should apply to capital. The only problem is that in order to focus on 'real' quantities, we first have to separate them from prices; and surprising at it may sound, in general the two *cannot* be separated.

Separating quantity from price

To understand the difficulty, let's put aside the theory for a moment and look at what the statisticians do. Their procedure is straightforward: they assume that the dollar market value of any basket of commodities (MV) is equal to its 'real' quantity (Q) times its unit price (P), and then they rearrange the equation. Symbolically, they start from:

1. $MV = Q \times P$

Which is equivalent to:

2. $Q = \frac{MV}{P}$

These formulae are taken to be completely general. They apply to any basket of commodities at any point in time – from the contents of a supermarket cart

pushed by a London shopper in 2008, to the annual output of the Chinese economy in 2000, to the global stock of 'capital goods' in 1820. Given data on the market value and price of any set of commodities, calculating its 'real' quantity and growth rate is a simple matter of plugging in the numbers and computing the results.

To illustrate, suppose the U.S. Bureau of Economic Analysis wishes to calculate the 'real' rate of accumulation in the automobile industry from 1990 to 2000. The statisticians know that, over the decade, the market value (at replacement cost) of the industry's capital stock (MV) grew by 93 per cent and that 17 per cent of that increase was due to a rise in unit price (P). Based on these data, the statisticians can easily tell us that the 'real' rate of accumulation – measured by the rate of growth of Q – was 65 per cent ($1.93 / 1.17 - 1 \approx 0.65$).[2]

A clean, simple computation, no doubt, only that it never works.

The failure is as general as the formulas. The calculation fails with 'capital goods', just as it fails with GDP, private consumption, gross investment or any other collection of heterogeneous commodities. And the reason is embarrassingly simple. Equation (2) above tells us that in order to compute the quantity we first need to know the price. What it doesn't say is that in order to know the price we first need to know the quantity. . . .

To see the circularity, consider the following facts. An automotive factory is made of many different tools, machines and structures. Over time, the nature of these items tends to change. They may take less time and effort to produce; they may become more or less 'productive' due to technical improvement and wear and tear; their composition may change with new machines replacing older ones; they may be used to produce different and even entirely new output; etc. The result of these many changes is that today's automobile factories are *not the same* as yesterday's, or as last year's. The price index of automobile factories, however, is supposed to track, over time, the price of the *very same* factories. The obvious question, then, is: 'How can such an index be computed when the underlying factories – the "things" whose price the index is supposed to measure – keep changing from one year to the next?'

Clearly, in order to measure the price of capital – or of any other collection of different commodities – we must first denominate its underlying 'substance' in some homogenous units. And here we come to the Cartesian 'crux of the matter'. Like Heraclitus, we face the permanent flux of an ever-changing capital stock. Yet, in the spirit of Parmenides, we cannot accept this flux since we need an eternally stable entity to price. And so we fall back on the compromise position of Democritus. According to this compromise,

2 The data in this example pertain to the 'net stock of private fixed assets' in the sector defined as 'motor vehicles, bodies and trailers, and parts'; they are taken from the Fixed Asset Tables of the U.S. Bureau of Economic Analysis.

capitalist phenomena indeed are ever-changing – but this permanent shift is merely the rearrangement of the capitalist *atoma*. What the naked eye sees as a maelstrom of different commodities, the political economist interprets as the reshuffling of identical, irreducible particles.

For the neoclassicists, the common substance of commodities is the 'utils' they generate.[3] Like any other set of commodities, a collection of machines, factories and structures may be heterogeneous and constantly changing. But no matter how varied and variable its components, say the neoclassicists, they can all be reduced to 'standard efficiency units', elementary particles of productive capacity counted in terms of the utility they create. In this way, an automobile factory capable of producing 1,000 utils is equivalent to two factories each producing 500 utils. As factories change over time, we can simply measure their changing 'magnitude' in terms of their greater or lesser util-generating capacity.

In contrast to the neoclassicists, Marx approached the problem from the input side, arguing that capital, like any other commodity, could be quantified in terms of the socially necessary abstract labour required to produce it. So if we begin with an automotive factory that takes, on average, 10 million hours of abstract labour to construct, and add to it another factory that takes, on average, only 5 million hours to build, we end up with an aggregate capital whose 'magnitude' is equivalent to 15 million hours of abstract labour.

These brave reductions, though, do not help us in the least. In fact, they are totally redundant. After all, had we known the 'util productivity' or 'abstract labour contents' of capital, this knowledge would already tell us its 'real' magnitude, making the whole statistical exercise unnecessary. . . .

Quantifying utility

Let the price tell all

The neoclassical notion of universal utility got off to a bad start.[4] The initial proclamations were decidedly optimistic. In the eighteenth century, mathematician Daniel Bernoulli stated that 'people with common sense evaluate money in proportion to the utility they can obtain from it' and went ahead to build on this conviction the quantitative law of diminishing marginal utility (Bernoulli 1738: 33). In the nineteenth century, Philosophical Radical Jeremy Bentham promised his adherents that, in the utilitarian calculus of pleasure and pain, 'Prejudice apart, the game of push-pin is of equal value with the arts and sciences of music and poetry' (1825: Book 3, Ch. 1). He was also convinced that utility could be compared *between* individuals, though he never bothered to indicate how.

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3 The term 'util' was coined by Irving Fisher in his doctoral dissertation (1892: 18).

4 For a sympathetic history of utility theory, see Stigler (1950).

The early neoclassicists, however, weren't nearly as sanguine. Cooled down by the less egalitarian John Stuart Mill, they didn't like the idea of interpersonal comparisons (which implied that society could benefit from greater income equality). But their doubts went deeper. They didn't think the 'quantity of pleasure' from a game of pushpin could be compared to that of music and poetry. In fact, they admitted quite openly that universal utility is impossible to measure and, indeed, difficult to even fathom. The interesting thing, though, is that this recognition did not deter them in the least. 'If you cannot measure, measure anyhow,' complained their in-house critic Frank Knight (quoted in Bernstein 1996: 219). Although the neoclassicists conceded that utility is unquantifiable, they went ahead to build their entire science of 'economics' on the util, an unquantifiable unit. In hindsight, it is hard to think of a more fitting beginning for a successful religion.

In his discussion of utility, Francis Edgeworth, one of the early mathematical economists, admitted that these 'atoms of pleasure' do present 'peculiar difficulties'. Like the invisible Ether, 'they are not easy to distinguish and discern; more continuous than sand, more discreet than liquid; as it were nuclei of the just-perceivable, embedded in circumambient semi-consciousness'. But not to worry:

> We cannot count the golden sands of life; we cannot number the 'innumerable smile' of seas of love; but we seem to be capable of observing that there is here a greater, there a less, multitude of pleasure units, mass of happiness; and that is enough.
>
> (Edgeworth 1881: 8–9)

In fact, Edgeworth was so enthralled with the prospect of quantifying the semi-conscious that he offered to build a 'hedonimeter' that would continuously register 'the height of pleasure experienced by an individual' (ibid.: 101).[5] And Edgeworth wasn't alone in disregarding the odds. His contemporary, Stanley Jevons, was equally ardent:

> A unit of pleasure or pain is *difficult even to conceive*; but it is the amount of these feelings which is continually promoting us to buying and selling, borrowing and lending, labouring and resting, producing and consuming; and *it is from the quantitative effects of the feelings that we must estimate their comparative amounts*.
>
> (Jevons 1871: 11, emphases added)

Jevons' last sentence here should strike a chord with neoclassicists. It justifies a logical U-turn that Paul Samuelson would later call 'revealed preferences' (Samuelson 1938). The reason for the U-turn is simple. We cannot measure

5 On the early quest for measurable utility, see Colander (2007).

the utility that drives behaviour, but there is always the option of going in reverse. All it takes is to examine actual behaviour ('the quantitative effects of the feelings') and then *assume* that, in a perfectly competitive equilibrium, this behaviour 'reveals' the underlying relative utilities ('comparative amounts').

And so arose the infamous neoclassical circularity: '*Utility* is the quality in commodities that makes individuals want to buy them, and the fact that individuals want to buy commodities shows that they have *utility*' (Robinson 1962: 48, original emphases). This circularity, though, operates only at the theoretical level. At the practical level, neoclassicists go in one direction only: from the phenomena to utility. And the phenomenon they find most revealing is price:

> Utility is taken to be correlative to Desire or Want. It has been already argued that desires cannot be measured directly, but only indirectly, by the outward phenomena to which they give rise: and that *in those cases with which economics is chiefly concerned the measure is found in the price which a person is willing to pay for the fulfilment or satisfaction of his desire*.
>
> (Marshall 1920: 78, emphasis added)

And so the path was laid out, and the laity followed – only to find in the end what it assumed in the beginning.

Finding equilibrium

Let's trace this path. We'll use the example of *Energy User-Producer, Inc.*, a hypothetical corporation that owns two types of assets: automotive factories and oil rigs. The company engages in building, acquiring and selling these assets, so over time their numbers change (for simplicity, we assume that the factories and rigs themselves are of the same type and do not change over time, an assumption that we relax in our discussion of hedonic regression below).

The bottom part of Figure 8.1 shows the historical evolution of the firm's holdings. We can see that in 1970 it owned 33 automotive factories and 20 oil rigs, and that in subsequent years the former number declined, reaching 15 in 2007, while the latter rose to 47 (since this is a hypothetical corporation, the number of factories and rigs is concocted out of thin air, but the same logic would apply had we used actual numbers).

It is easy to calculate the company's dollar market value for any year t. We simply take the number and price of the automotive factories it owns in that year (denoted by $N1_t$ and $P1_t$, respectively) together with the number and price of its oil rigs ($N2_t$ and $P2_t$) and plug them into the following expression:

3. $$MV_t = N1_t \times P1_t + N2_t \times P2_t$$

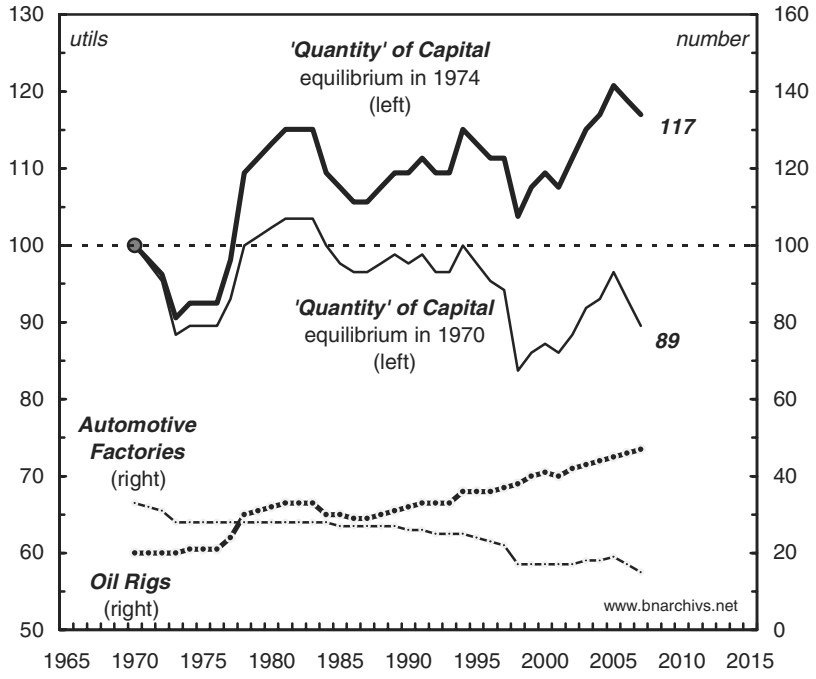

Figure 8.1 Energy User-Producer, Inc.

Note: The number of automotive factories and oil rigs is hypothetical. The 'quantity' of capital with a 1970 equilibrium assumes that the 'util-generating capacities' of an automotive factory and an oil rig have a ratio of 2:1, while the 'quantity' of capital with a 1974 equilibrium assumes that the ratio is 1:1.

For instance, if in 1970 an automotive factory cost $40 million and an oil rig $20 million, the company's 33 factories and 20 oil rigs would be worth $1.72 billion:

4. $\$1.72\ bn = 33 \times \$40\ mn + 20 \times \$20\ mn$

Now, assume that 1970 was a year of perfectly competitive equilibrium. According to the neoclassical scriptures, this happy situation means that the 2:1 ratio between the price of automotive factories and oil rigs 'reveals' to us their relative efficiencies. It tells us that automotive factories generate twice the universal utils as an oil rig. With this assumption, we can then use Equation (5) to compute the overall 'quantity' of capital (Q) owned by *Energy User-Producer, Inc.* for any year t:[6]

6 This computation contains an important caveat that must be noted. According to neoclassical theory, the equilibrium price ratio is proportionate to the relative efficiencies of the *marginal* automotive factory and oil rig, but that isn't enough for our purpose here. In order to compute the overall 'quantity' of capital, we need to know the relative efficiencies of the

5. $Q_t = N1_t \times \$40\ mn + N2_t \times \$20\ mn$

The results, normalized to $Q_{1970} = 100$, are depicted by the thin line in the upper part of Figure 8.1.[7] We can see that the increase in the number of the presumably less productive oil rigs was more than offset by the decline in the number of the presumably more productive automotive factories. As a result, the overall 'quantity' of capital fell by 11 per cent throughout the period.

Of course, there is no particular reason to assume that 1970 was a year of perfectly competitively equilibrium. Any other year could do equally well. So, for argument's sake, let us pick 1974 as our equilibrium year and see what it means for the computations.

Many things happened between 1970 and 1974. The most important for our purpose were probably the threefold rise in the price of crude oil and the accompanying increase in the price of energy-producing equipment, including oil rigs. So, for the sake of illustration, let us assume that, by 1974, the price of oil rigs doubled to $40 million, while the price of automotive factories remained unchanged at $40 million. Now, since these are equilibrium prices, the 'revealed' efficiency ratio between automotive factories and oil rigs must be 1:1 (as opposed to 2:1 in a 1970 equilibrium). To compute the 'quantity' of capital owned by *Energy User-Producer Inc.*, we would now use Equation (6):

6. $Q_t = N1_t \times \$40\ mn + N2_t \times \$40\ mn$

The results of this computation, again normalized to $Q_{1970} = 100$, are plotted by the thick line in the upper portion of Figure 8.1. The difference from the previous calculations is striking: whereas equilibrium in 1970 implies an 11 per cent fall in the 'quantity' of capital, equilibrium in 1974 shows a 17 per cent increase. The reason for this divergence is that, compared with the first assumption, the 'relative efficiency' of oil rigs is assumed to be twice as large, with the result that each additional oil rig adds to the aggregate util-generating capacity double what it did before.

So now we have a dilemma. Since we are dealing with the same collection of capital goods, obviously only one of these 'quantity' series can be correct –

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average factory and rig, and that latter information is *not* revealed by prices. Neoclassical manuals tell us that the average and marginal efficiencies are generally different, and that save for special assumptions there is no way to impute one from the other. This discrepancy is assumed away by the national account statisticians. The standard practice – which we follow here for the sake of simplicity – is to take equilibrium prices as revealing average efficiencies and utilities. This bypass enables the measurement of 'real' quantities, at a minor cost of making the result more or less meaningless.

7 A 'normalized' series is calibrated to make its value equal to a given number in a particular 'base year' (in this case, 100 in the base year 1970). To achieve this calibration, we simply divide every observation in the series by the value of the series in the base year and multiply the result by 100 (so the normalized series = $Q_t / Q_{1970} \times 100$). The absolute magnitudes of the observations change, but since all the observations are divided and multiplied by the same numbers, their magnitudes *relative* to each other remain unaltered.

but which one? To answer this simple question all we need to know is in which of the two years – 1970 or 1974 – the world was in perfectly competitive equilibrium. The embarrassing truth, though, is that no one can tell.

The consequence of this inability is dire. Depending on the year at which prices were in equilibrium, the divergence between the two measures in Figure 8.1 could be much bigger or much smaller, only that we would never know it. Moreover, the predicament goes beyond capital goods. It applies to *any* heterogeneous basket of commodities, and it grows more intractable the more encompassing the aggregation.

Neoclassical theorists love to assume the problem away by stipulating a world that simply leaps from one equilibrium to the next. In our illustration, this assumption would make both 1970 and 1974 equilibrium years, eliminating the difficulty before it even arose.

Unfortunately, though, this assumption doesn't serve the statisticians. The reason is that, with ongoing equilibrium, all 'pure' price changes – i.e. changes that do not correspond to alterations of the commodity – must be attributed to variations in technology or tastes; yet, if tastes keep changing, we lose the basis for temporal comparisons. With consumer preferences having shifted, the same automotive factory may represent in 1974 a different 'util generating capacity' than it did in 1970; similarly, an increase in the number of rigs may denote a decrease as well as an increase in their 'util generating capacity', all depending on the jerky desires of consumers. So once the util dimensions of commodities are no longer fixed, we lose our benchmark and can no longer talk about their 'real' quantities.

Therefore, here the statisticians part ways with the theoreticians. They assume, usually implicitly, that equilibrium occurs only infrequently. And then they convince themselves that they can somehow identify these special points of equilibrium, even though there is nothing in neoclassical manuals to tell them how to do so.

Quantity without equilibrium

Elusive equilibrium is devastating for measurement. Consider again our example of oil rigs and automotive factories. The first produce energy and the second use it, so their relative prices depend crucially on the global political economy of the Middle East, home to two thirds of the world's known oil reserves and one third of its daily output. The difficulty for the statisticians is that this region, with its complex power conflicts between large corporate alliances, regional governments, religious movements and superpowers, never settles into a perfectly competitive equilibrium; but if so, how can we use the relative prices of oil rigs and automotive factories as a measure of their relative 'quantities'?

And the problem is hardly unique to oil rigs and automotive factories. Indeed, given that the entire world is criss-crossed by huge corporate alliances, complex government formations, contending social groups, mass

persuasion, extensive coercion and the frequent use of violence, how can any market ever be in equilibrium? And if that is the case, what then is left of our attempt to quantify the 'capital stock' or any 'real' magnitude?

The statisticians try to assume the problem away by mentioning it as little as possible. The most recent UN guidelines on the system of national accounts, published in 1993, contain only ten instances of the word 'equilibrium', none of which appear in Section XVI on Price and Volume Measures, while the word 'disequilibrium' is not mentioned even once in the entire manual (United Nations. Department of Economic and Social Affairs 1993). The more recent OECD document on *Measuring Capital* (2001) no longer refers to either concept.

Fortunately, an earlier version of the UN national account guidelines, published in 1977, before the victory of neoliberalism, was not as tight-lipped. This older version provides occasional advice on how to deal with unfortunate 'imperfections', so we can at least get a glimpse of how the statisticians conceive the problem. One 'special case of difficulty' identified here is internal, or non-arm's length, transactions between related enterprises or branches of the same company. Since transfer prices set under these conditions may be 'quite arbitrary', to use the UN's wording, the advice is to 'abandon value [meaning price] as one of the primary measures' and replace it with a 'measure of physical quantity' combined with an estimate of 'what the equivalent market price would have been' (United Nations. Department of Economic and Social Affairs 1977: 12). Needless to say, the authors do not explain why we would need prices if we already knew the physical measures. They are also silent on where we could find 'equivalent' market prices in a world where all markets have already been contaminated by power.

Another challenge is the repeated need to 'splice' different price series when a new product (say an MP3 player) replaces an older one (a CD player). Since the splicing involves a price comparison of two different objects, the guidelines recommend that the replacement 'should take place at a time when the assumption that the price differences between the two products are proportional to the quality differences is most likely to be true' (p. 10). In short, splice only in equilibrium. But since nobody knows when that happens (if ever), the guidelines concede that, in practice, the decision 'must be essentially pragmatic' – that is, arbitrary.

The impossibility of equilibrium blurs the very meaning of 'well-being' – and therefore of the underlying substance that utils supposedly measure. The neoclassical conception of well-being is anchored in the 'sovereign consumer', but how can we fathom this individual sovereign in a world characterized by conflict, power, compulsion and brain-washing? How many consumers can remain 'autonomous' under such conditions? And if they are not 'autonomous', who is in the driver's seat? Henry Ford is reputed to have said that, 'If I'd asked people what they wanted, they would have asked for a faster horse'. But even if we take a less condescending view and assume that consumers do

have some autonomy, how do we separate their authentic needs and wants from falsely induced ones?

These are not nitpicking questions of high theory. The ambiguities here have very practical implications. For example, the national accounts routinely add the value of chemical weapons to that of medicine – this under the assumption that, in perfectly competitive equilibrium, one dollar's worth of the former improves our lives just as much as one dollar's worth of the latter. Consumers, however, do not live under such conditions, and rarely are they asked whether their country should produce chemical weapons, in what quantities or for what purpose. So how do we know that producing such weapons (Bentham's pushpins) indeed makes consumers better off in the first place, let alone better off to an extent *equal to* how well off they would have been had the same dollars been spent on medicine (Bentham's poetry)? Perhaps the production of chemical weapons *undermines* their well-being? And if so, should we not subtract chemical weapons from GDP rather than add them to it?[8]

And it's not like medicine and weapons are in any way special. What should we do, for instance, with items such as private security services, cancerous cigarettes, space stations, poisonous drugs, polluting cars, imbecile television programmes, repetitive advertisements and cosmetic surgery? In the absence of perfectly competitive equilibrium, how do we decide which of these items respond to autonomous wants, which ones help create false needs, and which are simply imposed from above?

Neoclassicists cannot answer these questions. Yet, unless they do, all 'real' measurements of material aggregates – from the flows of the national accounts to the stocks of capital equipment and personal wealth – remain meaningless.[9]

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8 In practice, the 'real' quantity of weaponry is measured in exactly the same way as the 'real' quantity of food or clothing – i.e. by deflating its money value by its price (U.S. Department of Commerce. Bureau of Economic Analysis 2005: 33–35). Presumably, this 'real' quantity represents the nation's happiness from annihilating one enemy multiplied by the number of enemies the weapons can kill (plus the collateral damage). The statisticians are understandably secretive on how they actually determine this utilitarian quantum.

9 Alternative 'green' measures, such as the Index of Sustainable Economic Welfare (ISEW) and the Genuine Progress Indicator (GPI), do not really solve the quantification problem. These measures, pioneered by Herman Daly and John Cobb (1989), try to recalibrate the conventional national accounts for 'externalities' and other considerations. They do so by (1) adding the supposed welfare impact of non-market activities, (2) subtracting the assumed effect of harmful and unsustainable market activities and (3) correcting the resulting measure for income inequalities. Although the aim of these recalibrations is commendable, they remain hostage to the very principles they try to transcend. Not only do they begin with conventional national accounting as raw data, but their subsequent additions and subtractions accept the equilibrium assumptions, logic and imputations of utilitarian accounting (for a recent overview of 'green accounting', see Talberth, Cobb, and Slattery 2007).

Hedonic regression

The final nail in the neoclassical measurement coffin is the inability to separate changes in price from changes in quality. The gist of the problem is simple. Even if we could do the impossible and somehow measure relative quantities at any given point in time, as time passes the 'things' we measure are themselves changing.

In our example of *Energy User-Producer, Inc.*, we assumed that the automotive factories and oil rigs remained the same over time and that only their number changed. But in practice this is rarely if ever the case, and the implications for measurement are devastating.

To illustrate the consequences, suppose an oil rig made in 1984 cost 40 per cent more than one made in 1974. Assume further that the new rig is different than the old one, having been altered in order to make it more productive. From a neoclassical perspective the higher price is at least partly due to the new rig's greater 'quantity' of capital. The question is how big are the respective effects? What part of the increase represents the augmented quantity and what part is a 'pure' price change?

As the reader must realize by now, the simple answer is that we do not know and, indeed, cannot know. The statisticians, though, again are forced to pretend. Since the measured items are constantly being transformed, they need to be, again and again, reduced back to their universal units, however fictitious.

Luckily (or maybe not so luckily), neoclassical theorists have come up with a standard procedure for this very purpose, fittingly nicknamed 'hedonic regression'. The idea was first floated in the late 1930s and had a long gestation period. But since the 1990s, with the advance of cheap computing, it has spread rapidly and is now commonly used by most national statistical services.[10]

How would a statistician use this procedure to estimate the changing quantity of the oil rig in the above example? Typically, she would begin by specifying the rig's underlying 'characteristics', such as size, capacity, weight, durability, safety, and so on. Next, she would regress variations in the price of the rig against observed changes in these different characteristics and against time (or a constant in cross-section studies); the estimated coefficient associated with each characteristic would then be taken as the weight of that characteristic in the 'true' quantity change of the rig, while the time coefficient (or constant) would correspond to the 'pure' price change. Finally,

10 For early studies on the subject, see Court (1939), Ulmer (1949), Stone (1956) and Lancaster (1971). Later collections and reviews include Griliches (1971), Berndt and Triplett (1990), Boskin *et al.* (1996), Banzhaf (2001) and Moulton (2001). For a critical assessment, see Nitzan (1989).

she would decompose the observed price change into two parts, one reflecting the increased quantity of capital and the other reflecting pure price change.[11]

Hedonic regressions are particularly convenient since they cannot be 'tested', at least not in the conventional econometric sense. Standard econometric models are customary judged based on their overall 'explanatory power' measured by such statistics as R^2 or F-tests, on the 'significance' of their coefficients indicated by t-statistics and on other bureaucratic criteria. Hedonic regressions are different. These models do not try simply to explain variations in price by variations in the commodity characteristics. Rather, their purpose is to decompose the overall variations in price into two parts – one attributed to changes in characteristics and a residual interpreted as a 'pure' price change. However, since there is no a priori reason to expect one part to be bigger than the other, we have to accept whatever the empirical estimates tell us. If changes in characteristics happen to account for 95 per cent of the price variations, then the 'pure' price change must be 5 per cent. And if the results are the opposite, then the 'pure' price change must be 95 per cent.

This peculiar situation makes hedonic computations meaningful only under very stringent conditions. First, the characteristics that the statistician enumerates in her model must be the ones, and the only ones, that define the items' 'quality' (so that we can neither omit from nor add to the list of specified characteristics). Second, the statistician must use the 'correct' regression model (for instance, she must know with certainty that the 'true' model is linear rather than log-linear or exponential). And last but not least, the world to which she applies this regression must be in a state of perfectly competitive equilibrium, and the 'economic agents' of this world must hold their tastes unchanged for the duration of the estimates.

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11 For instance, suppose oil rigs have two characteristics, 'extracting capacity' and 'durability', and that x_1 and x_2 represent the temporal rates of change of these two characteristics, respectively. A simple-minded, cross-section hedonic regression could then look like Equation (1):

1. $p = b_0 + b_1 \mathrm{x}_1 + b_2 x_2 + u,$

where p is the overall rate of change of the price of oil rigs, b_0 is the 'pure' price change, b_1 and b_2 are the respective contributions of changes in 'extracting capacity' and in 'durability' to changes in the 'quantity' of oil rigs, and u is a statistical error term. Now suppose that, based on our statistical estimates, $b_1 = 0.4$ and $b_2 = 0.6$, so that:

2. $p = b_0 + 0.4\, x_1 + 0.6\, x_2$

Next, consider a situation in which 'new and improved' rigs have twice the 'extracting capacity' of older rigs ($x_1 = 2$), the same durability ($x_2 = 0$), and a price tag 40 per cent higher ($p = 0.4$). Plugging these numbers back into Equation (2), we would then conclude that new rigs have 80 per cent more 'quantity of capital' ($0.4 \times 2 + 0.6 \times 0 = 0.8$) and that the pure price change must have been a *negative* 40 per cent ($b_0 = -0.4$).

Now, since the model cannot be tested, these three conditions *must* be true. Otherwise we end up with meaningless results without ever suspecting as much. Sadly, though, the latter outcome is precisely what we end up with in practice: the first two conditions can be true only by miraculous fluke, while the third is a social oxymoron. And since none of the necessary conditions hold, we can safely state that, strictly speaking, all 'real' estimates of a qualitatively changing capital stock are arbitrary and therefore meaningless. Indeed, for that matter every quantitative measure of a qualitatively changing aggregate – including consumption, investment, government expenditure and the GDP itself – is equally bogus. Statements such as 'real GDP has grown by 2.3 per cent' or 'the capital stock has contracted by 0.2 per cent' have no clear meaning. We may see that these stocks and flows are changing, but we cannot say by how much or even in which direction.

Quantifying labour values

Do the Marxists avoid these measurement impossibilities?[12] On the surface, it looks as though they should. In contrast to the neoclassicists whose capital is measured in subjective utility, Marxists claim to be counting it in objective labour units; and so, regardless of how and why capital accumulates, at least its magnitude should be problem free. But it isn't.

Concrete versus abstract labour

According to Marx, the act of labour has two distinct aspects, *concrete* and *abstract*. Concrete labour creates *use value*. Building makes a house, tailoring creates a coat, driving creates transportation, surgery improves health, etc. By contrast, abstract labour creates *value*. Unlike concrete labour which is unique in its characteristics, abstract labour is universal, 'a productive activity of human brains, nerves, and muscles . . . the expenditure of human labour in general . . . the labour-power which, on average, apart from any special development, exists in the organism of every individual' (Marx 1909, Vol. 1: 51).

The key question is how to quantify this abstract labour. In the above quotation Marx uses a 'biological' yardstick. Abstract labour, he says, is the 'activity of human brains, nerves and muscles'. But as it stands, this yardstick is highly problematic, for at least two reasons. First, there is no way to know how much of this 'biological activity' is embodied in the concrete labour of a cotton picker as compared to that of a carpenter or a CEO. Second, and perhaps more importantly, relying on physiology and biology here goes against Marx's own insistence that abstract labour is a *social* category.

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12 As noted, most neo-Marxists have abandoned the labour theory of value. As we shall see at the end of this section, however, the question remains relevant to their inquiry as well.

Marx resolves this problem, almost in passing, by resorting to another distinction – one that he makes between skilled labour and unskilled, or simple, labour. The solution involves two steps. The first step establishes a quantitative equivalence between the two types of labour: 'Skilled labour', Marx says, 'counts only as simple labour intensified, or rather as multiplied simple labour, a given quantity of skilled being considered equal to a greater quantity of simple labour' (ibid.). The second step, a few lines later, ties this equivalence to abstract labour: 'A commodity', he asserts, 'may be the product of the most skilled labour, but its value, by equating it to the product of simple unskilled labour, represents a definite quantity of the latter labour alone'. In other words, abstract labour is equated with unskilled labour, and since skilled labour is merely unskilled labour intensified, we can now express any type of labour in terms of its abstract labour equivalence.

This solution is difficult to accept. The very parity between abstract and unskilled labour seems to contradict Marx's most basic assumption. For Marx, skilled and unskilled labour are two types of *concrete* labour whose characteristics belong to the *qualitative* realm of use value. And yet, here Marx says that labour skills are also related to each other *quantitatively* and that this relationship is the very *basis of value*.

This claim can have two interpretations. One is that objective labour value depends on subjective use value – a possibility that Marx categorically rules out in the first pages of *Das Kapital.* The other interpretation is that there are in fact two types of use value: *subjective use value* in consumption and *objective use value* in production. The first type concerns the relationship between people and commodities; as such, it cannot be quantified and is justly ignored. The second type involves the technical relationship of production and hence is fully measurable. Unfortunately, this latter interpretation isn't convincing either. As we have seen in Chapter 7, it is impossible to objectively delineate the productive process; but, then, how can we hope to objectively measure something that cannot even be delineated?

Value theorists, though, seem to insist that use value in production *can* be measured. So, for argument's sake, let's accept this claim and assume that unskilled labour indeed is a measurable quantum. What would it take to compute how much of this quantum is embedded in commodities?

For this calculation to be feasible, one or both of two conditions must be met.[13] The first condition is satisfied when a commodity is produced entirely by unskilled labour. In this case, all we need to do is count the number of socially necessary hours required to make the commodity. A second condition becomes required if production involves different levels and types of skills. In this case, simple counting is no longer possible, and the theory works only if there exists an objective process by which skilled labour can be converted or reduced to unskilled (abstract) labour. Let us consider each condition in turn.

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13 Note that in and of themselves, these conditions, although required, may be insufficient.

A world of unskilled automatons?

Begin with the first situation, whereby all labour is unskilled. According to Marx, this condition is constantly generated by capitalism, which relentlessly strives to de-humanize, de-skill and simplify labour, to turn live labour into a universal abstraction, a 'purely mechanical activity, hence indifferent to its particular form' (Marx 1857: 297). The abstraction process does not mean that all labour has to be the same. It is rather that capitalism tends to generate and enforce skills that are particularly flexible, easy to acquire and readily transferable. In this sense, abstract labour is not only an analytical category, but a real thing, created and recreated by the very process of capitalist development.[14]

This claim, central to the classical Marxist framework and later bolstered by Harry Braverman's work on *Labor and Monopoly Capital* (1975), elicited considerable controversy, particularly on historical grounds. Workers, pointed out the critics, were forever resisting their subjugation by capital and in reality prevented labour from being simplified to the extremes depicted by Marx (cf. Thompson 1964; for a review, see Elger 1979).[15]

According to Cornelius Castoriadis, Marx's conception of abstract labour was not only historically incorrect, but logically contradictory (1988, Vol. 1: General Introduction). First, if workers indeed were systematically deskilled, degraded and debilitated, asked Castoriadis, how could they possibly become, as Marx repeatedly insisted, historical bearers of socialist revolution and architects of a new society? According to this description, it seems more likely that they'd end up as raw material for a fascist revolution.[16]

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14 'The indifference to the particular kind of labor corresponds to a form of society in which individuals pass with ease from one kind of work to another, which makes it immaterial to them what particular kind of work may fall to their share. . . . This state of affairs has found its highest development in the most modern of bourgeois societies, the United States. It is only here that the abstraction of the category "labor", "labor in general", labor *sans phrase*, the starting point of modern political economy, becomes realized in practice' (Marx 1911: 299). The slaughter-house worker in Upton Sinclair's novel *The Jungle* (1906) needs no more than a minute to learn his job.

15 It is of course true that, over time, the distribution of skills undergoes major shifts, cyclical as well as secular. But a significant portion of these shifts occurs through the training of new workers rather than the quick re-training of existing ones. The rigidity of existing specialization seems obvious for highly skilled workers. Few engineers can readily do the work of accountants, few pilots can just start working as doctors, and few managers can easily replace their computer programmers. Moreover, the rigidity is also true for many so-called blue-collar workers, such as auto mechanics, carpenters, truck drivers and farmers, who could rarely do each other's work.

16 This was a potential that Mussolini, a self-declared student of Lenin and editor of a socialist tabloid, was quick to grasp. George Mosse (2000), whose father owned a tabloid chain in the Weimer Republic, comments in his memoirs that, unlike the socialists, the fascists didn't try to impose on workers their intellectual fantasies of freedom. They understood what workers wanted and gave them exactly what they deserved: entertainment, soccer and a strong hand. The dilemma for socialists was expressed, somewhat tongue in cheek, by George Orwell:

Second, and crucially for our purpose here, according to Castoriadis capitalism *itself* cannot possibly survive the abstraction of labour as argued by Marx. The complexity, dynamism and incessant restructuring of capitalist production required not morons, but thinking agents. If workers were ever to be reduced to automatons, doing everything by the book like Hasek's *The Good Soldier Schweik* (1937), capitalist production would come to a halt in no time.

The foregoing argument does not mean that capitalists do not try to automate their world, only that they cannot afford to *completely* succeed in doing so. In other words, over and above the conflict between capitalists who seek to objectify labour and workers who resist it, there is the inner contradiction of social mechanization itself: the tendency of mechanization to make power inflexible and therefore vulnerable. As we shall see later in the book, social mechanization in capitalism occurs mostly at the level of *ownership*, through the capitalization of power, a process which in turn leaves capitalist *labour* considerable autonomy and qualitative diversity.

Resistance by workers and the richness of their skills are crucial barriers to the measurement of value. Even if a portion of the labour force indeed is 'unskilled' in Marx's sense, few if any commodities are produced solely by such labour. And since most, if not all, labour processes involve some skilled labour, it is obvious that the first condition does not apply. Value cannot be derived simply by counting unskilled hours.[17]

Reducing skilled to unskilled labour

The diversity of labour skills leave us with the second requirement, namely, that there must exist a mechanism to 'reduce' the myriad of skilled labour to

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> If there was hope, it *must* lie in the proles, because only there, in those swarming disregarded masses, eighty-five percent of the population of Oceania, could the force to destroy the Party ever be generated. . . . [The] proles, if only they could somehow become conscious of their own strength, would have no need to conspire. They needed only to rise up and shake themselves like a horse shaking off flies. If they chose they could blow the Party to pieces tomorrow morning. Surely, sooner or later it must occur to them to do that. And yet–!. . . . *Until they become conscious they will never rebel, and until after they have rebelled they cannot become conscious*.
>
> (1948: 69–70, original emphasis)

17 One can sidestep the problem by following Braverman (1975), who distinguished 'manual' labour from 'scientific management' and 'mental work'. The difficulty here is not only in how to draw the line between the two, but also in what to do with the second group (class?). Unless we continue to consider them as workers, the very emergence and growth of this group imply a built-in counter-tendency in capitalism, one in which labour can be simplified and abstracted only by having some of it transformed into 'management' and 'mental' activity – a sort of 'elimination of labour by labour'. Moreover, since this latter type of 'non-manual' activity, whether labour or not, cannot be counted in abstract terms, how do we account for its productive contribution to value and surplus value?

units of unskilled (abstract) labour. According to Marx, this mechanism is both omnipresent and obvious: 'Experience shows that this reduction is constantly being made. . . established by a social process that goes on behind the backs of the producers. . . .' (1909, Vol. 1: 51–52). But in fact the process is anything but trivial.

The starting point of the reduction is the assumption that labour skills are created through spending on education and training, on and off the job. In this sense, 'skilled labour power' is a commodity like any other – i.e. a product of labour. It is produced by the study and training time of the worker himself, as well as by the labour of those who educate and train him. The value that the skill assumes in this process is equivalent to the socially necessary abstract labour time required for the subsistence of the worker, his teachers and trainers throughout the skill-creation process.

Now, skilled labour supposedly creates more value than unskilled labour, and the question is how much more? Marxists have devoted far less attention to this question than it deserves, and, as a result, their take on the subject hasn't changed much since the issue was first examined by Marx and Hilferding.[18]

Marx answered the question from the output side, by pointing to the greater 'physical productivity' of skilled labour. His solution, though, is both circular and incomplete. It is circular insofar as physical productivity can be compared across different commodities only by resorting to prices and wages. This reverse derivation would have us conclude that, given their wage differential, a Pfizer chemist earning $150,000 a year must create 15 times the value of an Intel assembly-line worker whose wage is only $10,000 – a logic that is reminiscent of Gary Becker's (1964) 'human capital' and that Marx rightly would (or at least should) have rejected. The solution is also incomplete because Marx nowhere explains why the additional value-creating capacity of skilled labour should bear any particular relationship to the labour cost of acquiring the skill. The fact that an engineer trains 10 per cent longer does not mean she will create 10 per cent more value; it could also be 1 per cent, 20 per cent or any other number.

An alternative reduction, drawn from the input side, was offered by Hilferding (1904). Skilled labour, he argued, simply transfers its added production time to the commodity it produces. For instance, if it takes the equivalent of 40,000 hours of unskilled labour to teach and train a brain surgeon who performs 20,000 hours of surgery over her working life, then one hour of her skilled labour is equivalent to 3 hours of unskilled labour ((40,000 + 20,000) / 20,000 = 3).

However, this solution too turns out to be open-ended. For our purpose, the most important problem is that Hilferding counts as skill-creating value not the *total* number of hours necessary to create the skill, but only those

18 For a critical assessment of the problematic reduction of skilled to unskilled labour, see Harvey (1985).

hours that the worker or his employer end up *paying* for. And it is here that the bifurcations of political economy and its equilibrium assumptions again come back to haunt us.

Since in reality the 'economy' is neither fully commodified nor separate from 'politics', much of the education and training is *free* – provided by the household, community and government. Moreover, since the 'economy' – however defined – is rarely if ever in a fully-competitive equilibrium, there is no guarantee that the procured education and training are transacted at value.[19]

To complicate things further, note that so far we have taken it as a given that one can actually specify the process of 'producing' the skill. But can we? Although it seems evident that skills are developed through education, on-the-job learning and broader cultural influences, this is a *qualitative* joint process, and therefore one that suffers from the intractable indeterminacies examined in Chapters 6 and 7. Last but not least, there can be no easy agreement on what constitutes unskilled labour at any point in time (should we use as our benchmark a UK high-school graduate, an Indian peasant, or an African bushman?). And if that basic unit cannot be specified, where do we start from?[20]

As a consequence of these difficulties, the Marxists, like the neoclassicists, have ended up without an elementary particle. No one, from Marx onward, has been able to measure the unit of abstract labour, and, with time, fewer and fewer Marxists think it is worth trying. A tiny but dedicated minority continues to work around this handicap, putting much effort and ingenuity into mapping the value structure of capitalist societies without a basic unit of value. But most Marxists, including many who otherwise adhere to the theory's principles, have abandoned this quest. They endorse the liberal methods and data. They use, often without a second thought, the national accounts of growth and inflation, along with their quantitative estimates of the 'capital stock'. They see no problem in deflating nominal values by

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19 In the hypothetical situation that the 'true' value of acquiring the skill happens to be paid for in full, we end up with multiple rates of exploitation whose magnitudes are inversely related to the cost of acquiring the respective skills. This result, which goes counter to Marx's assumption of equalizing tendencies, arises because, for Hilferding, the cost of acquiring the skill acts like constant capital: it merely transfers its own value to the commodity.

20 To avoid some of these difficulties, as well as to account for the important role of labour market segmentation, some writers offered to develop a labour theory of value based on heterogeneous rather than abstract labour (see, for instance, Bowles and Gintis 1977; Steedman 1980). This approach, though, merely substitutes one reduction for another, since we now need to 'translate' the value vector into a price scalar. Others, such as Itoh (1987; 1988) suggested moving in the opposite direction by treating an hour of labour uniformly, regardless of its concrete nature. This latter measurement may be justified from the point of view of the worker, though the analytical implication is that we can no longer use labour values to explain capitalist prices and accumulation.

hedonic price indices to obtain 'real' quantities, or in using equilibrium-based econometrics to draw dialectical conclusions. Their voice is still Marx's, but their hands have long been those of the hedonists.[21]

The retreat from labour in favour of hedonic accounting serves to dilute and blur the basic concepts of Marxism. Without 'abstract labour', there can be no 'labour values' and therefore no way to define, let alone measure, 'surplus value' and 'exploitation'. And with these basic concepts thrown into question, their *negations* too become suspect. Neo-Marxists like to highlight the deviations of 'monopoly capitalism' (Sweezy 1942; Baran and Sweezy 1966), 'unequal exchange' (Emmanuel 1972) and the 'smoke and mirrors' of 'accumulation by dispossession' (Harvey 2004) from Marx's 'expanded reproduction' under the 'law of value'. But since this law has no units in which to be denominated (leaving aside its other problems), it isn't clear what exactly these new social formations deviate *from*.

Needless to say, no amount of neoclassical data on 'real' growth and accumulation can undo this gridlock. Marxists cannot hope to save their method by banking on the very logic they try to undo. They will simply sink deeper into the quicksands of utilitarian impossibilities.

A clean slate

Is there a way out of these circularities and contradictions? In our view, the answer is yes – but not within the existing framework of political economy. This framework identifies the quantitative 'essence' of capital with the *material* sphere of production and consumption, and that assumption makes its problems insoluble. Utils and abstract labour – even if they did exist in some sense – do not have fundamental quantities that can be measured. They therefore have to be derived in reverse, from the very phenomena they try to explain. And even this inverted derivation falls apart, because it is built on assumptions that are patently false if not logically contradictory.

What we need, then, is not a revision, but a *radical* change. We need to develop a new political economy based on new methods, new categories and new units. Our own notion of capital as power offers such a beginning.

21 Even Shaikh and Tonak (1994), who have tried to devise specifically Marxist national accounts, ended up employing a neoclassical price index in order to convert 'nominal' measures of output to their 'real' counterparts (Appendix J).

Part III
Capitalization

9 Capitalization
A brief anthropology

> It is not the consciousness of men that determines their being, but, on the contrary, their social being that determines their consciousness.
>
> —Karl Marx, *Preface to A Contribution to the Critique of Political Economy*

> The size of my chequebook and the content of my pockets do not determine my social consciousness.
>
> —Tokyo Sexwale, South African political prisoner-cum-business tycoon

Utility, abstract labour, or the *nomos*?

When Milton Friedman claims that 'there is no such thing as a free lunch', he echoes Antoine Lavoisier, the eighteenth-century French tax-farmer-cum-chemist who invented the Law of Conservation of Matter. Burnt carbon produces a new substance – carbon dioxide – but according to Lavoisier there was nothing miraculous about this transformation. The reaction can be achieved only by adding oxygen to the carbon. And when the combustion takes place in a sealed container, the new substance has a mass equal that of its ingredients. Your lunch always has to come from somewhere.

The theory was not concocted in a vacuum. Lavoisier's patron, Louis XVI, was strapped for cash, and the resourceful chemist was looking for ways to shore up the monarch's finances. His idea: surround Paris with a high wall to create a sealed container in which individual incomes could be partly converted into crown revenues. The plan was only partly successful. The wall certainly was tight enough to trap much of the city's taxable income, to the joy of the vigilant collectors. But it was also loathed enough to have Lavoisier's head lost to the revolutionary guillotine and the wall to the Parisian mob. The underlying principle of conservation, though, remained intact. It soon became the foundation stone of modern science, spreading to other physical entities, most notably energy, as well as to the study of society.

In the spirit of Lavoisier, political economists came to believe that there was 'intrinsic equivalence' in production and exchange. Abstract labour and utility – like all matter and energy – could neither disappear into nor be created out of thin air. Their form may change, but their content cannot. Just

as the infinite diversity of natural bodies can be reduced to different combinations of universal atoms (or their subatomic particles), so can the endless diversity of commodities be reduced to alternative groupings of identical utils or abstract labour time. As we have seen, for Marx, who approached the process from the input side, the commodity's value was transformed labour: the live abstract labour expended in producing the capital reappeared as dead abstract labour in the newly produced capital. Similarly for the neoclassicists, who view the process from the output side: as the quantity of capital depreciates, the lost utils resurface in the goods and services being produced.[1]

The answer of both theories to the question 'what is capital?' lies in this transformation. Since exchange merely transfers the substantive quantities of production and consumption, it follows that underneath every ratio of prices there lies a corresponding ratio of utils or abstract labour. In both cases, the pecuniary appearance of capital is merely the mirror image of its material/energy substance. The financial liabilities on the right-hand side of the balance sheet derive their value from – and in the final analysis, are equivalent to – the productive assets on the left-hand side.

But there is hair in the soup. Conservation and intrinsic equivalence are rather demanding principles. They can be considered meaningful only if utility and abstract labour can be measured; only if there is an 'economy' that is distinct from 'politics' and free from the 'distortions' of power; and only in so-called perfectly competitive equilibrium. Unfortunately, though, these conditions can never hold. As previous chapters have made clear, no one knows what utility and abstract labour look like, let alone how to measure them; there is no way to distinguish economics from politics and to keep power out of the picture; and capitalism has never experienced even a momentary equilibrium, let alone a perfectly competitive one.

So we are back to square one, if not square zero. We still do not know what makes something capital or what determines its magnitude in dollars and cents. Worse still, now we no longer have the principle of intrinsic equivalence to build on.

But, then, isn't this rejection detrimental to the very possibility of political economy? By giving up the material basis of capitalism, are we not cutting the branch we sit on? Indeed, is there anything else – other than utility or labour value – with which we can explain the quantitative order of prices, exchange and distribution?

The short answer is yes. There is an alternative. According to Cornelius Castoriadis (1984), this alternative was articulated some 2,500 years ago, by Aristotle. Equivalence in exchange, Aristotle argued, came not from anything intrinsic to commodities, but from what the Greek called the *nomos*. It was rooted not in the material sphere of consumption and production, but in the

1 Of course, in each theory input or output are just the starting point, and the conservation continues through subsequent cycles in the input–output chain. For a critical analysis of conservation theories in political economy, see Mirowski (1989).

broader social–legal–historical institutions of society. It was not an objective substance, but a human creation.

And when we think about this question without theoretical blinders, this 'loose' determination is not that difficult to fathom. In all pre-capitalist societies, prices – and distribution more generally – were determined through some mixture of social struggles and cooperation. Authoritarian regimes emphasized power and decree, while more egalitarian societies used negotiation, volition and even gifts (Polanyi, Arensberg, and Pearson 1957). This same loose determination is also evident in more recent alternatives to capitalism. It characterizes broad regimes such as communism, as well as small-scale formations like the Spanish cooperative Mondragon and the Israeli anarchism of the early Kibbutz.

In all of these cases prices and distribution are creatures of their particular *nomos*. So why can't the same loose determination happen in capitalism? Consider the ratio between the price of petroleum and the wages of oil rig workers; between the value of Enron's assets and the salaries of accountants; between General Electric's rate of profit and the price of jet engines; between Halliburton's earnings and the cost of 're-building' Iraq; between Viacom's taxes and advertisement rates; between the market capitalization of sub-prime lenders and government bailouts. Why insist that these ratios are somehow determined by – or deviate from – relative utility or relative abstract labour time? Why anchor the logic of capitalism in quanta that cannot be shown to exist, and that no one – not even those who need to know them in order to set prices – has the slightest idea what they are? Isn't it possible that these capitalist ratios are simply the outcome of social struggles and cooperation?

Most political economists prefer to steer clear of such a loose determination. The ideological stakes are simply too high. If prices and distribution are not determined by objective productive contributions, neoclassicists have nothing with which to explain income and justify profit. Similarly for the Marxists: without labour values there is no objective basis to condemn capitalist exploitation.

Unfortunately, and as already noted, this insistence on so-called objective determination is mostly a formality. In practice, political economists are entirely dependent on a very loose determination of prices and distribution. In the neoclassical case, this dependency is evident when economists set up perfectly competitive equilibrium models – and then retrofit them to reality with the generous help of endless shocks and imperfections (in the know-all language of the news agencies: 'oil prices have risen *because* of excess demand from China'; and a day later, '*despite* excess demand from China, oil prices have fallen amid easing security concerns at Ras Tanura'). Marxists do the very same thing when they first articulate the laws of expanded reproduction and then immediately violate them with the endless mischief of force, manipulation and accumulation by dispossession.

Now, this mixture of hard and loose determination would be scientifically acceptable if we could somehow draw the line separating the objective laws

from their distortions. But neither neclassicists nor Marxists can do so, even on paper. The basic units of utility and abstract labour underlying these laws are pseudo-quantities and, by extension, so are their deviances and distortions. Moreover, even if these quantities were real and observable, there is still no obvious reason why human beings would have to obey any 'objective' law based on such units.

This critique does not imply social chaos. Far from it. Society is not a formless mass and its history is not a mere collection of accidents. There are rules, patterns and a certain logic to human affairs. But these socio-historical structures are created, articulated and instituted not from the outside, but by *society itself*. They are manifested through religion, the law, science, ideology, conviction, habit and force. Although embedded in the *physis*, they are all creatures of the *nomos*. Whether imposed by rulers for the sake of power or crafted by the demos for their own happiness, they are all made by human beings.

The above considerations are crucial for our purpose here, for, if we start from the *nomos* rather than utility or labour value, we end up with a completely different concept of capital, a radically different understanding of accumulation and new ways to interpret capitalist development.

This part of the book begins our exploration of the capitalist *nomos*. The engine of capitalism, we argue, is the process of capitalization – the discounting into present value of future earnings. When we speak of capital accumulation we speak of the *growth of capitalization*. The current chapter sketches the anthropology of capitalization from its humble beginnings in fourteenth-century Italy to its all-embracing moment of the present. It shows that capitalization – and therefore the accumulation of capital – has little to do with 'means of production' and everything to do with the multifaceted restructuring of the capitalist order. This encompassing nature of accumulation in turn explains why prevailing theories of capitalization, both Marxist and neoclassical, head in the wrong direction. Chapter 10 shows that these theories, anchored in the supposedly productive underpinnings of capital, are inevitably led to view capitalization as a 'distortion'. Chapter 11 negates this view, laying the foundations for an alternative approach. It provides a framework that identifies the elementary particles of capitalization, outlines their significance and indicates how they form the basis for our new theory of 'capital as power'.

The unit of capitalist order

Every 'order' – in society, as in nature – is articulated or generated through categories and forms.[2] The most potent of these are numbers. The greater our ability to use numbers, the more accurate and comprehensive our capacity to

2 We use 'order' here in the sense of *kosmeo*, without normative connotations.

articulate order. In capitalism, the fundamental numerical unit is price. In principle, this unit can be assigned to anything that can be owned. In that sense, everything that can be owned – from natural objects, through produced commodities, to social organizations, ideas and human beings – can also be quantified. Moreover, the quantification is uniform across time and space. Prices in Europe of the eighteenth century are readily comparable to prices in India of the twenty-first century, just as the price of health care is readily comparable to that of nuclear weapons. This uniformity enables ownership to be intricately interrelated – or ordered – and with great precision.

Historically, the expansion of the capitalist price system progressed along two trajectories – one that incorporated into the process an ever-growing proportion of the population, and another that privatized and priced more and more social activities.

It is perhaps worth noting that the first systematic attempt to explain and justify prices appeared only in the early nineteenth century, long after the first theories of capitalism. John Locke (1690) had anchored private property in productivity in the seventeenth century, and Adam Smith (1776) had analysed the free market in the eighteenth. But it was only with David Ricardo's labour theory of value (1821) that the focus shifted explicitly to prices. And why the long delay? Partly because, until the nineteenth century, there wasn't a pressing need for such a theory: prices simply weren't that important.

It is of course well known that prices already existed in the early civilizations of the Near East, and that in large ancient metropolises they even fulfilled a significant role. But the extent to which they *ordered* society remained limited. In Rome, for instance, prices were used in local markets, as well as in transportation and long-distance trade; yet roughly 90 per cent of the Roman population is estimated to have lived off farming, and three fourths of the output is believed to have been consumed by its own producers. Furthermore, even in the city of Rome, the *annona* food rations, although partly purchased by the authorities, were freely distributed to the population.[3] After the fall of the Roman Empire prices became even less important. During the feudal era, up to 90 per cent of the European population lived in the countryside, organized in autarkic units with little or no connection to prices. The bourgs in Italy and in the Low Countries used prices extensively, but these city states were small enclaves whose logic was antithetical to the feudal self-sufficiency in which they were embedded.

The first society to become subjugated to the architecture of prices was probably England. Symbolically, this transition happened sometime in the first half of the nineteenth century, as urban dwellers approached 50 per cent of the population. Since the cities depended on the countryside for food and

3 For the debate on the 'economic' nature of antiquity, see for example Finley (1973) and Temin (2001).

raw materials, the rural population too was gradually drawn into the price system. Other European countries followed in the footsteps of England, and by the late nineteenth century most had become predominantly urban. On a global level, however, the shift from self-sufficient agriculture to urban-dominated, price-denominated societies was much slower and was completed only in the twentieth century. In the 1900s, the worldwide rate of urbanization was still around 10 per cent, and it was only in the early years of the twenty-first century that it surpassed 50 per cent.[4]

If we take capitalist urbanization as a rough proxy for the geographic spread of the price system, we can say that the architecture of prices emerged as a dominant way of organizing society only two centuries ago, and that it was only recently that its logic has come to dominate nearly every corner of the world.

In parallel to this expansion, the price system has also grown increasingly complex. Underlying this complexity is the explosive growth in the number of social activities denominated in prices. To give some sense of the magnitudes involved, consider the North American Industry Classification System (NAICS) and the North American Product Classification System (NAPCS), which together provide the most up-to-date method of categorizing industries, establishments and the products and services they produce.[5] In this classification, each 'industry' (a grouping of physical establishments with the same primary output) is identified by a 6-digit code, while each type of product or services is identified by a 10-digit code. The latter can accommodate up to 100 billion possible prices (less one). If we assume that only 1/10th of these numbers are in use, we end up with 10 billion prices – the same order of magnitude as the world population. But that is merely the beginning. Typical 10-digit products include relatively broadly defined items such as 'fabricated automobile seat covers and tire covers', 'professional use hair mousse', 'rigid magnetic disk drives' and 'toothbrushes' – each of which comes in numerous shapes and forms. To describe all these shapes and forms, we would probably need an additional two or three digits. And there is more. The NAICS/NAPCS system does not include second-hand commodities, primary commodities or financial assets; it doesn't include future contracts or options that can be applied to every product and service; and it doesn't

4 Trends in the labour force tended to lead those in urbanization. The non-agricultural share of the English labour force surpassed 50 per cent already in the second half of the eighteenth century. By comparison, the US non-agricultural labour force accounted for 20 per cent of the total as late as 1800, and rose to more than 50 per cent only after the Civil War. In China, half of the population is still agricultural, while in India the proportion is two thirds (Cipolla 1980: p. 75, Table 2–6; Sullivan 1995; World Bank Online).

5 The NAICS/NAPCS replaces the earlier Standard Industrial Classification (SIC). For a detailed listing of NAICS/NAPCS manufacturing and mining categories from which the examples in this paragraph are taken see U.S. Department of Commerce. Economics and Statistics Administration (2004).

include bundles of products and services. If we added these extra layers, the number of different prices would be much bigger, requiring even more digits.

All in all, then, it seems safe to conclude that the world today has billions and possibly trillions of different commodities, all denominated in universal price units and therefore connected through a single quantitative architecture that cuts across time and space. Marx began his *Capital* with reference to the 'immense accumulation of commodities' (1909, Vol. 1: 41). Yet even this most prescient observer would probably have found the present complexity of prices baffling. Nothing remotely similar has ever existed in human history.

The comprehensive reach, complexity and uniformity of the price system have made capitalism the most ordered society ever. In no prior epoch have numbers been so extensively and consistently used to describe, organize and shape human behaviour. Prices enable entirely new ways of re-ordering society. What previously required military conquest can now be done through currency devaluation; what once necessitated religious conversion today takes a mere shuffle of a few paper records we call portfolio investment. Furthermore, the highly malleable nature of prices – i.e. their remarkable ability to go up and down – makes capitalism by far the most *dynamic* of all historical orders. In fact, in capitalism *change* itself has become the key moment of order.

The pattern of capitalist order

Now, price is merely the *unit* with which capitalism is ordered. The actual *pattern of order* – namely, the way in which prices are structured and restructured relative to one another – is governed by capitalization. Capitalization is the algorithm that generates and organizes prices. It is the central institution and key logic of the capitalist *nomos*. It is the 'generative order', to use David Bohm's term, through which the capitalist order, denominated in prices, is created and re-created, negotiated and imposed.[6]

Formulae

What exactly is capitalization? We have mentioned the term several times in the book, and it is now time to examine it more closely. Most generally, capitalization represents the present value of a future stream of earnings: it tells us how much a capitalist would be prepared to pay *now* to receive a flow of money *later*. A simple example: a \$1,000 payment due in a year's time (K_{t+1}) and 'discounted' at a 5 per cent rate of interest (r) would have a present value (K_t) equal of \$952.38.

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6 The notion of the 'generative order' is developed in Bohm and Peat (1987). We return to it in Ch. 14.

To see why this is so, let's back step and look at the process in reverse. Suppose the capitalist invests K_t dollars now (the present value of \$952.38) in order to get back a year from now K_{t+1} dollars (the future payment of \$1,000). The capitalist engages in this transaction because the future payment is bigger than its present value: it comprises the repayment of the original investment *plus* additional earnings ($K_{t+1} = K_t + E_{t+1}$). And since in this case the capitalist knows both the original investment and the future payment, he can compute the rate of return (r):

$$1. \quad r = \frac{E_{t+1}}{K_t} = \frac{K_{t+1} - K_t}{K_t} = \frac{K_{t+1}}{K_t} - 1 = \frac{\$1000}{\$952.38} - 1 = 0.05$$

Now, let's rearrange the terms of this equation. If we know the future payment and the going rate of interest, we can easily figure out how much the capitalist believes is appropriate to pay for it now, namely the 'present value':

$$2. \quad K_t = \frac{K_{t+1}}{1 + r} = \frac{\$1000}{1.05} = \$952.38$$

Given this principle, the computation can be further generalized deep into the exciting future. For instance, an earning flow of a constant or varying magnitude (E), paid over n periods, would be discounted by successive compounding of the rate of interest:

$$3. \quad K_t = \frac{E_{t+1}}{1+r} + \frac{E_{t+2}}{(1 + r)^2} + \ldots + \frac{E_{t+n}}{(1 + r)^n}$$

If the payments are uniform over time (so $E_{t+1} = E_{t+2} = \ldots = E_{t+n} = E$), their capitalized value would be:[7]

$$4. \quad K_t = \frac{E}{r} \times \left(1 - \frac{1}{(1 + r)^n}\right)$$

If these equal payments continue in perpetuity (so $n \to \infty$), the present value becomes:[8]

$$5. \quad K_t = \frac{E}{r}$$

---

7 To obtain Equation (4), replace all E_{t+i} in Equation (3) by E, multiply both sides of the equation by $(1+r)$, subtract the original equation from the new one and rearrange the terms.

8 When the number of payments (n) grows infinitely large, the expression in the brackets of Equation (4) approaches 1.

And if the perpetual payments are expected to grow at a rate of g per period, the present value becomes:[9]

$$6. \quad K_t = \frac{E}{r - g}$$

First steps

Simple computations in this spirit were used as early as the fourteenth century.[10] Italian merchants allowed customers to pre-pay their bills at a 'discount', applying the rate of interest to the time left until payment was due. Initially, the practice was relatively limited. The Church opposed usury, and the merchants, trying to keep out of trouble, restricted their discounting to foreign bills where the rate of interest could easily be concealed by modifying the exchange rate. Eventually, though, the Church's stranglehold loosened, and in the seventeenth century, with religious tolerance spreading and the Glorious Revolution in the wings, English goldsmiths started to discount domestic bills openly (de Roover 1942: 56; 1944: 402–3; 1974: 210–11).

Although the practice of discounting spread rapidly, its underlying ideology remained largely undeveloped. There was no formal theory and there were no textbooks. Instead, there were rules of thumbs and plenty of confusion. As late as the mid-eighteenth century, financiers and traders still used what twentieth-century economists retrospectively describe as 'incorrect' calculations, 'erroneous' tables and 'inefficient' discounting. Sometimes, the practitioners even committed the cardinal sin of failing to compound interest (Faulhaber and Baumol 1988: 583).

Coming of age

Capitalization came of age only in the twentieth century. It was only with the rise of the modern corporation and the spread of large-scale financial markets that discounting turned from a loose practice to a full-fledged ideology, complete with detailed bureaucratic procedures, a rigid ethical code and trained professional cadres – and even then, the going proved tough.

It turns out that the first systematic rules of discounting were laid down already in the mid-nineteenth century, by a group of German foresters (Faustmann 1849). The foresters tried to figure out how they should value

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9 To derive Equation (6), substitute $E(1+g)^i$ for E_{t+i} (with $i = 1, 2, 3, \ldots n$) in Equation (3), multiply both sides of the new equation by $(1+r)/(1+g)$, and follow the remaining steps of footnotes 7 and 8.

10 For a succinct overview of the origin and evolution of capital budgeting and net present value, see Faulhaber and Baumol (1988: 583–85). Part of our account here is informed by their summary.

wooded land and the associated activities of planting and harvesting, and in the process developed many of the mathematical formulae of present value. But with business organizations still largely unincorporated, these formulae had limited use and remained obscure. It took another half-century for them to be reinvented by economists, who, incidentally, never suspected that they were moving in already well-charted territory.

The most famous of these economists is Irving Fisher. In *The Rate of Interest* (1907), he developed the logic and ethics of discounting in great detail. His key contribution was the emphasis on universality. Capitalization through discounting, he argued, was a general principle. It should be applied not only to the pricing of debt, but to *every* income-generating asset:

> It is evident that not bonds and notes alone, but all securities, *imply* in their price and their expected returns a rate of interest. There is thus an implicit rate of interest in stocks as well as in bonds. . . . It is, to be sure, often difficult to work out this rate definitely, on account of the elusive element of chance; but it has an existence in all capital. . . . It is not because the orchard is worth $20,000 that the annual crop will be worth $1000, but it is because the annual crop is worth $1000 that the orchard will be worth $20,000. The $20,000 is the discounted value of the expected income of $1000 per annum; and in the process of discounting, a rate of interest of 5 per cent. is implied.
>
> (Fisher 1907: 10–11, 13, original emphasis)

In other words, a pecuniary asset, taken in its most general form, is merely *a claim on earnings*. In this sense, bonds, corporate shares, preferred stocks, mortgages, bank accounts, personal loans, or the registered ownership of an apartment block are simply different incarnations of the same thing: they are all income-generating entities. As such, their price is nothing but the present value of the earnings they are expected to generate.

Frank Fetter, another early advocate of capitalization, argued that the discounting process applies not only to all assets, but also to all times:

> The primitive economy in its choice of enjoyable goods of different epochs of maturity, in its wars for the possession of hunting grounds and pastures, in its slow accumulation of a store of valuable durable tools, weapons, houses, boats, ornaments, flocks and herds, first appropriated from nature, and then carefully guarded and added to by patient effort – in all this and in much else the primitive economy, even though it were quite patriarchal and communistic, without money, without formal trade, without definite arithmetic calculations, was nevertheless *capitalizing*, and therefore embodying in its economic environment a rate of premium and discount as between present and future.
>
> (Fetter 1914b: 77, original emphasis)

In short, if human beings were indeed made in the image of God, the Almighty must have been a bond trader.

Despite their forceful elegance and claim for universality, Fetter and Fisher's generalizations hardly echoed for another half-century. There was some discussion of capitalization in American economic journals, and discounting procedures occasionally surfaced in textbooks. But for the most part, the enthusiasts were outnumbered by the sceptics.[11]

The sceptics had good reason to be suspicious. The early twentieth century marked the dawn of a new capitalism. Central to this new formation was the modern corporation. It was an entirely new way of organizing business, both inside and outside the firm. Moreover, it spread rapidly, carried by a tidal wave of public offerings. Securities of every colour, size and denomination were being floated in ever larger numbers. It was all very novel, and the sheer magnitude and exponential growth of the process left economists baffled and public officials gasping for air.

There were very few theoretical tools and scarcely any data to make sense of this new development. There was no 'transparency' to speak of (as politically correct investors now demand); the paucity of historical time series meant that there was little 'prior knowledge' to build models on (and therefore no 'parameters' to estimate); there was no ground on which to form 'rational expectations' (and hence no way to evaluate the rosy earning projections of the financiers); and it was unclear which interest rate to use in discounting and how to account for 'risk' (Fisher's 'elusive element of chance'). To make matters worse, the newspapers were only too happy to amplify the exploits of corporate promoters. The owners and their bankers were blamed, not without cause, for 'overcapitalizing' their assets and 'watering' their stocks relative to their 'actual' investments – all in order to rip off the innocent public.[12]

The whole thing smelled of a racket: 'the principle that capitalization should be based on earning capacity rather than on actual cost', declared one disgruntled reviewer, 'is not only unsound in theory but is also vicious in its practical application' (Bonbright 1921: 482). Under these conditions, officials and theorists were unsure how to reconcile the new practice of discounted earnings with the familiar 'par value'. It seemed much easier to stick to the conservative principles of 'historical cost' accounting.

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11 For early textbook sections, see Fetter (1904: Division C) and Lough (1917: Ch. VIII). A sample of journal articles include Swayze *et al.* (1908), Davenport (1908), Scott (1910), Brown (1914), Fetter (1914a; 1914b), Bonbright (1921) and Machlup (1935). Reading the simple language and clear arguments put forth in this early debate, one is struck by how obscure mainstream economics has become since then. A comparable debate today would be entirely indecipherable to the uninitiated.

12 This early financial history is told with great insight and much fanfare by Matthew Josephson's classic tale of *The Robber Barons* (1934).

But these proved to be no more than minor pains of adjustment. The encompassing tendencies of capitalization were too powerful to resist, the historical data started to accumulate, and the economists eventually adjusted their theories. By the 1950s, capitalization was finally established as the heart of the capitalist *nomos*, engraved on both sides of the balance sheet. On the asset side, net present value became the practice of choice in capital budgeting to allocate corporate resources. Meanwhile, on the liabilities side, the invention of portfolio selection theory by Harry Markowitz (1952) and of the capital asset pricing model (CAPM) by William Sharpe (1964) and John Lintner (1965) bureaucratized the concept of risk and in so doing helped formalize the calculus of financial investment. Finally, both developments were facilitated greatly by the spread of electronic computing, which enabled capitalization formulae to be applied easily and universally to every possible asset under the sun.

The capitalization of every thing

And, so, finally the floodgates were open. Nowadays, every expected income stream is a fair candidate for capitalization. And since income streams are generated by social entities, processes, organizations and institutions, we end up with the 'capitalization of every thing'. Capitalists routinely discount human life, including its genetic code and social habits; they discount organized institutions from education and entertainment to religion and the law; they discount voluntary social networks; they discount urban violence, civil war and international conflict; they even discount the environmental future of humanity. Nothing seems to escape the piercing eye of capitalization: if it generates earning expectations it must have a price, and the algorithm that gives future earnings a price is capitalization.

This encompassing mechanism of social ordering and reordering lies at the heart of our theory of capital, so it is worthwhile to flesh it out with some examples.

Human beings

Begin with people's lives. These of course had already been commodified in the early power civilizations, starting with the institution of the 'working day'. But it was only since the spread of bourgeois accounting and the development of probability and statistics that the process assumed the forward-looking form of discounted *future* income.

The first steps in this direction were taken by the eighteenth-century mathematician Daniel Bernoulli (1738). According to Bernoulli, all human beings have a certain 'productive capacity'. They can work for a living – and if that proves impossible, there is always the option of begging. People's ability to produce future income constitutes their 'wealth', or what economists today call 'human capital'. And how much is this 'human capital' worth? Easy: just

ask the person how much money he or she would demand now for *giving up* the potential to earn this income in the future.[13]

Presumably, this is the equation workers today balance when they borrow money to buy a car, take a mortgage to purchase a home, or open a line of credit to acquire what they otherwise can't with their immediate income.[14] Following Bernoulli, they take money now in return for giving up more of it later. As borrowers, they commit themselves to repaying the principal and interest, a liability that the lending institution happily discounts as an asset. Now, to settle their debt the workers need to work (or beg) for an income. In other words, they need to devote part of their life to the bank. And it is this part of the worker's life that the bank capitalizes as an asset on its balance sheet.

Of course, the process hardly stops here. The discounting of human lives extends in various directions – some explicit, others less so. The most obvious is the premium insurance companies put on the future earning loss associated with particular limbs, body or soul (Mishan 1979).[15] Less blatant but no less important is the price governments and international organizations are

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13 In the words of Bernoulli:

> There is then nobody who can be said to possess nothing at all in this sense unless he starves to death. For the great majority the most valuable portion of their possessions so defined will consist in their productive capacity, this term being taken to include even the beggar's talent: a man who is able to acquire ten ducats yearly by begging will scarcely be willing to accept a sum of fifty ducats on condition that he henceforth refrain from begging or otherwise trying to earn money. For he would have to live on this amount, and after he had spent it his existence must also come to an end. I doubt whether even those who do not possess a farthing and are burdened with financial obligations would be willing to free themselves of their debts or even to accept a still greater gift on such a condition. But if the beggar were to refuse such a contract unless immediately paid no less than one hundred ducats and the man pressed by creditors similarly demanded one thousand ducats, we might say that the former is possessed of wealth worth one hundred, and the latter of one thousand ducats, though in common parlance the former owns nothing and the latter less than nothing.
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> (Bernoulli 1738: 25)

It seems that the basic underpinnings of 'human capital' theory haven't changed much since these early pronouncements.

14 For the moment, these options are available only to a minority of the world's workers, although 'micro-credit' banks and similar innovations gradually extend the Bernoullian principle even to the most wretched.

15 The most publicized are the premiums paid by celebrities (or their owners/employers) to protect their bodily assets. A recent account of notable coverage lists primarily legs: actress Betty Grable's were the first 'million dollar legs' (named after the sum for which they were insured), but her pair was later superseded by supermodel Heidi Klum's ($2 million), dancer Michael Flatley's ($39 million) and soccer player David Beckham's (£60 million). Other insured bodily assets include voice (Marlene Dietrich's was covered for $1 million and Bruce Springsteen's for $6 million), teeth (comic actor Ken Dodd's for £4 million), face (supermodel Claudia Schiffer's for $5 million) and fingers (guitarist Keith Richards' for $1 million). The interested reader can find these details and more in Cordas (2005).

prepared (or unprepared) to pay in order to save (or sacrifice) entire communities – a price that involves discounting the future 'worth' of the said community (Cropper, Aydede, and Portney 1991). The issue here is decreasingly one of choice based on morals and feelings and increasingly a matter of cold calculations based on the 'imperatives' of discounted incomes.

In his *Brave New World* (1932), Aldous Huxley articulated the making of a postmodern humanoid. The process proceeds in two steps. In the first, different human brands are mass-produced on an assembly line of test tubes. In the second, the 'newborns' are subjected to repetitive mantras that fine tune their cravings and anxieties. Huxley conceived this authoritarian utopia as his own Fabian alternative to the anarchy of free-market liberalism. But, then, he didn't know much about the powers of capitalization.

Capitalism seems able to shape 'preferences' as effectively as any authoritarian regime – including Huxley's – is able to mould habits and instil fears. But capitalism does much more than that: it makes these 'preferences' sufficiently predictable for capitalists to translate them into expected profit discountable to present value.

On the face of it, liberal capitalism is all about 'individuality' and 'free choice'. And yet, the so-called individual consumer ends up being part of a collectively managed mob, as described so eloquently in Herbert Marcuse's *One-Dimensional Man* (1964). The attractive aspect of this tendency was articulated with great enthusiasm already in the nineteenth century by Francis Galton, one of the forefathers of the science of crowds:

> The huger the mob and the greater the apparent anarchy, the more perfect is its sway. It is the supreme law of Unreason. Whenever a large sample of chaotic elements are taken in hand and marshalled in the order of their magnitude, an unsuspected and most beautiful form of regularity proves to have been latent all along.
>
> (Quoted in Newman 1956, Vol. 3: 1481)

The Friedmanite individual may feel 'free to choose' his location in the distribution, but the distribution itself is shaped by the power institutions and organizations of capitalism. And it is this shaping – i.e. the very creation of a predictable 'representative' consumer – that gets capitalized.

The process follows two parallel paths. The first and more transparent is the relentless promise of pleasure – the carrot that 'sovereign consumers' love to pay for. The second and less obvious is the threat of pain. It turns out that the hedonic lure of consumption can be greatly amplified by fear, so the promise of pleasure is usually spiced up with plenty of anxiety and unease.

The division of labour is relatively straightforward. The official news reels scare their audiences with uncertainty, loneliness, violence and disaster, the sports programmes elate them into ecstasy, and the blockbuster films give them their 'two minutes of hate' between the chainsaw massacres and end-of-the-world catastrophes. This simmering brew is then cooled down by the

soothing solutions of commercial advertisements: sexual impotence is cured by a chemical fix, decrepit apartments by affordable mortgages, ruinous illness by pricey health insurance, dead-end jobs by professional night courses, wrinkles by magic lotions, random violence by gated communities. Don't be a left-behind fool, buy my ware and be cool.

Capitalists worldwide are estimated to spend up to $600 billion annually just to remind us of these options. If we assume a 15 per cent markup on these advertising expenditures, we get $90 billion of net profit. This sum represents roughly 5 per cent of global net corporate income and a comparable portion of global market capitalization.[16] The computations of course are tentative ('half my advertising is wasted, but I don't know which half', goes the famous Madison Avenue saying). They also exclude sales promoting expenditures buried in the 'cost of production' (as noted in the discussion of advertising in Chapter 7). But the very fact that so much is spent on persuasion suggests that a significant chunk of outstanding corporate assets discounts the very ability of capitalists to shape human hopes and fears.

Now, this is the downstream part of the story, but like in Huxley's utopia, there is also an upstream part. Over the past decade or two, investors have started to discount, in addition to people's mental aspirations and worries, the code of their physical reproduction: the genome. It is now possible not only to modify and replicate existing organisms, but also to convert one organism into another via a 'genome transplant' (Sample 2007). Soon enough, it may be feasible to produce a creature from scratch, and one day perhaps even a 'human being' (hopefully modelled after the universal bond trader).

Capitalists have been eager to protect and defend these god-like acts of creation with multiple patents and other expressions of goodwill – all in order to ascertain that the making of plants, animals and people won't end up being a free lunch. After all, what's the use of making life if it can't help you make money? And so far – at least according to the capitalists' own bets – the odds of achieving both goals look promising indeed: from its inception in 1994 to 2007, the AMEX Biotechnology Index has risen ten times faster than the S&P 500 Index. Apparently, it is now finally possible to play God *and* be rich.

Organizations, institutions, processes

Capitalization of course is hardly restricted to the individual. Take education, an activity estimated to account for roughly 5 per cent of world GDP. The idea of free public schooling was born out of the French Revolution. The new method served to both liberate human beings and turn the newly literate into patriotic citizens and soldiers on the cheap. The arrangement worked smoothly for a while, but by the twentieth century a new complication had

16 The estimate of advertisement spending is from Saatchi (2007). Global profits for 2005–6 are computed from Thomson Datastream by dividing world market value TOTMKWD(MV) by the world price-to-earning ratio TOTMKWD(PE).

emerged. Having been butchered in two world wars, the citizens/soldiers demanded that warfare be complemented by expensive welfare. Suddenly, the draft was no longer a panacea, and with 'free soldiers' turning out to be rather pricey, the benefit of educating them was called into question. The final disintegration of the model came in the 1970s. After the US loss in Vietnam and the arrival of neoliberal globalization, there was no longer a need for costly mass armies. Instead, the capitalists started to invest in 'smart weapons' that could be operated by high-school dropouts. The draft was gradually abandoned in favour of purely professional armies, and free education in favour of privatized learning.

And so, the organization of learning, once the prerogative of state, church and community, is now increasingly capitalized – even when the teaching itself is still publicly administered. The process is discounted directly by its private suppliers – particularly the publishers of journals, textbooks and databases, whose profits margins can reach 100 per cent (Bergstrom 2001: 186–87). Education is also discounted indirectly insofar as it shapes preferences and mutes criticism, and in so doing helps boost profit and reduce risk (recall John D. Rockefeller's pronouncement that his investment in the University of Chicago was the best he had ever made).

The same logic applies to the organization of entertainment, a process whose global turnover is estimated at $1 trillion (Vogel 2007: xix). Entertainment, like education, is capitalized directly by its providers as well as indirectly by those whose profits it affects. Another capitalized institution is the newly emergent social networks such as Facebook, MySpace and YouTube, where education and entertainment are fused seamlessly with subliminal and not-so-subliminal marketing. Although these so-called virtual communities are open for everyone to join and participate at no cost, they are anything but free. Each has a captive audience that can be persuaded to spend money, a prospect that capitalists readily discount to the tune of billions.

Other organized institutions, such as the law or religion, are rarely discounted explicitly, but their indirect impacts are extensively capitalized. The assets of pharmaceutical corporations, software companies and other businesses dealing with patents and copyrights depend on the enforcement of intellectual property rights, and in that sense capitalize both the law and the extent to which it is enforced. The same process, only negated, applies to criminal organizations. Whereas legal business discounts the protection of the law, criminal networks – from drug dealing to human trafficking, money laundering, contraband trade, illegal gambling and gun smuggling – capitalize their ability to violate the law and enforce their own private order.

Similarly with religion. The assets of Islamic banks and investment companies, for example, as well as of secular financial institutions dealing with Muslim savers and investors, discount the extent to which these companies and institutions comply with the *sharia* (Islamic law). More broadly, religion – just like the law, entertainment and education – shapes the social structure

and therefore has a wider effect on profit, and that effect too is promptly, if implicitly, capitalized.[17]

Organized violence and war are extensively discounted. The immediate beneficiaries are the military contractors, but the profit expectations of other capitalists are also affected, sometimes in a much bigger way. In either case, the impact – direct or indirect, positive or negative – gets discounted into asset prices. This much should be obvious. The process, though, also works in reverse.

Over the past half-century, the logic of capitalization has penetrated military jargon and praxis. The first steps in this direction were taken during the 1960s by Robert McNamara. This was the beginning of the end of US 'Military Keynesianism', and President Kennedy, who wanted to limit the nuclear arms race and shift the Cold War to a more 'conventional', labour intensive path, entrusted McNamara with putting the US military on an 'efficient' footing. McNamara brought to the Pentagon people like Hitch and McKean, whose work on *The Economics of Defense in the Nuclear Age* (1960) (which we mentioned in Chapter 5) was one of the earlier attempts to apply hedonic cost/benefit analysis to military affairs. Initially, the computations were rather naïve by today's standards, but with time and money the economics of defence (or attack, depending on the perspective) grew more sophisticated and gradually integrated the broader logic and full scope of capitalization.

Military officers and strategists nowadays speak of 'military investment', while national accountants routinely measure the country's 'military assets'.[18] Furthermore, the military seems to have endorsed the notion that the 'market knows best', and it now uses 'market signals' to predict future military events and to evaluate the success of military operations. In 2003, the U.S. Defense Advanced Research Projects Agency (DARPA) proposed to set up a futures

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17 During the 2000s, soaring oil prices have given rise to an 'Islamic finance industry' with 2007 assets estimated at around $750 billion. The expansion has been so rapid and unexpected that the business still lacks standardization. It is presently 'regulated' by a few dozen religious scholars whose human capital consists of the exclusive right to declare a financial instrument '*sharia* compliant'. A unit of this religiously sanctioned capital can fetch millions of dollars a year on the free market for *fatwas* (Bokhari and Oakley 2006; Khalaf 2007). Religious investment of course is hardly limited to Muslims. Rabbinate organizations around the world run capitalized networks of 'kosher' certification, each with its own code of conduct and an army of invigilators. Businesses that fail to pay protection are deprived from accessing the purchasing power of the observant laity. Christians also capitalize divinity. The United States for one has plenty of 'faith-based funds', each catering to the investment preferences of a particular denomination, be it Catholic, Presbyterian or Baptist, and all based on the premise that god loves a winner (Brewster 2008).

18 The U.S. Department of Commerce provides a detailed breakdown of military assets by type, including different kinds of planes, missiles, ships and military vehicles, each discounted according the damage it can cause (U.S. Department of Commerce. Bureau of Economic Analysis 1999). A theoretical 'Typology of Military Assets' is given in Brzoska, Franko and Husbands (2000). See also footnote 8 in Chapter 8.

exchange that would help predict coups, assassinations and terrorist attacks (Graham 2003; Hulse 2003). The rationale was straightforward. Given that the quest for profit is the best generator of information, and since the market is the most efficient mechanism for distilling such information, why not fuse the working of the army with the logic of capitalism? After all, the army has always been an 'arm' of the ruling class, so it is only appropriate that in a *capitalist* state the army obeys the same logic as the ruling capitalists. Let investors discount future contracts on such events, and then simply follow the money. A sharp increase in the capitalized price of a 'pipeline explosion contract in 12 months', for example, would then give strategists reason to believe that such an explosion is more likely, while a drop in the price of a 'Jordanian coup contract 6 months ahead' would mean a lower probability for that particular outcome.

Apparently the scheme was a bit too politically incorrect for US voters to digest and was quickly shot down. But there was really nothing exceptional about it. Violent events do affect profits, so investors continuously try to discount the prospects of such events into asset prices. This ongoing capitalization means that even without an official bourse for violence the military can still tease out information from the capital market: all it has to do is look at the interest-rate spread between the bonds of the affected country and comparable international instruments. Victory is in the eye of the bondholder.[19]

The future of humanity

The all-encompassing role of discounting is most vividly illustrated by recent discussion of environmental change. One key issue is the process of global warming/dimming and what humanity should do about it. Supporters of immediate drastic action, such as Nicholas Stern, argue that there is no time to waste. According to *The Economics of Climate Change* (2007), the report produced by a review panel that he headed for the British Government, the world should invest heavily in trying to limit climate change: the cost of inaction could amount to a permanent 5–20 per cent reduction in global GDP (p. xv). But this conclusion is by no means obvious. Critics such as William Nordhaus (2007) argue against drastic actions. In their view, the overall cost of climate change may end up being negligible and the investment to avert it a colossal blunder.

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19 Chaney (2007) looks at variation in the yield spread on Iraqi sovereign debt to evaluate the US 'pacification policy' in Iraq, while Greenstone (2007) uses a similar method to judge the success of the US troop 'surge' in Iraq. The latter author explains in his article's abstract that 'After the Surge, there was a sharp decline in the price of those bonds, relative to alternative bonds'. In his opinion, 'This decline signals a 40% increase in the market's expectation that Iraq will default. This finding suggests that, to date, the Surge is failing to pave the way toward a stable Iraq and may in fact be undermining it'. Go argue otherwise.

The interesting thing about this debate – apart from the fact that it may affect the future of humanity – is that both sides base their argument on the very same model: capitalization. Climate change is likely to have multiple effects – some positive, most negative – and the question is how to discount them to their net present value. Part of the disagreement concerns the eventual consequences and how they should be priced relative to each other and in relation to other social outcomes. But the most heated debate rages over the discount rate. At what rate of return should the damage be capitalized?

One thousand dollars' worth of environmental damage a hundred years from now, when discounted at 1.4 per cent, has a present value of –$249 (negative since we measure cost). This is the discount rate that led Stern to conclude that climate change would be enormously harmful, and that urgent action was needed. But the same one thousand dollars' worth of damage, discounted at 6 per cent, has a present value of only –$3. This is the long-term discount rate that Nordhaus likes to use in his computations. It implies that the impact of climate change may end up being minimal, and so should the response be, at least for now.[20]

Although most investors are probably unaware of this climate-splitting debate, they too view the process through the lens of capitalization. By 2007, there were nearly 50 'climate change' funds listed on the Bloomberg news service. The HSBC Global Climate Change Benchmark Index, an investment vehicle that tracks 300 companies that 'make money from fighting climate change', has outperformed the MSCI World Index by 70 per cent since 2004 (Oakley 2007). In parallel, there has been a boom in the market of 'catastrophe bonds'. The emergence of these bonds in the 2000s has enabled investors to buy from insurance companies the 'tail risk' of large-scale catastrophes such as earthquakes, pandemics and perfect storms, and by so doing has given capitalists the illusion they can somehow 'externalize' the more cataclysmic impacts of nature on society (Lewis 2007).

It seems that, just like the Salamander traders who underwrite the slow-motion holocaust in Karel Capek's *War with the Newts* (1937), capitalists today cannot resist the temptation of dancing at both weddings: on the one hand they contribute to climate change, while on the other they cheerfully discount the boom in the doom. As long as their capitalization keeps rising, they themselves will happily go under with their thumbs up.[21]

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20 The controversy over the 'proper' discount rate has been staged with much fanfare by the panellists of the Copenhagen Consensus conference (Lomborg 2004).

21 'The history of the newts is thus characterised from the very outset by its perfect and rational organization; the principal but not exclusive credit for this must go to the Salamander Syndicate; it should, however, be acknowledged that science, philanthropic endeavour, enlightenment, the press and other factors also played a considerable part in the spectacular spread and progress of the Newts. That said, it was the Salamander Syndicate which, so to speak, daily conquered new continents and new shores for the Newts, even though it had to overcome many an obstacle to that expansion. . . . In short, unlike human

Capitalization and the qualitative–quantitative *nomos* of capitalism

Extrapolating the foregoing illustrations, we can say that in capitalism most social processes are capitalized, directly or indirectly. Every process – whether focused on the individual, societal or ecological levels – impacts the level and pattern of capitalist earnings. And when earnings get capitalized, the processes that underlie them get integrated into the numerical architecture of capital. Moreover, no matter how varied the underlying processes, their integration is always uniform: capitalization, by its very nature, converts and reduces qualitatively different aspects of social life into universal quantities of money prices. In this way, individual 'preferences' and the human genome, the structure of persuasion and the use of force, the legal structure and the social impact of the environment – are qualitatively incomparable yet quantitatively comparable. The capitalist *nomos* gives every one of them a present value denominated in dollars and cents, and prices are always commensurate.

colonisation of the globe, the spread of the Newts proceeded in accordance with a plan and on a generous scale; had it been left to nature it would have dragged on over hundreds and thousands of years. Say what you will, but nature is not, and never has been, as enterprising and purposeful as human production and commerce. . . .' (Capek 1937: 122–23).

10 Capitalization

Fiction, mirror or distortion?

> He had the same trouble as all intellectuals – he was ineffectual. He knew too many things, and they confused him.
>
> —Louis-Ferdinand Céline, *Journey to the End of the Night*

How are we to theorize the all-embracing architecture of capital? The examples in the previous chapter suggest that capitalization is an encompassing social process of valuation in need of a comprehensive theory of value. The conventional neoclassical and Marxist approaches, though, lack such a theory and therefore fall back on narrow 'economic' explanations. In both cases, capitalization is explained in relation to the so-called material–productive processes of capitalism.

As usual, the starting points of the two approaches are diametrically opposed. Marx considers capital goods the real thing and nominal capitalization a mere fiction, whereas the neoclassicists view nominal capitalization as a mirror of capital goods (and vice versa). Yet in the end, because of their wrong starting point, the two schools meet in the middle of nowhere, with capitalization seen as an inescapable 'distortion'. We have mentioned these biases several times in the book, and it is now time to look at them more closely.

From fiction to distortion: Marx's view

Marx wrote before the corporation emerged as the dominant form of business organization, and therefore before capitalization came into its own. Nonetheless, he was familiar with the technique of discounting and offered one of the first attempts to understand the role of credit and financial markets in capitalist dynamics.

He started by juxtaposing two different entities: 'actual' capital versus 'illusionary' or 'fictitious' capital. Actual capital exists as *commodities* – means of production, work in progress and commodity money whose prices are governed by labour time, whether historical or current. By contrast,

fictitious capital consists of *ownership claims on earnings* whose price is the present value of those earnings.[1]

Why is the latter capital 'fictitious'? Marx lists three basic reasons. First, a claim on earnings often has no actual capital, or 'principal', to call on. This is the case of state debt, for instance. Here the capitalist lends money to the government, yet this money does not create – nor is it intended to create – means of production. Instead, it is spent on current operations. And since the government repays the money plus interest out of its revenues, the capitalist ends up having a claim not over actual capital, but merely over state taxes (or the printing press, as the case may be). Second, a claim on earnings, even on those generated by actual capital, extends into the future. It covers expected as well as current payments, and the two cannot be treated equally. Unlike present income, future income expectations may not materialize; and since their level cannot be known beforehand, their present value could end up being partly or wholly illusionary. Finally, a given flow of income, whether generated by actual capital or not, would create different levels of capitalization depending on the rate of interest (Marx 1909, Vol. 3: 546–47 and 550–51).

Clearly, actual and fictitious capitals are totally different creatures. They consist of different entities and are quantified through different processes – the former via past and current productive labour time, the latter through future earnings expectations and the rate of interest. So, when considered separately, their respective magnitudes and movements need have nothing in common. The problem, though, is that they *cannot* be considered separately. The capitalist system is denominated in prices, and as Marx himself conceded, prices are affected by *both* fictitious and actual accumulation. As a result, any divergence of the former from the latter is bound to 'distort' the value system.

How big is this distortion? Marx's own view was ambivalent. On the one hand, he made it sound as if fictitious capital contaminates the price system to the point of making it incomprehensible:

> All connection with the actual process of self expansion of capital is thus lost to the last vestige, and the conception of capital as something which expands itself automatically is thereby strengthened. . . . The accumulation of the wealth of this class [the large moneyed capitalists] may proceed in a direction very different from actual accumulation. . . . Moreover, everything appears turned upside down here, since no real prices and their real basis appear in this paper world, but only bullion, metal coin, notes, bills of exchange, securities. Particularly in the centers, in which the whole money business of the country is crowded together, like

1 'The forming of a fictitious capital is called capitalising. Every periodically repeated income is capitalised by calculating it on the average rate of interest, as an income which would be realised by a capital at this rate of interest' (Marx 1909, Vol. 3: 548).

> London, this reversion becomes apparent; *the entire process becomes unintelligible*.
>
> (Marx 1909, Vol. 3: 549, 561 and 576, emphasis added)

On the other hand, Marx seemed to believe that the relationship between the two types of capital can be mapped. Focusing on the accumulation of 'money capital', he asks:

> To what extent is it, and is it not, an indication of an actual accumulation of capital, that is, of reproduction on an enlarged scale? The so-called plethora of capital, an expression used only with reference to the interest-bearing capital, is it only a peculiar way of expressing industrial over-production, or does it constitute a separate phenomenon alongside of it?
>
> (Vol. 3: 559)

Marx himself never provided a systematic answer to this question. As noted, he was writing early in the processes and perhaps believed that capitalism would collapse well before fictitious capital could become entrenched. The Marxists after him, however, could no longer ignore the process. Consequently, they have tried to piece together his scattered insights and, weaving in their own interpretation, yield a Marxist theory of capitalization.

According to the careful reconstruction of Michael Perelman (1990), Marx saw fictitious capital as having a contradictory effect. As a form of credit it helps make the organization of production much more flexible. Yet as a source of information it sends the 'wrong' price signals, and in so doing undermines the coordination of production.

During the boom, the two processes diverge. Ballooning fictitious capital facilitates investment, while growing price distortions amplify the misallocation of resources. These are conflicting trajectories, however, and therefore cannot continue forever. Sooner or later a crisis strikes, and the 'excessive imbalance' between prices and values is rectified:

> In order for the price system to work, financial forces should cause fictitious capitals to move in directions that parallel changes in reproduction values. . . . By losing any relationship to the underlying system of values, strains eventually build up in the sphere of production until a crisis is required to bring the system back into a balance, whereby prices reflect the real cost of production. The fiction of fictitious value cannot be maintained indefinitely. At some unknown time in the future, prices will have to return to a rough conformity with values. . . .
>
> (Perelman 1990: 83)

And so we come full circle. Recall that Marx began by suggesting that actual and fictitious capitals are two *different* entities. But, then, since fictitious capital distorts the relationship between prices and labour time, it serves

to undermine Marx's labour theory of value. To uphold the labour theory of value, this distortion must be neutralized. And the only way to neutralize it is to assume that the system periodically 'equilibrates' fictitious and actual capital. In the end, the two entities, although different in essence, have to assume the same appearance.

There is of course another possibility altogether, and that is that prices do not obey the labour theory of value. In this latter case, capitalization has no material/productive benchmark to converge on, so we need another theory to explain its trajectory and oscillation.

Unfortunately, there is no way to choose between these two opposing views for the simple reason that labour values cannot be known even if they exist. This impossibility means that we cannot tell whether prices deviate from values, and therefore whether fictitious capital is larger or smaller than the underlying 'actual' capital.

The net result is to leave Marxists with no scientific theory of capitalization, and therefore with neither a unique explanation for nor an alternative to the *actual* capitalism of the present. As noted in Chapter 7, this void has been filled by culturalists and state theorists of various denominations who usually have no clue as to what they are missing. And the few who still try to study fictitious capital seriously are fighting a losing battle. Being unable to use labour time as their anchor, most have gravitated toward the hedonic measures of neoclassical economics. Their empirical studies – including those that have adopted Minsky's financial instability hypothesis (1975; 1982) – see credit and fictitious capital as oscillating around the util-denominated 'capital stock' publicized by the national accounts. And with orthodox measurements come orthodox explanations, leading one observer to conclude that 'there is no qualitatively distinct radical monetary perspective' and that no monetary approach within radical political economy can be 'prevalidated as Marxian' (Dymski 1990: 58–59).[2]

From mirror to distortion: the neoclassical view

Contrary to the Marxists, who begin from two different entities, the neoclassicists start from equivalence: capitalization both derives from and reflects on capital goods. The stylized expression of this symmetry is due to Irving Fisher. In an article aptly titled 'What is Capital?' (1896), Fisher opens by devising a consistent set of definitions. His starting point is a distinction between 'stock' (quantity at a point in time) and 'flow' (quantity per unit of time). Capital is a stock, income is a flow. Capital gives rise to income, whereas income gives capital its value. The precise correspondence between these concepts is articulated in his book *The Rate of Interest* (1907):

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2 *Wall Street* (1997) by Doug Henwood is one of the more comprehensive radical dissections of modern finance. But even a razor-sharp and highly versatile author like Henwood is unable to inject much Marxism into the subject.

> The statement that 'capital produces income' is true only in the physical sense; it is not true in the value sense. That is to say, *capital-value does not produce income-value.* On the contrary, income-value produces capital-value. . . . [W]hen capital and income are measured in *value*, their causal connection is the reverse of that which holds true when they are measured in *quantity.* The orchard produces the apples; but the value of the apples produces the value of the orchard. . . . We see, then, that present capital-*wealth* produces future income-*services*, but future income-*value* produces present capital-*value*.
>
> (pp. 13–14, original emphases)

The feedback loop is illustrated in the following table (p. 14):

Table 10.1 Fisher's house of mirrors

	Present capital		*Future income*
Quantities	Capital wealth	❶ →	Income services
			↓❷
Values	Capital value	← ❸	Income value

Explanation: In the material world, depicted by step 1 of the sequence, capital wealth (measured by the physical quantity of capital goods) produces future income services (similarly measured by their physical quantity). In the nominal world, depicted by stage 3, the income value of the future services (measured in dollars) is discounted by the prevailing rate of interest to generate the present value of capital (also measured in dollars). The two worlds are connected through stage 2, whereby the physical quantity of future income services determines their dollar price.

Hypothetical numerical illustration: Intel has 10 million units of capital wealth, which, during its future life, will produce 1 billion units of income services in the form of microchip-generated utils (step 1). These 1 billion utils' worth of services, spread over the life of the capital wealth, will fetch 100 billion dollars' worth of future profits and interest (step 2), which in turn are discounted to 50 billion dollars' worth of capital value (step 3).

Unfortunately, this neat sequence cannot work. As we saw in previous chapters, a collection of capital goods cannot have a definite physical quantity, so it is impossible to say how much services these capital goods 'produce' (thus annulling step 1). And since we don't know the physical productivity of capital goods, obviously we cannot deduce from this productivity either their nominal value (cancelling step 2), or their dollar capitalization (invalidating step 3). So we are still in a bind. While money income is routinely discounted to its present value, there is no way to connect the resulting dollar capitalization with the 'physical quantity' of the so-called underlying capital goods.

At this point, then, the neoclassical search should have been called off. Needless to say, that didn't happen. On the contrary, the quest for the Holy Grail continues unabated. Neoclassical analysts and theorists remain convinced, today perhaps more than ever, that there exists an invisible bridge between the under world of machines and technology and the over world of discounted capitalization. And they certainly have put their mouth where the money is. Over the past century, they have built numerous models, estimated countless regressions and written billions of words – all with the purpose of keeping the bridge standing and the faith unbending.

So in order not to nip their investment in the bud, let's put aside our concern for logical consistency and in what follows assume, along with the believers, that the material quantity of capital goods (whether that quantity 'exists' or not) can be measured by their prices. This assumption puts Fisher's 'capital value' and 'capital wealth' on the same monetary footing, denominated in dollars and cents. And since the two entities are now perfectly comparable, the test becomes pragmatic: for the doctrine to stand there must be *empirical* correspondence between capitalization and the money price of capital goods.

Sadly, though, even this watered-down correspondence doesn't exist. It turns out not only that the two magnitudes are very unequal, but that their rates of growth oscillate in *opposite* directions. Let's see why.

Microsoft vs General Motors

Begin with a simple example. Figure 10.1 provides basic information on two leading corporations in the United States – Microsoft and General Motors (GM). There are four sets of bars in the chart, each presenting a different set of facts about the two companies. The grey bars are for GM, the black ones for Microsoft. On top of each of the Microsoft bars, we denote the per cent ratio of Microsoft relative to GM.

The two sets of bars on the left present data on the 'material' operations of the two firms. In terms of relative employment, depicted by the first set, GM is a giant and Microsoft is a dwarf. In 2005, GM had 335,000 workers, 5.5 times more than Microsoft's 61,000. The second set of bars denotes the respective dollar value of the companies' plant and equipment, measured in historical cost. In line with our concession, we assume that these dollar values are proportionate to the 'productive capacity' of the two companies. According to these statistics, in 2005, GM's 'productive capacity', standing at $78 billion, was 33 times larger than Microsoft's, whose capital goods were worth a mere $2.3 billion.

The two sets of bars on the right show the companies' respective capitalization. Here the picture is exactly the opposite, with Microsoft being the giant and GM the dwarf. In 2005, Microsoft's equity had a market value of $283 billion, nearly 26 times GM's $11 billion. And even if we take the sum of debt and market value (which supposedly stands as the total claim on a

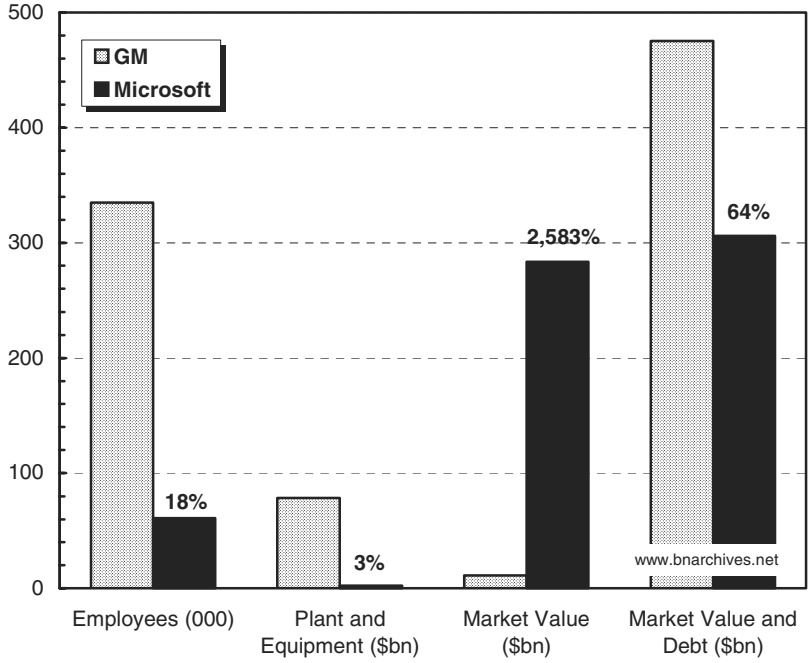

Figure 10.1 General Motors versus Microsoft, 2005

Note: The per cent figures indicate, for any given measure, the size of Microsoft relative to GM.

Source: Compustat through WRDS (series codes: data29 for employees; data8 for net plant and equipment; data24 for price; data54 for common shares outstanding; data181 for total liabilities).

company's productive assets), the GM total of $475 billion was only 55 per cent greater than Microsoft's $306 billion – a far cry from its relatively huge work force and massive plant and equipment.

The usual response to such a discrepancy, from Alfred Marshall onward, points to 'technology' and 'human capital'. This is the 'knowledge economy', tells us Peter Drucker (1969: Ch. 12). Obviously, Microsoft's disproportionate market value must be due to its superior know-how, packed as 'intangibles'. And since intangibles are not included in the plant and equipment category of corporate balance sheets on the one hand yet bear on capitalization on the other, we end up with a market value that deviates, often considerably, from the tangible capital stock.

This is a popular academic claim, and for a good reason: it is entirely reversible and totally irrefutable. To illustrate, simply consider the reverse assertion – namely that GM has more know-how than Microsoft. Since nobody knows how to quantify technology, how can we decide which of the two claims is correct?

Tobin's Q*: adding intangibles*

The discrepancy between capitalization and real assets is by no means limited to individual firms or particular time periods. In fact, it appears to be the rule rather than the exception. Consider Figure 10.2, which plots the so-called *Tobin's Q* ratio for US corporate sector from 1932 to 2006.[3] In this figure, *Tobin's Q* measures the ratio between corporate capitalization and capital goods: for each year, the series takes the market value of all outstanding corporate stocks and bonds and divides it by the current replacement cost of corporate fixed assets (plant and equipment). Since both magnitudes are denominated in current prices, the ratio between them is a pure number.

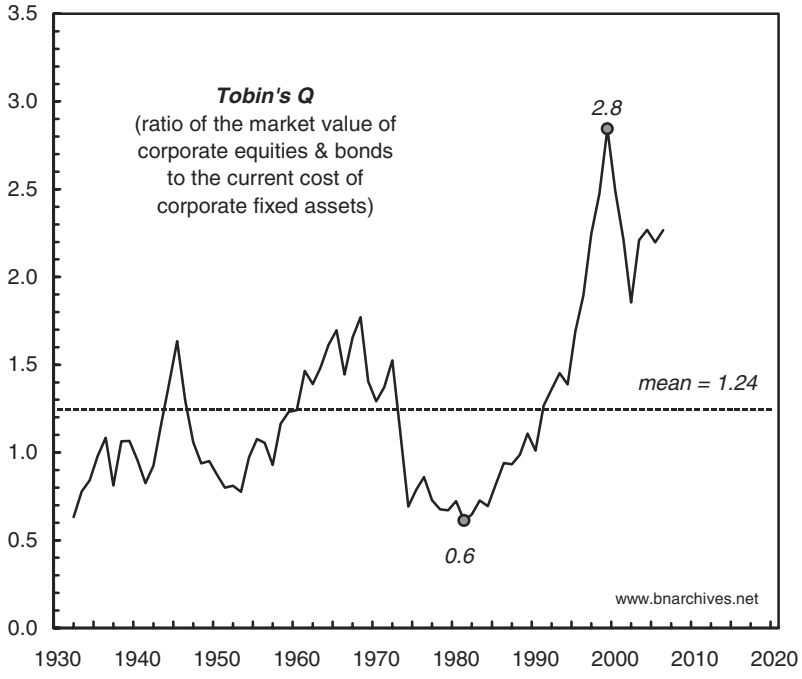

Figure 10.2 Tobin's Q in the United States

Note: The market value of corporate equities and bonds is net of foreign holdings by US residents.

Source: U.S. Bureau of Economic Analysis through Global Insight (series codes: FAPNREZ for current cost of corporate fixed assets). The market value of corporate equities and bonds splices series from the following two sources. 1932–1951: Global Financial Data (market value of corporate stocks and market value of bonds on the NYSE). 1952–2007: Federal Reserve Board through Global Insight (series codes: FL893064105 for market value of corporate equities; FL263164003 for market value of foreign equities held by US residents; FL893163005 for market value of corporate and foreign bonds; FL263163003 for market value of foreign bonds held by US residents).

3 The *Q*-ratio was proposed by James Tobin and William Brainard (1968; 1977) as part of their analysis of government stabilization and growth policies.

Here too we uphold our theoretical concession. We assume that Fisher's symmetry between real assets and capitalization, although failing the materialistic test, can still hold in nominal space. Now, if this assumption were true to the letter, *Tobin's Q* should have been 1. One dollar's worth of 'real assets' would create a definite future flow of money income, and that flow, once discounted, would in turn generate one dollar's worth of market capitalization. The facts, though, seem to suggest otherwise.

There are two evident anomalies. First, the historical mean value of the series is not 1, but 1.24. Second, the actual value of *Tobin's Q* fluctuates heavily – over the past 75 years it has oscillated between a low of 0.6 and a high of 2.8. Moreover, the fluctuations do not look random in the least; on the contrary, they seem fairly stylized, moving in a wave-like fashion. Let's inspect these anomalies in turn.

Why is the long-term average of *Tobin's Q* higher than 1? The conventional answer points to mismeasurment. To reiterate, fixed assets consist of plant and equipment; yet, as we have already seen in the case of Microsoft vs GM, capitalization accounts for *more* than just plant and equipment. And since *Tobin's Q* measures the ratio between the whole and one of its parts, plain arithmetic tells us the result must be bigger than 1. But, then, *how much* bigger? Even if we accept that there is mismeasurement here, the question remains as to why *Tobin's Q* should average 1.24, rather than 1.01 or 20 for instance. And here, too, just like in the case of Microsoft vs GM, the answer is elusive.

To pin down the difficulty, let's examine the structure of a balance sheet a bit more closely. Recall that corporations have two types of assets: tangible and intangible.[4] According to the neoclassical system of classification, tangible assets consist of capital goods – machines, structures and recently also software. Intangible assets, by contrast, represent knowledge, technology, organization, goodwill and other metaphysical entities. Mainstream economists consider both types of assets productive, and the accountants concur – but with a reservation. Although tangible and intangible assets are both 'real', they cannot always be treated in the same way.

The reason is prosaic. Tangible assets are bought and sold on the market and therefore have a universal price. Since the market is assumed to know all, this price is treated as an objective quantity and hence qualifies for inclusion in the balance sheet. By contrast, most intangible assets are produced by the firm itself. They are generated through internal R&D spending, in-house advertisement expenditures and sundry other costs associated with the likes of 'corporate re-engineering' and 'structural re-organisation'. These are not arm's-length transactions. They are not subject to the universalizing discipline

4 For mainstream analyses of intangibles, see for example Lev (2001) and Corrado, Hulten and Sichel (2006).

of the market, and therefore the intangible assets they generate lack an 'objective' price. And items that do not have an agreed-upon quantity, no matter how productive, cannot make it into the balance sheet. The best the accountants can do is to list them as current expenditures on the income statement.

There are two exceptions to the rule, though. One exception is when companies purchase pre-packaged intangibles directly through the market – for instance, by acquiring a franchise, patent, trademark, or copyright. The other is when one corporation acquires another at a price that exceeds the acquired company's book value. Since the merger does not create new tangible assets, the accountants assume that the premium must represent the intangible assets of the new formation. They also assume that since this premium is determined by the market, it must be objective. And given that the intangibles are objectively measured, the accountants feel safe enough to include them in the balance sheet.

So all in all we have three categories: (1) tangible assets that are included in the balance sheet, (2) intangible assets that are included in the balance sheet, and (3) intangible assets that are not included in the balance sheet. Now, as noted, fixed assets comprise only the first category, whereas capitalization reflects the sum of all three, and according to the conventional creed it is this mismatch that explains why the long-term average of *Tobin's Q* differs from 1.

The historical rationale goes as follows. Over the past several decades, US-based corporations have undergone an 'intangible revolution'. Their economy has become 'high-tech', with knowledge, information and communication all multiplying manifold. As a consequence of this revolution, the growth of tangible assets decelerated, while that of intangible assets accelerated. And how do we know the extent of this divergence? Simple, say the neoclassicists. Subtract from the market value of firms the market price of their fixed assets, and then assume that, since the market knows all, the difference equals the quantity of intangibles.

Using this standard method, a recent study of the S&P 500 companies estimates that, over the past thirty years, the ratio between their market value and the book value of their tangible assets has risen more than fourfold: from 1.2 in 1975 to 5 in 2005 (Cardoza *et al.* 2006). The increase implies that in 1975 intangibles amounted to 17 per cent of the total assets, whereas in 2005 they accounted for as much as 80 per cent. Much of this increase is attributed to the growth of out-of-balance-sheet intangibles, whose share of market capitalization during the period is estimated to have risen from 15 to 65 per cent.

Conclusion: the 1.24 mean value of *Tobin's Q* is hardly a mystery. It is simply another 'measure of our ignorance' – in this case, our inability to measure intangibles directly. Fortunately, the problem can be circumvented easily by indirect imputation. And, indeed, looking at Figure 10.2, we can see that much of the increase in *Tobin's Q* occurred over the past couple of

decades – coinciding, as one would expect, with the upswing of the 'intangible revolution'.

This rationale may sound soothing to neoclassical ears, but accepting it must come with some unease. To begin with, the neoclassicists don't really 'measure' intangibles; rather, they deduce them, like the ether, as a residual. Moreover, according to their own imputations, this residual accounts for as much as 80 per cent of total market value. To accept this magnitude as a fact is to make the 'material' basis of the theory (shaky as it is) account for no more than 20 per cent of market capitalization – hardly an impressive achievement for a theory that calls itself 'mainstream'. Moreover, the imputation method itself doesn't seem very robust. Given that the quantity of intangibles is equal to the difference between market value and tangible assets, oscillations in market value imply corresponding variations in intangible assets. But, then, why would the quantity of a productive asset, no matter how intangible, fluctuate – and often wildly – even from one day to the next?

Boom and bust: adding irrationality

The solution to the latter riddle is to invoke irrationality. In this augmented neoclassical version, capitalized market value consists of not two components, but three: in addition to tangible and intangible assets, it also includes an amount reflecting the *excessive* optimism or pessimism of investors. And this last component, goes the argument, serves to explain the second anomaly of *Tobin's Q* – namely its large historical fluctuations.

This irrationality rationale is illustrated in Figure 10.3. To explain it, let's backtrack and refresh the basics of rational economics. During good times, goes the argument, capitalist optimism causes investors to plough back more profits into productive assets. During bad times, the process goes in reverse, with less profit earmarked for that purpose. As a result, the growth of 'real' assets tends to accelerate in an upswing and decelerate in a downswing. This standard pattern is illustrated by the thick line in the figure. The data measure the rate of change of the current cost of corporate fixed assets (the denominator of *Tobin's Q*), with the series smoothed as a 10-year moving average in order to accentuate its long-term pattern. According to the figure, the US corporate sector has gone through two very long 'real' accumulation cycles (measured in price terms), the first peaking in the early 1950s, the second in the early 1980s.

The vigilant reader will note that the accumulation process here reflects only the tangible assets – for the obvious reason that the intangible ones cannot be observed directly. But this deficiency shouldn't be much of a concern. Since neoclassical economists view intangible and tangible assets as serving the same productive purpose, they can assume (although not prove) that their respective growth patterns, particularly over long periods of time,

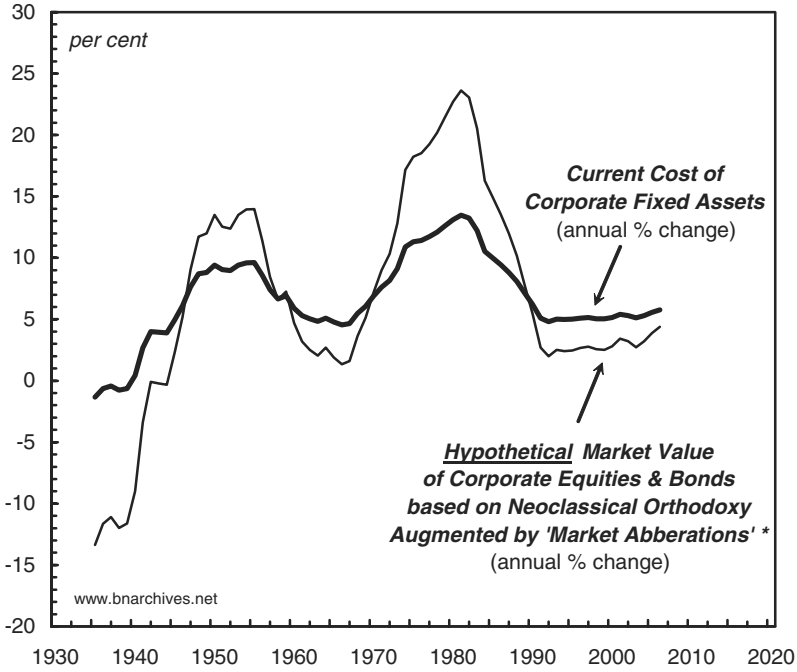

Figure 10.3 The world according to the scriptures

* The value for each year is computed in two steps: first, by calculating the deviation of the growth rate of the (smoothed) 'real' series from its historical mean; and, second, by adding 2.5 times the value of the deviation to the historical mean.

Note: Series are smoothed as 10-year moving averages.

Source: U.S. Bureau of Economic Analysis through Global Insight (series codes: FAPNREZ for current cost of corporate fixed assets).

are more or less similar.[5] So all in all, we could take the thick line as representing the *overall* accumulation rate of 'real' capital, both tangible and intangible (denominated in current dollars terms to bypass the impossibility of 'material' quantities).

Now this is where irrationality comes in. In an ideal neoclassical world – perfectly competitive, fully transparent and completely informed – Fisher's 'capital wealth' and 'capital value' would be the same. Capitalization on the stock and bond markets would exactly equal the dollar value of tangible and intangible assets. The two sums would grow and contract together, moving

5 If, as neoclassicists seem to believe, the trend growth rate of intangibles is faster than that of tangibles, then the *overall* growth rate of 'real' assets (tangible and intangible) would gradually rise above the growth rate of tangible assets only illustrated in Figure 10.3. However, since the cyclical pattern would be more or less the same, this possibility has no bearing on our argument.

up and down as perfect replicas. But even the neoclassicists realize that this is a mere ideal.

Ever since Newton, we know that pure ideas may be good for predicting the movement of heavenly bodies, but not the folly of men. Newton learned this lesson the hard way after losing plenty of money in the bursting of the 'South Sea Bubble'. Two centuries later he was joined by no other than Irving Fisher, who managed to sacrifice his own fortune – $10 million then, $100 million in today's prices – on the altar of the 1929 stock market crash.

So just to be on the safe side, neoclassicists now agree that, although capitalization does reflect the objective processes of the 'real economy', the picture must be augmented by human beings. And the latter, sadly but truly, are not always rational. Greed and fear cloud their vision, emotions upset their calculations and passion biases their decisions – distortions that are further amplified by government intervention and regulation, lack of transparency, insider trading and other such unfortunate imperfections. All of these deviations from the pure model lead to irrationality and end in mispriced assets.

But not all is lost. Convention has it that there is nonetheless order in the chaos, a certain rationality in the irrationality. The basic reason is that greed tends to operate mostly on the upswing, whereas fear usually sets in in the downswing. 'We tend to label such behavioural responses as non rational', explains Alan Greenspan (2008), 'But forecasters' concerns should be not whether human response is rational or irrational, only that it is observable and systematic'. The regularity puts limits on the irrationality; limits imply predictability; and predictability helps keep the faith intact and the laity in place.

The boundaries of irrationality are well known and can be recited even by novice traders. The description usually goes as follows. In the upswing, the growth of investment in productive assets fires up the greedy imagination of investors, causing them to price financial assets even higher. To illustrate, during the 1990s developments in 'high-tech' hardware and software supposedly made investors lose sight of the possible. The evidence: they capitalized information and telecommunication companies, such as Amazon, Ericsson and Nortel, far above the underlying increase in their 'real' value. A similar scenario unfolded in the 2000s. Investors pushed real-estate capitalization, along with its various financial derivatives and structured investment vehicles, to levels that far exceeded the underlying 'actual' wealth. The process, which neoclassicists like to think of as a 'market aberration', led to undue 'asset-price inflation'. Naturally, the capitalization created by such 'bouts of insanity' is mostly 'fake wealth'. It represents 'fictitious value' and leads to inevitable 'bubbles'.[6] But there is nonetheless a clear positive relationship here: the irrational growth of 'fake wealth', although excessive, moves in the *same* direction as the rational growth of 'real wealth'.

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6 For a typical analysis of 'bubbles', complete with the above jargon, see Janszen (2008).

The process is said to invert during a bust. This is where fear kicks in. The 'real' economy decelerates, but investors, feeling as if the sky is falling, bid down asset prices far more than implied by the 'underlying' productive capacity. A famous illustration is offered by the Great Depression. During the four years from 1928 to 1932, the dollar value of corporate fixed assets contracted by 20 per cent, while the market value of equities collapsed by an amplified 70 per cent (we have no aggregate figures for bonds). A similar 'undershooting' occurred during the 1997 Asian financial crisis, with market value contracting by 50 per cent in many cases, against a growth slowdown or a very moderate decline in the dollar value of the 'real' capital stock. Yet here, too, the relationship is clear: the irrational collapse of 'fictitious value', however exaggerated, moves *together* with the rational deceleration of 'productive wealth'.

This bounded irrationality is illustrated by the thin line in Figure 10.3. Note that this series is a hypothetical construct. It describes what the growth of capitalization might look like when neoclassical orthodoxy is augmented by 'irrationality' and 'market aberrations'. The value for each year in the hypothetical series is computed in two steps. First, we calculate the deviation of the growth rate of the (smoothed) 'real' series from its historical mean (so if the smoothed growth rate during the year is 8 per cent and the historical mean rate is 6.7 per cent, the deviation is 1.3 per cent). Second, we add 2.5 times the value of the deviation to the historical mean (so in our example, the hypothetical smoothed growth rate would be $2.5 \times 1.3 + 6.7 = 9.95$ per cent). The coefficient of 2.5 is purely arbitrary. A larger or smaller coefficient would generate a larger or smaller amplification, but the cyclical pattern would remain the same.

This simulation solves the riddle of the fluctuating *Tobin's Q*. It shows how, due to market imperfections and investors' irrationality, the growth of capitalization overshoots 'real' accumulation on the upswing, therefore causing *Tobin's Q* to rise, and undershoots it on the downswing, causing *Tobin's Q* to decline.

And so everything falls into place. *Tobin's Q* averages more than 1 due to an invisible, yet very real intangible revolution. And it fluctuates heavily – admittedly because the market is imperfect and humans are not always rational – but these oscillations are safely bounded and pretty predicable. Capitalization indeed deviates from the 'real' assets, though in the end it always reverts back to the 'fundamentals'.

Or does it?

The gods must be crazy

It turns out that while the neoclassical priests were busy fortifying the faith, the gods were having fun with the facts. The result is illustrated in Figure 10.4 (where both series again are smoothed as 10-year moving averages). The thick line, as in Figure 10.3, shows the rate of change of corporate fixed assets

measured in current replacement cost. But the thin line is different. Whereas in Figure 10.3 this line shows the rate of growth of capitalization stipulated by the theory, here it shows the *actual* rate of growth as it unfolded on the stock and bond markets. And the difference couldn't have been starker.

The gyrations of capitalization, instead of amplifying those of 'real' assets, move in exactly the *opposite* direction. It is important to note that we are dealing here not with short-term fluctuations of the business cycle, but with very long-term waves of roughly 30-year duration. Furthermore, the pattern seems anything but accidental. In fact, it is rather systematic: whenever the growth rate of 'real' assets decelerates, the growth rate of capitalization accelerates, and vice versa.[7]

This reality puts the world on its head. One could perhaps concede that 'real' assets do not have a material quantum – yet pretend, as we have agreed

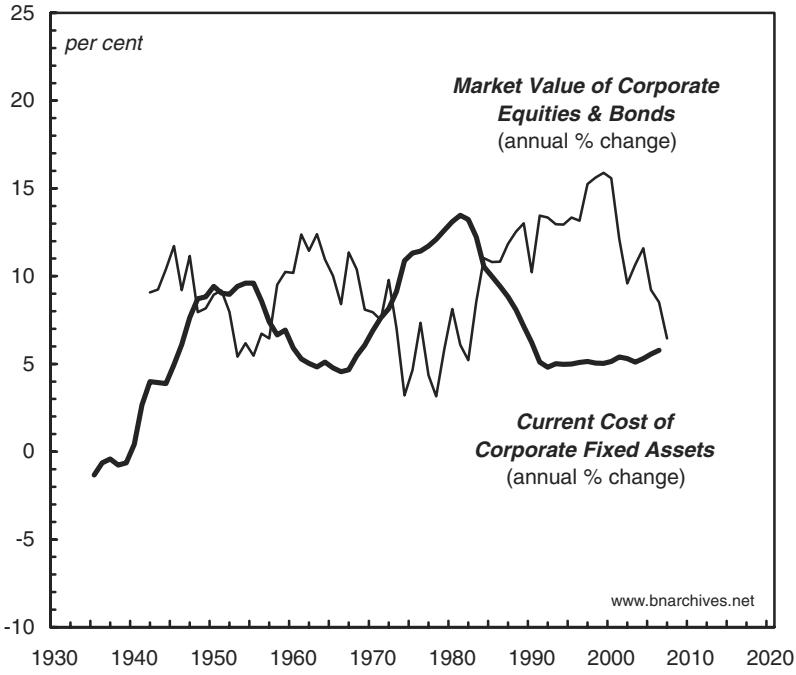

Figure 10.4 US capital accumulation: which is the 'real', which the 'fictitious'?

Note: The market value of corporate equities and bonds is net of foreign holdings by US residents. Series are smoothed as 10-year moving averages.

Source: See Figure 10.2.

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7 Given our rejection of 'material' measures of capital, there is no theoretical value in comparing the growth of the two series when measured in so-called 'real' terms. But just to defuse the scepticism, we deflated the two series by the implicit price deflator of gross investment and calculated their respective 'real' rates of change. The result is similar to Figure 10.4: the two growth rates move in opposite directions.

to do here, that somehow this nonexistent quantum is proportionate to its dollar price. One could further accept that the dollar value of 'real' assets is misleading insofar as it excludes the invisible 'dark matter' of intangible assets (up to 80 per cent of the total) – yet nonetheless be convinced that these invisible–intangible assets follow the same pattern as the visible–tangible ones. Finally, one could allow economic agents to be irrational – yet assume that their irrational pricing of assets ends up oscillating around the rational 'fundamentals' (whatever they may be). But it seems a bit too much to follow Fisher and claim that the long-term growth rate of capitalization is driven by the accumulation of 'real' assets when the two processes in fact move in opposite directions.

And, yet, that is precisely what neoclassicists (and Marxists as well) seem to argue. Both emphasize the growth of real assets as the fountain of riches – while the facts say the very opposite. According to Figure 10.4, during the 1940s and 1970s, when the dollar value of 'real assets' expanded the fastest, capitalists saw their capitalization growth dwindle. And when the value of 'real assets' decelerated – as it had during the 1950s and early 1960s, and, again, during the 1980s and 1990s – the capitalists were laughing all the way to the stock and bond markets.

Given this dismal record, why do capitalists continue to employ economists and subsidize their university departments? Shouldn't they fire them all and close the tap of academic money? Not at all, and for the simplest of reasons: misleading explanations help divert attention from what really matters. The economists would have us believe that the 'real thing' is the tangible quantities of production, consumption, knowledge and the capital stock, and that the nominal world merely reflects this 'reality' with unfortunate distortions. This view may appeal to workers, but it has nothing to do with the reality of accumulation. For the capitalist, the *real thing is the nominal capitalization of future earnings*. This capitalization is not 'connected' to reality; it *is* the reality. And what matters in that reality is not production and consumption, but *power*. This nominal reality of power is the capitalist *nomos*, and that should be our starting point.

11 Capitalization

Elementary particles

> But the past always seems, perhaps wrongly, to be predestined.
> —Michel Houellebecq, *The Elementary Particles*

Capitalization uses a discount rate to reduce a stream of future earnings to their present value. But this statement is still very opaque and lacking in detail. Which earnings are being discounted? Do capitalists 'know' what these earnings are – and if so, how? What discount rate do they use? How is this rate established? Moreover, accumulation is a dynamic process of change, involving the *growth* of capitalization and therefore *variations* in earnings and the discount rate. What, then, determines the direction and magnitude of these variations? Are they interrelated – and if so, how and why? Are the patterns of these relationships stable, or do they change with time?

Academic experts and financial practitioners have saved no effort in trying to answer these questions. But the general thrust of their inquiry has been uncritical and *a*historical. Explicitly or implicitly, they all look for the philosopher's stone. They seek to discover the 'natural laws of finance', the universal principles that, according to Frank Fetter, have governed capitalization since the beginning of time.

The path to this knowledge of riches is summarized by the motto of the Cowles Commission: 'Science is Measurement'. The Commission was founded in 1932 by Alfred Cowles III and Irving Fisher, two disgruntled investors who had just lost a fortune in the 1929 market crash. Their explicit goal was to put the study of finance and economics on a quantitative footing. And, on the face of it, they certainly succeeded. The establishment of quantitative journals, beginning with *Econometrica* in 1933 under the auspices of the Cowles Commission, and continuing with *The Journal of Finance* (1946), *Journal of Finance and Quantitative Analysis* (1966) and the *Journal of Financial Economics* (1974), among others, helped transform the nature of financial research. And this transformation, together with the parallel quantification of business school curricula since the 1960s, turned the analysis of finance into a mechanized extension of neoclassical economics.[1]

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1 For aspects of this transformation, see Whitley (1986) and Bernstein (1992).

Yet, if we are to judge this effort against the Cowles Commission's equation of science with measurement, much of it has been for naught. While finance theory grew increasingly quantitative, its empirical verification became ever more elusive. And that should not surprise us. Finance in its entirety is a *human* construction, and a relatively recent one at that. Its principles and regularities – insofar as it has any – are created not by god or nature, but by the capitalists themselves. And since what humans make, humans can – and do – change, any attempt to pin down the 'universal' regularities of their interactions becomes a Sisyphean task. Despite many millions of regressions and other mechanical rituals of the quantitative faith, the leading priests of finance remain deeply divided over what 'truly' determines capitalization. When it comes to 'true value', virtually every major theology of discounting has been proven empirically valid by its supporters and empirically invalid by its opponents (that is, until the next batch of data demonstrates otherwise).

But these failings are secondary. The 'science of finance' is first and foremost a collective ethos. Its real achievement is not objective discovery but ethical articulation. Taken together, the models of finance constitute the architecture of the capitalist *nomos*. In a shifting world of nominal mirrors and pecuniary fiction, this *nomos* provides capitalists with a clear, moral anchor. It fixes the underlying terrain, it shows them the proper path to follow, and it compels them to stay on track. Without this anchor, all capitalists – whether they are small, anonymous day traders, legendary investors such as Warren Buffet, or professional fund managers like Bill Gross – would be utterly lost.

Finance theory establishes the elementary particles of capitalization and the boundaries of accumulation. It gives capitalists the basic building blocks of investment; it tells them how to quantify these entities as numerical 'variables'; and it provides them with a universal algorithm that reduces these variables into the single magnitude of present value. Although individual capitalists differ in how they interpret and apply these principles, few if any can transcend their logic. And since they all end up obeying the same general rules, the rules themselves seem 'objective' and therefore amenable to 'scientific discovery'.

This chapter completes our discussion of the financial ethos by identifying the elementary particles of capitalization and outlining the relationship between them. The storyline follows two parallel paths. One path examines the conventional argument as it is being built from the bottom up. The starting point here is the neoclassical actor: the representative investor/consumer. This actor is thrown into a financial pool crowded with numerous similar actors, all seeking to maximize their net worth earmarked for hedonic consumption. For these actors, the financial reality is exogenously given. As individuals, there is little they can do to change it. And since the reality follows its own independent trajectory, the sole question for the actor is how to *respond*: 'what should I do to make the best of a *given* situation?' As a result, although the market looks full of action, in fact every single bit of it is

passive reaction. And since everyone is merely responding, the only thing left for the theorist to do is aggregate all the reactions into a single equilibrium: the price of the asset.

The other path in our presentation looks at capitalization from the top-down perspective of organized capitalist power. Here the question is not only how investors behave, but also how the ethos that conditions them has emerged and developed. Furthermore, although capitalists undoubtedly react to existing conditions, they also seek to change these conditions; and it is this *active restructuring* – particularly by the leading corporate and government organs – that needs to be put at the centre of accumulation analysis. The second purpose of our presentation, then, is to allude to these transformative aspects of the capitalist *nomos*. This emphasis provides the framework for the next part of the book, where we begin our analysis of capital as power.

Earnings

When capitalists buy an asset, they acquire a claim over earnings. This claim is the anchor of capital. 'The value of a common stock', write Graham and Dodd in the first edition of their sacred manual, 'depends entirely upon what it will earn in the future' (1934: 307). 'What is an issue in the purchase decision', the book reiterates half a century and four editions later, 'is the future earnings that the investor will obtain by buying the stock. It is the ability of the existing assets and liabilities to create future earnings that determine the value of the equity position' (Graham *et al.* 1988: 553).

In Chapter 9, we provided a simple expression of this ethos, with capitalization at any given time (K_t) being equal to the discounted value of a perpetual stream of earnings (E):

$$1. \quad K_t = \frac{E}{r}$$

Financial analysts, who customarily focus on individual stocks, similarly express the price of a share at a given time (P_t) as the present value of a perpetual stream of earnings per share (EPS):[2]

$$2. \quad P_t = \frac{EPS}{r}$$

These equations, although simplistic, point to a basic pillar of finance. Whether we look at overall capitalization or the price per 'share' of capitalization, earnings have a crucial impact on the magnitude of capital and its

2 Equation 2 is derived by dividing both sides of Equation (1) by the number of shares (N), such that $P_t = K_t / N$ and $EPS = E / N$.

pace of accumulation. All else being equal, the higher the earnings, the larger the capitalization; and the faster the growth of earnings, the more rapid the rate of accumulation.

This basic relationship is illustrated in Figure 11.1. The chart plots annual data for the S&P 500 group of US-listed companies, showing, for each year, the average share price for the group along with its average earnings per share. Both time series are normalized with 1871 = 100 and are plotted against a logarithmic scale to calibrate the pattern of exponential growth.

The data establish two clear facts. The first fact is that, over the long term, capitalization is positively and fairly tightly related to earnings. During the 1871–2006 period, the correlation coefficient between the two series measured 0.94 out of a maximum value of 1.

The alert reader may contest this correlation as deceptive, on the ground that capitalists discount not the current profits depicted in the chart, but the

Figure 11.1 S&P 500: price and earnings per share

Note: The S&P 500 index splices the following three series: the Cowles/Standard and Poor's Composite (1871–1925); the 90-stock Composite (1926–1957); and the S&P 500 (1957–present). Earnings per share are computed as the ratio of price to price/earnings.

Source: Global Financial Data (series codes: _SPXD for price; SPPECOMW for price/earnings); Standard and Poor's through Global Insight (series codes: JS&PC500 for price; PEC500 for price/earnings).

profits they expect to earn in the future. And that certainly is true, but with a twist. Because they are obsessed with the future, capitalists are commonly described as 'forward looking'. They (or their strategists) constantly conjure up future events, developments and scenarios, all with an eye to predicting the future flow of profit. An Aymara Indian, though, would describe this process in reverse. Since our eyes can see only what lies ahead and are blind to what lies behind, it makes more sense to say that capitalists have the future *behind* them: like the rest of us, they can never really see it.[3]

Now, imagine the uneasy feeling of a capitalist having to walk backwards into the future – not seeing what she is back-stepping into, having no idea when and where she may trip and not knowing how far she can fall. Obviously, she would feel much safer if her waist were tied to a trustworthy anchor – and preferably one that she can see clearly in front of her. And that is precisely what capitalists do: they use current earnings (which they know) as a benchmark to extrapolate future ones (which they do not know) – and then quickly discount their guess back to its 'present' value.

Their discounting ritual is usually some variant of Equation (2). Recall from Chapter 9 that this equation is derived on the assumption that earnings continue in perpetuity at a *given* level. Of course, with the exception of fixed-income instruments, this assumption is never true: most assets see their earnings vary over time. But whatever its temporal pattern, the flow of earnings can always be expressed as a perpetuity of some fixed average.[4] And it turns out that making that average equal to current profit (or some multiple of it) generates an empirical match that is more than sufficient for our purpose here. The tight correlation in Figure 11.1 thus confirms a basic tenet of the modern capitalist *nomos*. It shows that the level and growth of earnings – at least for larger clusters of capital over an extended period of time – are the main benchmark of capitalization and the principal driver of accumulation.

The theoretical implication is straightforward: in order to theorize accumulation we need to theorize earnings. And yet here we run into a brick wall. As we have seen, both neoclassical and Marxist writers anchor earnings in the so-called 'real' economy; but since production and consumption cannot be measured in universal units, and given that the 'capital stock' does not have a

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3 Most languages treat the ego as facing – and in that sense looking *toward* – the future. When capitalists speak of 'forward-looking profits' they refer to future earnings. Similarly, when they announce that 'the crisis is behind us' they talk of something that has already happened. The Aymara language, spoken by Indians in Southern Peru and Northern Chile, is a notable exception. Its words and accompanying gestures treat the known past as being 'in front of us' and the unknown future as lying 'behind us'. To test this inverted perception just look up to the stars: ahead of you there is nothing but the past (Núñez and Sweetser 2006; Pincock 2006).

4 The visual manifestation of this smoothing is rather striking. When analysts chart the past together with their predictions for the future, the historical pattern usually looks ragged and scarred, while the future forecast, like a metrosexual's smoothly-shaved cheek, usually takes the shape of a straight line or some stylized growth curve.

definite productive quantum, both explanations collapse. The only solution is to do what mainstream and heterodox theories refuse to do: abandon the productive–material logic and look into the *power* underpinnings of earnings. The remaining chapters of this book are devoted largely to this task.

However, before turning to a detailed power analysis of earnings, it is important to identify the other elementary particles of capitalization. The significance of these other particles is evident from the second fact in Figure 11.1 – namely, that the match between earnings and capitalization, although fairly tight in the longer run, rarely holds in the medium and short term.

Sometimes the correlation is rather high. During the 1870s, 1900s and 1930s, for example, the annual variations in stock prices were very much in tandem with the ups and downs of earnings. But at other times – for instance, during the 1910s, 1940s and 1990s – the association was much looser and occasionally negative. Furthermore, even when prices and earnings move in the same direction, the magnitude of their variations is often very different.

These differences in scale are illustrated by the fluctuations of the price–earning ratio (or PE ratio for short), obtained by dividing share prices by their corresponding earnings per share. For the S&P 500 index, the PE ratio has fluctuated around a mean value of 16, with a low of 5 in 1917 and a high of 131 in 1932. These fluctuations mean that, if we were to predict capitalization by multiplying current earnings by the historical PE average, our estimates could overshoot by as much as 220 per cent (in 1917) and undershoot by as much as 88 per cent (in 1932).[5] Moreover, the deviations tend to be rather persistent, with price running ahead of earnings for a decade or more, and then reversing direction to trail earnings for another extended period. Finally, it should be added that the medium- and short-term mismatch between earnings and capitalization, evident as it is for the S&P 500, is greatly amplified at lower levels of aggregation. Individual firms – and even sectors of firms – often see their capitalization deviate markedly from their earnings for prolonged periods. Obviously, then, there is much more to capitalization than earnings alone.

Hype

Decomposition

The first qualification requires a decomposition of earnings. By definition, *ex ante* expected future earnings are equal to the *ex post* product of actual future earnings and what we shall call the 'hype' coefficient.[6] Using these concepts, we can modify Equation (1), such that:

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5 When the PE is 5, the capitalization implied by a PE of 16 is 16/5 times its actual level (or 220 per cent larger). When the PE is 131, the implied capitalization is 16/131 times the actual level (or 88 per cent smaller).

6 For early, if somewhat naïve, attempts to understand hype, see Nitzan (1995b; 1996a).

$$3. \quad K_t = \frac{EE}{r} = \frac{E \times H}{r}$$

In this expression, EE is the expected future earnings (in perpetuity), E is the actual level of future earnings (in perpetuity), and H is the hype coefficient equal to the ratio of expected future earnings to actual future earnings ($H = EE/E$). Similarly for share prices:

$$4. \quad P_t = \frac{EEPS}{r} = \frac{EPS \times H}{r}$$

with $EEPS$ denoting expected future earnings per share (in perpetuity), EPS signifying actual future earnings per share (in perpetuity), and H standing for the hype coefficient equal to the ratio of expected to actual future earnings per share (so that $H = EEPS/EPS$).

According to this decomposition, the capitalization of an asset (or of a share in that asset) depends on two earnings-related factors. The first factor is the actual, *ex post* future earnings. These earnings are unknown when the assets are capitalized, but they will become known as time passes and the income gets recorded and announced. The second factor – the hype coefficient – represents the *ex post* collective error of capitalists when pricing the asset. This error, too, is unknown when the assets are priced, and is revealed only once the earnings are reported.

The hype coefficient, expressed as a pure number, measures the extent to which capitalists are overly optimistic or overly pessimistic about future earnings. When they are excessively optimistic, the hype factor is greater than 1. When they are exceedingly pessimistic, hype is less than 1. And in the unlikely case that their collective projection turns out to be exactly correct, hype is equal to 1.

The reader can now see that Equations (1) and (2) are special cases of Equations (3) and (4), respectively. The former equations assume, first, that earnings will continue to flow in perpetuity at current levels; and, second, that capitalist expectations regarding these earnings are neither overly optimistic nor overly pessimistic, so that hype is equal to 1. As we have shown, these simplifying assumptions work well for broad aggregates such as the S&P 500 and over the long run; but they are not very useful for shorter periods of time and/or when applied to narrower clusters of capital.

Movers and shakers of hype

On the face of it, the introduction of hype may seem to seriously undermine the usefulness of the discounting formula. After all, with the exception of 'sure' cases such as short-term government bonds whose future payments are considered more or less certain, the earnings expectations of capitalists can be anything – and, by extension, so can be the level of capitalization.

This has been a popular suspicion, particularly among critical political economists who like to deride the growing 'fictitiousness' of capital. Over the years, many were happy to side with John Maynard Keynes, whose opinion, expressed somewhat tongue in cheek, was that capitalists value stocks not in relation to what they expect earnings to be, but recursively, based on what they expect *other* investors to expect:

> . . . professional investment may be likened to those newspaper competitions in which the competitors have to pick out the six prettiest faces from a hundred photographs, the prize being awarded to the competitor whose choice most nearly corresponds to the average preferences of the competitors as a whole; so that each competitor has to pick, not those faces which he himself finds prettiest, but those which he thinks likeliest to catch the fancy of the other competitions, all of whom are looking at the problem from the same point of view. . . . We have reached the third degree where we devote our intelligence to anticipating what average opinion expects the average opinion to be. And there are some, I believe, who practice the fourth, fifth and higher degrees.
>
> (Keynes 1936: 156)

This infinite regress indeed seems persuasive when one focuses on the trading pit or looks at the day-to-day gyrations of the market. But it does not sit well with long-term facts. In Figure 11.1, asset prices for the S&P 500 companies are shown to oscillate around earnings, and similar patterns can be observed when examining the history of individual stocks over a long enough period of time.

So we have two different vantage points: a promiscuous short-term perspective, according to which asset prices reflect Keynes-like recursive expectations; and a disciplined long-term viewpoint, which suggests that these expectations, whatever their initial level, eventually converge to actual earnings. Expressed in terms of Equations (3) and (4), the two views mean that the hype coefficient, however arbitrary in the short or medium run, tends to revert to a long-term mean value of 1.

Now, recall that hype is the ratio of *expected earnings* to earnings (EE/E), whereas the above impressions are based on the ratio of *capitalization* to earnings (K/E). The latter number reflects *both* hype and the discount rate ($K/E = H/r$), so unless we know what capitalists expect, we remain unable to say anything specific about hype. But we can speculate.

Suppose that there are indeed large and prolonged fluctuations in hype. Clearly, these fluctuations would be crucial for understanding capitalism: the bigger their magnitude, the more amplified the movement of capitalization and the greater its reverberations throughout the political economy. Now, assume further that the movements of hype are not only large and prolonged, but also fairly patterned. This situation would open the door for 'insiders' to practically print their own money and therefore to try to manipulate hype

to that end. Hype would then bear directly on power, making its analysis even more pertinent for our purpose.

What do we mean by 'insiders'? The conventional definition refers to a capitalist who knows something about future earnings that other capitalists do not. Typical examples would be a KKR partner who is secretly orchestrating a big leveraged buyout, a Halliburton executive who is about to sign a new contract with the Department of Defense, or a JPMorgan-Chase financier who has been discretely informed of an imminent Fed-financed bailout of Bear Stearns. This exclusive knowledge gives insiders a better sense of whether the asset in question is under- or over-hyped; and this confidence allows them to buy assets for which earning expectations fall short of 'true' earnings – and wait. Once their private insight becomes public knowledge, the imminent rise of hype pushes up the price and makes them rich.[7]

These insiders are largely *passive*: they take a position expecting a change in hype. There is another type, though, less known but far more potent: the *active* insider. This type is doubly distinctive. First, it knows not only how to identify hype, but also how to *shape* its trajectory. Second, it tends to operate not individually, but in loosely organized pacts of capitalists, public officials, pundits and assorted 'opinion makers'. The recent US sub-prime scam, for example, was energized by a coalition of leading banks, buttressed by political retainers, eyes-wide-shut regulators, compliant rating agencies and a cheering chorus of honest-to-god analysts. The active insiders in the scheme leveraged their positions – and then stirred the capitalist imagination and frothed the hype to amplify their gains many times over.

The more sophisticated insiders can also print money on the way down. By definition, a rise in hype inflates the fortunes of outsiders who unknowingly happened to ride the bandwagon. This free ride, though, is not all that bad for insiders. Since hype is a cyclical process, its reversion works both ways. And so, as the upswing builds momentum and hype becomes excessive, those 'in the know' start selling the market short to those who are not in the know. Eventually – and if need be with a little inside push – the market tips. And as prices reverse direction, the short-positioned insiders see their fortunes swell as fast as the market sinks. Finally, when the market bottoms, the insider starts accumulating under-hyped assets so that the process can start anew.

These cyclical exploits, along with their broader consequences, are written in the annals of financial euphoria and crises – from the Tulip Mania of the seventeenth century and the Mississippi and South Sea schemes of the eighteenth century, to the 'new-economy' miracle of the twentieth century and the sub-prime bubble of recent times. The histories of these episodes – and countless others in between – are highly revealing. They will tell you how

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7 This method should not be confused with so-called 'value investing'. The latter tactics, immortalized by Graham and Dodd's *Security Analysis* (1934), also involve buying cheap assets; but what constitutes 'cheap' in this case is a matter of interpretation rather than exclusive insight into facts.

huge fortunes have been made and many more lost. They will teach you the various techniques of public opinion making, rumour campaigns, orchestrated promotion and Ponzi schemes. And they will introduce you to the leading private investors, corporate coalitions and government organs whose art of delusion has helped stir the greed and fear of capitalists, big and small.[8]

However, there is one thing these stories cannot tell you, and that is the *magnitude* of hype. In every episode, investors were made to expect prices to go up or down, as the case may be. But price is not earnings, and as long as we do not know much about the earnings projections of capitalists, we remain ignorant of hype, even in retrospect.

Random noise

This factual void has enabled orthodox theorists to practically wipe the hype and eliminate the insiders. Granted, few deny that earnings expectations can be wrong, but most insist they cannot be wrong for long. Whatever the errors, they are at worst temporary and always random. And since hype is transitory and never systematic, it leaves insiders little to prey on and therefore no ability to persist.

The argument, known as the 'efficient market hypothesis', was formalized by Eugene Fama (1965; 1970) as an attempt to explain why financial markets seem to follow what Maurice Kendall (1953) called a 'random walk' – i.e. a path that cannot be predicted by its own history. The logic can be summarized as follows. At any point in time, asset prices are assumed 'optimal' in the sense of incorporating all available information pertaining to the capitalizing process. Now, since current prices are already 'optimal' relative to current knowledge, the arrival of *new* knowledge creates a mismatch. An unexpected announcement that British Petroleum has less oil reserves than previously reported, for example, or that the Chinese government has reversed its promise to enforce intellectual property rights, means that earlier profit expectations were wrong. And given that expectations have now been revised in light of the new information, asset prices have to be 're-optimized' accordingly.

Note that, in this scheme, truly new information is by definition random; otherwise, it would be predictable and therefore already discounted in the price. So if markets incorporate new information 'efficiently' – i.e. correctly and promptly – it follows that price movements must look as random as the new information they incorporate. And since ('technical analysis' notwithstanding) current price movements do seem random relative to their past moments, the theorist can happily close the circle and conclude that this must be so because new information is being discounted 'efficiently'.[9]

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8 For some notable histories, see Mackay (1841), Kindelberger (1978) and Galbraith (1990).

9 This first draft of the financial constitution is often softened by various amendments, particularly to the definition of information and to the speed at which the market incorporates it.

There is a critical bit that needs to be added to this story, though. As it stands, the presumed efficiency of the asset market hangs crucially on the existence of 'smart money' and its hired experts. The reason is obvious. Most individual investors are blissfully unaware of new developments that are 'relevant' to earnings, few can appreciate their implications, and even fewer can do so accurately and quickly. However, since any mismatch between new information and existing prices is an unexploited profit opportunity, investors all have an incentive to obtain, analyse and act on this new information. And given that they themselves are ill equipped for the job, they hire financial analysts and strategists to do it for them.

These analysts and strategists are the engineers of market efficiency. They have access to all available information, they are schooled in the most up-to-date models of economics and finance, and there are enough of them in the beehive to find and eliminate occasional mistakes in judgement. The big corporations, the large institutional investors, the leading capitalists – 'smart money' – all employ their services. Individual investors' folly is 'smart money's opportunity. By constantly taking advantage of what others do not know, the pundits advertise their insight and keep the market on an efficient keel. And since by definition no one knows more than they do, there is nobody left to systematically outsmart the market. This, at any rate, is the official theology.

Flocks of experts and the inefficiency of markets

The problem is with the facts. As noted, until recently nothing much was known about expectations and hype, so the theory could never be put to the test. But the situation has changed. In 1971, a brokerage firm named Lynch, Jones and Ryan (LJR) started to collect earning estimates made by other brokers. The initial coverage was modest in scope and limited in reach. It consisted of projections by 34 analysts pertaining to some 600 individual firms, forecasts that LJR summarized and printed for the benefit of its own clients. But the service – known as the Institutional Brokers Estimate System, or IBES – expanded quickly and by the 1980s became a widely used electronic

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According to Fischer Black (1986), the news always comes in two flavours: information and noise. Information is something that is relevant to 'theoretical value' (read true value), while noise is everything else. Unfortunately, since, as Black acknowledges, true value can never be observed, there is no way to tell what is 'relevant', and therefore no way to separate information from noise. And since the two are indistinguishable, everyone ends up trading on a mixture of both. Naturally, this mixture makes the theory a bit fuzzy, but Black is undeterred. To keep the market equilibrated, he loosens the definitions. An efficient market, he states, is one in which prices move within a 'factor of 2' of true value: i.e. between a high that is twice the (unknowable) magnitude of value and a low that is half its (unknowable) size. In his opinion, this definition of efficiency holds 90 per cent of the time in 90 per cent of the markets – although he concedes that these limits are not cast in stone and can be tailored to the expert's own likings (p. 533).

data provider. The system currently tracks the forecasts of some 90,000 analysts and strategists worldwide, regarding an array of corporate income statements and cash flow items. The forecasts cover both individual firms and broad market indices and are projected for different periods of time – from the next quarter through to the vaguely defined 'long term'. The estimates go back to 1976 for US-based firms and to 1987 for international companies and market indices.

And so, for the first time since the beginning of discounting more than half a millennium ago, there is now a factual basis to assess the pattern and accuracy of expert projections. This new source of data has not been lost on the experts. Given that any new information is a potential profit opportunity, along with IBES there emerged a bourgeoning 'mini-science of hype': a systematic attempt to foretell the fortune tellers.[10]

So far, the conclusions of this mini-science hardly flatter the forecasters and seriously damn their theorists. In fact, judging by the efficacy of estimates, the efficient market hypothesis should be shelved silently. It turns out that analysts and strategists are rather wasteful of the information they use. Their forecast errors tend to be large, persistent and very similar to those of their peers. They do not seem to learn from their own mistakes, they act as a herd, and when they do respond to circumstances, their adjustment is painfully lethargic.

A recent comprehensive study of individual analyst forecasts by Guedj and Bouchaud (2005) paints a dismal picture. The study covers 2812 corporate stocks in the United States, the European Union, the United Kingdom and Japan, using monthly data for the period 1987–2004. Of its many findings, three stand out. First, the average forecast errors are so big that even a simple 'no-change' projection (with future earnings assumed equal to current levels) would be more accurate. Second, the forecasts are not only highly biased, but also skewed in the same direction: looking twelve months ahead, the average analyst overestimates the earnings of a typical corporation by as much as 60 per cent! (if analysts erred equally in both directions, the average error would be zero). Although the enthusiasm cools down as the earning announcement date gets closer, it remains large enough to keep the average forecast error as high as 10 per cent as late as one month before the reports are out. Finally, and perhaps most importantly, the projections are anything but random. The dispersion of forecasts among the analysts is very small – measuring between 1/3rd and 1/10th the size of their forecast errors. This difference suggests, in line with Keynes, that analysts pay far more attention to the changing sentiment of other analysts than to the changing facts.

Behavioural theorists of finance often blame these optimistic, herd-like projections on the nature of the analyst's job. The analysts, they argue, tend to forge non-arm's-length relationships with the corporations they cover, and this intimacy leads them to 'err' on the upside. Moreover, the analysts'

10 For an extensive annotated bibliography on earnings forecasts, see Brown (2000).

preoccupation with individual corporate performance causes them to lose sight of the broader macro picture, creating a blank spot that further biases their forecast.

These shortcomings are said to be avoided by strategists. Unlike analysts who deal with individual firms, strategists examine broad clusters of corporations, such as the S&P 500 or the Dow Jones Industrial Average. They also use different methods. In contrast to the analysts who build their projections from the bottom up, based on company 'fundamentals', strategists construct theirs from the top down, based on aggregate macroeconomic models spiced up with political analysis. Finally, being more detached and closely attuned to the overall circumstances supposedly makes them less susceptible to cognitive biases.

Yet this approach does not seem very efficient either. Darrough and Russell (2002) compare the performance of bottom-up analysts to top-down strategists in estimating next year's earnings per share for the S&P 500 and Dow Jones Industrial Average over the period 1987–99.[11] They show that although strategists are less hyped than analysts, their estimates are still very inaccurate and path dependent. They are also far more lethargic than analysts in revising their forecasts. Being locked into their macro models, they often continue to 'project' incorrect results retroactively, *after* the earnings have already been reported! The appendix to this chapter examines the temporal pattern of strategist estimates. It demonstrates not only that their forecast errors are very large, but that they follow a highly stylized, *cyclical* pattern. Their hype cycle is several times longer than the forecast period itself, and its trajectory is systematically correlated with the direction of earnings.

Let there be hype

And so the Maginot Line of market efficiency crumbles. The analysts and strategists know full well that 'it is better for reputation to fail conventionally than to succeed unconventionally', as Keynes once put it (1936: 158). Consequently, rather than ridding each other of the smallest of errors, they much prefer the trotted path of an obedient flock. Ironically, this preference is greatly strengthened by the fact that most of them actually *believe* in market efficiency. Ultimately, the market must be right, and since it is their recommendations that keep the market on track, it follows that to deviate from their own consensus is to bet against the house. Better to run with the herd.

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11 Bottom-up projections for each index are constructed in two stages: first by averaging for each individual company in the index the estimates of the different analysts, yielding the company's 'consensus forecast'; and then by computing the weighted average of these consensus forecasts, based on the relative size of each company in the index. The top-down consensus forecasts for each index are obtained by averaging the projections of the different strategists.

This inherent complacency, amplified by the folly of so-called 'dumb money', means that there is no built-in 'mechanism' to stop the insiders. In fact, the very opposite is the case. Since the experts tend to move in a flock, it is enough to influence or co-opt those who lead (the mean estimate) in order to shift the entire pack (the distribution of estimates). And the temptation to do so must be enormous. Fluctuations in hype can be several times larger than the growth of actual earnings, so everything else being equal, a dollar invested in changing earning expectations could yield a return far greater than a dollar spent on increasing the earnings themselves.

Pressed to the wall, mainstream finance responded to these anomalies by opening the door to various theories of 'irrationality' – from Herbert Simon's 'bounded rationality' (1955; 1979), through Daniel Ellsberg's 'ambiguity aversion' (1961), to Daniel Kahneman and Amos Tversky's 'prospect theory' (1979), to Richard Thaler's broader delineation of 'behavioural finance' (De Bondt and Thaler 1985). These explanations, though, remain safely within the consensus. Like their orthodox counterparts, they too focus on the *powerless individual who passively responds to given circumstances*. Unlike his nineteenth-century predecessor, this 'agent' is admittedly imperfect. He is no longer fully informed and totally consistent, he tends to harbour strange preferences and peculiar notions of utility (and may even substitute 'satisficing' for 'maximizing'), and he sometimes lets his mood cloud his better judgement.

These deviations, argue their theorists, fly in the face of market efficiency: they show that irrational hype can both exist and persist. But that conclusion, the theorists are quick to add, does not bring the world to an end. As noted in Chapter 10, individual irrationality, no matter how rampant, is assumed to be bounded and therefore *predictable*. And since predictable processes, no matter how irrational, can be modelled, the theorists can happily keep their jobs.

Of course, what the models cannot tell us (and the financial modellers are careful never to ask) is how these various 'irrationalities' are being shaped, by whom, to what ends and with what consequences. These aspects of capital accumulation have nothing to do with material technology and individual utility. They are matters of organized power. And on this subject, finance theorists and capitalist insiders are understandably tight-lipped. The only way to find out is to develop a radical political economy of hype independent of both.

The discount rate

If putting a number on future income and wealth seems difficult, knowing *how much* to trust one's prediction is next to impossible – or, at least that is how it was for much of human history. When Croesus, the fabulously rich king of Lydia, asked Solon of Athens if 'ever he had known a happier man than he', the latter refused to be impressed by the monarch's present wealth:

> The gods, O king, have given the Greeks all other gifts in moderate degree; and so our wisdom, too, is a cheerful and a homely, not a noble and kingly wisdom; and this, observing the numerous misfortunes that attend all conditions, forbids us to grow insolent upon our present enjoyments, or to admire any man's happiness that may yet, in course of time, suffer change. For *the uncertain future has yet to come, with every possible variety of fortune*; and him only to whom the divinity has continued happiness unto the end, we call happy; to salute as happy one that is still in the midst of life and hazard, we think as little safe and conclusive as to crown and proclaim as victorious the wrestler that is yet in the ring.
>
> (Plutarch 1859, Vol. 1: 196–97, emphasis added)

Solon's caution was not unfounded, for in due course the hubristic Croesus lost his son, wife and kingdom. And in this respect, we can say that little has changed. The future is still uncertain, but the capitalist rulers, like their royal predecessors, continue to convince themselves that somehow they can circumvent this uncertainty. The main difference is in the methods they use. In pre-capitalist times uncertainty was mitigated by the soothing words of astrologists and prophets, whereas nowadays the job is delegated to the oracles of probability and statistics.

Capitalist uncertainty is built right into the discounting formula. To see why, recall our derivation of this formula in Equations (1) to (6) in Chapter 9. We started by defining the rate of return (r) as the ratio of the known earnings stream (E) to the known dollar value of the invested capital (K), such that $r = E/K$. The expression is straightforward. It has one equation, one unknown and an obvious solution. Next, we rearranged the equation. Since the rate of interest can be calculated on the basis of the earnings and the original investment, it follows that the original investment can be calculated based on the rate of return and the earnings, so that $K = E/r$. The result is the discount formula, the social habit of thinking with which capitalists began pricing their capital in the fourteenth century.

Mathematically, the two formulations seem identical, if not circular (recall the Cambridge Controversy). But in reality there is a big difference between them. The first expression is *ex post*. It computes the realized rate of return based on knowing both the initial investment and the subsequent earnings. The second expression is *ex ante*. It calculates the present value of capital based on the future magnitude of earnings. These future earnings, however, cannot be known in advance. Furthermore, since capitalists do not know their future earnings, they cannot know the rate of return these earnings will eventually represent. Analytically, then, they are faced with the seemingly impossible task of solving one equation with three unknowns.

In practice, of course, that is rarely a problem. Capitalists simply conjure up two of the unknown numbers and use them to compute the third. The question for us is how they do it and what the process means for accumula-

tion. The previous section took us through the first step: predicting future earnings. As we saw, these predictions are always wrong. But we also learned that the errors are not unbounded, and that, over a sufficiently long period of time, the estimates tend to oscillate around the actual numbers. The second step, to which we now turn, is articulating the discount rate – the rate that the asset is expected to yield with the forecasted earnings. And it turns out that the two steps are intimately connected. The discount rate mirrors the confidence fortunetelling capitalists have in their own forecasts: *the greater their uncertainty, the higher the discount rate – and vice versa*.

The normal and the risky

What is the 'proper' discount rate? The answer has a very long history, dating back to Mesopotamia in the third millennium BCE (a topic to which we return in the next chapter).[12] Conceptually, the computation has always involved two components: a 'benchmark' rate plus a 'deviation'. The meaning of these two components, though, has changed markedly over time.

Until the emergence of capitalization in the fourteenth century, both components were seen as a matter of state decree, sanctioned by religion and tradition, and modified by necessity. The nobility and clergy set the just lending rates as well as the tolerated zone of private divergence, and they often kept them fixed for very long periods of time (Hudson 2000a, 2000b).

Neoclassicists never tire of denying this 'societal' determination. Scratch the pre-capitalist surface, they insist, and underneath you will find the eternal laws of economics. From the ancient civilizations and early empires, to the feudal world, to our own day and age, the underlying logic has always been the same: the productivity of capital determines the 'normal' rate of return, and the uncertainty of markets determines the 'deviations' from that normal.

This confidence seems unwarranted. We have already seen that the neoclassical theory of profit is problematic, to put it politely. But even if the theory were true to the letter, it would still be difficult to fathom how its purely *capitalist* concepts could possibly come to bear on a *pre*-capitalist discount rate. First, prior to the emergence of capitalization in the fourteenth century the productivity doctrine was not simply unknown; it was unthinkable. Second, there were no theoretical tools to conceive, let alone quantify, uncertainty. And, finally, there were no systematic data on either productivity or uncertainty to make sense of it all. In this total blackout, how could anyone calculate the so-called 'economic' discount rate?

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12 There is considerable recent literature on the ancient origins of interest, debt and money. These contrarian writings, partly inspired by the work of Mitchell-Innes (1913; 1914), critique the undue imposition of neoclassical logic on pre-capitalist societies and instead emphasize a broader set of political, religious and cultural determinants. Important collections include Hudson and Van de Mieroop (2002), Hudson and Wunsch (2004), Ingham (2004) and Wray (2004).

Probability and statistics

These concepts have become meaningful only since the Renaissance. The turning point occurred in the seventeenth century, with the twin invention of probability and statistics.[13] In France, Blaise Pascal and Pierre de Ferma, mesmerized by the abiding logic of a game of chance, began to articulate the mathematical law of bourgeois morality. Probability was justice. In the words of Pascal, 'the rule determining that which will belong to them [the players] will be proportional to that which they had the *right to expect from fortune*. . . [T]his *just distribution* is known as the division' (cited in Bernstein 1996: 67, emphases added).[14]

At about the same time, Englishmen John Graunt, William Petty and Edmund Halley took the first steps in defining the field of practical statistics. The term itself connotes the original goal: to collect, classify and analyse facts bearing on matters of *state*. And indeed, Graunt, whose 1662 estimate of the population of London launched the scientific art of sampling, was very much attuned to the administrative needs of the emerging capitalist order. His practical language would have been music to the ears of today's chief executives and finance ministers:

> It may be now asked, to what purpose tends all this laborious buzzling and groping? . . . I Answer. . . That whereas the Art of Governing, and the true *Politiques*, is how to preserve the Subject in *Peace*, and *Plenty*, that men study onely that part of it, which teacheth how to supplant, and over-reach one another, and how, not by fair out-running, but by tripping up each other's heels, to win the Prize. Now, the Foundation, or Elements of this honest harmless *Policy* is to understand the Land, and the hands of the Territory to be governed, according to all their intrinsick, and accidental differences. . . . It is no less necessary to know how many people there be of each Sex, State, Age, Religious, Trade Rank, or Degree, &c. by the knowing whereof Trade and Government may be made more certain, and Regular; for, if men know the People as aforesaid, they might know the consumption they would make, so as Trade might not be hoped for where it is impossible.
>
> (Graunt 1662: 72–73, original emphases)

Although initially independent, probability and statistics were quickly intertwined, and in more than one way. The new order of capitalism unleashed multiple dynamics that amplified social uncertainty. Instead of the stable and

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13 The social history of these related disciplines is told in Hacking (1975; 1990) and Bernstein (1996). Our account here draws partly on their works.

14 Probability theory in fact was developed a century earlier, by the Italian mathematician Girolamo Cardano. His work, however, was ahead of the times and therefore largely ignored.

clear hierarchies of feudalism came a new ethic of autonomous individualism and invisible market forces. The slow cycle of agriculture gave rise to bustling industrial cities and rapidly growing populations. The relatively simple structures of personal loyalty succumbed to the impersonal roller coaster of accumulation and the complex imperatives of government finances and regulations. More and more processes seemed in flux. But then, with everything constantly changing, how could one tell fact from fiction? What was the yardstick for truth on the path to societal happiness and personal wealth?

The very same difficulty besieged the new sciences of nature. In every field, from astronomy and physics to chemistry and biology, there was an explosion of measurement. But the measurements rarely turned out to be the same – so where was truth? With so many 'inaccuracies', how could one pin down the ultimate laws of nature?

The solution, in both society and science, came from marrying logical probability with empirical statistics. According to this solution, truth is hidden in the actual statistical facts, and probability theory is the special prism through which the scientist can see it. Any one measurement may be in error. But when the errors are random they tend to cancel each other out, and if we increase the size of the sample we can get as close to the truth as we wish. Moreover, and crucially for our purpose here, probability theory can also tell us *how wrong* our pronouncement of truth is 'likely' to be. It tosses the *al-zahr* – Arabic for 'dice' – to reckon the hazards.

This marriage of logic and measurement changed the concept of the unknown, making it seem less intimidating. Of course, the fear is still very much there: 'Unless you are running scared all the time, you're gone', explains the quintessential forward-looking capitalist, Bill Gates (1994). But the unknown, having been mediated through probability and statistics, has become less mysterious and, in that sense, less menacing. For the first time in history, uncertainty has been given a shape: it has a 'distribution'. Probability and statistics draw a clear relationship between the 'normal' and the 'dispersion' around it, between what is supposedly 'natural' and 'true' and what is 'distorted' and 'devious', between the rulers at the 'centre' and the rebels and radicals at the 'margins'. They translate the unknown into seemingly precise 'standard deviations', and by so doing give human beings a comforting 'measure of their ignorance'.

The effect of this newly found confidence has been nothing short of revolutionary. It has opened the door to massive advances in the natural sciences. Virtually every field – from geodesy and astronomy, to classical and quantum statistical mechanics, to the biostatistics of evolution and medicine – has been rewritten by the new technique. And the same has happened in political economy. Every aspect of capitalism – from insurance, to engineering, to production, salesmanship, finance, public management, weapon development, population control, health care, mass psychology, the media and education, to name a few – has been re-articulated and further developed to leverage the power of probability and statistics. The belief that one can at

least sketch the unknown has encouraged social imitative and intellectual creativity. The sense of knowing the 'odds' has made it much easier to dare to take a risk.

Averting risk: the Bernoullian grip

For the running-scared capitalist, though, probability and statistics are a mere starting point. They pretend to give the odds – but the odds alone are still devoid of meaning. And that is where utilitarianism comes into the picture.

The issue can be illustrated with a simple example. Suppose Bill Gates considers acquiring one of two software companies, Civilsoft and Weaponsoft. Civilsoft sells in the open market and is a bit volatile. The analysts tell Gates that, in their view, it has a 50 per cent chance of generating annual earnings of $50 million and a 50 per cent chance of generating annual earnings of $150 million. Weaponsoft is different. It sells to the military and has recently managed to secure a long term contract with the U.S. Department of Defense. According to the analysts, it is certain to generate $100 million annually. Now, probability calculations make the two firms equally attractive: mathematically, both have expected annual earnings of $100.[15] And, so, if Gates believes his analysts he should be indifferent as to which of the two he should acquire.

Not so, argued Daniel Bernoulli (1738). In his seminal paper, published more than two centuries before Gates was born, he stipulated that the measurement of risk involves more than the mere statistical odds. It requires that we put a 'moral' judgement on the expected dollars and cents – a judgement that he insisted must be based on *diminishing marginal utility*.

According to this logic, Gates, like the rest of us, should contemplate not the *expected dollar earnings* the companies will generate, but the *expected utility* he will get from consuming those earnings. This modification makes a big difference. '[A]ny increase in wealth no matter how insignificant', wrote Bernoulli, 'will always result in an increase in utility which is inversely proportionate to the quantity of goods already possessed' (p. 25). So the first dollar Gates earns generates more utility than the second, the second more than the third, and so on all the way to the billionth dollar and beyond.

To illustrate the consequence of this stipulation, let us split the expected earnings into $50 million chunks and assume for simplicity that with diminishing marginal utility the first chunk gives Gates 3,000 utils, the second 2,000 utils and the third 1,000 utils. With this assumption, the takeover targets no longer look equally attractive: the less risky Weaponsoft is expected to generate 5,000 utils, whereas the more volatile Civilsoft is likely to give only

15 Mathematically, the expected earnings of Civilsoft are: $50 million × 0.5 + $150 million × 0.5 = $100 million, the same as Weaponsoft's.

4,500.[16] And since ultimately all Mr Gates cares about is hedonic consumption, it is better for him to acquire the military contractor. It is likely to give him 500 more utils per annum.

Finance theory has never managed to shake loose of the Bernoulli grip. His paper triggered a deluge of publications on risk, many of which modified and revised his original formulation. But most remain locked behind his three subjectivist tenets. First, risk ultimately is a *personal* matter. Second, attitude to risk is rooted in the individual's *hedonic* preferences. And third, because of diminishing marginal utility, most individuals tend to be *risk averse*. This grip keeps the risk analysis of contemporary capitalist power hostage to the eighteenth-century belief in individual utilitarianism.

The unknowable

Of course, most theorists of capitalism ignore power. So before continuing we should point out that Bernoulli's mechanical hedonism may be inappropriate for the study of risk quite apart from the absence of power. First, there is the question of the odds. Capitalists are concerned with the future, yet statistical estimates of probabilities can only be drawn from the past. This is a crucial mismatch. As David Hume's *Treatise of Human Nature* (1739) tells us, the mere fact that all past experiments have found water to boil at 100 degrees Celsius does not mean that the same will happen next time we put the kettle on the stove. Natural scientists have managed to assume this challenge away by stipulating the stability of natural laws (whether deterministic or stochastic), but this stipulation seems a bit stretched when applied to society.

The inherent difficulty of calculating the social odds was heightened during the first half of the twentieth century. The combined onslaught of revolutions, financial crises, a Great Depression and two world wars suggested that the problem was not merely one of assigning odds to possible outcomes, but of *specifying* what those outcomes might be in the first place.

According to Frank Knight (1921), risk calculations presuppose a known set of odds. But in society, the future contains an element of novelty, and novelty cannot be pre-assigned a probability: it is unique and therefore inherently *uncertain*. Even Keynes, whose belief in the existence of so-called objective social probability survived the First World War, caved in after the Second. In matters of society, he confessed, the future is largely unknowable:

> By 'uncertain' knowledge, let me explain, I do not mean merely to distinguish what is known for certain from what is only probable. The game of roulette is not subject, in this sense, to uncertainty; nor is the prospect of

16 For Weaponsoft, the expected utility is the sum of 3,000 utils for the first $50 million chunk and 2,000 utils for the second. For Civilsoft, the computation is: 3,000 utils × 0.5 + (3,000 utils + 2,000 utils + 1,000 utils) × 0.5.

> a Victory bond being drawn. Or, again, the expectation of life is only slightly uncertain. Even the weather is only moderately uncertain. The sense in which I am using the term is that in which the prospect of a European war is uncertain, or the price of copper and the rate of interest twenty years hence, or the obsolescence of a new invention, or the position of private wealth-owners in the social system in 1970. *About these matters there is no scientific basis on which to form any calculable probability whatever. We simply do not know*.
>
> (Keynes 1937: 213–14, emphasis added)

And then there is the second problem. Even if we convince ourselves that the mathematical odds exist and that we can somehow know them, there is still the task of assigning to these odds utilitarian weights. Without these weights, there is no point talking about Bernoullian risk. Yet these weights, made up of utils, vary from person to person and from moment to moment, and this fluidity has implications. Any given asset must be seen as having not one, but many quantities of risk (as many as there are potential capitalists). Furthermore, the quantity of risk, being partly subjective, will change with preferences even if the so-called objective odds remain unaltered. This ever-shifting multiplicity makes it difficult to pin down the 'correct' risk premium and therefore to specify the 'proper' discount rate. And with this rate hanging in the air, how are capitalists to compute an asset's 'true' present value?

The capital asset pricing model

These logical challenges proved no match for the capitalist *nomos*. Although investors may be unable to calculate risk on their own, they can ask the know-all market to do it for them. All they need is a bureaucratic blueprint disguised as theory, and Lord Keynes was prescient enough to anticipate what it would take to produce one. His checklist was short: (1) believe that the present odds are a reliable guide to future ones; (2) assume that other investors got those odds right; and (3) conclude that their relevant computations are already reflected in asset prices (Keynes 1937: 214). The instructions were simple enough, and when a year later Paul Samuelson (1938) announced that prices reveal to us what we desire but cannot express ('revealed preferences'), the road for an operational theory of risk was finally wide open.

The glory went to Harry Markowitz and William Sharpe. Markowitz (1952; 1959) gave investors a quantitative definition of risk and told them how to 'optimize' risk and return through diversification. Sharpe (1964), building on Markowitz's insight, showed capitalists how to tease out of the market the 'true' risk premium with which to discount their assets. These contributions closed the circle. The capitalization ritual was now fully articulated, and the two inventors went on to collect the Sveriges Prize in Economic Sciences in Memory of Alfred Nobel.

Portfolio selection

Markowitz's manuals focused on the Bernoullian individual: the risk-averse investor. In buying and selling financial assets, he said, 'the investor does (or should) consider expected return a desirable thing *and* variance of return an undesirable thing' (1952: 77, original emphasis). And the best method to achieve both goals, he concluded, is to diversify.

Although Markowitz himself spoke merely of the 'variance' of returns – defined as the squared deviation of the rate of price change from its own mean value – the term was quickly adopted as a synonym for risk. This in itself was a major achievement. Until Markowitz, there was no quantitative definition for risk, let alone one that everyone agreed on.[17] So the fact that he was able to galvanize the 'investment community' around this concept – even if he never intended to – is already worth a Nobel.

But Markowitz did much more than that. By showing why risk should be handled through diversification, he provided the justification for an old practice and helped underwrite the new trend of institutional investing. To illustrate his logic, consider a portfolio comprising different financial assets. If the market prices of these assets do not move completely in tandem (so that the correlations between their rates of change are less than 1), their unique fluctuations will partly offset one another. This partial offsetting has a great benefit: it causes the *price volatility of the portfolio as a whole* to be smaller than the *average volatility of the individual assets.* By owning a portfolio of different assets, therefore, the capitalist can enjoy their average return while suffering *less* than their average 'risk'. Diversification, it now seemed, offered an entirely free lunch.

Which portfolio should the capitalist own? Conceptually, it is possible to plot on a two-dimensional chart the return/variance attributes of all possible portfolios. Of these endless combinations, there is a subset that Markowitz identified as 'efficient'. These are the best deals. Each efficient portfolio offers the minimum variance for a given return – or, alternatively, the maximum return for a given variance. The only way to do better on one attribute is to give up on the other, and vice versa. Conveniently, all efficient portfolios lie on a well-defined 'efficient frontier', and the Bernoullian capitalist simply needs to pick the one that equilibrates her very own greed and fear.

A few years after Markowitz made his mark, James Tobin (1958) offered an even sweeter deal. If investors are able to borrow and lend at a 'risk-free' rate of interest (such as the rate on US T-bills) they can in fact outperform the efficient frontier. All it takes is two easy steps. First, they need to single out on the efficient frontier that particular portfolio (labelled *M* for convenience) which, when combined with borrowing or lending, yields the highest return

17 Ricciardi (2004) managed to collate a list of no less than 150 unique risk indicators – hardly an indication of unanimity.

for every level of volatility. And then they make their move. Those who are more risk averse can invest part of their money in *M*, putting the rest of it into risk-free assets (i.e. lending it to the central bank). And those who are less risk averse can borrow at the risk-free interest rate and invest the extra cash in additional units of *M*. Life has never been simpler.

CAPM

These guidelines, though, are still limited. Their target is the individual investor who already possesses definite expectations on return and variance and merely awaits instructions on how to diversify. The guidelines are silent, however, on how investors formed these expectations to begin with, and on the market consequences should they all follow the diversification advice. These latter questions were taken up by William Sharpe (1964) and John Lintner (1965) in their capital asset pricing model, or CAPM for short.

On the face of it, the questions seem unanswerable. Since individual investors are assumed to be autonomous, their return/variance expectations are open-ended and can take any value whatsoever. And given that the expectations are unbounded, the consequences of acting on them become unpredictable. So Sharpe and Linter decided to simplify. What would happen, they asked, if all investors happened to share the *same* expectations regarding return and variance – and, moreover, if their expectations were the same as the *true* distribution of outcomes (i.e. if investors knew the stochastic generator of history)?

The scenario is admittedly odd. After all, what can one learn about uncertainty by assuming it away? Indeed, what would generate a future variance if all capitalists were the same and if all knew the future variance? Recall, however, that we are dealing here with the articulation of the capitalist *nomos*. The ultimate task is not to theorize capitalists, but to give them a bureaucratic blueprint. And if you revisit the previous section you will see that, in pursuing this goal, Sharpe and Linter were merely following Keynes' checklist.

And indeed, the answers they gave emerged directly from their assumptions. If investors all see the world eye to eye, they will all own the same efficient portfolio *M*, and nothing but *M*. And since they all own only units of *M*, every owned stock in the market must be part of *M*. The only portfolio that satisfies these conditions is the market as a whole. So in Sharpe and Lintner's world, investors are fully diversified, each holding onto a proportion of the entire market.

Now, recall that diversification reduces volatility because the price movements of different assets partly offset each other. Why is the offsetting only partial? The reason is that price volatility is seen as stemming from two distinct sources: one that is *unique* to the asset itself, and another that is common to the *market* as a whole. A sufficiently diverse portfolio – which *M* obviously is – eliminates all unique volatility. Thus, following Sharpe and Lintner, portfolio investors can disregard all price volatility that is out of sync

with the market. But no matter how diverse their portfolio, they can never eliminate market volatility, by definition.

In other words, every asset carries in its genes a definite quantum of market volatility, a quantum which in turn is passed on to the portfolio as a whole. 'The risk of a well-diversified portfolio', declare Brealey, Myers and Allen in their *Principles of Corporate Finance* (2008: 193), 'depends on the market risk of the securities included in the portfolio'. This is not something one argues about: 'Tattoo that statement on your forehead if you can't remember it any other way', they warn. 'It is one of the most important ideas in this book'.

Conveniently, this logic is fully invertible. Since individual assets contribute to the market portfolio their own market risk, their contribution can be deduced from the market. Recall that unique risk has been diversified away, so the only thing that makes one asset more or less risky than another is its 'sensitivity' to the overall market. This sensitivity is called *beta*, and it can easily be measured, or so we are told. The greater the market risk of the asset, the higher *beta* – and vice versa.[18]

Now, if the measured historical *beta* is equal to the 'true' timeless *beta*, as the CAPM proclaims, we can calculate the asset's risk premium. By definition, *beta* expresses the ratio between, on the one hand, the 'excess' return of the asset over and above 'risk-free' assets (*asset excess return* = $r - r_{rf}$) and, on the other hand, the 'excess' return of the market over and above 'risk-free' assets (*market excess return* = $r_m - r_{rf}$):

$$5. \quad beta = \frac{r - r_{rf}}{r_m - r_{rf}}$$

Rearranging Equation (5), the capitalist can obtain the risk premium for the asset:

$$6. \quad risk\ premium = r - r_{rf} = beta\ (r_m - r_{rf})$$

And, finally, with one more reshuffle, the overall discount rate (r):

$$7. \quad r = r_{rf} + beta\ (r_m - r_{rf})$$

The first component on the right is the 'risk-free' benchmark (r_{rf}), while the second component is the compensation for the asset's risky 'deviations' ($beta\ (r_m - r_{rf})$).

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18 *Beta* can be derived in two easy steps. First, assume that all investors consider historical volatility equal to 'true' volatility. Second, run a linear regression with the historical rate of change of the *asset* price as the dependent variable, and with a constant and the historical rate of change of the *market* price as the independent variables. *Beta* is the estimated slope coefficient of this regression.

And that is pretty much it. All that the capitalist now has to do is take the 'risk-free' rate of interest (r_{rf}), the market return (r_m) and the estimated *beta* and plug them into Equation (7). And since all capitalists are assumed to be drones and therefore to do the very same maths with the very same numbers, they all end up with the same discount rate (r).[19] This number is then put into the denominator of the discount formula in Equations (3) and (4) to give the 'true' capitalized value of the asset.

Circularity

CAPM has been a smashing business success. Within a few decades, it has become the basis on which corporate finance courses are structured. Often, it is the only model that MBA students rehearse in some detail. And as the students turn into managers, executives and government officials, they apply what they learnt. In the early 1980s, less than one third of large US firms used the CAPM to compute the cost of equity. By the early 2000s, the proportion was well over 70 per cent, although, to be on the safe side, other formulae are used as well (Gitman and Mercurio 1982; Graham and Harvey 2001).

This success is all the more remarkable given the model's dismal empirical showing. Recall that Sharpe and Lintner assumed that investors know the 'true' variance of returns, and therefore also the 'true' *beta* – yet that, in practice, they all take a shortcut and use the historical *beta* instead. No wonder the model crumbles.

First, there is the 'equity premium puzzle': it turns out that, taken as an asset class, equities outperform government bonds by much more than their extra volatility would demand (Mehra and Prescott 1985). And then the puzzle becomes embarrassing. Comparisons of different classes of equities often show returns to be uncorrelated and sometimes *negatively* correlated with *beta* values! 'The problems are serious enough', conclude efficient market theorists Fama and French, 'to invalidate most applications of the CAPM' (2004: 43).

Given these difficulties, the CAPM has been refurbished, extended and modified with new and improved techniques and a never-ending flow of fresh data.[20] But the new models share with the old one key feature: circularity. Excess return is the compensation for risk, while risk is measured by excess return. This correspondence holds simply because it should:

> [F]ew people quarrel with the idea that investors require some extra return for taking on risk. *That is why common stocks have given on*

19 Equation (7) produces two special cases. One is for 'risk-free' assets, which, being uncorrelated with the market, have a *beta* of 0 and therefore a discount rate of r_{rf}. The other is for the market index itself, whose *beta* is 1 and whose yield is therefore r_m.

20 Two famous extensions/alternatives are Ross' Arbitrage Price Theory (1976) and the augmented CAPM of Fama and French (1995).

> *average a higher return than US Treasury bills*. Who would want to invest in risky common stocks if they offered only the *same* expected returns as bills?
>
> (Brealey, Myers, and Allen 2008: 217, first emphasis added)

It is just like Lamarckian evolution. A giraffe grows its neck to reach the high leaves on the tree, and so does the market: it makes prices of volatile assets rise faster in order to give investors a reason to own them.

Risk and power

The issue here is not circularity as such, but the worldview that underlies it. The framework of mainstream financial theories is neoclassical. Its basic units are risk-averse, utility maximizing investors. These individuals are powerless. They are too small to affect the circumstances and hence take them as given. Their only possible course of action is *re*action: buying stocks whose return/risk attributes are attractive and selling those that are unattractive (that is, until the market equilibrates their prices to their natural levels). Their focus is price, and only price. The price tells them everything they need to know about return and risk. Whatever lies beneath it is irrelevant. And so the discount formula disappears.

The CAPM reasons the link between return and risk in moral terms: the capitalist 'deserves' higher returns to compensate for higher risk. But if we abandon the fairy tale of perfect competition and efficient markets and return to the real world of organized capitalist power, the capitalization formula comes back into focus and the relationship between risk and return assumes a rather different meaning.

Back on earth, the sequence is as follows: earnings are a matter of power and conflict; the conflict over earnings invites resistance; and resistance breeds volatility and uncertainty. In this way, the capitalist struggle to increase earnings is inextricably bound up with uncertainty regarding their eventual level. The numerator of the capitalization formula becomes intimately tied to its denominator.

The degree of confidence

Recall that in capitalism the ownership of an asset is a claim on future earnings. The price of the asset, expressed as present value, is merely the capitalist assessment of those earnings. Underlying this assessment are two key considerations. One is the *level of earnings capitalists expect to receive*; the other is the *degree of confidence capitalists have in their own predictions*. In order to make this degree of confidence explicit, we rewrite Equations (3) and (4), such that:

$$8. \quad K_t = \frac{EE}{r} = \frac{E \times H}{r_c \times \delta}$$

$$9. \quad P_t = \frac{EEPS}{r} = \frac{EPS \times H}{r_c \times \delta}$$

In this reformulation, capitalist confidence is expressed in two basic ways. At any given social conjunction, there is a certain benchmark, a rate of return that capitalists feel confident they can get. We denote it accordingly by r_c. Finance theory refers to this rate as 'risk-free' – yet explains neither why it is free of risk nor what determines its level. Neoclassicists must resist the temptation to equate this rate to the marginal productivity of capital – not only because the latter is logically impossible and empirically invisible, but also because the absence of 'risk' here is secured by . . . the government! As we shall argue in the next part of the book, what enables capitalist governments to set a 'risk-free' rate in the first place – and what makes capitalists view this rate with approval and confidence – is neither 'productivity' nor statist 'distortions', but the overall structure of power in society.

Of course, with the exception of short-term government instruments, capitalist income is always uncertain (hence the ever-present hype). The conflict that underlies earnings is multifaceted and can develop in many directions. Sometimes capitalist power is sufficiently secure to make capitalists certain of their strategy and the earnings it will generate; at other times, their power is tenuous and future predictions more hesitant. The *degree* of confidence that emerges from these considerations is expressed, inversely, by the 'risk coefficient' (δ). When capitalists are fully confident, δ is 1. Otherwise, δ is bigger than 1, and it increases as confidence decreases.

Note that this risk coefficient is *not* the same as the so-called 'risk premium' of finance theory. First, whereas the risk premium pertains to the asset price on the left-hand side of the capitalization equation, the risk coefficient pertains to earnings on the right-hand side. Since the price of the asset involves more than earnings, the two risk concepts cannot be the same.

Second, whereas the 'risk premium' is the designated return for *actual* volatility, the risk coefficient denotes the *confidence* capitalists have in their predictions. Of course, volatility and confidence are related, but their correspondence is anything but simple. To start with, volatility per se does not generate uncertainty. It is the *pattern* of volatility that does. The annual earning cycle of ski resorts may be much more volatile – yet far more certain – than the profits of airlines. Insofar as seasonal weather variations prove easier to predict than the vagaries of world travel, capitalists will judge the larger volatility of the former less risky than the smaller volatility of the latter. The other reason is that the past is only a partial guide to the future. This fact has been pointed out by Knight and Keynes, but it takes on a whole new dimension once we bring power into the picture. In the next part of the book we argue that the very purpose of power-driven capitalist accumulation is to *reshape* society. Capitalists realize that the very nature of their enterprise is to defy prediction, and they therefore take even the most successful forecasting models with a grain of salt.

Lastly, whereas in financial theory a higher risk begets a higher 'risk premium', higher earnings volatility does not imply higher earnings growth, or vice versa. Over the past half-century, the earnings of General Electric rose 10 times faster than those of General Motors – though the volatility of GE's earning growth was far smaller than GM's (Bichler and Nitzan 2006). Contrary to Lamarckian finance, earnings volatility does not entail a 'premium'. And the reason, again, is at least partly associated with power. Bernoulli's capitalists are risk averse because their goal is hedonic consumption: their next yacht is assumed to be slightly less enjoyable than the previous one. But power-driven capitalists are very different. As we shall see, their goal is not more income, but a larger distributive share of income. Redistribution, however, does not obey the laws of diminishing marginal utility, so there is no longer reason to assume that capitalists are risk averse.

Most of the world's leading capitalists, including some of the biggest so-called portfolio investors, are *not* very diversified. In fact, many are highly focused. The reason they have 'made it' is that, unlike the passive individuals that populate the CAPM, they are active. 'Speculating and playing with power is more exciting than playing roulette', writes Traven in *The White Rose*: 'At roulette influence cannot be exercised' (1929: 96). Big capitalists do not take the odds as given; they try to *change* them. They struggle to increase their earnings and surrounding hype, and they similarly try to tame volatility. They are not only risk takers, they are also *risk shapers*. And as they embrace risk rather than shy away from it, the moral link between earnings volatility and earnings growth breaks down.

For the large capitalists, reducing earning volatility is a major obsession. But the reason is not hedonic payoff, but predictability and control. Knight and Keynes identified the problem: the unbridgeable gap between uncertainty and risk. Organized capitalist power is an attempt to defy the problem, if only in appearance: by shaping society, capitalist power 'translates' undefined uncertainty into seemingly quantitative risk. Capitalism is uncertain partly because the conflictual power logic of accumulation makes it so. But power also means ordering, and from the standpoint of capitalists this ordering is the *degree to which they can contain their own uncertainty*. Partly objective, partly inter-subjective, this degree is captured inversely by the 'risk coefficient'.

Toward a political economy of risk

Clearly, there is an urgent need for a critical political economy of risk. Yet both orthodox economics and heterodox Marxism are unable to develop such a political economy from within their own frameworks.

Neoclassical theorists are ambivalent about the subject. On the one hand, risk taking is one of the key justifications for riches and wealth. On the other hand, to recognize risk and uncertainty is to accept that foresight is flawed and information inherently incomplete, if not absent. This ambivalence may

explain why in their textbook, *Samuelson Inc*. devote two pages out 932 to the notion of risk – enough to pay tribute to the issue without undermining everything else (Samuelson and Nordhaus 1992: 673–74).

The situation is not much better with Marxist theory and radical institutionalism. Although earnings and risk are two sides of the same power process, Marxists have had plenty to say on the former and almost nothing on the latter. Marx's own work emphasizes the 'iron laws' of history and is indifferent to its uncertainties. The concept of risk is neither covered nor indexed in Bottomore's *Dictionary of Marxist Thought* (1991). There is no entry for risk in *The Elgar Companion to Radical Political Economy* (Arestis and Sawyer 1994). Risk is indexed twice – in reference to 'decision making' and to 'utility' – both subjects of minor interest to radical political economists. It is similarly absent from *The Elgar Companion to Institutional and Evolutionary Economics* (Hodgson, Samuels, and Tool 1994).[21]

In both the neoclassical and Marxist cases, the neglect is rooted in the materialistic notion of accumulation. Capital in these frameworks is a material entity, denominated in productive/hedonic units, and so risk, by its very 'immaterial' nature, must be external to that entity. Risk can certainly *influence* accumulation; but it can never be *integral* to it. It is only when we conceive of capital as power that risk can be made inherent to accumulation.

Summing up

In the three chapters of this part of the book, we have argued that political economists have been barking up the wrong tree. Capital is neither a hedonic entity nor a social amalgam of abstract labour, but a capitalization of expected future earnings. The process of capitalization, having emerged in Italy during the fourteenth century, has since expanded and developed to become the most adhered-to convention of the capitalist *nomos*. It encompasses more and more aspects of human life – from the individual, to social relations, to society's broader interactions with the environment.

The process of capitalization differs from the material amassment of 'capital goods' not only conceptually, but also empirically. We have seen that, historically, the growth trajectories of pecuniary capitalization and the 'capital stock' have oscillated in *opposite* directions. Both mainstream and Marxian theories explain this mismatch either as a mismeasurement, or simply as the distortion of 'real' by 'fictitious' capital. But the fact of the matter is that there is nothing to distort or mismeasure. The two concepts are fundamentally different, so there is no reason why they should be equal in magnitude or move in the same direction to start with.

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21 Farjoun and Machover's *Laws of Chaos* (1983), which we mentioned in Chapter 6, offers a notable stochastic exception to Marxist determinism. But their account focuses on the *ex post* dispersion of prices and profit rates and does not extend to the *ex ante* notions of uncertainty and risk.

'Material capital' is backward looking. It is a stock of past, ploughed-back earnings corrected for depreciation (assuming the whole thing is measurable to begin with). Capitalization is forward looking. It discounts the earnings of the future. Moreover, whereas 'material capital' is one dimensional, based on earnings only, capitalization is multidimensional. It consists of four elementary particles – actual future earnings, hype, a confident rate of return and a risk coefficient. Finally, material capital is seen either as distorted by power (in the neoclassical case) or supported by power (in the Marxian case) – yet in both cases, power is external to capital itself. By contrast, the elementary particles of capitalization are all about power.

These broad contours of capitalization are the sketch from which one can begin to theorize and research the architecture of capitalist power. Of course, a full account of this architecture cannot be attempted in a single volume. Therefore, in the remainder of the book, we focus on what seems to be the most salient dimension: the power underpinnings and implications of capitalist earnings. Hopefully, this analysis will provide insight and raise questions to encourage further explorations into the subject.

Appendix to Chapter 11: strategists' estimates of S&P earnings per share

Figure 11.2 presents earnings-related data for the S&P 500 group of companies over the period between 1988 and 2006. The chart contrasts the actual level of earnings per share (EPS) with the consensus estimates of strategists made one to two years earlier. The figure also plots a hype index, calculated as the ratio of estimated to actual earnings.

The thin line in the upper part of the figure plots the actual EPS. The data pertain to annual earnings, which usually are reported during the first quarter of the following year. For example, the annual EPS data for 1999 would be reported during the first three months of 2000.

The thicker broken line in the upper part of the chart shows the corresponding consensus estimates. The data points on this line are monthly readings, denoting the consensus forecasts made during the previous year. For instance, the data point for January 1999 is the estimate, made in January 1998, for the 1999 annual earnings; the data point for February 1999 is the estimate, made in February 1998, for the 1999 annual earnings; and so on. The last estimate for each year is made in December of the previous year. This setup gives us up to 11 observations for each year's earnings (some months do not have reported estimates). The first estimate is made 23 months prior to the last month of the projected year (for instance, in January 1999 for the year ending December 2000), and the last estimate is made 12 months before that year's end (in December 1999 for the year ending December 2000). The series appears 'broken' since every December the forecast shifts to next years' earnings.

The thicker line at the bottom of the figure computes a monthly hype index

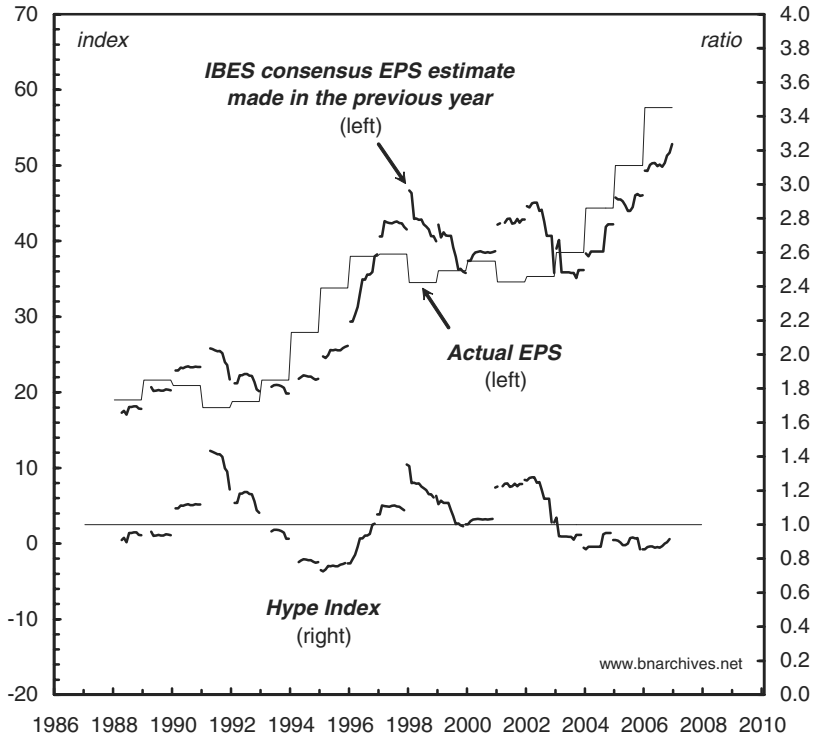

Figure 11.2 S&P 500: earnings, earning estimates and hype

Note: EPS denotes earnings per share. The Hype Index is the ratio between the consensus EPS estimate and the actual EPS.

Source: IBES through WRDS.

based on the two earning series. Each observation measures the ratio between the consensus forecast made in the same month during the previous year and the actual EPS for the entire year. For example, the data point for January 1999 would express the ratio between the forecast made in January 1998 for 1999 EPS and the actual EPS in 1999.

The figure depicts several clear patterns:

1 Despite the short forecast period, the forecast errors are very large. According to the hype index, the range of errors is 69 per cent – from a maximum overshooting of 43 per cent (hype reading of 1.43 in May 1991), to a maximum undershooting of 26 per cent (hype reading of 0.74 in May 1995). The standard deviation of the errors is 17 per cent – *three* times larger than the average EPS growth rate of 5.8 per cent.
2 Over time, the errors tend to 'average out'. For the period 1987–2006, the mean value of the hype index is 1.02 – only marginally highly than a

neutral value of 1. In the long run, strategist expectations oscillate around actual earnings.

3 The oscillations of estimates and errors are anything but random. The estimates are usually set at the beginning of the year as some positive multiple of current earnings (averaging 1.08), and are then adjusted over the next 11 months. The *ex post* errors follow a fairly stylized and pretty long cycle. The peak-to-peak duration of this cycle is four to five years – two to five times longer than the forecast period. The errors are also correlated – albeit inversely – with the direction of earnings. Recall our critique in Chapter 9 of the common belief that good times bring excessive exuberance and bad times generate undue dread. It seems that in our case here the opposite is true. The strategists' macro models appear to underestimate earning when they are rising (in 1988, 1993–96 and 2003–6) and overestimate them when they are stable or falling (1989–92 and 1997–2002).

Part IV

Bringing power back in

12 Accumulation and sabotage

> The truly great fortunes are made only by those who grab hold of the nation's nervestrings.
>
> —B. Traven, *The White Rose*

The categories of power

In the introductory chapter to his *Grundrisse* (1857: Ch. 1), Marx struggles with the difficulty of picking a theoretical starting point. The choice of categories, he points out, is complicated by considerations of abstraction and specificity, as well by questions of historical progression. The capitalist order, like any other social order, enfolds its preceding histories. Each of its categories, Marx observes, embodies not only contemporaneous relations with other categories, but also deep lineages to a past from which it emerged and which it negates.

Our own story of capital focuses on power. But in order to get to power we first had to critique the existing categories, relations and histories of political economy. Common to these theories and explanations is their unwillingness or inability to deal with the power underpinnings of capital. Our journey to explore this difficulty has taken us through various territories: the social myths of Newtonian mechanics; the bifurcation of 'politics' and 'economics' and the academic splintering of the social sciences; the creed of efficiency and the impossibility of quantifying productivity; the distinction between the 'real' and the 'nominal' and the tortured relationship between tangible wealth and financial markets; and, finally, the history of capitalization from Middle-Age discounting to present-day asset pricing.

Capitalization stands at the centre of contemporary capitalism. The discounting to present value of expected future earnings is now the organizing 'economic' principle that shapes and directs daily life on our planet. But as our journey has repeatedly suggested, capitalization is not merely an 'economic' category. It is an *encompassing mode of power*.

Until the emergence of capitalism, power was largely separate from and situated above the processes of production and consumption. It was administered by large doses of force sprinkled with small promises, mostly for after-

life fulfilment. The new regime of capital introduced a whole new technology of power, one that penetrates and shapes the very souls of its subjects. It invented the concept of 'ideology' and the institution of 'public education'; it developed mass psychology, mass culture and mass consumption; it gave rise to a one-dimensional man; it opened up domains that prior rulers could not even fathom. These inventions have made capital the most invasive, encompassing and flexible form of organized power ever known to humanity. And since these power processes all bear on profitability and therefore are all discounted into asset prices, to study capitalization is to study the nature and evolution of organized power in contemporary capitalism.

Thus, our starting point in this part of the book is that the capitalization of earnings is not a narrow offshoot of production but a broad representation of power. Pecuniary earnings, we argue, do not have a material 'source', whether counted in utils or labour time. Instead, they are the symbolic representation of a struggle – a conflict between dominant capital groups, acting against opposition, to *shape and restructure the course of social reproduction at large*. In this struggle, what gets accumulated is not productivity as such, but the ability to *subjugate creativity to power*.

Theorizing this capitalized struggle, however, is anything but trivial. The immediate problem, again, is the categories themselves. Nowadays, almost every concept that pertains to capital embodies or connotes production and consumption. The notions of 'business' and 'industry', 'investment' and 'private ownership', the 'normal rate of return' and the 'natural rate of unemployment', 'commodity pricing' and 'wealth maximizing', 'equity' and 'debt', 'profit' and 'interest', the 'corporation' and its 'material' and 'immaterial' assets, 'accumulation' and 'circulation', and, finally, the so-called 'fractions' of capital – are all articulated, understood and used as *economic* entities.

This prejudice may serve neoclassical and Marxist arguments, but it undermines our own: given our focus on power, the 'economic' bias of these concepts makes it impossible for us to use any of them 'as is'. And so, just as Marx had to peer through the voluntary equivalences of liberalism in order to articulate exploitation, we too find ourselves having to tear through the economic language of capital in order to see the real picture of capital as power.

And the task is certainly tricky. On the one hand, we need to translate the existing categories, one by one and in relation to each other, so that slowly, out of the façade of material productivity there can emerge the power nature of capital. On the other hand, we must keep in mind the conventional meaning of these categories, so that we can refer to prevailing explanations and measures. And then there are several ideas that require new categories altogether.

A new language can easily be misunderstood, so we tread as carefully as we can. We articulate our argument at length, in detail and with occasional repetition – and we ask our reader to suspend judgement. You are likely to find the argument easier to assess when you reach the end of our story.

Perhaps the first attempt to develop a power theory of capital was offered at the turn of the century by Thorstein Veblen. Later, his student and colleague, Lewis Mumford, expanded some of Veblen's themes into a sweeping theory of power civilizations. Both frameworks build on the primal interaction between creativity and power. Veblen, whom we deal with in the present chapter, associated this interaction with a distinction between industry and business. Mumford, to whom we turn in the next chapter, saw this interaction as part of a conflict between democratic and totalitarian technologies. Their profound insights, unduly neglected by political economists, deserve closer scrutiny and offer bases for further development.

Veblen's world

Veblen's view stood in sharp contrast to the utilitarian dogma of his day. While his neoclassical peers preached the gospel of hedonic pleasure and equilibrium as the governing mechanism, or at least the underlying ideal, of all societies, Veblen focused on conflict. Unlike Marx, though, he emphasized not only the conflict between owners and non-owners, but also what he saw as a broader clash between creativity and power. In his opinion, this wider conflict pervades all societies, appearing in different guises at different times. In the modern capitalist order, it takes the form of a fundamental distinction between *industry* and *business*.

Industry and business

For Veblen, industry and business are two increasingly distinct spheres of human activity. Industry constitutes the material context of capitalism, although industry is not unique to capitalism. When considered in isolation from contemporary business institutions, the principal goal of industry, its *raison d'être* according to Veblen, is the efficient production of quality goods and services for the betterment of human life. The hallmark of industry is the so-called 'machine process', a process that Veblen equated not merely with the use of machines, but more broadly with the systematic organization of production and the reasoned application of knowledge. Above all, Veblen accentuated the holistic nature of industry. The neoclassical emphasis on individualism and its Robinson Crusoe analogies of the innovative 'entrepreneur' and single 'consumer' are misleading myths. The machine process is a *communal* activity; its productivity derives, first and foremost, from *cooperation* and *integration*. The reasons are both historical and spatial.

First, modern industrial production is contingent on what Veblen called the 'technological heritage' of society, the general body of 'community knowledge' grounded in the 'accumulated wisdom of the past' (Veblen 1908: 326–29). Second, over time the gradual accumulation of knowledge makes production more spatially interdependent. 'Evidently', writes Veblen 'the state of industrial arts is of the nature of a joint stock, worked out, held,

carried forward, and made use of by those who live within the sweep of the industrial community. In this bearing the industrial community is a joint going-concern' (1923: 64). Following Werner Sombart, he emphasized the *comprehensive and encompassing* nature of industry, in that it 'draws into its scope and turns to account all branches of knowledge that have to do with the material sciences, and the whole makes a more or less delicately balanced complex of sub-processes' (1904: 7–8).

Given this growing interdependency of both knowledge and processes, says Veblen, the efficiency of industrial production increasingly hinges on synchronization and standardization of both production and wants (an issue resurrected half a century later by Galbraith with his 'revised sequence' and attack on 'consumer sovereignty'). As a highly integrated system, industry is strongly disposed toward elaborate planning and close cooperation. Ultimately, it calls for 'solidarity in the administration of any group of related industries' and, more generally, 'for solidarity in the management of the entire industrial traffic of the community' (Veblen 1904: 17).

Although Veblen's emphasis on integration and synchronization hardly seems earthshaking, mainstream and to some extent Marxist economists have systematically managed to ignore two of its key implications. One implication of integration and synchronization is that distribution cannot possibly be based on individual factor productivity or atomized labour time. Consequent to this conclusion, the other implication is that distribution should be sought in the realm of power.

This is where business comes into the picture. According to Veblen, business differs from industry in both methods and goals. Business enterprise means investment for profit.[1] It proceeds through purchase and sale toward the ulterior end of accumulated pecuniary wealth. While industry is a manifestation of the 'instinct of workmanship', business is a matter of ownership and power; whereas the former requires integration, cooperation and planning throughout society, the latter depends and thrives on conflict and antagonism among owners and between owners and the underlying population.

The two languages

These profound differences have crystallized into two separate languages. Unlike industrial activity, with its tangible, material categories, business traffic and achievements are counted strictly in pecuniary terms. Economists insist on reducing 'nominal' business magnitudes to 'real', utilitarian units, though that insistence merely attests to their pre-capitalist habit of thinking. As we have seen earlier in the book, this reduction is impossible to achieve. But even if the conversion proved feasible, according to Veblen the capitalists couldn't care less. Under the price system, he pointed out,

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1 Unless noted otherwise, we use profit loosely to denote capital income in general.

> men have come to the conviction that *money-values are more real and substantial than any of the material facts in this transitory world*. So much so that the final purpose of any businesslike undertaking is always a sale, by which the seller comes in for the price of his goods; and when a person has sold his goods, and so becomes in effect a creditor by that much, he is said to have 'realized' his wealth, or to have 'realized' his holdings. *In the business world the price of things is a more substantial fact than the things themselves*.
>
> (Veblen 1923: 88–89, emphases added)

The pecuniary nature of business terminology is not a mere accounting convention; it is the very gist of business enterprise.

At first sight, Veblen's separation between industry and business seems to resemble Marx's distinction between simple reproduction of use value ($C \rightarrow M \rightarrow C$) and expanded reproduction of exchange value ($M \rightarrow C \rightarrow M'$) – the former representing the life cycle of the workers/creators, the latter of the capitalists/rulers. There is a crucial difference, however. Marx used a single material unit – abstract labour – to measure both processes. By contrast, Veblen began at the outset with two distinct categories: heterogeneous material units for industry and a universal pecuniary unit for business. This duality enabled him to avoid the Marxist Transformation Problem altogether: prices and accumulation are business magnitudes, and hence their determination cannot be attributed, at least not in any straightforward way, to the complex and largely intractable sphere of industrial interactions.

According to Veblen, unlike industry in the abstract, *capitalist* industry is subordinated to business ends; its aim is no longer serviceability and livelihood, but profit. Simple as it seems, this hierarchy inverts conventional economic reasoning. Being a quest for profit, argues Veblen, business enterprise is a *claim* on pecuniary earnings. It is wholly and only an act of *distribution*. The objects over which profits constitute an effective claim are created elsewhere, in the industrial sphere (as well as in nature). Yet, given that capitalist industry is carried on for the sake of business, it follows that the primary line of causality runs not from production to distribution, but from distribution to production. And if causality is a guide for analysis, the study of capitalism should begin with business, not industry.

Indeed, on its own, industry provides no insight into distribution. Anticipating and dismissing the Cambridge Controversy more than half a century before it arose, Veblen pointed out quite bluntly that J.B. Clark's marginal productivity theory was wishful thinking. In order to explain distribution by productivity, we must first identify the productivity of each individual factor of production. Yet this identification, he said, could not be achieved because the so-called economic inputs did not possess any individual productivity to begin with.

The immaterial equipment

As already noted, Veblen viewed industrial activity as an integrated community process centred on the 'technological heritage' of society. On the surface, this view may look similar to prevailing convictions, popular since Galbraith (1958; 1967), that emphasize the growing significance of technology vis-à-vis the traditional factors of production – i.e. land, labour and capital.

That is not what Veblen had in mind, however. In his opinion, technology – or the 'immaterial equipment' of society, as he liked to call it – was not just another 'factor of production', however important. Instead, it was the *vital* cultural substance that made raw materials, machines and physical human labour useful in the first place: 'To say that these minerals, plants and animals are meaningful – in other words, that they are economic goods – means that they have been brought within the sweep of the community's knowledge of ways and means' (Veblen 1908: 329). Without this 'immaterial equipment', he argued, the physical factors of production were *economically* meaningless objects.

For instance, the usefulness of any given computer depends crucially on the current state of technology. With the arrival of new software, the hardware quickly ends up in the junk heap; the new technology makes it socially obsolete, and although it may have lost none of its operational features, it is no longer a 'capital good'. Or rolling history in reverse, a modern factory producing semiconductors would have been a worthless (and indeed meaningless) collection of physical objects during Veblen's time – first, because it could not have been operated; and second, because its output would have had no perceptible use. In these and all other cases, the transformation of a physical object into an economically useful capital good can neither lead nor lag the existing 'state of industrial arts'. The same logic applies to labour power and raw materials. A jungle tribesman would be lost in a modern factory, much as a bank manager would be lost in the Sahara desert. Similarly, ancient stone utensils are as useless today as was petroleum before the invention of modern combustion engines.

Labour, land and capital goods are obviously essential for production, but only because they are part of a comprehensive social and cultural process. It hence 'seems bootless to ask', argued Veblen, although few neoclassicists were listening, 'how much of the products of industry or of its productivity is to be imputed to these brute forces, human and non-human, as contrasted with the specifically human factors that make technological efficiency' (1908: 349–50). In short, as the industrial system grows in complexity, the productivity theory of distribution becomes an oxymoron.

To illustrate the 'holistic' nature of contemporary industry, consider the automobile sector. Its research and development process incorporates knowledge from fields as diverse as mathematics, physics, chemistry, biology, metallurgy, economics, demography, sociology and politics. Its production relies on coordinating the interaction of raw materials, labour, assembly facil-

ities, infrastructure, transportation and distribution systems in numerous countries. Finally, development, production and consumption are all path-dependent. For example, the emergence of large-scale petroleum refining, suburbanization and the highway system accelerated automobile production in the twentieth century, while congestion and environmental limits will likely hinder it in the twenty-first.

In this increasingly complex context, with technology being temporally cumulative, spatially interdependent and intermingled with politics, it is practically impossible as well as theoretically inconceivable to even identify all 'inputs', let alone determine their separate productive contributions. And that is merely the first step.

The hand of power

Our automobile example shows that the industrial process is comprehensive and integrated. But that in itself does not make it 'efficient'. The added difficulty emerges because, according to Veblen, industry is subjugated to business. The compass that directs the production of automobiles in our example is corporate earnings – yet contrary to the various doctrines of political economy, says Veblen, these earnings depend not on efficiency, but on 'sabotage'. Most generally, the income of an owner is proportionate not to the specific productive contribution of his or her input, and not even to the exploitation of productive workers – but rather to *the overall damage that an owner can inflict on the industrial process at large*.

The implication is that every bit of the industrial process is touched by the hand of power. In the case of automobile production, every aspect – from environmental considerations, suburbanization and the highway system, through the global coordination of manufacturing and the conditioning of workers and consumers, to the development process and the basic science – is intermingled with power. And so, even if we were somehow able to miraculously conjure up the distinct connections between these many 'inputs' and their automobile 'output', the result would reflect not productivity per se, but the *control of productivity* for capitalist ends.

From this viewpoint, it is impossible to speak of a depoliticized economy as the liberals do, or of a separation between economic exploitation and political oppression as the Marxists articulate. The basic distinction, rather, is between power and creativity, and the task is to analytically disentangle their specifically capitalist incarnations of industry and business.

The social hologram

The whole picture

Metaphorically, the interaction of industry and business can be thought of as a social hologram. The concept of the hologram, alluded to earlier in the

book, was invented in the late 1940s by the Hungarian–British physicist Denis Gabor, an invention for which he later won the Nobel Prize. Technically, the hologram is a photographic method that uses a laser beam to record and then read and project the interference pattern of incidental waves. But it is much more than a mere technical gadget. Seen as a conceptual approach, the hologram has immense potential implications that go far beyond photography.

To illustrate the underlying principle, think of a pond into which three pebbles are dropped simultaneously. These three incidental 'events' create a structure of evenly spreading – and intersecting – waves throughout the pond. Now, suppose that we were to freeze the pond instantaneously, pick up the top sheet of ice containing the wave pattern, and then drop it to the ground so that it shatters to pieces. Because of the curvature of the waves, each piece, no matter how small or from which part of the pond, will contain enough information, a bit fuzzy but nonetheless complete, to trace the three events. All we need to do is to 'extend' the partial arcs on the piece into complete circles and then find their centres. Our ability to do so turns each piece into a *holo gramma* – the ancient Greek for the 'whole picture'.[2]

Since its invention, Gabor's holographic concept has been extended to the study of physics and neuro-psychology, among other areas.[3] Without implying comparable precision, it seems that Veblen's conception of industry and business could also benefit from the holographic metaphor. In this metaphor, society is the pond, and each human pulse – a new idea, a realignment of institutions, people or machines, a particular social transformation of matter and energy – is a drop of a pebble. The resulting social hologram is temporal as well as spatial. In its most generalized conceptualization, it encompasses the whole spectrum of contemporary human activity along with all of its historical lineages.

Now, in this metaphor, every social creation – and therefore every good and service – can be thought of as a slice of this hologram. To the naked eye, these slices may appear as distinct particles. Yet each and every one of them embodies the *entire* wave-like interaction of all human pulses, past and present, positive or negative.

Seen from this perspective, the conventional input–output ideology becomes a misleading simplification. It focuses on first-order relations between the observed (or rather seemingly observable) quantities of the individual particles, while ignoring the invisible but far more important multi-layered fusion of social, political and technological impulses without which the individual particles could not be thought of as 'inputs' or 'outputs' in the first place.

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2 One of the earliest – and most highly imaginative – extensions of the holographic model into understanding both consciousness and the cosmos is Itzhak Bentov's *Stalking the Wild Pendulum* (1977). The pond metaphor is taken from his book.

3 In physics, the innovator was David Bohm (Bohm 1980; Bohm and Peat 1987; Hiley and Peat 1987). In neuro-psychology it was Karl Pribram (1971).

Unfortunately, though, the social impulses that make up this holographic fusion cannot be assigned objective individual weights commensurate with their separate 'contributions', whether productive or counterproductive. Unlike natural events, these impulses are social in nature and inter-subjective in interpretation. Although each of them is 'present' in every social product, the *extent* of that presence is impossible to quantify objectively. And that impossibility pretty much seals the fate of any theory attempting to root distribution in objective productivity: the quantitative input–output structure of production cannot be mapped because it does not exist, and what does not exist cannot be a basis for theory that purports to measure it.

Resonance and dissonance

The alternative is to think of this holographic interaction in its totality. A single pulse still means little. A repeated pulse creates a pattern. A repeated pulse coming at a regular interval – i.e. at a given frequency – creates a stylized oscillating pattern. Oscillators pulsing at their so-called natural frequency tend to 'speak' easily with other oscillators that beat at the same or similar frequency. Their co-vibrations are said to 'resonate'. Resonant systems are energy-efficient, requiring minimal energy both to sustain and amplify their vibrations. They are also self-synchronizing, tending to recalibrate and pull in outliers that beat at slightly different frequencies. Finally, they pervade the universe – all the way from the structure of the atom, through living systems, to the movement of celestial bodies.

Metaphorically, we can think of Veblen's industry as a resonant system. Its purpose is to better human life efficiently, and that purpose can best be achieved through reasoned coordination and integration; that is, through a resonant system whose numerous social pulses are organized so that they beat at purposeful and mutually reinforcing frequencies. What constitutes a resonant industry – and, indeed, the very 'good life' its resonance tries to achieve – is of course open-ended. It is up to society to decide these things. And such decisions, since they concern society as a whole, become more meaningful as they grow more democratic.

This articulation of industry yields a notion of productivity that is very different from the one used in conventional political economy. Neoclassicists and Marxists think of 'productive efficiency' in terms of objective inputs and outputs. The goal is output, and efficient processes are those that produce a given output with the minimal amount of inputs. This definition, though, cannot be applied to the analytical notion of a resonant industry for two basic reasons.

First, the ends and means of industry do not have objective quanta. When a single person assesses the relationship of a well-defined set of inputs and a single output, the measurement may seem unambiguous. But as we have seen in Chapter 8, the illusion of objectivity quickly dissipates once we start to aggregate, and it disappears completely when we deal with society as whole.

At that level, the magnitudes can only be measured *inter-subjectively*. This inter-subjectivity can take various forms. It can be enforced by a dictator or an oligarchy; it can be imposed by capitalist power through the guise of voluntary exchange; or it can be decided openly and democratically, through a broad participatory process in which a resonance-seeking society conscientiously assigns quantities to its preferences and methods. The last measure, representing our articulation of industry, obviously is inconsistent with any objective definition of efficiency.

The second reason is that the ends are not necessarily separate from the means. Standard measures of efficiency treat inputs as something to be minimized and outputs as something to be maximized – but that approach is meaningful only if the two categories are mutually exclusive. From the viewpoint of a resonant industry, though, the ends and means are not mutually exclusive: the creativity, joy and comfort of *those who produce* are as important as *what they produce*. And since the very process of bettering human life is part and parcel of that better life, the 'inputs' get mingled with the 'outputs' and the conventional concept of efficiency breaks down. Instead of an objectively given ratio of outputs to inputs, productivity becomes what society makes it to be: *the democratically articulated 'good life' per person*.

With this alternative concept in mind, consider now the realm of business. Although endlessly crisscrossing that of industry, the sphere of business tends to pulse at different frequencies – different from each other and different from that of industry. The main purpose of business is *differential* return. At the disaggregate level, this goal compels capitalists, as individuals and in groups, to act at cross purposes, such that each tends to beat at a different frequency. The aggregate picture is somewhat different. As we have seen in Part III, at its most general level business has its own super-resonance, so to speak – a resonance manifested through the religious adherence of all capitalists to the universal commands of capitalization. But this super-resonance of business conflicts with that of industry. It has to.

Now, it is true – and here we differ from Veblen and side with Marx – that business can and does 'propel' industry. It pushes human beings, organizations and institutions into a state of hyperactivity, constantly shaping and restructuring their interactions. But this propulsion – and here Veblen was right – does not and cannot make industry productive, by definition. If the propulsion resonates with industry – that is, if it serves the inter-subjectively defined 'good life' – it becomes part of industry. But then, since industry is open to all and therefore *inherently* non-profitable, the propulsion ceases to be a business proposition. The only way to make a profit is through *dissonance*. It is only by propelling industry in ways that *interfere with and partly hamper* its open integration, coordination and the well-being of its participants that business earnings can be appropriated and capital accumulated.

Of course, like all metaphors, this one too shouldn't be taken literally, but as a mental framework to help us imagine alternative explanations. The task

now is to explore precisely how business undermines industry and the way in which their interaction can inform a concrete theory of capital as power.

Absentee ownership and strategic sabotage

The natural right of investment

Over the long term, argued Veblen, output depends mostly on the size of the population and the scope of the industrial arts; 'tangible assets' are relatively insignificant. Throughout history, the occasional destruction of material equipment and resources has usually been a relatively minor inconvenience. In Ireland, for example, the encouragement of illiteracy by the British occupiers hindered development much more effectively than the destruction of the country's infrastructure. Even in the twentieth century, when physical accumulation had reached unprecedented levels, it took war-stricken Germany and Japan only a few years to launch their 'economic miracles'.

In the short term, however, tangible equipment is significant, and it is here, according to Veblen, that ownership comes into the picture:

> For the transient time being, therefore, any person who has the legal right to withhold any part of the necessary industrial apparatus or materials from current use will be in a position to impose terms and exact obedience, on pain of rendering the community's joint stock of technology inoperative for that extent. Ownership of industrial equipment and natural resources confers such a right legally to enforce unemployment, and so to make the community's workmanship useless to that extent. *This is the Natural Right of Investment*.
>
> (Veblen 1923: 65–66, emphasis added)

A modern reader may find this definition of investment puzzling, so it is perhaps useful to put the term in historical context. Originally, the meaning of 'investment' had nothing to do with money and even less to do with production. Investment was a matter of power, pure and simple. *Investio* in Latin means 'to dress', and in Europe of the Middle Ages it was a signifier of feudal property rights. Lords would typically give their vassals a suit of clothing – or *vestes* – as part of their keep and as a sign of honour. The symbolic ceremony of transferring property rights from the lord to the vassal was known as *investiture*. The property in question could have been an estate, an office, a monastery, or simply a stipend (*feodum de bursa*). The ceremony 'vested' the vassal with the fief, conferring on him *tenure* or *seisin* – a legal seizure protected against invasion from any quarter (Bloch 1961: 173, 349; Ganshof 1964: 97, 126). According to the Oxford English Dictionary, the word 'investment' entered commercial use only in the early seventeenth century with the East India trade, and its contemporary connotation of

converting money capital into tangible income-yielding assets appeared only in the middle of the eighteenth century.

In other words, throughout the early history of the term, the causal link ran not from the creation of earnings to the right of ownership, but from vested ownership to the appropriation of earnings. And according to Veblen, the same principle continues to hold in the capitalist epoch. 'Capital goods' yield profit not because of their individual productivity, but because they are *privately* owned to begin with – that is, owned *against* others.

Private ownership and institutionalized exclusion

How does private ownership 'generate' earnings? By necessity, every social order is created and sustained through a certain mixture of cooperation and power. In simple egalitarian societies, cooperation was paramount; in capitalism, power is the governing principle. The power principle of capitalism is rooted in the centrality of private ownership. The word 'private' comes from the Latin *privatus*, meaning 'restricted', and from *privare*, which means 'to deprive'. As Jean-Jacques Rousseau tells us, 'The first man, who, after enclosing a piece of ground, took it into his head to say, "This is mine", and found people simple enough to believe him, was the true founder of civil society' (Rousseau 1754: Part III).

The most important feature of private ownership is not that it enables those who own, but that it disables those who do not. Technically, anyone can get into someone else's car and drive away, or give an order to sell all of Warren Buffet's shares in Berkshire Hathaway. The sole purpose of private ownership is to prevent us from doing so. In this sense, private ownership is wholly and only an institution of exclusion, and institutional exclusion is a matter of organized power.

Exclusion does not have to be exercised. What matters is the *right* to exclude and the *ability to exact terms for not exercising that right*. This right and ability are the foundation of accumulation. Business enterprise thrives on the implicit threat or explicit exercise of power embedded in ownership, with capitalist income being the 'ransom' for allowing industry to resonate:

> Plainly, ownership would be nothing better than an idle gesture without this legal right of sabotage. Without the power of discretionary idleness, without the right to keep the work out of the hands of the workmen and the product out of the market, *investment and business enterprise would cease*. This is the larger meaning of the Security of Property.
>
> (Veblen 1923: 66–67, emphasis added)

Of course, the role of power is hardly unique to capitalism. According to Veblen, all forms of ownership are based on the same principle of coercive appropriation, which in his view dates back to the early stages of barbarism and the initial emergence of predatory social customs. The differentiating

factor, he says, is technological: the institutionalization of forceful seizure is intimately linked to the nature of tangible implements and to their relative significance in production. In the earlier stages of social development, forced appropriation was limited because there was little to appropriate and most objects were easily replaceable. But as society's 'immaterial assets' started to accumulate, so did the benefit from controlling its key 'material assets'.

The right to property

The first form of property rights, according to Veblen (1898; 1899a), was the ownership of people, particularly women. Etymologically, the English word 'husband' and the Mesopotamian word 'baal' both share the double meaning of ownership and marriage – and, in the latter case, also sexual exploit and the superior male-god of the west-Semitic pantheon.[4]

Subsequently, the focus of ownership shifted (although not necessarily linearly) from slaves, to animals, to land. The specific trajectory depended on the nature of technological development, and it was only recently that it moved primarily to produced means of production.[5] Notably, prior to capitalism neither slave ownership nor landed wealth were ever justified on grounds of productive contributions; both were institutionalized as a 'right' – by virtue of divine will or sheer force, but never as a consequence of creativity.

Now, clearly, the mere ownership of capital is no more productive than the ownership of slaves or land, so why do economists insist it is?

The answer, according to Veblen, is that economic theory had been unduly influenced by the transitory institutions of handicraft that existed during the transformation from feudalism to capitalism. Common sense suggested that craftsmen, working for themselves with their own material appliances, had a 'natural right' to own what they had made; it also implied that they could dispense with their product as they saw fit – that is, sell it for an income.[6] Handicraft and petty trade thus helped institutionalize pecuniary earnings as a natural extension of ownership-by-creativity. With exchange seen as a 'natural right of ownership', the very earning of income became a proof of productivity.

But this common sense is misleading for two reasons. First, even at the handicraft stage, production was an integrated societal process. Thus, despite

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4 This was also the view of the early Marxists. According to Engels' *The Origin of the Family, Private Property and the State* (1884), classes and the hierarchic state both evolved from private property, which in turn originated in the appropriation of women by men.

5 Early evidence of such shifts is found throughout the many debates over slavery and the parcelling of family estates in the *Book of Numbers*.

6 As John Locke put it in the seventeenth century: 'The *Natural Liberty* of Man is to be free from any Superior Power on Earth. . . to have only the Law of Nature for his Rule. . . . The measure of Property, Nature has well set, by the Extent of Mens *Labour, and the Conveniency of Life*' (1690, §22: 324 and §36: 334, original emphases).

the myth of 'individualism', private ownership was at least partly dependent on the dynamics of organized power (with the exclusionary practices of guilds offering a conspicuous illustration). Second, and more significantly, the institutions of handicraft were short-lived. As Veblen pointed out, technical change ushered in by the onset of the industrial revolution meant that production had to be conducted on a *large scale*, which in turn implied the progressive *separation of ownership from production*.

The absentee ownership of power

During the earlier stages of capitalism, production and business were still partly interwoven.[7] Indeed, even as late as the nineteenth century, US 'captains of industry' such as Cornelius Vanderbilt and Andrew Carnegie were seen as creative forces, acting as master workmen as well as astute businessmen. This duality did not last for long, however, and as business became increasingly separate from industry, the implication was no less than profound. Gradually, capitalism came to mean not merely the amassment of 'capital goods' under *private* ownership, but more profoundly a division between business and industry affected through the rise of *absentee* ownership.

The institution of absentee ownership has altered the very nature and meaning of capital. Not unlike the European lords of the Middle Ages, who gradually withdrew from the direct management of their estates, modern capitalists have become investors of 'funds', absentee owners of pecuniary wealth with no direct industrial dealings.

The complete delinking of capital from 'capital goods' is well illustrated by comical extremes. In the summer of 1928, the world's largest oil companies signed the secret Red Line Agreement, parcelling the Middle East between them for years to come. To celebrate the occasion, the architect of the deal, Calouste Gulbenkian, or 'Mr Five Percent' as he was otherwise known, chartered a boat to cruise the Mediterranean with his daughter Rita:

> Off the coast of Morocco, he caught sight of a type of ship he had never seen before. It looked very strange to him, with its funnel jutting up at the extreme stern of the long hull. He asked what it was. An oil tanker, Rita told him. He was fifty-nine years old, he had just made one of the greatest oil deals of the century, he was the Talleyrand of oil, and he had never before seen an oil tanker.
>
> (Yergin 1991: 206)

This illustration is not an outlier. Currently, roughly half of all capitalist assets are owned indirectly through institutional investors such as pension and mutual funds, hedge and sovereign funds, insurance companies, banks

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7 For a literary reflection of this fusion, see for instance the 'The Silent Men', a short story in Camus' *Exile and the Kingdom* (1958).

and corporations. The ultimate owners of these assets, whether big or small, exercise little voice in the management of the underlying production processes. For the most part, they merely buy and sell shares of these assets and collect the flow of dividends. Often, their diversification is so extensive that they don't know exactly what they own. And that characterization is by no means limited to portfolio owners. Many of the largest direct investors – including the capitalist dons whose names populate the Forbes listing of the superrich – are equally removed from any industrial dealings. Most of their energies are spent on the high politics of sabotage and the fine art of cutting and pasting assets through endless deals of divestment and merger – activities that they commonly carry out, just like Gulbenkian, without ever seeing a single 'capital good'.

Whereas most economists continue to view capital as an amalgamation of machines, structures, semi-finished commodities and measure-of-their-ignorance technology, for the business investor capital has long been stripped of any physical characteristics. In the eyes of modern owners – whatever their gender, colour, religion, sexual inclination, ethnicity, culture, nationality, creed, height, weight or age – capital means one thing and one thing only: *a pecuniary capitalization of earning capacity*. It consists not of the owned factories, mines, aeroplanes, retail establishments or computer hardware and software, but of the present value of profits expected to be earned by virtue of such ownership.

Of course, neoclassicists have never had a quarrel with capital as the present value of future earnings. In the long run, they assure us, demand and supply make this present value equal to the cost of producing that capital (assuming competitive markets, perfect foresight and the rest of the hedonic fairy tale). But as Veblen (1908) acutely observed long before the Cambridge Controversy (and as we have seen in Part III), this explanation was logically faulty from the very start. If capital and capital goods were indeed the same 'thing', he asked, how could capital move from one industry to another, while capital goods, the 'abiding entity' of capital, remained locked in their original position? Similarly, how could a business crisis diminish the value of capital when, as a material productive substance, the underlying capital goods remained unaltered? Or how could existing capital be denominated in terms of its productivity, when technological progress seemed to destroy its pecuniary value?

For Veblen, the answer was straightforward: capital simply is not a double-sided entity. It is a pecuniary magnitude, and *only* a pecuniary magnitude, and its magnitude depends not on the capacity to produce but the ability to incapacitate. In the final analysis, the modern capitalist is nothing more than an *absentee owner of power*.

Strategic sabotage

What exactly is this power to incapacitate? Where does it come from, what form does it take, and how does it yield profit? According to Veblen, the

answer remained obscure partly because the historical consolidation of capitalist property rights slowly substituted ideological manipulation and legal authority for brute force and religious sanctity.

With the twin emergence of the modern corporation and the modern state, capitalism has acquired a 'civilized' face: absentee ownership has become a legitimate norm; open violence has been replaced by latent threats underwritten by hefty advertising budgets, bloated security services and overflowing jails; and power has solidified into a mystical structure (at least for those subjected to it). In this new order, the power to incapacitate – or 'sabotage' as Veblen liked to call it – becomes a fully legitimate convention, carried out routinely and invisibly through the very subordination of industry to business. The blueprints of capitalist production are already programmed for business limitation, its hired managers are schooled in the art of invisible restriction, and its top executives are remunerated in proportion to profit. In order to merely earn the normal rate of return, all the owner has to do is own.

But then where is the 'sabotage'? Is it not true that in order to profit, business enterprise needs to *promote* industrial creativity, productive ingenuity and 'best practices'? The answer is not really. Strictly speaking, business cannot 'promote' industry. At most, it can unleash it – and even that it does only up to a point and under very specific conditions. Earnings do depend on output – but not on any type of output and not only on output. Moreover, the dependency is non-linear and sometimes inverted, which is why Veblen referred specifically to *strategic* sabotage.

Seen as an entire social order, business enterprise certainly is far more 'productive' than any earlier mode of social organization.[8] Yet, in Veblen's opinion, the immense productive vitality of this social order is an industrial, not a business phenomenon. Business enterprise is possible only in conjunction with large-scale industry, though the reverse is not true (as illustrated by socialist industry or giant cooperatives such as Mondragon). The practices of business of course are closely related to industry, but only in point of control, never in terms of production and creativity. From this *a priori* vantage point, business per se is distinct from industry and therefore cannot boost industry, by definition. Even companies in possession of cutting-edge technology cannot promote industrial creativity; instead, they can merely relax – usually for a hefty fee – some of the constraints that would otherwise limit creativity.

This interpretation of the hyperproductivity of capitalism is quite different from that of Marx. In our view, Marx was correct to stress the dialectical imperative of technical change, an emphasis that the evolutionist Veblen preferred to disregard. Over the longer haul, capitalists indeed find themselves compelled – and in turn force their society – to constantly revolutionize

8 This statement refers not to 'measured' increases in utility or abstract labour, but to the unprecedented social transformations, massive technical change and neck-breaking pace of energy conversion that came with the capitalist epoch.

the pattern of social reproduction. They continually 'invest' in having industry develop for them new methods and products and in expanding their capacity to produce them. Yet all of this they do in the expectation of adequate differential returns, and differential returns are possible only through *restriction*.

'Free is not a business model', explains the representative of eBay China (Dickie 2006). Money spent on having your engineers invent open-source technology or on making your workers create physical capacity that everyone can freely use is money gone down the drain. The only way such spending can become a profit-yielding *investment* is if others are prohibited from freely utilizing its outcome. In this sense, capitalist investment – regardless of how 'productive' it may appear or how much growth it seems to 'generate' – remains what it always was: an act of limitation.

The direction of industry

The limitation takes two general forms. The more important – but also more elusive and harder to delineate – concerns the very direction of industrial development. This restriction, of course, is hardly unique to capitalism, being inherent to the very development of any system of hierarchical production.

According to the historical evidence marshalled by Stephen Marglin (1974), rulers almost invariably fight to impose techniques that secure and amplify their power – often at the *expense* of efficiency (conventionally measured). This was true when the Romans forced slaves into brick and pottery 'factories' – just as it was true when European feudal lords imposed water mills and prohibited hand mills, when post-bellum American planters forced a credit-based system of share-cropping on small farmers, and when Stalin collectivized Soviet agriculture. The purpose of these technological impositions, Marglin argues, was 'divide and conquer'. And in his opinion, the same remains true with capitalist production: this is why British capitalists retained demonstrably inefficient mining techniques, why they introduced the factory system well before the arrival of machines, and why they insisted on a minute division of labour that was debilitating to the point of becoming technically counterproductive.

At first sight, this capitalist imposition of inefficiency may seem surprising, if not counterintuitive. After all, capitalists seek profit, profit increases as cost falls, and cost falls as efficiency rises – so isn't it in capitalists' best interest to adopt the most productive techniques? What exactly is the point of increasing power if the end result is lower profit? The question may sound biting – but it is the wrong one to ask. In fact there is no contradiction at all: in reality, power means not less profit but *more* profit.

The confusion is easy to sort out. The idea that profit maximization necessitates cost minimization and that cost minimization requires efficient production holds only in the fairy tale of perfectly competitive equilibrium. In this fictitious context, where prices and wages are set by mother market to

equilibrate marginal productivity and utility, it certainly makes sense for the 'representative' capitalist to adopt the most efficient techniques.[9]

But once we get rid of the fiction and move to the real world where prices represent not utility and productivity but power, these imperatives immediately break down on their own terms. 'Productive efficiency' (minimum inputs per unit of output) no longer implies 'economic efficiency' (minimum cost per unit of output), and 'economic efficiency' no longer means 'maximum profit'. In this imperfect context, it makes perfect sense for capitalists to impose 'inefficient' techniques: their very inefficiency is the power leverage through which profits are generated.

Let's illustrate this principle with more contemporary examples. Take transportation. On the face of it, a well-designed public transit seems much more conducive to human welfare and the natural environment than private transit. Yet, in the US and elsewhere, capitalist transportation has tended to move away from the public and toward the private. And the reason is not hard to grasp. Public transportation resonates with the integrated operation of industry and therefore doesn't sit well with regular flow of business profit.

This is perhaps the reason why early in the twentieth century the automobile companies bought and dismantled 100 electric railway systems in 45 US cities (Barnet 1980: Ch. 2). And it is also why these companies have long shunned any radical change in energy sources. The electric car, first invented in the 1830s, predates its gasoline and diesel counterparts by half a century, and for a while was more popular than both (Wakefield 1994). But by the early twentieth century, having proved less profitable than the gas guzzlers, it fell out of favour and was forcefully erased from the collective memory. Then came intolerable pollution, which in the 1990s led the state of California to mandate a gradual transition of automobiles to alternative energy. Complying with the new regulations, General Motors had its engineers quickly develop a highly efficient electric car, the EV1. But fearing that this gem of a car would undermine profit from their gas guzzlers, the company's owners, along with owners of other concerned corporations in the automotive and oil business, also invested in an orchestrated attempt to defeat the California bill. When the regulation was finally overturned, every specimen of the EV1 was recalled and literally shredded (Paine 2006).[10]

A similar pattern emerges in the setting of broad electronic standards. In theory, the goal of such standards is to have as many different electronic components and processes resonate as seamlessly and effortlessly as possible. In practice, though, the debate is not over industrial resonance but business profit: it is not the technical blueprint that matters, but who will *control* it.

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9 It is worth noting that this adoption merely keeps the capitalist running on empty, since perfect competition allows no profits beyond the marginal productivity of capital.

10 Of course, business circumstances change, and when in the 2000s global warming and peak oil emerged as lucrative profit opportunities, GM suddenly rediscovered its zeal for electric propulsion and quickly reinvented what it had previously shredded (Reed 2008).

The production of digital audio tapes (DAT) in the early 1990s, for instance, had been postponed (to the point of making the technology outdated) because several large firms could not reach a consensus regarding its effect on recording profits, a saga that has since been replayed in the 'format wars' over digital versatile discs (DVD) and high-definition optical discs.

These examples can easily be extended. Other broad industrial diversions include the development by pharmaceutical companies of expensive remedies for invented 'medical conditions' instead of drugs to cure real disease for which the afflicted are too poor to pay; the development by high-tech companies of weapon technologies instead of alternative clean energies; the development by chemical and bio-technology corporations of one-size-fits-all genetically modified vegetation and animals instead of bio-diversified ones; the forced expansion by governments and realtors of socially fractured suburban sprawl instead of participatory and sustainable urbanization; the development by television networks of lowest-denominator programming that washes the brain instead of promoting its critical faculties; and so on.

Of course, as we repeatedly noted the line separating the socially desirable and productive from the undesirable and counterproductive is inter-subjective and contestable. But taken together, these examples nonetheless suggest that a significant proportion of business-driven 'growth' is wasteful if not destructive, and that the sabotage underlying these socially negative trajectories is exactly what makes them so profitable.

The pace of industry

The other limitation – perhaps less important but easier to approximate – concerns the growth of industrial capacity and output, whatever their purpose. The conventional view, both popular and academic, is that business loves growth. The more utilized the capacity and the faster its expansion, the greater the profit – or at least that's what we are told. The facts, though, tell a very different story. In reality, business can tolerate neither full-capacity utilization nor maximum growth. And why the aversion? Because otherwise profit would collapse to zero.

Consider again the automobile sector. Were the large car companies to decide to produce as much as possible rather than as much as the 'traffic can bear', their output could probably double on fairly short notice. And this potential is hardly unique to automobiles. Almost every modern industrial undertaking – from petroleum, through electronics, to clothing, machine tools, telecommunication, pharmaceuticals, construction, food processing and film, to name a few – tends to operate far below its full technological capacity (not to be confused with full business capacity).[11] If all industrial

11 The difference is fundamental. Conventional capacity measures consider what is feasible under the existing social order of business enterprise and production for profit, and usually estimate normal utilization to be in the 70–90 per cent range. Alternative conjectures based

undertakings were to follow the reckless example of automobiles, the relentless pressure of oncoming goods and services would undermine tacit agreements and open cooperation among dominant firms and government agencies, trigger massive downward price spirals, and sooner or later end up in a Great Depression and a threat of political disintegration.

Speculating in a similar vein, Veblen (1923: 373) concluded that it was therefore hardly surprising that 'such a free run of production has not been had nor aimed at; nor is it at all expedient, as a business proposition, that anything of the kind should be allowed'.[12] Profits are inconceivable without production, but they are also impossible under a 'free run' of production. For profits to exist, business enterprise needs not only to control the direction of industrial activity, but also to *restrict its pace below its full potential.*

Business as usual

Conceptually, we would expect there to exist a non-linear relationship between the income share of capitalists on the one hand and their limitation of the pace of industry on the other.[13] This relationship is illustrated hypothetically in Figure 12.1. The chart depicts the utilization of industrial capacity on the horizontal axis against the capitalist share of income on the vertical axis. Up to a point, the two move together. After that point, the relationship becomes negative.

The reason is easy to explain by looking at extremes. If industry came to a complete standstill, capitalist earnings would be nil (bottom left point in Figure 12.1). But capitalist earnings would also be zero if industry always and everywhere operated at full socio-technological capacity (bottom right point). Under this latter scenario, industrial considerations rather than business decisions would be paramount, production would no longer need the consent

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on a material/technological limit, however, are likely to suggest far lower capacity utilization. Veblen, for one, estimated this utilization to fall short of 25 per cent (Veblen 1919: 81), a figure not much different from later estimates reported in Blair (1972: 474) and Foster (1986: Ch. 5). Interestingly, though not surprisingly, US military contractors, engaged in the most destructive form of business enterprise, sometime operate at as little as 10 per cent of their capacity – while earning superior rates of return (U.S. Congress 1991: 38).

12 A glimpse into what such a 'free run' might look like is offered by the recent experience of Japan: 'The underlying problem facing many Japanese companies', writes the *Financial Times*, 'is that they have misallocated capital over a long period. Instead of regarding it as a scarce resource to be used as efficiently as possible, they have pursued engineering excellence. . . . Japanese production lines are often models of automated efficiency, but less attention has been paid to whether the goods on them should be produced at all. Many companies have poured cash into projects that will never generate a return above the cost of capital' (Abrahams and Harney 1999).

13 Business limitations on the direction of industry are much more difficult to delineate and shall not be examined here.

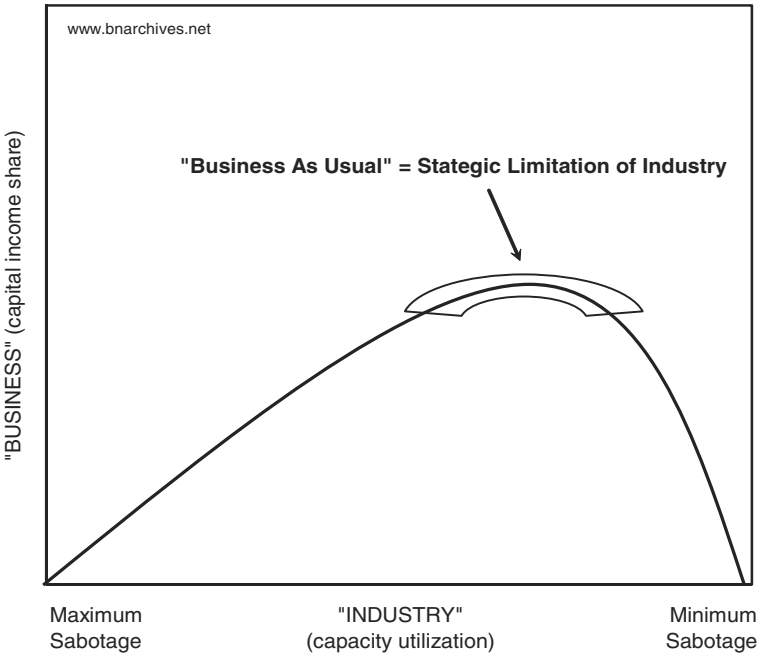

Figure 12.1 Business and industry

of owners, and these owners would then be unable to extract their tribute earnings.[14]

In a capitalist society, 'business as usual' means oscillating between these two hypothetical extremes, with absentee owners limiting industrial activity to a greater or lesser extent. When business sabotage becomes excessive, pushing output toward the zero mark, the result is recession and low capitalist earnings. When sabotage grows too loose, industry expands toward its societal potential, but that too is not good for business, since loss of control means 'glut' and falling capitalist earnings. For owners of capital the ideal condition, indicated by the top arc segment in Figure 12.1, lies somewhere in between: with high capitalist earnings being received in return for letting industry operate – though only at less than full potential. Achieving this 'optimal' point requires Goldilocks tactics – neither too warm nor too cold – or what Veblen sardonically called the 'conscious withdrawal of efficiency'.

This theoretical relationship receives an astounding empirical confirmation from the recent history of the United States, depicted in Figure 12.2. The

14 This hypothetical possibility was contemplated with great horror more than a century ago by *The Spectator* of London. In discussing workers' cooperatives, the newspaper concluded: 'They showed that associations of workmen could manage shops, mills, and all forms of industry with success, and they immensely improved the conditions of the men, but they *did not leave a clear place for the masters* (May 26, 1866, quoted in Marglin 1974: 73, emphasis added).

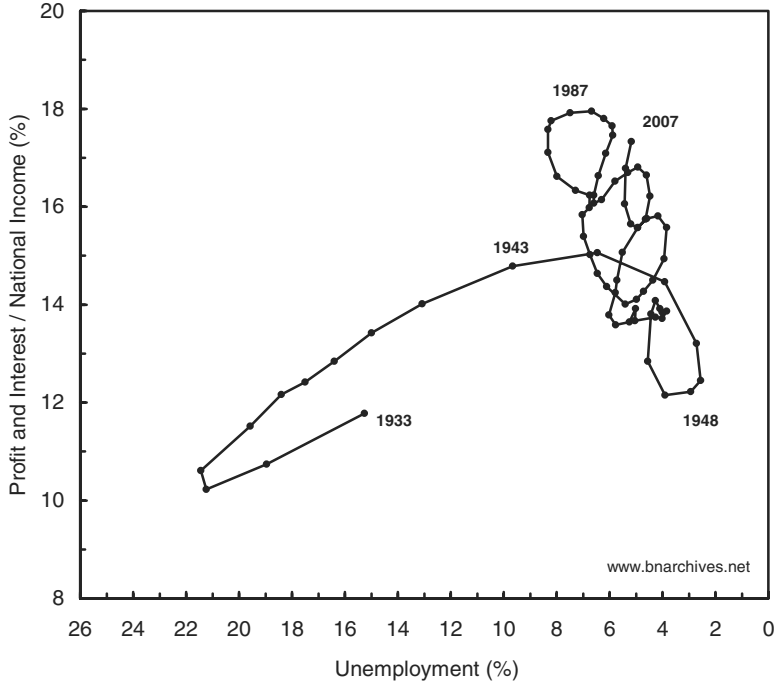

Figure 12.2 Business and industry in the United States

Note: Series are shown as 5-year moving averages.

Source: U.S. Department of Commerce through Global Insight (series codes: INTNETAMISC for interest; ZBECON for profit; YN for national income; RUC for the rate of unemployment).

chart contrasts the success of business on the vertical scale with the limitation of industry on the horizontal. The former is measured by the income share of capitalists (profit and interest), the latter by the rate of unemployment (inverted from right to left).[15] The data clearly show the negative effect on business – *both* of excessive industrial sabotage until the early 1940s and of insufficient sabotage during the Second World War. 'Business as usual' was restored only after the war, with growing industrial limitations helping

15 In their empirical work, many radical political economists consider as capitalist *all* non-labour income – including profit, interest, proprietors' income and rent. We find this encompassing perspective deeply misleading for two reasons. The first is technical. Many proprietors work for a living, while a significant proportion of rent is imputed to owners' occupied dwellings. As a result, it is never quite clear what part of these incomes is 'capitalist'. The second and perhaps more important reason is that the bulk of profits and interest is earned by large *capitalist organizations*, while most proprietors' income and rent is earned by *individual owners*. The former exercise enormous power, while the latter have little or none.

capitalists move up and to the left on the chart, toward their 'optimal' income share.[16]

Taking stock and looking ahead

Building on Veblen, our discussion so far has illustrated how business and industry could be thought of as fused yet distinct spheres of capitalism. According to this framework, industry is an integrated creative process whose productivity derives from the totality of its purposefully resonating pulses. By contrast, business is a power process carried out through the prerogatives of ownership. Owning per se is an idle act. It has no productivity and therefore no bearing on industry, either positive or negative. Owners of course can impact industry indirectly. But for this impact to be profitable it has to be negative. It is only by stirring the development of industry in directions that are wasteful and harmful yet easier to control, or by strategically limiting its pace so that their own discretion doesn't become redundant, that profit can be earned. It is this threat of dissonance that enables absentee owners to lay claim to a process to which they do not directly contribute. That is how capitalist earnings are generated.

In what follows, we concentrate specifically on the way in which business limits the pace of industry. Extending Veblen, we identify two types of sabotage: (1) *universal* business-as-usual limitations that are carried out routinely and uniformly by all firms; and (2) limitations that are *unique* to a single company or group of companies. Corresponding to these two types of limitations are two rates of return: (1) a *normal* rate of return that all capitalists believe they deserve; and (2) a *differential* rate of return that capitalists seek over and above the normal.

Pricing for power

Begin with the universal methods of sabotage. To the uninitiated, these are practically invisible. They involve no violence and force, no fire and blood, no hunger and deprivation. They do not even seem to restrict industry. For the most part, their path is clean and detached. And the reason is simple: they operate not directly, but indirectly, through the fundamental unit of the capitalist order: price.

From price taking to price making

According to received liberal dogma, firms are 'price takers': they accept whatever price mother market gives them. The reality, though, seems to

16 A similar non-linear pattern emerges if we substitute the official rate of 'economic growth' for the rate of unemployment (on an inverted scale). However, given our mistrust of 'real' measurements, we forgo this illustration.

suggest the exact opposite. The standard practice, documented extensively and repeatedly since the 1930s, shows that most modern firms are 'price makers': they set their own price and then sell as much as possible at that price.

Neoclassicists have fought tooth and nail to deny this inverted reality. They had no other choice: to recognize price making would have pulled the rug from under conventional price theory and brought down the rest of economics. Substantively, their counterattack was a failure. Although led by some of the heaviest guns, it hardly dented the facts: price making was here to stay. Pedagogically, though, the attack was highly successful. It managed to expunge the whole debate from introductory economics textbooks, with the result that today's students know little or nothing about the controversy. A brief outline therefore seems appropriate.[17]

The first to question seriously the competitive price-taking model and to emphasize the tendency toward oligopoly and monopoly was Veblen.[18] During the roaring twenties his interventions were duly ignored; but by the 1930s, with the Great Depression having opened the door to intellectual dissent, his insights began to echo. Within a few years, the neoclassicists found themselves confronted with two sets of challenges. The first were the theories of 'imperfect competition' (by Robinson 1933) and 'monopolistic competition' (by Chamberlin 1933). Many neoclassicists considered these deviations scandalous, but in due course they managed to domesticate and absorb them into their creed. Their task, though, wasn't nearly as easy with the second set of challenges. These were empirical, and they proved impossible to tame.

The debate opened with Gardiner Means' path-breaking work on industrial prices in the United States (1935a; 1935b). Means showed that there were in fact not one but two types of prices. The first were the familiar 'market prices': relatively flexible, moving up and down with supply and demand and prevalent in competitive industries. But there was also a second and heretofore unfamiliar type of 'administered prices': relatively inflexible, changing only infrequently, responding slowly to market conditions and typical of concentrated industries.

This duality had two far-reaching implications. The first was that prices were intimately connected to crisis – and in more than one way. Means showed that during the Great Depression, competitive industries saw massive declines in their market prices, but only moderate drops in their output and employment. The situation in concentrated industries, though, was exactly

17 For critical reviews of the pricing debate, see Blair (1972: Part IV), Lee (1984), Nitzan (1990) and Lee and Irvin-Lessmann (1992).

18 '[I]t is very doubtful if there are any successful business ventures within the range of the modern industries from which the monopoly element is wholly absent. They are, at any rate, few and not of great magnitude. And the endeavor of all such enterprises that look to a permanent continuance of their business is to establish as much of a monopoly as may be' (Veblen 1904: 54).

the opposite: prices declined slightly, while production and payroll collapsed, sometimes by as much as 80 per cent. In other words, the Great Depression occurred mostly in concentrated industries whose prices proved relatively inflexible. Seen from a Veblenian perspective, administered prices were nothing but a mechanism of industrial sabotage.

The second implication was theoretical and general. Profit maximization requires that firms make the best out of the circumstances they face. Administered prices, though, respond only partly or not at all to market conditions. This discrepancy means that companies that set such prices do *not* make the best out of the circumstances, and, therefore, that they do *not* maximize their profit. The conclusion was simple and painful: the more prevalent administered prices become, the greater the irrelevance of standard price dogma. And since, according to study after study, most prices are administered, the agony must be considerable.[19]

The markup and the target rate of return

The first explicit confirmation of this painful conclusion came a few years later, with the publication of Hall and Hitch's work on business behaviour (1939). Whereas Means focused on the pattern of prices, Hall and Hitch investigated those who set them. They interviewed company officials in Britain, asking them to explain how they determined prices. And their conclusions were stunning, at least by neoclassical standards. It turned out that firms did not follow the neoclassical recipe of equating marginal revenues and cost; that they did not know what these marginal magnitudes meant; and, most embarrassingly, that they did not care about profit maximization to begin with. The process that firms did follow was totally different: they started by calculating what they considered to be 'normal' unit cost (namely the cost at 'normal' levels of output); they tacked onto this cost a 'conventional' markup; and they kept the resulting price stable in the face of cyclical variations in demand.

Later on, these findings were augmented by the notion of a 'target rate of return'. According to the empirical research of Kaplan, Dirlam and Lanzillotti (1958), modern firms, particularly the leading ones, begin with a long-term target rate of profit, and then back-calculate the markup necessary to realize this rate of return over the longer haul.[20]

This method seems straightforward – and it probably is for the price-setting firm. But not so for the theorist. Whereas the former merely has to act,

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19 For up-to-date surveys of the evidence, see Blinder *et al.* (1998) and Fabiani *et al.* (2006).

20 For instance, a firm that wants to achieve an average 20 per cent return on an investment of $1 billion needs to earn an average of $200 million in profit. If the 'normal' volume is 100 million units and the 'normal' unit cost is $20, the firm needs to add a 10 per cent markup and set its unit price at $22. With these assumptions, keeping the price fixed while letting sales fluctuate with demand will yield the target rate of return over the longer term.

the latter has to reason. And as it turns out, the pricing formula cannot be 'explained' easily. The main problem is the 'target rate of return' and the associated 'conventional' markup: since these no longer obey the rules of profit maximization, there is no way to find their unique values. In theoretical parlance, they become 'indeterminate'. Hall and Hitch (1939: 28) tried to solve the problem by making the markup a reflection of the 'community of outlook' of businessmen, while others, such as Eichner (1976), anchored the target rate of return in the firms' 'investment plans'. However, conventional economic theory does not know how to theorize airy concepts such as the 'community of outlook' and 'investment plans', as a result of which 'economic science has not yet solved its first problem – what determines the price of a commodity?' (Robinson 1966: 79).

A possible way out of this puzzle was pointed out by Michal Kalecki (1943a), whom we have mentioned in Chapter 4. For Kalecki, the markup was not simply a vague social convention, but a measure of power: he called it the 'degree of monopoly'.[21] Monopoly power, like every other form of power, can be known only by its consequences. And for Kalecki, that consequence was the markup: the higher the markup and its associated rate of return, the greater the implied power of those who set it, and vice versa.

Pricing and incapacitating

And so the circle closes and sabotage becomes invisible. The vast majority of modern capitalists (or their managers) are 'price makers': they fix the price of their product and then let 'market forces' do the rest for them. To the naked eye they all seem keen on producing and selling as much as possible, but beyond the façade the picture is very different. The specific level at which they set the price *already embodies the power to incapacitate*. On the one hand, the profit target and markup built into the price reflect the firm's power, while, on the other hand, that power, exercised by the high price, serves to restrict industry below its full capacity. The sabotage and the power to inflict it remain concealed, but their consequences are very real.

Is free competition free of power?

Now, up to this point, our discussion has been limited to the mainstream of administered prices. It should be added, however, that even in those isolated cases where 'free competition' is said to reign, the power to incapacitate is not at all absent. To see why this is so, consider a neoclassical 'perfectly competitive' firm – but instead of focusing on what it does, think of what it is unwilling to do. For illustration, take the case of mining, where prices are presumably set by global supply and demand. A reader schooled in

21 The precise definition was a bit more involved, but that should not detract us here.

neoclassical theory may be tempted to conclude that, at least in such cases, the presence of market prices excludes sabotage. But it ain't necessarily so.

Mining output, much like any other output, is controlled by business. The actual production of a single firm and the number of firms in operation therefore are bounded not by the state of industrial arts, but by what can be sold at a 'reasonable' profit. In fact, this is exactly what standard neoclassical manuals tell the owner of a perfectly competitive firm: in the long-run, have your company produce only if you expect to earn at least the normal rate of return. Otherwise, shut down.

For neoclassicists who insist on equating the normal rate of return with the marginal revenue product of capital, this stipulation simply assures efficient resource allocation. From a Veblenian standpoint, though, this unwillingness to produce for less than some conventional rate of return is the very manifestation of industrial sabotage. Thus, although 'perfectly competitive' firms may not set prices, their productive activity – individually and in the aggregate – nevertheless is limited by the imperative of earning a normal rate of return.

The capitalist norm

The normal rate of return and the natural rate of unemployment

The normal rate of return of course is a fuzzy magnitude, a convention that varies among business owners and over time. The important point, however, is that this normal rate exists in the first place. With the gradual penetration of capitalist institutions, owners have come to believe that the flow of profit is a natural, orderly phenomenon. As such, profit is seen as having a more or less predetermined mean growth rate and a dispersion that varies with circumstances (expressed by the standard deviation from this mean).

According to Veblen, this development is hardly trivial. Until a few hundred years ago, profit was seen more as a coincidence than a regular feature of ownership. The main goal was to *retain* property, and owners of land, slaves or gold rarely expected their assets to grow 'on their own'. But under capitalism, where the business limitation of industry grows increasingly universal, the consequent profit is regarded as natural and its rate of expansion as normal. In this way, the strategic limitation of industry can prevail even in the absence of explicit binding arrangements.

The normality of profit has been so thoroughly accepted that the industrial limitation from which it derives is no longer self-evident. Consider the fact that since 1890, the first year for which aggregate data are available, the official US rate of unemployment averaged 7 per cent (5.7 per cent without the 1930s). Economists, however, remain unimpressed by this fact. Indeed, that is exactly what they expect. Given that this average rate has been associated with 'business as usual', most now take it to represent 'the natural rate of unemployment'. In an unconscious Orwellian bent, modern textbooks

casually talk about the 'full employment unemployment rate', 'unemployment equilibrium' and 'over-full employment' – generally without quotation marks (see for example Parkin and Bade 1986: 282–83; and Branson 1989: 188). Even Carlyle could not have foreseen the dismal state of a society subjugated to the economic science.

Antecedents: return and sabotage in antiquity

The power features of the capitalist normal rate of return are not without precedent. Their origins can be traced to the early emergence of the rate of interest in the Middle East some 4,500 years ago. The ancient interest rate, just like today's normal rate of return, was a matter of power and sabotage. But its institutional and societal underpinnings were radically different and are worth exploring so as to put our discussion in context.[22]

The roots of the pecuniary standard are inherently negative. In almost every language, the concept of debt is associated with guilt and sin. Originally, proto-money was used for the settling of obligations, including reparations ('pay' and 'pacify' share the same root in both English and Hebrew), marriage debts, communal fines, religious offerings and, eventually, royal taxes. The *máš* – the Sumerian term for interest – means 'kid' and 'calf', a term that developed from the earlier religious proto-tax of the *máš*-fee. *Mikneh* in Hebrew means 'herd' narrowly and 'moveable property' more broadly. Similarly, the words 'pecuniary', 'fee' and 'feudal' all derive from the Latin *pecus* – a concept that later came to denote 'cattle', but that originally referred more broadly to 'personal chattels' and 'moveable wealth'.

Livestock etymologies and growth metaphors have led neoclassicists to conclude that ancient interest payments on debt were natural returns on productive agricultural yield. This is an erroneous interpretation for two reasons. First, although debt (along with many other concepts) was often counted in 'pastoral' units, it was considered barren throughout antiquity. Second and more straightforwardly, most lending in antiquity had nothing to do with 'investment' and therefore had no 'return' from which to deduct interest.

The institution of interest was first invented in Sumer during the third millennium BCE, from where it later spread to the Eastern Mediterranean, Greece and Rome. From their very inception, debt, credit and interest were matters of organized power. The Sumerian proto-monetary architecture was fundamentally *statist*.[23] It developed as a royal method of administration and accounting, a system with which the palace and temple allocated material

22 Our account of the origin of interest in this subsection draws on the work of Michael Hudson (1992; 2000a; 2004).

23 A proper, coin-denominated 'monetary system' appeared much later, in Lydia of the seventh century BCE. The term 'money' is even more recent, coming from the Roman temple of *Juno Moneta*, where silver and gold coins were minted during the Punic Wars.

provisions, organized production and collected taxes. Commercial and long-term trade accounting, wherever they existed, were part and parcel of this statist architecture.

The Sumerian debt system was very different from the capitalist one. Capitalist borrowers are usually thought of positively, as entrepreneurs who leverage their own money in order to make more money. By contrast, most Sumerian borrowers were farmers in distress, on-the-brink subjects whose dire circumstances forced them to 'mortgage' (or death-pledge) their cattle and even family members just to make ends meet. These peasants did not 'invest' their loans; they used them simply to stay alive. And since the borrowers made no productive advances, there was no reason for the interest they paid to bear any relationship to the 'efficiency' of their chattel or the 'yield' of their fields.[24]

And, indeed, contrary to the ever-fluctuating capitalist normal rate of return, the standard Sumerian rate of interest never changed. It was fixed at 1/60 per month, or 20 per cent annually, and did not budge for more than a millennium. The Greek interest rate of 1/10 per annum and the Roman rate of 1/12 – although not nearly as durable as the Sumerian – were also set for long periods of time. The stability of these ancient rates reflected the pattern of agricultural seasons, a system of mathematical fractions and a set of religious myths – a combination that the ruling elites gradually synthesized and locked into an inflexible architecture of pecuniary rules.

This pre-capitalist architecture, just like the capitalist one, was rooted in organized power and inflicted plenty of damage. Exorbitant interest rates dispossessed and enslaved numerous borrowers. In fact, the sabotage was so severe that ancient rulers had to announce periodic debt moratoriums, or Clean Slates, to avoid social disintegration. But this is where the similarity ends.

Pecuniary power: ancient versus capitalist

In antiquity organized power was enforced directly by royal decree and increased by the open use of force. Wealth was a subset of power, an entity whose magnitude depended on the whim of gods and the dose of violence. It had no *predetermined* pace of growth, positive or negative, natural or religious. And whatever its erratic rate of expansion, it obviously could not have depended on a fixed rate of the interest. The latter was seen primarily as an administrative device. The ancients even forbade its compounding.

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24 It seems that many poor farmers are still unable to internalize the neoclassical entrepreneurial spirit. In India, small peasants, squeezed between high input prices and low output prices, continue to borrow simply to make ends meet. Just like their Sumerian predecessors, they do not invest their loans 'properly'. And since that makes them unable to meet their interest payments, many thousands end up killing themselves every year (Meeta and Rajivolochan 2006).

The capitalist order puts this logic on its head. On the surface, organized power seems to have vanished. With autonomous, growth-seeking agents engaged in voluntary transactions, the normal rate of return no longer connotes destitution and enslavement. But this is no more than an optical illusion. Paraphrasing Anatole France, the main novelty is that now 'everyone is free to sleep under the bridge'. Organized power is still very much there, albeit in a totally different form. Instead of open violence administered by state rulers, we have administered prices openly imposed by private absentee owners. On the consensual surface of the market, no one seems to hold that power. But the unshaken belief in the normal rate of return and its associated natural rate of unemployment attests to the omnipresence of power.

Unlike its ancient predecessor, the normal rate of return is no longer a mere administrative device. Whereas in antiquity the rate of interest was a subsidiary of state power, under the system of business enterprise the capitalist state itself is gradually subsumed by the logic of the normal rate of return. Government deliberations and decisions are constantly under the long shadow of the bond market, and even central bankers, who ostensibly 'determine' the short-term 'risk-free' rate of interest, in fact take their cue from the 'market'.[25] The normal rate becomes a central feature of the capitalist *nomos*. It is the yardstick on which capitalization is based and the principal evidence that not only the level of organized power, but also its *augmentation*, is natural, inherent and just.

The differential underpinnings of universal sabotage

Where does the capitalist normal rate of return come from? Paradoxically, the *universality* of profit and the regularity of its expansion are based on the *specific* institutions of differential sabotage. Indeed, a normal rate of return can exist only because owners are never satisfied with it. What owners believe they are entitled to under normal circumstances is not what they seek in practice. The primal drive of modern business enterprise is not to meet but to *beat* the average. Business performance is denominated in relative, not absolute terms, and it is 'getting ahead of the competition' that constitutes the final aim of all business undertakings. This compelling desire to *outperform* – to earn more, to grow larger, to expand faster than others – is perhaps the most fundamental urge of contemporary business. In that sense, even members of the tightest oligopolistic coalition are fiercely competitive.

Paul Johnson (1983: Ch. 1) associates this relativism with the twentieth-century vulgarization of Einstein's theory. In his view, the misplaced social-

25 This subjugation is illustrated by the fact that, since the 1980s, the fund rate set by the U.S. Federal Reserve Board and the three-month rate on government T-bills have both *followed* rather than led the 'market-determined' yield on long-term bonds.

ization of physics ushered in a total meltdown of the absolute values, both religious and ethical, that characterized the nineteenth century. But such cultural emphasis, however appealing, misses the structural imperative of accumulation. Understood as a power institution, capital is *inherently* differential, a crucial aspect to which we turn below. For the moment, though, our focus is on how the differential limitation of industry forms the basis for the normal rate of return.

Differential returns mean above-average profit growth. Such returns usually require raising one's *own* profit growth – though that in itself is rarely feasible without also limiting the *average* growth of profit. The problem is simple. Profit is a product of sales and the profit share in sales. Individual firms can try to raise their sales volume faster than the average; but that alone will not guarantee differential profit growth, since sales and the profit share are not independent. If all firms push their sales up, the consequence is an overall loss of business control over industry and a resulting drop in the overall profit share of income. The conclusion – well known since antiquity but broadly institutionalized only since the late nineteenth century – is the imperative of restricted access: for the profits of one owner (or a coalition of owners) to beat the average, others must be prevented from accessing the same earnings. Whereas the conventional logic of profit maximization focuses only on the capitalist's own lot, the quest for differential profit also involves the lot of other capitalists.

The means of achieving this differential end are numerous, transcending both business and politics and spanning the societal spectrum from the individual to the global. These means include direct limitations, such as predatory pricing, formal and informal collusion, advertising and exclusive contracts. They also include broader strategies like targeted education, patent and copyright laws, industrial policies, financial regulations, preferential tax treatment, legal monopolies, labour legislation, trade and investment pacts and barriers and, of course, the use of force, including military, for differential business ends.

The negative industrial impact here is often indirect. For the benefiting owner, the differential gain accrues because the necessary industrial limitation is borne by *other owners*. For instance, historically the large petroleum companies have gained from expanding world demand at least partly because they have been politically able to keep smaller 'independent' companies largely out of the loop (Blair 1976). On the other hand, when exclusion cannot be ensured, like in the case of software development or the manufacturing of microchips, soaring production often overshoots into excess capacity and falling profits. In general, then, the negative impact of business on industry is both indirect and non-linear: while profits usually correlate positively with one's owned industrial activity, beyond a certain point this correlation is maintained only insofar as the production controlled by others is contained.

In sum

Business profits are possible because absentee owners can strategically limit industry to their own ends. Such control is carried out routinely, either by pricing products toward earning a target rate of return at some standard capacity utilization, or by making industrial activity conditional on earning a normal rate of return. Underlying these universal business principles are numerous differential practices, with owners, individually or in groups, trying to redistribute income via institutional and organizational change. The specific aim of most (though not all) differential tactics is to restrict the industrial activity controlled by existing or potential rivals. Their aggregate consequence is dissonance that undermines the industrial community at large, yielding a natural rate of unemployment on the one hand and a corresponding normal rate of return on the other.

The link between differential and universal industrial sabotage is closely related to the twin conflicts pervading the regime of business enterprise – one between absentee owners and the industrial community, the other between absentee owners themselves. These two conflicts resemble Marx's distinction between the class struggle and intra-capitalist competition – but with a big difference. Whereas for Marx the class struggle was conceptually prior to the intra-class relationship among capitalists, in our view they are two sides of the same process: the dominance of capital over society depends on a pecking order among capitalists themselves, and vice versa. On a disaggregate level, the distribution of profit among absentee owners is roughly related to the balance of business damage they can inflict on each other. And on the aggregate level, the overall industrial sabotage arising from their internal business warfare determines their overall profit share (although not in any linear way and along with other factors). In other words, the goals of business owners revolve around the distribution of profit, while the methods of business sabotage ensure that such profit is made available in the first place.

Capital and the corporation

Capital as negation

One reason why Veblen's analysis never became too popular is that it made business capital a *negative* industrial magnitude. This view of the business-industry nexus is alien to both neoclassical and Marxian thinking. For neoclassicists, who emphasize harmony and equilibrium, the positive social value of capital is hardly in doubt. Contrary to this view, Marx accentuated the antagonistic social basis of capital, linking accumulation to exploitation. However, just like his liberal counterparts, he too stressed the relentless pressure to improve productivity – pressure that stems not from the lure of monopoly and imperative of power, but from the discipline of competition. And so despite the antagonism – or perhaps because of it – capitalists according to Marx must use their capital in the most productive way possible.

Even British contributors to the Cambridge Controversy were still

ambiguous on the industrial footing of capital. As Joan Robinson (1971) pointed out, Sraffa broke the 'conspiracy of silence' by destroying the presumption that the profit rate measured the contribution of investment to national income, let alone to human welfare; by calling into question the positive connotation of both accumulation and growth; and by refocusing attention on distribution. But although Robinson later realized that Veblen had anticipated much of this critique, she never took the next step to explore the possibility that distributive power and industrial production were not simply uncorrelated, but *negatively* correlated (1967: 60; 1975: 115–16).

The difference is subtle but crucial: while the Cambridge Controversy raised the possibility that capital *could be unproductive*, Veblen contended that, from an industrial point of view, it was *necessarily counterproductive*.

This claim is not easy to dismiss. Business, like other power institutions throughout history, can force people to act, but it cannot make them productive. Moreover, productivity as such, being socially holographic and therefore open and unrestricted, cannot generate a profit. The only way for capitalists to profit from productivity is by subjugating and limiting it. And since business earnings hinge on strategic sabotage, their capitalization represents nothing but incapacitation. In this particular sense, capital, by its very construction, is a negative industrial magnitude.

The rise of the modern corporation

The emergence of capital as a business limitation of industry was greatly facilitated by the rise of the modern corporation and the larger use of credit as ownership. Now, on the face of it, this claim sounds counterintuitive. In fact, most readers would probably expect the exact opposite to be true – namely, that the corporation emerged precisely because of its productivity. But as with many other productivist categories, there is more here than meets the eye.

Perhaps the first to contemplate the broad social significance of incorporation was Karl Marx. Prescient as usual, he suggested that the corporation may mark the dawn of a new capitalist regime: 'The capitalist stock companies as well as the co-operative factories', he wrote, 'may be considered as forms of transition from the capitalist mode of production to the associated one' (Marx 1909, Vol. 3: 521). Yet, in his opinion, this transition was driven by the imperative of efficiency. The corporation helped concentrate the means of production and in so doing enabled capitalists to further increase productivity and hasten accumulation.

The liberal view is different, but not by much. According to mainstream economics, the corporation is the most effective way for society – not just its capitalists – to reap the benefits of large-scale production. The following pronouncement by *Samuelson Inc.* is typical:

> Large-scale production is technically efficient, and a large corporation is an advantageous way for investors to pool the irreducible risks of

> business life. Without limited liability and the corporation, a market economy simply could not reap the benefit that comes when large supplies of capital need to be attracted to efficient-sized corporations. . . .
> (Samuelson, Nordhaus, and McCallum 1988: 453)

From a Veblenian standpoint, though, this productivist logic makes no sense. The corporation is a business institution, not an industrial unit, and so the reason for its emergence and continuous success must go beyond economies of scale and scope.

First, although incorporation certainly reduces risk, as we have argued in Chapter 11 and will show further in Chapter 13, risk reduction has more to do with power than with efficiency. In fact, the focus on power was there from the very start. The purpose of the proto-corporations that first emerged in Italy of the tenth century was to bypass or at least mitigate feudal sabotage and the dangers of piracy. These early 'investment brotherhoods' had two basic structures – one maritime, the other landed. The maritime organization, known as the *commenda*, was a short-lived joint venture between an 'investor' (*commendator*) and an operator. Its whole terminology connotes power: the voyage itself was called *taxedion*, meaning a 'military expedition'; the task of the leader was called *procertari*, meaning 'to engage in struggle'; and the investments were called *iactare*, meaning 'rolling the dice'. The comparable landed organization was the *compagnia*, meaning 'sharing of bread'. In contrast to the one-time *commenda*, here the investment was locked for a number of years and ostensibly was less risky. But many *compagnia* owners, such as the Perruzis of Florence, were pulled into the lucrative business of princely war finance, a highly unproductive enterprise whose business consequences often proved far more disastrous than the hazards of the sea (Pirenne 1937: 122–23; Lopez 1967: 141–42, 295–98).

The second difficulty with the common rationale is that large-scale production is a sound business practice only if it serves to raise profits – yet contrary to popular conviction one does not necessarily imply the other. Since the 1890s, the modern corporation has outgrown its largest industrial unit, suggesting that economies of scale are no longer the paramount determinant of business size, if they ever were (Scherer 1975: 334–36; Edwards 1979: 217–18). A typical modern firm now owns numerous, in some cases hundreds of industrial establishments, often in unrelated industries. And while the corporation continues to grow in size, its industrial units do not.[26] The fact that

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26 According to the Statistics of U.S. Business program (SUSB), the size of establishments (defined as production locations) does not differ much between super-large firms (with over 10,000 employees) and medium-sized ones (with 100–999 employees): in 2005, both groups had an average establishment size of 52 employees. The real difference was in the *number* of establishments: in that year, a typical large firm owned an average of 658 establishments, whereas its medium-sized counterpart had only 4.6 (U.S. Department of Commerce. Bureau of the Census).

industrial size is not a necessity for business success has been demonstrated forcefully with the growing significance of outsourcing. Many of today's corporate giants have successfully reinstated the putting out system of the industrial revolution, with the typical result being rising profit coupled with falling payroll.

The rise of the corporation of course is related to the emergence of large-scale industry, but causality may well run opposite to what mainstream economics argues: the corporation emerged not to *enable* large-scale industry, but rather to *prevent* it from becoming 'excessively' productive.

In the case of the United States, this rationale is illustrated by the two principal processes charted in Figure 12.3. Between 1790 and the Civil War, population growth averaged 3 per cent annually. With the conquering of the western frontier, this rate fell to 2.2 per cent between the Civil War and the turn of the twentieth century, and further down to 1.6 per cent between the turn of the century and the onset of the Great Depression. The second significant development occurring at the same time was a rapid acceleration

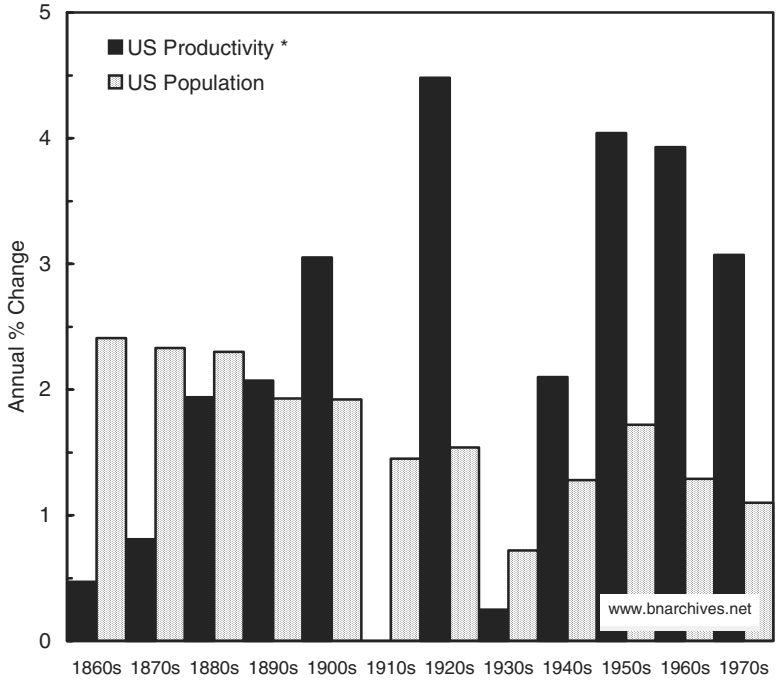

Figure 12.3 The productivity threat

* Measured labour productivity in manufacturing, based on the Frickey Index spliced with the FRB index and divided by the number of manufacturing production workers. The average productivity growth during the 1910s was zero per cent.

Source: U.S. Department of Commerce.

in (officially measured) labour productivity. In manufacturing, the growth of output per employee rose from less than ½ per cent in the 1860s to over 3 per cent by the turn of the century.[27]

The crucial intersection of these two opposing trends occurred during the last decade of the nineteenth century. Until then, with population expanding faster than productivity, the main concern for individual firms was how to satisfy soaring demand. Sales could therefore grow at maximum potential without threatening markups and profitability. This was the golden age of 'free competition'. But then things began to change. After the Civil War, the state of the industrial arts benefited from improved transportation and communication, an unprecedented increase in the use of new raw materials, the development and assimilation of numerous innovations, new production techniques and growing product diversity. The net result was a marked acceleration in the growth of productive capacity. Given that this process coincided with slowing population growth, the threat was that sooner or later the industrial system would become 'inordinately productive', as Veblen would have put it. If the earlier pattern of competitive production were to continue, industry would tend to generate much more output than could be profitably sold, bringing pricing down and business enterprise to a halt.

It was at this point that the modern business corporation as we know it came into its own. Until then, business combination largely took the form of pools and trusts whose primary purpose was to constrain aggregate output to 'what the traffic could bear' at profitable prices. Yet as Olson (1965; 1982) convincingly argues, collaboration is usually difficult and often impossible in large groups, and an excessive number of firms was indeed a primary reason for the relative fragility of these early combinations (Cochran and Miller 1961: 140–46; Chandler 1977: 317–18). There was a pressing need to reduce the number of firms, and the most effective method was merger. Mergers, however, were not only structural transformations, but also financial transactions. They involved buying and selling capital, which in turn meant that firms had to have a pecuniary value. In short, *capital itself had to be made vendible*.

The developments that followed were quick and swift. During the 1890s, the United States saw the widespread incorporation of business firms, the rapid growth of stock and bond markets and the expanding use of credit as a form of ownership. It was during that period that the separation of business from industry was finally completed. Firms were turned into corporations and investors into absentee owners of discounted future earnings. From then on, the predicament of excess capacity remained a more or less permanent feature of US capitalism. As Figure 12.3 shows, official productivity growth continued to run ahead of population growth. Industrial limitation therefore

27 The precise productivity growth figures are dubious for the reasons outlined in Chapter 8, but the quantum technological leaps that underlay them were very real.

remained a business necessity, carried out by progressive corporate centralization and the relentless restructuring of broader power institutions.

Productive wealth and corporate finance

Equity versus debt

With the corporation seen as a means of limiting industrial activity for business gain, accumulation can no longer be understood in terms of the underlying productive apparatus of the firm. We have already seen the temporal dimension of this rupture. As a forward-looking entity, capital accumulates *upfront* – that is, before the profit is earned and usually before any material equipment is created. But the rupture persists even without the timing issue. Simply put, rising capacity brings more industrial production – but then too much industrial production is bad for business and disastrous for accumulation.

This 'twisted' link between accumulation and production becomes evident from a closer examination of equity and debt. For the archaic 'captain of industry', capital meant equity; debt did not provide the direct control necessary to run industry. For the modern 'captain of solvency', however, the difference is no longer clear cut. As an absentee owner, the contemporary investor views both equity and debt as undifferentiated, self-expanding claims on the asset side of the balance sheet, universal capitals qualified only by their risk/reward profiles.

Although entries on the liabilities side of the balance sheet do not stand against specific entries on the assets side, it is generally accepted that equity capitalizes mostly the corporation's 'immaterial assets', whereas debt discounts mainly its 'material assets'. The conventional accounting creed is that both assets are valuable because of their productivity. The former represents the company's *unique* knowledge, client loyalty and other aspects of its supposed industrial superiority; the latter denotes its *undifferentiated* plant and equipment. We shall now see that these accounting conventions hold little water, even on their own terms.

Immaterial assets

Consider first the 'immaterial assets'. The popular conception is that these represent the unique productivity of the firm's *own* industrial apparatus. But do they? Take inventions and innovations. Both are deemed productive – though given the hologramic nature of knowledge, it isn't easy to sort out how much of this productivity 'originates' in the firm that owns them.[28]

Think of a Microsoft software package. This package – essentially a coded

28 For the sake of simplicity we treat here the firm and its employees as synonymous. Insofar as they are not, the 'origin' of knowledge becomes even fuzzier.

set of ideas – could not have been developed without similar codes having been written by others – or indeed without computer languages, the microchip, semi-conductivity, binary logic, mathematical functions or human language for that matter. Such knowledge owes its existence to society at large; much of it was invented for its own sake, often with no immediate 'applications'; and all of it is available free of charge. In this sense, most of Microsoft's inventions and innovations are not really Microsoft's – and this delinking means that the 'productivity' of these innovations, whatever it may be, isn't Microsoft's either and therefore cannot account for its 'immaterial assets'. In fact, had Microsoft followed the productivity doctrine of distribution to the letter, paying royalties on the use of such knowledge, it would probably have no 'immaterial assets' whatsoever and an infinitely large debt.

In practice, though, none of this matters. The real issue is not whether Microsoft's knowledge 'originates' inside or outside the company, but whether that knowledge – whatever its source – can be protected. Note that on its books, Microsoft – like any other corporation – capitalizes not the invention itself, but the patent or copyright that defends it. And by now the reason shouldn't be surprising: unless the innovation is protected, everyone can use it, and what everyone can use nobody can profit from. Conclusion: a corporation – no matter how 'innovative' it claims to be – can only capitalize the *protection* of knowledge, never the knowledge itself.[29]

Moving from legally sanctioned intellectual property rights to unsanctioned items, the alleged productivity of 'immaterial assets' becomes even more dubious. Unsanctioned items are commonly classified under 'goodwill'. The accounting meaning of 'goodwill', though, is quite different from its

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29 Much like in Budd Schulberg's classic tale of modern America, *What Makes Sammy Run?* (1941), the success of many techno-entrepreneurs often owes more to their ruthless power than creative acumen. Their common strategy is known as 'fast following': being the first to spot new ideas created by others, to wrestle them away from their creators and to quickly turn them into the fast follower's own property.

Bill Gates' MS-DOS operating system, for instance, is surprisingly similar to a previous system named QDOS, a system written by one Tim Peterson, to whom Gates paid $50,000 so that he would give up any future claims to it. Likewise, the idea for Gates' Windows system was reputably taken, this time gratis, from Steven Jobs of Apple, who tried in vain to block it in court, after himself having 'borrowed' it, along with the computer mouse, from developers at Xerox. Even Jim Clark, the legendary Silicon Valley innovator, owes almost his entire fortune to simple, back-of-the-envelope ideas – the idea to use the Mosaic browser developed by Marc Andreessen as a basis for Netscape, and the idea to use the internet as a basis for Healtheon's integration of the US health-care industry. The actual development and implementation of both ideas were done entirely by others.

According to Michael Lewis (2000: xvii), many of Silicon Valley's greatest innovations – including its so-called 'new-new things' – are rarely earth shattering or even novel. Rather, they are notions 'poised to be taken seriously in the marketplace', ideas that have been worked out almost entirely, and are only 'a tiny push away from general acceptance' – that is, a tiny push away from being legally packaged so that others cannot use them unless they pay.

original connotation of customer loyalty based on intimate knowledge in a small community. On the company books, 'goodwill' is usually used (or abused) as a catch-all term for the unsanctioned power to strategically limit industry for differential business gains.

A good case in point is corporate merger, a business transaction that has the occult ability to make the whole grow bigger than its parts. When two companies amalgamate, their post-merger capitalization almost always exceeds their separate pre-merger capitalizations put together. Some attribute this miracle to productive synergy: when fused, the two companies supposedly complement and boost each other's efficiency. As we shall see in Chapter 15, though, this explanation is very thin on evidence. Worse still, it is largely irrelevant for the common practice of conglomerate amalgamation, and it is totally undermined by the widespread practice of post-merger 'downsizing' to shed excess capacity.

The real cause is very different. In the final analysis, what makes the combined capitalization greater than the sum of its parts is the additional *social power* generated by the merger: the power to increase differential earnings, raise differential hype and reduce differential uncertainty. Of course, the power underpinnings of this 'added value' cannot be admitted in public. So, instead, the extra capitalization is minted on the balance sheet as fresh 'goodwill'.

In conclusion, equity accumulation capitalizes not *differential productivity* but *differential power*. In this sense, any institutional arrangement leading to higher profit expectations and lower risk perceptions – be it favourable political rearrangements, the creation of new consumer 'wants', the re-organization of collusion, or the weakening of competitors – will sooner or later lead to higher equity values backed by new 'goodwill'.

Material assets

But then what about debt? Is it not true that, unlike equity, debt is commonly backed by a material apparatus whose productive essence can hardly be denied? And doesn't this fact suggest that capital income, at least partly, is a function of productivity? The answer, again, is negative. Plant and equipment are productive in the holographic context of 'industry at large'. And it is only because of that broader context that the ownership of machines yields the ability to threaten industry and the right to appropriate part of society's income. Only under these circumstances can machines be capitalized.

To illustrate, consider a tanker vessel. Its ability to transfer crude petroleum changes very gradually and predictably over time. By contrast, its dollar value as a 'capital good' tends to vary dramatically with the price of oil. This latter price is affected by very broad social circumstances, including the relative cohesion of OPEC and the large petroleum companies, Middle East wars, the ups and downs of global production and changes in energy efficiency. When these circumstances change, so does the price of oil; when the price of

oil goes up or down, a greater or smaller share of global income goes to the vessel's owner; and as the profit from the vessel fluctuates, so does the vessel's capitalized value – and yet this entire sequence occurs without there being any perceptible change in the vessel's productivity![30]

This example is by no means unique. The very same principle applies to aircraft, factories, office space and every other piece of 'capital equipment' on earth. Their capitalized value depends not on their intrinsic productivity, but on the general political, institutional and business circumstances within which they operate.

Now, on the company books, physical assets are recorded not at current market value, but at cost. This is what accountants call 'book value'. Consciously or not, there is an attempt here to separate the portion attributable to social power from the so-called 'true' value of the asset as measured by its historical cost. As it turns out, though, even this presumably 'objective' convention is unable to expunge power from prices.

The reason is that, at any point in time, the very cost of producing plant and equipment is already a manifestation of systemic conflict and struggle. Consider again our example of tanker vessels. If ownership of such tankers confers large profits, some of these will likely be appropriated by the companies producing them (as well as by their workers, depending on their own bargaining position). The acquiring shipping line will record the book value of the vessel as an undifferentiated quantum, a 'cost' item stripped of any power consideration. But this cost already reflects a redistributional power struggle that enabled the shipyard to up the price of the newly launched vessel to begin with. Moreover, even in the unlikely absence of differential earning capacity, the cost of producing tangible equipment already embodies the normal rate of return and therefore the *average* limitation of industry by business.

To sum up, the distinction between stocks and bonds is rooted in power considerations, not industrial circumstances. Both forms of capital rest on power, though the nature of power is different in each case. Most generally, equity capitalizes the firm's *differential* ability to restrict industry for its own benefit, whereas debt capitalizes the *average* ability of all owners to limit industry at large.

The maturity of capitalism

The power distinction between debt and equity can also be viewed by contrasting their respective returns and the industrial limitations from which

30 The list of assets affected by oil prices can easily be extended. The efficiency of oil traders, for instance, does not change much faster than that of sea vessels; their 'human capital', though, measured by their sign-on fees, fluctuates, as if by magic, with the price of oil and the Baltic Dirty Tanker Index (Morrison 2006). Similarly for the governments of oil-producing countries: their oil-drilling expertise changes only gradually, while the value of

they derive: interest on debt represents average sabotage, while profit on equity denotes differential sabotage. From this viewpoint, long-term swings in the ratio of interest to profit can be interpreted as a proxy for the 'maturity' of capitalism.

Our notion of maturity here refers loosely to the strength and solidity of existing power institutions; and this strength and solidity, we argue, is intimately linked to the nature of earning expectations and their associated forms of capitalization. Frankel (1980) sees the basic difference between equity and debt as a question of trust: the former represents an *expected* return, the latter a *promise* of return. But then, under business enterprise, the degree of trust among owners depends on the 'normalization' of their power.[31]

For this reason, we can expect that as capitalism matures and industrial control increasingly petrifies into accepted institutions, perceptions of risk decline, trust rises and debt becomes an increasingly acceptable form of accumulation. Conversely, when changing circumstances work to loosen the previous grip of existing conventions and understandings (and in that sense 'invigorate' capitalism), debt becomes relatively more difficult to issue and the more risky equity investment again is used as the primary vehicle of capitalization. Seen in this light, the maturity of capitalism does not develop linearly, and in fact has no preset direction. It may increase as well as decrease, depending on the trajectory of it power institutions, organizations and processes.

Following this logic, we expect the maturity of capitalism, approximated by the ratio of interest to profit, to be positively correlated with the extent of industrial sabotage. And, indeed, as illustrated in Figure 12.4, this correlation seems to exist in the United States. Since the 1930s, our index of maturity has been closely correlated with the unemployment rate, a readily available (albeit imperfect and partial) proxy for industrial limitation.

At first sight, the relationship may seem intuitive and not particularly significant. After all, economic fluctuations affect profit more than interest, so when unemployment rises so should the ratio of interest to profit. However, this triviality holds only in the short term. In the longer haul, interest payments are much more flexible, so there is no *technical* reason for the interest-to-profit ratio to correlate positively with unemployment. Note that Figure 12.4 smoothes the two series as 5-year moving averages. In this light, the fact that their long-term gyrations are so similar is highly significant.

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their sovereign wealth funds swells and contracts with the ups and downs of petroleum prices (Farrell and Lund 2008).

31 It is perhaps worth noting here that the terms 'commitment' and 'trust' have rather violent origins. The anarchy of private warfare during the early period of Medieval feudalism left little public space and eliminated any semblance of personal security. This context gave rise to armed gangs of *ingénue in obsequio* – free men under the protection and at the service of a military chieftain. The armed retainers of the Frankish king were initially known as *comitatus* and later as *trustis* (Ganshof 1964: 3–5).

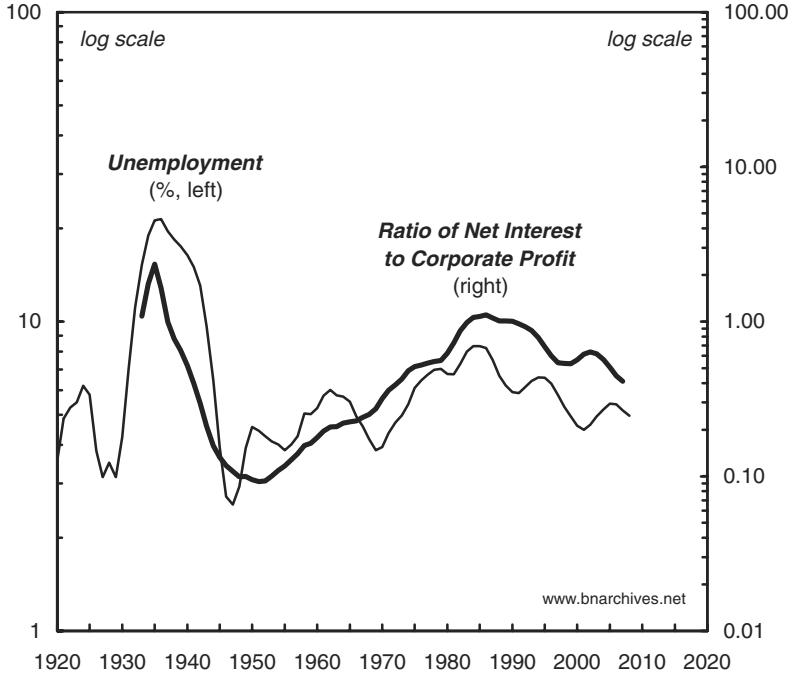

Figure 12.4 Business trust and industrial sabotage in the United States

Note: Series are expressed as 5-year moving averages. The ratio of net interest to corporate profit compares the already smoothed series.

Source: U.S. Department of Commerce through Global Insight (series codes: RUC for the rate of unemployment; INTNETAMISC for net interest and miscellaneous payments; ZBECON for pre-tax corporate profit with capital consumption allowance and inventory valuation adjustment).

The 1930s and 1940s were marked by great turbulence. As the figure indicates, during the Great Depression business control over industry had become 'excessive', while later, with the war-induced boom, it became 'too loose' (see also Figure 12.2). The 1950–1980 period was much more stable. Business slowly regained control over industry, boosting confidence in the regular flow of capital income and trust among lenders and borrowers. The consequence was a gradual rise in unemployment on the one hand and a shift from profit to fixed income on the other. Since the mid-1980s, however, the trend seems to have reversed. The increasing globalization of business enterprise and the progressive opening of the US political economy have put existing business institutions under duress and transformed the very way in which business controls industry. And as the promise of return weakened relative to the mere expectation of return, unemployment fell together with the 'maturity' ratio of interest to capital income.

Fractions of capital

The institution of absentee ownership and the notion that profit and accumulation derive from business limitations on industry suggest that all capital is *intrinsically* unproductive. This view contrasts sharply with Marx's 'fraction' taxonomy, a logic that differentiates productive from unproductive capitals. According to Marx, capital accumulates through a circulation scheme:

1. $M \rightarrow C \rightarrow P \rightarrow P' \rightarrow C' \rightarrow M'$

In this scheme, financial capital (money M), turns into commercial capital (commodities C), to be made into industrial capital (work in progress, or productive capital P), producing more industrial capital (P'), converted again into commercial capital (more commodities C') and finally into financial capital (more money M').

Although the circulation of capital is a single process, during the nineteenth century each stage appeared to be dominated by a different group, or fraction of the capitalist class: the conversion of $M \rightarrow M'$ was dominated by the financial fraction, $C \rightarrow C'$ by the commercial fraction and $P \rightarrow P'$ by the industrial fraction. As we have seen, the industrial fraction was deemed productive: it was considered the engine of accumulation, the site where value was determined and surplus value created. The financial and commercial fractions, by contrast, were seen as unproductive, deriving their profit through an intra-capitalist redistributional struggle.

During the 1970s and 1980s, many structural Marxists laboured to map the political economy of these fractions, a tradition that has since resurfaced in the fashionable study of 'financialization'.[32] In our view, though, this framework is inadequate for understanding the contemporary capitalist regime. The problem is straightforward: even if Marx's notion of capital were problem free and even if profit had everything to do with productive surplus and nothing to do with sabotage, the fractions of capital could still not be identified.

Severing accumulation from circulation

The first, analytical, difficulty concerns the link between Marxian circulation and the reality of accumulation. Conceptually, circulation happens on the assets side of the balance sheet, while accumulation occurs on the liabilities side. Since Marx counted all commodities in the same backward-looking unit of abstract labour, it was only logical for him to consider the two processes as mirror images. The firm advances the items on the assets side: money, raw materials, semi-finished goods, proprietary knowledge and the depreciated

32 Recent contributions to the 'financialization' literature include Williams *et al.* (2000), Froud, Johal and Williams (2002), Krippner (2005) and Epstein (2005).

portion of its machinery and structures. These items get augmented by surplus value. And as the surplus value gets ploughed back, the book value of the debt and shareholders' equity on the liabilities side expands by the same amount as the items on the assets side. Circulation and accumulation grow and (occasionally) contract in tandem.

But what seemed sensible to Marx has become irrelevant in the new order of capitalist power. Accounting book value is backward looking and therefore extraneous. In the calculus of power, what matters is the corporation's forward-looking capitalization on the bond and stock markets. This capitalization is a symbolic valuation and therefore cannot be circulated, by definition. Moreover, calculated as the risk-adjusted discounted value of expected future earnings, it bears little relation (and, as we have seen in Chapter 10, often a *negative* relation) to the cost of the circulated assets.

And here lies the problem. The fractions of capital are anchored in the conceptual identity of circulation and accumulation. But with forward-looking accumulation having been severed from backward-looking circulation, production no longer bears directly on capital. And with capital out of the productive loop, the definition of the different fractions loses its meaning.

Where have all the fractions gone?

The second difficulty is empirical and historical. The vendibility of capital enables even relatively small corporations to operate in many different areas, and this diversification makes it impossible to decide which fraction they belong to – even if the definition of the fractions themselves was crystal clear.

For example, how are we to classify conglomerates such as General Electric, DaimlerChrysler, or Philip Morris? These firms operate in hundreds of different sectors across the entire business spectrum – from financial intermediation, through raw materials, to trade, manufacturing, entertainment, advertising and distribution – so what should we call them? Although these examples are admittedly extreme, corporate diversification has become so widespread that the problem is now very general. And that is merely the beginning.

The difficulty is not only that diversified firms produce and sell many different products, but also that there is no objective method to determine what part of their profit comes from which line of production. In addition to being unable to measure 'productivity' so as to pin down the ultimate 'source' of profit, we are faced here with the intractable maze of non-arm's-length transactions and transfer pricing between different branches of the same firm. For example, if GE Capital 'subsidizes' GE's jet-engine division by supplying it with 'cheap' credit, the result is to lower profit in the former and raise it in the latter – and all of that without there being any change in production or sales.[33]

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33 We write 'subsidizes' and 'cheap' with inverted commas since there is no objective benchmark to gauge what is cheap and what is subsidized.

And the problem only grows as we aggregate. In the national accounts, 'manufacturing profits' denote the earnings not of manufacturing *establishments*, but of so-called manufacturing *firms*. Unlike the former, which often produce a well-defined set of commodities, the latter are a hybrid. They comprise firms whose largest *single* line of business, measured in terms of sales, is manufacturing. But given that manufacturing represents only part – and sometimes a fairly small part – of the firm's overall sales, the result is that the bulk of 'manufacturing profit' may very well come from activities *other than manufacturing*.[34]

These considerations suggest that the fraction view cannot be treated as a universal feature of capitalism. It may have been a useful rough classification during the pre-diversification phase (particularly for purposes of political alliances, etc.). But it has dubious theoretical value and little empirical relevance in an era of hyper capitalization, absentee ownership and conglomeration.

Toward fractions of power

These difficulties have led some orthodox Marxists to throw in the fractions towel, at least for the time being. Thus Duménil and Lévy admit that large 'non-financial' corporations engage in 'financial' activities and that extensive diversification means that the term 'finance' can now be used to denote 'capitalist owners' in general (as opposed to their managers). Yet, unwilling to give up Marx's scheme, they prefer to see these as problems to be solved. 'In our opinion', they say 'the analysis of the various fractions of the ruling classes, and the related institutions, still needs to be completed' (2005: 21–22).

We do not share this optimism. The difficulties here are not soluble – at least not within the framework of conventional economics, whether Marxist or neoclassical. The deadlock was candidly acknowledged by Paul Sweezy in his assessment of *Monopoly Capital* (1966), a deservingly famous book that he wrote together with Paul Baran twenty-five years earlier. His observations are worth quoting at some length because they show both the problem and why economics cannot solve it:

> Why did Monopoly Capital fail to anticipate the changes in the structure and functioning of the system that have taken place in the last twenty-five years? Basically, I think the answer is that *its conceptualization of the capital accumulation process is one-sided and incomplete*. In the established tradition of both mainstream and Marxian economics, we treated capital accumulation as being essentially a matter of adding to the stock of existing capital goods. But in reality this is only one aspect of the

34 The insurmountable difficulties of matching business profits with specific lines of industrial activity are alluded to in various methodology papers which, unfortunately, few students of fractions bother to read (see for example, U.S. Department of Commerce. Bureau of Economic Analysis 1985: xiv; 2001: M21–M22).

> process. Accumulation is also a matter of adding to the stock of financial assets. The two aspects are of course interrelated, but the nature of this interrelation is problematic to say the least. The traditional way of handling the problem has been in effect to assume it away: for example, buying stocks and bonds (two of the simpler forms of financial assets) is assumed to be merely an indirect way of buying real capital goods. This is hardly ever true, and it can be totally misleading. This is not the place to try to point the way to a more satisfactory conceptualization of the capital accumulation process. It is at best an extremely complicated and difficult problem, and I am frank to say that I have no clues to its solution. But I can say with some confidence that achieving a better understanding of the monopoly capitalist society of today will be possible only on the basis of a more adequate theory of capital accumulation, with special emphasis on the *interaction of its real and financial aspects*, than we now possess.
>
> (Sweezy 1991, emphasis added)

The stumbling block sits right at the end of the paragraph: 'the interaction between the real and financial aspects'. Sweezy recognized that the problem lies in the very concept of capital – yet he could not solve it precisely because he continued to bifurcate it into 'real' and 'financial' aspects.

And that shouldn't surprise us. 'Whatever happens', writes Hegel (1821: 11), 'every individual is a child of his time; so philosophy too is its own time apprehended in thoughts. It is just as absurd to fancy that a philosophy can transcend its contemporary world as it is to fancy that an individual can overleap his own age, jump over Rhodes'. Sweezy and his *Monthly Review* group had pushed the frontier of Marxist research for much of the post-war period, but by the 1990s their ammunition ran out. They recognized the all-imposing reality of finance, but their bifurcated world could not properly accommodate it.

In reality, there is no bifurcation. All capital is finance, and only finance. And every type of capital, including that which is formally associated with industry, is inherently unproductive. From a power perspective, the very classification of capitals along lines of industrial activity, even in the absence of diversification and forward-looking capitalization, is misconceived.

Production is always a socio-hologramic activity, carried through the *integrated* realm of industry. The business corporation, by contrast, is a differential legal construct. Being a legal entity, General Motors does not, and indeed cannot, produce cars. It merely *controls* the production of cars. But then so do firms such as Mitsubishi Trading and Deutsche Bank. Through different forms of *power*, each of these corporations controls key aspects of the production of *cars*, and that control in turn enables them to command undifferentiated parts of the total *societal* profit. The way to classify firms, therefore, is not on the narrow basis of production, but along broader lines of power, of which production is merely one aspect.

13 The capitalist mode of power

> Every soul and every object have their own purpose but all ultimately aim at one: the conquest of the world for Genghis Khan.
>
> —Chingiz Aitmatov, *The Day Lasts More than a Hundred Years*

> I don't separate myself from the state. I have no other interests.
>
> —Oleg Deripaska, owner of Rusal and at one point Russia's richest man

We now broaden the discussion of capital as power. In the previous chapter, we argued that capitalization discounts the power of capitalists to strategically limit social creativity and well-being. Capitalists inflict business dissonance on industrial resonance and leverage the consequence in the form of differential profitability. But power is not merely the means of business. It is also its most fundamental aim.

To articulate this argument, we begin the chapter by tracing the origin of mechanization to the ancient power civilizations of the river deltas, where the first giant machine was invented. This early machine, though, was not material, but social. It was made not of physical components, but of human beings. And its ultimate purpose was not production, but the exertion of power for the sake of power. Capital, we argue, is a modern incarnation of this mega-machine, a mechanized social structure driven by power for its own sake. From this viewpoint, the architecture of capitalism is better understood not as a mode of production, but as a mode of power.

The mode of power of a society, we argue, constitutes the 'state' of that society. The second part of the chapter explores this proposition. It examines the feudal mode of power, traces the process through which it gave way to a capitalist mode of power, and examines how the logic of capital has gradually penetrated, altered and eventually become the state – the state of capital.

A final note before we begin: as in Chapter 12, here too we translate and negate existing concepts and introduce new ones, here too we develop the argument at length, and here too we suggest that the reader suspend judgement till the end.

Material and symbolic drives

One of the most comprehensive attempts to understand the interaction between technology and power was offered by Lewis Mumford (1934; 1961; and primarily 1967; 1970). Mumford challenged the conventional emphasis on the material nature of technology, focusing instead on its symbolic aspects. Techniques, he argued, were integral to man's higher culture. In his opinion, the final aim of technology was the shaping of society rather than nature. Indeed, the most complex machines were not tangible but social.

Thus, whereas Veblen emphasized the progressive separation between the positive aspects of material technology and the negative features of social power, Mumford (who was greatly influenced by Veblen) suggested a different dichotomy between democratic and authoritarian technologies. Democratic technology centred on *human progress*; authoritarian technology focused on *human control*. Rather than following Veblen's notion of power as a fetter on technology, Mumford began by viewing power itself as a form of technology.

The invisible technology

In contrast to the conventional creed, Mumford emphasized the *symbolic* aspects of early human development. Limited by the materialist bias of their profession, he argued, archaeologists understandably judge human progress on the basis of physical objects. 'Man the maker', however, was a fairly late arrival, and the creation of physical artefacts were preceded by other, less visible but equally important mental activities. Moreover, the subsequent growth of material production has done little to diminish the primacy of symbolic drives.

According to Mumford, perhaps the most important human technology – invisible to archaeology until the invention of writing – is language. The material technology of Palaeolithic and Neolithic societies (and in some sense even of our own age) remains infinitely inferior to the complexity, flexibility, uniformity, efficiency and growth of their spoken languages. It is unclear how long language took to develop, but according to Mumford little of what followed could have been achieved without the prior construction of this wholly symbolic technology. Furthermore, it is highly unlikely that the development of language was driven by the everyday imperatives of survival – the hunting pack was dependent on short commands and had little use for the subtlety of language common even among the most archaic tribes still living today. According to Mumford, the principal drive was self-discovery.

Mumford argued that the latent function of language – much like the earlier appearance of ritual and taboo and the subsequent evolution of science and material technology – was *to control, for better or worse, man's own mental and emotional energies*. In many ancient cultures, words were considered the most potent force: God is commonly believed to have created the

world with his words, a feat of power that humans have since striven to emulate. Both in goal and structure, language was a precursor for all later technological developments.

The two archetypes

From this premise, Mumford differentiated between two qualitatively distinct technologies: one associated with the democratic outlook of Neolithic culture, the other with the power bias of 'civilized' society. In his opinion, their distinct paths stem from a different reaction to death. Neolithic technology takes the biological route, seeking to enhance life while accepting the inevitability of death. Power technology, by contrast, uses mechanical force and violence in the vain hope of achieving immortality.

This qualitative distinction, of course, cannot be applied easily to actual societies, certainly not with any precision. Most social formations contain elements of both technologies, and few if any conform closely to either ideal type. But the distinction is nonetheless useful as a general myth, a basic framework for understanding the dual underpinnings of social organizations.

Neolithic culture

Neolithic culture does not see work as alienating labour, but rather as a communal process intertwined with the broader ecological system. Work is often backbreaking, but physical toil is compensated for by companionship, cooperation, song and rhyme, while aesthetic achievements are valued no less than abundance of yield. Indeed, many early feats of domestication – such as fertilization, the sacrifice of food for future growth, the harnessing of cattle and the use of a plough – were probably first practised as religious rituals. Feminine traits abound – from the lunar cycle linking cultivation to menstruation and sexuality, through the primary role of containers (pot, jar, house, village), to the careful cultivation of gardens and the patient rearing of children. Festivities, ceremonies and rituals revolve around the family, neighbours and community. Eating, drinking and sexual activity occupy a central place. There is no lifetime division of labour. Knowledge is rarely monopolized, and most types of work can be performed by all members of the community. Systemic gender inequality is uncommon. There are no social classes, and authority stems from age. Violence is limited and dictatorial power rarely tolerated.[1]

Neolithic culture established the merit of morality, self-discipline, cooperation and social order. It had shown the value of public goods and forethought. Most importantly, over time it has proven to be the most resilient

1 For more on the cooperative, life-loving aspects of Neolithic culture, worship and rituals, see Gimbutas (1982).

form of social organization, always outlasting the far more energetic yet brittle power civilization.

These aspects of Neolithic culture, Mumford argued, did not disappear with the archaic village. As a form of social technology, they persist within modern society – sometimes visibly as in villages, communal organizations and even business companies, and at other times invisibly as resistance to the dictates of mechanical civilization.

Mumford also identified some significant shortcomings in Neolithic culture. The exclusive nature of small associations restricts human interaction, the horizons are limited, and pettiness and suspicion prevent broader cooperation. And, indeed, after its initial burst of discoveries and inventions, Neolithic innovation died down and stagnation set in. Conservatism made Neolithic settlements vulnerable to external invasions, and when horse-mounted tribes, equipped with metals and weapons, moved in, many Neolithic communities succumbed and withered.

Power civilization

Against this backdrop of a peaceful if limited form of democratic organization rose the spectre of power civilization under the authoritarian rule of divine kingship. The first of these social amalgamations evolved in the great river deltas – from Egypt and Mesopotamia to the Indus Valley and China. According to Mumford, the unifying hallmark of these amalgamations was *absolute power*.

The need for such power was partly rooted in material circumstances. Physical surplus and the consequent amassment of material wealth for the first time had created the possibility of 'total loss'. The population was large and growing, segmented by an increasing division of labour and evermore interdependent. Under these conditions, flooding, drought and later total war could easily have spelled catastrophe, if not complete annihilation. Whereas Neolithic culture could flexibly respond to the first two and rarely faced the third, in the urban amalgamates of the deltas these threats had to be counteracted resolutely and ruthlessly. And given the large scale of activity, such a response could be achieved only through the sanction of absolute authority.

But as Mumford argued, material considerations tell only part of the story; the other and perhaps more important part is symbolic. The rise of power civilization was accompanied by the appearance of the *sky gods*. Neolithic earth gods, attuned to the micro biological cycle of fertility and operating on a human scale, were no longer sufficient for the task at hand. For the kings, risk of disaster made failure increasingly unacceptable, thus amplifying the ever-present fear of death. Neolithic culture, humbled by its limited potential, had to accept mortality, but kings were no longer bound by Neolithic horizons. Control over growing resources and larger populations suggested to them – admittedly with some justification – that the 'skies were the limit'. Expanding insight into writing, mathematics and astronomy gave their task

cosmic proportions. But as Josephus Flavius wisely observed, 'The union of what is divine and what is mortal is disagreeable' (Koestler 1952: 237). So as earthly rationality grew hand in hand with supernatural irrationality, the king, dazzled by both his achievements and fears, was driven toward the ultimate feat of becoming an immortal sun god himself.

Power civilization appeared after rising agricultural yield for the first time had enabled a systematic generation of food surpluses. According to Mumford, it was probably at that point that hunting chiefs, who had earlier entertained symbiotic relationships with Neolithic settlements, first discovered the promise of forceful redistribution. Weapons, which had previously been used primarily against animals, were now increasingly applied against people, and total war became a permanent institutional feature.

Neolithic excavations offer little or no evidence of fortification or armament. The first fortifications are associated with urban centres, while heaps of cracked sculls – early evidence of organized murder – do not appear until kingship. Neolithic art did not glorify warriors and leaders. It left us no wall paintings of massacres and prisoners. It never built tombs in which lesser mortals were sacrificed for the afterlife of rulers. These aesthetic manifestations emerged only when humanity embarked on its 'civilized' power trip to control nature and, most importantly, people.[2]

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2 The contrast between the authoritarian drive of power civilization and the democratic impulse of Neolithic technology is well illustrated by the fundamental difference between the ancient royal scripts on the one hand and the alphabet on the other. The former were used in the hierarchical administration of taxation, material stocks and masses of human beings. But beyond their practical role, they also served as a means of instilling institutional privation, fear and awe. Their structures were exceedingly if not deliberately complicated. Egyptian hieroglyphics, Mesopotamian cuneiform and Chinese logography all have hundreds and often many thousands of symbols. Studying these scripts required many years of harsh schooling and systematic harassment that would put to shame even the best public schools of the British Empire (Kramer 1963). Their impenetrable structure helped sustain hierarchy and prevent entry. It made broad learning impossible, deterred innovation and fixed the cosmos against subversion. It was a technology of sabotage, par excellence.

The democratic invention of the alphabet destroyed this exclusivity and opened up a world of freedom. The first known alphabet was written on the walls of the turquoise mines of Serabit el-Khadim in the Sinai Peninsula, sometime during the fifteenth or fourteenth century BCE. The writers were probably the western-Semitic Apiru (or Amurru) who worked there as periodic zapping labour. Both the Bible and Egyptian evidence suggest that the royal administrators did not like these guest workers. Unlike the peasants of the Nile Valley, they were quasi-nomadic tribes who hadn't been civilized into complete docility. Perhaps in defiance of their employers who had cheated them, they invented a new script and used it to record their names and work days. This script, known as Proto-Sinaitric, simplified the Egyptian hieroglyphs, reducing them to only 40 symbols. Two hundred years later, Proto-Sinaitric became an alphabet with 24 symbols (Giveon 1978; Naveh 1987). In due course, this democratic act, having decimated the sabotage of exclusive reading and writing, would open the door to philosophy, history, science and democracy – feats of autonomy and creativity that were inconceivable in the early power civilizations.

The mega-machine

According to Mumford, the first power machine was social. In attempting to emulate the perfect cosmic order so as to annul their own mortality, kings turned to design, assemble and operate a human *mega-machine.* Absolute control of this mega-machine served as evidence of supernatural power, and the machine's most fantastic output – megalomaniacal graves – were supposed to open the gate to immortality.

The mega-machine of the early kingships typically comprised three principal components: a labour machine of peasant conscripts to erect public works; a military machine to impose internal discipline and engage in external war; and a bureaucratic machine to keep the accounts. Control was in the hands of a tight caste comprising the royal court and the high priesthood – the former maintaining a monopoly over physical force, the latter over knowledge and ideology. Division of labour and advanced specialization (Egyptian mining expeditions, for instance, had up to 50 different job descriptions), strict regimentation, uncompromising discipline and tough punishment turned the workers, soldiers and officials of these organizations into mere mechanical components. Initiative was all but forbidden and flexibility disallowed. Taken as whole, these organizations formed 'a combination of resistant parts, each specialized in function, operating under human control, to utilize energy and to perform work'. In short, they fulfilled all the requirements of Franz Reuleaux's classic definition of a machine (Mumford 1967: 191).

The fusion of rational insight and highly irrational aspirations resulted in a massive explosion of what political economists now call 'productivity'. Seen from a material standpoint, the technological achievements of the early mega-machine, particularly the construction of the pyramids, remained unparalleled until our own epoch. But according to Mumford, the more significant contribution was the construction of the human mega-machine itself. It was here that the three basic principles of mechanization – complex coordination, de-humanization, and remote control – were first applied. In other words, the original object of mechanization was *society itself*. And in due course, just as the cosmic worldview was a necessary prerequisite for the adoption of universal weights, coins, the calendar and the clockwork, the human mega-machine became the ultimate model for subsequent non-human mechanization.

The mega-machine enabled human beings, for the first time, to transcend some of their own biological limitations. The principles of universality, order and predictability opened the door to a continuous expansion of knowledge. Urban amalgamations assembled by the first mega-machines opened new horizons for human interaction, triggering occasional flurries of creativity difficult to achieve in small and disjoined Neolithic settlements.

But the unleashing of such positive forces was neither the intended purpose nor the most important consequence of the mega-machine. According to

Mumford, the ultimate goal of human organization on a large scale was and remains negative: *exerting social power for its own sake*. The use of brute force is more than a means of exacting obedience; it is the very manifestation of a power civilization. Human sacrifice, although pre-dating kingship, became a central preoccupation of civilized societies, slowly becoming institutionalized, perhaps unconsciously, in the form of war. In its extreme incarnation, argued Mumford, kingship was a 'man eating device', and the cannibalistic lust of earlier kings has repeatedly resurfaced in subsequent appearances of social mega-machines (1967: 184). Even today, monetized property (capital) and the death penalty (capital punishment) remain linked to the same root, *caput*.

To sum up, Mumford put the power orientation of the mega-machine model in sharp contrast to the democratic features of Neolithic society. With the mega-machine, Neolithic dispersion was replaced by power concentration; ecological production by mechanization; lack of specialization by a lifelong division of labour; limited local violence by the institutionalization of total war; cooperation by exploitation, forced labour and slavery; and egalitarianism by a class structure.

The mega-machine resurrected: capital

Eventually, the early mega-machines of the great deltas crumbled under their own weight. For all their external might, they were internally vulnerable: dehumanization and obedience stifled initiative, while preoccupation with power and death were bound to undermine legitimacy. And when the 'myth of the machine' died – that is, when the power structure no longer fulfilled the Pharaoh's promise of 'life, prosperity and wealth' – the social pyramid was liable to falter.

But according to Mumford, the 'myth of the machine', much like Neolithic culture before it, has outlived its first historical incarnation, and in the sixteenth century centralized power once more emerged to control human consciousness. Nothing seemed to escape this renewed preoccupation with organized power. The most significant sign was the resurrection of the sky gods and the growing assimilation of Galileo's mechanical world picture. Every social innovation – from Venetian music and French diplomacy to Newtonian physics and Hobbesian politics – was marked by mechanical rationalism. And indeed, within only a few centuries, mechanization had once again taken command – so much so that in 1933 the entrance to the World's Fair at Chicago could proudly boast: 'Science explores: Technology executes: Man Conforms'. This announcement, together with the title of the fair – 'The Century of Progress' – attests to the extent to which the 'myth of the machine' has been restored (Mumford 1970: 213).

Extending Mumford, we argue that the new mega-machine has become much more powerful than the old – though for reasons that Mumford himself did not explore. In his analysis, Mumford focused mainly on the newly

resurrected institution of kingship and its successor, the sovereign state. But lurking within the cocoon of the state – and soon emerging to define the very meaning of the state – was a new and very specific logic that Mumford largely ignored: the *nomos* of capital.

In our view, capital fulfils all the characteristics of a mega-machine. Based on the universal ritual of capitalization and a fundamental belief in the 'normal rate of return', capital is a symbolic crystallization of power exercised over large-scale human organizations, typically by a small group of large absentee owners intertwined with key government officials.

The underlying *driving force* of large-scale capitalist organizations is not fundamentally different from that which propelled the rulers of earlier power regimes: they all seek to control nature and, ultimately, human beings. But the *structures* of these power regimes – their architectures, institutions and processes – are fundamentally different. These differences, we argue, make the capitalist mega-machine more potent than any of its real or imagined predecessors – more than Genghis Khan's rolling war machine, more than Orwell's party state, perhaps even more than Huxley's human reproduction line. There are several key reasons for this greatly enhanced power:

1 *Universality.* Although capital appears fractured by complex production chains and fragmented ownership stakes, in fact it is highly universal. The power symbols of earlier mega-machines were largely culture-specific, relying on the physical display of public works, armies, sacrifice, flags and emblems. Capital, by contrast, is reduced to one symbol: *capitalization.* By the early twenty-first century, this symbol has been effectively abstracted down to electronic flickers, computer bits and bytes that make people the world over march to the invisible command of capital.
2 *Cohesion*. The unifying belief in the normal rate of return as the ultimate yardstick for social action is all embracing. It penetrates government, business, mass communication and culture, gradually taking over their very articulation and development. By providing a common language, this belief helps unite the various elites into a cohesive, if not seamless, ruling class of absentee owners, making opposition all the more difficult.
3 *Expandability.* Unlike the power of kings and sovereign governments, capital power is vendible. And the fact that capital can be bought and sold means that the power it represents can be expanded on *an ever-increasing scale*. For the first time in history, it seems that the sky *is* the limit. As Mr Collins, the oil magnate in Traven's *The White Rose*, puts it, 'There isn't any land anywhere in the world that I can't get if I want it . . . even if it's on Jupiter – I get it – as sure as death' (Traven 1929: 34).
4 *Intensity.* The focus on profit enables capitalists to deepen as well as broaden their power. The ancient mega-machine was a relatively well-defined organization. Power was exercised mostly over the organization itself and in that sense was 'organization augmenting': to have more of it

required a bigger organization. The capitalist mega-machine is a much broader construct. It consists not of the corporation per se, but of the *entire* scope of capitalistic reproduction. As we elaborate in the final part of the book, control over this totality is proportionate to the various capitalized profit shares. A capitalist group can increase this share directly by expanding its own corporate organization; but it can also do so indirectly, by raising its profit per 'unit of organization' so as to become 'leaner and meaner'.

5 *Absorptiveness.* Any process of power that systematically affects the expected level and pattern of profit is quickly capitalized (non-systematic effects usually get classified as better-to-ignore 'extraordinary items'). The discounters are constantly on the lookout, scanning the power landscape. They look to see whether education increases the relative wages of women, whether environmental policies raise the effective penalty for polluters, whether the use of military force alters the price of raw materials, whether television makes workers easier to predict, whether religious missions pacify indigenous populations, whether economic policy redistributes income, whether elections alter taxation, and so on – all with the aim of assessing the impact of these processes on profitability. Any regular effect on profit is instantly discounted into present value, and the power process this effect emanates from henceforth becomes part of capital.

6 *Flexibility.* By virtue of its universality, cohesion, expandability, intensity and absorptiveness, capital has become the most flexible power structure in history. Contrary to earlier mega-machines that depended mainly on punishment, oppression, violence and terror, capital relies also – and often far more so – on reward. This ability to use both carrot and stick makes capital suppler and therefore more resilient than either kingship or sovereign government. And even when this richer menu of power occasionally fails, giving rise to losses and bankruptcy, large-scale capitalist organizations are usually able to resurrect themselves through merger, restructuring and the securitization of debt. Indeed, *this flexibility is what makes capital accumulation possible in the first place*. This last point can hardly be overstated. If orthodox economics were right and capital was indeed a *physical* amalgamation of 'machines' or 'production lines', its immobility and rigidity would have made accumulation impossible. By contrast, if we treat capital as a human mega-machine, a structure of *social* control, capitalization and re-capitalization become possible as business organizations adapt to and change reality. Literally, capital can be accumulated only because it is *not* a physical entity.

To sum up: the myth of the mega-machine enables us to think of capital not as a material–productive apparatus, but as a symbolic architecture of social power. Operating through the price system, this architecture quantifies

and reduces qualitatively diverse power processes into the universal language of capitalization, and by so doing absorbs them into the process of accumulation. Very little remains out of reach: power that can be priced is power that can be capitalized.

Yet it is precisely this encompassing feature that makes the capitalist mega-machine difficult to reconcile with existing theories of society. For if capital tends to absorb and internalize other forms of organized power, how can we differentiate it – and, indeed, should we differentiate it – from bureaucratic organization in general and the state in particular?

Consequent to these ambiguities, the historical ascent of the capitalist mega-machine has been grossly misunderstood – often to the point of putting the whole process on its head. The first misunderstanding concerns the separation of accumulation from organization within the corporation. The second, broader misunderstanding involves the relationship between corporations and capital on the one hand and governments and state on the other. We deal briefly with the former and then turn to the latter.

Owners and technocrats

Begin with the inner compass of the corporate unit. As we saw in Chapter 4, the Weberians latched onto social mechanization as evidence that 'capital' – an entity that they erroneously equated with machines and productive artefacts – was actually on the decline, and that class analysis therefore had become irrelevant if not totally misleading.

For John Kenneth Galbraith (1967; 1983), a famous voice of this school, mechanization spelled the ascent of a new social strata: the 'technostructure'. Following the conventional creed, his starting assumption was that 'property' applies only to capital goods as distinct from organizations: the capitalist proprietors still own the physical productive apparatus, but not the organization and management of knowledge. And since in his view production has grown more dependent on the latter relative to the former, it follows that property owners must have lost their primacy to corporate technocrats and government regulators. Galbraith himself provided no evidence that this transformation had indeed occurred – although, following *The Modern Corporation and Private Property* by Berle and Means (1932) and *The Managerial Revolution* by Burnham (1941), he was not alone in inferring that ownership was becoming increasingly separate from control.

Despite their popularity, though, the 'separation thesis' and the consequent belief that capital was on the decline were founded on pretty shaky grounds. As Maurice Zeitlin (1974) convincingly showed, the direct evidence, including in Berle and Means's own study, was dubious from the very start: the separation of ownership from control was never much more than a 'pseudofact'. Neither the earlier data nor those furnished by subsequent attempts, he argued, showed that such separation had actually taken place, a claim that

has since been corroborated by numerous writers.[3] Other, less hostile critiques, like those of Baran and Sweezy (1966) and more recently Screpanti (1999), accepted that ownership was increasingly separate from day-to-day control. But in their view, this separation only subjugated executives to the rigid dictates of accumulation, turning the corporation into an even more effective 'profit machine'.[4]

This last point is certainly confirmed by the evidence. As we shall see later in the chapter, when the European bourgeoisie took the lead from the declining feudal nobility, its ascent was manifested through a marked redistribution from landed income to pecuniary return on investment. If capitalists were indeed losing ground to the technostructure as Galbraith and others have argued, we would expect to see a similar redistribution – this time from profit and interest to the salaries of technocrats and professionals. And yet this redistribution never happened. Indeed, judging by the facts, capital seems to have grown stronger, not weaker.

Figure 13.1 pertains to the United States, for which there are systematic historical data going back to the late 1920s. The series in the chart shows the income share of capitalists, measured by the proportion of pre-tax profit and interest in national income. The historical picture painted here is unambiguous. First, we can see that the income share of capitalists has trended upward, from an average of 12 per cent in the 1930s to 16 per cent recently.[5] Second, the chart shows that the volatility of the income share, indicated by the narrowing distance between the upper and lower dotted lines, has declined. Given that capitalization is boosted by higher earnings *and* lower risk, the combination of these two processes attests to the extent to which the mega-machine of capital has strengthened its grip over society.[6]

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3 According to Zeitlin, Berle and Means used an excessively high ownership cut-off point. They considered as managerial a corporation whose lead owner has less than a 20 per cent equity stake, while in fact effective control often can be exercised with as little as 10 or 5 per cent. They then went on to make a bad situation worse by overstating the number of firms that actually fulfilled this already loose criterion.

4 For more analyses of the 'separation thesis' and evidence on ownership and control, see Moore (1983), Scott (1997), La Porta *et al.* (1999) and Morck (2005).

5 The share of *after*-tax profit and interest in national income followed a similar trajectory. After the Second World War, sharp increases in corporate taxation reduced this share, which fell to 6 per cent in the mid-1940s. Subsequently, though, the effective tax rate drifted downwards – a reduction that helped the corporate share of after-tax national income reach nearly 15 per cent by the mid-2000s.

6 As noted in footnote 15 in Chapter 12, unlike many radical political economists we do not consider rent and the earnings of unincorporated business as capitalist income. The US national-income share of these two components has declined from 20 per cent in the late 1920s to 10 per cent presently, causing the overall share of non-labour income to fall from 37 per cent to 27 per cent. This drop gives the impression that capital has been losing ground, while in fact the very opposite is true.

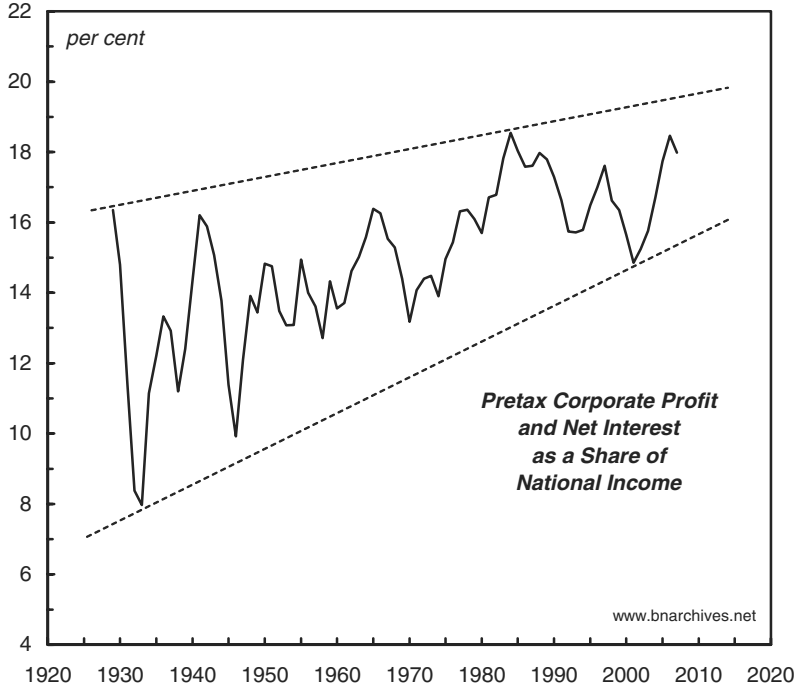

Figure 13.1 Capital's share of income in the United States

Source: U.S. Department of Commerce through Global Insight (series codes: ZBECON for pre-tax corporate profit; INTNETAMISC for interest; YN for national income).

Evidently, then, knowledge of production techniques is not a prerequisite for exacting obedience. In the final analysis, it is not the engineers and bureaucrats, but the capitalists who are in the driver seat. The ultimate drive of their corporate organizations is not 'continuity', 'security', or 'sales growth' as the managerialists would have us believe, but accumulation. And whether the capitalists are absent or present, the logic of their mega-machine seems to enforce this accumulation on society with increasing mechanical exactitude.

State and capital

Still, even with this evidence, students of capital have remained uncertain about how to link it to power. The main reason is simple enough. As Marx pointed out, *historically*, the regime of capital emerged together with the nation-state. Yet, as we have seen earlier in the book, *theoretically*, this joint emergence was fractured from the very start. The conventional bifurcation of 'politics' and 'economics' associated capital with production, leaving the state, and power more broadly, at the mercy of political scientists. Therefore,

it seems that in order to understand capital as power we need not only to debunk the economists, but also to question what the pundits tell us about the state.

Now, state theory is wide-ranging and complex – but then it is worth noting that its intricacies are a fairly new phenomenon, and that the excessivly complex and indecipherable texts probably owe more to the post-war explosion of research budgets and the mass media than to the inherent difficulty of the subject matter itself. Our purpose here, therefore, is to simplify. Rather than provide yet another scholastic account, we offer an alternative outline of how one may think about the issue.

The need for such alternative thinking is evident, if only indirectly, from the growing unease of state theorists themselves. Over the past couple of decades, the very association of states with command and power on the one hand, and markets with production and well-being on the other, has become increasingly difficult to defend.[7] There have been several attempts to fix the problem, including revising the meaning of the two concepts, altering their relative importance and historicizing their co-development. But as the following illustrations suggest, none of these solutions touches the real problem.

Metamorphosis

The revisionist method is typified by the writings of leading US realist Robert Gilpin. During the 1970s, when statism was riding high in the halls of academia, Gilpin distinguished state and markets based on their goals. The former, he said, is seeking power, the latter wealth (Gilpin 1975). By the late 1980s, however, when governments no longer seemed omnipotent, he changed his mind. His new position was that state and markets share the dual goal of power *and* wealth, and that the difference between them is mainly the means they use to achieve this goal (Gilpin 1987).

This is a major shift for a leading state theorist to make, so one may wonder what prompted it. One possible answer is that, between the first and second edition of his book, states and markets had gone through a metamorphosis and that Gilpin was only reporting this change. Another plausible explanation is that Gilpin made a mistake in the first edition and corrected it in the second. And then there is the third possibility – that Gilpin has changed his mind simply because he doesn't know how to differentiate the two institutions.

Reordering

An easier and much more popular solution, particularly among liberals, is to rearrange the order of significance. According to this creed, 'globalization'

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7 The literature on state and society often refers to 'capital' and 'market' as if they were synonymous. Although the two concepts are fundamentally different, we follow this convention here for the sake of simplicity.

has reshuffled the power cards, putting markets on top of states. This perspective is forcefully advanced by Susan Strange in her aptly titled book, *The Retreat of the State*:

> The argument put forward is that the impersonal forces of world markets, integrated over the postwar period more by private enterprise in finance, industry and trade than by the cooperative decisions of governments, are now more powerful than the states to whom ultimate political authority over society and economy is supposed to belong. Where states were once the masters of markets, now it is the markets which, on many crucial issues, are the masters over the governments of states.
>
> (Strange 1996: 4)

Of course, reordering cuts both ways, and, indeed, not everyone thinks that the state is in retreat. Weiss (1998) and Hirst and Thompson (1999), for example, argue that the belief that states are capitulating in the face of capital mobility and transnational corporations is factually unfounded – if only because, in their opinion, capital mobility is lower now than a century ago and the large corporations are not nearly as transnational as the 'globalizationists' would have us believe. Others, like Helleiner (1994), claim that globalization and deregulation, insofar as they exist, do not attest to the victory of the market – primarily because, in his view, these processes result from the deliberate (and reversible) decisions of state officials.

Contradictory interdependency

Perhaps the most interesting analyses of these questions are offered by Marxists. As we have seen in Chapter 4, Marxists see the state not as separate from, but as embedded in society. Furthermore, given the capitalist nature of this society, the state, almost by necessity, has a pro-capitalist bias. Beyond this point, however, there is significant disagreement. There is dispute over the extent to which state officials are autonomous from the overall logic of accumulation and the pressures exerted by particular interest groups; over whether the state is 'predatory' or 'developmental'; over whether the capital that the state regulates is productive and useful or speculative and wasteful; and, finally, over the degree to which these characteristics are inherent or change over time.

Underlying these numerous interpretations, though, the basic bifurcation remains. No matter how much the two entities change and regardless of their many interactions, capital stays anchored in production and the state in power. The former generates surplus through economic exploitation, the latter regulates accumulation through political oppression.

One of the more sophisticated attempts to transcend this static duality is offered by the work of Giovanni Arrighi and his co-writers on the joint evolution of state and business from the Venetian city states till the present (for

example, Arrighi 1993, 1994; Arrighi and Silver 1999). Combining the neo-Leninist tradition of Magdoff (1969) and others with a world-systems perspective, Arrighi *et al.* suggest that, over the past half-millennium, the emphasis if not locus of power has gradually shifted from organizations bounded by territory, primarily states, to ones defined by virtual command over scarce resources, mainly business entities. The shift itself has been highly dialectical. According to Arrighi, Barr and Hisaeda, there is a basic 'contradictory interdependency' (our term) between the two entities, with business agencies, because of their non-territorial nature, growing 'ever more dependent on, but also ever more subversive of, the power of the hegemonic state' (1999: 98).

During the seventeenth and eighteenth centuries, the joint-stock companies, chartered first by Holland and later by England, were still half governmental, half business organizations, acting simultaneously both as state and as capital. By the nineteenth century, however, the substitution of British for Dutch hegemony, together with the emerging domination of British manufacturers, established a more efficient division of labour between territorial and resource-based power. The new firms, relieved from the burden of formal government, were now free to exploit their economic prowess. But that relief only made them dependent on state power for protection and expansion. Furthermore, their competitive organization did little to enhance the state power on which they relied, and when larger business amalgamates began to emerge in Germany and the United States, the British-based system was superseded. By the early twentieth century, a new, American-based formation of state and business gained dominance – although, according to Arrighi, the contradictory interdependency of this new formation is even more pronounced than that of its predecessors. US-based multinational companies, while relying on American state power to keep the world open for (their) business, are actively subverting that very power. The global accumulation of these corporations, particularly in the area of financial intermediation and capital flows, have worked to destabilize the post-war economic order created by US hegemony, and by so doing have undermined the very basis of their prosperity.

The long history of this contradictory interdependency, Arrighi argues, could be useful in understanding 'epochal leaps' in the underlying nature of both state and business. Initially, a new hegemonic state typically supports and promotes its own business institutions. Eventually, however the hegemon's power and the monopolistic profit of its companies attract outside contenders and generate internal inequities and strife. In parallel, business concerns seeking to break their spatial barriers increasingly 'subvert' the territorial power on which they rely. Historically, the consequence of these mounting contradictions has been global instability and, eventually, 'systemic chaos'. The resolution of this systemic chaos, at least so far, has always involved the emergence of a new hegemon – although, according to Arrighi, that latter aspect was less important. The more crucial feature of the transition was the

emergence of a *qualitatively new* state–business formation, one that helped resolve the earlier contradictions and that over the past few hundred years worked to shift the focus of power from territoriality to accumulation.

The argument is intriguing, and it certainly takes us further than most accounts in trying to understand the historical interaction of state and business. And yet, even here, the duality persists. State and business, although constantly changing through mutual interaction, are still seen as *fundamentally distinct*, and it is this basic distinction that we need to rethink.

In what follows, we argue that capital and state do not stand against or function together with each other. They do not complement or undermine one another. They neither interact nor interplay. And the reason is simple: they are no longer separate. Capital itself has become an emergent form of state: the *state of capital*.

Notions of space

Cosmic space

The troubled relationship between state and capital could be conceived, metaphorically, by thinking about the notion of space. In his Foreword to Max Jammer's *Concepts of Space* (1954: xi–xv), Albert Einstein contrasts two interpretations of the concept: (1) space as the *container* of all material objects, and (2) space as the *positional quality* of the world of material objects. The two views are radically different in origin and implications.[8]

The container concept, associated with Democritus, Plato, Descartes and, eventually, Galileo and Newton, assumes that space exists *independently* of what it contains, and that space is *absolute* rather than relative; in other words, that space acts on its contents (as an inertial system, for instance) but the contents do not react back on space. By contrast, the positional concept, traceable to Aristotle and Spinoza and developed by Leibnitz and Huygens, interprets space not as independent of the things, but rather as the *order of the things*. This type of space is defined by the very relations of the entities that 'make it'. The first interpretation sees space itself as inherently 'empty'. In the second interpretation 'empty space' is an oxymoron.

According to Einstein, Newton won the day largely because of the mathematics: his container concept could be described with available Euclidean geometry, while Leibnitz's relational concept could not. In due course, though, Newton's perspective has proven inferior, or at least insufficient. The development of electromagnetism and field theory on the one hand, and of non-Euclidean geometry on the other, paved the way for Einstein's notion of a four-dimension space-time – a Leibnitz-like framework in which gravity and curvature are two sides of the same thing. In this ontology, to know the relational properties of bodies is to know the shape of their space – and vice versa.

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8 Our account in this sub-section draws on the analysis of Agassi (1969).

Social space

The space of mainstream political economy is much like a Newtonian container.[9] But unlike in physics, this container is forever partial. In the liberal version, the container is *market-space*. Its particles – the utility maximizing investors–consumers – act and react on one another according to the rules of the market, but they have no bearing on the rules as such. These rules are eternally fixed, making market space independent and absolute.

Unfortunately, liberal society also has non-economic entities, organizations and institutions, the most important of which is the state (or the government). Unlike the individual investor–consumer, these latter entities often are very large, sometimes irrational and often disobedient of market rules. And since market-space is by definition independent and absolute, there is no way to incorporate these non-economic entities into its logic. They remain 'exogenous'.

This fact makes market-space inherently partial. And since the external units cannot be wished away, even by liberals, the only solution is for market-space itself to inflate and deflate in response to their varying pressures. This is why liberals tell us that when politicians 'intervene' the market has to 'contract', and when the market expands the state must 'retreat'.

The realist container is more or less a mirror image of the liberal. Instead of a market-space populated by calculating utility seekers, we have *state-space* swarming with equally rational power-mongers.[10] Realist actors struggle over power resources and capabilities, and the state is the arena in which they carry out their Hobbesian all-out wars. In some editions the state itself becomes an actor – fighting against other states on the global stage or against other social actors in the national arena. But in all versions the space rules are eternally fixed. To be included in this space you have to seek and use power. If you are after something else – say wealth for 'its own sake' – you have to remain in 'outer' space.

As we have seen, some writers, such as Gilpin, try to bend the rules by describing states and markets as seekers of power as well as augmenters of wealth. But this solution breaks down on its own implicit assumption – namely, that wealth and power are distinct to begin with. Since the production of utility presupposes the harmonious equilibration of perfectly competitive production and consumption, it follows that wealth can never be created in the Mad-Max violence of state-space. In the end, the market must remains outside of state-space. If the former inflates, the latter must deflate, and vice versa.

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9 Note that we refer here to the space *of* political economy, not to the treatment of space *by* political economists. The latter issue, popular among postmodernists, has no bearing on our discussion here.

10 Note that, with 'economic imperialism', power could be defined as a form of utility, making realism a subset of liberalism. For argument's sake, we don't press this dilution here.

The Marxist framework is very different from both the liberal and realist. Instead of market-space or state-space, it articulates *production-space*. And this space, at least in its abstract articulation, is Leibnitzian rather than Newtonian. When Marx speaks about a 'mode of production', he has in mind a totalizing system that determines individual action while simultaneously being shaped and reshaped by that action. This production-space is not eternal, but rather historical and dialectical. In the capitalist epoch, the main logic of this space is surplus value and the drive for accumulation. This logic incorporates both the economic processes of production and the political institutions of power and state, and it constantly changes. Energized by its internal relations, the capitalist production-space is ever evolving until it eventually crumbles under the weight of its inner contradictions.

And yet, when we get to the details, the devil appears and the Leibnitzian metaphor breaks down. As we have seen earlier in the book, although Marx was striving for an encompassing explanation, his theory of value and accumulation remained locked in the Newtonian mechanics of productive labour. This narrow emphasis may have seemed sufficient in the mid-nineteenth century. But as the world changed, the concept of productive labour proved too narrow and, ultimately, impossible to accept. Inevitably, Marxists found themselves having to separate production from power, economics from politics and capital from state. The unit and logic of their economic accumulation could no longer be reconciled with the broader power aspects of capitalism. And as the schism widened, the totalizing Leibnitzian-like space was fractured.

State as a mode of power

In our view, hierarchical social orders are better understood not as modes of production, but as *modes of power*. Every mode of power, whether based on slavery, feudalism or capitalization, has its own particular configuration. Each of these configurations obviously depends on production, narrowly understood. But production as such is merely part of the story of power. Beyond providing the material preconditions for social life, its significance for understanding the hierarchical structure of society lies not in its efficiency or inefficiency per se, but in the way that efficiency or inefficiency bears on power.

We propose to think of the mode of power of a society as the 'state' of that society. Obviously, this conception of state is very different from conventional definitions. In common parlance, a state is a political entity that exercises sovereignty, backed by force, over a definite territory.[11] This political

11 In the pedantic words of Max Weber, 'A ruling organization will be called "political" insofar as its existence and order is continuously safeguarded within a given *territorial* area by the threat and application of physical force on the part of the administrative staff. A compulsory political organization with continuous operations will be called a "state" insofar as its administrative staff successfully upholds the claim to the *monopoly* of the *legitimate* use of physical force in the enforcement of its order' (Weber 1978, Vol. 1: 54).

entity is both (1) an *organization*, typically consisting of government organs (the administration, bureaucracy, legal apparatus and the military/police), and (2) a *set of institutions*, legal and habitual, that enable the political entity to exercise its rule.

This definition may seem relatively unambiguous when applied to pre-capitalist centralized regimes, where the organizations and institutions of power were usually associated with and commonly fused in a single entity – 'estate', 'palace', 'king', 'emperor'. But with capitalism, this application is no longer straightforward. Capitalism alters the very nature and meaning of power – as a result of which the organs and institutions of power no longer reside in a single entity (let alone a 'political' one), the scholars no longer agree on what these organs and institutions are, and the capitalist state no longer fits into the conventional box. With this glaring exception, the definition ceases to be universal.

Our own notion of state as a mode of power is broader and more flexible. First, it transcends the analytical distinction between economics and politics. As noted, this distinction may be valid when viewed from below and at lower levels of abstraction, and in that sense it remains 'enfolded' in our explanation. But it could be very misleading when considered from above and in relation to the overall architecture of power. The latter perspective no longer differentiates between 'economic power' and 'political power', between 'exploitation' and 'oppression', or between the 'power of the market' versus the 'power of the state'. Organized power can take different forms, centralized or decentralized. But insofar as the overall structure is hierarchical, it constitutes a *single nomos of power*.

Second, the *nomos* of power is not fixed. It changes as the social order evolves, and it is occasionally replaced when a new mode of power emerges. In this sense, one cannot speak of 'the state' as an abstract form with an unchanging definition. The state is never an empty Newtonian container. Instead, it is a Leibnitzian-like space: an ever-changing, historically specific relational entity that both comprises and is shaped by the bodies that constitute it.

In contemporary capitalism, the key organizational bodies of the state are corporations and government organs. These are the concrete incarnations of the capitalist mode of power, and although separate they are deeply interrelated. First, both bodies are conditioned by the same *nomos* of capitalized earnings and its associated rituals. Regardless of whether their departments overlap or exist at arm's length, regardless of whether their personnel are separate or share a revolving door, and regardless of whether they cooperate or bicker, they are both part and parcel of the same architecture of mechanized social power. Second, they presuppose each other: there are no capitalist corporations without a capitalist government, and there is no capitalist government without corporate or proto-corporate organizations. And, third, by incessantly seeking to redistribute capitalized earnings, whether at cross purposes or in unison, corporations and governments end up shaping and

reshaping the very patterns of power that define capitalism. In the final analysis, there are no profit expectations without state prisons: at the zenith of its capitalist power, nineteenth-century Britain had more political prisoners than Tsarist Russia, just as the United States today boasts the world's largest inmate population.

We call this Leibnitzian-like space the *state of capital*. Mumford insightfully saw the modern state as a resurrected mega-machine. But this mega-machine is historically unique. It is not a state in the abstract, but one that both consists of and is defined by *capital as power*.

The feudal mode of power

The above account of course is a stylized abstraction. To understand where the state of capital comes from historically and how it developed its unique features as a modern mega-machine, it is useful to take a step back and examine, if only briefly, some of its feudal roots.

This type of inquiry, to be certain, is hardly novel. The feudal origins of capitalism have received more than ample theoretical scrutiny, particularly from Marxists. There are even two famous controversies about the issue. The first, the 'Transition Debate', launched by Maurice Dobb (1946) and Paul Sweezy (1950), concerned the significance of 'production' versus 'circulation'. The second, the so-called 'Brenner Debate', beginning with the work of Robert Brenner (1977; 1978) and still going, focuses on the relative importance of 'forces of production' as opposed to 'relations of production'.[12]

However, the question these debates seek to answer is fundamentally different from our own: whereas they are concerned with the transition between modes of production, our own interest is the transition between modes of power.[13]

The feudal state

Understood as a mode of power, the 'feudal state' consisted of a hierarchical network of voluntary military dependencies among free men.[14] This decentralized state was born out of the ruins of the Roman Empire. Lack of central authority and fracturing inheritances fostered something akin to a war of all against all and a heightened sense of insecurity. The initial response was

12 Key contributions to these two debates are included in Hilton (1978) and in Aston and Philpin (1985), respectively.

13 The analysis that follows focuses exclusively on Europe. However, it should be noted that a feudal mode of power developed in other places as well – including Medieval Japan, the Ottoman Empire and Ethiopia, among others – and with features that were often remarkably similar to Europe's.

14 Our account in this and the following three sections draws mainly on the historical works of Bloch (1961), Ganshof (1964), Le Goff (1965; 1988), Lopez (1967), Pirenne (1937) and Tuchman (1978).

the formation of armed gangs based on personal loyalty and mutual protection. This arrangement later bloomed into a full-fledged system of intricate lord–vassal obligations.

The key hallmark of the feudal regime was violence. The lords despised work and creativity, which they viewed as infinitely inferior to their life of honour and exploit. The person and possessions of others were a means to an end. They were seen partly as a source of loot, but mostly as the target of differential sabotage:

> The Bayeux Tapestry of the Queen Mathilda – that remarkable story in pictures from the end of the eleventh century, narrating the 1066 Norman conquest of England – shows us how, after the landing, a big feast was held and blessed by the hegemon, and how the war expedition was launched with the burning of a house. And, indeed, war in the Middle Ages was marked by systemic devastation. Its purpose was not so much to defeat the enemy militarily, *as to undermine its economic and social power* (by burning and destroying crops, houses and villages).
>
> (Le Goff 1965: 29, emphasis added)

This inherent violence determined both the form and content of the feudal contract. Ceremonially, the legal bond (*nexus iuris*) between the lord and the vassal consisted of two acts: a fusion of their persons symbolized by the 'mixing of hands' (*immixtio manuus*), and an oath of fealty (*sacramentum*) which indicated that the vassal was giving himself voluntarily, as a free man.[15]

Substantively, the bond was mostly *negative*, a sort of mutual insurance policy designed to reduce uncertainty. Each side promised not only to protect the other – but more importantly *not to harm* the other.[16]

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15 The 'mixing of hands' may have been the precursor of the bourgeois handshake, while violation of the vassal's oath of fealty (or 'foi'), developed into the English and French 'defiance' (Ganshof 1964: 26–27, 98–99).

16 In AD 802, the Carolingian emperor Charlemagne imposed on his subjects a new oath of fealty that added positive aspects to the existing negative ones. These negative features are highlighted by the emperor's decree, where he says that, from now on, the new oath is

> 'not as many have thought up to now, involving simply fidelity to the lord emperor as far as his life is concerned' – i.e. the obligation of *refraining from any action against him which will put his life in danger* – 'and the obligation of *not introducing into his kingdom any enemy out of hostility toward him*, and of *declining to be part to the disloyalty toward him of others or keeping silent regarding such*'.
>
> (Quoted in Ganshof 1964: 34–35, emphases added)

Another set of instructions from AD 1020 articulates this negativity in six different ways:

> He who swears fealty to his lord should always have these six words present to his memory: 'safe and sound', sure, honest, useful, easy, possible. Safe and sound, because he *must cause no injury to the body of his lord*. Sure because he *must not injure his lord by giving up his secrets or his castle*, which are the guarantees of his security. Honest,

In addition to not attacking his lord, the vassal was obliged to provide a certain quota of military services – so that the lord could protect himself as well as attack others. These services took various forms, but gradually they converged on the basic particle of feudal power: the fully-equipped knight.

In order for vassals to produce, train and supply knights on a permanent basis, they needed access to agricultural land and tillers, organized through the autarkic manorial system. And so, gradually, the homage between the lord and the vassal came together with the granting of a benefice, usually in the form of a landed fief, or 'feodum' – hence the term 'feudalism'.

The cost of reproducing a single knight and his accessories was pretty hefty, requiring roughly 150 hectares of land according to some estimates. Based on this ratio, a fair-size fief of a count, made up of 200–250 agricultural communities, could supply no more than 150–200 mounted warriors. These modest numbers had an important implication: they meant that a larger army could be assembled only by networking the separate commitments of many different vassals (Le Goff 1965: 54–55).

This networking formed the basis of the 'feudal state'. The arrangement first emerged in the eighth century, when the Carolingian rulers, seeking to consolidate their power and increase obedience, sowed confiscated church lands as well as their allodial territories with royal vassals. The vassals, who in turn wished to reduce their own uncertainty and if possible leverage their power, further parcelled their fiefs to subordinate vassals, and so on. The end result was a dense network of mutual military obligations tied to agricultural manorial production, a standardized pattern of power that later spread throughout much of Europe.

It is not difficult to see here the principle that later informed both Hobbes's *Leviathan* and Locke's 'social contract': the individual being (vassal or bourgeois), torn between his desire for freedom (independence) and quest for security (to annul his fear of death), finds the compromise in merging himself with a larger mode of power (the feudal network or the sovereign state).

> because he *must do nothing to injure the rights of justice of his lord* or such other prerogatives as belong to his well-being. Useful because he *must do no wrong to the possessions of his lord*. Easy and possible, because he *must not make difficult for his lord anything which the latter may wish to do*, and because he *must not make impossible to his lord that which the lord might otherwise accomplish*. It is only right that the vassal should abstain from injuring his lord in any of these ways.
>
> (Quoted in Ganshof 1964: 83, emphases added)

Even the 'positive' vow of protection was inherently negative, in that it was directed against everyone else. A French document from the thirteenth century recommends the following declaration by the vassal:

> I promise this because you have granted to me and to my heirs such and such a property, as long as we shall remain your vassals, and also because you have promised to defend me and mine *against every man*.
>
> (Quoted in Ganshof 1964: 154, emphases added)

During the Middle Ages, royal power, although often existing de jure, usually was conditional on and subsidiary to feudal obligations. In some places, such as France of the twelfth century, power was so diffused that the king, although claiming 'sovereignty', was no more than a glorified lord whose authority hardly extended beyond his own feudal domain. In other places, such as England after the Norman conquest of the eleventh century, power was highly centralized in the hands of the king. But that centralization was still feudal insofar as the entire country was the property of the king and every feudal agreement was supplemented by allegiance to the monarch (a duality that perhaps hastened the development of British capitalism).

There was an important novelty in this arrangement. In imperial structures, power could expand in two ways: conquest and marriage. The 'feudal state' introduced a third alternative: voluntary military contract. Of course, because of their larger number, individual feudal lords could not match the power of emperors. But their added ability to cut and paste slices of power in a quasi-amicable way – a precursor for the capitalist buying and selling of vendible corporate 'shares' – made the structure of power more flexible, easier to realign, and perhaps less vulnerable to external blows.[17]

The limits of feudal power

Feudal flexibility, though, had three hard limits. First, the feudal bond was *personal* and deeply *religious*. Its material aspects were merely instrumental. The primary purpose was the establishment of direct loyalty and mutual obligation between two people. Second, the bond was *total*. The lord exercised something akin to sovereignty over the very person of the vassal. And third, the contract was *permanent*. Save for instances in which the no-harm clauses were violated, the feudal link could not be unilaterally terminated. It ended only with the death of one of the sides.

Over time, these features started to strain the structure of feudal power. One problem was that the chain of personal commitments was highly unreliable.

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17 Feudal remnants occasionally crop up in flattering reports on the amalgamating victories of present-day magnates. The following account of Woodbridge, the family investment arm of the Thomson family, is typical:

> As president of Woodbridge . . . Mr Beattie, 48, is often described as the *consigliere* or *éminence grise* of the family. . . . 'Woodbridge exists for one reason – to create value for its shareholders, who are all *descendants of Roy Thomson*.' In the 30 years to 2005, he says, that value grew from $300m to $30bn.

But even when the unit of power is still clannish, in capitalism its methods of expansion are detached and impersonal:

> . . . Thomson family members have been *unsentimental traders of assets*. . . having an uncanny sense of when an industry is on the turn.
>
> (Edgecliffe-Johnson 2008, emphases added)

As a contract between two people, the feudal bond gave the lord direct power over his own vassals, but not over his vassals' vassals. Unlike a capitalist owner who has legal right and effective power over the corporation's entire chain of subsidiaries, the leverage of a feudal lord depended on the good will of his vassals, who, when called on for a military operation, might or might not bring along their own subcontractors. In places where the feudal links were complicated, the task of quickly assembling a large army became a real headache. In some cases, the large lords and kings found themselves at a significant disadvantage – for instance, against the easy-to-organize popular militias of the bourgs, or relative to the centralized and partly monetized armies of the English king.

Another difficulty was how to prioritize different commitments. The vassals, seeking to leverage their power and security, often allied themselves with more than one lord. These multiple commitments, though, were inherently contradictory. Unlike the capitalist limited-liability contract – which has a definite magnitude denominated in dollars and cents, and hence a pro-rated structure depending on the relative magnitude of the priced pledges – the feudal contact was total. The vassal was obliged to serve his lord completely and without reservation. Those with overlapping obligations could therefore face multiple claims from different lords, each demanding the very same services. As a result, there emerged various systems of 'rating' – some based on the size of the fief, others on the time it was granted, and still others on the relative position of the lord – all designed to somehow reconcile the overlapping obligations.

The most serious limit, though, was the non-alienated nature of the fief. The fief was the property of the lord. It was a unit of power 'granted' to the vassal so that he could serve his master personally. But given the personal nature of the service, the transfer was always 'temporary' and was annulled by death. In this sense, any attempt to parcel, transfer or sell the fief was a direct challenge to the very purpose of the feudal contract. Over time, though, the pressure to alienate the fief mounted – coming initially from vassals who sought to pass it on to their heirs, and subsequently from lords who were both lured by and forced into the new pecuniary logic of the bourg. The solution was found in the form of 'relief' – a sort of ransom paid by the heir to the lord for giving up the property. In the beginning the relief was arbitrary. But around the twelfth century in France there emerged something like a 'normal rate', whereby the lord would alienate the fief in return for a sum equal to the property's annual revenue (Ganshof 1964: 136–39).

The capitalization of feudal power

The weakening of the feudal mode of power was marked by the colours of capitalism. One important change was the inversion of the feudal contract. Originally, the fief was a means to an end. The vassal made an oath of fealty to the person of the lord, who in return gave him the fief so that he could fulfil

that oath. But toward the second part of the Middle Ages, the order had changed, with the fealty and service becoming preconditioned on the granting of the fief. The fief was now increasingly a matter of 'real estate', and feudal relations gradually shifted from a personal to proprietary footing.

A parallel change was the increasing monetization of both sides of the feudal contract. In many cases, the fief itself took the form of a stipend, or *feodum de bursa*, whereby the vassal received a payment for his keep rather than a direct allocation of land. The same happened to the services. Although these assumed a variety of forms from the very start, initially the key service was military. However, from the eleventh century onward in England and somewhat later on the Continent, the significance of military services declined, giving way to pecuniary payments. In England, many of the lower vassals paid their services in *scutage*, or monetary substitute, while in fourteenth-century Flanders less than 20 per cent of the vassals of the count in the châtellenie of Bruges were required to perform military services (Ganshof 1964: 90–92).

Faubourg, bourg, bourgeoisie

The power architecture of capitalism was gradually penetrating and transforming the feudal mode of power. The beginning was rather humble. The process started during the eleventh and twelfth centuries with the twin expansion of the bourgs and the periodic 'fairs'. The original bourg was a feudal fortification, built by serfs for military purposes. By contrast, the fair was an extra-territorial 'free-trade zone'. Granted by the prince as a source of royalties, it was exempt from feudal law and was endowed with 'franchises' and 'liberties' available nowhere else. In due course, the periodic fair gave way to the *faubourg*, a permanent settlement of merchants that was physically attached but socially alien to the bourg. Gradually, the merchants began to fortify their own suburb and in many cases ended up absorbing the old feudal fortification. The logic of the new bourg – commercial, industrial and above all monetized and capitalized – was every bit different from the one it had swallowed.

The dual economy

The capitalist bourg introduced a totally novel mode of power. Its manufacturing sector, having developed as early as the eleventh and twelfth centuries, had many structural features we now take for granted. One of these was a prototype of the 'dual economy', (a term coined centuries later by Averitt 1968 to describe the bifurcated structure of the modern US business sector). On the one hand, there was the 'small economy', comprising associations of masters, apprentices and hired workers that supplied mainly the local market. On the other hand, there was the 'big economy' of large merchants and producers who controlled the long-term trade. The latter constituted a closely knit oligarchy, and it colluded heavily – both inside the bourg and with the

oligarchies of other bourgs (with the most conspicuous example of the latter collusion being the Hanseatic League of London).

In parallel, there developed in the bourgs a proto-proletariat of unskilled workers, made mostly of propertyless incomers from the countryside, often known as the 'blue nails'. The oligarchy treated the workers and artisans with indifference – that is, as long as they remained docile. When they revolted (the first known strikes took place in Flanders during the thirteenth century) the retaliation – often coordinated within and between the bourgs – was usually swift and violent. In England of the fourteenth century, more than four hundred years before the Speenhamland Act, the King and Parliament were already passing decrees and legislation that made labour mandatory and idleness illegal (Pirenne 1937: 178–91; Lopez 1967: 278–80; Tuchman 1978: 120). In this sense, the capitalist class struggle, from its very inception, was never merely an 'industrial dispute'. It was a broad power conflict embedded in a newly emergent form of state.

Private and public

Another important innovation was the bourgeois link between the 'public' and the 'private'. This institutional structure, like many others, developed almost unintentionally. The new dwellers of the bourg needed to defend and fortify their private warehouses and workshops against the external hazard of the feudal space. The protection itself, though, was inherently public. By fusing the two, the bourgeoisie invented 'public finance' – a concerted effort to advance their coinciding private interests through proportional taxation.

The resulting fiscal system was completely antithetical to the feudal logic. First, contrary to feudal taxes that were inherently penal and served the individual lord only, bourgeois taxes were directly linked to the 'public interest' – that is, to the *collective* interest of capitalists. Second, since the public consisted of the private taxpayers, it made sense to make payment proportionate to the individual's interest – i.e. to his income. Finally, taxation presumed and implied representation – and indeed, in the bourgs of the eleventh century there emerged, along with public works, bodies of elected or representative councils (Pirenne 1937: 178–91). In other words, from the very beginning, private capitalist bodies and capitalist government assumed one another and were symbiotically intertwined.

Liberty as differential power

Beyond these innovations, though, the bourgeoisie, at least initially, tended to view its project not as a comprehensive alternative to the feudal state, but rather as an *exception* to that state. Inside the bourg there was 'democracy of the privileged' – a close correspondence, if not an identity, between 'political administration' and 'economic management', both controlled by the moneyed aristocracy. The space outside the bourg, though, was accepted as a different

mode of power. Although this space was generally hostile to the bourg, the bourgeoisie neither denied nor challenged it.

Matters of jurisprudence and religion, as well as the acts of peace and war, were fully accepted as the prerogatives of church, king and lord. Indeed, the bourgeoisie was usually more than keen on emulating the authority and privilege of the territorial princes – by seeking noble status, by giving gifts to the clergy and by lending money to the duke in need. All in all, the 'state' was viewed as an external moral–legal entity, distinct from and superior to the city, which was merely an 'economic' body (Lopez 1967: 267–68). This was the basic duality that Hegel identified in his *Philosophy of Right* (1821) – a duality that Marx rightly criticized but could 'solve' only by turning it into an inherent contradiction between 'political universality' and 'economic alienation'.

At the beginning of its journey, then, the bourgeoisie merely tried to fit into and advance within the structure of feudal power. Its tactics were simple. The nobility benefited from forceful confiscation through territorial sabotage – hazards that the bourgeoisie sought to bypass through exemptions and immunities.[18] These exceptions and immunities, though, were always in the plural. They represented *particular* 'liberties' and 'franchises', and therefore advantages held *relative to and against others*.

There was nothing exceptional about this differential quest. The notion of *universal* liberty was totally foreign to the feudal world. In the Middle Ages liberty meant sovereignty, and therefore force and authority over others. Only God was totally free. Everyone else, including the king, was a vassal, and therefore partly dominated. Even the term 'knight', a symbol of power, comes from the German *knecht*, meaning 'subjugated', a connotation that can also be found in the words Samurai (servant) and Mamluk (slave soldier). All were merely extensions, or 'arms', of a ruler – hence the term 'army'.

For this reason, 'liberty' at that period – whether bourgeois or feudal – could only be understood as a *status of power*. (1) It denoted negation: it was the right not to pay, not to work, not to obey. (2) It was dynamic and relative: it changed over time in relation to other people. And (3) it was anchored in sabotage: it marked one's place in the hierarchy of damage, with the right to inflict it on some and the obligation to accept it from others. In this sense, the expansion of bourgeois liberties was synonymous, both conceptually and historically, with the growth of the bourgeoisie's differential power.

War and inflation

As the leverage of the bourgeoisie increased, its own mode of power started to penetrate and gradually replace the feudal state. The bourgs were able to wrestle increasing territorial and legal independence from feudal institutions,

18 The extent of territorial sabotage is illustrated by the fact that even as late as the end of the fifteenth century, there were still 64 feudal tolls on the Rhine, 35 on the Elbe and 77 on the Danube in lower Austria (Pirenne 1937: 88).

forcing the Church and lords to sign 'peace accords' for prolonged periods. In France during the eleventh century, many of the new bourgs were labelled *communia pro paca*, or 'communes for peace' (Le Goff 1965: 66). Yet much of the headway of the bourgeoisie was achieved directly and indirectly through war.

The indirect impact of war was to devastate the nobility, with more than a little help from the bourgeoisie. Changes in the nature of warfare, particularly since the thirteenth century, undermined the advantages of feudal military subcontracting. Improved fortifications, new and highly lethal arching technologies and the growing efficiency of infantry relative to mounted knights presented feudal armies with serious challenges. Moreover, lacking the accounting and logistical skills of the bourgs, the lords found it difficult to organize, feed and discipline large forces of heterogeneous knights. But the most serious challenge was soaring cost. In the five years between the English invasions of 1346 and 1351, the French King witnessed the price of hiring knights and their accessories practically double (Tuchman 1978: compare pages 84 and 128). War had become so expensive that even the richest of kings found it difficult to finance it. Consequently, observed Robert Lopez, '[f]ortunate indeed were those kings who succeeded in maintaining the peace' (1967: 333).

Underlying the mounting cost of war was a new weapon of mass destruction: inflation. The expansion of the bourgs and their growing consumption of agricultural produce were accompanied by the spread of the monetary standard and the penetration of prices into the feudal heartland. This process marked the beginning of an invisible revolution – a transformation that shifted the emphasis from the bartered knight of the manor to the cash-paid soldier of the bourg, bankrupted the lords and altered the very nature and form of social power.

The nobility and clergy, locked into an antiquated system of barter and fixed income, found themselves at the greatest disadvantage. Most did not grasp the pricing mechanism and were utterly clueless about inflation. Abbot Gille li Muisis of Tourna summed the bewilderment in a famous fourteenth-century verse:

> Money and currency are very strange things.
> They keep on going up and down and no one knows why;
> If you want to win, you lose, however hard you try.
> (Quoted in Tuchman 1978: 130)

Feudal rents were fixed by custom and habit, but the prices the nobility had to pay – particularly for luxuries and weaponry – soared. The consequences were devastating. From the thirteenth century onward, lords were forced into borrowing, then into mortgaging their property, and eventually into 'releasing' their serfs and selling their lands altogether (Pirenne 1937: Ch. III, Section II; Le Goff 1965: 167).

The monarchs were generally more astute. Some of them understood, instinctively if not theoretically, that money represented a new order of power and that any shock to that order could be leveraged for differential ends. And the brightest of the lot went on to invent various techniques of sabotage to serve their own ends. One of the more sophisticated methods was to threaten debasement – and then blackmail those who stood to lose the most from such an act in return for putting it on hold (Lopez 1967: 333). Centuries later, the financiers of the Weimar Republic would use a variant of this technique with their foreign creditors – threatening to inflate the currency in order to avoid having to pay war reparations.

But the biggest winner was the bourgeoisie. Situated at the epicentre of the price mechanism, it not only set most of the prices but also understood the inflationary mechanism better than everyone else. This strategic position enabled the early bourgeoisie to profit from the process relative to others and to amass huge fortunes.[19] And that was merely the beginning. As we shall see in Part V, the techniques that were developed during that period, perfected and extended by subsequent generations of capitalists, turned inflation into one of the principal axes of the capitalist mode of power.

War and credit

By the fourteenth century, the European social landscape was in the midst of a massive transformation from a feudal to a capitalist mode of power. This transformation entailed many different developments and innovations, but there was one invention that literally encompassed them all: credit. From its very beginning, credit was a matter of organized power. Its inception was intimately connected to war: it emerged as a negation of feudal sabotage, and it eventually developed to engulf and internalize that sabotage and more.

Bypassing power: private instruments

As noted, the bourgeoisie sought to negate the territorial barriers of feudal sabotage by seeking direct territorial exemptions, immunities and liberties. But the most effective means of bypassing feudal power was *trans*-territorial: the virtual financial instrument. In its attempt to evade feudal violence, the bourgeoisie went on to develop the letter of credit, bill of exchange and

19 To put the magnitudes of these fortunes in context, consider that in 1348, Pope Clement VI paid 80,000 florins to buy Avignon from the Queen of Naples, and that a year later the King of France purchased Monpellier for 133,000 florins. By comparison, the annual turnover of the Bardi company of Florence stood at 875,000 florins. Similarly, when Riniero Zeon, Doge of Venice, died in 1268, his estate was estimated at 50,000 Venetian pounds. This sum was equivalent to a mere one year's worth of output coming from the alum mines of Benetetto Zaccaria, a Genoese merchant whose portfolio included many such lucrative properties (Lopez 1967: 297).

maritime insurance, along with the proto-corporate *commenda* and *compagnia* that were already mentioned in Chapter 12.

These developments came hand in hand with the growth of urban education – an alternative to the feudal monastery and a precursor of public schooling. By the thirteenth century, most Italian merchants were literate, knew some mathematics, used bookkeeping and often spoke foreign languages (Pirenne 1937: 122–25). This education enabled the bourgeoisie to further improve its credit institutions and organizations, putting the illiterate nobility at an ever-growing disadvantage.

Gradually, as the financial instruments diversified and the transactions multiplied, each type became associated with its own 'benchmark' and 'normal rate of return'. Ironically, the most vibrant private market was real estate, the original source of feudal power. The rising merchants were busy buying the dwindling territorial properties of their increasingly indebted enemies, and by so doing further hastened their demise. The institution of the mortgage – originally a bypass of the Church opposition to interest – gave rise to an urban market that traded in rents and sold asset-backed securities. The bougs started raising money by selling perpetuities backed by the real-estate collaterals. In the thirteenth century, Genoa recognized the vendibility of such contracts, leading to the creation the Bank of St. George, a precursor of the modern mortgage bank (Pirenne 1937: 137–39).

Absorbing power: state finance

But the magnitude of private credit paled in comparison to the size of state finance. Wars, whose cost soared in tandem with their material scope and unit price, were the most financially demanding expenses. Changing military technologies, beginning with the crusades and continuing with the Hundred Years War, made it increasingly necessary to rely on hired armies that needed to be paid in cash. There were two ways to raise the money – taxes and borrowing – but it was their *combination* that proved the most effective.

The first to brave this new form of war finance were the Lombardian city states. They issued tax-backed bonds, using the proceeds to pay for soldiers and weapons that waged increasingly successful campaigns against barter-backed knights. The territorial princes and kings were initially hostile to this new arrangement. But having witnessed the lethal force of the new pecuniary militias unleashed on their increasingly expensive knights, they found the temptation of fight-now-pay-later difficult to resist. Gradually, they began to borrow the methods and money of the bourgeoisie, with the result being a growing interdependency – and eventually a bondage – between the territorial sovereign and the exterritorial capitalists. In due course, this alliance would develop into a new mode of power, a social space we now call the 'capitalist nation-state'.

Let's examine this process a bit more closely, beginning with taxation. The collection of ad hoc levies and duties was not only unpopular, but also grossly

inefficient and extremely time consuming. Therefore, in the interest of expediency, the kings often took a shortcut, announcing a convenient 'state of emergency':

> The monarchy, when it took over the reins of national life, ought to have resurrected a regular income tax system, the fundamental basis of both Roman and modern finance. . . . But the 13th century was not ripe for such radical reform. The King would merely ask his subjects for 'help' in times of crisis. Philip 'the Fair' acted in such a way as to keep a 'crisis' going, almost without interruption, and his successors improved even more on these methods.
>
> (Lopez 1967: 334)

The bourgeoisie was forced to foot a growing part of the bill; but by now it was already too powerful to give something for nothing. In return for taxation it demanded representation – this time on a 'national' scale.

Government taxes, though, constituted only one aspect of the new deal. The other aspect was private credit, and the two got inextricably bound up. Facing the prospect of war, the king, even if fiscally solvent, was often financially illiquid. Taxes could be collected in the future, but the need for cash was immediate. His solution was to turn to *haute finance* with its easily accessible stash of money. For the financier, the request offered a huge investment opportunity: a royal promise to augment his capital with future taxes.

Initially, the arrangement was fraught with peril, and although both sides resorted to it with much enthusiasm and growing frequency, often they got burned. During the Hundred Years War, for example, Kind Edward of England financed his invasion of France with an estimated 1 to 1.5 million gold florins borrowed from the Florentine banks of Bardi and Peruzzi and backed by an expected wool tax. The tax revenues, though, proved disappointing, and the two banks, unable to collect their loans, crashed, creating a chain reaction of bankruptcies throughout Northern Italy (Tuchman 1978: 81).

But time heals, and by the early nineteenth century war finance had already been perfected into business as usual. A typical illustration follows. During the Napoleonic Wars, an English expeditionary force, headed by the Duke of Wellington, got stuck in Portugal, besieged by a 'terrible need of funds'. Wellington borrowed money from shabby continental banks against massively discounted British government bonds, but the money was like a drop in the bucket. Unpaid soldiers resorted to looting; wounded officers had to sell their clothes to secure medical attention; and with its wallet empty, the army's attempt to have the local population turn against French rule was going nowhere.

Wellington was ready to give up the fight, but then, just as all seemed lost, the Rothschilds came to the rescue. Earlier on they had collected many of Wellington's discounted British government bills at a fraction of their book

value, and they now cashed them at an enormous profit in London. In addition, they also bought some £800,000 worth of gold at bargain prices from the East India Company – bullion that they were more than willing to sell back at 'fair value' to the needy British government. The Rothschilds also took it upon themselves, again for a proper fee, to transfer this money from England to the Continent, and they continued to do so for a number of years, funnelling as much as £20 million to the British troops. The transfers were even encouraged by the French authorities, who were misled to believe that the money represented private capital flight in expectation of British devaluation. . . . (Elon 1996: 166–71).

And so, almost seamlessly, war and organized violence – nominally the archenemies of the 'free market' – had been absorbed into capital. On the one hand the capitalists used inflation to destroy the military power of the nobility, while on the other hand they financed 'national' wars to multiply their capitalization many times over. And war was merely the beginning of this public–private bondage. In due course, capital has been able to internalize not only organized violence, but *every systematic aspect of government power*.

The genesis of capital as power

Let's take stock of some of our claims so far. In Chapters 9 to 11, we have seen that, by discounting risk-adjusted expected earnings, capitalization has gradually come to encompass and commodify our social world, creating a unified quantitative architecture of historically unprecedented complexity. Then in Chapter 12, we have demonstrated that both the level and pattern of capitalist earnings are a matter of strategic sabotage, and therefore that the capitalization of earnings represents the commodification of power. Finally, in this chapter we argue that the commodified power of capital has increasingly taken over and absorbed other forms of organized power; that over time this takeover and absorption have come to define the mode of power of society, gradually turning capital itself into a state; and that this Leibnitzian transformation is not a recent phenomenon, but one that started with the very inception of bourgeois discounting in Italy of the fourteenth century.

The government bond

Symbolically, the earliest manifestation of the state of capital is the government bond. This financial instrument marks the *first systematic capitalization of power*, namely, the power of government to tax. And since this power is backed by institutionalized force, the government bond represents *a share in the organized violence of society*.

In and of themselves, taxation and the organized violence behind it are of course ancient, dating back to the early use of armies to collect agricultural

tribute.[20] Subsequently, taxation was legitimized in custom and law, so that the use of naked force became less necessary. But it was only with the emergence of capitalism that this power was routinely packaged as a 'financial asset', discounted as vendible bonds on the open market.

This capitalization of power marked the beginning of the end of the feudal mode of power. Instead of a rigid structure of multiple personal 'protections' and endless 'exceptions', there emerged the anonymous and highly flexible capitalist 'bond' of private owners and public governments. For the first time in history, organized power, although still qualitatively multifaceted, assumed a universal quantity.

Primitive accumulation?

Interestingly, the first to suggest that the state was integral to capital was no other than Karl Marx. Recall that, analytically, Marx emphasized the primacy of production and surplus in the emergence and development of capitalism. However, toward the end of the first volume of *Capital*, in a section titled 'Genesis of the Industrial Capitalist', we find a strikingly different interpretation. In contrast to his otherwise bottom-up view, whereby the bourgeois state emerges to give an already-developed capitalism its universal form, here he offers a top-down 'structural' explanation, with accumulation seen as emerging from within the state.

The genesis of capitalism, Marx writes in this section, is primitive accumulation, and primitive accumulation is largely the working of the state:

> The different momenta of primitive accumulation distribute themselves now, more or less in chronological order, particularly over Spain, Portugal, Holland, France, and England. In England at end of the 17th century, they arrive at a systematic combination, embracing *the colonies, the national debt, the modern mode of taxation, and the protectionist system*. These methods depend in part on brute force, e.g. the colonial system. *But they all employ the power of the State*, the concentrated and organized force of society, to hasten, hothouse fashion, the process of transformation of the feudal mode of production into the capitalist mode, and to shorten the transition. Force is the midwife of every old society pregnant with a new one. *It is itself economic power*.
>
> (Marx 1909, Vol. 1: 823–24, emphases added)

Within this constellation, Marx further identifies the formative role of credit, particularly public debt:

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20 Although state revenues are no longer collected in kind, the fiscal year still starts in April, to remind us of springtime tax expeditions in antiquity.

> National debts, i.e. the alienation of the state – whether despotic, constitutional or republican – marked with its stamp the capitalist era. . . . Public credit becomes the credo of capital.
>
> (Ibid.: 827)

In fact, according to Marx, the public debt is not only 'one of the most powerful levers of primitive accumulation', but also the basis of modern finance more broadly, having 'given rise to joint stock companies, to dealings in negotiable effects of all kinds, and to agiotage, in a word to stock-exchange gambling and the modern bankocracy' (ibid.).

Leaving aside differences in the meaning of 'state', this view seems similar to our own. The capitalist state, Marx argues, is neither a historical latecomer nor an added complication to an otherwise 'economic' notion of capital. Instead, it is an integral aspect of accumulation, and it was so from the very start.

But the similarity is only superficial. Note that Marx's view here relies crucially on the concept of 'primitive accumulation'. This is the mechanism through which state violence and power penetrate the *inner* workings of accumulation. Primitive accumulation, though, is an exception to the rule. During the normal course of 'expanded reproduction', whereby 'real' capital expands through the legitimate production and appropriation of surplus value, the state acts on capital only from the outside, as an *external* regulator.

The problem with this distinction is that the two types of accumulation – normal and abnormal – negate and therefore presuppose each other. In order to know what constitutes primitive accumulation (the forceful exception), we first have to know what expanded reproduction is (the sans-force rule). Yet, as we have seen, that cannot be done. Since productive labour, abstract labour and surplus value cannot be identified theoretically or empirically, there is no way to delineate expanded reproduction; and since the boundaries of expanded reproduction are forever unknown, there is no way to know what constitutes primitive accumulation. The two concepts rise and fall together.

For this reason, the endless debates from Luxemburg (1913) to Harvey (2004) – controversies over what constitutes 'real' accumulation, on how to differentiate it from 'rent seeking' and 'accumulation by dispossession', and on whether 'primitive accumulation' is necessary merely to kick-start capitalism or in order to sustain it throughout – are much ado about nothing. These questions cannot be settled for the simple reason that accumulation does not have two faces. It has only one, and it is called capitalization. This process, although deeply intertwined with production, is a manifestation of power and only of power. And since we are dealing with power, the capitalist government (Marx's state) is embedded not only in the so-called 'primitive' forms of accumulation, but potentially in every single bit of it.

Government capitalized

And so, what began as a tentative and limited penetration of bourgeois principles into the feudal state ended up destroying that state to emerge, several centuries and numerous struggles later, as a full-fledged state of capital. And as capital grew into a state, the interaction between its organizational bodies of corporations and governments multiplied and intensified.

Over the past century, the government bond market has become the heart of modern finance. It provides the biggest and most liquid security market; it offers a vehicle for both fiscal and monetary policy; and it reflects, through its benchmark yield, the universal normal rate of return.

And that is just the start. Governments are engaged in numerous activities other than taxation – including military spending, subsidies, education, industrial policies, war making, tariffs, protection of private property, patents and copyrights, propaganda, labour laws, macroeconomic policies and policing, to name a few – and these activities all bear on the differential level and temporal pattern of capitalist income. In fact, it is hard to think of a single aspect of modern government that does *not* bear on the distribution of income in general and of capitalist income in particular, just as it is difficult to find a single corporation whose differential earnings are not affected by government power.

Given that these power features of government all influence differential capitalist earnings and risk, they are discounted, if only implicitly, into corporate stock and bond prices. In other words, a significant proportion of all private property is, in fact, *capitalized government power.* Of course, the precise magnitude of this impact isn't written in the company books or declared in stock-market filings. But it can be illustrated easily with simple thought experiments.

Consider Microsoft once more. As we have seen, it doesn't matter whether Microsoft engineers 'produce' its software from scratch or 'borrow' it entirely from others, gratis. The owners of Microsoft can profit differentially from this software only insofar as they can prevent others from using it without pay. And this prevention depends crucially on the existence and enforcement of intellectual property rights – that is, on the extent to which Microsoft can harness the government apparatus to its own end. Now negate this ability and assume that the government no longer protects Microsoft's software. The most likely result is that Microsoft's earnings and capitalization will drop sharply if not collapse altogether. The magnitude of the drop represents the extent to which Microsoft capitalizes the government.[21]

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21 Not surprisingly, Microsoft earns most of its profits from sales in developed countries such as the United States, where software piracy can cost the trespasser up to five years in jail. Most developing countries have not yet perfected the penal system for such acts, and until they 'develop' in that direction, their governments' contribution to Microsoft's bottom line is likely to remain negligible.

Similarly with so-called financial 'intermediaries' such as Deutsche Bank. The differential earnings of this group depend, among other things, on interest rate differentials and credit volumes – both of which emerge from a complex power interplay of government policy, cooperation and conflict among the leading financial intermediaries, the relative power of borrowers and the ebb and flow of risk perceptions. The government is deeply 'discounted' at every step of the way, and the extent of its capitalization can be readily if hypothetically assessed by contemplating what would happen if we were to obey the market fundamentalists and eliminate its involvement from any of those steps. . . .

Or consider DaimlerChrysler. The level and pattern of its differential earnings depend on its tacit and open collusion with the other seven auto titans. They also depend on the highway system provided by governments and the availability of alternative public transportation; they depend on environmental regulation or lack thereof; they depend on the ups and downs in the price of oil and hence on the global political economy of the Middle East; they depend on tax arrangements with various governments and on the use of transfer pricing; they depend on a sophisticated propaganda war that creates wants and shapes desires; they depend on the relative strength of DaimlerChrysler's labour unions; and so on. DaimlerChrysler's profits also hinge on its huge credit operations, and therefore on monetary policy; and they depend on the company's military business, and therefore on the global politics of armament budgets and the threat of inter- and intra-state conflict. Where exactly the government role begins and ends in this complex process of capitalization is difficult to tell, but the magnitude of this role would become immediately apparent if we removed or curtailed it.

A final example – the oil companies. Over the past four decades, the relative profits of these companies have had little to do with variations in the production of oil – and almost everything to do with oil's relative price.[22] And the relative price of oil in turn has had little to do with 'supply and demand' or 'abstract labour' and everything to do with the global political economy in general and the political economy of the Middle East in particular. So here, too, profit and capitalization are matters of politics at large, which means that oil assets partly capitalize government power.

The conclusion then is pretty clear. If capital is a material–economic substance, then the most we can say is that the government does or does not 'affect' its accumulation. But if assets represent capitalized power, then capital must be seen as incorporating government power. In that sense, the government has become part of capital.

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22 There is a very tight correlation between the global profit share of the oil companies on the one hand and the dollar price of crude oil deflated by the US CPI on the other. The correlation coefficient, using monthly series, measures 0.8 out of 1 since 1974, and 0.92 since 1979 (Nitzan and Bichler 2006b: 72). There is virtually no correlation between oil profit and the volume of oil output.

The state of capital

Now, so far we have dealt with the degree to which the government has been capitalized by corporations. But that is only part of the process through which capital becomes a state. The other part concerns the extent to which the various organs of government have been conditioned, habituated and shaped by the logic of capital. We flesh out this question with a series of illustrations.

Who are the regulators?

By the late 2000s, the changing ecology finally made the headline news and 'environmental friendliness' became a prerequisite for making money, so Wal-Mart decided to go green. Given the company's reputation as an indifferent if not predatory giant, this publicized shift toward 'social responsibility' has taken many leftists and environmentalists by surprise. But the move also revealed another aspect that few paid attention to: it illustrated how Wal-Mart has become a de facto regulator:

> Because of Wal-Mart's sheer size and market share, most of its rivals have no choice but to follow its lead – and the company has found itself setting standards beyond those that regulators require. 'They have so much market power that they could drive environmental change through 50,000 companies, something that Congress and the Bush administration has refused to do', says Michael Marx of Corporate Ethics International. . . .
>
> (Bichall 2007)

And since Wal-Mart now acts as a government, so to speak, it seems only appropriate that it should also be lobbied:

> Wal-Mart says it consults with suppliers on standards. But its efforts to set higher environmental goals than those legally required mean that the retailer is attracting the kind of lobbying that would have previously been directed at central government, from both environmentalists and from industry.
>
> (Ibid.)

This example of private regulation is by no means exceptional. It keeps popping up in many different areas – from the setting of accounting standards and the determination of monetary policy, to military spending and the waging of war, to the commercialization of legal arbitration and the choice of pharmaceutical practices – all instances in which corporations act as regulators of the capitalist environment in which they operate.

Sovereign owners?

The second example concerns the modus operandi of government finance. Traditionally, capitalist governments treated their foreign reserves as a buffer for securing imports and protecting the currency. Consequently, the extra money was usually 'parked' in liquid foreign government bonds. This situation started to change in the 1980s. Massive shifts in the global distribution of income gave rise to a significant concentration of foreign currency assets – first in the hands of oil-producing countries, and more recently also in the coffers of Asian governments. These piles of cash made the lure of capital too difficult to resist, as a result of which many governments started to invest their holdings through a new institution: the 'sovereign wealth fund'.

By 2006, sovereign wealth funds had amassed assets estimated at $2.5 trillion – representing 10 per cent of all institutionally held investments in the world and nearly 1.5 per cent of all global financial assets. The size of these funds has been growing in leaps and bounds, and at current growth rates it is expected to reach $12 trillion in 2015 – exceeding the sum total of global reserves by as much as 50 per cent (Farrell *et al.* 2007: 11; Jen 2007; Farrell *et al.* 2008: 10).

So far, much of the discourse surrounding this growth has focused on its threat to 'free markets' and the 'national interest' (particularly that of the United States, the world's largest importer of capital). The sovereign owners of these funds, the pundits explain, are inherently anti-market (the liberal fear) and potentially hostile (the realist unease), so thwarting this new form of 'government intervention' must be good for both freedom and country.

But this logic can easily be turned on its head. By setting up and managing sovereign wealth funds, governments are further integrating, if not locking themselves, into the larger architecture of capitalist power. This submission is succinctly summarized, however unintentionally, by Yousef al Otaiba, director of international affairs for the government of Abu Dhabi:

> The success in generating and wisely applying financial returns for the public good is directly linked to a clear set of principles that has guided Abu Dhabi's investment organizations. Most basic are the focus on *maximizing risk-adjusted returns, relative to well-established market indices*; taking a long-term view; avoiding leverage; and investing in a well-diversified portfolio across asset classes, geographies and sectors. Furthermore, the leading investment organization, the Abu Dhabi Investment Authority (ADIA), has operated predominately as a *passive investor*, with the overwhelming share of its portfolio consisting of minority stakes in companies that have included no control rights, no board seats and no involvement in the management or direction of the receiving companies. . . . It is important to be absolutely clear that the Abu Dhabi government *has never and will never use its investment organizations or individual investments as a foreign-policy tool*.
>
> (al Otaiba 2008, emphases added)

The last promise in this quote should be taken with a grain of salt. As things stand, there is (still) no means of preventing governments from using their assets in line with their policy goals. But given the increasingly capitalist bent of these new sovereign owners of wealth, it is not clear how their investment and divestment decisions would differ from the business-as-usual policies of ExxonMobil, Bechtel or Samsung.

Whose policy?

And since we talk about foreign policy, what should we make of the recent US invasion of Iraq? Was this policy move taken in the national interest, in the name of business, or perhaps both?

Conventional opinions on this question vary widely, so perhaps we should briefly reiterate the underlying assumptions. At one extreme we have the realist position, according to which the state, understood as an independent entity represented by its 'officials' (i.e. the government apparatus), seeks to defend the 'national interest' against the interest of other nations. At the other extreme, we have the structural Marxist position that sees the state, in the 'last instance', as subservient to the 'logic of accumulation'. And on the face of it both views ring true. There is little doubt that George Bush Jr. and his administration believed that they represented the 'national interest' of the United States. But it is also fairly obvious that this same administration, whatever its formal leeway, could not have deviated too much from the underlying dictates of profit and accumulation.

And that is precisely the problem. As stated above, the realist and structural Marxist views are mutually consistent. And if they can coexist, how can we tell whether the US government launched the attack on Iraq in order to serve its vital national interests or to protect the capitalist order? Is it possible that the attack was meant to serve both goals, or is one cause more important than the other? Can we even tell them apart?

Moreover, is the relative significance of these goals fixed, or does it change over time? Considering the past fifty years, could we say, for example, that the 'national interest' has grown less imposing relative to the 'logic of accumulation', or has it been the other way around? Perhaps the underlying logics of the national interest and accumulation have both changed?

Whose interests?

These, undoubtedly, are big questions. To answer them, we have to take the following steps. First, we need to specify clearly the 'logic of state power' and the 'logic of accumulation', including the categories and units in which they are articulated and observed. Second, we need to identify conflicts between these logics. And third, we need to examine how these conflicts pan out comparatively and historically. Based on such an investigation, we can then choose the logic that gives the most consistent, robust and predictive picture.

Clearly, so far the debate hasn't taken this route. Worse still, it seems that both sides – the realists and the structural Marxists – have preferred to frame their positions in irrefutable terms. Stephen Krasner, an advocate of the realist view, interprets the 'national interest' not as the sum of individual interests, but rather as the overall interest of the nation. In his words, it is not the 'utility *of* the community' that matters, but the 'utility *for* the community' as determined by its central decision makers (Krasner 1978: 12, original emphases). In practice, though, the 'decision makers' (read government officials) themselves rarely agree on the matter, so it is up to the researcher – Krasner in this case – to make the decision for them. And the way this interest is phrased is often so loose that it can be made consistent with virtually any line of action. According to this template, the 2003 US invasion of Iraq was motivated (depending on the theorist) by the quest for raw materials, by the need to spread capitalist ideology, by the desire to tame the barbarians, by the aspiration to thwart Europe and Asia, by the desire to have Bush Jr. re-elected, or simply by a miscalculation – all in the name of the national interest. Go prove otherwise.

Unfortunately, structural Marxists do not always fare much better in specifying the 'logic of accumulation' and the 'interest of capitalists', let alone in assessing the *degree* to which this logic and interest dominate the state. In the 1960s, the welfare state served the long-term interest of capitalism; in the 1980s, the welfare state's demise better served that same interest. In the 1980s and 1990s, capitalists wanted a new world order of peace; now they suddenly want Empire. In the 1970s and 1980s the US government tried to serve its 'own' capitalists by conspiring with OPEC to raise oil prices; in the early 2000s it tried to cater to their 'global' interests by invading the Middle East in order to lower oil prices (and when, in the late 2000s the price of oil reached the stratosphere, it was obviously in the interest of the oil companies and the speculators).

These claims may or may not be true. But their validity can be judged only if we first specify *exactly* what we mean by the 'interest of capitalists' and the 'logic of accumulation'. Only then can we begin to judge whether government organizations and institutions are autonomous from or subservient to these interests and logic, or perhaps somewhere in between.

What is to be done?

The final part of the book outlines the power logic of capitalism and the interest of the dominant owners as we see them. In doing so, this part also illustrates some key features of the historical development of capital accumulation. The quantitative patterns it outlines delineate the boundaries of capitalist politics. These boundaries point to the central political processes, broadly defined, that determine the course of accumulation. They also provide a basis for assessing the extent to which government policies have been 'discounted' into capital on the one hand and the degree to which the capitalist mega-machine may have become a form of state on the other.

Part V

Accumulation of power

14 Differential accumulation and dominant capital

ad omnia et contra universos hominess – in all matters and against all men
—An eleventh-century count pledging to serve his lord.
Quoted in François Louis Ganshof's *Feudalism*

Creorder

Creating order

Historical society is a *creorder*. At every passing moment, it is both Parmenidean and Heraclitean: a state in process, a construct reconstructed, a form transformed. To have a history is to *create order* – a verb and a noun whose fusion yields the verb-noun *creorder*.

A *creorder* can be hierarchical as in dictatorship or tight bureaucracy, horizontal as in direct democracy, or something in between. Its pace of change can be imperceptibly slow – as it was in many ancient tyrannies – yielding the impression of complete stability; or it can be so fast as to undermine any semblance of structure, as it often is in capitalism. Its transformative pattern can be continuous or discrete, uniform or erratic, singular or multifaceted. But whatever its particular properties, it is always a paradoxical duality – a dynamic creation of a static order.

Democratic *creorders* – of which the most notable example is the *demos kratia* of Ancient Athens – are relatively few and far between, so it is difficult to generalize about them. But given that such societies are to some extent free to create their own fate, they can choose to do so rapidly or slowly.

A power *creorder* doesn't have that choice. Power means the ability to *impose* order, and imposition presupposes resistance – resistance from those on whom order is imposed and from others who wish to impose their own. This ever-present tension between force and counter-force makes a power *creorder* inherently unstable. Slack on one side unleashes pressure from another, a greater force in one direction trumps over a weaker force in the other. And since to overcome resistance is to create a new order, the very presence of power spells a built-in pressure for change.

Historically, however, this pressure tended to remain latent. Judged by contemporary standards, most hierarchical regimes seem highly stable, if not entirely static. Although dynamic in potential, the pace of their *creorder* was usually restricted. It was capped by material limitations and symbolic inhibitions, and it often slowed to a halt by the very success of rulers in eliminating opposition. Regimes with 'surplus' energy usually spent it on conquering and subjugating other societies.

In capitalism, these internal limitations are greatly loosened by two unprecedented developments: (1) a permanent revolution of the scientific–ideological mindset that enables rapid material and societal transformations; and (2) a relentless process of pecuniary capitalization that translates and reduces these heterogeneous transformations of quality into universal changes in quantity.

Mediated through the market, the convergence of these processes enables capitalists to *creorder* in ways that no other ruling class has ever been able to. At the most basic level, it allows owners to lever technical *change* – rather than techniques per se – as a tool of power. At a higher level it lets them use the monetary symbols of prices and inflation to restructure power. And at a still higher level, and perhaps most importantly, it permits them to reorganize power directly, by buying and selling vendible ownership claims. In this sense, the capitalist market, with its universalizing price architecture and encompassing discounting, is not a diffusion of power but the *very precondition of power*.

The power role of the market

The power role of the market cannot be overemphasized – particularly since, as we have seen throughout the book, most observers deny it and many invert it altogether. Analytically, the inversion proceeds in three simple steps. It begins by defining the market as a voluntary, self-regulating mechanism. It continues by observing that such a mechanism leaves no room for the imposition of power. And it ends by concluding that power and market must be antithetical, and that they can coexist only insofar as the former 'manipulates' and 'distorts' the latter.

An example of this inversion is Fernand Braudel's historical work *Civilization & Capitalism* (1985). According to Braudel, capitalism negates the market. In his words, there is a conflict between a self-regulating 'market economy' on the one hand, and an *anti-market* 'capitalist' zone where social hierarchies 'manipulate exchange to their advantage' on the other (Braudel 1977; 1985, Vol. 1: 23–24 and Vol. 2: 229–30). A similar sentiment is expressed by Cornelius Castoriadis, when he proclaims that 'where there is capitalism, there is no market; and where there is a market, there cannot be capitalism' (1990: 227).

The root of the error here lies right at the assumptions. Capitalism cannot negate the market because it *requires* the market. Without a market, there can

be no commodification, and without commodification there can be no capitalization, no accumulation and no capitalism. And the market can fulfil this role precisely because it is *never* self-regulating (and since it is never self-regulating, there is nothing to 'manipulate' or 'distort' in the first place). Price is not a utilitarian–productive quantity, but a power magnitude, and the market is the very institution through which this power is quantified. Without this market mediation of power, there can be no profit and, again, no capitalization, no accumulation and no capitalism.

And there's more. The market doesn't merely enable capitalist power, it totally transforms it. And it achieves this transformation by making the capitalist mega-machine *modular*. The blueprint of this new machine, unlike those of earlier models, is very short. Its essential component is the capitalization/accumulation formula. The formula is special in that it doesn't specify what the mega-machine should look like. Instead, it stipulates a 'generative order', a fractal-like algorithm that allows capitalists to reconstruct and reshape their mega-machine in innumerable ways. The algorithm itself changes so slowly that it seems practically 'fixed' (the basic principle of capitalization hasn't changed much over the past half-millennium). But the historical paths and outcomes generated by this algorithm are very much open-ended, and it is this latter flexibility that makes the capitalist *creorder* so dynamic.[1]

How to measure accumulation?

So let's start with capitalization, the 'raw material' of accumulation. In its immediate appearance, capitalization is just a number, a quantity of dollars and cents. On its own, it can tell us nothing about power, or about anything else for that matter. To gain a meaning, it has to be benchmarked.

'Real' benchmarking?

Begin with the yardsticks that don't stick. For most economists, the proper benchmark is a price index. Capitalization, like any other 'economic' entity, acquires its meaning when expressed in 'real terms'; and the way to determine this 'real' quantity is to divide the dollar value of capitalization by its unit price. Accumulation is the rate of growth of this 'real' ratio.

Unfortunately, this procedure won't do. As we have seen, the category of 'real capital' is logically impossible and empirically embarrassing. Capitalization has no material units to measure its quantity (and without a quantity

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1 According to David Bohm (Bohm 1980; Bohm and Peat 1987), there is no 'ultimate' generative order. Instead, there is an infinite 'enfoldment', a never-ending 'order of orders' that slowly unfolds with greater hindsight and insight. From this viewpoint, Marx's capitalism is enfolded, along with several other modes of production, within the higher generative order of 'dialectical materialism'. Perhaps with enough hindsight it will be possible at some point to nest capitalization within a higher generative order of power.

there is no definite unit to price); the replacement cost of material artefacts owned by capitalists usually is a small fraction of their overall capitalization; and, as a coup de grâce, over time this replacement cost tends to oscillate *inversely* with capitalization.

A popular escape route is to express 'real' capital in terms of purchasing power. According to this logic, capitalists, like all economic 'agents', are in hot pursuit of hedonic pleasure. All they seek is consumption – immediate or postponed – and the more the better. In this context, the thing to do is benchmark capitalization not against its own elusive price, but relative to the price of consumer goods and services. Simply divide the dollar value of capitalization by the CPI and you are done.

But this procedure isn't simple either. Capitalists of course are concerned with consumption. Yet, beyond a certain level of riches, their consumption is only marginally affected by their accumulation. And if only a fraction of their fortune is earmarked for consumption, what should the remainder be benchmarked against?

Moreover, it turns out that even the proportion that does get consumed is rather tricky to deflate. In liberal tracts consumption is a hedonic affair between a person and the things he or she consumes. Not so for accumulation-induced consumption. Here, the relationship is inter-personal. The goal is not to achieve hedonic pleasure but to establish *differential* status: to demonstrate that the consumer can afford something that others cannot. Veblen (1899b) labelled this demonstration 'conspicuous consumption'.

This new emphasis puts the standard deflating method on its head. From a naïve utilitarian perspective, higher prices for consumer goods and services imply lower purchasing power and therefore a smaller 'real capital'. For the conspicuous consumer, though, the exact opposite is true: since higher prices bestow a higher differential status, they generate greater utility and therefore imply a *larger* 'real capital'.[2]

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2 One of the most conspicuous acts of consumption is the acquisition of an entire territory. Capitalists cannot yet apply this act to sovereign countries, but they have been practising on islands. According to the subtly titled *Financial Times* supplement *How to Spend It*, 'the demand for islands has never been higher, and although the chief driver of this rarefied market remains prestige, other factors now fuel the passion for a personal domain surrounded by sea' (Freedman 2007). One popular consideration, says Fahran Viladi, owner of the world's leading island estate agency, is the direction of the wind, in case a nuclear attack annihilates the nearby mainland. Another is elevation – so that the consumer can safely escape the immanent rising of the seas as the poles melt. But even these considerations are part of the show off: 'It's not the price – because those who can afford it tend not to worry about money – it's the fact there's such a limited supply'. And sure enough, 'private islands tended to outperform the mainstream property market'. So, in the end, conspicuous consumption is nothing more than glorified investment; but, then, since investment cannot have a 'real' quantity, our measurement odyssey ends up right where it started. . . .

It's all relative

The most important critique against 'real' measures of accumulation, however, is that they are irrelevant. Accumulation is not about physical objects or the hedonic pleasure of capitalists. It is about power. And power is not absolute, it is *relative*. It acquires its meaning only when gauged against other powers.

Of course, the differential nature of power isn't unique to capitalism. Chieftains gauged their power against other chieftains, lords against other lords, kings against other kings, nation-states against other nation-states. But in these regimes, the comparisons were largely subjective and their social significance more limited. It is only in capitalism, where power is translated into the universal units of capitalization, that the differential nature of power really takes centre stage.

Neoclassicists never tire of preaching the imperative of *maximizing* profit and wealth, although they rarely if ever explain what 'maximization' means in practice or how it can be achieved in reality.[3] And not that they should bother – for in the real world of capital, the reference points are all relative.

A capitalist investing in Canadian 10-year bonds typically tries to beat the *Scotia McLeod* 10-year benchmark; an owner of emerging-market equities tries to beat the *IFC* benchmark; investors in global commodities try to beat the *Reuters/Jefferies CRB Commodity Index*; owners of large US corporations try to beat the *S&P 500*; and so on. Every investment is stacked against its own group benchmark – and, in the abstract, against the global benchmark.

Modern-day capitalists have long abandoned the vain search for Archimedean absolutes for readily observable Newtonian differentials. And it is not as if they had a choice. The shifting sands of the capitalist *creorder* leave no absolute yardstick standing. 'All that is solid melts into air, all that is holy is profaned', observed Marx and Engels (1848: 63). The only thing capitalists can relate to are the broad processes themselves: *they assess their own performance by comparing it to the performance of others*.

In this quest, the goal is not to maximize but to exceed, not to meet but to beat. To achieve a 5 per-cent profit growth during recession is success; to gain 15 per cent when others make 30 is failure. Even *declining* profit can be a triumph, provided it 'outperforms' the average:

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3 We have already seen in Chapter 12 that actual pricing methods have little to do with 'maximization'. Neoclassicists love to ignore these inconvenient facts – only that the situation is hardly any better in their 'pure' theory. As it turns out, neoclassical profits can be 'maximized' only in the hypothetical cases of perfect competition and monopoly – but not anywhere in between. The problem, first identified by Cournot (1838), is one of oligopolistic interdependence, which, in its unrestricted form (that is, without the game theorists), makes maximum profit indeterminate even in the mind of the economist (see footnote 4 in Chapter 5).

> In normal circumstances, the results issued by Mr Dimon's firm [JPMorgan Chase] on Thursday – a halving in second-quarter profits, and a bleak outlook for the rest of the year – would have sent investors rushing for the exit. But, with fund managers' nerves jangled by almost a year of credit-related bad news, JPMorgan's ability to outperform most of its rivals and beat analysts' predictions was enough to send its shares 11 per cent higher at midday in New York.
>
> (Guerrera 2008)

Maximizing profit for absolute accumulation is bordering on the occult. The only real thing is *differential accumulation*.[4]

Unlike the impossible absolute and elusive maximum, the 'normal' and 'average' are everywhere. Numerous organs of the state of capital – from the news media listings of *Fortune*, *Business Week, Far Eastern Economic Review, Euromoney*, *Financial Times* and *Forbes*, to the private databases of Bloomberg, Compustat, Datastream and Global Insight, to national and international organizations – keep churning new benchmarks at a neck-breaking pace. Soon enough, they'll have us swamped with more benchmarks than assets.

Every business and economic category is averaged across the world and over time. Indeed, so real is the zeal that even *future projections* of these magnitudes are now benchmarked against their own so-called 'consensus forecast'. The benchmarks are classified by every imaginable criterion, separately and in combination – including size, nationality, sector, duration, risk, liquidity and 'investability', among others. Indeed, the notion of 'normality' as a benchmark for action and achievement has been so thoroughly accepted that it now dominates numerous non-business spheres, from education and the arts to sports and foreign relations. To be real is to be relative.

Differential capitalization and differential accumulation

The capitalist creorder

The logic of this relative architecture was spelled out by the eighteenth-century invention of the metric system. The system was purposefully linked to the magnitude of the planet (setting the metre equal to 1/40,000,000th of the earth's circumference). This anchor, hoped its inventors, would be the benchmark for the measure of all things. '[A] meter based on the size of the

4 Peter Martin, a *Financial Times* columnist, is clearly sailing against the wind when he calls on fund managers to abandon their 'fetish' for relative performance in favour of absolute returns (Martin 1999). Some hedge funds have tried to do just that – i.e. achieve a pre-determined rate of return – but as another *Financial Times* commentator explains, their strategy is tantamount to having their cake and eating it too. In the end, 'absolute return strategies' are attractive only insofar as they manage to beat the average. . . (Anonymous 2002).

earth', marvelled Pierre-Simon Laplace, 'would entitle even the most humble landowner to say: "The field that nourishes my children is a known portion of the globe; and so, in proportion, am I a co-owner of the World"' (quoted in Alder 2002: 90).

Capitalization enables a similar partition of ownership – only in ways that are infinitely more complex and fluid than anything Laplace could have imagined, and not nearly as congenial or assuring. This latter partition is counted not in metres but in money prices, and it parcels the control not only of land but potentially of every aspect of human society. It is the mapping of capitalist power at large.

Of course, not all power gets capitalized – but then all capitalization is power. And as more and more forms of power get capitalized, capitalization becomes the overarching architecture of power. This view helps us transcend the conventional separation between power and capital. From the hierarchical perspective of Marx, the engine is productive capital. This is the basis on which the entire social structure of power gets built. The Weberians flatten the picture, arguing that control over the means of production is merely one of many different types of authority.[5] Our own framework fuses the two logics. Capital is still the starting point, as Marx correctly insisted. And ownership of the means of production indeed is merely one form of power, as the Weberians argue. But capital is not means of production; it is a mode of power. And although there are many different forms of authority and power, in principle they can all be subsumed by capital.

In this way, the structure of ownership encompasses and reflects the *entire* gamut of capitalized power. In Chapter 13 we described this mode of power as the 'state of capital', a mega-machine that comprises both corporations and government organs. The cogs of this mega-machine consist of factory workers, corporate accountants and chief executives, along with government employees, bureaucrats and top officials. All are part of the same process of capitalization and accumulation, and in that sense all are integrated into the same map of ownership.

In this framework, the total dollar value of capitalization maps the power that capitalists exert over society. Any given fraction of this totality denotes a corresponding, undifferentiated share of that power. Individual or groups of capitalists secure their claims through particular organizations, institutions and processes, so the *content* of their power is always qualitatively unique. But because this power is exercised over society as a whole, its *form* can be quantified in universal monetary units; that is, as claims on the entire process

5 'Control over the means of production is but a special case of authority, and the connection of control with legal property an incidental phenomenon of the industrializing societies of Europe and the United States. Classes are tied neither to private property nor to industry or economic structures in general, but as an element of social structure and a factor affecting change they are as universal as their determinant, namely, authority and its distribution itself' (Dahrendorf 1959: 136–37).

of social restructuring. This universality enables capitalists to gauge their power based on their relative stakes: an owner with 1 per cent of the total has twice the power of one with only 0.5 per cent and half that of another with 2 per cent.

But capitalism isn't simply an order; it is a *creorder*. It involves the ongoing imposition of power and therefore the dynamic transformation of society. In this process the key is differential *accumulation*: the goal is not merely to retain one's relative capitalization but to increase it. And since relative capitalization represents *power*, increases in relative capitalization represent the *augmentation of power*. The accumulation of capital and the changing power of capitalists to transform society become two sides of the same *creorder*.

This notion of capital as power and accumulation as changes in power stands in sharp contrast to received convention. Political economy keeps the two sets of concepts strictly distinct, and even the most astute observers can do no more than 'link' them. When Bowles, Gordon and Weisskopf (1986; 1990) offer to weigh capitalist power relative to that of workers, foreign suppliers and the country's citizenry, they take capital as a given – and then treat it as a 'source' of power. A similar distinction underlies Doug Henwood's assessment of the growing concentration of wealth. This concentration, he writes, yields 'extraordinary social power – the power to buy politicians, pundits, and professors, and to dictate both public and corporate policy' (1997: 4). In this sequence, capitalists first accumulate 'wealth' and then use this wealth to acquire 'power'. The two categories, although intimately linked, are nonetheless separate.

The figurative identity

In our framework, capital accumulation and the changing power of capitalists are one and the same. But this 'identity' is only figurative. It consists of converting quality into quantity, of translating and reducing the heterogeneous processes of capitalist power into the universal units of differential capitalization. And this conversion obviously is *not* an objective process.

First, the relative magnitude of capitalization, although readily observable, is based on the inter-subjective conventions of the capitalist *nomos*. Second, this relative magnitude cannot be inferred simply by observing the power aspects of the capitalist scene. The fact that a certain corporation was granted a patent, that it had the government move to its side, that it introduced a new technique, or that it acquired a competitor, cannot, in and of itself, tell us much about that company's rate of differential accumulation.

The way to understand this figurative identity is speculatively. Force is nothing apart from its effect, tell us Hegel and Marcuse; it is always a correspondence between form and content, quantity and quality. Therefore, the way to give capital meaning is by contrasting these two aspects, by juxtaposing the quantitative patterns of differential accumulation, on the one

hand, with the qualitative power institutions, organizations and processes that underlie this accumulation, on the other.[6]

Clearly, any such attempt to jump from qualities to quantities cannot claim the rigour of natural science. But, then, we have seen what happened to liberal and Marxist analyses when they tried to imitate this rigour. They pretended that there is a strict quantitative correspondence between prices, production and accumulation on the one hand and utility and labour values on the other, and then fell flat on their faces when they tried to demonstrate this correspondence.

Capitalists constantly try to force life into a box, to harness creativity, to convert quality into quantity. This is the nature of their power. But they can achieve this conversion only *speculatively and inter-subjectively*, and there is no point in pretending otherwise. The task is to try to understand this speculative translation. And, in our opinion, the only way to do so is by telling a 'scientific story' – a systematic historical analysis that convincingly ties the quantities and qualities of capitalist power.

With these considerations in mind, we propose the following working definition of accumulation:

- From a static perspective, the differential power possessed by a particular group of owners is measured by its *differential capitalization* (*DK*); that is, by comparing the group's combined capitalization to that of the average capital unit. If this average is \$5 million, a capital worth \$5 billion represents a *DK* of 1,000. This magnitude means that, as a group, the owners of that capital are 1,000 times more powerful than the owners of an average capital.
- From a dynamic viewpoint, the change in differential power is measured by the rate of *differential accumulation* (*DA*), defined as the rate of change of *DK*. To achieve differential accumulation, owners need to have their own capitalization grow faster than the average capitalization. Positive, zero or negative rates of *DA* imply rising, unchanging or falling differential power, respectively.
- From a power stance, only capitalists with a positive *DA* are said to accumulate. These differential accumulators should be the centre of analysis.

The universe of owners

Who are the differential accumulators? To contextualize the answer, let's backtrack and first consider the universe of owners. In principle, anyone who

6 In this sense, our logic here is similar to Kalecki's 'degree of monopoly' (1943a), an already mentioned proxy that measures the *consequence* for relative profit margins of monopolistic institutions and forces. Our own notion here differs from Kalecki's, first, in that it focuses on capitalization rather than merely on profit margins, and second, in that it relates not to the narrow economic question of monopoly vs competition, but to the entire dynamics of capitalist power.

owns a capitalized asset can be thought of as a 'capitalist' to that extent. And since capitalization has penetrated nearly every corner of society, there are plenty of such 'capitalists' around. For our purpose, though, this formal generalization is overstretched and misleading.

We can think of two types of assets: those that are held for use and those that are held for accumulation. The vast majority of owners hold the first type. They own articles that they use, such as their family home, vehicle and other 'big-ticket' items; and they own assets that they intend to use – primarily savings and pensions. The aggregate magnitude of these assets could be substantial, but their individual size tends to be small. Most importantly, these assets give their owners little or no control over other people.

A small minority of owners holds the second type of assets. These assets are financial instruments, consisting mostly of equity and debt claims on corporations and governments. They are held not for use, but for accumulation. Their overall magnitude is large and so is their individual size. And, most importantly, they give their owners direct and indirect control over other people.[7]

This classification narrows our search. It is obvious that the first group of people – namely, most of humanity – is pretty much out of the accumulation race. The vast majority of the population is simply trying to make ends meet – and, if they are lucky, also to save a bit for emergency and old age. Since they do not pursue power, they offer no reference point to accumulators and hence do not figure in the benchmark.

The relevant universe for differential accumulation comprises the second group: the owners of financial instruments. They are the capitalists. In our discussion, though, we focus not on individual owners, but on *groups* of owners. The reason is that the vendibility of capital creates centrifugal as well as centripetal forces, and the centrifugal forces limit the power of any single capitalist. In counteracting this effect, the elementary solution is the corporation, and, eventually, the corporate–government coalition (overt or covert). For this reason we concur with Veblen that the corporation itself, regardless of who runs it, was historically necessary for the survival of capitalism. Without this institution, which for Marx signalled the immanent 'abolition of capital as private property within the framework of capitalist production itself' (1909, Vol. 3: 516), the centrifugal forces of competition and excess capacity would probably have killed the bourgeois order long ago. Hence, any analysis of contemporary capitalism must have the corporation as a central building block.

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7 The two ownership groups overlap. The first may own some financial assets, while the second owns assets for use. But the overlaps are sufficiently small to be safely ignored. Even in the so-called 'people's capitalism' of the United States, most family holdings of stocks and bonds do not exceed a few thousand dollars. And although many of the big holders of financial instruments have a lavish lifestyle, the assets they own for use tend to be small relative to those they hold for accumulation.

As we have seen in Part IV, the underlying purpose of coalescing individual capitalists into a corporation, and corporations into corporate–government alliances, is exclusion. In non-capitalist systems, exclusion is usually embedded in relatively rigid customs, such as those preventing serfs from growing into kings, slaves from turning into masters and untouchables from becoming Brahmins. Capitalism does not have similar customs. Commodification makes upward mobility possible, and in principle there is nothing to prevent the son of a wandering vendor of quack medicine from assembling the Standard Oil of New Jersey, or a university dropout from incorporating Microsoft.

However, the possibility of upward mobility doesn't mean that capitalism has done away with exclusion. Far from it. Indeed, for John D. Rockefeller and William Gates to have acquired their power, others had to give it up. Because of the constant threat of 'equal opportunity', such exclusion requires relentless formation and reformation of 'distributional coalitions', to use the language of Mancur Olson (1965; 1982). The difference therefore is largely one of form: whereas in other modes of power exclusion is mostly static, built into the social code and yielding relatively stable groupings, in the capitalist *creorder* it has to be dynamically recreated through ever-shifting alliances.

Dominant capital

The upshot of these considerations is that the accumulation of capital in general depends on the accumulation of capital at the centre. The crucial group is *dominant capital* – a cluster that we equate with the leading corporate–government coalitions at the core of the process. The periphery of capital, comprising the many firms outside the core, in fact constitutes a permanent threat to accumulation. Subject to the strong centrifugal forces of competition, these firms cannot help but undermine the collusive underpinnings of business 'sabotage' and therefore the very possibility of accumulation. It is only to the extent that dominant capital can retain and augment its exclusive power *against* these lesser capitals, keeping them 'out of the loop', that the capitalization process can be sustained and extended.

This intra-capitalist conflict accentuates the *differential* underpinnings of accumulation. Whereas 'profit maximizers' concentrate only on their own gains, differential accumulators are also driven to undermine their rivals' gains. Their successful sabotage gives their relative performance a double boost: it raises their own earnings while cutting those that make up the benchmark they try to beat.

The identity of dominant capital is bound up with the process of differential accumulation. By definition, those who beat the average rise in the ranking, whereas those who trail it fall in the ranking. Given enough time, the fastest differential accumulators, regardless of their initial positions, will end up occupying the top ranks. So, as a first approximation, we can say that, at

any point in time, dominant capital consists of the largest corporations in the relevant universe of companies.

Note that this loose definition says nothing about the individual firms that comprise dominant capital. Differential accumulation does not have to be dominated by the same corporate entities throughout – and given the highly transformative nature of the process, neither should we expect it to be. However, at the most general level, what matters is the differential growth of dominant capital *as a whole*, regardless of its inner composition. As George Orwell aptly put it, 'A ruling group is a ruling group so long as it can nominate its successors. . . . *Who* wields power is not important, provided that the hierarchical structure remains always the same' (Orwell 1948: 211, original emphasis).[8]

How should we delineate dominant capital from the rest of the corporate universe? The most elegant solution is to not delineate it all, and instead use an integral index such as Gini or Herfindahl-Hirschman (HH). The advantage of these indices is that they take into account the entire distributional pattern of companies, so there is no need to set an arbitrary cut-off point. But integral indices also have two important deficiencies: they require detailed data that often do not exist, and they are difficult to reconcile intuitively with the binary notion of differential accumulation.

Therefore, in our presentation here we opt for the less elegant yet simpler cut-off method. There are two basic options. One is to choose a fixed proportion – for instance, the top 5 or 10 per cent of the firms in the corporate universe. The other is to select a fixed number of firms – for example, the top 50 or 100. The latter method is simpler and we use it here.

Aggregate concentration

So let's look at the numbers. We begin our exploration with standard measures of aggregate concentration, which we find useful but only up to a point. The next section sharpens the analysis by looking at our own differential measures.

Our focus continues to be the United States – first, because of its central capitalist position over the past century and, second, because it has the best long-term statistics. Table 14.1 lists some indicative magnitudes of the categories we measure, contrasting the early 1950s with the early 2000s. The data pertain to three categories: (1) the top 100 corporations in the Compustat

8 Theory aside, the actual turnover among the leading corporations is slower than it looks – although it is sometimes necessary to read the fine print to see why. A 1989 *Fortune* comparison shows that, of the top 50 firms in 1954, only 28 were still in the top 50 in 1988. The rest 'disappeared' – though *none* because it became too small. Of the 22 firms that were no longer on the 1988 list, all remained very much at the top: 7 were still ranked in the top 300, 11 were acquired by other large firms, two went private, one was reclassified as a service firm and one was still on the list but under a new name (Anonymous 1989).

Table 14.1 US corporate statistics: average number of firms, average capitalization per firm and average net profit per firm

	Compustat Top 100 corporations			*Listed corporations*		*All corporations*	
Period	*Number of firms*	*Capitalization per firm ($mn)*	*Net profit per firm ($mn)*	*Number of firms*	*Capitalization per firm ($mn)*	*Number of firms*	*Net profit per firm ($mn)*
1950–54	100	694	60	1,579	107	617,994	0.036
2002–06	100	95,943	5,243	6,175	2,749	5,566,044	0.166

Source: See Figures 14.1 and 14.2

Industrial database, a cluster that we use as a proxy for dominant capital;[9] (2) the universe of listed corporations; and (3) the universe of all corporations. The table provides information on the number of firms in each group, the average capitalization per firm and the average profit per firm. We refer to these numbers in our description below.

Figure 14.1 shows two indices of aggregate concentration – one based on market capitalization, the other on net profit. Each index measures the per cent share of the top 100 firms ranked by market capitalization in the relevant corporate universe.[10]

The concentration index for market capitalization is computed from two sources. The numerator is the market capitalization of the top 100 firms from the Compustat database, ranked annually by market capitalization. The denominator is the combined market capitalization of all listed corporations on the NYSE, NASDAQ and AMEX (the number of listed corporations quadrupled from roughly 1,500 in the early 1950s to over 6,000 presently).

The second measure of concentration, based on net profit, is computed a bit differently. The numerator is the total net profit of the top 100 Compustat firms by capitalization. The denominator is the aggregate net profit of all US corporations, listed and unlisted (the total number of corporations increased nearly tenfold – from around 600,000 in the early 1950s to over 5.5 million presently).

Both data series show high and rising levels of aggregate concentration. In the early 1950s, the top 100 firms accounted for 40 per cent of all market capitalization. By the early 2000s their share was 60 per cent. The uptrend in the aggregate concentration of net profit, based on the entire corporate universe, is even more pronounced – particularly given the much faster growth in the total number of firms. During the early 1950s, the top 100 dominant-capital firms accounted for 23 per cent of all corporate profits. By the early 2000s, their share more than doubled to 53 per cent.

9 The term 'Industrial' here is misleading. The Compustat database includes firms from all sectors.

10 Unless otherwise noted, market capitalization denotes the market value of outstanding equity shares. It does not include bank debt and bonds.

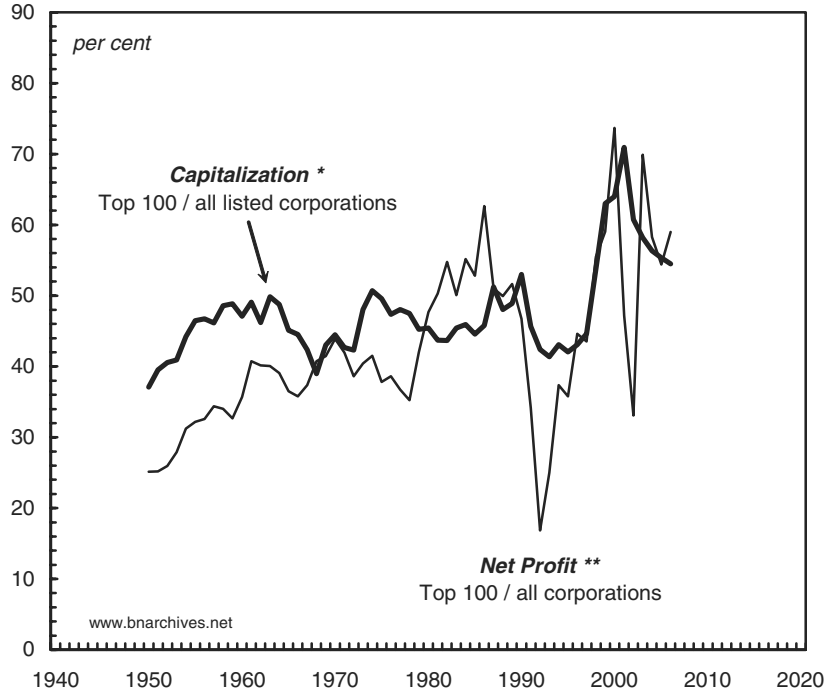

Figure 14.1 Aggregate concentration in the United States

* Ratio between the market capitalization of the top 100 Compustat corporations (ranked annually by market capitalization) and the overall market capitalization of all US listed corporations.

** Ratio between the net profit of the top 100 Compustat corporations (ranked annually by market capitalization) and the overall net profit of all US corporations (listed and unlisted).

Source: Compustat compann file through WRDS (series codes: data25 for common shares outstanding; data199 for share price; data172 for net income); U.S. Federal Reserve Board's Flow of Funds through Global Insight (FL893064105 for market value of corporate equities); U.S. Bureau of Economic Analysis through Global Insight (ZA for profit after taxes).

Measures of aggregate concentration are often used to approximate the overall power of big business. And the levels and trends in Figure 14.1 indeed portray an ominous picture. But the situation in fact is far more alarming than this picture suggests. The difficulty lies in the definition of aggregate concentration and is fairly simple to explain. Let (s) denote the average size of a dominant capital firm (in terms of capitalization, profit, etc.), (n) the fixed number of dominant capital firms, (S) the average size of a firm in the corporate universe and (N) the number of firms in the corporate universe: The aggregate concentration ratio is then given by:

1. $$\textit{aggregate concentration} = \frac{s \times n}{S \times N} = \frac{s}{S} \times \frac{n}{N}$$

As the equation makes clear, the rate of aggregate concentration depends not only on the differential size of dominant capital (s/S), but also on the ratio between the number of dominant-capital firms and the total number of firms (n/N). The problem is that over time these two ratios tend to trend in *opposite* directions. Whereas (s/S) tends to increase as large firms grow bigger while small firms do not, (n/N) tends to fall since the number of dominant-capital firms remains fixed while the overall number of firms keeps rising. In many instances, the rise in N is so fast that the aggregate concentration ratio ends up moving sideways or even down.

Now, this counter movement would have been inconsequential had the numerator and denominator of the concentration ratio represented comparable entities. But the entities they represent are very different. The numerator measures the overall size of dominant capital – a cluster that gets as close as one can to the ruling capitalist class. This group is subject to intra-distributional struggles, but on the whole it is probably the most cohesive – and often the only – class in society. Its members – owners and controllers – are connected and fused through numerous ownership, business, cultural and sometimes family ties; they are tightly linked to key government organs through a complex web of regulations, contracts, revolving doors and a shared worldview; and their accumulation trajectories often show close similarities.

The denominator, representing the corporate sector as a whole, is a very different creature. Excluding dominant capital, the vast majority of its firms are small. Unlike dominant capital, whose worldview was shaped by the twentieth century, the owners of smaller firms tend to entertain nineteenth-century ideals. They continue to swear by the 'free market' and the 'autonomous consumer', they love to bedevil 'government intervention' and the higher-up 'lobbies', and they long for the good old days of 'equal opportunity' and a 'level playing field'. Their own corporate units are only loosely related through professional associations, if at all; they are removed from the high politics of organized sabotage; they have very little say in matters of formal politics; and, most importantly, they tend to act at cross purposes. In no way can they be considered a power block.[11]

The fractured nature of this sector makes aggregate concentration ratios difficult to interpret: an increase in the number of small firms causes aggregate concentration to decline – yet that very increase fractures the sector even further, causing the relative power of dominant capital to *rise*.

Differential measures

The relevant measure of power, therefore, is not aggregate but disaggregate. What we need to compare are not the totals, but the 'typical' units that make

11 The different mindsets of the numerator and denominator were portrayed rather accurately in Jack London's *The Iron Heel* (1907) and further elaborated in C. W. Mills (1956) *The Power Elite*.

up those totals – i.e. the relevant (s/S) in Equation (1). This is what we do in Figure 14.2 which displays two differential measures – one for capitalization, the other for net profit.[12]

Begin with differential capitalization. This ratio is computed in three steps: first, by calculating the average capitalization of a dominant-capital firm (total capitalization of the top 100 Compustat firms divided by 100); then by

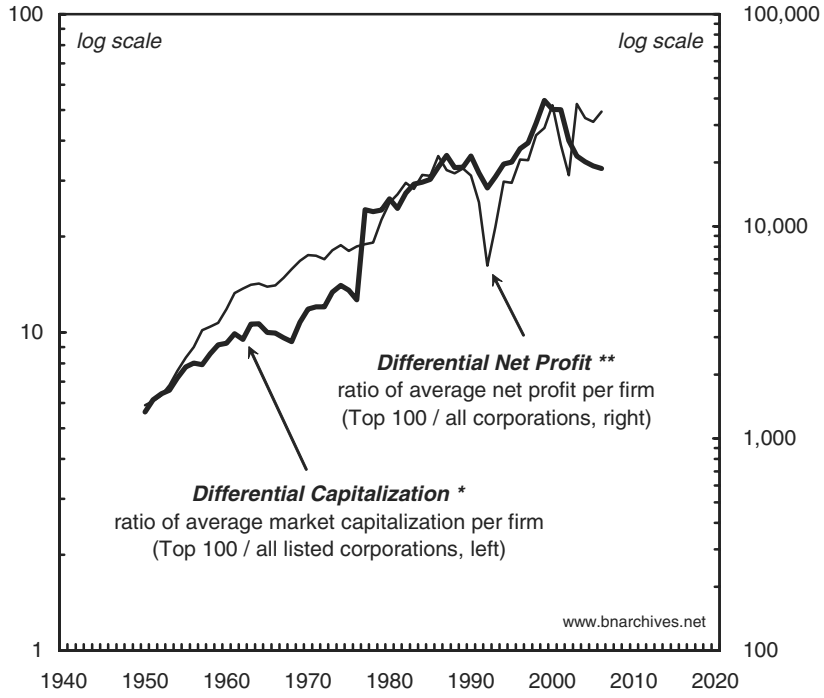

Figure 14.2 Differential capitalization and differential net profit in the United States

* Ratio between the average market capitalization of the top 100 Compustat corporations (ranked annually by market capitalization) and the average market capitalization of all US listed corporations.

** Ratio between the average net profit of the top 100 Compustat corporations (ranked annually by market capitalization) and the average net profit of all US corporations (listed and unlisted). The number of US corporations for 2004–2006 is extrapolated based on recent growth rates.

Source: Compustat compann file through WRDS (series codes: data25 for common shares outstanding; data199 for share price; data172 for net income); Global Financial Data (number of listed corporations on the NYSE, AMEX and NASDAQ till 1989); World Federation of Exchanges (number of listed corporations on the NYSE, AMEX and NASDAQ from 1990); U.S. Internal Revenue Service (number of corporate tax returns for active corporations); U.S. Federal Reserve Board's Flow of Funds through Global Insight (FL893064105 for market value of corporate equities); U.S. Bureau of Economic Analysis through Global Insight (ZA for profit after taxes).

12 For a different approximation of differential capitalization, based on book value, see Nitzan (1998b).

calculating the average capitalization of a listed company (total market capitalization divided by the number of listed companies); and finally by dividing the first result by the second.

The ensuing ratio denotes the differential power of capital. It shows that in the early 1950s, a typical dominant capital corporation had nearly 7 times the capitalization (read power) of the average listed company ($694 million compared to $107 million, as calculated in Table 14.1). By the early 2000s, this ratio had risen to around 35 ($96 billion vs. $2.7 billion) – a fivefold increase.[13]

Unfortunately, this measure significantly underestimates the increase in the power of dominant capital. Note that the vast majority of firms are *not* listed. Since the shares of unlisted firms are not publicly traded they have no 'market value'; the fact that they have no market value keeps them out of the statistical picture; and since the excluded firms are relatively small, differential measures based only on large listed firms end up understating the relative size of dominant capital.

In order to get around this limitation, we plot another differential measure – one that is based not on capitalization but on net profit, and that includes all corporations, listed and unlisted. The computational steps are similar. We calculate the average net profit of a dominant-capital corporation (the total net profit of the top 100 Compustat companies by capitalization divided by 100); we then compute the average net profit of a US corporation (total corporate profit after taxes divided by the number of corporate tax returns); finally, we divide the first result by the second.

As expected, the two series have very different orders of magnitude (notice the two log scales). But they are also highly correlated (which isn't surprising given that profit is the key driver of capitalization). This correlation means that we can use the broadly-based differential profit indicator as a proxy for the power of dominant capital relative to *all* corporations. With this interpretation in mind, the pattern emerging from the chart is remarkable indeed. The data show that, in the early 1950s, a typical dominant capital corporation was roughly 1,667 times larger/more powerful than the average US firm (average profit of $60 million compared with $36,000). By the early 2000s, this ratio had risen to 31,325 ($5.2 billion vs. $166,000) – a nineteenfold increase![14]

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13 The sharp jump in differential capitalization between 1976 and 1977 is the result of adding the NASDAQ to our universe of listed companies (although the NASDAQ started to operate in 1971, data for total capitalization are available only from 1976 onward). At that time of its inclusion, the NASDAQ listed very small firms, so its addition brought down the capitalization of the average corporation.

14 The sharp drop in the series during 1992–93 is due primarily to a one-time accounting charge (SFAS 106), a regulation that required firms to report in advance the future cost of their post-employment benefits. Since the rule applied almost exclusively to large firms, it had a big effect on the numerator but a negligible one on the denominator.

Accumulation crisis or differential accumulation boom?

What does Figure 14.2 tell us? Most generally, it suggests that US differential accumulation has proceeded more or less uninterruptedly for the past half-century and possibly longer. Relative to all listed companies, the rate of differential accumulation by the top 100 dominant-capital firms averaged nearly 4 per cent annually (measured by the slope of the exponential growth trend of the capitalization series). The differential profit measure, benchmarked relative to the corporate sector as a whole, expanded even faster, growing at annual trend rate of 5 per cent. Seen as a *power* process, US accumulation appears to have been sailing on an even keel throughout much of the post-war era.

For many readers, this conclusion may sound counterintuitive, if not heretical. According to analyses of the social structures of accumulation (SSA) and regulation schools, for instance, the United States has experienced an accumulation *crisis* during much of this period, particularly in the decades between the late 1960s and early 1990s.[15]

This sharp difference in interpretation is rooted in the troubled definition of capital. The conventional creed, focused on a 'material' understanding of profitability and accumulation, indeed suggests a crisis. Figure 14.3 shows two standard accumulation indices (smoothed as 5-year moving averages). The first is the plough-back ratio, which measures the proportion of capitalist income 'invested' in net productive capacity (net investment as a per cent of net profit and net interest). The second is the rate of growth of the 'net' capital stock measured in 'real terms'. The long-term trend of both series is clearly negative. And, from a conventional viewpoint, this convergence makes sense. The plough-back ratio is the major source of 'capital formation', so when the former stagnates and declines so should the latter.

This notion of accumulation crisis stands in sharp contrast to the evidence based on differential accumulation. As illustrated in Figure 14.4, unlike the plough-back ratio and the rate of 'material' accumulation, the *share* of capital in national income trended upward: it rose in the 1980s to twice its level in the 1950s, and fell only slightly since then (with data smoothed as 5-year moving averages). This distributional measure shows no sign of a protracted crisis; if anything, it indicates that capital income has grown *increasingly abundant*.

From a conventional viewpoint, these opposite developments are certainly puzzling. Capitalists have been 'investing' a smaller proportion of their income and have seen their 'real' accumulation rate decline – yet despite the 'accumulation crisis' their share of national income kept growing.

From a power viewpoint, though, the divergence is perfectly consistent: capital income depends not on the *growth* of industry, but on the strategic *control* of industry. Had industry been given a 'free rein' to raise its productive

15 Contributions to and reviews of these approaches are contained in Kotz, McDonough and Reich (1994) and in McDonough (2007).

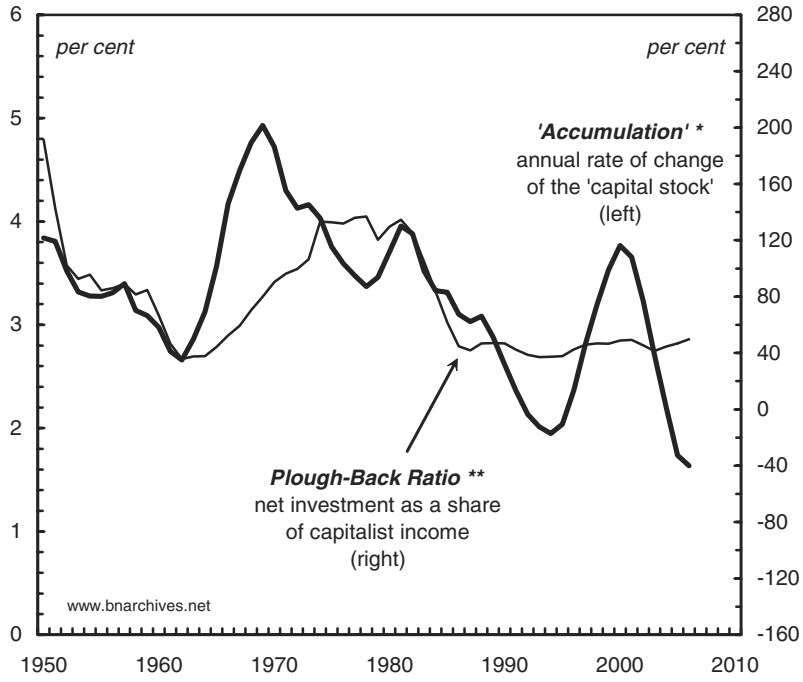

Figure 14.3 Accumulation crisis? . . .

* 'Accumulation' denotes the per cent growth rate of private fixed assets net of depreciation, expressed in constant prices. Private fixed assets comprise non-residential equipment, software and structures.

** The plough-back ratio is net investment expressed as a per cent of capitalist income. Net investment is the first difference between successive annual values of the net capital stock in current prices. Capitalist income is the dollar sum of after-tax corporate profit and net interest.

Note: Series are smoothed as 5-year moving averages.

Source: U.S. Bureau of Economic Analysis through Global Insight (series codes: FAPNRE for private fixed assets in current prices; JQFAPNRE for private fixed assets in constant prices; ZAECON for after-tax corporate profit with IVA and CCA; INTNETAMISC for net interest and miscellaneous payments on assets).

capacity, the likely result would have been *excess* capacity and a *fall* in capital's share (revisit Figures 12.1 and 12.2). Based on this latter logic, it seems entirely possible that the income share of capitalists increased *because* their 'real' investment declined.

To close the circle, note that the uptrend in the income share of capital plotted in Figure 14.4 coincided with a consistently positive differential accumulation by dominant capital (indicated here by the rising trend of differential net profit, smoothed as a 5-year moving average). This correlation is hardly trivial, at least from the viewpoint of economic orthodoxy. Liberal analysis suggests that because of diminishing returns, accumulation (defined as rising 'capital goods' per head) should be associated with lower rates of

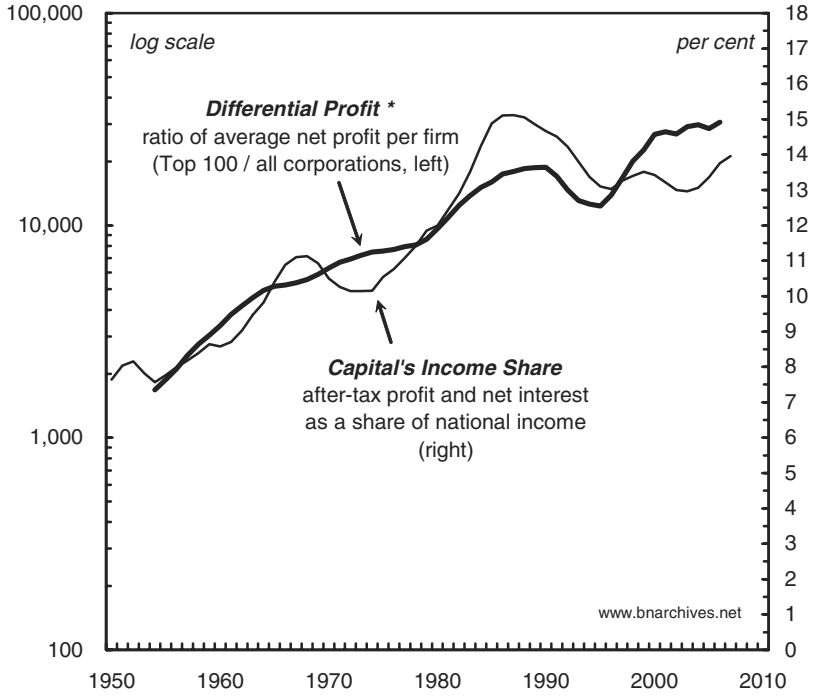

Figure 14.4 . . . Or a differential accumulation boom?

* Ratio between the average net profit of the top 100 Compustat corporations (ranked annually by market capitalization) and the average net profit of all US corporations.

Note: Series are smoothed as 5-year moving averages.

Source: Compustat compann file through WRDS (series codes: data25 for common shares outstanding; data199 for share price); U.S. Bureau of Economic Analysis through Global Insight (ZA for corporate profit after tax; ZAECON for after-tax corporate profit with IVA and CCA; INTNETAMISC for net interest and miscellaneous payments on assets; YN for national income); U.S. Internal Revenue Service (number of corporate tax returns for active corporations). The number of US corporations for 2005–2006 is extrapolated based on recent growth rates.

returns and hence a downward pressure on the income share of capital. Marxist analysis is more ambivalent. It accepts that distribution could depend on power – yet, hostage to the labour theory of value, it sees investment as contributing to a rising organic composition of capital and therefore to lower surplus and declining returns.

From our own perspective, however, the positive association between differential accumulation and capital's income share is hardly surprising. Accumulation is a power process, not a material one. Defined in differential terms, it involves the growing relative power of society's leading capital groups, which in turn helps sustain or expand the overall income share of capital. This double-sided process is consistent with our analysis in

Chapter 12, where we suggested that the distribution of capital income among absentee owners (and hence the differential rate of accumulation) is roughly related to the balance of *business* damage they inflict on each other, and that the income share of all absentee owners depends (although non-linearly) on the overall *industrial* damage arising from the business warfare raging among them.

Therefore, we tentatively argue that, over the longer term, capital accumulation depends on two key conditions, and that the absence of one or both of these conditions brings a threat of capitalist crisis:

- *A non-negative rate of differential accumulation by dominant capital*. This condition implies that the relative power of the largest absentee owners is either stable or growing. It reflects both the power drive of accumulation and the actual ability to keep 'industry' subjugated to 'business'.
- *A steady or rising capital share of income*. Although this requirement is partly an indirect result of the first condition, it also reflects the overall balance of power between capitalists and other societal groups. Unless this condition is fulfilled, the very 'capitalist' nature of the system could be put into question.

Historical paths

The boundaries of novelty

Differential accumulation is a power *creorder*, an ongoing struggle to restructure society against opposition. The form of the process is the quantitative redistribution of ownership, its content the qualitative transformation of power relations. The transformative feature is crucial because it means *novelty*, and novelty, by definition, is never in the cards. It cannot be predicted. In this sense, differential accumulation, despite its 'objective' quantitative appearance, is inherently open-ended. It does not move toward any 'equilibrium'. It has no 'laws of motion'. It may not even happen at all. In short, like much else in society, it is an indeterminate journey, an adventure continuously re-written by its own characters.[16]

This is the dynamic prefix of the capitalist *cre*-order. But there is also the static suffix of cre-*order* – namely, the structures that capitalists try to impose and to which they themselves often become subservient. The imposition of

16 'The most important aspect of the economic process', writes Georgescu-Roegen (1979: 321), 'is precisely the continuous emergence of novelty. Now, novelty is unpredictable, but in a sense quite different from the way in which the result of a coin toss is unpredictable. . . . [it] is unique in the sense that in chronological time it occurs only once. Moreover, the novelty always represents a qualitative change. It is therefore understandable that no analytical model can deal with the emergence of novelty, for everything that can be derived from such a model can only concern quantitative variations. Besides, nothing can be derived from an analytical model that is not logically contained in its axiomatic basis'.

order concretizes differential accumulation. It turns it from an abstract principle into a particular story, subject to specific, albeit broad, limitations. As noted earlier, these limitations – including the basic algorithm of accumulation – are themselves created by humans, so they too can be altered. But such changes, being more fundamental in nature, always come with difficulty and never too quickly. To paraphrase Marx, 'human beings make their own history, *as well as* the circumstances in which this history unfolds, but the latter are much more difficult to change than the former'. And as long as these 'circumstances', or 'algorithms' persist in their general form, their impact is to restrict action and 'limit the possible' as Fernand Braudel (1985) put it.

It is in this latter sense that commodification and capitalization gradually make the quest for differential accumulation a primary compass of social action, a constraint that shapes both ideology and behaviour. And insofar as this differential quest materializes – that is, insofar as dominant capital *does* grow faster than the average – its expansion tends to occur within certain boundaries and follow particular paths.

Spread, integration, oscillation

What are these paths? Broadly speaking, the historical evolution of differential accumulation during the past century seems to have followed three related patterns. The first, secular feature is the gradual *spread* of differential accumulation as the principal driving force of capitalist development – within a given society, as well as into virgin territory previously untouched by vendible capital.

The second feature, also secular, is the increasing *integration* of separate differential accumulation processes. As capital becomes more and more vendible, its buying and selling transcends its original industry, sector and, finally, home country, resulting in a progressive convergence of accumulation benchmarks across these different universes. The capitalists find it feasible to invest farther afield, and the more they venture out, the more universal their yardsticks become. The social process underlying this convergence is the growing unification and standardization of business principles, so that any given society or group finds itself responding to the roller coaster of differential accumulation elsewhere and to an increasingly similar normal rate of return everywhere.

The final feature of this history is *cyclical*. Differential accumulation tends to move in long swings, alternating between two distinct regimes which we term 'breadth' and 'depth'. A breadth regime is characterized by proletarinization, growth and corporate amalgamation; it tends to be structurally dynamic; and commonly it is less conflictual. A depth regime, by contrast, is marked by stagflation; it tends to consolidate rather than change institutions and structures; and it is usually more conflictual and often violent.

These three features of differential accumulation – its spread, integration and alternating regimes – are closely related. The first two processes work to reinforce one another; and their unfolding makes the breadth–depth cycles ever more interdependent and synchronized across sectors and societies.

The other side of this triple process relates to class. Ongoing differential accumulation means the centralization of commodified power in the hands of an ever more cohesive group of dominant capital, whereas the spatial integration of the process makes this group increasingly transnational. The study of differential accumulation regimes therefore is a study of capitalist class formation. It helps us understand how this class comes into being, the methods it uses to build and consolidate its power, and the conflict and contradictions it faces in *creordering* its own history.

The remainder of the chapter outlines the general boundaries and paths of these processes, characterizes their features and briefly examines their interactions. The subsequent chapters look at these issues more closely, flesh out their history and assess their broader significance for the global political economy.

Regimes of differential accumulation

How can dominant capital achieve differential accumulation? To set the context, consider again the capitalization equation from Chapter 11. The formula consists of four elementary particles – future earnings (E), hype (H), a risk coefficient (δ) and the 'confident' normal rate of return (r_c):

$$2. \quad K = \frac{E \times H}{r_c \times \delta}$$

For dominant capital, differential capitalization (DK) is the ratio between its own capitalization and the average capitalization. Equation (3) expresses this ratio by using the D subscript to denote dominant capital and no subscript to denote the average capital. The normal rate of return is common to dominant capital and the average and therefore drops from the ratio:

$$3. \quad DK = \frac{K_D}{K} = \frac{\left(\frac{E_D}{E}\right) \times \left(\frac{H_D}{H}\right)}{\left(\frac{\delta_D}{\delta}\right)}$$

Equation (3) presents the overall picture. On the quantitative side, it tells us that dominant capital can achieve differential accumulation by some combination of the following: (1) raising its differential earnings (E_D/E), (2) raising its differential hype (H_D/H) and (3) lowering its differential risk

(δ_D/δ).[17] On the qualitative side it means that in order to understand the concrete history of dominant capital, we need to examine the intertwined power processes that drive its differential earnings, hype and risk (as well as the processes that underlie the normal rate of return – which, although not in the equation – remains of crucial importance in setting the boundaries of the process).

But of these components, one clearly stands out: differential earnings (E_D/E). As we have seen, this is the main long-term driver of the process. And since our aim here is to provide only a broad-brush description, the empirical analysis that follows focuses mostly on earnings and refers to hype and risk only in passing.

For a corporation, the level of earnings is the product of the number of employees multiplied by the average earnings per employee:

$$4. \quad E = employees \times \frac{E}{employees} = employees \times earnings\ per\ employee$$

The number of employees denotes the *formal size* of the organization, while earnings per employee measure the *elemental power per unit of organization*. According to this equation, the firm can raise its earnings in two ways. The first path, which we call 'breadth', is to augment the size of its organization by having more employees. The second path, which we label 'depth', is to increase the elemental power of its organization by raising its earnings per employee.[18]

This decomposition merits clarification. Despite the apparent connotations, the categories of employment and earnings per employee have little to do with narrowly defined production and everything to do with broadly conceived power. Our choice of employment as a measure of organizational

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17 Differential accumulation (*DA*) is the rate of change of differential capitalization (*DK*). Expressed in instantaneous rates of change:

$$DA \approx differential\ growth\ of\ earnings + differential\ growth\ of\ hype - differential\ growth\ of\ risk.$$

Note that differential accumulation is based on *differences* between growth rates. Dominant capital can achieve differential accumulation even if its own capitalization is falling – provided that the average capitalization falls even faster. This understanding applies also to the underlying components of differential accumulation and is assumed throughout.

18 Note that this decomposition differs from the common view of earnings as the product of sales revenues and the earnings margin. Although both decompositions are correct by definition, only the former corresponds to our separation between the corporation's size and its elemental power. To illustrate, sales revenues can be raised by increasing employment in order to produce more (size), or by raising prices (elemental power). Likewise, earnings per employee (which for us represent elemental power) can be raised by increasing prices and therefore sales revenues, or by widening the earnings margin. Formally speaking, breadth affects market share, but market share does not always involve breadth. Similarly, the earnings margin affects depth, but depth does not necessarily influence the earnings margin.

size is not accidental. Ever since they first emerged in the power civilizations of the ancient river deltas, hierarchical organizations have been measured by 'head', or *capita*. They have been counted in slaves, soldiers, serfs, religious followers, factory workers and now, more generically, in employees. The number of 'heads' under one's immediate command – relative to the number of heads commanded by others – is indicative of one's immediate power.

But formal organizational size is merely the first, immediate dimension of power. In the past, rulers were able to use their slaves, soldiers, serfs, religious laity and factory workers to control others, often beyond the formal confines of their own organization. And the same is true, only many times over, with the broader category of employment.

Operating through their corporate organization, capitalists are able to project their indirect power over society as a whole. This indirect power takes numerous forms – from the creation of loyal and predictable consumers, through the taming of voters, to the control of subcontractors, the subjugation of governments, the shaping of public policies, the moulding of culture, the crafting of ideology, the harnessing of religion, the use of armies and police forces and the crafting of international relations. The relative effectiveness of these multiple forms of indirect power gets crystallized in the magnitude of differential profit per employee. This latter measure represents the elemental power of the capitalist organization, its ability to extend its power beyond its immediate size.

Equation (5) formalizes this logic at the differential level (using the subscript D to denote dominant capital and no subscript to signify the average). Differential earnings (E_D/E) are given by the ratio of differential employment and differential earnings per employee:

$$5. \quad \frac{E_D}{E} = \left(\frac{employees_D}{employees}\right) \times \left(\frac{earnings\ per\ employee_D}{earnings\ per\ employee}\right)$$

A dominant capital firm can accumulate differentially: (1) by expanding its employment faster than the average; (2) by raising its earnings per employee faster than the average – or by some combination of the two. Each avenue – breadth or depth – can be further subdivided into 'internal' and 'external' sub-routes, leading to a four-way taxonomy:

Table 14.2 Regimes of differential accumulation

	External	*Internal*
Breadth	Green-field	Mergers & Acquisitions
Depth	Stagflation	Cost cutting

1 *External Breadth: Green-field Investment*. A firm can achieve differential accumulation by building new capacity and hiring new employees faster

than the average. This method is labelled 'external' because, from a societal perspective, it involves a net addition of employees.[19] Its upper ceiling is the extent of proletarianization. The more immediate limit comes through the negative impact it has on depth: 'excessive' green-field growth creates a downward pressure on prices and hence on earnings per employee.

2 *Internal Breadth: Mergers and Acquisitions.* Strictly speaking, internal breadth involves differential earnings growth through inter-firm labour mobility. This growth can happen when a firm adds new capacity and employment against cutbacks elsewhere, although such movements relate more to *industrial* restructuring (labour mobility between sectors) than to the *size* redistribution of firms (labour moving from small to large firms). The situation is different with corporate amalgamation via mergers and acquisitions, where no new capacity is created. By taking over other companies, the firm increases its own earnings relative to the average (which is virtually unaltered). We call this route 'internal' since it merely redistributes control over existing capacity and employment. Merger and acquisition activity perhaps is the most potent form of differential accumulation, serving to kill three birds with one stone: it directly increases differential breadth; it indirectly helps to protect and possibly boost differential depth (relative pricing power); and it reduces differential risk. This path is limited, however, both by the availability of takeover targets and by socio-political and technological barriers.

3 *Internal Depth: Cost Cutting.* The purpose is to cheapen production faster than the average, either through relative efficiency gains or by larger reductions in input prices. The process is 'internal' in that it redistributes income shares within a given price. Although cost cutting is relentlessly pursued by large firms (directly as well as indirectly through outsourcing), the difficulty of both protecting new technology and controlling input prices suggests that the net effect commonly is to meet the average rather than to beat it.

4 *External Depth: Stagflation.* Our emphasis on stagflation rather than inflation is deliberate: contrary to the conventional wisdom, inflation usually occurs with, and often necessitates, some slack. Now, for a single seller, higher prices commonly are more than offset by lost volume, but things are different for a coalition of sellers. Dominant capital, to the extent that it acts in concert, can benefit from higher prices, since, up to a point, the relative gain in earnings per unit outweighs the relative decline in volume. Of course, for the process to become continuous (inflation rather than discrete price increases), other firms must join the spiral. But small companies have little political leverage and usually are unable to collude, so the common result is to redistribute income in favour of the

19 For any given firm, green-field investment of course can draw on inter-firm labour mobility as well as on new employment. From an aggregate perspective, however, labour movement between firms is properly classified as internal breadth.

bigger ones who can. We refer to this method as 'external' since the redistribution occurs through a (pecuniary) expansion of the earnings pie.

Some implications

In addressing the implications of this taxonomy, it is important to distinguish the case of an individual large corporation from the broader analysis of dominant capital as a group. A single firm may successfully combine different facets of breadth and depth. However, the same does not hold true for dominant capital as a whole. If we look at breadth and depth not as firm strategies, but as overall *regimes of differential accumulation*, it quickly becomes apparent that the broader conditions that are conducive to one regime often undermine the other. For the sake of brevity, we group our tentative arguments here into eight related propositions:

- *Proposition 1. Understood as broad regimes, breadth and depth tend to move counter-cyclically to one another.* Breadth presupposes some measure of employment growth as well as relative political–economic stability. Depth, on the other hand, commonly implies restrictions, conflict, and stagflation. Although strictly speaking the two regimes are not mutually exclusive, they tend to 'negate' one other, with more breadth being associated with less depth, and vice versa.
- *Proposition 2. Of the two regimes, breadth is the path of least resistance*. There are two reasons for this pattern. First, usually it is more straightforward and less conflictual to expand one's organization than it is to engage in collusive increases in prices or in struggles over input prices. Although both methods are political in the wide sense of the term, depth commonly depends on complex corporate–state realignments that are not necessary for breadth. Second, breadth is relatively more stable and hence easier to extend and sustain, whereas depth, with its heightened social antagonism, is more vulnerable to backlash and quicker to spin out of control.
- *Proposition 3. Over the longer haul, mergers and acquisitions tend to rise relative to green-field investment*. While both routes can contribute to differential accumulation, as capitalism spreads geographically and dominant capital grows in importance, so does the threat of excess capacity. Mergers and acquisitions alleviate the problem whereas green-field aggravates it.[20] The broader consequence of this shift is for chronic stagnation to gradually substitute for cyclical instability.

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20 The notion of excess capacity, associated mainly with Monopoly Capital writers such as Kalecki (1971), Steindl (1952) and Baran and Sweezy (1966), is admittedly problematic. Here, we use it to denote the potential threat to prevailing earning margins from higher resource utilization. To illustrate, recall from Figure 12.2 that, since the Second World War, US margins, measured by the combined profit and interest share of GDP, have been positively related to the rate of unemployment. In this context, a move from higher to lower unemployment increases utilization and threatens margins.

- *Proposition 4. The relative growth of mergers and acquisitions is likely to oscillate around its uptrend.* Corporate amalgamation involves major social restructuring and hence is bound to run into roadblocks. The result is a wave-like pattern, with long periods of acceleration followed by shorter downturns.
- *Proposition 5. The underlying logic of mergers and acquisitions implies progressive 'spatial' unification and, eventually, globalization*. For amalgamation to run ahead of overall growth, dominant capital must successively break its 'envelopes', spreading from the industry, to the sector, to the national economy, and ultimately to the world as a whole. In this sense, differential accumulation is a prime mover of spatial integration and globalization.
- *Proposition 6. Cost cutting is not a real alternative to an amalgamation lull. The pressure to reduce cost is ever-present, but its effect is more to meet than to beat the average.* The principal reason is that productivity improvements are neither inherently related to corporate size nor easy to protect. Similarly, reductions in input prices seldom are proprietary and often spill over to other firms.
- *Proposition 7. A much more potent response to declining mergers and acquisitions is inflationary increases in earning margins*. This method is often facilitated by previous corporate centralization, and although the process is inherently unstable and short-lived, it can generate very large differential gains. By its nature, though, such inflation is possible only through a vigilant limitation of production, as a result of which inflation appears as stagflation.
- *Proposition 8. Over the longer term, differential accumulation depends primarily on mergers and acquisitions. In the shorter term, it can benefit from sharp stagflationary crises.* The main engine of differential accumulation is corporate amalgamation, a process that thrives on overall growth and the successive breakup of ownership 'envelopes'. Occasional discontinuities in the process, however, push dominant capital toward an alternative regime of stagflationary redistribution. The result is a pendulum-like oscillation between long periods of relative political–economic stability accompanied by green-field growth and low inflation, and shorter periods of heightened conflict, stagnation and inflation.

The remaining chapters of the book highlight the significance of these propositions with an examination of the US experience over the past century. Brevity and the exclusive focus on the United States make this analysis suggestive rather than exhaustive. Nonetheless, the United States and US-based firms have had a leading role in shaping modern capitalism, so their experience may offer insight into other cases as well as into the nature of capitalist development more broadly. Finally, a word of caution. Although the

United States offers the best historical data, these are not always suited for our disaggregate analysis and occasionally force us into rough approximations, roundabout estimates and bare speculations. Our conclusions therefore are tentative and open to challenges, and they invite further research and discussion.

15 Breadth

> It is difficult to describe the rapacity with which the American rushes forward to secure the immense booty which fortune proffers to him. . . . for he is goaded onwards by a passion more intense than the love of life. Before him lies a boundless continent, and he urges onwards as if time pressed and he was afraid of finding no room for his exertions.
>
> —Alexis de Tocqueville, *Democracy in America*

It is hard to think of a capitalist growth episode more exhilarating and promising than the nineteenth-century advancement of the 'American frontier'. The promise of abundance, riches and endless opportunities (minus the Indians) excited tellers of stories and theories alike and lured millions to try their luck in the land of unlimited possibilities (Zinn 1999).

Yet, as the opening quote from de Tocqueville points out, even in this historically unique period, with a wilderness large and fertile enough to accommodate everyone, the pursuit of growth was decidedly *differential*. Growth itself may seem unbounded, but the *control* of growth is always bounded. No capitalist can ever control more than the entire social process. This is the whole. The only way for some owners to gain more power over this totality is for others to give up some of theirs. In the rush for power, there is never enough room for everyone.

The present chapter examines how dominant capital increases its power by augmenting the relative size of its corporate organs. To reiterate, there are two basic ways of doing so: (1) green-field investment that buys newly built facilities and hires new employees,[1] and (2) mergers and acquisitions that take over the existing facilities and employees of other firms. We spend relatively little time on green-field growth, which, as we shall see, is the less important avenue. The bulk of the chapter is devoted to corporate amalgamation and its far-reaching implications for the capitalist *creorder*.

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1 Throughout the chapter, we use the term 'green-field investment' to denote the *purchase* of newly produced plant and equipment. The production of these items is distinct from the process of accumulation.

Green-field

Dominant capital can run its green-field investment at different speeds: it can sprint ahead of the pack, expanding its employment faster than the overall growth of the business sector; it can run with the pack, expanding at the same rate as the business sector; or it can trail the business sector. Of these strategies, the first two are relevant for our inquiry. Both augment the external breadth of dominant capital (differential employment per firm); but as it turns out, both act as a double-edged sword in that they also undermine external depth (differential profit per firm).

Running ahead of the pack

The consequences of running ahead of the pack are fairly clear. When larger firms hire new workers faster than the overall expansion of private employment, their corporate size grows relative to that of the average firm (particularly since, as we shall see shortly, the size of the average firm tends to fall even as overall employment rises).

But, save for exceptional circumstances, this strategy is suicidal. Recall that the ultimate purpose is to increase not the relative size of the organization (breadth), but of relative profit (the product of breadth and depth). And it turns out that that this strategy usually loses in depth more than it gains in breadth, leading to *falling* differential profit.

As the reader now knows, 'letting industry loose' undermines the fundamental tenet of 'sabotage' without which profit and accumulation are impossible. The vulnerability here is so great that even the mere anticipation of 'excessive' growth is often enough to trigger panic, price war and sharply lower differential profit per firm. Perhaps this is the reason that most dominant-capital executives respond to green-field 'opportunities' with the suspicion of a New-York-City driver who has just spotted an empty parking space. Their typical knee-jerk reaction is to look for the proverbial road-sign warning: 'Don't even THINK of parking (your cash) here'.

Running with the pack

Fortunately for dominant capital, there is no need to lead. Simply going with the crowd and letting employment expand in tandem with the business sector as a whole is sufficient to generate external breadth. The success of this 'sound' strategy has to do with the different expansion patterns of large and small firms.

Large companies react to overall growth mainly by increasing their employment ranks. Smaller companies, by contrast, respond by growing in number (through the birth of new firms) as well as in size (by hiring more workers). This difference is important since newborn firms, by their very nature, tend to be smaller than the average (recall our discussion of aggregate

concentration in Chapter 14). The implication is that, even if green-field growth is spread proportionately between dominant capital and the rest of the business universe (since both expand at the same clip), as long as some of this growth results in the birth of smaller firms, the net impact is to reduce average employment per firm and, therefore, to augment the differential breadth of dominant capital.

The evolution of this process in the United States is illustrated in Figure 15.1, which shows the number of corporations, the overall level of employment and the average number of employees per firm (with series rebased for comparison).[2] The overall picture is one of pronounced divergence. From 1926 to 2008, the number of corporations has risen nearly

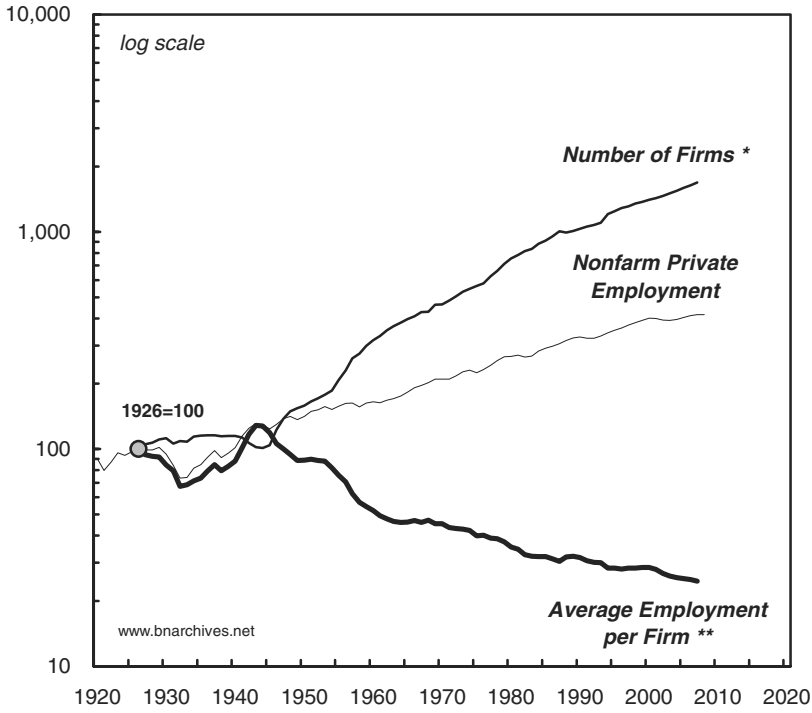

Figure 15.1 US employment, number of firms and size of firms

* Corporations only.

** Nonfarm private employment divided by the number of firms.

Source: U.S. Internal Revenue Service (number of corporate tax returns; the numbers for 2004–2006 are extrapolated based on recent growth rates); *Historical Statistics of the United States* (series codes: D127 for non-agricultural employment; D139 for non-agricultural government employment till 1938); U.S. Bureau of Economic Analysis through Global Insight (series codes: EEA for nonfarm private employment from 1939 onward).

2 Note that not all 'active corporations', as the IRS classifies them, accumulate. Many firms are incorporated solely for legal purposes, tax evasion, etc., and often have neither assets nor employees. The proportion of such firms is fairly large but also fairly stable. According

sixteenfold, whereas overall employment has grown only threefold. As a result of this difference, average employment per firm has dropped by over 75 per cent (note the logarithmic scale).[3]

The process wasn't always even. During the two decades between the mid-1920s and mid-1940s, the number of firms remained relatively stable, first because of the Great Depression, and subsequently due to the Second World War. Consequently, changes in overall employment during that period were reflected more or less fully in the average size of firms, which fell throughout the Depression only to rise rapidly thereafter.

In the longer run, however, this early pattern proved an aberration. As noted, capitalism is subject to strong centrifugal forces, one of which is the inability of business enterprise to control the overall number of independent capitalists on the scene. And indeed, after the war, the number of firms started multiplying again, while their average size trended down more or less continuously. Since large-firm employment has increased over the same period, we can safely conclude that overall employment growth served to boost the differential breadth of dominant capital.

The indirect impact of employment growth, operating through depth, is more complex and harder to assess. On the one hand, the multiplicity of small firms keeps their profit per employee low – partly by precluding cooperation and pricing discretion and partly by undermining formal political action. This fact bears positively on the differential depth of dominant capital. At the same time, unruly growth in the number of small firms can quickly degenerate into excess capacity, threatening to unravel cooperation within dominant capital itself. The balance between these conflicting forces is difficult if not impossible to determine.

All in all, then, green-field growth is no panacea for dominant capital. Although the process boosts its differential breadth, it has an indeterminate and possibly negative effect on differential depth. One way to counteract this latter threat is to scare the underlying population with 'overheating' and educate 'policy makers' about the benefits of 'balanced growth' – a

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to the IRS, in 2004 roughly 12 per cent of all active corporations had no assets (zero book value) – a bit less than in 1935, when 13 per cent of corporations were in the same position. The long-term stability of this ratio means that the attendant bias need not concern us here.

3 Our measurements here are not strictly comparable: we contrast the number of corporations with overall non-agricultural private employment (that also includes proprietorships and partnerships), rather than with corporate employment only (for which data are not publicly available). However, we can assess the accuracy of this comparison indirectly, by looking at the share of corporations in nonfarm private GDP (using data from the U.S. Bureau of Economic Analysis, Tables 1.3.5 and 1.14). This share rose from 61 per cent in 1929 to 67 per cent in 2007 – a 10 per cent increase. Now, if we assume that relative employment trends roughly track relative GDP trends, the implication is that, over the entire period, corporate employment rose by only 10 per cent more than overall nonfarm employment. Compared to the threefold rise in nonfarm private employment reported in the text, this bias is too small to affect the overall results.

stagnationary recipe that has been applied with considerable success over the past half-century.[4] But the more fundamental solution to the problem is corporate amalgamation.

Mergers and acquisitions

A mystery of finance

Our discussion of amalgamation begins with Figure 15.2. The chart plots a 'buy-to-build' indicator, expressing the dollar value of mergers and acquisitions as a per cent of the dollar value of gross fixed investment. In terms of our own categories, this index corresponds roughly to the ratio between internal and external breadth. (The data sources and method of computing this index are described in the Data Appendix to the chapter.)

The chart illustrates two important processes – one secular, the other cyclical. Secularly, it shows that, over the longer haul, mergers and acquisitions indeed have become more important relative to green-field investment

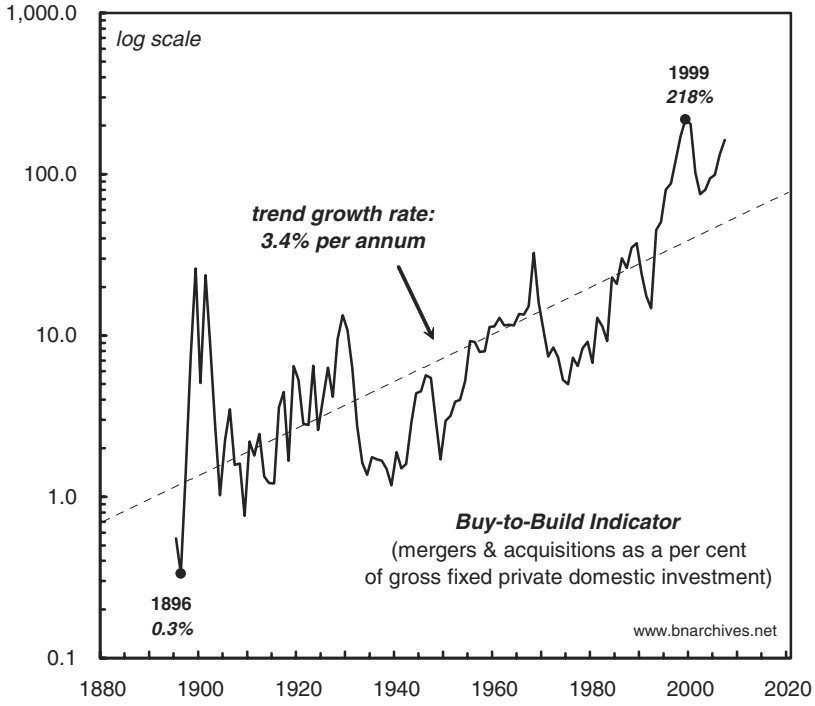

Figure 15.2 US accumulation: internal vs external breadth

Source: See Data Appendix to the chapter.

4 For a neo-Marxist analysis of this long-term policy bias, see Steindl (1979).

(Proposition 3 in Chapter 14). At the end of the nineteenth century, money put into amalgamation was equivalent to less than 1 per cent of green-field investment; a century later, the ratio surpassed 200 per cent. The trend growth rate indicated in the chart suggests that, year in, year out, mergers and acquisitions grew 3.4 percentage points faster than new capacity.

Now, whereas employment associated with new capacity is added by small and large firms alike, amalgamation increases mostly the employment ranks of dominant capital. The net effect of this trend, therefore, is a massive contribution to the differential accumulation of large firms.[5]

The reasons for this tendency are not at all obvious. Why do firms decide to merge with, or take over other firms? Why has their urge to merge grown stronger over time? And what does this process mean for the broader political economy?

These are not straw-man questions. Mergers baffle the experts. 'Most mergers disappoint', writes *The Economist*, 'so why do firms keep merging?' (Anonymous 1998). And the textbooks offer no clear answer. According to one influential manual, mergers remain one of the 'ten mysteries of finance', a riddle for which there are many partial explanations but no overall theory (Brealey *et al.* 1992: Ch. 36).

The efficiency spin

Needless to say, amalgamation is a real headache for mainstream economics, whose models commonly rely on the assumption of atomistic competition. Alfred Marshall (1920) tried to solve the problem by arguing that firms, however large, are like trees in the forest: eventually they lose their vitality and die out in competition with younger, more vigorous successors.

On its own, though, the forest analogy was not entirely persuasive, if only because incorporation made firms potentially perpetual. So, for the sceptics, Marshall had to offer an add-on. Even if large firms failed to die, he said, and instead grew into a corporate caste, the attendant social inconvenience was still tolerable – because, first, such a caste tended to be benevolent and, second, the political costs were outweighed by the greater economic efficiency of large-scale business enterprise.

The rigorous spin on this justification was provided by Ronald Coase (1937), who stated that the size of firms is largely a matter of 'transaction costs'. Inter-firm transactions, he asserted, are the most efficient since they are subject to market discipline. Unfortunately, such transactions are not free, and therefore they make sense only if their efficiency gains exceed the

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5 The effect on relative employment growth is probably somewhat smaller than implied by the dollar figures. First, amalgamated companies often end up shedding some workers, and second, merger and acquisition data include divestitures that reduce rather than raise employment (though only if the acquirer isn't part of dominant capital). Correcting for these qualifications, though, isn't likely to alter the overall trend.

extra cost of carrying them through; otherwise, they should be internalized as intra-firm activity. Using such a calculus, one can then determine the proper 'boundary' of the firm, which, according to Coase, is set at the precise point where 'the costs of organizing an extra transaction within the firm become equal to the costs of carrying out the same transaction by means of an exchange on the open market or the costs of organizing in another firm' (p. 96).

The ideological leverage of this theory proved immense. It implied that if companies such as General Electric, Cisco or Exxon decided to 'internalize' their dealings with other firms by swallowing them up, then that must be socially efficient; and it meant that their resulting size – no matter how big – was necessarily 'optimal' (for instance, Williamson 1985; 1986). In this way, the nonexistence of perfect competition was no longer an embarrassment for neoclassical theory. To the contrary, it was the *market itself* that determined the right 'balance' between the benefits of competition and corporate size – and what is more, the whole thing was achieved automatically, according to the eternal principles of marginalism.

But then, there is a little glitch in this Nobel-winning spin: it is irrefutable. The problem is, first, that the cost of transactions (relative to not transacting) and the efficiency gains of transactions (relative to internalization) cannot be measured objectively; and, second, that it isn't even clear how to identify the relevant transactions in the first place. This measurement limbo makes marginal transaction costs – much like marginal productivity and marginal utility – unobservable; and with unobservable magnitudes, reality can never be at odds with the theory.[6]

For instance, one can use transaction costs to claim that the historical emergence of 'internalized' command economies such as Nazi Germany or the Soviet Union proves that they were more efficient than their market predecessors. The obvious counterargument, which may well be true, is that that these systems were imposed 'from above', driven by a quest for power rather than efficiency. But then, can we not say the exact same thing about the development of oligopolistic capitalism?[7]

In fact, if it were only for efficiency, corporations should have become smaller, not larger. According to Coase's theory, technical progress, particularly in information and communication, reduces transaction costs, making the market look increasingly appealing and large corporations ever more cumbersome. And, indeed, using this very logic, Francis Fukuyama (1999) has announced the 'death of the hierarchy', while advocates of the 'E-Lance Economy' (as in freelance) have argued that today's corporate behemoths are

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6 The literature on 'measuring' transaction costs is reviewed sympathetically by Wang (2007) and Macher and Richman (2008). For a critical assessment, see Buckley and Chapman (1997).

7 For more on the contrast between power and efficiency arguments here, see Knoedler (1995).

anomalous and will soon be replaced by small, 'virtual' firms (Malone and Laubacher 1998). So far, though, these predictions seem hopelessly wrong: amalgamation has not only continued, but accelerated, including in the so-called high-technology sector, where transaction costs have supposedly fallen the most.

From efficiency to power

From an efficiency perspective, the relentless growth of large firms is indeed puzzling. Why do firms give up the benefit of market transactions in pursuit of further, presumably more expensive internalization? Are they not interested in lower costs?

From a power viewpoint, though, the riddle is more apparent than real. Improved technology certainly can reduce the minimum efficient scale of production (MES); and, indeed, today's largest establishments (plants, head offices, etc.) often are smaller than they were a hundred years ago. However, firms are not production entities but business units; and given that they can own many establishments, their boundary need not depend on production as such. The real issue with corporate size is not efficiency but differential profit, and the key question therefore is whether amalgamation helps firms beat the average – and if so, how?

The conventional wisdom here is that mergers and acquisitions are a disciplinary form of 'corporate control'. According to writers such as Manne (1965), Jensen and Ruback (1983) and Jensen (1987), managers are often subject to conflicting loyalties, and this conflict may compromise their commitment to profit maximization (the so-called principal-agent problem). The threat of takeover puts these managers back in line, forcing them not only to improve efficiency, but also to translate such efficiency into higher profit and rising shareholders' value.

This argument became popular during the 1980s. The earning yield on US equities fell below the yield on long-term bonds for the first time since the 1940s, and that drop gave corporate 'raiders' the academic justification (if they needed one) for launching the latest and longest merger wave. The logic of the argument, however, was and remains problematic. Mergers may indeed be driven by profit, but that in itself has little to do with productivity gains. Neither is there much evidence that mergers are prompted by inefficiency, or that they make the combined firms more efficient.[8] Indeed, as we suggested in Chapter 12 and argue further below, the latent function of mergers in this regard is not to boost efficiency but to *tame* it – a task that they achieve by keeping a lid on overall capacity growth. Moreover, there is no clear indication that mergers make the amalgamated firms more profitable than they

8 See for example, Ravenscraft and Scherer (1987), Caves (1989), Bhagat, Shleifer and Vishny (1990) and Kaplan (2000).

were separately – although here the issue is somewhat more complicated and requires some explication.

Two points are worth noting. First, there is a serious methodological difficulty. Most attempts to test the effects of mergers on profitability are based on comparing the performance of merged and non-merged companies.[9] While this method may offer some insight in the case of individual firms, it is misleading when applied to dominant capital as a whole. Looking at the amalgamation process in its entirety, the issue is not how it compares with 'doing nothing' (that is, with not amalgamating), but rather how it contrasts with the alternative strategy of green-field investment. Unfortunately, such a comparison is impossible since the very purpose of mergers and acquisitions is to avoid creating new capacity. In other words, amalgamation removes the main evidence against which one can assess its business success.

Perhaps a better, albeit 'unscientific', way to tackle the issue is to answer the following hypothetical question: What would have happened to the profitability of dominant capital in the United States if, instead of splitting its investment one third for green-field and two thirds for mergers and acquisitions, it were to plough it all back into new capacity? As Veblen (1923) correctly predicted, such a 'free run of production' is not going to happen, so we cannot know for sure. But then the very fact it hasn't happened, together with the century-long tendency to move in the opposite direction, from green-field to amalgamation, already suggests what the answer may be.[10]

The second important point concerns the meaning of 'profitability' in this context. Conventional measures, such as earnings-to-price ratio, return on equity, or profit margin on sales, relevant as they may be for investors, are too narrow as indicators of *capitalist power* – particularly when such power is vested in and exercised by corporations rather than individuals. A more appropriate measure for this power is the distribution and differential growth of profit (and of capitalization more broadly), and from this perspective mergers and acquisitions make a very big difference. By fusing previously distinct earning streams, *amalgamation contributes to the organized power of dominant capital*, regardless of whether or not it augments the more conventional rates of return. In our view, this 'earning fusion', common to all mergers, is also their ultimate reason.

And indeed, by gradually shifting the emphasis from building to buying, from colliding to colluding and from a certain measure of public oversight to increasingly capitalized government, corporate capitalism in the United States and elsewhere has been able not only to lessen the destabilizing impact of green-field cycles pointed out by Marx, but also to reproduce and consolidate on an ever-growing scale. Instead of collapsing under its own weight,

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9 For instances of this approach, see Ravenscraft (1987), Ravenscraft and Scherer (1989), Scherer and Ross (1990: Ch. 5) and Healy, Palepu and Ruback (1992).

10 See also footnote 12 in Chapter 12, for the accumulation consequences of Japan's anti-merger/all-for-growth attitude.

capitalism seems to have grown stronger. The broader consequence of this shift has been creeping stagnation (Proposition 3 in Chapter 14); and yet, as Veblen already suggested a century ago, the large accumulators have learned to 'manage' this stagnation for their own ends.

Patterns of amalgamation

Merger waves

Now, this general rationale for merger does not in itself explain the concrete historical trajectory of corporate amalgamation. Mergers and acquisitions grow, but not smoothly, and indeed the second feature evident in Figure 15.2 is the cyclical pattern of the series (Proposition 4 in Chapter 14).

Looking at the past century, we can identify four amalgamation 'waves'. The first wave, occurring during the transition from the nineteenth to the twentieth century, is commonly referred to as the 'monopoly' wave. The second, lasting through much of the 1920s, is known as the 'oligopoly' wave. The third, building up during the late 1950s and 1960s, is nicknamed the 'conglomerate' wave. And the fourth wave, beginning in the early 1980s, does not yet have a popular title, but based on its all-encompassing nature we can safely label it the 'global' wave.

This wave-like pattern remains something of a mystery. Why do mergers and acquisitions have a pattern at all? Why are they not erratic? Or, alternatively, why do they not grow continuously or in line with green-field investment? So far, most attempts to answer these questions have approached the issue from the micro perspective of the firm, which is precisely why they run into a dead end.

Tobin's Q

One of the more famous explanations is based on the work of Tobin and Brainard (1968; 1977), whom we have already met in Chapter 10. The underpinnings of the argument cannot be simpler: capitalists are rational, and rational actors buy what is cheap. Their yardstick is *Tobin's Q*: the ratio between the capitalized value of an asset on the market and the price of building it from scratch. When *Tobin's Q* is smaller than 1, existing capacity is cheaper, so the firm will buy it from others. And when *Tobin's Q* is greater than 1, new capacity is cheaper, so the firm will construct it anew.

For the corporate universe as a whole, *Tobin's Q* is the ratio of overall market capitalization to the replacement cost of all outstanding assets; and if individual rationality extends to aggregate rationality, we should observe the buy-to-build indicator moving *inversely* with *Tobin's Q*: the less expensive existing assets are relative to newly produced ones, the greater the proportion of 'financial' to 'real' investment should be, and vice versa.

The explanation seems sensible enough, only that reality refuses to abide. Figure 15.3 shows the relationship between the two magnitudes: our own

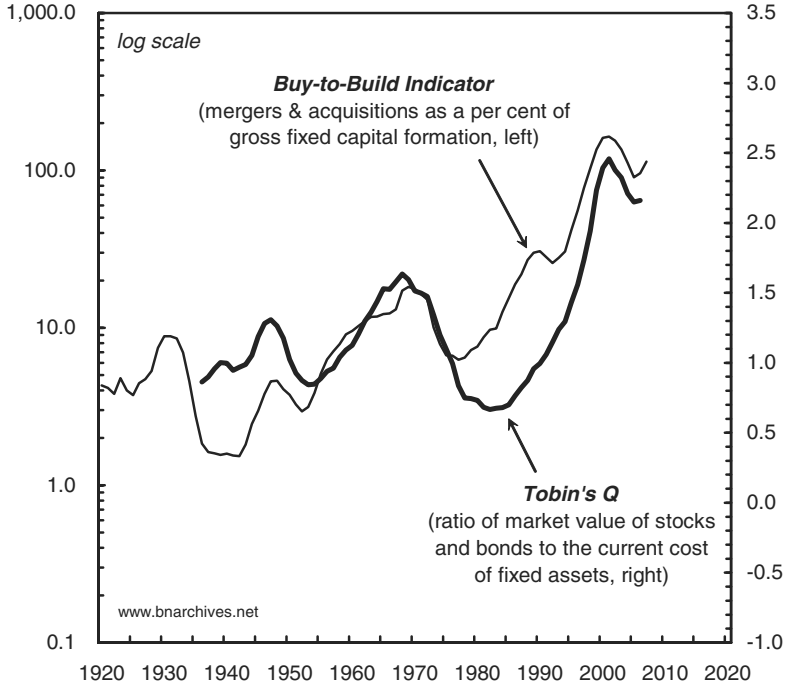

Figure 15.3 Tobin's Q?

Note: The market value of stocks and bonds is net of foreign holdings by US residents. Series are smoothed as 5-year moving averages.

Source: For data sources and computations of the Buy-to-Build Indicator, see Data Appendix to the chapter. Data for *Tobin's Q*: U.S. Bureau of Economic Analysis through Global Insight (series codes: FAPNREZ for current cost of corporate fixed assets). The market value of stocks and bonds splices data from the following two sources. 1932–1951: Global Financial Data (market value of corporate stocks and market value of bonds on the NYSE). 1952–2007: Federal Reserve Board through Global Insight (series codes: FL893064105 for market value of corporate equities; FL263164003 for market value of foreign equities held by US residents; FL893163005 for market value of corporate and foreign bonds; FL263163003 for market value of foreign bonds held by US residents).

buy-to-build indicator, expressing mergers and acquisitions as a per cent of gross fixed investment; and *Tobin's Q*, computed by dividing the overall market value of stocks and bonds by the total current cost of corporate fixed assets (both series are smoothed for easier comparison).

According to the chart, US capitalists have gone out of their minds: instead of investing in what is cheap, they have been systematically overspending on the expensive! Note that the two series move not inversely, but together. When *Tobin's Q* rises, so does the buy-to-build ratio – which means that capitalists prefer costlier mergers and acquisition over cheaper greenfield. And when *Tobin's Q* falls, so does our buy-to-build indicator – which suggests that they prefer pricier new factories over the inexpensive secondhand assets available on the market.

Of course, the problem here is not the capitalists; it's the theory. If the positive correlation of the two series seems anomalous, it is only because we use a neoclassical logic that denies power in order to explain a process that is all about power.

The specific blind spot is prices. Locked into the atomistic individualism of the nineteenth century, liberal analysts tend to assume that prices are given by the market, and that the only thing capitalists need to do is minimize cost. Yet, as we have seen in Chapter 12 – and as the large owners know full well – this pricing ethics is a relic of history. In the new state of capital, the power struggle is fought over prices as well as costs. The issue is not only to reduce the latter, but also to actively maintain and increase the former. And this simultaneity changes the whole 'buy or build' calculus.

New capacity indeed may be cheap if only a few capitalists add it. But if many capitalists do the same, the calculus becomes very different. The latter circumstances spell 'glut'; glut means the disintegration of full-cost pricing; and if prices end up dropping faster than costs, the consequence is falling profit. In this context, building green-field factories – although seemingly 'cheaper' than existing assets – is a recipe for business disaster. As we explain below, dominant capital understands this power logic all too well and acts accordingly. And as the emphasis flips from passively accepting prices to actively managing them, *Tobin's Q* turns from a cause to a consequence: it goes up when investors happen to buy and down when they decide to build.

From classical Marxism to monopoly capitalism

In short, mergers and acquisitions, although pursued by individual firms, occur within a broader and ever-changing political–economic context. It is only when we make this restructuring process the centre of our analysis that the general pattern of amalgamation begins to make sense.

A highly interesting attempt in this direction was offered by Michael Lebowitz (1985), who tried to derive the tendency toward monopoly capitalism from the very logic of classical Marxism. According to Marx, argues Lebowitz, the essence of accumulation is the expropriation of means of production – initially from workers, but ultimately also from most capitalists – until capital becomes One, a unitary amalgamate held by a single capitalist or a single corporation. The road toward such amalgamation, Lebowitz continues, proceeds through horizontal, vertical and conglomerate integration (although not necessarily following the stylized pattern in Figure 15.2), and the key challenge is to show that all three phenomena are *inherent* in the inner logic of accumulation.

To establish this link, Lebowitz begins by assuming, along with Marx, an intrinsic connection leading from productivity growth to accumulation. Next, he suggests that all three forms of integration increase efficiency and hence contribute to accumulation: horizontal integration creates economies of scale; vertical integration leads to more roundabout, or mechanized production

runs; and conglomerate integration improves allocative efficiency through inter-sectoral capital mobility. To constrain any of these processes therefore is to hinder accumulation; and since according to Marx capital works to dismantle its own barriers, it follows that all three types of integration are inevitable, and that capitalism is destined to become monopolistic.

Based on its own premises, this logic is undoubtedly elegant. But the premises are partly incorrect as well as incomplete. The first problem concerns production. As noted earlier, beyond a certain point there is no necessary connection between industrial size and measured efficiency/profitability, so complete *business* integration cannot be attributed to the 'productive' logic of accumulation.[11]

The second problem is the absence of power. Even if greater industrial integration were always more efficient and more profitable, that would still leave unexplained a growing proportion of mergers that merely fuse ownership while leaving production lines separate. The difficulty is most clearly illustrated in the case of conglomerate integration. Inter-sectoral capital movement can improve allocative efficiency only through green-field investment; but, if so, why does conglomerate consolidation almost invariably take the route of merger?

The answer, by now a bit tedious, is that business consolidation is not about efficiency but about the control of efficiency. While capital is forever trying to remove the barriers to its own accumulation, this very accumulation is inherently impossible without imposing barriers on others, including on most other capitalists. The act of merger fulfils both of these requirements, allowing investors to exercise their *freedom to hinder*.

Differential advantage

Seen from a differential-accumulation perspective, amalgamation is a power process whose goal is to beat the average and redistribute control. Its main appeal to capitalists is that it contributes directly to differential breadth, yet without undermining and sometimes boosting the potential for differential depth.[12] In addition, by making the fused entities ever larger, increasingly

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11 Economies of scale, impressive as they were in Marx's time, are not a timeless iron law, but rather historically and technologically contingent. Diseconomies of scale can be as important, and there is no reason to believe that completely centralized planning, capitalist or otherwise, is most efficient (recall our discussion in Chapter 12 of industrial 'resonance' and the open-ended democratic notion of 'efficiency'). Similarly with roundabout processes: longer production runs may be more efficient, but only up to a point, beyond which they almost always run into organizational barriers.

12 Note that the act of merger itself has no direct effect on depth. The impact on depth works only indirectly, through increasing corporate centralization – and even that is merely a facilitating factor. Consolidation makes it easier for firms to collude as well as to fuse with government organs. But that facilitation doesn't imply that collusion and fusion will *actually* take place, or that they will be effective.

intertwined with other larger firms and government bodies, and more involved in setting polices and regulations, mergers stabilize earnings growth and therefore reduce differential risk.[13] Finally, mergers often generate differential hype that owners can leverage to their own advantage.

Thus, everything else remaining the same, it makes more sense to buy than to build. But then everything else does not and indeed *cannot* remain the same. The reason is simple: amalgamation *creorders* the very conditions on which it is based.[14]

Three transformations

Three particular transformations need noting here. First, amalgamation is akin to eating the goose that lays the golden eggs. By gobbling up takeover targets within a given corporate universe, acquiring firms are depleting the pool of future targets. Unless this pool is somehow replenished, mergers and acquisitions are bound to create a highly centralized structure in which dominant capital owns everything worth owning. From a certain point onward, therefore, the pace of amalgamation has to decelerate. Although further amalgamation within the circle of dominant capital itself may be possible (large firms buying each other), the impact on the *group's* differential accumulation relative to the average is negligible: by this stage, dominant capital has grown so big it *is* the average.

Green-field growth, by adding new employment and firms, works to replenish the takeover pool to some extent. But then, and this is the second point worth noting, since green-field growth tends to trail the pace of amalgamation in both employment volume and dollar value, its effect is mostly to

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13 This power perspective is usually lost on financial analyses of merger. As we saw in Chapter 11, the standard view on risk reduction focuses on diversification. Merger does the job when it fuses firms with divergent volatility patterns. But according to the analysts, owners can achieve the same reduction with far less hassle simply by including shares of the premerged firms in a diversified financial portfolio.

The glitch in this argument is that the owned entities in the two cases are very different. To see why, imagine a capitalist owning 1 per cent of the shares of every independent oil refiner that populated the business landscape *before* the arrival of John D. Rockefeller. Now compare this scenario to one in which the capitalist owns a 1 per cent stake in Rockefeller's Standard Oil of New Jersey *after* the company absorbed all these independent refiners. The diversification of the two ownership stakes is technically identical, but their earnings pattern most certainly is not. Historically, the 'before' case was associated with cutthroat competition and the absence of organized power, which together meant massive volatility; in the 'after' case, the political–economic regime imposed by Standard Oil brought a more stable flow of earnings and greatly reduced risk.

14 This *creordering* is also why most macro studies of mergers and acquisitions, such as Mitchell and Mulherin (1996), Weston, Chung and Siu (1998) or Winston (1998), are usually insufficient. Although these studies acknowledge the role of structural changes, such as increased competition, technical change and policy deregulation, they tend to treat these changes as external societal 'shocks' to which business 'responds' with amalgamation.

slow down the depletion process, not to stop it. Indeed, the very process of amalgamation, by directing resources away from green-field investment, has the countervailing impact of reducing growth, and that reduction hastens the depleting process. Thus, sooner or later, dominant capital is bound to reach its 'envelope', namely the boundaries of its own corporate universe with few or no takeover targets to speak of.[15]

Finally, corporate amalgamation is often socially traumatic. It commonly involves massive dislocation as well as significant power realignments; it is restricted by the ability of broader state institutions to quickly accommodate the new corporate formations; and it is capped by the speed at which the underlying corporate bureaucracy can adapt (a point emphasized by Penrose 1959). The consequence is that as amalgamation builds up momentum, it also generates higher and higher roadblocks, contradictions and counter-forces.[16]

Taken together, the depletion of takeover targets, the negative effect on growth associated with lower levels of green-field investment and the emergence of counter-forces suggest that corporate amalgamation cannot possibly run smoothly and continuously (Proposition 4 in Chapter 14).

Breaking the envelope

But then, why should amalgamation move in cycles? In other words, why does the uptrend resume after it stumbles? And what does this resumption mean?

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15 A typical illustration of this process is provided by the food business (based on data from the authors' archives). During the 1980s, the sector went through rapid amalgamation. In 1981, a $1.9 billion merger between Nabisco and Standard Brands created Nabisco Brands, which then merged in a $4.9 billion deal with R.J. Reynolds to create RJR Nabisco. A few years later, KKR, which had earlier acquired Beatrice for $6.2 billion, paid $30.6 billion to take over RJR Nabisco in what was then the largest takeover on record. Elsewhere in the sector, Nestlé took over Carnation ($2.9 billion) and Rowntree ($4.5 billion); Grand Metropolitan acquired Pilsbury ($5.7 billion) and Guinness ($16 billion); Phillip Morris bought General Foods ($5.7 billion) and Kraft ($13.4 billion); BCI Holdings took over some Beatrice divisions ($6.1billion); and Rhône-Poulenc bought Hoechst ($21.9 billion). By the end of the 1980s, the merger flurry died down. According to the *Financial Times*, food companies at the time were very cheap, yet 'shareholders have deserted food stocks . . . partly because of the absence of genuinely attractive acquisition targets' in an industry whose 'biggest problem has been minimal sales growth' (Edgecliffe-Johnson 2000). During the 1990s, there were a few more big transactions, such as the $14.9 billion acquisition of Nabisco by Philip Morris, but these were mostly reshuffles of assets among the large players. The experience of reaching the 'envelope' was summarized metaphorically by a Bestfood executive whose company had been taken over by Unilever: 'I have been to Bentonville, Arkansas [home of Wal-Mart's headquarters], and I would like to say that it is not the end of the world, but you can see it' (ibid.).

16 The 1933 Glass-Steagall Act, for instance, barred US banks from making industrial investments, a prohibition that only recently has been relaxed. Similar transformational effects were brought on by the post-war dismantling of the Japanese *Zaibatsu*, by the 1990s unbundling of South African holding groups and the divestment of Israeli banks of their 'non-financial' holdings, and by the transnationalization of the Korean *Chaebol* during the 2000s.

From the perspective of dominant capital, amalgamation is simply too important to give up. And while there may not be many candidates worth absorbing in their own corporate universe, *outside* of this universe targets are still plentiful. Of course, to take advantage of this broader pool, dominant capital has to break through its original 'envelope' – which is precisely what happened as the United States moved from one wave to another (Proposition 5 in Chapter 14).

The first, 'monopoly' wave marked the emergence of modern big business, with giant corporations forming within their own original *industries*. Once this source of amalgamation was more or less exhausted, further expansion meant that firms had to move outside their industry boundaries. And indeed, the next 'oligopoly' wave saw the formation of vertically integrated combines whose control increasingly spanned entire *sectors*, such as in petroleum, machinery and food products, among others. The next phase opened up the whole *US corporate universe*, with firms crossing their original boundaries of specialization to form large conglomerates with multiple business lines ranging from raw materials, through manufacturing, to services and finance. Finally, with the national scene having been more or less integrated, the main avenue for further expansion now is across international borders, hence the latest *global* merger wave.[17]

Until recently, the global wave was characterized by considerable de-conglomeration, with many firms refocusing on so-called core activities where they enjoyed a leading profit position. The main reason is that globalization enables additional intra-industry expansion across borders while legitimizing further domestic centralization in the name of 'global competitiveness'. Eventually, though, such refocusing is bound to become exhausted, pushing dominant capital back toward conglomeration – and this time on a global scale. In fact, such re-conglomeration is already happening in areas such as computing, communication, transportation and entertainment, where technological change is rapidly blurring the lines between standard industrial classifications.[18]

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17 The process of course is hardly unique to the United States. For example, 'Before [South Africa] started the progressive unwinding of exchange controls in 1994', writes the *Financial Times*, 'large companies were prevented from expanding overseas. With capital trapped at home, they gobbled up all available companies in their industries before acquiring companies in other sectors and becoming conglomerates' (Plender and Mallet 2000). For analyses of differential accumulation, business consolidation and globalization in South Africa and Israel, see Nitzan and Bichler (1996) and Nitzan and Bichler (2001).

18 For instance, information, telecommunication and entertainment companies such as Cisco, Alcatel-Lucent, Microsoft, Time Warner, NewsCorp, Hutchison Whampoa and Vivendi increasingly integrate computing (hardware and software), services (consulting), infrastructure (cables and satellite), content (television, movies, music and print publishing) and communication (internet and telephony), while leisure firms like Carnival Cruise own shipping lines, resort hotels, air lines and sport teams. Other companies, like General Electric or Philip Morris, have never abandoned conglomeration in the first place and continue spreading in numerous directions.

And, indeed, the pivotal impact of mergers is to *creorder* not capitalist production but capitalist power at large. The reason is rooted in the dialectical nature of amalgamation. By constantly pushing toward, and eventually breaking through their successive social 'envelopes' – from the industry, to the sector, to the nation-state, to the world as a whole – mergers create a strong drive toward 'jurisdictional integration', to use Olson's terminology (1982). Yet this very integration pits dominant capital against new rivals under new circumstances, and so creates the need to constantly *creoder* the wider power institutions of society, including the state of capital, international relations, ideology and violence.

Although this merger-driven *creordering* of power is yet to be theorized and empirically investigated, some of its important patterns can be outlined tentatively. In the remainder of the chapter we examine several key developments that unfold as mergers enter their ultimate, global envelope.

Globalization

From the viewpoint of capital as power, globalization is the *capitalization of power on a global scale*, and its key vehicle is the *movement of capital*.[19] The notion of 'movement' here can have different meanings, so some clarification is in order before we begin.

In common parlance, reference to international capital mobility connotes a macro-statist frame of reference: capital is seen as an 'economic–productive' entity that somehow 'flows' from one state to another. But that isn't what happens in practice. By definition, capital mobility is a purely *pecuniary* process. Usually, the only thing that happens is a reshuffle of ownership claims, in which foreign capitalists acquire an asset from (or sell one to) their domestic counterparts. Occasionally, the acquisition alters the value of the transacted asset, but that change, too, is entirely pecuniary. The accountants simply adjust the value of equity or debt on the right-hand side of the balance sheet and of goodwill on the left-hand side, and that's it.

There is no cross-border flow of machines, structures, vehicles, technical know-how, or employees. These items may or may not move later on, but such movements are merely rearrangements of the left-hand side of the balance sheet; they have no bearing on the act of foreign investment per se.

The real impact of capital flows is on the underlying nature of power. When ownership crosses a border, it alters the organization and institutions of power on both sides of that border and, eventually, the significance of the border itself. In this sense, capital mobility *creorders* the very state of capital –

19 Globalization of course has numerous other dimensions, but these are secondary for our purpose here. For more on the globalization debate, see Gordon (1988), Du Boff *et al.* (1997), Sivanandan and Wood (1997), Burbach and Robinson (1999), Hirst and Thompson (1999), Radice (1999), Sutcliffe and Glyn (1999) and Mann *et al.* (2001–2).

from within and from without – and it is this fundamental transformation that we need to decipher.

Capital movements and the unholy trinity

Most analyses of capital movement concentrate on its alleged cyclicality. The common view is that, although capital flow has accelerated since the 1980s, the acceleration is part of a broader *recurring* pattern, and that the peaks of this process in fact were recorded during the late nineteenth and early twentieth centuries (Taylor 1996).

The standard approach to these ups and downs in capital mobility is the so-called 'Unholy Trinity' of international political economy. According to this framework, there is an inherent trade-off between (1) state sovereignty, (2) capital mobility and (3) international monetary stability – three conditions of which only two can coexist at any one time (Fleming 1962; Mundell 1963; Cohen 1993).[20]

Thus, during the 'liberal' Gold Standard that lasted until the First World War, limited state sovereignty allowed for both free capital mobility and international monetary stability. During the subsequent inter-war period, the emergence of state autonomy along with unfettered capital flow served to upset this monetary stability. After the Second World War, the quasi-statist system of Bretton Woods put a check on capital mobility so as to allow domestic policy autonomy without compromising monetary stability. Finally, since the 1970s, the rise of neoliberalism has, again, unleashed capital mobility, although it is still unclear which of the other two nodes of the Trinity – state sovereignty or monetary stability – will have to give.

Why has the world moved from liberalism, to instability, to statism and back to (neo)liberalism? Is this some sort of inevitable cycle, or is there an underlying historical process here that makes each 'phase' fundamentally different? The answers vary widely.[21]

Liberal interpretations emphasize the secular impact of technology that constantly pushes toward freer trade and greater capital mobility, with unfortunate setbacks created by government intervention and distortions. From this perspective, post-war statism, or 'embedded liberalism' as Ruggie (1982) later called it, was largely a historical aberration. After the war, governments took advantage of the temporary weakness of capitalism to impose all sorts

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20 The rationale is based on the external account identity between the current and capital balances. If the international monetary system were to remain stable (in terms of exchange rates), governments can retain domestic sovereignty over exports and imports only if capital movements are controlled to 'accommodate' the resulting current account imbalances. In the absence of such capital controls, governments would have to give up their policy autonomy; if they don't, the mismatch between the current and capital balances would lead to currency realignment and international monetary instability.

21 For views and reviews, see Cerny (1993), Helleiner (1994), Sobel (1994) and Cohen (1996).

of restrictions and barriers. Eventually, though, the unstoppable advance of information and communication forced them to succumb, as a result of which the rate of return rather than political whim once again governs the movement of capital.

Critics of this natural-course-of-things theory tend to reverse its emphasis. Thus, according to Helleiner (1994), the key issue is neither the expansionary tendencies of technology and markets, nor their impact on the propensity of capital to move, but rather the willingness of states (i.e. governments) to let such movements occur in the first place. From this viewpoint, state regulation is not an aberration, but rather the determining factor – and one that governments remain free to switch on and off.

One important reason for such cyclical change of heart, suggests Frieden (1988), is the shifting political economy of foreign debt. According to this view, during the Gold Standard, Britain became a 'mature creditor', and therefore was interested in liberalization so that its debtors could have enough export earnings to service their foreign liabilities. The United States reached a similar position during the 1970s, and since then it has used its hegemonic power to re-impose liberalization for much the same reason. According to Goodman and Pauly (1995), this second coming of liberalism was further facilitated by the desire of governments to retain the benefits of transnational production. The latter desire required that they also open the door to transnational financial intermediation, hence the dual rise of portfolio and foreign direct investment.

Global production or global ownership?

Plus ça change, plus c'est pareil? According to the globalization sceptics, the answer is pretty much yes. Despite the recent increase in capital mobility, they point out, most companies remain far more national than global (see for instance, Doremus *et al.* 1998; Weiss 1998; Hirst and Thompson 1999). The extent of transnational production is fairly limited: its share in global GDP rose from 5.6 per cent in 1982, to 6.8 in 1990, to 10.1 per cent in 2006. Even the world's top 100 transnational corporations are not yet 'fully' global: their 2005 'Transnationality Index' – defined as the average of the ratios of foreign to total assets, foreign to total sales, and foreign to total employment – is only 60 per cent, compared to 51 per cent in 1990.[22]

The data themselves are hard to argue with – only that they aren't really the relevant ones to use. As noted in the preamble to this section, capital flow denotes the movement not of machines or production, but of ownership. The key issue, therefore, is not the location of factories and employees, but of the capitalists, and from this latter perspective the picture looks very different.

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22 The ratios in the paragraph are computed from the United Nations Conference on Trade and Development (2000, Table I.1, p. 4 and Table III.3, p. 76; 2007, Table I.4 p. 9 and Table I.12 p. 26).

Seen from the assets side of the balance sheet, a company whose factories and offices are all located in the United States is entirely 'domestic'. But this 'all-American' production tells us nothing about the company's liabilities. If its owners float bonds on the European market, borrow money from a Kuwaiti bank, or sell their equity to a Korean capitalist, their company – although still 'domestically' located – suddenly becomes 'global'.

How extensive is the globalization of ownership as distinct from the globalization of production? According to recent research by the McKinsey Global Institute, between 1990 and 2006 the global proportion of foreign-owned assets has nearly tripled, from 9 per cent to 26 per cent. The increase was broadly based: foreign ownership of corporate bonds rose from 7 to 21 per cent, of government bonds from 11 to 31 per cent and of corporate stocks from 9 to 27 per cent (Farrell *et al.* 2008: p. 73, Exhibit 3.10).

How do these ratios compare to the situation during the late nineteenth and early twentieth centuries, a period when capital mobility was supposedly hitting a record high? Since there are no data on global assets in that earlier period, the question is impossible to answer directly. But we can examine the process indirectly, by measuring the growth of global assets relative to global GDP. This comparison is presented in Figure 15.4. The estimates, taken from

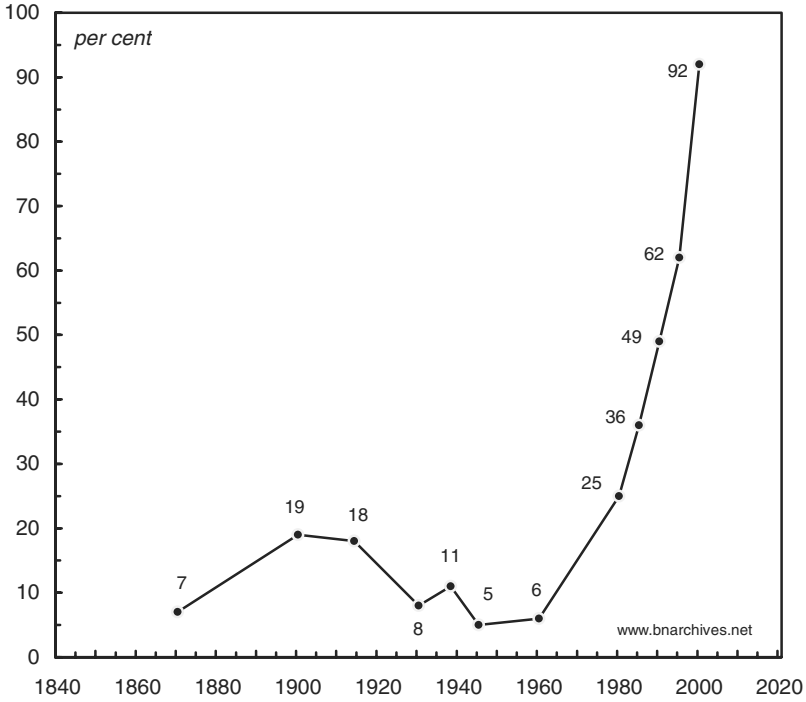

Figure 15.4 Ratio of global gross foreign assets to global GDP

* Gross foreign asset stocks consist of cash, loans, bonds and equities owned by non-residents.

Source: Obstfeld and Taylor (2004), pp. 52–53, Table 2-1.

the work of Obstfeld and Taylor (2004), show the ratio of gross foreign assets (comprising cash, loans, bonds and equities owned by non-residents) to world GDP.

Based on this approximation, the historical transnationalization of ownership seems far less cyclical that the globalization sceptics would like to believe. The chart confirms the build-up of foreign assets during the latter decades of the nineteenth century, as British imperialism was approaching its zenith; it shows the relative build-down of these assets during the first half of the twentieth century, as instability, depression, wars and capital controls hampered the movement of capital; and it demonstrates the resurgence of foreign ownership since the early 1970s, as embedded liberalism gave rise to global capitalism.

The amplitude of this long-term 'cycle', though, has increased quite a bit. During the previous phase, foreign assets peaked at less than 20 per cent of world GDP; in the current phase, which so far shows no sign of abating, their ratio to GDP has already surpassed 90 per cent.

Net or gross?

The question, then, is: How could a supposedly *cyclical* pattern of foreign capital flows generate what seems like a *secular* surge in foreign capital stocks? The answer is twofold. First, even if the movement of capital indeed ebbs and flows, over time the impact it has on the level of capital stocks tends to be cumulative (a point emphasized by Magdoff 1969). A second point, less intuitively obvious but equally important, is that the movement of capital may not be as cyclical as it seems.

Note that most analyses of capital flow concentrate on net movements – namely, on the *difference* between inflow and outflow.[23] This choice is inadequate and potentially misleading. Capitalist integration and globalization can move both ways, which means that the proper measure to use here is the gross flow – that is, the *sum* of inflow and outflow (Wallich 1984). The net and gross magnitudes are the same when capital goes only in one direction, either in or out of a country. But when the flow runs in both directions, the numbers could be very different.

The divergence of the two measures is clearly illustrated in Figure 15.5. The chart contrasts the net and gross capital flows in the G7 countries (with both series expressed as a per cent of the G7's gross fixed capital formation).[24]

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23 The main reason for this choice is convenience. Direct data on capital flow often do not exist; those that do exist are difficult to obtain; and most of those who write on the subject prefer to stay clear of empirical research in the first place. Unfortunately, the analysts have found an easy way around these difficulties. The national accounting identities make net capital flow equal to the current account deficit, by definition; and since data for the latter are readily available, most writers simply use them to approximate the former.

24 We stick to the G7 (G8 without Russia) in order to maintain sufficiently long time series.

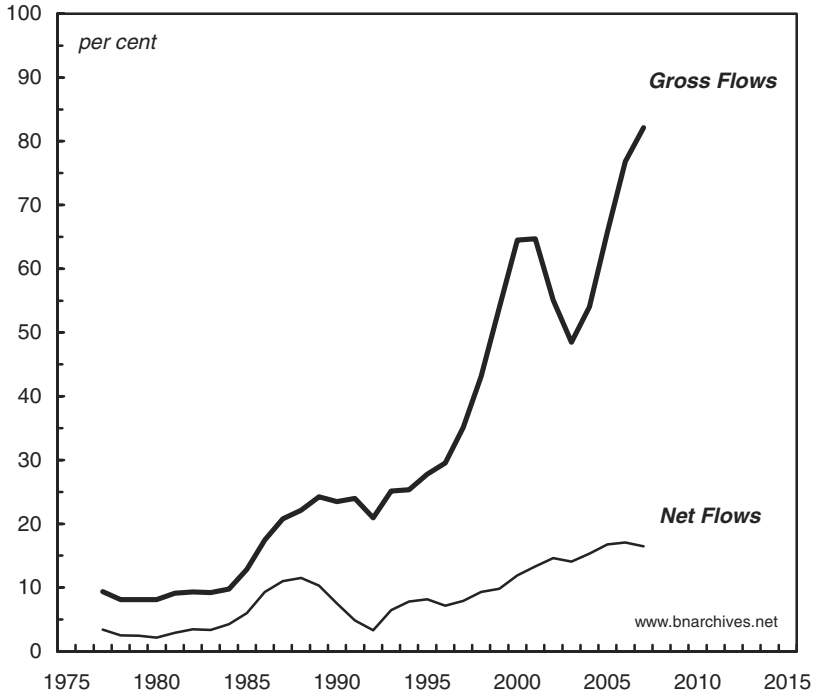

Figure 15.5 G7 cross-border private investment flows as a per cent of gross fixed capital formation

Note: Series are smoothed as 3-year moving averages. Flows comprise direct and portfolio investment. Gross flows are computed as the sum of inflows and outflows. Net flows are computed separately for each country as the difference between inflows and outflows and are then converted into absolute values and aggregated. Each series denotes the ratio of overall G7 flows to overall G7 gross fixed capital formation, both in $US.

Source: IMF's International Financial Statistics through Global Insight (series codes: LAF for the $US exchange rate; L93E&C for gross fixed capital formation); IMF's Balance of Payment Statistics through Global Insight (series codes: B4505 for direct investment abroad; B4555Z for direct investment in the reporting country; B4602 for portfolio investment abroad; B4652Z for portfolio investment in the reporting country); Global Insight International Database (series codes RX@UZ for Euro/$US exchange rate; IFIX@EURO for fixed capital formation from 1998 for EU countries).

It shows that since the 1980s, the relative increase of gross private flows was both powerful and secular, whereas that of net flows was more limited and cyclical. As a result, by 2007 the value of gross flows reached 82 per cent of green-field investment, compared to only 16 per cent per cent for net flows.[25]

Unfortunately, lack of historical data on gross movements makes it difficult to compare current developments with conditions prevailing at the turn

25 Note that the series in Figure 15.5 are based on end-of-year data and therefore fail to reflect shorter 'hot money' movements. Including these latter movements in our measure would have further widened the disparity between the gross and net flows.

of the twentieth century. Nonetheless, the facts that the share of gross investment in GDP was generally higher then than now and that two-way capital flow is a relatively recent phenomenon, together serve to suggest that the current pace of globalization, let alone its level, may well be at an all time high.

Capital flow and the creorder *of global power*

Theoretically, the common thread going through most analyses is the belief that capital flows in response to the 'primordial' forces of production and trade. According to this view, capital flows are directed by profit signals; profit signals show where capital is most needed; and capital is most needed where it is the most productive (comparatively or otherwise).

To us, this view is akin to putting the world on its head. The global movement of capital is a matter not of production and efficiency but of ownership and power. On its own, the act of foreign investment – whether portfolio or direct – consists of nothing more than the creation or alteration of legal entitlements.[26] The magnitude of such foreign entitlements – just like the magnitude of domestic entitlements – is equal to the present value of their expected future earnings. And since the level and pattern of these earnings reflect the control of business over industry, it follows that cross-border flow of capital reflects the restructuring not of global production, but of global capitalist power at large.[27]

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26 The popular perception that 'direct' investment creates new productive capacity, in contrast to 'portfolio' investment which is merely a paper transaction, is simply wrong. In fact, *both* are paper transactions whose only difference is relative size: investments worth more than 10 per cent of the target company's equity commonly are classified as direct, whereas those worth less are considered portfolio.

27 The 'delinking' of capital flows from the 'underlying' growth of production (assuming that they were previously linked) is slowly dawning even on the most religious. In a recent gathering of the world's central bankers at the Jackson Hole Retreat, the pundits sounded almost bewildered:

> Today, capital flows 'uphill' from poor to rich nations – above all the US – in contrast to the predictions of all standard economic theories. Moreover, as Raghu Rajan, chief economist at the International Monetary Fund, explained at Jackson Hole, there is no evidence of a positive relationship between net capital inflows and long-term growth in developing countries. Foreign direct investment may be a special case. But overall, the correlation is *negative*: countries that have relied less on foreign capital have grown on average faster. This is surprising, since extra capital should normally boost growth.
>
> (Guha and Briscoe 2006, emphasis added)

But then, just to make sure that bewilderment doesn't clash with faith, the experts quickly blame it all on 'distortions':

> One possible explanation, Mr Rajan said, is that developing countries may be unable to absorb foreign capital effectively because they have inadequate financial systems. . . .
>
> (Ibid.)

One of the first writers to approach international capital mobility as a facet of ownership and power was Stephen Hymer (1960). In his view, firms would prefer foreign investment over export or licensing when such ownership conferred differential power, or an 'ownership advantage' as it later came to be known. Based on this interpretation, the power of US-based foreign investors seems to have risen exponentially over the past half-century, as illustrated in Figure 15.6.

The chart presents two proxies for the globalization of US business. The first proxy, measuring the share of export in GDP, provides a rough indication of the contribution to overall profit of outgoing trade. The second, measuring the share of foreign operations in overall net corporate profit, approximates the significance of foreign as opposed to domestic investment.

Up until the 1950s, the relative contribution to profit of foreign assets was similar to that of export (assuming domestic and export sales are equally profitable, so that the ratio of export to GDP corresponds to the ratio of

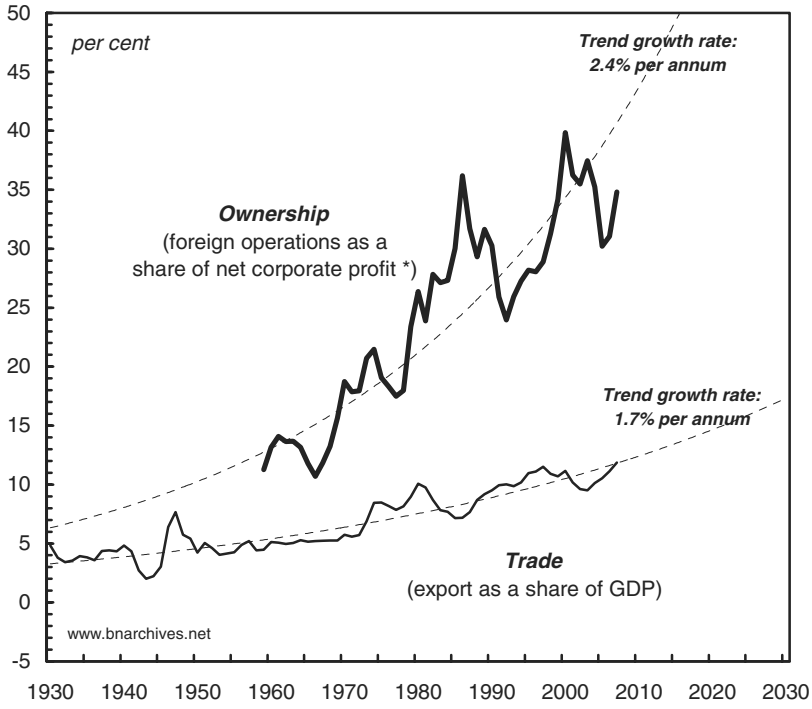

Figure 15.6 The globalization of US business: ownership vs trade

* Receipts from the rest of the world as a per cent of corporate profit after tax.

Note: Series are smoothed as 5-year moving averages.

Source: U.S. Bureau of Economic Analysis through Global Insight (series codes: GAARP till 1998 and ZBECONRWRCT from 1999 for after tax corporate profit receipts from the rest of the world; ZA for after tax corporate profit; X for export; GDP for GDP).

export profit to overall profit). But since then, the importance for profit of foreign investment has grown much faster than that of trade, reaching one third of the total in recent years. This faster growth of foreign profit may seem perplexing since, even with the recent resurgence of capital mobility, US trade flows are still roughly three times larger than capital flows. But then, unlike trade, investment tends to accumulate, and that accumulation eventually causes overseas earnings to outpace those generated by export.

This divergence serves to heighten the power underpinnings of trade liberalization. Advocates of global integration, following in the footsteps of Adam Smith and David Ricardo, tend to emphasize the central role of 'free trade'. Unhindered exchange, they argue, is *the* major force underlying greater efficiency and lower prices. And as it stands their claim may well be true. Indeed, downward price pressures are one reason why dominant capital is often half-hearted about indiscriminate deregulation, particularly when such deregulation allows competitors to undermine its differential margins. Yet despite this threat, large firms continue to support freer trade, and for a very good reason. For them, free trade is a means to something much more important, namely free investment – or more precisely, the *freedom to impose and capitalize power.*

Foreign investment and differential accumulation

Although difficult to ascertain with available data, the cumulative (albeit irregular) build-up of international investment must have contributed greatly to the differential accumulation of US dominant capital. The reason is that whereas exports augment the profits of small as well as large firms, the bulk of foreign earnings go to the largest corporations. Therefore, it is the globalization of ownership, not trade, which is the real prize. While free trade can boost as well as undermine differential accumulation, free investment tends mostly to raise it. But then, since free investment can come only on the heels of liberalized trade, the latter is worth pursuing, even at the cost of import competition and rising trade deficits.

Foreign investment, like any other investment, is always a matter of power. The nature of this power, though, has changed significantly over time. Until well into the second half of the nineteenth century, the combination of rapidly expanding capitalism and high population growth enabled profitability to rise despite the parallel increase in the number of competitors.[28] There was only a limited need for business collusion and the explicit politicization of accumulation – and, as a result, most capital flows were relatively small portfolio investments, associated mainly with green-field expansion (Folkerts-Landau, Mathieson, and Schinasi 1997, Annex VI).

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28 See for example, Veblen (1923, Ch. 4), Josephson (1934), Hobsbawm (1975, Chs 2–3), Arrighi, Barr, and Hisaeda (1999) and Figure 12.3 and related discussion in this book.

Eventually, though, excess capacity started to appear, giving rise to the progressive shift from green-field to amalgamation as described earlier in the chapter. Yet for more than half a century this shift was mostly domestic, with mergers and acquisitions first having to break through their various national 'envelopes'. It was only since the 1970s and 1980s that the process became truly global, and it was only then that the character of capital flow started to change.

The need to exert control has moved the emphasis gradually toward larger, 'direct' foreign investment, while the threat of excess capacity has pushed such investment away from green-field and toward amalgamation. At present, over 75 per cent of all foreign direct investment takes the form of cross-border mergers and acquisitions (United Nations Conference on Trade and Development 2000: 117, Figure IV.9).

From a power perspective, therefore, one could say that during the late nineteenth and early twentieth centuries capital mobility was still largely a matter of 'choice'. But by the end of the twentieth century it became more or less a 'necessity', mandated by the combination of excess capacity and the cumulative build-up of giant firms, for which profitable expansion increasingly hinges on global amalgamation and creeping stagnation (Proposition 3 in Chapter 14).[29]

In summary, there is a long but crucial link leading from the broad power imperatives of capitalism, to the logic of differential accumulation, to amalgamation, to capital mobility (Proposition 5 in Chapter 14). From this viewpoint, the purpose of globalization is not aggregate growth but differential gain; it is driven not by the quest for greater global efficiency, but by the need to control efficiency on a global scale; and finally and most importantly, it is inherent in the capitalist *creorder*. Without the globalization of ownership, dominant capital cannot break its national envelope; and if it cannot go global, its differential breadth is bound to collapse. In this sense, globalization is part of the inner logic of accumulation. It can be reversed only by altering that logic, or by moving away from it altogether.

Appendix to Chapter 15: data on mergers and acquisitions

There are no systematic historical time series for mergers and acquisitions in the United States (other countries have even less information). The mergers and acquisitions series constructed in this chapter and plotted in Figures 15.2 and 15.3 is computed on the basis of various studies. These studies often use different definitions, covering different universes of companies.

The dollar values of mergers and acquisition for the 1895–1919 period are taken from Nelson (1959, Table 14, p. 37), whereas those covering the 1920–29 period come from Eis (1969), as reported in *Historical Statistics of*

29 'Economic growth' of course is hardly an end in itself. It is only that, *in capitalism*, such growth is crucial for the livelihood, employment and personal security of most people.

the United States (U.S. Department of Commerce. Bureau of the Census 1975, Vol. 2, Table V38–40, p. 914). Both data sets cover manufacturing and mining transactions only and thus fail to reflect the parallel amalgamation drive in other sectors (Markham 1955).

Data for the 1930–66 period are from the U.S. Federal Trade Commission, reported in *Historical Statistics of the United States* (1975, Vol. 2, Table V38–40, p. 914). These data, again covering only manufacturing and mining, pertain to the number of transactions rather than their dollar value. Significantly, though, the number of mergers and acquisitions correlates closely with the value ratio of mergers and acquisitions to green-field investment during previous and subsequent periods for which both are available (the 1920s and 1960s–1980s). In our computations, we assume that there is a similar correlation during 1930–66 and use the former series (with proper re-basing) as a proxy for the latter ratio.

From 1967 onward, we again use value data which now cover all sectors. Figures for 1967–79 are from W.T. Grimm, reported in Weston (1987, Table 3.3, p. 44). For 1980–83, data are from Securities Data Corporation, comprising transactions of over $1 million only. The next batch, covering the period from 1984 to the 2003, consists of transactions of $5 million or more and is from Thompson Financial. The data for 2004–7, also from Thompson Financial, cover transactions of $10 million or more. These latter data are spliced with the previous series for consistency.

In constructing our indicator for the ratio of mergers and acquisitions to gross fixed investment, we divided, for each year, the dollar value of mergers and acquisitions by the corresponding dollar value of gross fixed private domestic investment. Until 1928, the green-field investment data pertain to total fixed investment (private and public) and are taken from the *Historical Statistics of the United States* (1975, Vol. 1, Series F105, p. 231). From 1929 onward, the data cover gross fixed private investment and are from the U.S. Bureau of Economic Analysis via Global Insight (series code: IF). For the 1930–66 period, we spliced in the number of deals, linking it with prior and latter value ratios.

16 Depth

> *Husbandman*: I think it is long of you gentlemen that this dearth is, by reason you enhance your lands to such an height, as men that live thereon must needs sell dear . . . or else they were not able to make the rent again.
>
> *Knight*: And I say it is long of you husbandmen, that we are forced to raise our rents, by reason we must buy all things so dear that we have of you . . . which now will cost me double the money. . . .
>
> —From a sixteenth-century text, *A Discourse of the Common Weal of this Realm of England*
> Quoted in Leo Huberman's *Man's Worldly Goods*

The farmers and knights of the sixteenth century could be forgiven for failing to understand the universal 'laws' of inflation. They didn't realize that their own local problems in fact were part of a much bigger global process. They were oblivious to the influx of precious metals and ignorant of the growing importance of credit and capitalization. They had no comparative data to look at and no in-house economists to 'interpret' them. In fact, as far as they were concerned, inflation didn't even exist. There were only increases in prices. The term 'inflation' came into common use only three centuries later.

Nonetheless, these illiterate sixteenth-century folks were smart enough to see what many present-day economists wish we forgot – namely, that inflation is a *conflictual process of redistribution*. The prices that the farmers charged were costs for the knights, while those that the knights set were costs for the farmers. Both hiked their prices, but never at the same rate. And this differential meant that those who raised their prices faster redistributed income from those who did so more slowly.

But the inflationary struggle isn't simply a tug-of-war between 'independent' individuals or groups in society.[1] It is an entire *regime*, an encompassing political process of transforming capitalist power. Note that inflation per se is much older than capitalism. As we have seen, prices already existed in the early civilizations and were leveraged and manipulated well before the arrival of capital. But capitalism is the first mode of power to be *overwhelmingly*

1 For a typical tug-of-war approach to inflation, see Hirschman (1985).

denominated in prices. And hence it was only with the rise of accumulation that inflation could emerge as a key aspect of the social *creorder*; and it was only in the twentieth century, with rise of large organized units, that inflation became a defining feature of the state of capital. The purpose of this chapter is to examine some of the ways in which prices and inflation assume this role through the process of differential accumulation.[2]

Depth: internal and external

One of the more flexible features of the capitalist mega-machine is the ability to increase power indirectly as well as directly (Equation 4 in Chapter 14). Capitalist power, exerted over society as a whole, is coded in the level and pattern of differential earnings. As we have seen, dominant capital can *broaden* this power directly by making its organization grow faster than the average. But there is also the other, indirect route of *deepening* the elemental power of its organization. Whereas breadth hinges on the number of employees in the corporate organization, depth depends on earnings per employee – a measure of the corporation's ability to leverage its organizational power over society as a whole.

Of these two methods, the former is the more effective. Operating primarily through mergers and acquisitions, it can generate enduring large-scale increases in capitalized power. Yet amalgamation isn't always feasible; and when breadth occasionally recedes, dominant capital has to resort to depth – or risk differential *de*cumulation. It is through this latter process that price changes and inflation come into the accumulation picture.[3]

Let's look at the depth process more closely. Earnings per employee can be decomposed into three elements associated with the number of units produced/sold by the corporation (indicated by the term 'units').[4] These include (1) unit price, (2) unit cost and (3) units per employee:

$$1.\quad earnings\ per\ employee = \frac{earnings}{employment} = \frac{earnings}{units} \times \frac{units}{employment}$$

$$= unit\ earnings \times units\ per\ employee$$

$$= (unit\ price - unit\ cost) \times units\ per\ employee$$

2 For a fuller theoretical and empirical analysis of inflation and stagflation, including critiques of existing approaches, see Nitzan (1992; 2001), Bichler and Nitzan (2001: Ch. 5) and Nitzan and Bichler (2000; 2002: Ch. 4).

3 This and the next chapter illustrate our empirical arguments with available statistics of price and quantity aggregates. By using conventional data we keep the empirical critique at the same level as the theories and studies we challenge. For an alternative conceptualization that attempts to bypass the 'quality' trap of aggregation and devise alternative measures, see Nitzan (1992: Ch. 7).

4 For simplicity, our exposition here assumes that all output is sold.

According to this equation, dominant capital can increase its differential depth by some combination of the following: (1) raising the number of units sold per employee faster than the average; (2) lowering unit cost faster than the average; (3) increasing unit price faster than the average.

Most political economists emphasize the first two methods and deemphasize if not reject the third. In the race for accumulation, they argue, the ultimate winners are those whose inputs are the most efficient and least expensive. That's the ABC of economic survival. It is of course true, the argument continues, that 'monopolistic' firms sometimes can increase their profits by charging higher prices, but this practice is secondary and ephemeral. According to received convention, excessively high prices send buyers in search of cheaper substitutes; the excess profits generated by high prices attract competitors; and finally, there is always Schumpeter's creative destruction and the onslaught of innovations that even the strongest monopolist cannot withstand.

All of this seems common sense – but, then, what looks sensible from the viewpoint of conventional political economy often gets inverted by differential accumulation. In Chapter 15 we saw that, contrary to common belief, dominant capital benefits much more from mergers and acquisitions than from green-field growth. And in the present chapter we'll see a similar inversion with respect to prices: it turns out that raising prices is far more important for dominant capital than cutting costs.

Cost cutting

To clarify, it's not that the economists are wrong about cost cutting. The conflictual dynamics of capitalism, persistent even in the presence of oligopoly and monopoly, imply a constant pressure to raise the 'productivity' of the inputs and lower their prices.[5] This dual pressure, identified by the classical economists and reiterated by all subsequent schools, critical as well as conservative, seems beyond dispute.

And yet, from the viewpoint of differential accumulation, cutting cost is much like 'running on empty'. It helps dominant capital meet the average, not beat it. Admittedly, this latter claim isn't easy to test. The problem is that conventional data on productivity and input prices are rarely if ever broken down by firm size, so it is impossible to know whether and to what extent larger firms beat the average on either count. But the claim can be assessed indirectly, and the roundabout evidence seems consistent with the 'running-on-empty' thesis.

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5 We use the concepts of 'productivity' and 'inputs' here from the what-you-see-is-what-you-get perspective of capitalist executives; the theoretical impossibility of defining these concepts rarely hinders their practical computation.

'Productivity' gains

Begin with 'productivity'. Analytically, the number of units sold per employee (denoted by 'units per employee') can be written as the ratio between sales per employee and unit price:

$$2.\quad \textit{units per employee} = \frac{\textit{units}}{\textit{employees}} = \frac{\textit{sales}/\textit{employees}}{\textit{sales}/\textit{units}} = \frac{\textit{sales per employee}}{\textit{unit price}}$$

Using this equation, we can approximate the performance of dominant capital relative to the corporate sector as a whole.

Our proxy for dominant capital here is the Fortune 500 group of companies (an alternative to the Compustat Top 100 from Chapter 14). Over the past half-century, sales per employee in the Fortune 500 group and in the corporate universe have grown more or less in tandem. The ratio between the Fortune 500 and the corporate universe was 1.4 in 1954; it fell gradually to 1.1 by 1969; and from there it rose steadily, reaching 1.7 by 1993 (with the latter increase probably partly reflecting the growing significance of outsourcing by large firms).[6] The overall change from 1.4 in 1954 to 1.7 in 1993 represents a 20 per cent increase – miniscule when compared to the nineteenfold increase in differential profit per firm recorded over the same period (Figure 14.2). It also seems reasonable to assume that the prices charged by larger firms haven't fallen relative to those of smaller ones (and have possibly increased) – particularly since, as we show in the next section, inflation has tended to work in their favour.[7]

Now relate these two long-term developments to Equation (2). Since differential sales per employee rose only marginally while differential prices haven't fallen and have probably risen, it follows that 'productivity' gains by dominant capital were more or less the same as the social average.

The difficulty of securing differential 'productivity' gains shouldn't surprise us. Even if we ignore the holographic nature of technology and focus only on the presumable 'in-house' development of production techniques, there is still no reason to expect large firms to be better in such development than small ones.

For instance, many of the current advances in bio-technology, information and communication are reported by smaller companies, some with only a handful of employees. Dominant capital is often unable to match this flurry of innovation. In many cases, large firms find it cheaper to let smaller companies incur the R&D cost and then buy the more promising startups – sometimes just to keep their technology from spreading too quickly.[8]

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6 *Fortune* stopped publishing employment data after 1993.

7 Figures in this paragraph are computed on the basis of data from *Fortune*, the U.S. Internal Revenue Service and the U.S. Bureau of Labor Statistics.

8 'Big American companies', writes *The Economist*, 'fear that innovation is the secret of success – and that they cannot innovate'. Indeed, their 'terror' is that 'innovation seems to work best

Moreover, and probably more importantly, production techniques, regardless of who develops them, are notoriously difficult to monopolize. Unlike final commodities that can often be protected through patents, copyrights and other exclusionary threats, improvements in the social organization of production tend to proliferate easily, and this rapid spread quickly dilutes the initial advantage of whoever implemented them first.

Input prices

The other route to cutting costs is to lower the prices of the inputs. Yet, here too it is very difficult to translate absolute reductions into differential reductions. For a start, even the largest firms have only limited control over their input prices, particularly with the proliferation of 'outsourcing' and long 'production chains'. The challenge to differential accumulation of universal input prices was summarized neatly by the former chairman of Intel, Andrew Grove:

> How do you build a company when your buyers are infinitely knowledgeable and where your suppliers maintain a level playing field for your competitors? What remains your competitive differentiator or your source of value or whatever academic cliché you want to wrap around it?
> (Byrne 2000)

Furthermore, even when large firms do control input prices, the benefits quickly tend to spill over to other firms. Thus, a wage freeze by dominant capital groups in the United States would empower smaller firms to follow suit; political pressure by automobile companies on the Indian government to subsidize oil would benefit all energy users; a British importer winning a tariff reduction gives competing importers a free ride, etc.

All in all, then, cost cutting is a poor differential tactic. Dominant capital has to pursue it with much zeal, lest it falls behind; but it can rarely use it to get ahead.

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outside of them', a result of which '[m]uch of today's merger boom is driven by a desperate search for new ideas', with trading in intangible assets reaching $100 billion in 1998, up from $15 billion in 1990 (Anonymous 1999). 'Nobody holds out for organic growth any more', declares Sir Richard Sykes, chairman of Glaxo SmithKline, which in 1999 controlled 7.3 per cent of the world market for pharmaceuticals. According to a 2000 *Financial Times* survey in which he is cited, the reason has little to do with 'efficiency gains'. Indeed, 'Those wary of mergers', reports the survey, 'argue there is no evidence of scale contributing to greater efficiency. Ed Scolnick, chief scientist at Merck, found absolutely no correlation between the size and productivity of his company's research laboratories. The relative success of small biotechnology companies suggests that scale in research may even be a disadvantage'. Of course, this is hardly a reason not to merge. As Jim Niedel of Glaxo points out in the same article, 'doubling up' (via merger) allows companies to screen twice as many compounds, not to mention the resulting increase in 'salespower' (Pilling 2000). In our terminology, it contributes to both internal breadth and external depth.

Stagflation

The road to differential depth is not to cut cost but to inflate prices. As we shall see, inflation often redistributes income from wages to profits and from small to large firms; it elevates the differential earnings per employee of the leading corporations; and it deepens the 'elemental power' of dominant capital.

But the process is full of puzzles. First, there is the general theoretical conundrum. Conventional theory associates inflation with growth, yet reality usually brings inflation together with stagnation. Since this combination is not supposed to happen, economists decided to contain the damage by giving it a special name. They called it 'stagflation' – an anomalous mixture of *stag*nation and in*flation* that shouldn't be confused with 'normal', growth-driven inflation (growthflation?).[9]

And then there is our own bizarre proposition that stagflation, whether normal or anomalous, fuels the differential accumulation of dominant capital. Most readers will probably find this suggestion somewhat difficult to swallow. How could firms gain from a combined crisis of rising prices, stagnating production and falling employment? Why should this crisis benefit larger firms relative to smaller ones? And if stagflation is so beneficial to the most powerful groups in society, why don't we have it all the time? Clearly, there are many questions to sort out here, so it is worthwhile to backtrack a bit and provide some context.

The historical backdrop

To start with, there seems to be a general neglect, including among critical political economists, of the historical significance of inflation for capitalist development. On the face of it, this neglect is rather surprising. Inflation – commonly defined as a general rise in the price of commodities – is hardly new. According to David Hackett Fischer (1996), since the thirteenth century there have been no less than four major inflationary waves, or 'price revolutions' as he calls them. Figure 16.1 illustrates the pattern of these waves in the UK, a country whose price indices go back the farthest (note the log scale).[10]

The first wave occurred during the thirteenth century; the second during the sixteenth century; the third in the latter part of the eighteenth century; and the most recent began in the early twentieth century and is still going. As Fischer argues, each of these price revolutions was accompanied, particularly toward the latter part of the wave, by a deepening socio-economic crisis. In

9 The term 'stagflation' was reputedly coined in the 1960s by British parliamentarian Ian Macleod and later popularized by Paul Samuelson (1974).

10 The patterns of US consumer prices (since the early nineteenth century) and of US wholesale prices (since the mid-eighteenth century) are remarkably similar to the UK ones shown in Figure 16.1.

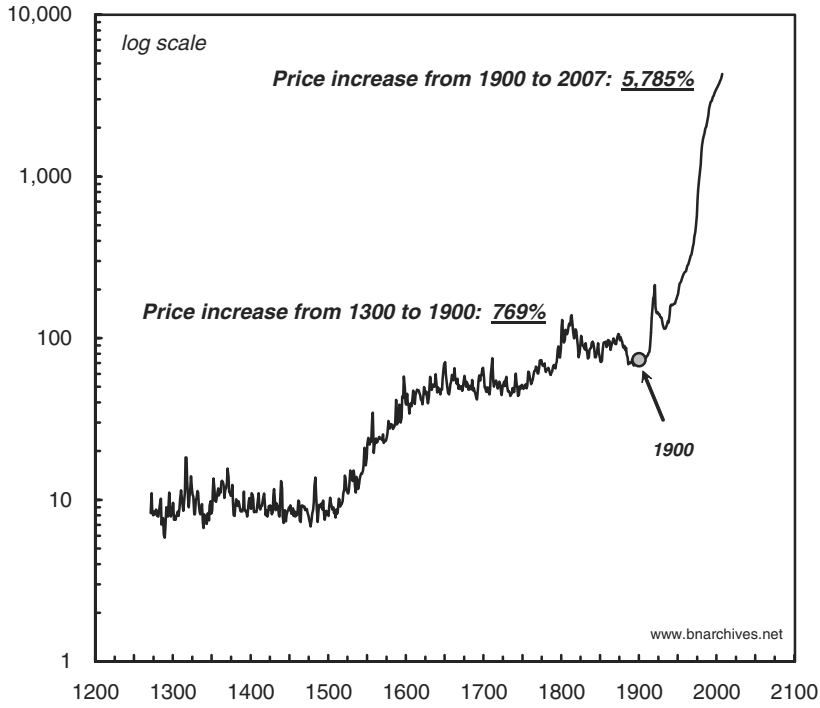

Figure 16.1 Consumer prices in the UK, 1271–2007

Source: Till 1948, data are from Global Financial Data (series code: CPGBRM); from 1949 onward, data are from International Financial Statistics through Global Insight (series code: L64@C112).

other words, the 'anomaly' of inflation in the midst of stagnation is not a twentieth-century novelty. It's been with us for half a millennium, if not more.

Now, to be fair to the classical political economists, the specific backdrop against which they were writing was largely one of price stability and even deflation – not inflation. As shown in Figure 16.1, UK consumer prices had hardly changed between 1600 and 1750. In the second half of the eighteenth century they rose relatively quickly, but then fell again throughout the nineteenth century. Between 1800 and 1900 – a formative period of political economy – consumer prices in Great Britain and wholesale prices in the United States both dropped by more than one third.[11] In this deflationary context, it was only natural to concentrate on production and the coercive discipline of 'market forces' and to ignore inflation.

However, the historical backdrop changed dramatically during the twentieth century. First, inflation has risen to unprecedented levels. As Figure 16.1

11 Data for the United States are from Global Financial Data (series code: WPUSAM for the wholesale price index).

shows, UK prices rose by nearly 6,000 per cent between 1900 and 2007, compared with less than 800 per cent in the previous six centuries combined.[12] Second, there was a clear change in pattern. Whereas during pervious waves prices oscillated around their uptrend, in the twentieth century – with the notable exception of the 1930s – they moved only up.[13]

The classical political economists, writing in a different era, perhaps could be excused for not paying too much attention to inflation. But having lived through the experience of the twentieth century, contemporary observers cannot ask for similar leniency.

Neutrality?

Of course, modern political economists don't deny that inflation exists, and some even agree that it may have short-term consequences. But in the opinion of most, all of this is much ado about nothing. In the long run, inflation has little or no effect. It is 'neutral'.

And why this insistence on 'neutrality'? The reason goes back to David Hume's 'classical dichotomy'. As we have seen earlier in the book, political economists follow this dichotomy to separate the 'real' and 'nominal' spheres of economic life. Of these two, the 'real' sphere of production, consumption and distribution is considered primary; the 'nominal' sphere of money and absolute prices is thought of mostly as a lubricant, a mechanism that merely facilitates the movement of the 'real economy'. And since money prices are 'nominal' and therefore do not impinge on the 'real', their overall inflation (or deflation) must be 'neutral', by definition.[14]

Aggregates

The belief that inflation is 'neutral' is greatly facilitated by the way economists define it. There are two common definitions: (1) inflation as a

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12 The US pattern is almost identical, although the magnitudes are smaller: between 1900 and 2007, consumer prices in the land of unlimited opportunities rose by only 2,700 per cent (computed from Global Financial Data [series code CPUSAM] and International Financial Statistics through Global Insight [series code: IMF:L64@C111]).

13 The story of the 1930s is more complicated than the aggregate data suggest. Recall from Chapter 12 that most of the price drop during the period happened in competitive industries. In the more concentrated industries prices remained relatively stable, and in some sectors they even rose.

14 This view is pervasive. 'There cannot, in short, be intrinsically a more insignificant thing, in the economy of society, than money', tells us John Stuart Mill (1848: Book 3, Ch. 7). Arthur Pigou wrote a whole book to debate *The Veil of Money* (1949), and Franco Modigliani informs us that 'Money is "neutral", a "veil" with no consequences for real economic magnitudes' (Papademos and Modigliani 1990: 405). And since, according to Milton Friedman (1968: 98), 'inflation is always and everywhere a monetary phenomenon', it follows that an overall increase in money prices, however annoying, is neutral in the grander scheme of things (on the origins of the terms 'veil of money' and 'neutrality of money', see Patinkin and Steiger 1989).

continuous increase in the *average* price level; and (2) inflation as an ongoing increase in 'liquidity'; that is, an increase in the *total* amount of money relative to the *total* volume of commodities.

These two definitions are often seen as equivalent: if we derive the average price level P as the ratio between the total amount of money M and the overall 'quantity' of commodities Q (ignoring the velocity of circulation), it is obvious that in order for the average price P to rise (or fall), the liquidity ratio M/Q has to rise (or fall) at the same rate, and vice versa.[15] In this strict sense, Milton Friedman is correct: inflation indeed is 'always and everywhere a monetary phenomenon', by definition. But inflation is never *only* a monetary phenomenon.

Disaggregates

The important thing to note here is the aggregate perspective: the conventional definition focuses wholly and only on averages and totals. This fact is crucial, since to define inflation in this way is to miss the point altogether.

Inflation certainly involves a rise in the average price of commodities; but that is like saying that the average outcome of a game between two basketball teams is always a draw: one team's win is another's loss. Although mathematically correct, the statement is irrelevant to the reality of basketball games. If these games always ended up in a draw, players would soon be looking for another game – one that they could actually win. Similarly with inflation. If all prices rose at the same average rate, inflation definitely would be 'neutral', as mainstream economists say. But it would also serve no purpose whatsoever and hence cease to exist.

The crux of inflation is not that prices rise in general, but that they rise differentially. Inflation is never a uniform process. Although most prices tend to rise during inflation, they never rise at the same rate. There is always a spread, with some prices rising faster and others more slowly. From this viewpoint, the engine of inflation is a *redistributional struggle fought through rising prices*. The overall level of inflation is merely the surface consequence of that struggle.

So in the end, Milton Friedman is right – but only in part. Inflation is always and everywhere a monetary phenomenon; but it is also always and everywhere a *redistributional* phenomenon.[16]

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15 Note that the equivalence of the two definitions breaks down once we admit that commodities cannot be aggregated into an overall 'quantity' (Chapter 8). However, since economists are generally indifferent to this impossibility, we don't press it in this chapter.

16 The following is a technical note for those interested in the fine print. Mainstream economists would readily admit that in reality prices do not all change at the same rate, and that relative price variations may even be positively correlated with the rate of inflation (see for instance Parks 1978). But these relative variations, they would add, neither cause inflation nor bear on its consequences.

First, in a competitive market relative price variations reflect changes in consumer preferences (marginal utility) and technology (marginal productivity), and in that sense

Redistribution

The difference between the two views is decisive. For those who see inflation as an aggregate 'nominal' process of 'too-much-money-chasing-too-few-commodities', indeed there is little reason to look any further into the so-called 'real' world of distribution. The only relevant questions are, first, how much money is created and, second, how increased liquidity is 'transmitted' to higher prices.

But if inflation is merely the aggregate appearance of an underlying redistributional conflict, the way to understand it is to *begin* from that very struggle. From this perspective, there are two important questions: (1) who are the winners and losers in the struggle; and (2) what is the broader character of that struggle? We deal with each question in turn.

Winners and losers

Inflation redistributes income in many different ways, of which we highlight two: redistribution between workers and capitalists, and redistribution between small and large firms.[17]

Workers and capitalists

Figure 16.2 contrasts the redistribution between workers and capitalists with the rate of wholesale price inflation in the United States over the past half-century (the insert in the top-left corner shows the period since 1985 and will be examined later). The distribution of income denotes the ratio between the

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have little to do with overall inflation. Second, 'disequilibrium' prices – namely, those that do not reflect the underlying logic of utility and productivity – may exist, but only temporarily. Soon enough, the market would force them back to their 'proper' equilibrium levels. And finally, during inflation deviations from equilibrium prices arise mostly from misguided expectations and therefore are never systematic in their pattern. These deviations could make some 'agents' richer and others poorer, but only by fluke. Disequilibrium prices could also arise from 'government intervention' and 'monopoly practices' (mainly by labour unions), but the redistributional effect is nullified once agents become aware of these 'imperfections' and 'discount' them into their demand and supply. Moreover, regardless of their redistributional impact, these 'imperfections' cannot translate into inflation unless validated by increases in overall liquidity.

Unfortunately, this line of defence is persuasive only to those who erect it. First, marginal utility and productivity are never observable, so there is no way to know the 'equilibrium' price that equates them. Second, equilibrium prices, as their name suggests, hold only in equilibrium. But since we never know whether we are in equilibrium or disequilibrium, we never know which prices are 'out of line'. Finally, it is unclear why we should *assume* that inflation does not systematically redistribute income. To argue that market forces prevent such systematic redistribution may be a meaningful explanation for an observed outcome. But shouldn't we first establish that this is indeed the outcome?

17 Inflation is also related to the distribution of assets, a topic to which we return later in the chapter.

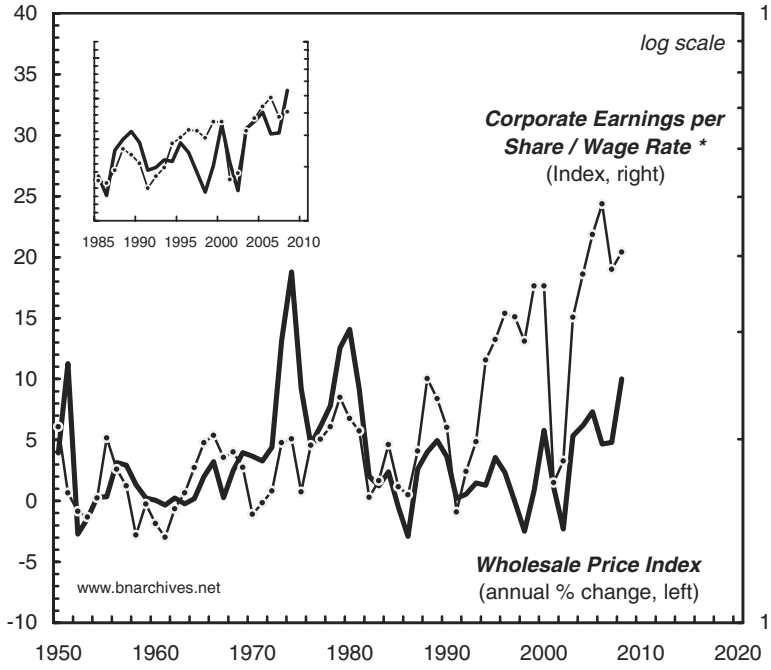

Figure 16.2 US inflation and capital–labour redistribution

* Corporate earnings per share are for the S&P 500. The wage rate is the average hourly earnings in the goods producing private sector till 1963 and in the private sector afterwards.

Source: Standard & Poor's through Global Insight (series code: EARN500NS for S&P 500 earnings per share); U.S. Department of Commerce and U.S. Bureau of Labor Statistics through Global Insight (series codes: AHPGP and AHPEAP for the wage rate; WPINS for the wholesale price index).

earnings per share of the Standard & Poor's 500 (S&P 500) and the average hourly wage in the private sector. The specific focus on earnings per share and the wage rate is intended to emphasize the income of *individual* owners – the owner of capital and the owner of labour power, respectively.

Now, if mainstream economics is right and inflation is 'neutral', its ups and downs shouldn't correlate with the distribution of income between workers and capitalists. The wheel of fortune would oscillate between the two groups as they alter their prices and wages at different rates. But since these are relative price changes, there is no reason for them to be *systematically* related to the overall nominal rate of inflation.

Unfortunately, that is *not* what we see in the chart. Instead of a random pattern, the data show the two series to be *tightly and persistently* correlated. When inflation accelerates, income is redistributed in favour of capitalists; and when inflation decelerates, the process inverts to benefit workers at the expense of capitalists. Obviously, this isn't exactly the evidence neutrality buffs would marshal to prove their point.

Now, at first sight it seems that the correlation has loosened a bit in recent years. But this is an optical illusion. Notice that the fluctuations in the income ratio have trended upwards, particularly since the late 1980s. The main reason is that, unlike workers, the S&P 500 have gone global, drawing an increasing proportion of their profits from overseas operations (as illustrated in Figure 15.6). This global diversification caused the *levels* of the two series to diverge.[18]

Remarkably, though, even in this period of heightened capital flows and soaring foreign earnings, the *fluctuations* of distribution and inflation continue to move in tandem. The insert in the top-left corner of Figure 16.2 recalibrates the left-hand axis, showing that the correlation remains as positive and tight as before.[19]

Small and large firms

The second redistribution through inflation is between small and large firms. Given our focus on external depth, the interesting question for us concerns the earnings-per-employee ratio: can dominant capital leverage inflation in order to increase its own earnings per employee faster than the average?

The neutrality theory of inflation would say no. Relative 'pricing power' – assuming such power exists – is a 'real' variable. This relative power may rise or fall, but there is no reason for it to change with 'nominal' inflation, and even less reason for the change to be related to firm size. And yet, here, too, reality disrespects the theory. It turns out that US inflation has systematically and persistently redistributed earnings from small to large firms.

In this illustration we use the Fortune 500 group of companies as our proxy for dominant capital and focus specifically on net profit.[20] Differential profit per employee is defined as the ratio between net profit per employee in the Fortune 500 group and in the business sector, respectively. However, as we already mentioned, *Fortune* stopped publishing the number of employees after 1993, so we end up with only a partial series. Fortunately, there is a close substitute: the differential markup. This indicator measures the ratio between the net profit share of sales in the Fortune 500 group and in the business sector, respectively. Over the period between 1950 and 1993, the annual oscillations of these two differential indicators looked like carbon copies of one another, with a correlation coefficient of 0.86. Assuming that this correlation

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18 Notice that the peaks of the income ratio in Figure 16.2 coincide with the peaks in the foreign-to-total profit ratio in Figure 15.6.

19 For a similarly tight correlation using monthly rather than annual data since 1999, see Nitzan and Bichler (2006a: p. 22, Figure 4). In principle, the analysis could benefit from matching the international sources of profits with the corresponding national rates of inflation. However, given the convergence of global inflation rates since the 1990s, the insight added by this exercise is likely to be limited.

20 A more complete analysis of capitalist income would consider corporate interest payments as well as net profit.

continued after 1993 makes the differential markup a nearly perfect proxy of differential profit per employee.[21]

Figure 16.3 contrasts the differential markup of the Fortune 500 with the annual rate of wholesale price inflation. The figure demonstrates the greater

Figure 16.3 US inflation and differential accumulation

* The markup is the per cent of net profit in sales. The Fortune 500 markup is the per cent of after tax profit in sales revenues. The business sector markup is computed by dividing total corporate profit after tax with IVA and CCA (from the national income accounts) by total business receipts (from the IRS). The Differential Markup is given by dividing the Fortune 500 markup by the business sector markup.

Note: Until 1993, the Fortune 500 list included only industrial corporations (firms deriving at least half their sales revenues from manufacturing or mining). From 1994 onward, the list includes all corporations. For 1992–3, data for Fortune 500 companies are reported without SFAS 106 special charges.

Source: U.S. Department of Commerce through Global Insight (series codes: ZAECON for total corporate profit after tax with IVA and CCA; WPINS for the wholesale price index); U.S. Internal Revenue Service; *Fortune*.

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21 The reason for the tight match is simple to explain. The markup is given by the following expression:

$$markup = \frac{profit}{sales} = \frac{profit\ per\ employee}{sales\ per\ employee}$$

As noted earlier in the chapter, differential sales per employee have changed very gradually and only by a little (increasing by 20 per cent over the period 1950–93). This relative stability causes fluctuations in the differential markup to be more or less fully expressed as fluctuations in differential profit per employee.

'elemental power' of dominant capital. Over the past half-century, the differential markup averaged 1.6, while differential profit per employee (which is not shown here) averaged 2. These numbers mean that the largest firms marked up their sales by 60 per cent more than the business average and that they earned twice as much profit per employee.

For our purpose, though, the crucial point lies in the dynamics. Over time, the relative profit power of dominant capital tended to fluctuate; and as the data clearly show, these fluctuations have been *positively and tightly correlated* with the rate of inflation: dominant capital tended to beat the average when inflation rose and trail it when inflation fell.[22]

Further analysis in Nitzan (1992, pp. 418–22, Figures 9.15a–9.15h) demonstrates that the link between inflation and differential depth is positively related to firm size. The analysis disaggregates US-based corporations into eight groups ranked by assets size, showing that the larger the firm, the greater and more systematic its differential gains from inflation.

This systematic correlation is all the more remarkable given the prevalent practice of markup pricing discussed in Chapter 12. Much of the literature about this practice is concerned with the way firms 'respond' to and 'transmit' cost signals.[23] Now, if firms merely responded to and passed on cost increases, their differential markup position would have remained the same and there would be no redistribution. Figure 16.3, though, shows that redistribution is incessant, so there must be more to markup pricing than passive reaction.

At the very least, some firms – most notably the largest – must be more 'responsive' than others; their more agile reaction, particularly during inflation, helps them beat the average and redistribute income in their favour. But the more plausible explanation is that these firms do not simply react passively; they *take the initiative*. They actively raise their prices, markup and profit per employee faster than the average, and as the ensuing redistibutional struggle unfolds inflation is ratcheted higher.

Patterns

All in all, then, it is clear that US inflation hasn't been 'neutral' in the least. On the contrary, it has been associated with a systematic redistribution of income from workers to firms and from small firms to large firms. That in itself is already a good enough reason to doubt conventional inflation theory. But what is really remarkable here is that the *direction* of these two correlations has remained the same for half a century or more.

This point can hardly be overstated. Redistribution is a matter of power, and power can shift over time. So even if we accept that 'inflation is always and everywhere a redistributional phenomenon', still there is no inherent

22 For evidence and analysis of the same process in Israel and South Africa, see Nitzan and Bichler (2000; 2001).

23 For a critical discussion of markup theories of inflation, see Nitzan (1992: Ch. 4).

reason why it should *almost always* work in favour of capital in general and dominant capital in particular.

For instance, in Israel, as in the United States, workers tended to lose from inflation and large firms tended to gain at the expense of smaller ones (Nitzan and Bichler 2002: Ch. 4). But in Germany and France, two countries where labour is relatively strong, the impact of inflation on labour/capital redistribution has been far less clear (the highly aggregated nature of OECD data makes it difficult to draw conclusions regarding the performance of large versus small firms).

In principle, then, the link between inflation and redistribution has no preset pattern. Inflation itself is a tricky process; its consequences depend on the relative power of the leading firms, capital in general and labour groups, among others; this relative power can change over time and so can the distributional outcomes. In this open-ended context, the fact that the US experience has been so systematically one-sided is highly significant.

Thus, put together, the evidence presented here means that US inflation has become a very potent and fairly 'reliable' engine of differential accumulation. With a long history to learn from, companies know that inflation helps them raise their profit faster than it helps workers raise their wages; they know that inflation helps them more if they are large than if they are small; and they know that the process has certain regularities on which they can rely.

Accumulating through crisis

Business as usual

These considerations serve to suggest why inflation has become a permanent feature of modern-day capitalism. Recall from Figure 16.1 that the turn of the twentieth century marked the birth of a new type of inflation: relentless and rapid. And recall further that it was exactly at that point that dominant capital emerged as a key element of the capitalist *creorder*.

This dual rise of modern inflation and dominant capital is no coincidence. In Chapter 12 we suggested that accumulation requires sabotage, and that 'business as usual' for large corporations comes with a certain measure of stagnation (Figures 12.1 and 12.2). But this turns out to be only half the story. The other half is inflation. As we have seen, dominant capital benefits from inflation – relative to workers and relative to smaller firms. And, therefore, it shouldn't surprise us that just as stagnation has become a fixture of the modern capitalist landscape, so has inflation. Putting the two processes together, we can redefine 'business as a usual' as a *combination* of stagnation and inflation, or stagflation.

The imperative of crisis

So in the end, inflation in the midst of stagnation is not an anomaly. If anything, it is the general rule. Modern capitalism is built on strategic sabotage

and continued dissonance. In order to earn a profit and accumulate capital, business needs to restrict industry and limit its resonating energies. And when profit is to be increased and accumulation hastened, the sabotage often has to intensify and the dissonance deepen. That is how inflation redistributes income, and that is why the process commonly appears as a stagflationary crisis.

Naturally, most economists would reject these claims outright. Inflation, they would counter, is a monetary phenomenon and therefore has no lasting impact on the 'real' world. As a concession, they would readily agree that inflation can be *triggered* by 'real' variables – but certainly not by stagnation. Indeed, according to the macroeconomic canons, the most common catalyst for inflation (aside from the proverbial printing press) is 'excessive' economic growth.

This conviction, however, is based on a cyclical perception of supply constraints, which, valid or not, is meaningful only in the short term. Over the longer haul, capacity can be increased as needed, so 'material' bottlenecks are largely irrelevant. In fact, the most common 'curse' of rapid growth is the even faster expansion of green-field investment and the inevitable 'glut' that follows.[24]

In the long run the key to inflation is power. Since growth tends to remove its own 'natural' bottlenecks, these have to be *actively* created and instituted by the key players. Regardless of their particular form, the purpose of all such instituted restrictions is to keep overall capacity from growing too fast. Note the emphasis here on *overall* capacity: dominant capital may be able to keep its own production stable or even growing, but unless it manages to cap overall growth, coordination is bound to disintegrate into a price war, leading to disinflation or even outright deflation.

The upshot is simple: over the longer haul we should expect conventional measures of inflation and growth to be not positively, bu *inversely* related. Long-term growth, far from stoking the inflation fire, works to cool it off by undermining the ability to coordinate and exercise organized power. Inflation, on the other hand, requires slack and therefore tends to appear as stagflation.

Varieties of stagflation

Before testing this proposition, however, a final clarification is necessary. The term 'stagflation' has several interpretations that are not equally useful. The weak version, as per Samuelson (1974), views stagflation as inflation combined with unemployment and under-capacity utilization. The moderate version, found for instance in Baumol, Blinder and Scarth (1986), defines it as

24 To illustrate, think of East Asia during the 1990s, where annual growth rates of nearly 10 per cent were associated with *falling* export prices. Was there anything mysterious about this combination of growth and deflation? Not really. Despite the rapid growth (or rather because of that growth), the investment-to-GDP ratio kept rising, while East-Asian companies kept undercutting each other in a hyper-competitive trench war. No wonder their prices kept falling (see Nitzan 1997: p. 12, Chart 4).

inflation combined with slow growth or recession. Finally, the strong version, adopted for example by Parkin and Bade (1986), limits stagflation to instances where inflation coincides with falling output.

For our purpose here, the weak version is not sufficiently refined. Twentieth-century capitalism was characterized by some measure of unemployment and unused capacity throughout, so its inflation was always stagflationary according to this definition. This characterization, although technically correct, doesn't allow us to gauge the precise nature and intensity of the process. The strong version is also not very helpful, since falling overall output is relatively rare. The most useful of the three is the moderate version, particularly when understood as a relationship. If growth is positively related to inflation, stagflation is clearly an anomaly. By contrast, if the relationship is negative, stagflation must be seen as the 'norm': it intensifies as growth declines and inflation rises; and it recedes when growth increases and inflation falls.

The stagflation norm

Now to the facts. Figure 16.4 shows the long-term relationship between the conventional measures of inflation and economic growth in the United

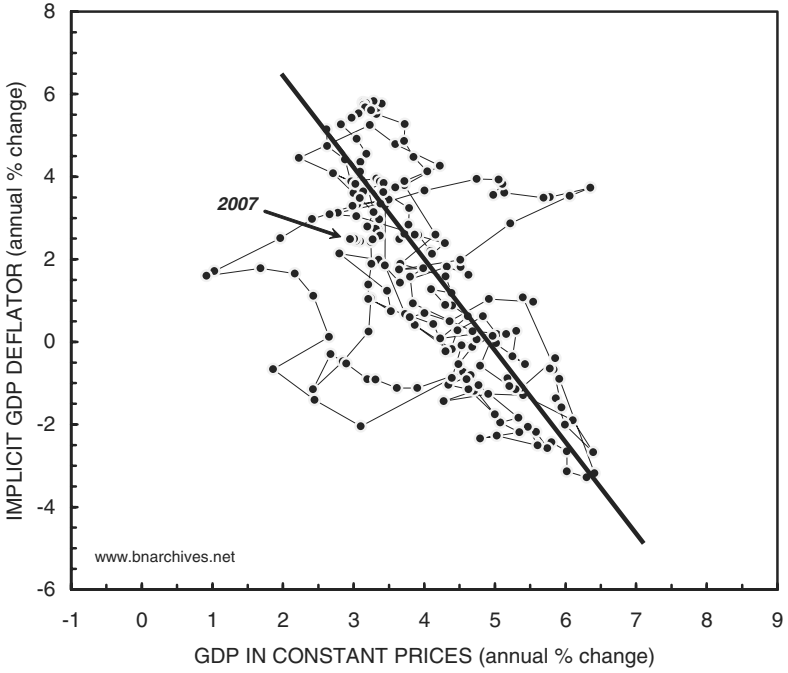

Figure 16.4 United States: inflation and growth, 1809–2007

Note: Series are shown as 20-year moving averages. The straight line running through the observations is drawn freehand for illustration purposes.

Source: Historical data till 1928 are from Global Financial Data. From 1929 onward, data are from the U.S. Department of Commerce through Global Insight (series codes: GDP for GDP; PDIGDP for the implicit GDP deflator).

States, going back to 1809 (with both series smoothed as 20-year moving averages). The data show quite clearly that the relationship between the two phenomena is not positive, but negative. Low inflation is associated with high growth, whereas high inflation is commonly accompanied by stagnation – the very opposite of what conventional theory wants us to believe. And this inversion is hardly limited to the United States. In fact, during the post-war period the negative correlation between growth and inflation has become the rule rather than the exception, reproducing itself in country after country, developed as well as developing (see for example, Nitzan 1995a; Nitzan and Bichler 2002: Figure 2.8, p. 71).

At this point, the reader may wonder: if stagflation is the norm and prices tend to rise in the midst of slack, the implication is that there is no 'material' scarcity; but, then, if there is no 'real' shortage, why are buyers willing to pay higher prices?

The short answer is that usually they are not willing; they are *forced*. And the way to force them is by creating, imposing and maintaining various forms of social crisis, apparent or real. Military hostilities during the First World War, the reparation crisis of Germany in the 1920s, the global oil crises of the 1970s, rising unemployment in Israel during the 1980s, political instability in Russia in the 1990s, debt default in Argentina in the early 2000s and 'peak commodities' in the late 2000s are all illustrations of such inflation-triggering crises.[25]

---

25 During the mid-2000s, many experts considered the bout of commodity-led inflation as indisputable evidence of 'real' shortage. The world, they said, was 'running out of resources' – primarily fossil fuels – and as 'demand exceeds supply' prices inevitably rise. This claim is hardly novel. It was marshaled by the Club of Rome during the previous commodity crisis (boom?) of the 1970s, and by numerous earlier observers inspired by the social ecology of Thomas Malthus.

But the argument rarely sits well with the facts. To illustrate, note that the global quantity of oil reserves and the theories of their ultimate peak and depletion have hardly changed over the last thirty years. By contrast, the 'real' price of oil oscillated widely: measured in 2007 US dollars, it rose from less than $10 a barrel in 1970 to $108 in 1979, fell to $13 in 1998 and soared to $150 in 2008 (only to fall back to less than $115 as these lines are written).

This mismatch isn't difficult to explain. Mother Nature does impose real limits, but natural limits do not determine prices. Ownership does. Recall that price implies restriction, and restriction presupposes ownership. This prerequisite means that natural limits can have no bearing on prices unless they are mediated through the power conferred by ownership. The ozone layer, clean water and ocean fish stocks, to name a few obvious examples, are as physically limited as oil is. Yet having no owners to restrict their use and therefore no prices, they cannot be made 'scarce'. By contrast, oil is tightly owned, mostly by governments of oil-producing countries and large petroleum companies. And it is the historical variations in the relative power of these owners – exercised mostly through the high politics of crisis and war – that explains why the price of oil varies so dramatically while its actual 'availability' does not (see for instance Nitzan and Bichler 1995: 487–92). Note that even when oil finally becomes nearly exhausted, there will be nothing to prevent its owners from giving it away for free if they so wished.

The effect of these crises on inflation is twofold. On the one hand, they undermine the ability of most people to resist price increases. On the other hand, they enable a consensus to emerge within dominant capital that inflation can be used with relative impunity. In this sense, stagflation is the macroeconomic appearance of 'accumulation through crisis'. Unemployment and stagnating production, along with other forms of instability, conflict and force, constitute the necessary backdrop for differential accumulation through differential inflation.

The hazards of inflation

However, stagflation isn't always a bonanza for dominant capital. We have already seen that although some stagnation is necessary for accumulation, excessive stagnation undermines it. And the same holds true for inflation: in small doses it boosts accumulation; in overdoses it can easily undermine it.

Capitalization risk

So far, our discussion has focused on the benefits of inflation for differential earnings; but we shouldn't forget that differential earnings are merely a means to the higher end of differential capitalization. Now, it is true that earnings are the most important elementary particle of capitalization, particularly over the longer run – but they are not the only factor. In addition, there is also hype, risk and the normal rate of return. These particles are also affected by inflation – though sometimes in ways that dominant capital doesn't find attractive.

The most important factor to consider here is risk. Note that although differential earnings rise with inflation, the gains are always short-lived: they last only as long as the underlying bout of inflation continues. Indeed, it seems that the only way to keep such gains coming is to keep inflation going; and if the gains are to be raised, inflation needs to be accelerated.

Although such acceleration occasionally happens, and often with the desired differential impact, it cannot last indefinitely. As illustrated repeatedly in history and across the world, inflation is a risky business. It is difficult to manage; it often degenerates into an uncontrollable spiral; and its consequences – for dominant capital specifically and for the capitalist order more broadly – are hard to predict.

This unpredictability can wreak havoc on differential capitalization. If the perceived increase in risk for dominant capital exceeds that of the business sector, the negative effect can outweigh the positive gain in differential earnings, causing differential capitalization to decline.

The politics of inflation

And that isn't all. Inflation destabilizes society. The architecture of capitalist power is denominated in prices; and inflation, by changing absolute and

relative prices, constantly alters that architecture. This reshuffling makes the political underpinnings of inflation dangerously overt.

The situation is very different from that of breadth. As we have seen, mergers and acquisitions have a long-lasting and often dramatic impact on the organization and ideologies of power. From the viewpoint of the proles, though, the process seems confined to the upper echelons of society. The media convince them that amalgamation is necessary for 'economies of scale' and 'national competitiveness', and that the financial aspects of the process are too difficult for them to comprehend anyway. And since the resulting consolidation seems to have little direct bearing on the day-to-day existence of the underlying population, few find reason to resist it – let alone to do so politically.

This sales pitch cannot work with inflation. The mechanisms of inflation, much like those of mergers and acquisitions, are political in the widest sense of the term. They are intimately dependent on the power institutions and policies of the state of capital and on the government organs that facilitate and administer them. But unlike amalgamation that comes covered in a soft glove, inflation delivers a raw punch. And this naked force makes the 'politics' of the process far more obvious.

Since redistribution here leverages the *entire* structure of prices, it has an immediate bearing on everyone. The winners and losers are evident, and their conflict is open for all to see. The underlying population, impartial to breadth, is almost always hostile to depth. It starts to resist and fight back; it calls for political changes; it demands to rein in the leading corporations; and it wants to be compensated by higher wages. And as the struggle intensifies, so does the inflationary spiral, causing the crisis to deepen and instability to heighten.

The government, seemingly 'unable' to stop the process, is blamed as a culprit and risks losing its legitimacy as a 'neutral' body. The stability of the currency, measurement habits, the law, morals and justice are all thrown into question. The ruling class itself starts to bicker over the spoils of the process, over how to manage it and over whether or not to terminate it. And as the process intensifies and its character politicizes, there arises the risk that the very supremacy of capital will be called into question.[26]

Stop-gap

For these reasons, inflation is more of a stop-gap option for dominant capital. In contrast to mergers and acquisitions whose differential impact is slower to develop, the gains from inflation have no upper technical bound (as illus-

26 The extreme instability engendered by the German inflation of the 1920s is described with much panache in Stefan Zweig's memoirs, *The World of Yesterday* (1943: Ch. XIII). Inverted, this account tells us how the different qualitative aspects of social instability are manifested in the universal quantities of inflation.

trated by episodes of hyperinflation). But these benefits come with mounting 'risks' which the large owners and leading government officials are often hesitant to take.

From the viewpoint of dominant capital, therefore, inflation is forever a double-edged sword. Effective but highly dangerous, it is *not* the weapon of first choice. It is only when the gains from breadth dry up that dominant capital, seeing its differential accumulation undermined, moves reluctantly toward relying on inflationary redistribution.

Policy autonomy and the capitalist *creorder*

The negative long-term correlation between growth and inflation helps to contextualize the post-war schizophrenia of 'policy makers'. Their stated purpose (with an emphasis depending on whether they sit in the finance ministry or central bank) is always the same: to promote growth and assure price stability. Their latent commitment, though, is far more flexible and seems to have progressively drifted in favour of differential accumulation.

During breadth periods, the stated and latent goals are consistent, with high growth and low inflation allowing 'policy makers' to do little and claim success. The problem arises when differential accumulation moves into depth and the macroeconomic scene turns stagflationary. Then the two commitments clash and the winner is almost always dominant capital. Policy is 'tightened', presumably in order to rein in inflation; but the consequence tends to be the exact opposite: the pace of growth slows, heightening the crisis that dominant capital needs in order to keep inflation going.

Occasionally, policy tightening claims a big victory – for instance, during the early 1980s, when Fed Chairman Paul Volker was congratulated for 'bringing inflation down' by sharply hiking the rate of interest. But was tighter policy really the *cause* of lower inflation? As illustrated in Figure 15.2, by the early 1980s, dominant capital was already busy riding a new merger wave, having no appetite for further inflation. If this interpretation is correct, the real cause of disinflation was the resumption of breadth, with Volker and his restrictive policy merely playing catch up.

These considerations reveal a glimpse of the new state of capital. As Galileo Galilei reputedly observed:

> Surely, God could have caused birds to fly with their bones made of solid gold, with their veins full of quicksilver, with their flesh heavier than lead, and with their wings exceedingly small. He did not, and that ought to show something.
>
> (Quoted in Singh 2004: 73)[27]

27 This quote is often referenced to Galileo's *Dialogue Concerning the Two Chief World Systems* (1632), although we were unable to find it in the English translation of that text.

In principle, 'policy makers' don't have to line up for dominant capital. They can loosen policy when the largest firms demand tightening, and vice versa. They can restrict mergers and dismember capitalist giants. They can set prices, provide subsidies and impose different forms of taxation to undermine the differential accumulation of the leading corporations. They can even move toward a truly democratic society, where the citizens themselves make policy and dominant capital fades into oblivion.

These options are all open in principle – that is, assuming today's 'policy maker' can even fathom them, let alone fathom them and retain their status as 'officials' of the capitalist state. But one way or the other, the systemic patterns of US differential accumulation suggest that these options are less and less open in practice. The officials and theorists of the state continue to talk about 'policy autonomy'; but the content and direction of the policies themselves seem increasingly predicated on the capitalist *creorder* of differential accumulation.

17 Differential accumulation
Past and future

> . . . he began to decipher the instant that he was living, deciphering it as he lived it, prophesying himself in the act of deciphering the last page of the parchments, as if he were looking into a speaking mirror. Then he skipped again to anticipate the predictions and ascertain the date and circumstances of his death. Before reaching the final line, however, he had already understood that he would never leave that room, for. . . everything written on them was unrepeatable since time immemorial. . . .
>
> —Gabriel García Márquez, *One Hundred Years of Solitude*

Like other aspects of the capitalist *nomos*, there is nothing 'natural' about differential accumulation. To accumulate differentially is to *creorder* organized power – and to do so conflictually against multiple oppositions. Such a process cannot be predetermined. It has neither a preset pattern, nor an inevitable outcome. In fact, it doesn't even have to happen and can just as easily go into reverse.

Given this open-endedness, the stylized history of differential accumulation is nothing short of astounding. With only brief interruptions, US-based dominant capital has managed to sustain its differential accumulation through both 'prosperity' and 'crisis' – and to do so in a most counterintuitive fashion. Its differential expansion has tended to rely not on green-field growth and cost cutting as the canons would have preferred, but on mergers and acquisitions and stagflation. Moreover, as we shall see in this final chapter, the broad trajectories of amalgamation and stagflation have become so tightly correlated that they look like mirror images of each other: as one process increases the other tends to decrease, and vice versa.

The apparent automaticity of the process may give the impression of natural inevitability, but that would be the wrong conclusion to draw. Perhaps a better metaphor here is the evolution of an organized religion. Much like the almighty God invented by past rulers, the ideology and practice of differential accumulation were created by capitalists as an open-ended process to increase their power. But success brings consolidation, and as dominant capital triumphed, its differential accumulation petrified into a rigid structure: it ended up conditioning and subjugating not only the underlying population, but also its own creators.

In the pages that follow we focus on one key aspect of this structure: the meta-correlation between amalgamation and stagflation. The historical relationship between these two regimes provides a framework for understanding key moments in the twentieth-century evolution of capitalism, as well as the limits it may face in the future.

Amalgamation versus stagflation

Figure 17.1 contrasts the general contours of internal breadth and external depth in the United States. The chart plots our amalgamation index (the buy-to-build indicator) against a composite stagflation proxy, both smoothed for easier comparison.

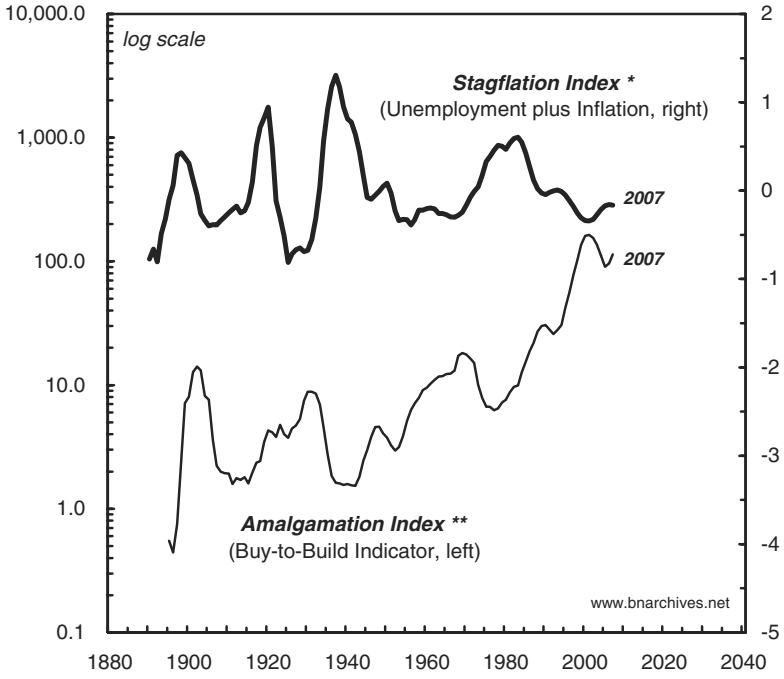

Figure 17.1 Amalgamation and stagflation in the United States

* Computed as the average of: (1) the standardized deviations from the average rate of unemployment; and (2) the standardized deviation from the average rate of inflation of the GDP implicit price deflator.

** Mergers and acquisitions expressed as a per cent of gross fixed private domestic investment.

Note: Series are shown as 5-year moving averages (the first four observations in each series cover data to that point only).

Source: The stagflation index is computed based on data from the U.S. Department of Commerce through Global Insight (series codes: RUC for the rate of unemployment since 1929; PDIGDP for the GDP implicit price deflator); *Historical Statistics of the United States* (series D-8, p. 126 for the rate of unemployment before 1929). For the Amalgamation Index see Appendix to Chapter 15.

To clarify the meaning of our stagflation proxy, recall from Chapter 16 the weak definition of stagflation as inflation together with unemployment and underutilized capacity. Now, as we have seen, the United States experienced some measure of unemployment and under-capacity utilization throughout the past century, so in that sense there was always some degree of stagnation. Also, with the exception of the 1930s, there was uninterrupted inflation. Applying both observations to the weak definition implies that US inflation during the period was always *stag*flationary.

With this understanding in mind, our stagflation proxy combines inflation and stagnation in three simple steps: first, we measure the standardized deviations of inflation from its average; second, we compute the standardized deviations of unemployment from its average; and finally we take the average of the two indices. Since the United States experienced continued stagflation, we treat a zero reading of the combined index as the average rate of stagflation; a positive reading as above-average stagflation; and a negative reading as below-average stagflation.

The chart shows that over the long haul mergers and acquisitions were indeed the path of least resistance (Proposition 2 in Chapter 14). Whereas stagflation moved sideways, oscillating around its own stable mean, mergers and acquisitions rose exponentially relative to green-field investment (note the logarithmic left scale).

The chart also shows that, following the initial emergence of big business at the turn of the twentieth century, internal breadth and external depth tended to move counter-cyclically. Temporary declines in mergers and acquisitions typically were 'compensated' for by sharp increases in stagflation; and when amalgamation resumed, with dominant capital breaking through its existing envelope and into a broader universe, stagflation promptly abated (Propositions 1 and 8).

The very existence of this counter-cyclical pattern is already remarkable – particularly since, as we have repeatedly emphasized, differential accumulation does not have to happen and can as easily go into reverse. Note also the highly significant fact that the inverse correlation between breadth and depth has grown tighter over time.

This tightening is clear from the chart. During the final decade of the nineteenth century, when big business was only starting to take its modern shape, the two series still moved in the same direction. By the first decades of the twentieth century, however, with dominant capital already having assumed centre stage, the relationship turned clearly negative, although still somewhat loose. And from the 1930s onward, as differential accumulation became increasingly entrenched, the negative fit grew tighter and tighter.[1]

---

1 Over the past century, the 30-year moving correlation between the stagflation and amalgamation indices in Figure 17.1 (with the latter index expressed as a natural log and measured as a deviation from its time trend) tightened almost to the fullest: it changed from a positive 0.06 in 1927 (virtually no correlation) to a negative 0.95 in 2007 (a nearly perfect inverse correlation).

The progressive move from looser to tighter correlation is consistent with our earlier narrative. Differential accumulation, understood as a broad historical process, is relatively new. It rose to prominence only toward the end of the nineteenth century, when corporations grew big enough and became sufficiently intertwined with governmental organs to engage in large-scale strategic sabotage. The process first became important in certain sectors in the United States and Europe, from where it subsequently spread domestically and internationally. However, the spread was very uneven; and so, despite high capital mobility, initially the cyclical regimes in different sectors and countries were disjoined and out of step with one another. It was only later – with the gradual proliferation and deepening of business principles and the ideology of discounting, with the progressive breaking of sectoral envelopes, and with the growing globalization of ownership – that differential accumulation became the compass of modern capitalism. And therefore it was only toward the middle of the twentieth century, when these processes converged, that breadth and depth grew more stylized and inversely synchronized.

The pattern of conflict

Now, since differential accumulation lies at the heart of the capitalist *creorder*, its specific regimes are important for understanding the broader nature of institutional and structural change in capitalist society.

Perhaps the most important change concerns the pattern of conflict. Recall that although dominant capital always struggles to increase its power relative to other capitalists, in breadth this struggle is direct, whereas in depth the path is indirect. When expanding through breadth, capitalists fight each other to control existing and new corporate organizations. The intra-capitalist struggle here is commonly associated with overall growth and ongoing institutional change, which in turn partly conceals the conflict between capitalists and society at large. By contrast, in depth the intra-capitalist struggle is mediated through a redistributional conflict between capitalists and the rest of society; moreover, the redistribution here thrives on stagflation, not growth. Obviously, sustaining such accumulation-through-crisis requires entrenchment, fortified power arrangements and a greater use of force and violence.

The very different social conditions required for each regime explain their incompatibility. Individual firms can engage in both breadth and depth; but for society as a whole, the power processes that support one type of differential accumulation tend to undermine the other.

A new type of cycle

Cyclical analyses of capitalism tend to focus on the patterns of 'real economy'. The most famous is the 'business cycle', a relatively short oscillation that describes the ups and downs of 'economic activity' – from output and invest-

ment to inventories and employment. Long-wave cycles, often extending over decades, measure looser variables such as innovation, as well as nominal quantities like prices.

These analyses are all informed by the traditional bifurcation between economics and politics. Embedded in the material/economic sphere, they emphasize the 'automatic' underpinnings of the cycle and search for their mechanical rationale.

After the Great Depression and the rise of 'government intervention', the business cycle was augmented by political 'variables'. Although economists continued to keep their economy conceptually separate from politics, they recognized that the latter could contaminate the former, leading to a 'political business cycle'.[2]

Our own breadth and depth cycles present a different story altogether. First, they deal neither with 'economic activity' nor with 'government intervention' that supposedly 'distorts' or 'supports' such activity; instead their subject is the broad *creording* of capitalist power quantified through differential accumulation. Second, although the breadth and depth cycles are historically stylized and seemingly mean-reverting, there is nothing automatic or equilibrating about them. In fact, given that we deal here with open-ended conflict whose outcome is never predetermined, there is no inherent reason why amalgamation and stagflation should be cyclical in the first place; and certainly there is no reason for the two cycles to be related.

The fact that they *are* cyclical and that they *are* correlated attests to the extent to which differential accumulation has come to define the capitalist *nomos*. Our own thesis is that for differential accumulation to occur, dominant capital has to expand through either breadth or depth; and that, at the societal level, these two regimes, because of their very different if not opposite character, tend to move counter-cyclically. But the grip of dominant capital can loosen or disappear, and when it does – so will differential accumulation and its cycles of breadth and depth.

Oscillating regimes: a bird's eye view

With this open-ended conflictual framework in mind, we can tentatively identify several broad phases in the global evolution of differential accumulation, temporal patterns whose initially blurred contours have gradually sharpened into focus: (1) a mixture of breadth and depth during the period between the 1890s and 1910s; (2) a partial breadth regime during the 1920s; (3) a depth

2 The term itself is due to Michal Kalecki, who looked at the process from a class perspective. In his article 'Political Aspects of Full Employment' (1943b), he argued that liberal governments know how to achieve full employment and defuse the business cycle – but are unable to do so politically. Torn between their need to maintain their popular legitimacy on the one hand and to protect the capitalist class on the other, their policies often end up contributing to the business cycle rather than alleviating it.

regime in the 1930s; (4) a breadth regime between the 1940s and 1960s; (5) a return to depth in the 1970s and early 1980s; (6) the re-emergence of breadth in the late 1980s and 1990s; and (7) tentative signs of a return to depth in the early years of the twenty-first century. Let's look at each period a bit more closely.

The period from the 1890s until the 1910s was one of rapid and accelerating economic growth, coupled with relatively low inflation and the beginning of corporate transnationalization, particularly by large US-based companies. Internationally, differential accumulation was still cloaked in 'statist' clothes, with American and European companies often seen as imperial agents as well as pursuers of their own interests. The competitive expansion of these companies, however, was largely uncoordinated and soon led to the creation of massive imbalances of excess capacity. Left unattended, such imbalances would have spelled business ruin, so there was growing pressure to 'resolve' the predicament via depth. And indeed, as Figure 17.1 shows, since the middle of the first decade of the twentieth century US merger activity had collapsed, followed in the 1910s by war in Europe together with plunging production and rising inflation around the world.

The 1920s offered a brief break. In the United States, merger activity soared while stagflation subsided sharply. In Europe, however, the reprieve was short and stress signs were soon piling up. Protectionist walls, both between and within countries, emerged everywhere; stagflation spread through a cascade of crises; and before long the world had fallen into the Great Depression of the 1930s.

By that time, the counter-cyclical pattern of breadth and depth became more apparent, with declining merger activity accompanied by rising stagflation.[3] The new depth regime was marked by the massive use of military force, in which the global power impasse was 'resolved' through an all-encompassing world war. This use of violence was articulated and justified largely in statist terms: it was a war of sovereigns waged over territory and ideology. But the war also proved highly significant for differential accumulation. Most importantly, it accelerated the relative ascent of US-based corporations, and it helped spread both the normal rate of return and the need to beat it.

After the war, the world again shifted to breadth. The counter-cyclical regime pattern was sharpened even further, while the inverse correlation between inflation and growth became increasingly apparent. Now, on the surface, it looked as if developments during that period, which lasted until the end of the 1960s, should have undermined breadth. For one, superpower rivalry, decolonization and the non-alignment movement limited the geographical expansion of Western dominant capital. In addition, many

3 Note again the bifurcated experience of the 1930s: as we mentioned in Chapter 12, most of the depression occurred in concentrated sectors, where production and employment fell by up to 80 per cent and where prices dropped very little or even rose. In the context of the times, this pattern was clearly stagflationary.

developing countries that were previously open to foreign investment adopted import-substitution policies that favoured domestic over foreign capitalists.

And yet, for much of the 1950s and 1960s, these barriers on breadth were outweighed by two powerful counter-forces. The first of these was the post-war baby boom that boosted population growth. The second was the post-war rebuilding of Europe and Japan that in some sense was equivalent to the re-proletarianization of their societies. The result was a powerful breadth engine, particularly for the large US firms that saw their profit soar during that period. The macroeconomic result in the industrialized countries – anomalous from a conventional viewpoint but consistent with differential accumulation – was rapid economic growth averaging 6 per cent during that period, combined with low inflation of less than 3 per cent.[4]

This picture was inverted in the 1970s. By then, the German and Japanese miracles had already run out of steam, while Western rates of population growth dropped sharply. Foreign investment could have provided a way out, yet outlets for such investment in developing countries remained hindered by communist or import-substituting regimes. Faced with these obstacles to breadth, dominant capital groups in the industrialized countries were once again driven toward depth, with the average rate of inflation during the 1970s rising to 8 per cent and the average rate of economic growth dropping to 3 per cent. And, as before, the new depth regime was accompanied by heightened conflict and violence. This time, though, the conflict was played out mostly in the outlying areas of the developing world, initially in South East Asia and subsequently in the Middle East.

The role of the Middle East

The role of the Middle East in global capitalism provides a good illustration of the temporal spread and geographical integration of differential accumulation.[5] Until the late 1940s, the region was 'out of sync' with the global cycle of breadth and depth. Its energy resources had already been parcelled out by the international oil companies in the 1920s; but with the world awash with oil, these companies mostly 'sat on their concessions' and produced little. As a result, the Middle East remained relatively insulated from the capitalist core, and when Europe slipped into stagflation and conflict during the 1920s and 1930s, the region prospered. After the war, though, the tables turned. The Middle East – until then a true 'outlying area' – suddenly became centre stage for the global drama of differential accumulation.

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4 The growth and inflation figures in this and the next paragraph are computed from International Financial Statistics through Global Insight (series codes: L64@C110 for the consumer price index; and L66&I@C110 for industrial production).

5 For a more detailed examination of the Middle East and differential accumulation, see Nitzan and Bichler (1995), Bichler and Nitzan (1996), Nitzan and Bichler (2002: Ch. 5), Bichler and Nitzan (2004b) and Nitzan and Bichler (2006b).

Initially, the link was pretty simple, with oil from the region helping sustain the growth underpinnings of global breadth. During the early 1970s, however, when differential accumulation shifted into depth, the relationship became more complicated. The background for this latter shift is illustrated in Figure 17.2. The chart shows a positive long-term correlation between inflation in the industrialized countries on the one hand and the global arms trade expressed as a share of world GDP on the other. Conventional economics would probably treat this relationship as accidental and largely irrelevant. From the viewpoint of dominant capital, however, the relationship is systematic and meaningful: it points to the *conflictural* underpinnings of its differential accumulation cycles.[6]

As we noted earlier, the inflationary depth regime of the 1970s and 1980s was largely a response to Western dominant capital 'running out of breadth'. This exhaustion in turn was partly the consequence of bipolar geopolitics that prevented capitalist expansion into outlying areas and contested Western

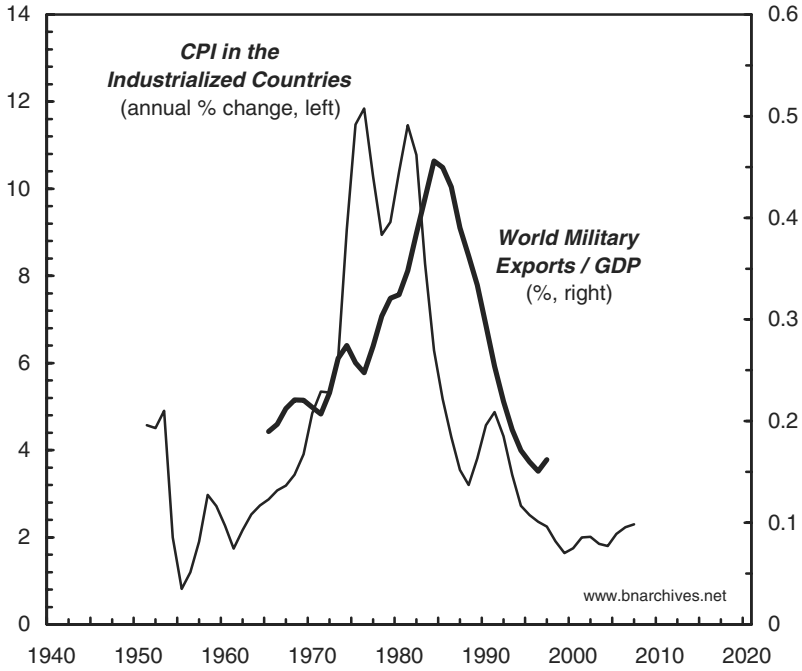

Figure 17.2 Inflation and arms exports

Note: Series are shown as 3-year moving averages.

Source: International Financial Statistics through Global Insight (series codes L64@C110 for CPI); U.S. Arms Control and Disarmament Agency, *World Military Expenditures and Arms Transfers* (various years).

6 The chart itself is meant merely to highlight the importance of conflict; the actual pattern of the conflict of course is far more complex and involves much more than arms exports.

control over strategic regions, particularly the Middle East. One key consequence of this antagonism was an intense arms race, and hence it is not surprising that the time pattern of arms exports – a handy proxy for 'bellicosity' – roughly follow the periodicity of Western inflation: the first process was fuelled by and nourished the antagonism and violence of depth, the second its redistributional mechanism. Both arms exports and inflation rose until the mid-1980s, peaked as the Cold War began to weaken, and went into a free fall with the disintegration of communism and the onset of global breadth.[7] Moreover, the two processes were causally connected, with military conflict, especially in the Middle East, contributing to rising energy prices, and therefore to higher inflation.

The late 1980s seemed to mark the beginning of yet another breadth phase – this time at the global level. On the surface, the new breadth regime was somewhat anomalous according to our criteria: inflation in the industrial countries dropped sharply, and yet, unlike in previous cycles, growth did not revive. A closer inspection, however, easily shows why.

First, with the collapse of the Soviet Union and the wholesale capitulation of statist ideology, the entire world finally opened up for capitalist expansion and differential accumulation. The result was that, although external breadth for dominant capital fizzled in the industrial countries proper, it remained strong outside of these countries, particularly in developing Asia.[8] Moreover, cheap imports from Asia helped keep inflation in the industrial countries low despite the latter's domestic stagnation. Second, the ideological demise of public ownership and the 'mixed economy' opened the door for privatization of state assets and government services, which, from the viewpoint of dominant capital, was tantamount to green-field investment.[9] And third, the decline of statist ideology weakened the support for 'national' ownership, thus contributing to the spread of cross-border mergers and acquisitions. Together, the combination of expansion into less developed countries, privatization and corporate amalgamation helped sustain a powerful breadth drive for large Western corporations despite the lacklustre growth of their 'parent' countries.

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7 The data for military exports here are based on the value of *deliveries*; if instead we were to display military *contracts* (which lead deliveries roughly by three years), the correlation would have been even tighter.

8 During the early 1990s, GDP growth in East Asia averaged 9 per cent, compared with less than 3 per cent in the industrialized countries. During that period, transnational corporations based in the United States saw their net profit from 'emerging markets' rise to 20 per cent of the total, up from 10 per cent in 1980s (Nitzan 1996b).

9 Although government deficits declined to around 1 per cent of world GDP in the late 1990s, down from their all time high of over 5 per cent in the early 1980s, government expenditures haven't fallen. They have risen from 14 per cent of GDP in the 1960s to 17 per cent in the 1980s, and remained more or less at that level since then (computed from World Bank Online). The privatization of such services – including transportation, water, infrastructure, education and security – typically takes the form of giving/selling them to dominant capital, which in turn contributes to differential accumulation in a manner similar to green-field investment.

Coalitions

So far, we have focused on dominant capital as a whole. The concrete history of differential accumulation, however, including its transition from one regime to the next, depends crucially on what happens *within* dominant capital. This process includes the inner conflicts between various corporate–state coalitions and alliances that comprise the nuclei of dominant capital, as well as the struggles that pit these coalitions and alliances against groups outside of dominant capital. An analysis of these issues is beyond the scope of this volume, but their significance can be illustrated briefly.[10]

During the depth phase of the 1970s and 1980s, differential accumulation was led by a 'Weapondollar–Petrodollar Coalition' made up of large oil companies, armament contractors and OPEC, and was backed by the United States and several European governments that supplied arms to the Middle East and encouraged high oil prices.[11] The central accumulation mechanism of this coalition was the ongoing cycle of Middle East 'energy conflicts' and 'oil crises'. The basic logic of the process was simple enough. Rising petroleum prices brought massive profits for the oil companies. They also generated huge petrodollar revenues for local OPEC governments, who were only too eager to spend them on expensive weaponry in preparation for the next war. As a result, the Middle East during that period became the world's largest market for imported arms, absorbing over one third of the global trade. The big arms contractors of course loved this arrangement, and various US administrations – from Nixon's and Ford's to Bush Sr.'s and Jr.'s – supported it with equal zeal. Indeed, what better way to fight communism, divide and rule the Middle East, and enrich your corporate friends – all in one stroke and without spending a penny?

The consequences of this process were nothing short of dramatic. Rising oil prices threw much of the world into a deep stagflationary crisis, conflict bloomed everywhere, and there was even the occasional flirt with nuclear exchange. The Weapondollar–Petrodollar Coalition, however, thrived, while the other members of dominant capital – although hit by the stagnation – ended up benefiting greatly from the consequent inflation (revisit Figure 16.3).

The distributional consequences for the oil and armament companies are vividly illustrated in Figure 17.3 which measures their share of global market capitalization. As the chart shows, during the 1970s and 1980s, this group of firms became one of the world's most valuable. With plenty of wars and soaring oil prices, its fortunes multiplied; and by 1981, after the onset of the Iran–Iraq wars, it accounted for nearly 14 per cent of global market capitalization. 'War profits' were clearly the way to go.

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10 For an exploration of these 'internal' politics of differential accumulation, see Nitzan and Bichler (2002), Bichler and Nitzan (2004b) and Nitzan and Bichler (2006b).

11 For a detailed history and analysis of this coalition, see Nitzan and Bichler (1995) and Bichler and Nitzan (1996).

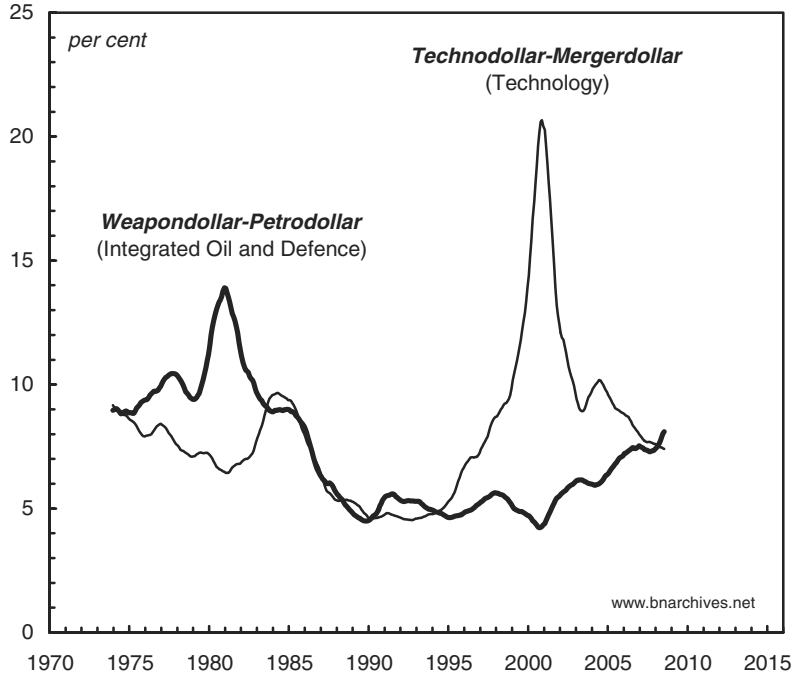

Figure 17.3 The two coalitions: share of world market capitalization

Note: Series denote monthly data shown as 12-month moving averages.

Source: Datastream (series codes: TOTMKWD for world total, OILINWD for integrated oil; AERSPWD for defence; TECNOWD for technology).

But that was the peak. By the mid-1980s the situation started to change on several fronts. First, many developing countries, having shifted from import substitution to export-led growth, were now reclassified as 'emerging markets' open to foreign investors. Second, 'high-technology' was firing up both investor's hype and the stock market, giving mergers and acquisition repeated shots of adrenalin. And third, neoliberalism, having undermined the previous statist ideology, now opened the door for massive privatization and capital decontrols. Put together, these developments marked the dawn of a new breadth regime.

The Weapondollar–Petrodollar Coalition started to decline, and by the early 1990s, with the Cold War over and the world having been declared a 'global village', it disintegrated. Signs of its demise were clear: international hostilities were actively curtailed, with the number of major conflicts falling from 36 in 1989 to 25 in 1997; military budgets the world over came under the axe, dropping by over one third in 'real' terms from their peak in the late 1980s; the price of oil fell absolutely and relative to other prices, reaching a low of $11 per barrel in 1999, compared with over $30 in the early 1980s

($96 in 2007 prices); and world inflation dropped to less than 5 per cent in 1999, down from over 30 per cent at the beginning of the decade.[12]

The main challenge to the Weapondollar–Petrodollar Coalition came from a new 'Technodollar–Mergerdollar Alliance', a group based on civilian high-tech and corporate takeovers and backed by Third-Way governments led by the likes of Bill Clinton and Tony Blair. Instead of 'war profits', nationalism and conflict, the new alliance marshalled the rhetoric of 'peace dividends' and free investment in an 'open world'. Capital controls gave way to deregulation, protectionism to privatization, and bloody wars to peace deals. And indeed, by end of 2000, the Technodollar–Mergerdollar Alliance seemed victorious. As Figure 17.3 illustrates, its share of global market capitalization soared to 20 per cent, while that of the oil and armament companies sank to a meagre 4 per cent.[13]

Unrepeatable since time immemorial?

The retreat of breadth

During the 1990s, many experts, impressed by the new breadth euphoria, announced the arrival of a 'new economy' based on high-tech 'knowledge', 'information' and 'communication'. This new economy, they promised, would deliver not only uninterrupted growth, but also low inflation, making the anomaly of stagflation a relic of history. Other observers with an eye to culture and politics went even further, arguing that liberal capitalism had won the last battle of ideology and that history was finally coming to an end. But the prognosis proved a bit hasty.

These projections hinged crucially on the promise of surging productivity. And yet, productivity growth data from the 1990s – assuming for argument's sake that 'productivity' indeed can be measured – hardly seem exceptional by historical standards. In the United States, the presumed epicentre of the 'high-tech revolution', these data pale in comparison to the record of the 'low-tech' 1950s and 1960s. Moreover, past productivity gains have often failed to stop inflation, so it isn't entirely clear why the experts expected them to succeed this time around. And, indeed, reports of the death of stagflation proved a bit premature.

The rapid breadth expansion, particularly in the emerging markets of Asia, created a massive build-up of excess capacity and loosened the grip of business sabotage. Green-field investment in the 1990s grew in leaps and bounds – much faster than world consumption and with disastrous consequences for

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12 Calculated from International Financial Statistics through Global Insight (series code: L64@C001 for CPI in the industrialized countries; L76AA&Z@C001 for the price of crude oil; and L64@C111 for the US CPI); the Stockholm International Peace Research Institute (Annual); and the U.S. Arms Control and Disarmament Agency (Annual).

13 For a similar comparison based on the distribution of global net profit, see Nitzan and Bichler (2006b: p. 80, Figure 12).

profit margins. The implications for differential accumulation were not lost on absentee investors, who began liquidating their holdings in peripheral regions where earnings growth fell short of the world average (Nitzan 1997; 1998a). The first victim was the Mexican peso circa 1994, followed in 1997 by the Thai baht and the rest of the Asian currencies. From there the centrifugal forces of excessive external breadth spread devaluation throughout the developing world, striking most countries, from Russia and Brazil to South Africa and Argentina.

The emerging markets crisis spelled trouble for the core markets of North America and Europe. During the 1990s, developing countries absorbed some of the elevated hype from the core, and in so doing provided a defence line for 'blue chip' companies listed in the world money centres. Eventually, though, this defence line collapsed. In 2000, fear struck the core financial markets. Led by the collapsing NASDAQ, they went into a tailspin and in the process pulled the rug from under a two-decade surge in merger activity. Next, the global political economy, perhaps for the first time since the Great Depression, fell into a synchronized recession involving all major countries. And finally, after a decade of 'peace dividends', attacks on the World Trade Center and the Pentagon, followed by the invasion of Afghanistan and Iraq and the re-intensification of the Israeli–Palestinian conflict, rekindled the ghost of violence and 'war profits'.

And so the tables again turned. As illustrated in Figure 17.3, by the early 2000s the Weapondollar–Petrodollar Coalition once more was on the ascent while the Technodollar–Mergerdollar Coalition went into a free fall.

Was the world running out of breadth? Were these developments the mark of a new depth phase? Or maybe they were soon-to-be-forgotten ripples on the tidal wave of globalization and amalgamation?

The boundaries of differential accumulation

In 1999, we presented a paper at the International Studies Association Meetings. The key question of the paper was stated in the title: 'Will the Global Merger Boom End in Global Stagflation?' (Nitzan 1999). And the answer was positive: based on our differential-accumulation framework, we argued that worldwide mergers and their neoliberal underpinnings were about to peak, and that conflict and stagflation were ready for a comeback.[14]

A decade later, such projections may seem trivial. The 'global village' is defunct; 'No-Logo' analysts have retreated, overshadowed by the pundits of terror and war; the headlines that previously announced prosperity and merger suddenly talk of stagnation and inflation; and the experts assure us that they have been predicting all of this all along.

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14 For subsequent articulations of this argument, see for example Nitzan (2001), Faux (2002) and Nitzan and Bichler (2003) and Bichler and Nitzan (2004a).

But the truth is that, back in 1999, none of this was in the cards. Few in our audience understood the question we asked and even less so the answer we gave. Caught in the postmodern fashion of deconstruction, conditioned by the double separation of economics from politics and the real from the nominal, and indifferent to the speculative quantification of qualitative processes, they found our argument bizarre and our projections off the wall.

Our presentation, though, didn't really try to 'predict' the future – at least not in the technical sense advocated by Karl Popper (1963). Instead, we attempted to delineate the limits of differential accumulation and to understand the boundaries they impose. And that is what we have done – with further analyses and details – in the present volume.

To reiterate, differential accumulation is a qualitative *creordering* of capitalist power that is speculatively quantified through the algorithm of capitalization. It is a conflictual process and is therefore open-ended. It doesn't have to happen. If dominant capital increases its power, the rate of differential accumulation will be positive. But if this power stays the same or decreases, differential accumulation will be zero or negative, respectively. This is the general theoretical setting.

Now, using this framework we demonstrated: (1) that differential accumulation has proceeded more or less uninterruptedly for the past half-century and possibly longer; (2) that, historically, this accumulation occurred primarily though amalgamation and stagflation; and (3) that these two power regimes have grown increasingly counter-cyclical.

This theoretical–empirical framework enabled us to make our 1999 projection. As Figure 17.1 shows, by the late 1990s amalgamation was reaching historical highs while stagflation was approaching historical lows. The situation seemed ripe for reversion. There was no structural reason to expect differential accumulation to collapse, and since its two regimes were at historical extremes, it seemed safe to expect mergers to recede and stagflation to resurface. And that is exactly what happened in the decade since this projection was made.

Out of bounds

But correct projections do not mean that the social future is somehow foreseeable, let alone predetermined. The capitalist *nomos* is a creature of society, articulated and imposed by the ruling class on those who are ruled. No matter how 'deterministic' it may seem, this *nomos* is never ironclad. Created by humans, it can be changed – and indeed replaced – by humans. In the language of Gabriel García Márquez, it is 'unrepeatable and therefore unpredictable since time immemorial'.

As long as dominant capital continues to rule, and as long as the logic of that rule remains unchanged, we can expect differential accumulation to oscillate between breadth through merger and depth via stagflation. Furthermore, since the breadth potential eventually is self-exhausting and

since dominant capital is already in the final, global envelope, it seems reasonable to expect future stagflation cycles to become more frequent and deeper.

But, then, there is no certainty that dominant capital will continue to rule in the same way – or that it will continue to rule at all.

Over the past century, capitalists have managed to impose the belief that their regime is natural and therefore unalterable. They have constructed a power architecture that is more sophisticated, encompassing and supple than anything the world has ever seen. And they have successfully concealed this state of capital by erecting an anti-scientific front that fractures the consciousness and dresses up the power institutions of capitalism as if they were mere technical aspects of a narrow 'economic narrative'.

This edifice of power and deceit hinges on the normal rate of return and the ability of dominant capital to beat it. As long as 'business-as-usual' sabotage and dissonance keep capitalists convinced that profit is normal and the growth of capitalization natural, and as long as dominant capitalists are able to exceed the normal and increase their power, the state of capital holds steady and its patterns remain 'deterministic'.

But this 'determinism' is not an external law of nature or a historical law of motion. Instead, it is merely the 'determinism' of the capitalist rulers. The patterns of this 'determinism' reflect the consensus of those who dominate society. They show the conviction of the rulers that they are in command – and that those whom they command cannot resist. This conviction, though, is never certain. Confronted with sufficient opposition, whether explicit or implicit, it can crumble. And when it does crumble, the result is to shatter the 'determinism' of the rulers, the patterns of their differential accumulation and, possibly, the entire state of capital that defines their rule.

Postscript, January 2009

The research for this book was completed in early 2008. Since then, the capitalist world has been rattled by what many consider to be the deepest crisis since the Great Depression. The global shakeup has brought one aspect of our framework into sharp focus: it has shown that differential accumulation is by no means predetermined, and that it can fail.

The open-ended nature of the process is demonstrated most vividly by the increasing threat of *deflation*. As we have seen, over the past half-century, the capitalist *creorder* has been shaped by the differential accumulation of dominant capital, whose growing power is fuelled by the inversely oscillating regimes of breadth and depth. Although the two regimes differ markedly, both depend on *rising prices*: breadth through merger requires relatively low inflation, while depth through stagflation depends on high – and rising – inflation. This requirement was fulfilled in the post-war era, the longest period of uninterrupted inflation in human history (Figure 16.1).

But the inflationary backdrop also points to the limits of capitalist power. As noted in the introductory and concluding chapters, power is confidence in

obedience: it represents the certainty of the rulers in the submissiveness of the ruled. In modern capitalism, this certainty is manifested in the ability of capitalists to control and systematize the upward movement of prices. And it is this ability – along with its associated confidence in obedience – that is totally lost during deflation. When prices start falling and the architecture of power begins to disintegrate, the rulers' confidence fizzles and history suddenly seems open-ended.

And indeed, challenges to capitalist power often emerge when they are least expected. That was the case in 1929 – and again in 2000. By the beginning of the third millennium, dominant capital seemed unassailable. Using mergers and acquisitions, it had penetrated and transformed most developing countries into 'emerging markets'; it had integrated former communist regimes into the logic of capitalization; and in the core countries it had imposed its own private 'regulation' while undermining public institutions of welfare and government. With the exception of small enclaves such as Cuba, Myanmar and North Korea, it had managed to subjugate and incorporate the entire world population into its all-encompassing *nomos*.

It was exactly at that high point, when the experts celebrated the end of history and the global village, that deflation suddenly struck. Mergers receded in the early 2000s – yet inflation, instead of rising, fell precipitously. This was no laughing matter. If disinflation turned into outright deflation, dominant capital would be bound to suffer differential *de*cumulation. And that was just for starters. Deflation threatened to bring down the entire chain of debt obligations, whose size relative to GDP was much larger than it had been on the eve of the Great Depression. Had prices started to fall and debt to deflate, the spiral could quickly have become unstoppable.

The initial response was denial. Deflation simply was too dire to contemplate:

> 'Ignore the Ghost of Deflation', recommends *Financial Times* columnist Samuel Britton. 'Apart from Japan', he observed, 'the world has not seen deflation for 70 years' (as if the world's second largest economy can be treated as an anomaly, and '70 years' as a magic threshold beyond which deflation can never return). 'Deflation is an overblown worry', declares James Grant, editor of *Grant's Interest Rate Observer*. 'Believe in Ghosts, Goblins, Wizards and Witches if you will', concurs financial expert Adrian Douglas, 'but don't believe in deflation occurring any time soon'. There is little to worry about, says Fed Chairman Alan Greenspan: 'The United States is nowhere close to sliding into a pernicious deflation'. Of course, denying the problem does not solve it. And, so, for those who remain fearful, the experts promise that whatever the risk, it could easily be defused. 'The good news', announces former member of the Federal Reserve Board, Angell Wayne, 'is that monetary policy never runs out of power'. 'There's a much exaggerated concern about deflation', laments Nobel Laureate Milton Friedman. 'It's not a serious prospect. Inflation

> is still a much more serious problem than deflation. Today's Federal Reserve is not going to repeat the mistakes of the Federal Reserve of the 1930s. The cure for deflation is very simple. Print money'. The same assumption underlies the soothing speech by Fed Governor Ben Bernanke, given in 2002 to the National Economist Club. In his address, properly titled 'Deflation: Making Sure "It" Doesn't Happen Here', Bernanke explained that 'Deflation is always reversible under a fiat money system'. 'The U.S. government', he assured his audience, 'has a technology called the printing press that allows it to produce as many U.S. dollars as it wishes at essentially no cost'.
>
> (Quoted from various sources in Bichler and Nitzan 2004b: 294–296)

But denial and promises didn't work, so the experts called for action: 'The Federal Reserve has won its long war against inflation', wrote Chief Economist of Goldman Sachs Bill Dudley and Managing Director of Pimco Paul McCulley. 'But to ensure an enduring legacy, Mr Greenspan now needs to solve a different problem: inflation is too low, rather than too high. . . . The inflation rate should be high enough to allow the economy to take a shock without falling into deflation' (Dudley and McCulley 2003).

And Greenspan was more than ready to comply. He quickly reduced interest rates to levels not seen since the 1960s – and equally quickly realized he was pushing on a string. 'In recent months, inflation has dropped to very low levels', he complained to the Joint Economic Committee of the Congress. 'Indeed, we have reached a point at which, in the judgment of the Federal Open Market Committee, the probability of an unwelcome substantial fall in inflation over the next few quarters, though minor, exceeds that of a pickup in inflation' (Greenspan 2003). This was probably the first time since the 1930s that the Fed had pronounced lower inflation unwelcome.

In the end, though, it was the brinkmanship of the Weapondollar–Petrodollar Coalition that saved the day. The coalition managed to put the Bush clan back in the White House, inflame the Middle East, raise the price of oil and provide the necessary spark for inflation. That spark, though, merely helped delay the day of reckoning.

By 2007, storm clouds had started to gather again, and by early 2008 all hell had broken loose. Assets markets have gone into a free fall, followed by crashing commodity prices, collapsing employment and production, and broad inflation indices that are rapidly approaching zero. The threat of deflation, having been ridiculed by Nobel Laureates and dismissed by Central Bankers, is back with a bang.

Given the gravity of the situation, governments the world over have suspended their commitment to 'free markets' and 'sound finance' in favour of massive bailout packages for dominant capital, large fiscal stimuli, unprecedented injections of 'liquidity' and other policy rituals. In addition, there has been some increase in televised violence – from the erupting conflicts of the

Middle East, to riots in Thailand, Greece and Korea, to promises of simmering discontent in Russia and China.

So far, though, policy and conflict have done little to lessen the deflation scare. Even the U.S. Federal Reserve Board sounds unnerved. Having reduced its interest rates to practically nil, it is now contemplating pleading directly with the public. According to this plan, the Fed will announce a positive 'inflation target'; this announcement will then cheer up the depressed public and lift its inflationary expectations; and the inflation monster, having been invited in so politely, will rear up its beautiful head and give the Fed what it wants most: prices that go up (U.S. Federal Reserve Board 2008; Guha 2009).

These nervous calls to the omens suggest that capitalism again faces a historical crossroads. Renewed inflation will restore differential accumulation for dominant capital, initially through depth and perhaps later through breadth. But if the ruling classes are grabbed by panic and the power architecture disintegrates into deflation, the effect could be deeply transformative.

And that wouldn't be the first time. During the 1930s, falling prices shook the capitalist world and eventually led to its complete *creordering*. Back then, the transformation ended up strengthening the state of capital. The imposition of capitalization on almost every aspect of social life, the ascent of dominant capital and the growing synchronization of breadth and depth helped create the most powerful mega-machine the world has ever known.

But the transformative outcome of deflation was not predetermined then, and it isn't predetermined now. If prices start to fall in earnest, dominant capital might be seriously weakened – perhaps to the point of losing control over its very mode of power and the mega-machine that sustains it. Whether it can continue to rule, though, and in what way, remains an open-ended question. The answer to this question depends not only on what dominant capital does and how it does it, but also on the creativity, ability and courage of those who resist it in the hope of *creordering* an alternative, humane future.

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