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Working Paper

Industrial policy in developing countries: overview and lessons from seven country cases

Discussion Paper, No. 4/2011

Provided in Cooperation with:

German Institute of Development and Sustainability (IDOS), Bonn

Suggested Citation: Altenburg, Tilman (2011) : Industrial policy in developing countries: overview and lessons from seven country cases, Discussion Paper, No. 4/2011, ISBN 978-3-88985-533-6, Deutsches Institut für Entwicklungspolitik (DIE), Bonn

This Version is available at:

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Industrial Policy in Developing Countries

Overview and lessons from seven country cases

Tilman Altenburg

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Bonn 2011



Discussion Paper / Deutsches Institut für Entwicklungspolitik
ISSN 1860-0441

Die deutsche Nationalbibliothek verzeichnet diese Publikation in der Deutschen Nationalbibliografie; detaillierte bibliografische Daten sind im Internet über <http://dnb.d-nb.de> abrufbar.

The Deutsche Nationalbibliothek lists this publication in the Deutsche Nationalbibliografie; detailed bibliographic data is available in the Internet at <http://dnb.d-nb.de>

ISBN 978-3-88985-533-6

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Contents

Abbreviations

Summary	1
1 Introduction	7
2 Industrial policy - taking stock of recent debates	8
2.1 How much intervention in markets?	8
2.2 Governance issues	17
2.2.1 The ability and willingness of governments	17
2.2.2 Governance patterns: Markets, hierarchies, and networks	19
2.2.3 Networking and favouritism	19
2.2.4 Holding service providers accountable	20
2.2.5 Defining industrial policy management capability	21
2.3 Local and regional economic development: The spatial dimension of industrial policy	22
2.4 Resource efficiency: The big new challenge for industrial policy	26
2.5 Principles of successful industrial policy making	28
3 Industrial policy in low and lower-middle-income countries: Specific challenges	33
3.1 The context-specificity of industrial policy	34
3.2 Different policy conditions in low and lower-middle-income countries: Stylised facts	35
3.2.1 Different priorities in conditions of widespread poverty	36
3.2.2 Different constraints for industrial development	41
3.2.3 Different industrial policy management capabilities	46
3.2.4 Environmental challenges and opportunities for low and lower-middle-income countries	50
3.2.5 Donor influence in shaping industrial policy	53
3.2.6 Different external policy conditions	55
3.3 Do low and lower-middle-income countries need more or less active industrial policies – and what should they look like?	57
3.3.1 Market failure <i>cum</i> government failure - the basic dilemma	57
3.3.2 How can policy effectiveness be ensured and political capture minimised?	60
4 Stories of success and failure: Insights from seven comparative country case studies	61
4.1 Research design and selection of case studies	62
4.2 Mixed performance	64
4.3 Increasing recognition of the private sector as the engine of growth ...	65

4.4	... but state-business relationships are rarely collaborative and governments are unwilling to soften control of ‘strategic’ sectors	66
4.5	Understanding the political economy	68
4.6	Are ‘national transformation projects’ pursued?	70
4.7	Do countries engage in selective policies?	71
4.8	Planning vs. searching: How do countries develop new activities?	72
4.9	Fragmentation of business	74
4.10	Climate change mitigation and adaptation	76
4.11	Effectiveness of policy implementation	77
5	Conclusions: Rethinking the role of industrial policy in low and lower-middle-income countries	83
	Bibliography	87
	Annex	
	Case studies	97
	Figures	
Figure 1:	Determinants of systemic competitiveness	12
Figure 2:	Level of state intervention in markets	16
	Tables	
Table 1:	Drivers of productivity growth at the firm level	45
Table 2:	Indicators of industrial policy management capability in low and lower-middle-income countries (LLMIC)	49
Table 3:	Selection of country case studies	63
Table 4:	Performance indicators	64
Table 5:	Selected governance indicators related to industrial policy	78
	Boxes	
Box 1:	Industrial policy: Changing perceptions over the course of time	10
Box 2:	Key elements of ecological industrial policy	28
Box 3:	The most important market failures in poor countries	58

Acknowledgements

The research for this report was funded by the German Federal Ministry for Economic Cooperation and Development (BMZ). The author is grateful for many new insights gained from the researchers who carried out country studies and commented on the synthesis report: Tatjana Chahoud, Steffen Erdle, Friedrich Kaufmann, Matthias Krause, Markus Loewe and Christina Rosendahl.

Empirical field work greatly benefited from support by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ, formerly GTZ), who seconded authors for two country case studies, helped to access national and donor experts and in some cases provided generous logistical support.

Moreover, the report benefited from detailed comments on an earlier version provided by Ha-Joon Chang, Mike Hobday, Kenichi Ohno and Hubert Schmitz. Of course, any remaining errors are mine alone.

Tilman Altenburg

Bonn, February 2011

Abbreviations

BMZ	Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung (Federal Ministry for Economic Cooperation and Development)
BTI	Bertelsmann Transformation Index
CDM	Clean Development Mechanism
CPI	Corruption Perception Index
DBI	Doing Business Indicators
EBRD	European Bank for Reconstruction and Development
FDI	Foreign Direct Investment
FRELIMO	Frente da Libertação de Moçambique
GCI	Global Competitiveness Index
GDP	Gross Domestic Product
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (formerly GTZ)
IFC	International Finance Corporation (World Bank)
IPCC	Intergovernmental Panel on Climate Change
LLMIC	Low and Lower-Middle-Income Countries
MOZAL	Mozambique's Large Aluminium Smelter
NASSCOM	National Association of Software Services Companies
NGOs	Non-governmental Organisations
OECD	Organisation for Economic Co-operation and Development
R&D	Research and Development
S&T	Science and Technology
SMEs	Small and Medium Enterprises
SOE	State-Owned Enterprise
SWAPO	South-West Africa People's Organisation
UNCTAD	United Nations Conference on Trade and Development
WEF	World Economic Forum
WBGU	German Advisory Council on Global Change (Wissenschaftlicher Beirat der Bundesregierung Globale Umweltveränderungen)
WGI	World Bank Governance Indicators
WTO	World Trade Organization

Summary

Industrial policy is back on the agenda. It is now widely accepted that those countries that managed to catch up with the old industrialised, high-income countries are the ones whose governments *proactively promoted structural change*, encouraging the search for new business models and markets and channelling resources into promising and socially desirable new activities. Empirical evidence shows this for the early catching-up experience of Germany, the United States and Japan as well as for the more recent post-World War II examples – from the early “Asian Tigers” of Korea and Taiwan to the current emergence of China. None of the countries that strictly followed the Washington Consensus, in contrast, has achieved comparable success in terms of technological upgrading, economic growth, and poverty reduction.

Economic theory also provides good reasons for industrial policy. In several instances, markets fail to send out appropriate price signals, such as when new activities require simultaneous investments in related activities to become viable, so that no investor dares make the first investment without knowing whether complementary assets will be provided; or when an initial investment that would have triggered manifold knowledge spillovers is not carried out because the investment in itself is not viable and its positive externalities cannot be appropriated by the initial investor. The environmental externalities that lead to climate change are another important case of market failure. Even if a carbon price were established, it would be impossible to achieve the globally necessary emissions reductions without temporary subsidies that help to develop and deploy new generations of low carbon technologies.

At the same time, evidence of *failed* industrial policy experiments is abundant. At an aggregate level, the experiments of centrally planned economies have failed miserably; the more moderate strategies of import-substituting industrialisation (very popular in the 1960s and 70s) generated industrial development and economic growth at an initial stage but mostly failed to make industries competitive and thus led to unsustainable debts. At the level of specific technologies, billions of subsidies have also been wasted in failed projects, both in developed and developing countries. Hence, even when market failure justifies public intervention *in principle*, inappropriate policies may have outcomes that are even worse – either due to erroneous assumptions or because public policies are captured by interest groups.

The question is thus not *whether* industrial policies should be adopted or not, but, more pragmatically, *how they should be designed and how they can be implemented more effectively*. This question is especially challenging for latecomer economies. On the one hand, market failure is particularly common in these countries. Latecomer economies typically lack information, experienced entrepreneurs, and diversification, so that investors cannot build on many complementary assets. On the other hand, these countries are also latecomers in terms of public institution-building, ranking low on the average in international governance indicators. Hence, these countries face a dilemma. They need more proactive governments to cope with all their market failures, but their political systems are often built on favouritism, and their administrations typically lack both the resources and the right incentives for effective service provisioning.

Against this backdrop, this study explores the scope for and performance of industrial policies in low and lower-middle-income countries. It includes an overall review of the industrial policy debate; a deeper analysis of such policies in the context of low and lower-middle-income countries; and lessons from country cases studies conducted in Egypt, Ethiopia, Mozambique, Namibia, the Syrian Arab Republic, Tunisia, and Vietnam.

Chapter 1 takes stock of the current industrial policy debate. It shows that markets fail for a number of reasons and demonstrates why governments need to support structural change proactively, but it also explores the different sources of government failure. It is argued that the risks of government failure are more manageable when governments build on their countries' current comparative advantages while creating the conditions to advance *gradually* towards higher-value activities. Ambitious projects that require substantial simultaneous improvements on different fronts and presuppose very different factor endowments, in contrast, are very risky. They have succeeded in some cases; the success of the aircraft industry in Brazil and the automotive industry in Korea would have been unthinkable without anticipatory and coordinated public support for a range of complementary activities. Such big leaps, however, require strong leadership and highly professional policy management that may overstrain the capabilities of most governments.

The chapter also addresses the spatial aspect of industrial policy, i.e. government efforts to encourage resources to move into lagging regions. Empirical evidence suggests that trying to work against the agglomeration forces of markets is rarely successful and often not even desirable. Politics may of course choose to foster lagging regions for political and socio-cultural reasons. The most promising way then is to support local capabilities in order to make the respective region more attractive to external investors and encourage knowledge transfer and regional learning. Policies that oblige investors to shift to regions with high business costs or that subsidise such relocation have proven costly and rarely achieved sustainable regional development.

The chapter then identifies the characteristics of successful industrial policy. It introduces the concept of *Industrial Policy Management Capability*, which includes the capabilities of defining an appropriate, viable national project of productive transformation and mobilising societal support for it; establishing clear rules for market-based competition; delivering services effectively; and creating and removing protection when needed. Building on these capabilities, concrete principles of good industrial policymaking are identified. For instance, industrial policies are more likely to achieve their results if targets are agreed upon in a collaborative manner, involving the private sector as well as the competent public entities and civil service organisations. To ensure relevance, beneficiaries should usually make substantial contributions in cash or in kind. Implementing agencies should operate in a business-like, customer-oriented manner and hence be authorised to recruit and promote personnel based on performance criteria. Service providers, both public and private, should be subject to as much competition as possible, and there should be provisions for customers to hold them accountable. Performance should be measured regularly and independently, and results should be fed back into the process of policy formulation in order to adapt policies. To safeguard impartiality, the different roles of government – policy formulation, financing, implementation, evaluation, etc. – should be unbundled. Independent policy think tanks may further ensure that policy decisions are evidence-based and that rent-seeking behaviour is avoided. The whole policy procedure should be designed as a collaborative process of experimental learning.

Most of the empirical evidence on the effectiveness of industrial policies comes from the countries of the Organisation for Economic Co-operation and Development (OECD) and newly industrialising countries in Asia. Industrialisation in these countries builds on political systems with relatively well established rules and regulations, reasonable administrative capabilities, and a substantial degree of private sector activity. Much less empirical litera-

ture is available for low and lower-middle-income countries, where the state is often weak and private capital accumulation through productive activities has historically been very limited. **Chapter 2** explores to what extent lessons from rich countries can serve as guidelines for industrial policy in those countries. It shows that the objectives and challenges for industrial policy in low and lower-middle-income countries are quite different from those in countries with higher incomes and better institutions. The former

- need to prioritise the income and employment opportunities for the poor and the provision of affordable services. Industrial policies thus need to account for specific trade-offs that exist between creating an investor-friendly business climate and protecting the livelihoods of the poor;
- can increase their productivity substantially by learning from established business practices elsewhere. Industrial policy should thus emphasise technology absorption rather than inventing new things and pushing the technological frontier;
- face less favourable initial conditions for private sector development. The scarcity of technical and entrepreneurial skills, the lack of specialised and efficient firms and public institutions in complementary activities, fewer business opportunities due to low incomes and little diversification of consumer habits, deficient infrastructure and insecure framework conditions for private transactions together result in productivity levels far below international standards. In such conditions, proactive policies are needed to nurture entrepreneurship and innovation;
- on average rank low on indicators of government effectiveness. This affects their capability for managing industrial policies and the possibilities of the public to hold governments accountable. Hence, industrial policies can be ‘captured’ more easily by particular interest groups;
- need to be able to harmonise donors and align them with country strategies, given that donor programmes often have considerable influence on the way industrial policies are implemented;
- need to negotiate international trade and investment agreements in particular ways. These agreements provide a number of specific policy options for low-income countries, but they also limit their policy space compared to the space that today’s industrialised nations had when they started to catch up.

Given the initial competitive disadvantages of latecomer countries, it is hard to imagine ways to unleash a virtuous circle of productivity development without a government that builds consensus on a national project of industrial transformation, fosters entrepreneurial and technical skills, helps to build trust among producers, and reforms a range of other formal and informal institutions.

The key problem is that, while the *need* to correct market failure is much greater than it is in rich and institutionally advanced societies, the *ability* of the public sector to tackle such failure is also much more limited. Fortunately, industrial policies for poor countries need not be overly sophisticated. It is fairly easy to anticipate the broad directions of structural change just by looking at the trajectories of slightly more advanced countries. The risk of “betting on the wrong horse” is thus not as big as it is in countries at the technological fron-

tier. Evidence also suggests that countries may improve their industrial policies through learning-by-doing. Political will is thus more important than the initial level of administrative capabilities.

Chapter 3 provides insights from industrial policy analysis conducted in seven developing countries. All these countries are industrial latecomers facing the dilemma shown in the previous chapters. At the same time, the seven countries represent different levels of *competitiveness* as well as *government effectiveness*. These differences imply dissimilar challenges and call for different policies.

All of the countries in our sample went through phases of state-driven development and heavy-handed regulation of private businesses. All strongly felt the limitations of centrally planned economies and, as a reaction, increasingly recognise the private sector as the main driver of growth. All have privatised state enterprises. At the same time, their attitude towards the private sector remains ambivalent. Governments are unwilling to relax direct control of “strategic” industries, such as telecommunications, mining, energy and banking, and to fully liberalise factor markets. Decision-making with regard to industrial policy is largely top-down, with little involvement of enterprises and other non-governmental stakeholders. Also, bureaucracy still hampers private sector development considerably. As a result, hybrid regimes have emerged which, on the one hand, rely on private business as the driver of economic growth but, on the other, only marginally involve private sector organisations in policy formulation and continue to interfere heavily in investment decisions in a number of ways.

This situation has come about mainly for political reasons. As none of the countries has a mature rules-based democracy, governments strongly rely on clientelist networks, which may include those employed in state-owned or other protected enterprises, the state bureaucracy and politically affiliated organisations. At the same time, the governments increase their legitimacy when they manage to improve overall living conditions and create trust in their long-term development strategy. From the governments’ perspective, industrial policies thus need to achieve different, and potentially conflicting, objectives: create patronage resources *and* enhance long-term growth and development.

All seven countries in our sample apply selective policies in favour of specific industries and groups of firms but (with rare exceptions, such as Vietnam’s creation of a large state-owned company to develop a national shipbuilding industry) focus on incrementally upgrading their endowment structure. The most common objective is to develop forward and backward linkages from traditional industries. In some cases, however, this appears not to be the most appropriate target, because upstream and downstream industries require very different endowments.

The case studies revealed a certain neglect of instruments aiming to unleash entrepreneurial creativity and encourage experimentation, such as business plan competitions or subsidies for non-traditional exports. Most support is provided to make incumbents in traditional activities more competitive. Moreover, the case studies confirmed the lack of monitoring, evaluations and other political checks and balances. Implementing agencies generally report to ministries, but reporting is mainly limited to *activities* and provides little information on *outcomes* or even *impact*. Generally, we found few signs of systematic reflection on policies; for example, few countries have policy think tanks that are regularly invited to review policy experiments and inform policymaking. Moreover, industrial policies are generally not well coordinated with other related policies, such as Small and Medium Enterprises (SME) policies, investment promotion, trade policies, or science and technology policies.

Another common problem is fragmentation of the business community. Production systems in all of the countries in our sample are fragmented along different lines. The deepest gap exists between micro/small and large firms. Fragmentation can also be observed between state-owned, state-related (military or party-affiliated, etc.) and independent private enterprises, between national and foreign-invested firms, between ethnic minority-owned and other domestic firms. Such fragmentation reduces inter-firm specialisation and hampers factor mobility between groups of firms as well as knowledge spillovers from efficient to less efficient firms. Better business linkages would thus enhance competitiveness and simultaneously improve social inclusion. Interestingly, linkage creation does not feature prominently in any of the countries' industrial policies.

While the seven countries thus share many characteristics, there are also important *differences*. Possibly the most striking difference with regard to industrial policy relates to the determination and capability for building consensus on a long-term national project of industrial transformation. Tunisia and Ethiopia are highly committed to an agenda of industrial development and upgrading, which is reflected in strong investments in industrial capacity building and targeted competitiveness initiatives, including the establishment of a range of sector-specific meso-institutions. The other countries lack a comparable strategic focus and political determination. Neither the *direction of change* is clear in terms of priority sectors, untapped potential and latent comparative advantages, nor do they have clear roadmaps that identify next steps, specific constraints, and ways to overcome them.

We also found considerable differences in the effectiveness of policy implementation, both across and within countries. Some countries have built up a civil service that provides services of reasonable quality, even though corruption is prevalent in all countries. Vietnam and Ethiopia, for example, stand out for their quite detailed Five-Year Plans which define detailed policy targets and indicators and are subjected to critical mid-term reviews. Interestingly, these industrial policy management capabilities do not correlate well with World Bank governance indicators. We also found different policy styles and different degrees of effectiveness within countries, such as between policies implemented in a top-down manner and policies mainly responsive to private sector demands. In some cases, policy initiatives are driven by donor agencies or Non-governmental Organisations (NGOs) rather than the national governments.

Another difference relates to the incorporation of climate change mitigation or adaptation in industrial policymaking. Most countries have no operational climate action plans, and where such plans exist, they are hardly coordinated with industrial development strategies. Tunisia and Egypt have launched successful initiatives to attract investments in renewable energy projects – which may become large industries as part of plans to integrate the Maghreb with European energy systems – but these do not involve strategic investments in national technological capabilities either.

In sum, latecomer economies need proactive industrial policies to cope with a range of competitive disadvantages in a globalising world. While pervasive clientelism and the weakness of democratic checks and balances increase the risks of political capture, the case studies confirm that even low and lower-middle-income countries can successfully implement proactive industrialisation strategies. The report shows that objectives and challenges for industrial policy in these countries are quite different from those in countries with higher incomes and better institutions, and it underlines the need for experimentation, given that each country has to find its own strategy for managing structural change in an inclusive and sustainable way.

1 Introduction

Productivity growth is a precondition for increasing living standards and maintaining competitiveness in the globalised economy. Low total factor productivity is the key reason for persistent poverty in developing countries. The productivity gap separating poor and rich countries has never been as deep as it is today. Poor countries in particular thus need to emphasise productivity growth to alleviate poverty. The challenge is not only to develop more productive ways of doing business in activities already established but also to accelerate the structural transformation from low productivity activities in agriculture, petty trade and skill-extensive services to new activities that are knowledge-intensive and exploit the advantages of inter-firm specialisation.

Undoubtedly, the main driver of structural change is the private sector. Still, governments have an important role to play in setting policy frameworks that allow for competition and encourage innovation and technological change, as well as in correcting market failure. For instance, it may be important to support activities that do not pay off immediately for an individual investor but are likely to trigger manifold linkages and spillovers in the future; or to encourage new activities that do not emerge spontaneously because several interrelated investments need to be made simultaneously that exceed the possibilities of individual entrepreneurs. Such government interventions accelerate structural change towards more competitive and higher value activities. This is what industrial policy is about.

While the theoretical case for industrial policy is not in doubt, there is no consensus about the right degree of intervention. The controversy is mainly about *selective* interventions that favour some sectors over others and thus interfere with the price mechanism, the main signalling device of market economies. Critics argue that governments are usually not very good at identifying coordination failures or anticipating future knowledge spillovers, and their decisions may well end up reducing allocative efficiency and creating perverse incentives for investors and bureaucrats.

It is now widely accepted that industrial policy *may* work well in countries with strong meritocratic public services and political checks and balances. These mainly include OECD member states and some other high or higher-middle income-countries. Korea, Taiwan, Singapore, Brazil and Chile are often mentioned as examples of countries that successfully used industrial policies to catch up with the rich countries of the OECD. Most observers, however, are quite sceptical when it comes to the role of industrial policies in low and lower-middle-income countries. According to all available governance indicators, these countries almost without exception lag far behind with regard to government effectiveness, transparency, and accountability. Hence, even though these countries obviously face particularly severe market failure, there is a big question mark as to the ability of their governments to intervene in markets in ways that increase public welfare.¹ In fact, eco-

1 Chang (2006) and others point out that state bureaucracies of East Asian industrial latecomers (e.g. Korea) were fairly ineffective at the beginning of their take-off. Thus, initial ineffectiveness obviously does not rule out the possibility of step-by-step improvements. Still, these bureaucracies obviously had the capacity to organise learning processes effectively in a way that the vast majority of low and lower-middle-income countries has not yet been able to replicate.

conomic history is full of failures of industrial policies. In any case, the appropriate policy mix is unlikely to be the same as in rich countries because both the *requirements* and the *capacity* for public intervention differ substantially. Yet, in stark contrast with the above-mentioned success cases of catch-up development, little is known about the quality and the outcomes of industrial policies in low and lower-middle-income countries.

The aim of this report is to help fill this gap. It consists of four parts. The first provides an overview of recent debates on industrial policy, identifying areas of consensus as well as remaining open questions and policy trade-offs. Special attention is given to the spatial dimension of industrial policy (“regional policy”) and the emerging relevance of environmental concerns in industrial policymaking (“ecological industrial policy”). This part ends by summing up principles of “good” industrial policy. Part 2 addresses industrial policy challenges that are *specific for low and lower-middle-income countries*. It argues that, in those countries, poverty reduction in its various dimensions should be the primary policy objective, which implies the use of industrial policy instruments that may differ from the conventional set of policies applied in more developed countries. It also highlights specific structural problems, both within the private sector and within government institutions, and it draws attention to the particular role of donors in shaping industrial policy in those countries. It finally considers the extent to which international agreements limit the range of available policy choices and whether this hampers successful coping strategies. Part 3 presents the main findings of seven country case studies: Egypt, Ethiopia, Mozambique, Namibia, Syrian Arab Republic, Tunisia, and Vietnam. These countries were selected to include countries at different stages of industrial development and different levels of government effectiveness. All of the case studies have been, or will shortly be, published separately (see Annex). Part 4 then draws some general conclusions for industrial policy in low and lower-middle-income countries.

2 Industrial policy – taking stock of recent debates

2.1. How much intervention in markets?

There has been a protracted debate on the role of industrial policy, especially with regard to latecomer development. This debate goes back to Alexander Hamilton and Friedrich List, who both advocated measures to protect the emerging industries of their home countries (USA and Germany, respectively) against the more competitive industries of Britain.² Ever since, the rationale of intervening in markets with the aim of shifting resources into sectors that governments perceive to be important for public welfare and future economic growth has been hotly debated.

Ample empirical evidence has been gathered on both industrial policy success and failure. On the one hand, there is increasing evidence that governments have played an active sup-

2 Similarly, in the second half of the 19th Century the Minister of Industry in Meiji Japan, Okubo Toshimichi, recognised the need for protection and state-led industrialisation as a precondition for catching up with the West.

porting role in almost every case of successful latecomer industrialisation. This applies to the USA, Germany and Japan in their early development as much as it does to the newly industrialised countries of Asia³ and certain industries or regional clusters in other developing countries.⁴ On the other hand there is also abundant documentation of misguided government interventions that wasted scarce public resources and distorted markets without producing the desired effects.⁵

In most cases, however, it is difficult to judge whether government policies have been instrumental in achieving certain outcomes, especially due to attribution gaps and the problem of the counterfactual; i.e., it is impossible to prove what would have happened had the respective government not intervened or had it taken different measures. The Indian software industry is often cited as an example of a sub-sector that succeeded with very little selective government support (Athreye / Hobday 2010; Pack / Saggi 2006, 33 ff.). Singh (2009, 284 ff.), in contrast, claims that this sector owes its emergence to strategic government action. Likewise, there is always a debate as to whether more active industrial policies would have achieved even better results. For example, it is generally agreed that Hong Kong developed rapidly on the basis of laissez-faire policies (Chiu 1996), but Tban and Ng (1995) also highlight the limitations of Hong Kong's passive policy. They show that achievements regarding technology-intensive and hi-tech products were quite limited. Conversely, critics of industrial policy claim that even the most successful stories of technological catching-up do not prove a causal relationship; growth might have been even higher without industrial policy (Pack / Saggi 2006).

Furthermore, if we understand industrial policy as a process of "self-discovery" (Hausmann / Rodrik 2003) whereby governments encourage economic actors to search for new opportunities, this necessarily implies trial and error. The failure of some of the policy experiments induced by government accordingly does not discredit the search process *per se*. Governments may act appropriately if they encourage a range of potentially lucrative activities as long as they have good reasons to assume that some of these activities are likely to generate knowledge spillovers and dynamic scale economies. It is possible that several government-sponsored projects may fail before one becomes a success, one whose benefits (in terms of spillovers and dynamic scale effects) outweigh the cost of all previ-

3 The successful cases most often cited are South Korea and Taiwan (Amsden 1989; Wade 1990; Rodrik 1995; Westphal / Pack 2000).

4 Successful sectors in other developing countries include non-traditional exports in Chile (Kurtz 2001) and the aircraft industry in Brazil (Goldstein / McGuire 2004); a well-documented case of regional industrial cluster development is Penang, Malaysia (Rasiah 1994).

5 The import substitution policies of the 1960s and 70s in many developed countries are often cited as failures of industrial policy because they imposed high costs on consumers; despite long periods of protection, most of the industries established were unable to catch up in terms of productivity and competitiveness, and many protected industries fared badly after liberalisation (e.g. Esser et al. 1992; Taylor 1998). In the Soviet Union and other COMECON countries, the failure of heavy-handed industrial policy before 1991 became even more obvious. Di Maio (2009, 129) claims that export promotion programmes throughout Latin America have been "highly disappointing as these activities did not generate the positive externalities and the spillovers they were supposed to produce." Many evaluations of regional economic policies draw similar conclusions (see chapter 1.3). Finally, there have been a number of very costly large-scale industrial policy failures in developed countries, such as the Concorde project in France and the development of the fast breeder reactor in Germany and Japan.

ous projects. Moreover, incentives to stimulate the search for new products, processes or markets sometimes generate unintended innovations. Military and space research in particular have yielded unexpected commercial successes in a number of industries.

Taking all this into account, it is difficult to establish, even *ex post*, when industrial policies can be considered a success or a failure. Moreover, industrial policies are not cost-free. Even if they prove successful for the branch targeted, such success may come at a high cost for taxpayers and/or for consumers, who have to bear higher prices for protected domestic goods. It is impossible to establish whether these resources would have been better invested in other activities. This is why the industrial policy debate has yet to be settled.

Box 1: Industrial policy: Changing perceptions over the course of time

Over time, the perception of industrial policy has experienced several pendulum swings, from widespread acceptance during phases of mercantilism in the 16th to 18th centuries and import-substituting industrialisation between the 1950s and 1970s to outright rejection during the 1980s and 90s. Developed countries have usually adopted a pragmatic stance and maintained a certain level of proactive policies to foster the competitiveness of their industries, while seeking at the same time to avoid highly market-distorting bureaucratic interventions. In contrast, many developing countries have followed the respective ideological mainstream, adopting radical policy changes. In the 1950s and 70s most developing country governments (especially in Africa, Latin America, and South Asia) heavily intervened in markets with the aim of building national industries. The late 1980s and 1990s witnessed the dismantling of protective trade policies and selective economic promotion under the hegemony of neo-liberal orthodoxy.

These abrupt policy changes reflect the weakness of institutionalised systems of policy learning in many developing countries. The management of government programmes is rarely results-based with built-in feedback mechanisms; there is often no independent policy research; some countries do not encourage public debate about policy alternatives; and few consensus-building mechanisms are in place. Furthermore, international financial institutions and donor agencies have supported different policy concepts over time. In particular during the 1980s and 90s, they interfered strongly in domestic policies, using conditionality to impose trade liberalisation and the downsizing of the state.

Given the success of some Asian economies that heavily “governed their markets” (Wade 1990) in pursuit of industrialisation, and the contrasting failure of neo-liberal policies in terms of creating new competitive advantages, many developing country governments are now turning back to more proactive promotion of specific activities. The recent global economic crisis is likely to accelerate this revival of selective interventions. It has revealed the extraordinary interconnectedness of the global economy, a factor that greatly enhances the risk of negative spillovers from bankruptcies of certain banks and, to a lesser extent, large firms in the ‘real economy’, such as General Motors. The need to protect “systemic” banks and manufacturing enterprises, now again accepted throughout all OECD countries, is nothing but a new variant of the old industrial policy argument of the need to strengthen “strategic industries”.

The dissent regarding the role of industrial policy is also due to a lack of clarity about its definition. According to most definitions,⁶ industrial policy comprises “*any government measure, or set of measures, to promote or prevent structural change*” (Curzon Price 1981). While industrial policies are sometimes employed to preserve and protect existing industries or to mitigate the effects of structural crises, their principle aim is to accelerate structural change towards more productive and dynamic activities. These activities need

⁶ See Aiginger (2007, 319 f.) for a compilation of definitions

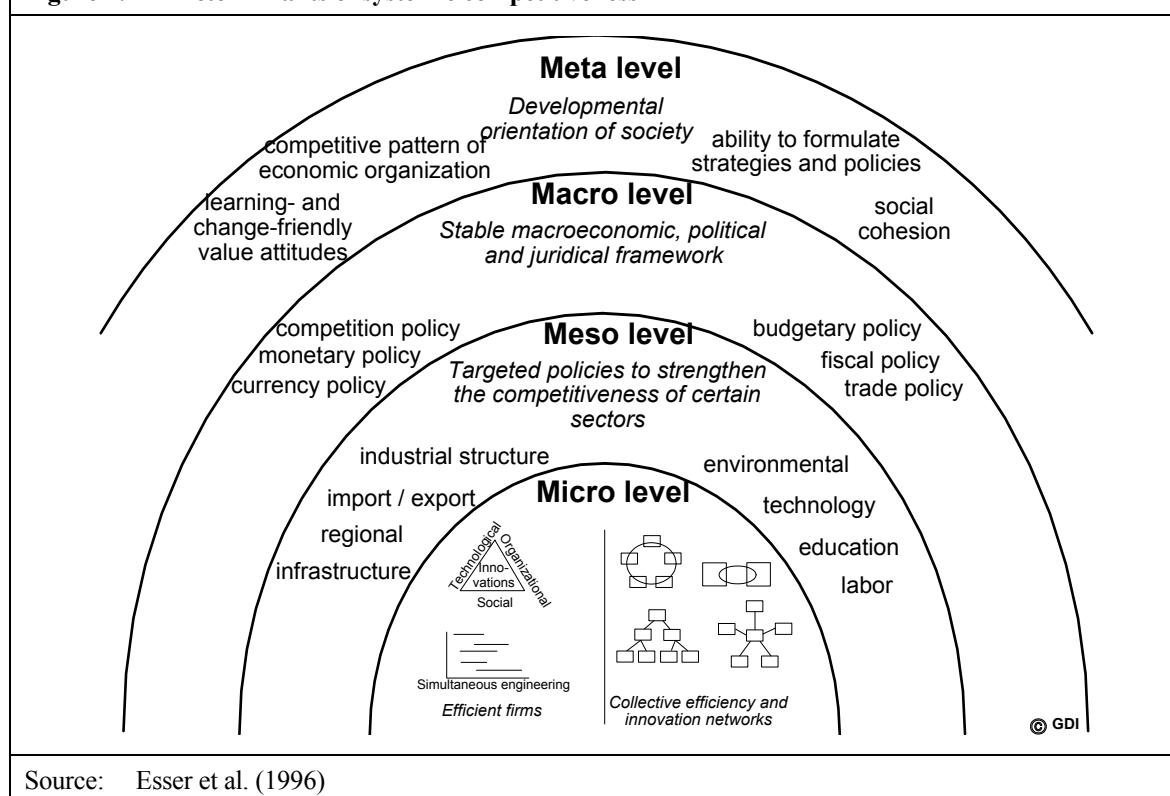
not be part of the industrial or manufacturing sector. Industrial policies quite often target activities in other sectors in which governments assume untapped growth potentials, such as non-traditional agricultural exports or high-value service activities like software development and tourism.

With “industrial policy” defined so broadly, it is not possible to delineate its scope exactly. Changing the sectoral composition of an economy involves the development of new industries and steady renewal of their competitive advantages. This requires private and public action on several fronts. Firms rarely achieve competitiveness on their own, that is, without a supporting environment of suppliers, production-oriented services, and pressure from strong competitors (Porter 1990). Once firms start to specialise and target more demanding new markets, they require new services that are not yet available and can sometimes not be provided by market actors, especially as long as the new activities are still nascent. Science and technology organisations then need to be set up and start developing new routines of interaction with private enterprises. Some government facilitation may be even needed to organise collective action among firms, which is important for small firms to achieve economies of scale (Schmitz 1999), in order to cover the initial transaction costs and help build trust among the actors involved. Increasing interactions among firms, in turn, may require improvements in corporate law to ensure that contracts can be enforced smoothly. Public-private dialogue on issues of legal reform or economic promotion may serve to build consensus among public and private actors, trigger policy learning and improve the ability to formulate and implement reasonable strategies.

In sum, as Freeman (2008) has put it, building competitiveness requires co-evolutionary dynamics among firms and institutions in several domains. This implies that policy interventions of different kinds – regulatory and supportive, generic and specific, focused on the macro or the meso and micro levels – are required to develop competitive new activities. Hence, they are all part of a country’s industrial policy.

The concept of *systemic competitiveness* developed by Esser et al. (1996) tries to capture this complexity. It proposes a framework to distinguish determinants at four levels and highlights the existence of systemic interdependencies between these determinants (Figure 1):

- *“At the metalevel: firstly, development-oriented cultural values which are shared by a large part of the society; secondly, a basic consensus on the necessity of industrial development and a competitive integration into the world market; thirdly, the ability of social actors to jointly formulate visions and strategies and to implement policies.*
- *At the macrolevel: a stable and predictable macroeconomic framework. This should include a realistic exchange-rate policy and general foreign-trade policy that stimulates local industry.*
- *At the mesolevel: specific policies and institutions to create a competitive advantage. This refers to specific, targeted policies to shape industries and their environment (technology institutes, training centers, export finance, etc.). Moreover, it is the world of local and regional industrial competitiveness initiatives to strengthen the firms' environment. Many of the institutions that act at the mesolevel are typically, or can in principle be, non-government entities, e.g. business associations, non-profit entities, or firms.*
- *At the microlevel: capable and continuously improving firms, and networks of firms with strong externalities”* (Altenburg / Hillebrand / Meyer-Stamer 1998, 1).

Figure 1: Determinants of systemic competitiveness

Source: Esser et al. (1996)

The fact that governments take action to promote or prevent structural change implies **normative judgements** regarding the direction of change; governments may seek to support change where it is desirable and to avoid or retard change where negative outcomes are anticipated. Industrialists define the goals of industrial policy more or less broadly. Most definitions focus on enhanced productivity, competitiveness, and economic growth. Krugman and Obstfeld (1991), for example, define industrial policy as “*an attempt by a government to encourage resources to move into particular sectors that the government views as important for future growth [emphasis added].*” Others claim that industrial policy should not only promote growth but also try to shape structural change in ways that are socially inclusive and environmentally sustainable. Some governments protect industries to alleviate the negative social effects of declining industries. Others use industrial policy to reduce regional disparities, such as to create modern types of productive employment in lagging regions. Meyer-Stamer (2009, 1) distinguishes between *modern* and *post-modern* industrial policies. The former focus on improving competitive performance, whereas the latter aim to enhance social welfare more broadly, i.e. by increasing the economy’s resource efficiency of making economic activities more inclusive.

Economic theory commonly distinguishes between ‘functional’ and ‘selective’ (sometimes called ‘horizontal’ and ‘vertical’) policies. *Functional* policies are those aimed at improving “the framework in which firms and industries operate and where market mechanisms ultimately determine survival and prosperity” (EBRD 2008, 80). They include the provision of power supply, port facilities, improvement of the legal framework for business, and incentives for research and development. *Selective* policies, in contrast,

favour certain activities over others. Such policies include trade protection and subsidies in the form of tax incentives or soft loans whenever these are targeted at specific firms, regions or sectors. Industrial policy involves both functional and selective measures.

Neoclassical economic theory is critical about selective industrial policies, arguing that differential support for activities distorts the allocative efficiency of markets. Markets encourage the creativity of individuals who take personal risks in the pursuit of profits. Competition among firms with different business concepts rewards efficient entrepreneurs and drives less efficient ones out of the market. It is this process of entry, innovation and exit in a competitive environment that drives productivity growth and determines where firms, regions, or countries have comparative advantages. Bureaucrats can hardly anticipate the outcome of this process. Attempts to channel resources into activities bureaucrats believe to be potentially competitive may therefore easily lead to less efficient resource allocation.

Others argue that selective policies are needed because market failure is pervasive. Markets accordingly send out price signals that lead to less than socially optimal resource allocation. In fact, there are a number of theoretical arguments to justify selective interventions (see Pack / Saggi 2006, 268 ff.; Chang 2009, 7 ff.):

- **Coordination failure.** Many investment projects require simultaneous investments in related activities to become viable. Assuming that the related activities are not yet in place and that they are not tradable, entrepreneurs will not invest unless someone else at the same time undertakes the necessary related investments. Hence, considerable coordination is required.
- **Dynamic scale economies and knowledge spillovers.** Price signals help entrepreneurs identify where they can *currently* exploit comparative advantages; but they do not help to find future production possibilities if substantial learning-by-doing economies are involved. In other words, it may be desirable for society to invest in an emerging economic activity (such as the electronics industry), which has the potential to create manifold linkage and spillovers, even though the initial investments may not pay off for any individual entrepreneur. This is because individual investors cannot (a) anticipate the range of new technologies and markets that may develop at a later stage of maturity of this industry and (b) appropriate all the gains of those activities.
- **Informational externalities.** Information about lucrative business options may not be freely available. Developing a new business idea involves costs and risks of failure. When the idea materialises, however, competitors may quickly copy it and thus dissipate the rents that can be obtained from the business innovation. Due to this non-appropriability, there is a case for governments to encourage the discovery of future business opportunities. As Hausmann and Rodrik (2003) put it, “... *there is great social value to discovering that cut flowers, soccer balls, or computer software can be produced at low cost, because this knowledge can orient the investments of other entrepreneurs. But the initial entrepreneur who makes the ‘discovery’ can capture only a small part of the social value that this knowledge generates [... because] other entrepreneurs can quickly emulate such discoveries. Consequently, entrepreneurship of this type ...will typically be undersupplied.*”

- **Environmental externalities.** Many environmental public goods, such as clean air, clean water and biodiversity, are not sufficiently taken into account in private investments. Policies are therefore needed to gear the choice of technologies towards more environmentally sustainable development paths. Such policies include elements of command and control as well as a range of stimulus packages. Market-based instruments are gaining importance, such as the establishment of tradable emissions rights. Due to the immediate threat of global warming, the internalisation of environmental costs, and decarbonisation of production in particular, are likely to become a major driver of industrial policy worldwide.

The theoretical case for the aforementioned market failures is undisputed. Controversy arises with regard to its practical relevance, particularly whether governments are well positioned to correct failure rather than further distorting markets. “Light” interventions following the logic of Hausmann and Rodrik (which is grounded on informational externalities) – i.e. to subsidise search costs for innovative investors and phase them out once the business model has proven its viability – are now widely accepted. The much more controversial issue is long-term strategic interventions that are justified on the grounds of coordination failures and assumed dynamic scale economies. To successfully build a globally competitive aircraft industry in Brazil or an automotive industry in Korea would have been unthinkable without anticipatory and coordinated public support for a range of complementary activities. Betting on the success of an entirely new industry and sustaining it throughout its infant phase, however, is obviously very risky.

More fundamental critique of the market failure concept comes from evolutionary economists including Stiglitz, Dosi, Freeman, Nelson, Cimoli and others who dismiss the welfare theorems of neoclassical theory altogether as largely irrelevant. They argue that standard assumptions – such as perfect competition, tradability of knowledge and full rationality of decision-making – are highly unrealistic. Consequently, the concept of market failure is regarded to be useless as a yardstick for government interventions. According to Cimoli et al. 2006),

“the whole world can be seen as a huge market failure ... non-market institutions (ranging from public agencies to professional associations, from trade unions to community structures) are at the core of the very constitution of the whole socio-economic fabric. ... they offer the main governance structure in many activities where market exchanges are socially inappropriate or simply ineffective.”

In this study we do not go that far, taking into account that the concept of market failure, while definitely imperfect, is useful to scrutinise the logic of government intervention in markets. There is little doubt that market failure is pervasive, particularly in developing countries. At the same time, despite all imperfections, markets are in most instances a more efficient mechanism for resource allocation than discrete government decisions. Hence governments need an analytical tool that helps to decide when market processes should be unleashed and when intervention is needed. Evolutionary theory does not offer any alternative concept that might help to make this distinction.

Many scholars of industrial development including Amsden (1989), Wade (1990), Lall (2003), Chang (2009), Cimoli / Dosi / Stiglitz (2009) and others have stressed that suc-

successful latecomer industrialisation has in most cases relied heavily on selective policies. These have included dedicated financial and non-financial support for industries considered to be “strategic”. Selectivity, however, went far beyond differentiating incentives across sectors. In many cases, governments made rather arbitrary case-by-case deals with individual enterprises. Wade cites the example of the Taiwanese government deliberately delaying imports for certain firms to force them to source locally. He argues that such “‘nudging’... was going on in Taiwan all the time, week after week, decade after decade as Taiwan moved up the world technology ladder into the high tech sectors” (Wade 2007, 6). Korea’s early technological development largely built on imitation and reverse engineering of imported technologies (Kim 1997), even when that implied infringement of intellectual property rights. Similarly, the Malaysian government used tax exemptions and public procurement to reward or punish firms for their attitudes towards industrial development plans (Altenburg 1998, 5).

While such interventions seem to have produced good results in a number of countries (mostly in newly industrialising Asia), it is obvious that they come at a cost. First, “picking winners” by government bureaucrats may direct resource allocation to inefficient uses. Second, arbitrary interference in business is likely to discourage private investors to take risks. Third, investors are encouraged to engage in rent-seeking activities. Selective measures are thus a double-edged sword, especially if they are not based on transparent rules.

To sum up, it is clear that there is a theoretical case for governments to intervene in imperfect markets. The question is thus not *whether* industrial policies should be adopted or not but *what the most appropriate policy mix is* along the continuum between strict non-intervention and provision of preferential treatment for pre-selected firms or industries. Figure 2 shows that governments have a range of options in terms of degree of selectivity and how selective support is allocated.

It should also be noted that the distinction between ‘functional’ and ‘selective’ policies, while theoretically attractive, is not clear-cut and does not provide much guidance for practitioners. Even those policies intended to be functional often indirectly influence the sector composition of the economy. Whether the exchange rate, for example, is over or undervalued has a bearing on the relative profitability of export vs. domestic market-oriented investments; whether governments favour primary or tertiary education influences the investment opportunities in more or less knowledge-intensive industries; and whether university education emphasises humanities or engineering sciences, and how many resources are devoted, say, to agricultural vs. non-agricultural research all create differential conditions for industries. The same applies for the economic stimulus packages that many governments launched to ramp up consumption during the recent global economic crisis. Car-scrapping schemes, for example, benefited the automotive industry vis-à-vis competing transport technologies, and they encouraged producers of small, fuel-efficient cars more than those of luxury cars. Hence even such stimulus packages imply a considerable degree of selectivity.

Figure 2: Level of state intervention in markets					
<div>Low<div></div>High</div>					
Strict non-intervention in markets	Market-enhancing policies	Reactive support	Non-targeted proactive support	Targeted proactive support	
Privatisation of public enterprises Reduction and equalisation of remaining trade barriers Labour market deregulation Simplification of firm entry & exit	Anti-trust policies Provision of business information systems Demand-side subsidies for the development of private service markets (voucher systems, etc.)	Trouble-shooting for investors in response to private sector demand	General export promotion Incentives for Research and Development (R&D), innovation Entrepreneurship development Promotion of resource efficiency	Promotion of specific activities or technologies (leather industry, solar energy, etc.), clusters or value chains: dedicated laboratories, skills development centres etc.	
				Strengthening existing activities	Stimulating new activities
				Experimental design, performance-based services delivered by public providers after competitive bidding; transparent criteria for selectivity	Top-down selection; services delivered by public providers Top-down selection; services delivered by public providers
Source: own compilation					

2.2. Governance issues

2.2.1 The ability and willingness of governments

What the most appropriate policy mix is depends not only on the maturity of the market economy and observed market failures, but also on the ability and willingness of governments to “fix” them without creating perverse incentives and reducing allocative efficiency. In fact, neither the *ability* nor the *willingness* of governments can be taken for granted (Chang 1996, 18 ff.).

With regard to *ability*, it is by no means evident that public agencies are capable of identifying market failures correctly and adopting measures that increase social welfare. Efforts to substitute for the market as an allocation mechanism may well reduce efficiency and, above all, create incentives for entrepreneurs to engage in lobbying and rent-seeking rather than productive investments. There is little reason to assume that bureaucrats are better than the allocative mechanism of markets at identifying future comparative advantages. Empirically, efforts to define “strategic industries” with assumed spillover effects *ex ante* and to “pick winners” have often failed. In particular, top-down approaches adopted by socialist and “developmental” governments during the 1960s and 70s to set up supposedly “strategic” industries (such as steel plants, cement factories, automotive assembly plants) under government ownership or public control have rarely been successful. As a consequence, governments nowadays see their role as facilitators and catalysts rather than as entrepreneurs. Modern industrial policy is more about creating an enabling environment for interaction and learning, targeting promising high-value activities in a joined-up manner with private enterprises, encouraging innovations, and facilitating synergies. Still, even such light-handed interventions require considerable competence on the part of governments.

With regard to *willingness*, it would be naïve to assume that public actors always act as benevolent welfare-maximisers. In fact, public actors are guided by a number of non-economic incentives which may lead to unsustainable outcomes. Politicians may want to demonstrate that they are taking action in order to satisfy their constituencies, regardless of outcomes. Rather than taking evidence-based decisions, it is in their interest to systematically overrate benefits and underrate costs. Lobbyists may reinforce such biased assessments to ensure continued flows of subsidies. In the same vein, implementing agencies have an interest in setting up new programmes or expanding them in order to increase their budgets and power. In general terms, bureaucrats face at best minor penalties if they misallocate resources. Politically backed industrial policy instruments may thus be kept in place far beyond the point where market actors would abandon a non-performing project.

Government intervention thus implies considerable risks. It is crucial to anticipate where and when interventions are likely to mitigate an existing market failure and in which circumstances they may do more harm than good. To draw this line in practice – especially *ex ante* – is difficult, given the huge number of potential direct and indirect, short-term and long-term effects of interventions, which explains why, despite a growing consensus on certain core principles of industrial policy, dissent still prevails with regard to the appropriate level of intervention in practice.

In the field of trade and foreign direct investment policy, for example, it is now widely accepted that policymakers should reduce red tape and implement transparent customs

procedures, keep effective protection relatively low, avoid extreme variation of tariff rates, encourage competition, avoid anti-export biases, not impose high taxes on exports, allow exporters duty-free access to inputs, invite foreign direct investors and foster linkages with local producers. More open trade regimes encourage learning and innovation, but liberalization should proceed at a pace that does not overburden and daunt local entrepreneurs. The best policy would be one that prompts entrepreneurs to improve continuously without overwhelming them, though that approach presupposes a good anticipation of local entrepreneurs' learning curves. It is therefore difficult to agree on the right timing and sequencing of trade liberalisation, especially with governments continuously lobbied by interest groups who try to push policy into different directions.

Research by Fagerberg and Srholec (2005, 44) shows that it is not so much the degree of openness to trade and foreign direct investment that explains performance but the ability to take advantage of them in terms of technological learning. As a result, a policy mix is needed that combines increasing openness with measures to improve technology adoption. But again, this is where the consensus ends. Some emphasise the importance of local content and national ownership requirements or other trade-related investment measures, while others argue that such interventions have usually scared investors away rather than leading to accelerated technology transfer (e.g. Moran 1999). Lall (1995) suggests softer "target and guide" instruments, i.e. winning over firms to make investments that fit the country's upgrading strategy and to persuade them to engage in technology transfer. Few countries, however, have been successful in pursuing such a strategy.⁷

The appropriate degree of public intervention in any case depends strongly on the effectiveness of governments. As Lall (2004, 101) has put it, *"if a rational choice of strategy differentiated by country were possible, the optimal one would take into account current and future government capabilities."* In practice, of course, strategies are not only decided upon on the basis of rational choices. Less efficient and accountable governments sometimes engage quite actively in selective policies as a vehicle for patronage.

A lot of research has been conducted to identify elements of good governance relating to industrial policy. Three questions are at the centre of this research:

1. Which governance patterns are suitable to deal with the increasing technological complexity in open market economies? To what extent is hierarchical policymaking still appropriate, and in what situations do market-based or network-based forms of governance deliver better results?
2. How intensively should governments network with private firms? To what extent is "embeddedness" in particular sectors important to ensure a thorough understanding of their particular needs and opportunities, and at what point do the risks of favouritism outweigh the benefits of tight collaboration?
3. How can public service providers be held accountable?

Below, the state of the debate regarding these elements of good governance is summarised.

⁷ Well-documented examples are Singapore (Battat / Frank / Shen, 1996, 28 f.) and Costa Rica (Rodriguez-Clare 2001).

2.2.2 Governance patterns: Markets, hierarchies, and networks

With regard to the first question, studies on policymaking in hierarchies and networks help to understand how consensus is negotiated and decisions are taken in the face of increasingly complex technological challenges and more diversified constellations of actors. Scharpf (1993) distinguishes between

- the anonymous market as a means to coordinate production,
- hierarchical decision-making, through which high-level authorities make rules and impose them on subordinate actors; and
- networks as a form of governance “between markets and hierarchies”.

Industrial policy (like many other policy areas) is increasingly shaped by network-like forms of governance based on self-organisation and voluntary horizontal coordination. Due to growing complexity in terms of technologies as well as the number of actors and markets involved, central decision-making authorities are unable to obtain and process all the relevant information for policy-decisions. Other actors, including firms, business associations and lower-level public agencies, need to be involved in searching for solutions and implementing them. Their involvement cannot rely on hierarchical decision-making alone. Modern industrial policy therefore combines the governance mechanisms of hierarchical decision-making (to enforce taxation, environmental standards, etc.), networks (to encourage voluntary industry standards, etc.), and markets (introducing voucher systems, subsidising demand for services, and triggering the development of new markets). These governance forms are interdependent. Policy networks, for example, are sometimes established “in the shadow of hierarchy”, meaning that governments threaten industry with the enactment and enforcement of legal restrictions should voluntary solutions not produce the desired outcomes (Meyer-Stamer 2009).

For the state, the increasing range of possible governance mechanisms implies new roles. While the main role in the hierarchical mode was to set and enforce rules, public agencies increasingly also act as initiators, coordinators and facilitators.

2.2.3 Networking and favouritism

According to public choice theory (e.g. Krueger 1974), businesses lobby for trade protection, administrative entry barriers and subsidies in order to reduce competitive pressure and obtain extra profits (rents). State-business relations are of a corporatist nature, whereby protected cartels of business “insiders” benefit from state protection, while the state gains support from the respective faction of the private sector. As these cartels are not subjected to market discipline, they tend to be inefficient and permanently extract surpluses from consumers and taxpayers. Market-oriented reforms are needed to break these corporatist alliances and create competitive pressure. But rent-seekers will lobby against such reforms. To bring about market-oriented reforms, governments thus need to be insulated from the rent-seeking interests of business.

Whereas the public-choice perspective calls for insulating government decision-making from business interest groups, the concept of embedded autonomy (Evans 1995) high-

lights the need for dense links between governments and industrial capital. Evans argues that governments must have a good understanding of the needs and the opportunities of the private sector to devise appropriate strategies. They need to know, for example, when infant-industry protection is needed and when it can be phased out. Governments should be *“embedded in a concrete set of social ties that binds the state to society and provides institutionalized channels for the continual negotiation and renegotiation of goals and policies”* (Evans 1995, 12). Public-private policy networks are needed to ensure frequent meetings on particular policy issues, and repeated mutual exposure serves to build trust.

But – very much in line with scholars of public-choice theory – Evans also sees the risks of political capture. Therefore he points to the need for autonomy in policymaking. Only autonomy enables the state to transcend the particularist interests of business groups and pursue a welfare-oriented strategy. As Rodrik (2004, 17) puts it,

“the critical institutional challenge therefore is to find an intermediate position between full autonomy and full embeddedness. Too much autonomy for the bureaucrats, and you have a system that minimizes corruption, but fails to provide the incentives that the private sector really needs. Too much embeddedness for the bureaucrats, and they end up in bed with (and in the pockets of) business interests.”

2.2.4 Holding service providers accountable

Principal-agent theory (Pratt / Zeckhauser 1985; World Bank 2004b) sheds further light on the question of how public service providers can be held accountable for providing necessary services and how political capture can be avoided. It addresses the problem that, when services are paid for not by the beneficiaries but by someone interested in certain outcomes (such as a government interested in industrial development), the service-providing unit may pursue interests that coincide neither with those of the funding agent nor the beneficiaries. Thus the “principal” interested in achieving certain goals, in terms of industrial development in our case, faces the problem of devising incentive schemes to get the service-providing “agent” to align with his goals.

In practice, this task is often difficult because the principal is not in close contact with the beneficiaries and thus lacks information. To deal with this dilemma, the principal needs a system of accountability that provides two elements: *“verifiable observation of performance and a system of rewards-penalties linked to the information so generated”* (Collier 2007a, 5). Like public-choice theory, principal-agent theory portrays bureaucrats as fully rational self-interested agents whose actions can only be directed towards the pursuit of welfare maximisation if they have the right economic incentives. This assumption has been criticised for forgetting that human actions are motivated multidimensionally. First, self-interest goes far beyond the immediate pursuit of material benefits. For instance, politicians and bureaucrats are usually interested in retaining legitimacy through the success of their policies. Second, human behaviour is always partly motivated by non-rational and non-economic considerations, including the desire for social recognition and sheer altruism. Fostering a culture of professional behaviour based on intrinsic motivation is thus an important complement to a system of material incentives.

2.2.5 Defining industrial policy management capability

The strands of the academic debate presented above are important, as they identify and explain significant facets of state-business relations. Against this backdrop, we can define more clearly what is required to make good industrial policies. We define industrial policy management capability as the *ability of political leadership to influence structural change in a way that improves the competitive performance of the economy sustainably*. This capability can be broken down into four major components:

1. **Strategic capability** refers to the ability to design policies conducive to sustainable and inclusive productivity growth. This presupposes a good understanding of the changing requirements of the global economy as well as the ability to monitor industrial development at home; in addition, it assumes an analytical ability to translate the observed phenomena into a strategy of socio-economic transformation; to set targets and identify incremental steps towards their achievement; and to create a social contract in support of this strategy. Where external actors play key roles (large foreign investors, donor agencies, etc.), it is important to align them with the strategy.
2. The **capability to establish clear rules** for market-based competition that facilitate contract enforcement and easy entry or exit for firms and provide safeguards against monopolies and cartels.
3. The **capability to deliver services effectively**. Where markets fail to deliver the necessary services, governments must be able to set up service agencies and devise incentive schemes and verifiable performance measurement systems that ensure effective and customer-oriented service provision. Meritocratic recruitment and promotion systems are key to ensure that the agency staff have a good understanding of the opportunities and constraints faced by the private sector. Close interaction and feedback loops between service providers and those affected by their decisions are important to maintain “embedded” relationships.
4. The **capability to create or remove protection when needed, while avoiding political capture**. Certain levels of protection and other targeted support may need to be provided by the state to encourage economic diversification and upgrading, but they should be phased out as soon as these targets have been achieved. This requires close observation of learning processes and the independence to withdraw or reallocate rents before they become unproductive. The transparent, predictable and rules-based formulation and implementation of policies are important to prevent the abuse of incentive systems by politicians, bureaucrats or beneficiaries in industries. Governments must be held to account for their interventions, such as through general checks and balances in the political system – including electoral competition, an independent judiciary, and critical feedback from independent media – as well as monitoring and evaluation mechanisms built into all major industrial policy programmes.

2.3. Local and regional economic development: the spatial dimension of industrial policy

Economic activities are unevenly distributed geographically. Any shift in resource allocation between sectors thus affects the spatial pattern of the economy. In particular, the transition from agriculture to manufacturing has far-reaching spatial consequences, as industrialisation requires and reinforces agglomeration economies. Even within sectors, a strong tendency towards the clustering of economic activities can be observed because economic activities build on externalities often concentrated in specific regions. While some determinants (local availability of raw material inputs, strategic locations for trading, etc.) may be given, most externalities evolve as economic activities unfold. Certain initial activities attract related industries, which again reinforce the attractiveness of that location. Pools of labour with specific skill sets are built up, the growing number of related enterprises increases the supply of complementary assets as well as the competitive pressure to improve them, and public agencies are set up to supply pre-competitive services. Agglomeration economies drive regional specialisation.

Deliberately or not, industrial policy always impacts on economic space. To the extent that it strengthens emerging clusters, or encourages spillovers from activities in one place that materialise in another, it becomes an element of regional policy. Policymakers should be aware of spatial effects and consider if and when there is a need to intervene. Increasing spatial unbalances, however, are not necessarily a cause for concern. On the contrary, spatial imbalances are necessary to exploit agglomeration economies and induce backward and forward linkages, thereby contributing to higher productivity and incomes (Hirschman 1958). Of course there may be situations when agglomeration “overshoots” and produces undesirable effects, such as damage to ecosystems in heavily populated and industrialised areas, or socially unacceptable levels of income disparity. Still, policymakers need to recognise that geographical concentration of people and wealth is a corollary of economic development. Neo-classical economists in particular are sceptical about governments trying to go against the agglomeration trends of markets. The most recent World Development Report gives a quite clear message in this regard: *“A rising concentration of people and production in some parts of a country has marked economic growth over the last two centuries. To fight this concentration is to fight growth itself.”* (World Bank 2008, 27).

The question whether, to what extent, and how governments should encourage spatially more balanced patterns of development and seek pro-actively to achieve better living conditions for the inhabitants of lagging regions is therefore not a straightforward one. Irrespective of the ongoing academic debate, governments in both developing and developed countries often take measures to encourage a more balanced geographical distribution of economic activity. The European Regional Development Funds are the most prominent example. They encourage investments and local development initiatives in less favoured regions in order to reduce regional and social imbalances within the European Union. Likewise, a wide range of policies has been tested in developing countries to persuade entrepreneurs to invest in backward regions, promote small industries in small towns and villages, and create new growth poles outside core economic regions.

The popularity of such policies is not based on evidence of success. Many academic reviews come to rather critical conclusions regarding the effectiveness of regional economic policies. Dewar (1998, 68 f.) reviews a huge number of evaluations for the United States and concludes that

“state and local business financing to stimulate economic development outside big cities does not achieve the explicit goals. The programs have little influence on either the level or the distribution of economic growth. ... Programs aimed at specific distressed geographic areas show almost no effects on the growth of these areas.”

Deichmann et al. (2008) confirm these findings for India and Indonesia.

Policies for spatial balancing nevertheless have a strong political rationale. The overall trend towards decentralisation gives the political constituencies in less dynamic regions more political voice and thus creates incentives for politicians to set up programmes that promise more industrial activity and more jobs in those regions. Greenbaum and Bondonio (2004) show that, because the selection process was political, spatially targeted economic programmes in the US and the EU spread regionally to include relatively better-off areas in order to gain political support.

In some countries, decentralisation has even made local economic development (LED) a mandatory task for local governments (Cunningham / Meyer-Stamer 2005, 4). Likewise, in the field of international development cooperation it is easier for donor agencies to gain political support for programmes that target the poor directly where they live and work, such as in lagging rural districts, than to strengthen emerging agglomerations where people are relatively better-off. This has made LED programmes for lagging regions quite popular in development cooperation.

Policymakers basically face the choice between limiting themselves to “spatially blind” (World Bank 2008) policies and trying to influence the choice of locations through private investments in order to pursue a balanced growth strategy. The World Bank favours the former. The World Development Report 2009 provides evidence that even when growth is unbalanced, development can still be inclusive because people migrate to places where they find more productive jobs, or because those who stay back home in lagging regions benefit from overall rising wage levels, remittances, and greater financial scope for public service provision. The Report therefore suggests relying on “spatially blind” institutional reforms to create a more investor-friendly business climate, ensure enforcement of property rights, and liberalise factor markets for labour and land to allow people, including the poor, to migrate to more prosperous regions. In countries where huge proportions of the population live far from the centres of economic dynamism, governments should also emphasise the improvement of connective infrastructure, including highways, railroads and telecommunications.

Market reforms and connectivity should allow for economic agglomeration in suitable locations and adaptation of geographic population distribution to the requirements of market-based economic development. Following the World Development Report, governments should only have recourse to targeted policies for economic development in lagging regions in exceptional cases. Such policies are recommended only temporarily when linguistic and class divisions impede free labour mobility (World Bank 2008, 27 ff.).

The literature on local economic development follows another paradigm. The focus here is on geographically targeted incentives to enhance the competitiveness of economic activities in lagging regions. It is hoped that the economy can be developed where the people live rather than forcing the inhabitants to migrate. The record of these efforts, however, has often been quite disappointing, forcing LED proponents to rethink their strategies. Rücker and Trah (2007, 12 f.) identify three phases of policies for local economic development, each with a different emphasis:

1. During the first phase, governments mainly offered tax breaks or subsidised the cost of public services to encourage investors to move to lagging regions. In some countries governments defined new growth poles in rural areas and small towns to encourage decentralised investments. Such efforts have mostly failed because entrepreneurs still preferred to invest in urban agglomerations where they could benefit from the proximity to markets and multiple externalities. Examples of failure include Kenya (Ikiara / Olewe-Nyunya / Odhiambo 2004) and Zimbabwe (Zwizwai / Kambudzi / Mauwa 2004). The record in industrialised countries has not been much better. According to Deichmann et al. (2008, 233 ff) *“cross-country evidence suggests that fiscal incentives [to encourage industrial firms to locate in secondary cities or other lagging areas] rarely succeed. They appear to influence business location decisions among comparable locations, but the result may be a negative-sum game between regions and inefficiently low tax rates, which prevent public goods from being funded at sufficiently high levels. Relocation tends to be within and between agglomerations rather than from large cities to smaller cities or lagging regions.”* In sum, agglomeration economies are very strong drivers of locational choice. Subsidies can do little to compensate for them.
2. In the second phase, attention shifted to promoting endogenous economic development efforts. Emphasis was given to supporting local entrepreneurship, enhancing specialisation within local clusters, strengthening social capital in communities, mobilising collective efficiency, and setting up community-based enterprises to meet the development needs of local people. In contrast to the previous phase, decision-making shifted from the central to the municipal level. Again, these efforts seem to have had relatively little success, which is hardly surprising in a globalising knowledge economy. Even in remote regions of developing countries, entrepreneurs nowadays compete against goods and services provided by leading international companies. It is hard to see opportunities for endogenous growth in lagging regions where firms cannot reap economies of scale and where the quality of almost any input factor is below international standards. Economic activities in these regions can only survive and thrive if they build on a specific comparative advantage. A review of experiences from local clusters in developing countries suggests that the most important development impulses come from outside the respective regions. Specialisation in value chains catering for global buyers or for urban demand is one important option. Linkages with internationally operating firms and demanding consumers are highly important for technological learning and help to bring local productivity levels closer to international best practice (Schmitz / Knorringa, 2000).⁸ Value chain opportunities exist in agriculture,

8 Bazan / Navas Alemán (2004) and Schmitz (2006) provide evidence that operating simultaneously as a global supplier and as a producer for local markets may be particularly successful because it makes it

manufacturing and services, tourism, etc. Helmsing (2001, 304) summarises the key lesson from efforts to develop LED “from within” as follows: “LED in the South cannot be exclusively local but must take into account the position and the positioning of territorial production systems within a local-global context”.

3. The third, and most recent, approach tries to balance endogenous economic development and integration in wider markets. It recognises the limitations of earlier efforts to develop mainly “from within”. This approach focuses on a competitive local business environment and measures to strengthen the supply-side capacities of regions in order to make them more attractive for investment on a competitive basis. In addition, measures are taken to better exploit local spillovers from integration in national and international markets. Thus the focal point is still the region, but the strategy is to build on its comparative advantages in trading with other regions.

Although the debate is not settled, empirical evidence suggests that trying to work against the agglomeration forces of markets is rarely successful and often not even desirable. Unbalanced growth may be inevitable, especially in early stages of transition from agrarian to industrial societies. Still, people tend to have manifold socio-cultural ties to their home region and may therefore have a preference to stay if they can make a decent living rather than migrating to unknown places – even if the latter would allow them to attain higher incomes and generate more growth for the national economy. Hence it may be desirable to undertake efforts to strengthen local economies in those regions where people live – rather than to strengthen the pull effects of the most dynamic economic centres. This option can also be justified on environmental grounds. Once environmental costs are fully internalised in economic calculations, it is likely that market processes will lead to less centralised spatial patterns that require less mobility of people and goods and better reflect the carrying capacity of local ecosystems.

Policymakers may choose to promote lagging regions for such reasons. Empirical evidence, however, suggests that regulations or subsidy schemes that try to channel investments towards places with strong locational disadvantages rarely ever achieve their objectives. Efforts to develop lagging regions “from within” have equally fared quite miserably. The most promising way is to connect producers in such regions with effective demand from other regions and simultaneously strengthen their capabilities. Depending on regional conditions, the strategy for promoting integration may vary. Integrating local firms into value chains co-ordinated by external buyers may be a promising option to increase effective demand when local companies have basic production skills, but lack access to major markets and marketing know-how; promotion of foreign direct investment, joint ventures or technology licensing may be more appropriate when local producers also lack competitiveness in basic manufacturing (Schmitz 2007, 422 ff.).

possible to learn from highly efficient global value chains and to employ the acquired capabilities in independent local market operations.

2.4. Resource efficiency: The big new challenge for industrial policy

Given the expected drastic consequences of climate change and the increasing deterioration of other environmental resources, the development of resource-efficient technologies is arguably the most important challenge for future industrial policy. The current debate is focused on low carbon technologies, but scarcity of other finite resources – in particular water and fertile soils – will also soon become acute at the global level.

To date, climate change is the most burning issue. According to Intergovernmental Panel on Climate Change estimates, global greenhouse gas emissions will have to be reduced to 50 % of the 1990 level by 2050 if the average global temperature increase is to be kept below the critical threshold level of 2 °C (Intergovernmental Panel on Climate Change [IPCC] 2007). Taking furthermore into account that the projected global energy needs will increase two to threefold by 2050 (Milford 2006), global warming can only be kept below the 2°C threshold if the carbon intensity (carbon emissions per unit of economic output) of the world economy is radically reduced. Any additional warming would have dire impacts on global ecosystems, including severe droughts, floods, hurricanes and massive extinction of species.

The required decoupling of economic growth from resource consumption calls for radical changes in socio-technical systems. To reduce carbon efficiency, for example, it is not sufficient to increase the energy efficiency of combustion in power plants and motors. The required levels of decarbonisation can only be achieved if, for example, new concepts of mobility are developed based on public transport and intelligent logistics; if patterns of urban development change; if new, light and resilient materials are developed; and if farming systems drastically reduce energy inputs. The transition towards a resource-efficient economy requires a true paradigm shift rather than incremental improvements along established technological trajectories.

The need to protect finite environmental goods adds a new rationale to industrial policy, requiring a more proactive government attitude and different policies. Traditionally, industrial policy has been pursued to increase the productivity of capital and labour. As has been argued in previous chapters, the main driver of productivity growth should be the private sector. The public sector may have a supporting role in subsidising search processes, coordinating market actors, or protecting and encouraging newcomers, but it should normally avoid picking specific technologies, and it should not interfere in the deployment of mature technologies.

In the case of “*ecological industrial policy*” (BMU 2008), in contrast, the challenge is to avoid irreversible processes such as the collapse of ecosystems, the depletion of resources and the extinction of species. To achieve this despite the rapidly mounting pressure on global ecosystems, much faster rates of innovation are needed. This, in turn, calls for a more interventionist role of governments. For example, while it is true that market processes have already slightly increased the resource efficiency of production in industrialised economies, these improvements are far too slow to meet the 2 °C target. Even if it were possible to establish a global carbon price in the near future, it would not provide sufficient stimulus to making the necessary investments. Too many additional market failures would persist, such as non-appropriability of investments in R&D for completely new

technologies, and the inability of markets to trigger large complementary investments simultaneously – such as in renewable energy plants and new grids.

However, any delay in bringing emissions down would magnify environmental damages and increase the costs of adaptation enormously. According to the German Advisory Council on Global Change (WBGU),

“it is of paramount importance that the level of global emissions reaches its peak by the year 2020 at the latest because otherwise the reduction of emissions in the subsequent period would have to take place at a speed that would fully overstrain the technical, economical and social capacities of our societies. (WBGU 2009, 2).

In the case of industrial policy for climate change and other environmental goods, the *speed* of innovation thus becomes crucial. Therefore it may be necessary

1. to **select technology families** – such as second-generation biofuels, photovoltaics, wind power, carbon capture and storage, or battery-fuelled cars – and to push the multiple complementary investments needed for their success (Kramer / Haigh 2009). Betting on all potential technologies simultaneously would exceed the available resources even in the richest economies and would delay the commercial breakthrough of the first technology family.⁹
2. to **subsidise the deployment** of environment-friendly technologies. Whereas technology diffusion is normally a market-driven process, public programmes may subsidise the introduction of new resource-saving technologies. In many cases such subsidies are needed only temporarily because technologies *“become cheaper the more widely they are deployed. Cost reductions of 3 to 25 percent for each doubling in volume are commonly achieved, leading to massive long term cost reductions (such as the 54 percent reduction in the cost of PV [photovoltaic, T. A.] modules from 2000 to 2009)”* (Project Catalyst 2009).

According to the specific targets of ecological industrial policy, it applies particular instruments. The centre piece is market-based instruments that put a price on public goods, such as tradable emissions rights, taxes, and public ecological charges. As has been shown, however, pricing environmental goods is not sufficient. There is also a need to use non-market mechanisms, such as prohibitions and limit values where future costs cannot be calculated or where monetisation would be unethical (such as loss of biodiversity). In addition, ecological industrial policy supports research, increases transparency of markets through standards and labels, encourages technology diffusion and tries to change consumption patterns. Box 2 summarises the key elements of “ecological industrial policy” (BMU 2008).

In sum, industrial policies that aim to increase resource efficiency may require a more proactive and interventionist role. The benefits vis-à-vis competitors pursuing hands-off economic policies may be twofold: proactive governments may gain in terms of more sus-

9 Selection of technology families is also necessary because social consensus is needed for implementation – many new technology families – from offshore wind parks to biofuels and carbon capture & storage – encounter fierce local resistance.

tainable resource management; *and* they may benefit from early mover advantages if they manage to trade goods and services more adapted to the resource-efficiency paradigm (Porter / van der Linde 1995).

Box 2: Key elements of ecological industrial policy

Ecological industrial policy ...

- eliminates subsidies with harmful effects on the environment;
- levies ecological charges and taxes to internalise environmental costs;
- establishes emissions trading schemes to ‘monetise’ public goods;
- finances public and encourages private environmental research;
- provides financial instruments for environmental investments and business start-ups, including venture capital and leasing;
- sets ambitious environmental targets that are announced and calculable on a long-term basis in order to give markets time to develop commercial solutions. One solution is the “top runner approach”, under which the best product on the market in terms of environmental sustainability determines the standard that the other products within this product group have to reach within a specified period;
- uses public procurement to encourage environment-friendly products and processes;
- promotes different lifestyles and consumption patterns;
- supports eco-labels to enhance market transparency and mobilise consumer pressure in favour of better products;
- sets up market-incentive programmes to accelerate the diffusion of new environment-friendly technologies;
- establishes public databases for environmental and efficiency technologies.

Source: Summarised on the basis of BMU (2008)

2.5. Principles of successful industrial policy making

Industrial development is path-dependent. What the most appropriate development strategy is depends on manifold initial conditions, including the endowment of natural resources and labour, distance to major markets, population density, and many others. Once initial investment and policy decisions have been taken, countries start building specific capabilities and neglecting others. As Nelson (1994) shows, the choice of technological trajectories shapes national institutions, and vice versa. Industrial policies are thus contextual.

This said, the previous chapters nevertheless allow us to define some generally valid principles of successful policymaking.¹⁰ Most of these principles aim to get the process right. They build on Rodrik’s (2004) understanding of industrial policy as a search process, on elements of principal-agent theory, and lessons from different strands of management theory. As an example, that industrial policies need to create safeguards against political capture can be regarded a generally valid principle of good practice. *How* these safeguards are organised, however, is context-specific. In some countries, formalised auditing systems

¹⁰ See also Altenburg et al. (2008) for an overview of principles of industrial policy

may be established, either within public administration or partly privatised; in others, community-based feedback mechanisms may be a more manageable and appropriate solution.

The key challenge of industrial policy is to balance (a) an *investment climate* that encourages productive private investment and market-driven structural change with (b) *targeted interventions* that accelerate productivity growth inclusively and sustainably.

Creating an enabling *investment climate* calls for a reliable legal framework that protects property rights and ensures contract enforcement. It should be recognised, however, that the successful East Asian countries – from Korea and Taiwan in the 1970s and 1980s to contemporary China – did not always fully respect the intellectual property rights of foreign investors. Reverse engineering of existing technologies was a key element in nurturing national firms. However, it is doubtful whether this can be a role model for today's latecomers. International regulations are now stricter, and China is probably the only developing country that has enough bargaining power to 'exploit' foreign technology owners (copying designs, engaging in reverse engineering, etc.) without risking their massive exodus.

As another element of an enabling investment climate, it is important to eliminate unnecessary bureaucratic procedures. In particular, developing countries often have inappropriate regulations that impose a high burden on investors without creating any value in terms of technological learning. For instance, African economies impose far more requirements for licensing a firm than European countries do (World Bank / IFC 2005). Moreover, many regulations are not effectively enforced, thereby creating space for arbitrary application of rules and bribery (ibid.). While many regulations are functional – and it is therefore misleading to benchmark countries against the least regulated economy¹¹ – a periodic revision of existing regulations in order to abolish unnecessary and simplify overly burdensome procedures is important to encourage investments. The challenge is to establish levels of regulation that are both functional for the particular national development agenda and enforceable.

Additional *targeted interventions* need to be carefully designed. They should challenge entrepreneurs and encourage learning and innovation rather than creating a protected environment that suffocates entrepreneurial dynamism and technological learning. The most serious error of past policies, in socialist countries and in many countries following the model of import-substituting industrialisation, was to focus on building physical industrial infrastructure, rather than creating a competitive environment and nurturing innovative entrepreneurship and institutional learning.

Industrial policy should balance economic, social and environmental objectives. While competition is of the utmost importance as a driver of productivity growth, it can be harmful if strong (foreign) competitors massively crowd out local producers without providing alternative employment opportunities. Liberalisation should proceed at a pace that encourages technological learning among national actors rather than overstraining them in ways

11 See Altenburg / von Drachenfels (2006) for a critique of regulatory minimalism

that leave only the option to exit the market. Temporary protective measures may be justified if they avoid creating rents that discourage technological learning; and if they do not foster activities and locations that are unlikely to become commercially viable in the foreseeable future.¹²

In line with this market orientation, industrial policy should build on and gradually extend existing comparative advantages rather than defying them. Trying to target completely new industries that do not match a country's factor endowment and comparative advantages is likely to fail (Lin / Monga 2010); however, it is also important to define a "national project" for socio-economic transformation and to take measures to upgrade existing advantages step by step. This is not about "picking winners", trying to dictate specific technological strategies, or bureaucratic micro-management of markets. Also, it is not in contradiction with experimentation and incremental policy improvements. But governments have a role to play in creating and sustaining a societal consensus with regard to the broad direction of structural change, for example to

- develop a market economy with social and environmental safeguards;
- increase international competitiveness as a precondition for earning foreign exchange;
- enhance the division of labour within the economy;
- experiment with new activities that create and expand the market for national producers and to support emerging competitive advantages proactively; and
- create the conditions for advancing from activities with low entry barriers and fierce price competition to knowledge-intensive activities that generate innovation rents.

It should be noted that structural change may also happen without proactive government support. Competitive markets drive productivity and income growth by themselves. As average productivity and income levels increase, comparative advantages will gradually shift towards activities of higher value. But relying on such 'natural' evolution may be too slow in a globalising world with many highly dynamic competitors. Strategic action, such as in the form of targeted human capital strategies or the setting of ambitious standards for the private sector, accelerates the process. The challenge for industrial policy is thus to identify the right level of government intervention. On the one hand, it is important to identify where economies may have "latent" comparative advantages (Lin / Monga 2010, 3) that private investors do not immediately recognise and develop due to existing market failures, and to create the conditions for their exploitation; on the other hand, it would be a waste of scarce resources if governments promoted industrial projects that fail to become economically viable or that move scarce capital or knowledge resources away from more productive uses. The difficulty is to assess in practice and *ex ante* what is potentially viable and constitutes a "latent" advantage.

12 How long the time horizon of industrial policy should be is a matter of open debate. There are a few examples of complex industries (automotive and semiconductor in Korea; aeronautics in Brazil) that succeeded only after quite long periods of protection. However, there are probably many more examples of failure despite costly long-term support. Long term support therefore only seems to be justified if the protected industry makes substantial progress towards international competitiveness.

Agreeing on a “national project” for transformation presupposes the ability of governments to facilitate inclusive stakeholder processes. The challenge is to agree on a shared vision, identify realistic next steps for industrial upgrading and set incentives that push entrepreneurs to pursue those steps. Of course, governments cannot have all the relevant information about economic activities that might become viable in the near future and about the external effects these activities might eventually create. The tools that have been proposed to identify *promising activities* (or “latent” comparative advantages)¹³ and the most *binding constraints*¹⁴ for their achievement are quite imprecise and offer little guidance for practical policymaking.

Hence, it is more promising to organise the search for promising next steps as a systematic and professionally moderated collaborative process between entrepreneurs, market analysts and government representatives. Appropriate formats include deliberation councils, supplier development forums, investment advisory councils, sector roundtables, and private-public venture funds. Moreover, as strategies for industrial transformation necessarily cut across institutional boundaries, it is essential to coordinate activities of different line ministries, private sector associations and other organisations at different policy levels – macro, meso, and micro. Coordination requires that mandates, competences and responsibilities be clearly defined.

Having collaborative and coordinating mechanisms in place is thus necessary but not sufficient. In fact, most countries have created public-private forums and inter-ministerial task forces to deal with issues of competitiveness, but few have a clearly discernable national project. Ohno (2009, 20 f.) therefore stresses the importance of a visionary top political leader who undertakes to galvanise such a national project with the support of a technocratic elite. The top leadership must be able to manage relations among ministries and agencies, between central and local government, between government and private sector, and, in the case of developing countries, between government and donors so that the national project is implemented even against the resistance of old elites. Ohno highlights the role of central policymaking bodies in Asian development, entrusted with the power to enact the pertinent changes across different ministries – such as Japan’s super-ministry MITI (Ministry of International Trade and Industry), the Economic Planning Board in South Korea, or the Economic Planning Unit in Malaysia (ibid., 82f.). Ohno says such top leadership is especially important in developing countries that do not have well institutionalised systems of technological and policy learning in place.

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- 13 The ‘Framework for Growth Identification and Facilitation’ proposed by Lin and Monga (2010, 16 ff) basically suggests to identify lists of tradable goods that have been produced for about 20 years in countries with similar endowment structures and twice the per capita income. However, products – and the related entry barriers for their production – in most cases change profoundly over 20 years; furthermore, per capita income does not tell much about the availability of entrepreneurial and technical skills or the government’s capability to create the institutional foundations for the necessary transformation.
- 14 The ‘Growth Diagnostics Framework’ proposed by Hausmann, Rodrik and Velasco (2008) is based on a decision tree methodology to identify which growth constraints are most binding and to start removing them. In doing so, however, it ignores the systemic nature of competitiveness and the complementarities between different constraints. Also, it is unable to capture differences between general constraints at the macro level and the much more specific constraints that may undermine the competitiveness of particular subsectors of the economy.

With regard to policy implementation, incentives are needed to ensure that the service providing agent in fact aligns with the principal's goals rather than pursuing own interests, such as increasing its own budgets, hiring more staff, or increasing its salaries. Moreover, implementing agencies need to have a good understanding of markets and the way private enterprises operate. Agencies must be able to "speak the language" of business people. To collaborate effectively with the private sector, customer orientation and business-like behaviour are essential. Many countries have successfully transferred the tasks of economic promotion to private or semi-public entities which have the necessary flexibility, for instance to set up meritocratic recruitment and promotion systems, which may also enhance competition. If users are able to choose between different providers, competition will press providers into good-quality services and promote more specialised services. Users will be able to demand the services that suit their needs best (Committee of Donor Agencies 2001). Contests that allow private sector firms to bid for public resources can be particularly useful. Another possibility is demand-side financing via grants or voucher systems.

Compulsory co-financing by customers ensures that they will only use services that they really need. In the case of poor beneficiaries, such as micro-entrepreneurs, participation may be made contingent upon non-financial efforts that involve a high opportunity cost of time for the relatively better-off – such as organising in groups. Programme beneficiaries thus self-select into participating. Also, precautionary incentives are often less costly and easier to handle than ex-post corrections – in other words, incentives to avoid the externalisation of environmental costs in the first place rather than encouraging end-of-pipe solutions; competition can also be ensured from the beginning rather than trying to correct the abuse of monopolistic power at a later stage.

Support should only be provided on a temporary basis, as long as market actors need to adjust to a changing environment. Credible exit strategies need to be formulated early on to signal that support is given for adapting to new challenges – not as an indefinite subsidy for inefficient rent-seeking industries. In the same vein, clear provisions are needed to end policy experiments in case of failure. At the same time, policy changes should be communicated early on and executed slowly to allow firms to adjust their structures and strategies. Policy shocks, such as the brisk trade liberalisation of the 1990s in many Latin American and African countries, may interrupt national learning processes and have very negative long-term effects.

Entrepreneurs – and small firm owners in developing countries in particular – operate in information-constrained environments. Industrial policy therefore has a role in creating an environment that systematically increases the options among which entrepreneurs may choose. Unless private agents provide such information, exposure to the newest market trends, demands of trend-setting consumers, advanced technologies and business concepts should therefore be facilitated and knowledge-sharing among firms encouraged.

Finally, industrial policy should be designed as a systematic process of experimental learning. For this purpose, independent monitoring & evaluation (M&E) is essential. It serves the dual function of learning from trial and error and safeguarding against political capture. As a general principle, incentives for industrial development should be linked to performance – this linkage was probably the most important factor in explaining the success of East Asian latecomer development (Amsden 2001) and presupposes the existence

of performance measurement as well as feedback loops to ensure that policies are adapted accordingly.

A good learning system also requires the unbundling of different roles of government, particularly as a target setter and regulator, as a funding agent, service provider, and evaluator. Unbundling creates clearer lines of accountability and gives service providers the autonomy to choose the best way of achieving their targets without undue political interference in decisions (World Bank 2006, 51). Likewise, competition can be promoted for different functions in order to improve performance. All these provisions help to improve the flexibility and effectiveness of industrial policy and minimise the risks of political capture.

3 Industrial policy in low and lower-middle-income countries: specific challenges

Most of the empirical evidence on the effectiveness of industrial policies comes either from OECD countries, from the first generation of newly industrialising countries in Asia – in particular South Korea (now also an OECD member), Taiwan, and Singapore – or from upper-middle-income countries such as Argentina, Brazil, Chile, Malaysia, Mexico, South Africa, and Turkey.¹⁵ Industrialisation in these countries builds on political systems with relatively well established rules and regulations, reasonable administrative capabilities and a substantial degree of private sector development.

Much less empirical literature is available for low and lower-middle-income countries,¹⁶ although most developing countries belong to these categories. According to the World Bank country classification, 43 countries are in the ‘low-income’ group (up to 975 US\$ GNI per capita in 2008) and another 55 countries in the ‘lower-middle-income’ category (976–3,855 US\$). Industrial development strategies of these countries are often inspired by, or even modelled after, policies that have been applied in high-income or upper-middle-income countries with rather mature institutions.

This chapter discusses to what extent lessons from these countries should be used as guidelines for industrial policy in low and lower-middle-income countries. It consists of three parts. Part 2.1 argues that industrial policies need to be context-specific. Part 2.2 explores in details how the political and economic conditions in low and lower-middle-income countries are different and what this implies for industrial policy. Part 2.3 then synthesises whether poor countries need more or less public intervention in markets and highlights priorities for industrial policy that differ from the conventional set of industrial policies applied in more advanced countries.

15 See e.g. Amsden (2001); Di Maio (2009); Stiglitz (1996)

16 Among the laudable exceptions are Soludo / Ogbu / Chang (2004), UNCTAD (2007) and UNIDO (2009).

3.1. The context-specificity of industrial policy

Evolutionary economics has shown that countries develop along unique trajectories. The appropriate degree of intervention in markets and the proper mix of policy instruments are therefore necessarily context-specific. Any analysis of country experiences must therefore account for differences within the group of low and lower-middle-income countries. Substantial differences exist, for example, with regard to

- *the sophistication of the economy*. Some least developed countries are at the very beginning of industrialisation. Here, a key industrial policy challenge is usually to develop new opportunities for rural non-farm employment. Some lower-middle-income countries, in contrast, may already be firmly embedded in global value chains and require specific policies to maintain their export competitiveness or try to advance towards higher value activities within these chains;
- *endowment with natural resources*. Some countries are much better endowed with agricultural or mineral resources than others. Resource-rich countries face specific challenges for industrialisation, such as Dutch-disease effects and rent-seeking incentives (Auty 1993; Rosser 2006), whereas resource-poor countries often face severe budget constraints and need to focus on labour and knowledge as their main production factors;
- *location*. Land-locked countries, for example, are faced with a number of specific disadvantages, especially the high cost of international trade. Local small-scale producers may, on the other hand, benefit from lower levels of import penetration. Other countries may benefit from location-specific factors, such as proximity to major consumer markets or trading routes;
- *history*. Development in some countries is able to build on a richer tradition in terms of skills development for industry and trade than in others. A considerable number of low and lower-middle-income countries have experienced civil war or failed policy experiments that destroyed social capital and undermined the potential for entrepreneurial development. Others have developed peacefully and gradually built up an entrepreneurial and business culture;
- *capabilities and development orientation of political actors*. Some “developmental” governments are determined to lead their countries towards industrialisation and take action to make the state bureaucracy more efficient and accountable. On the other extreme, some states are “predatory” (Evans 1995, 43 ff.) in the sense that they try to extract as much surplus as possible for their private benefit, without making relevant investments in economic transformation. Some ‘failing states’ have hardly any government capable of organising development processes. In some of those countries where governments have failed to foster entrepreneurial development, non-profit organisations and philanthropic business groups have partly filled the gap and supported development initiatives to unleash entrepreneurial innovation.

As a result of such different preconditions, policymaking is highly contextual. As Hobday concludes in his analysis of Asian industrialisation pathways, country conditions tend to be so different, and historical windows of opportunity may open or close so quickly, that very few generalised lessons can be drawn. His comparison of successful cases of late-

comer development reveals big differences with regard to policy styles, leading sectors, government involvement, and so on. In essence, therefore, “*with any development strategy, innovation and trial-and-error learning will be required, with little predictability in advance and no guarantee of success*” (Hobday 2003, 310). Furthermore, policymaking is a political process, with different groups of society voicing their interests and influencing politics and policies to varying degrees. Governments try to accommodate those interests. Their strategies thus reflect not only differences in terms of geography, history, and economic structure but also distinct preferences and power constellations among interest groups.

3.2. Different policy conditions in low and lower-middle-income countries: Stylised facts

Policy-makers should thus be careful with generalisations and policy blueprints. National strategies need to build on country-specific opportunities and constraints. At the same time, low and lower-middle-income countries share a considerable number of characteristics with regard to economic structure and governance. These common features suggest that the rationale for industrial policy and the chances of success of such policies differ considerably from those in richer societies with more advanced politico-administrative systems. The following part presents five stylised facts about conditions for industrial policy-making in low and lower-middle-income countries:

1. Low and lower-middle-income countries should, and in many cases do, set **different priorities** than policymakers in mature industrialised economies. Given widespread poverty, *inclusive industrial policies* are needed that prioritise the income and employment opportunities for the poor and improve the provision of affordable services. Industrial policies need to account for specific trade-offs that exist between creating an investor-friendly business climate and protecting the livelihoods of the poor.
2. The **initial conditions for private sector development tend to be less favourable** than in richer societies. On the supply side, technical and entrepreneurial skills tend to be scarce. The lack of specialised and efficient firms in complementary activities further increases costs and often reduces quality. The same is true for supporting public institutions. On the demand side, low incomes and little diversification of consumer habits severely restrict available business opportunities. In addition, most poor economies have relatively small populations. Deficient infrastructure and insecure framework conditions for private transactions further add to the segmentation of markets and diseconomies of scale. As a result, productivity levels tend to be far below international standards. Foreign competitors who build on economies of scale and systemic competitiveness in their home countries therefore often crowd out local producers of tradable goods and services. Latecomers are thus caught in a poverty trap.
3. Most low and lower-middle-income countries **rank particularly low with regard to government effectiveness** indicators (Kaufmann / Kraay / Mastruzzi 2008), which also affects their capability for managing industrial policies. The key problem of industrial policy in poor developing countries is that, while the *need* to correct market failure is much greater than it is in highly developed societies, the *ability* of the public

sector tackle such failures is also much more limited. Moreover, some countries lack institutions that hold governments accountable for their policies. In such cases policies can easily be ‘captured’ by particular interest groups. Thus there is a special need for policies that are cheap, simple in their implementation, and cannot easily be captured by influential interest groups, for instance because they are self-targeting in favour of poor beneficiaries or because implementation is subject to some social monitoring.

4. **Donors are major drivers of industrial policy.** In many poor countries, industrial policy programmes are almost entirely donor-financed. Donors supply funds and technical expertise to implement industrial policies and build institutional capacity. But they sometimes also contribute to policy fragmentation, overburden local administrations and tie up scarce professional resources. The ability of governments to harmonise donors and align them with country strategies is thus an important determinant of industrial policy success or failure in poor countries.
5. International trade and investment agreements provide a number of **specific policy options**, especially for least developed countries, that are not available to non-poor World Trade Organization (WTO) members. It is also true, however, that today’s industrial latecomers have more limited policy space than earlier industrialisers who caught up before the current WTO and other trade and investment regulations were in use (Chang 2003).

Let us look at these specific challenges for industrial policy in detail.

3.2.1 Different priorities in conditions of widespread poverty

Widespread poverty obliges developing countries to put poverty reduction first. Developing countries have committed themselves to achieving the Millennium Development Goals. Goal 1 calls for increased efforts to develop more productive new economic activities. It sets the targets

- to halve, from 1990 to 2015, the proportion of people whose income is less than US\$1 a day;
- to achieve full and productive employment and decent work for all; and
- to reduce by half the proportion of people who suffer from hunger.

Industrial policy can make important contributions to reaching this goal. Its intention is to enhance economic growth, both via improvements within economic sectors and via structural change. It is now generally accepted that economic growth is a precondition for poverty reduction. The poor typically share the benefits of growth and, conversely, see their incomes reduced during recessions, even though the growth elasticity of poverty varies considerably from country to country (Ravallion 2001). Put simply, two countries may have the same rate of economic growth, but in country A the incomes of the poor may increase more than proportionally, whereas in country B their incomes may rise more

slowly than average incomes or even shrink in absolute terms.¹⁷ There are even a few cases of prolonged economic growth with rising poverty levels because poor people often lack education, access to land and capital, and empowerment. Kaplinsky (1993) coined the term “immiserising growth” for this phenomenon. In essence, not only the *rate* of Gross Domestic Product (GDP) growth matters for poverty reduction but also the *pattern* of growth.

In order to be poverty-reducing, industrial policy should thus enhance development patterns that are both growth-oriented and provide opportunities for the poor to benefit from this growth. Of course it is, in principle, possible to devise industrial policies only with a view to enhancing competitiveness and productivity growth and to use the financial resources obtained from economic growth to finance welfare policies. However, there are good reasons to integrate pro-poor considerations in any policy choice *in the first place*, for instance because integrating poor people as producers and consumers may be good for equity *and* economic growth. Furthermore, the distinction between growth and welfare policies is somewhat artificial. In real life, almost any policy decision involves trade-offs between productivity and equity concerns and thus requires careful consideration of policy targets, such as:

- whether liberalisation is pursued rapidly to achieve quick productivity gains or slowly in order to allow poor producers to adapt;
- whether government resources are channelled towards resource-based or labour-intensive industries; or
- whether land use rights are granted to foreign investors or poor farmers.

To design industrial policies without regard for their distributive and poverty impact – and welfare policies without anticipating their implications for growth and competitiveness – may result in incoherent policies. If, for example, an industrial policy leads to the rapid crowding out of non-competitive jobs, the country will face increased poverty or have to incur high costs of corrective social policies. In such cases, it may be more effective, and more ethical, to adopt a policy of slower adaptation plus retraining of workers.

We use the term *inclusive industrial policy* to characterise policies that aim to shape structural change in a way as to enhance competitiveness and productivity growth while increasing the incomes of the poor more than proportionally. What are the key elements of *inclusive industrial policy*?

First, certain safeguards may be required to protect the most vulnerable groups. On one hand, there is considerable evidence that a liberal business climate that spurs competition is good for innovation and growth. Competition allows for the easy entry and exit of firms, and the quick adjustment of labour to market requirements drives productivity growth *in the long run*. On the other hand, it is also evident that poor people displaced from one ac-

¹⁷ Evidence shows that growth fuelled by resource extraction and resource-based industrialisation tends to produce more inequality than growth based on labour-intensive manufacturing. This difference affects gender inequality in particular, because labour-intensive manufacturing provides opportunities for women to shift from extremely low-productivity self-employment or informal jobs to wage employment. Women’s opportunities to benefit from resource extraction are considerably smaller (UNIDO 2009, 6).

tivity cannot easily switch to another more productive one, which is especially problematic for those who lack education and information about alternative opportunities. Likewise, gender, ethnic or class barriers may restrict their freedom to seize alternative opportunities. In sum, while ‘creative destruction’ (Schumpeter 1962) is generally a driver of productivity and income growth, it may aggravate poverty in marginalised groups of society. When foreign competitors suddenly engage in developing country markets, using far more advanced technologies and building on enormous economies of scale and scope in international markets, their competitive advantage will very frequently leave local entrepreneurs without any chance to adapt, which may rapidly undermine the incipient development of local entrepreneurship. Footwear and garment imports from China have had such effects on local producers in some African and Latin American countries (cf. Tegegne 2006 for Ethiopia). Similarly, the rapid rise of global retail chains in poor countries has rapidly crowded out many traditional retailers and small-scale producers in local supply chains (Reardon et al. 2003).

To avoid devastating social consequences, it may therefore be necessary to limit the economic freedom of commercial investors. It may, for example, in certain conditions be reasonable

- to restrict foreign trade at least temporarily when economic activities crucial for the livelihood of many poor people are heavily threatened or when countries face critical balance of payments problems and shortages of essential supplies (esp. food and energy). Such emergency provisions are permitted under WTO regulations. When the government of Ethiopia, for example, faced a severe foreign exchange shortage in 2009, it obligated coffee exporters to sell their stocks within a given time after the harvest, regardless of world market prices. Although such measures are obviously harmful for the country’s reputation as a place for private investment and may encourage illegal trade, they may in some cases be inevitable;
- to restrict foreign direct investment if rapid market penetration is likely to have unacceptable social consequences. Vietnam, for example, carries out economic needs tests on a case-by-case basis to determine if, where and when outlets of international retailers receive an operating license, depending on the local retail situation. These tests are in line with the WTO accession treaty as long as they follow a transparent procedure;
- to impose ceilings on land ownership to protect small-scale agriculture when large population groups depend on access to land to secure their livelihoods, which is especially likely where other forms of social protection are unavailable. In fact, most poor countries have established such land ceilings;
- to regulate land use in order to avoid crowding out of food production by non-food agro-industrial projects (biofuel, cotton, etc.). India, for example, restricts the processing of edible oils and sugar cane for the production of biofuels, fearing that high fuel prices would lead to food scarcity; and
- to establish public trading facilities and market data systems, promote agricultural co-operatives and set up public warehouses in order to reduce the power of local traders. In particular, small-scale producers in remote areas often lack information and are left at the mercy of merchants who are much better informed and often have full control of prices.

All these interventions come at a considerable cost. They are likely to hold back private investments, not only in the sectors directly affected but also in the economy in general, because they may raise doubts among investors about the reliability of the general business environment. The negative effects in terms of forgone investments may outweigh the intended pro-poor outcomes. Policymakers need to take those unintended effects into account. Still, there are good reasons to consider imposing restrictions on certain markets that are critical for the livelihoods of the poor. Balancing the pros and cons of such interventions is one of the most difficult challenges for policymakers in poor developing countries.

Second, industrial policies in low and lower-middle-income countries need to respond to the urgent need for additional and more productive income and employment opportunities for the poor. The following patterns of industrialisation can be highlighted as potentially pro-poor:

- Promoting manufacturing activities that absorb large quantities of low-skilled labourers, such as garment assembly for export (through duty drawback regimes, etc.). Poverty has been rapidly reduced in Asian low-cost export-oriented countries like Vietnam largely because such industries demand lots of unskilled workers. Similarly, Walker (1995) shows poverty-reducing effects of garment exports in Honduras.
- Policies that increase female participation in the workforce, such as by promoting industrial activities that have a preference for hiring women and by promoting women entrepreneurship. Policies that increase gender equality have consistently been found to also enhance economic growth (Klasen 2006).
- Policies that improve the access of the poor to rural non-farm employment. Poverty is especially persistent in rural areas. Non-farm activities help to diversify rural economies and relax the frequently observed oversupply of labour in agriculture, thereby increasing rural salaries. They may be promoted by improving access to infrastructure and rural finance or promoting non-traditional exports. However, non-farm activities are not easily accessible for the poor, and the effects of non-farm employment on rural income inequality have thus found to be mixed (Reardon et al. 2000). A range of targeted policies may, however, be adopted to lower the barriers to the entry of the poor into the sector, including group approaches and the promotion of fair-trade initiatives (Harper 2009).
- Policies to stimulate productivity development in micro and small enterprises. Such enterprises are often caught in vicious circles of low productivity and low investment. Helping promising firms to improve production and grow may increase incomes and create a number of positive externalities. Some governments, for instance, promote cluster of small firms to mobilise collective efficiency and increase their specialisation (Nadvi / Schmitz 1994). Others use public procurement to encourage upgrading of micro and small enterprises, such as by placing orders for school uniforms and furniture with those firms (Tendler / Amorim 1996).

On the other hand, not every industrial policy that targets needy producers is actually good. For example, Pagés (2010, 207 ff.) points out that SME policies may actually reduce aggregate productivity by distorting the allocation of resources, especially if they

support firms with weak business models and create incentives to stay small and informal. Trade-offs between growth and distribution thus need to be balanced carefully.

Third, the opportunity costs of industrial policy experiments need to be considered with particular care. As long as poor countries are faced with huge deficits with regard to basic social services for health, education, water and sanitation, governments should consider very carefully if and when industrial development programmes are justified. Investing in competitiveness is essential for creating the basis for sustainable productivity and income growth, but subsidies for industry imply a burden on taxpayers and/or consumers. When industrialisation projects are costly and create few opportunities for the poor – such as the Indian space programme or the nuclear programmes in North Korea and Iran – they can hardly be justified from a pro-poor policy perspective. Unfortunately, it is impossible to measure knowledge spillovers and dynamic scale effects in order to establish opportunity costs exactly.

Fourth, industrial policies should be implemented in innovative ways in order to serve the poor. Products and services on the market sometimes do not cater to the needs of the poor. Demand is often too low, the cost of serving dispersed customers, especially in rural areas, too high, and the transaction costs involved in service delivery and enforcing payments prohibitive. Products and services are therefore designed for the needs of wealthier households or firms, which often creates a vicious circle: inappropriate service supply further reduces demand and leaves poor groups undersupplied, constraining their ability to increase their productivity and their scope for purchasing efficiency-enhancing services. Also, poor consumers often have to pay more than rich people for the same services. This “poverty penalty” (Mendoza 2008) applies to credit, electricity, training, business development services and other inputs crucial for the competitiveness of firms. There may be different reasons for the poverty penalty. First, cost per unit increases with the geographical or social fragmentation of markets. Second, poor customers tend to have little political voice, and many public service providers are not held accountable for the services they should be delivering to the poor (World Bank 2004b). Hence there is a need to adapt services to the needs of the poor and reduce the poverty penalty. Microfinance provides the most prominent example of how a whole system of service provision can be redesigned to this end. Building on local social capital rather than collateral requirements, markets for small loans have unfolded rapidly. Innovative pro-poor banking techniques (such as solidarity lending, mobile banking and village banking) have greatly improved the credit access of poor population groups (González / Rosenberg 2006).¹⁸ Similar social innovations have effectively been implemented with regard to group certification, which reduces the cost of certification of quality standards for small producers and thereby helps to use standards as an enabling mechanism rather than as a technical barrier to market access and trade. In other fields, market failure may be more difficult to overcome, and a higher degree of subsidy may be required. With regard to developing new production technologies,

18 It should be noted that the sustainability of microfinance provision relies on interest rates that are far too high for long-term investments in technology and human capital. Microfinance thus has a positive effect on employment generation in petty trade and services, but contributes little to industrial development and structural change. For a critical perspective on microfinance see Chowdhury (2009).

for example, Utz and Dahlman (2007, 108) recommend setting up professional bodies *“entrusted with in-field trial and demonstration of diffusion, adaptation, and assimilation of formal sector technologies.”* Likewise, Altenburg and Stamm (2004) show that non-financial business services for Small and Medium Enterprises (SMEs) are usually under-supplied in developing countries, especially strategic services that enable firms to switch to more efficient business models. Public sector programmes may be needed to fill such gaps. The key here would be to design incentive systems that encourage competition among service providers and hold them accountable for results.

In sum, widespread poverty and the backwardness of local small-scale producers justify a number of particular government interventions to protect vulnerable population groups and provide space for gradual adaptation. Policymakers should avoid pursuing one-dimensional growth and modernisation strategies. The challenge for inclusive industrial policy-making is to find an appropriate balance between encouraging productivity growth through competition, on the one side, and providing space for learning and the *gradual* adaptation of the workforce according to its capabilities and initial conditions, on the other.

3.2.2 Different constraints for industrial development

Countries at different levels of economic and institutional development face different challenges for their competitiveness. The Global Competitiveness Report (WEF–World Economic Forum 2009) distinguishes three stages of development that call for different policies:

- Stage 1 is factor-driven: competitiveness mainly builds on the endowment primarily with unskilled labour and natural resources. Policies should mainly ensure well functioning basic institutions, infrastructure, a stable macroeconomic framework, and a healthy and literate workforce.
- Stage 2 is efficiency-driven: countries begin to develop more efficient production processes and increase product quality. Policies now need to shift towards higher education and training, developing sophisticated financial markets, and strengthening the ability to harness the benefits of existing technologies.
- Stage 3 is innovation-driven: companies compete on the basis of new and unique products, using the most sophisticated production processes. At this stage, policies should emphasise R&D and highly specialised industrial and financial services.

Similar differences apply within the group of poor, mostly factor-driven economies. Using enterprise surveys from 29 African countries, Ramachandran, Gelb and Shah (2009, 20 ff.) show that, for the poorest countries, the lack of very basic investment conditions is a binding constraint, including access to electricity or lack of macroeconomic stability. As average income increases, electricity and macroeconomic imbalances become less of a problem, but firms become more concerned with burdensome regulations, which are especially harmful in the presence of low administrative capacity and outright corruption. At even higher levels of income, human capital constraints become particularly important.

When it comes to international competitiveness, low and lower-middle-income countries face a problem typical for any latecomer in global development. They try to start industrial development in a situation when international competitors are already technologically much more advanced and have established long-term relationships with suppliers, customers and other business partners; created pools of labour with the relevant skills; and in some cases built up a brand reputation. Newcomers, especially those from lagging world regions, have to compete on an uneven playing field. They lack comparable network externalities, and they compete with firms that have already captured most of the relevant markets and accordingly benefit from substantial economies of scale. Collier and Venables (2007, 1) summarise this dilemma with respect to the competitive disadvantage of Africa:

“Africa has lagged behind partly because its economic reforms lagged those of Asia. When export diversification started to boom in Asia in the 1980s, no mainland African country provided a comparable investment climate. Now a number of African cities ... offer reasonable investment climates, but they cannot compete with Asian cities that have comparable investment climates since the Asian cities have established clusters of firms in the new export sectors. Such clusters provide firms in the cluster with the advantages of shared knowledge, availability of specialist inputs and a developing pool of experienced labour. ...Until African cities can establish such clusters, firms located in Africa face costs that will be above those of Asian competitors, but because costs are currently higher individual firms have no incentive to relocate.”

Industrial policy thus faces the challenge of poverty traps, with deficiencies on the demand side and the supply side reinforcing each other – a classical example of *coordination failure*.

On the **demand side**, the small size of markets, lack of diversification and consumer acceptance of low quality standards substantially constrain the opportunities for the development of a competitive private sector. Markets are small due to a combination of low incomes and, in most cases, small populations. Many low and lower-middle-income countries belong to the “bottom billion” countries, which typically have less than 20 million people with low average levels of income: “Per capita income, even measured at purchasing power parity (PPP) prices, is less than US\$2,000 per year, so that the typical economy has a size of less than US\$40 billion and more often around US\$20 billion” (UNIDO 2009, 9) – half the size of Luxembourg’s.

Moreover, the cost of trading across borders tends to be high compared to developed countries. On average, developing countries impose much higher restrictions on the cross-border flow of goods, capital, people, and ideas (World Bank 2008, 97 ff.). Enterprises thus find it difficult to expand their markets through exports. Due to poor transport infrastructure and inefficient transport systems, trading is costly even within countries, which further adds to the segmentation of markets and diseconomies of scale. Bigsten and Söderbom (2006) argue that this segmentation explains the prevalence of small manufacturing firms in Africa. Likewise, Sleuwaegen and Goedhuys (2003) show that most firms in Côte d'Ivoire are technically inefficient because they produce far below the maximum attainable output level.

Furthermore, poor consumers demand a very limited range of products, and they are rarely able and willing to pay a price premium for high quality or fashionable design. Unless

export markets can be targeted, local production is therefore largely confined to simple and homogeneous products for low-end markets, which further narrows the scope for product innovations and new business concepts. According to an argument put forward by Porter (1990), non-demanding domestic markets weaken the competitive advantages of firms because they discourage innovation.

On the **supply side**, there is underinvestment in pre-competitive areas such as education, vocational training, research, roads, and electricity. With the exception of a few rent-based economies, very few developing countries can afford the necessary pre-competitive investments. As a result, companies in low-income countries are on average much less able to develop, and even to absorb, new technology than those in middle- or high-income countries. Also, very few companies in poor countries conduct formal research in order to pioneer their own new products and processes.¹⁹

Moreover, the economies of low and lower-middle-income countries tend to be much less diversified. Manufacturing accounts for only a small part of GDP²⁰, and within the manufacturing sector, the bulk of activities tends to be concentrated in a few branches with low entry barriers. This reflects both the limited capabilities for developing new business models and the narrow demand base. The low degree of diversification has two negative effects. First, limited availability of specialised inputs obligates downstream industries to import at higher prices or produce inputs of all kinds in-house at sub-optimal scales without special expertise. Second, dependence on a limited number of industries, often related to natural resource extraction, increases economic vulnerability.

Given the limited technological capabilities and competitiveness of the private sector, few companies are able to compete in exports or in large-scale production for the domestic market. Enterprise structures are therefore typically highly polarised, with a small number of foreign and/or state-owned enterprises accounting for a considerable share of total output, and a myriad of micro and small enterprises creating low-productivity employment, but contributing little to GDP. The weakness of the indigenous business sector is reflected in the fact that inward Foreign Direct Investment (FDI) in low and lower-middle-income countries is usually quite high as a proportion of total investment (Bell 2007).

Compared to high-income countries, the productivity gap between small and large firms is much more pronounced, and the overwhelming majority of firms are clustered at the lower end of the distribution of productivity.²¹ Conventional wisdom suggests that unproductive firms exit the market; labour and capital are then reallocated to more productive firms. Especially in low and lower-middle-income countries, however, the “tail end” of least productive firms does not disappear. Instead, extraordinary productivity disparities persist, and the share of the labour force engaged in informal low-productivity micro-enterprises even increases (OECD 2009). Mead (1994) attributes this increase to a surplus of labour; when economic growth does not absorb the growing workforce, many unskilled unemployed peo-

19 World Economic Forum (2009, Tables 9.03 and 12.01)

20 In 2005, manufacturing added value was only 15% of GDP in low-income countries (Bell 2007, 13).

21 For Latin America: Pagés (2010, 75 ff.).

ple become self-employed or create informal micro-enterprises.²² Micro-enterprise formation is thus driven by lack of dependent employment rather than perceived business opportunities. Such “necessity entrepreneurship” is typically confined to simple activities with low entry barriers in terms of skills and capital requirements. In most low and lower-middle-income countries these activities are overcrowded and profits correspondingly low. Nevertheless, the number of micro-firms and persons employed does not decrease as long as opportunity costs of labour are almost zero.

The depth of the productivity gap limits the scope for inter-firm specialisation and interactive technological learning. Modern large firms rarely source from domestic suppliers or market through independent distributors because local firms rarely meet their quantitative and qualitative requirements. As a result, little knowledge is transferred. Low initial productivity and exclusion from the benefits of inter-firm specialisation and learning are mutually reinforcing. Empirical evidence from low and lower-middle-income countries consistently confirms that enterprises that start small tend to stay small and fail to improve their productivity significantly. Very few grow into the segment of specialist medium-sized firms (cf. Liedholm 2002; van Biesebroeck 2005). Due to this combination of low productivity and lack of specialisation, micro and small firms in low and lower-middle-income countries contribute very little to industrial development. For African countries, Morch von der Fehr (2005) and Eifert, Gelb and Ramachandran (2005) show that this is particularly true for firms operated by owners of African ethnic origin, whereas firms operated by other ethnic groups are less constrained. There may be different reasons, ranging from different access to market information to cultural factors, such as different valuation of entrepreneurship or profit-sharing obligations that make it difficult to accumulate capital.

Taking all the above factors together, productivity growth at the firm level is seriously hampered (Table 1). The left column of Table 1 presents the most important drivers of productivity growth at the firm level, all of which play important roles in mature economies. Productivity gains are achieved via increased allocative efficiency, systematic R&D-based learning, and learning-by-doing in routine operations. The right column highlights that in low-income countries, two of these mechanisms do not play a major role. Entry and exit of firms have little impact on productivity growth, because the vast majority of new firms tend to be created by necessity entrepreneurs who merely replicate standard local business models, which is reflected in the observation that the productivity of new firms does not exceed that of exiting firms (Tybout 2000, 28). Innovative firms are few and mostly come from different milieus. Firm-level R&D is also negligible. Learning-by-doing in routine operations – typically using imported standard technology – is the most important driver. Knowledge is incorporated in firms via purchase of new machines and licensed technology, or via interaction with customers. These mechanisms, however, are path-dependent and therefore rarely sufficient for creating competitive advantages at an international level.

22 Low demand for labour in modern formal enterprises may be partly due to rigid labour market policies, but the fact that micro-firm employment increases across all developing regions suggests that other regions are more important. Most importantly, standard manufacturing technologies require increasingly less labour. Only very few countries have GDP growth rates that compensate for the combined effect of the increase of the labour force *plus* enhanced labour productivity in firms using standard technologies.

Table 1: Drivers of productivity growth at the firm level		
Type	Characteristics	Relevance in low-income compared to high-income countries
1	Productivity growth via increased allocative efficiency: New entrants challenge incumbents, the most productive challengers survive; entry and exit lead to more efficient allocation.	Relatively weak, despite considerable “churning”. Most micro and small firms are necessity entrepreneurs, new firms enter at the same low level of productivity as incumbents and exiting firms. Certain firms (FDI, ethnic minorities) enter at much higher levels of productivity, but there is very little factor mobility between these and local firms.
2	Productivity growth through systematic, R&D-based learning within firms or in collaborative agreements between firms and Science and Technology (S&T) organisations.	Less relevant, as few firms perform systematic R&D and linkages with S&T organisations are weak.
3	Incremental productivity growth through learning-by-doing in routine operations within firms. Incorporation of knowledge via integration in value chains with technologically advanced lead firms, franchising arrangements, purchase of new machines, technology licensing, etc.	Most important form of technological learning in low-income countries, but highly path-dependent.
Source: own compilation, building on Hobday / Perini (2009) and Altenburg / Eckhardt (2006)		

In sum, market failure is far more pervasive in poor countries. The challenge is not just to make certain adjustments in markets that otherwise function rather smoothly. The challenge is to *kick-start market development* in a situation where indigenous entrepreneurship is incipient and supply-side and demand-side constraints reinforce each other in various ways.

In addition, latecomers to a globalising market face strong competition from far superior rivals. Many traditional pathways to high productivity are practically closed for latecomers. Countries that industrialised at an earlier stage typically built up competitive advantages in certain industries (such as steel, textiles, or garments for export) and subsequently exploited spillovers to diversify into new activities. Today, competitive pressure is enormous in any mature industry, and entering the market against the economies of scale of established producers and exporters is extremely difficult. Newcomers thus need to be very creative in developing innovative niche markets – as Chile did with commercial salmon farming and India with IT-enabled services. Also, not every country may have the opportunity to embark on export-led growth. Land-locked countries in particular need to look for other options.

From a positive perspective, latecomers also have some advantages, as they can build on business models and technologies that have been developed and tested elsewhere, which has implications for industrial policy. While the key challenge for rich countries is to improve capacity for technology creation and push the technological frontier, industrial pol-

icy in poor countries can focus on strengthening local capabilities for technology absorption (Goel / Dahlmann / Dutz 2007, 85).

In sum, poor latecomer countries need an industrial policy that is *more active* and has a *different focus* than the policies applied in rich countries. However, it is not necessarily wise for governments to engage in each and every field where markets do not work properly. Even when market failure is obvious, well meant interventions sometimes do more harm than good. Besides the question of opportunity costs (see above), there is the question of limitations in terms of capabilities to manage industrial policy effectively.

3.2.3 Different industrial policy management capabilities

It is widely held that industrial policy may work if, and only if, the state is strong and builds on well trained civil servants employed under merit-based incentive schemes and subject to political checks and balances. Soludo / Ogbu / Chang (2004, 27), for example, states that *“only when the state is capable and developmental, and has a vibrant capitalist class can industrial policies be effective.”*

Let us briefly sum up what “capable and developmental” implies, i.e. what governments need to have in order to design and implement good industrial policies (based on Chapter 1.2.5). As argued above, political leadership should be able not only to establish and enforce clear rules for market-based competition but also to formulate, in close collaboration with the private sector and other stakeholders, a strategy of socio-economic transformation; to create a social contract in support of this strategy; and to implement the strategy effectively, which in turn presupposes institutional reforms that encourage efficiency, transparency and accountability.

One may doubt whether many low and lower-middle-income countries can meet these criteria. To begin with, these countries usually lack financial resources and tend to have only a small pool of highly competent well paid cadres. Many industrial policies are costly – not only in terms of subsidies and investment in infrastructure but also in terms of investing in administrative capabilities, organising dialogue with civil society, monitoring results and creating other checks and balances. Financial and administrative skills constraints obviously already limit the scope for proactive support and call for simple and inexpensive instruments.

Even more importantly, the political will to use available resources in a way that leads to optimal public welfare cannot be taken for granted. The political systems of most low and lower-middle-income countries can be characterised as “hybrid regimes” (Diamond 2002) or, more specifically, neopatrimonial systems (Bratton / van der Walle 1997). In neopatrimonial systems, principles of modern statehood are formally valid, but permeated to a high degree by informal and personalised institutions. Governments use state resources strategically to win the electoral and other political support from specific societal groups, and office holders award personal favours – such as preferential processing of applications or assignment of public employment – to clients, in exchange for votes and loyalty. Hence, the boundaries between the private and the public spheres are blurred, and the scope for discretionary decisions is considerable. Electoral competition is typically lim-

ited, and even if elections are reasonably fair, deficits may well remain regarding the separation of powers, freedom of the press, and other democratic controls. As a consequence, interest groups may find it much easier to lobby the government and even bribe officials to obtain economic privileges than in mature rule-based democracies. Governments may seek legitimacy and support by building up extensive patronage systems, which frequently happens along ethnic lines in ethnically heterogeneous societies (Ikpeze / Soludo / Elekwa 2004, 345).

It goes without saying that such practices contradict the principles of effective industrial policy. Selective support may be provided for rent-seeking activities rather than on the basis of technical criteria, and government authorities may recruit and promote their staff on the basis of favouritism rather than merit. The practice of dispensing jobs in the public sector in return for political support has two negative consequences. First, it is likely to lead to overstaffed public agencies; second, and more importantly, if there is a tacit understanding that public positions are a kind of government award, while a government is unable to afford to pay attractive salaries, bribery may be tolerated. This is one explanation for the fact that low-income countries tend, on average, to regulate more despite their limited ability to enforce regulations. Each regulatory procedure creates an additional opportunity for bribery (Djankov et al. 2002; World Bank/IFC 2005). The lack of checks and balances – such as the virtual absence of any independent monitoring of industrial policy programmes in developing countries – is thus not only a matter of limited resources; it also reflects the logic of neopatrimonial political systems.

Corruption on the part of some economic agents may easily lead into a vicious circle. As Tirole (1996) has shown, the reputation of individual entrepreneurs and bureaucrats is affected not only by their own past behaviour but also by the behaviour of their peers. When an overall group is known as being fraudulent, it will be difficult for individuals to establish a reputation for integrity, which lowers the barrier for dishonest behaviour and in turn is likely to reinforce the bad reputation of the group.

As a result of both scarce public resources and favouritism, the governments of low and lower-middle-income countries tend to be weak on all four dimensions of industrial policy management capability (Table 2).

With regard to **strategic capability**, the Bertelsmann Transformation Index (BTI) ranks countries according to their “steering capability”, that is, their capability to define strategic priorities and to implement them effectively. Moreover, the Index measures the ability of political leaders to create a broad consensus of social actors regarding political reforms without sacrificing their reform agenda (“consensus building”). While the Index does not appraise *industrial policy* reforms explicitly, it can be used as a proxy. As Table 2 shows, of all low and lower-middle-income countries in the sample, about one third belong to the worst-performing quartile; two thirds are found in the two lower quartiles. Note that the BTI sample only includes transformation countries; had the old industrialised countries been included, the performance gap would have been even more visible.

With regard to the capability to establish **clear rules of the game for market-based competition**, the picture is similar. The Global Competitiveness Index assesses the transparency of government policymaking, and the Doing Business Index measures the procedures, time

and cost involved in resolving a commercial dispute. Again, low and lower-middle-income countries are clustered in the lower quartiles, showing that policymaking lacks transparent rules, and that most of these countries fail to ensure enforcement of business contracts.

With regard to the capability **to deliver services effectively**, the World Bank indicator for “government effectiveness” can be taken as a proxy. The results are even worse for low and lower-middle-income countries. 87 % of these countries are below average. The Global Competitiveness Index’s measure of “wastefulness of government spending” turns out to be more favourable, but it does confirm that poor countries are over-represented among the mediocre performers. As an indicator of the effectiveness of financial services (both public and private), the interest rate spread (differential between typical lending and deposit rates) tends to be high. In this regard, the average ranking of low and lower-middle-income countries on the Global Competitiveness Index is 90 compared to 68 for upper-middle-income countries.

Finally, different sources confirm that low and lower-middle-income countries are mostly weak in terms of **avoiding political capture**. The Corruption Perception Index ranks 180 countries. Although more than half of them are low and lower-middle-income countries, the best performer in this group ranks only 45th. Only 18 % of these countries are found in the upper half. The Global Competitiveness Index provides similar figures for “favouritism in decisions of government officials” and “judicial independence”.

In sum, even if such indicators are fraught with methodological problems,²³ and the numbers in Table 2 are not comparable due to the different size and composition of the samples, the overall picture is clear. *On average*, the industrial policy management capabilities of low and lower-middle-income countries are rather weak. At the same time, there is considerable *variance* within the group. In fact, some low and lower-middle-income countries rank quite high on different governance indicators. Tunisia, Cape Verde and Jordan, for example, rank between 65 and 69 (out of 100 for best performers) on the World Bank Governance Indicator for government effectiveness – a ranking similar to that of many OECD countries;²⁴ the Bertelsmann Index ranks Ghana and India high with regard to management capabilities, and Tunisia, Gambia and Burkina Faso are given a high ranking with regard to transparency of policymaking. Bad governance, in contrast, is especially common in resource-rich countries, which is consistent with the observation that the opportunity to extract large rents favours corruption, patronage politics and autocracy (Collier 2007b).

The weakness of low and lower-middle-income countries’ governments with regard to industrial policy management capabilities creates a dilemma. In the previous chapter, we argued that it is particularly the poor countries that need an active industrial policy. How, then, can these countries overcome the manifold market failures and kick-start private sector development?

23 See e.g. Ravallion (2010) for a critical discussion of the methodological foundations of composite indicators in general and Arndt / Oman (2006) for the World Bank Governance Indicators in particular. For our project, a comparison of country indicators including sub-indicators of the Index of Economic Freedom, the Doing Business indicators, the World Bank governance indicators and the Bertelsmann Transformation Index revealed several cases where indicators diverged considerably for similarly defined indicators.

24 Loewe et al. (2007, 43 f.) argue that perception-based indicators may be systematically biased because respondents tend to rate a country implicitly against the countries of its region, leading to overly optimistic ratings for countries (like Tunisia, Cape Verde and Jordan) whose regional peers score very low.

Table 2: Indicators of industrial policy management capability in low and lower-middle-income countries (LLMIC)			
Indicators of ...	Source	% of LLMIC in lowest quartile	% of LLMIC in lower two quartiles
Strategic capability			
Steering capability	BTI	32	63
Consensus building	BTI	33	63
Capability to establish clear rules of the game			
Transparency of government policy-making	GCI	38	68
Contract enforcement	DBI	36	60
Capability to deliver services effectively			
Government effectiveness	WGI	49	87
Wastefulness of government spending	GCI	27	63
Capability to create/remove protection when needed and avoid political capture			
Control of corruption	CPI	41	82
Judicial independence	GCI	41	80
Favouritism in decisions of government officials	GCI	38	71
Sources: BTI: Bertelsmann Transformation Index, 2008 (n=125, incl. 79 LLMIC); CPI: Corruption Perception Index, 2008 (n=180, incl. 97 LLMIC); DBI: Doing Business Indicators, 2008 (n=181, incl. 94 LLMIC); GCI: Global Competitiveness Index, 2008 (n=134, with 56 LLMIC); WGI: World Bank Governance Indicators, 2008 (n= 212, incl. 98 LLMIC).			

Scholars of Korea's and Taiwan's industrial development point out that these governments' management capabilities were rather weak when they embarked on their catch-up strategies in the 1960s (Chang 2006). Thus it seems that even weak governments may in certain conditions trigger successful industrial policy initiatives and improve their management capability over time. It should be noted that few governments in the world are able to design and effectively implement comprehensive long-term strategies. Policymaking is in most cases an incremental process of 'muddling through' whereby small reform steps are implemented, revised and adapted as intended and unintended results, support and resistance become visible. Ohno (2009) argues that development vision and initiative of the political top leadership are decisive to start such a process; he believes that steps to improve learning routines can be taken at a later stage. How political capture can be avoided if this leadership is not totally committed to the public cause, however, remains an open question.

The dilemma of simultaneous market and government failure also raises questions about alternative drivers of structural change. In some cases, non-governmental entities, such as

business associations, non-profit corporations and self-help organisations, have been instrumental in promoting structural change:

- The National Association of Software Services Companies (NASSCOM) is a chamber of commerce of the information technology and business process outsourcing industries in India. It facilitates business and trade in software and services, encourages research in software technology, organises training, promotes inter-industry linkages and collaboration between industry and universities, provides market intelligence services and organises dialogue. India's success in the IT-BPO industries has been attributed to NASSCOM's proactive role at times when the Indian government created many obstacles for the industry (Athreye / Hobday 2010);
- Bangladesh-based BRAC, the world's largest non-governmental development organisation, promotes projects for rural employment creation, including for example agro-industries, handicraft production and marketing, and a vegetable export programme.
- the non-profit corporation Fundación Chile played an important role in developing Chile's salmon farming industry.

While such actors can hardly be expected to launch and implement a comprehensive national project of industrial transformation, they may have an important role in promoting specific sector programmes. Encouraging such non-governmental initiatives and integrating them with public initiatives may be a promising option for countries with poor industrial policy management capabilities.

3.2.4 Environmental challenges and opportunities for low and lower-middle-income countries

Structural change has far-reaching implications for the environment. On the one hand, the aim of structural change is to enhance economic growth, and it in turn tends to damage the natural environment and deplete natural resources, such as energy reserves, clean water, soil, and biodiversity. Modernisation and enhanced division of labour involve increasing economies of scale, more intensive use of inputs, and often also transport over longer distances.

On the other hand, a structural shift away from agriculture to manufacturing and services, and from decentralised small-scale to centralised large-scale production, may alleviate pressure on resources, because

- many new forms of value creation are less directly linked to resource consumption;
- greater efficiency of the national economy frees up human and financial resources for investment in more environmentally friendly technologies;
- economies of scale in production may reduce the resource intensity of production. For example, agricultural production on larger farms is often more energy-efficient per unit than small-scale production, even if the large-farm product is then traded over larger distances (Schröder 2007; Reinhardt et al. 2007);

- structural change usually implies increasing involvement of producers in international value chains, where stricter product and process standards apply. As a consequence, suppliers in global value chains have to comply with much higher standards than producers who serve local markets.

The relationship between growth and environmental damage is therefore not linear. Countries may try to decouple growth from resource depletion. To what extent economies grow at the expense of the environment depends on the underlying incentive systems, in particular the extent to which economic agents are free to externalise environmental costs.

Even though environmental challenges are not yet high on the agenda of industrial policy-making in low and lower-middle-income countries, this is likely to change in the near future. Especially when exporting, developing countries increasingly face the need to comply with environmental standards. Non-traditional export products with promising market potential, such as fish, shrimp or cut flowers, are often cultivated in environmentally unsustainable ways that conflict with sanitary or phytosanitary standards of import markets and may lead to import bans or rejection of lots. The same applies for the use of harmful substances in the fabrication of toys, garments, or leather products. To ensure that products are exportable, it is therefore important to build efficient *and* environmentally sustainable production systems and set up quality assurance schemes, which may be quite complicated because it not only implies a need to set up labs and traceability systems – which commercial exporters are often able to manage – but also to build trust, sensitise and train smallholders, support collective action among producers, launch campaigns to regain consumer confidence and negotiate with the authorities of importing countries. These activities usually take place in the public domain.

Global climate change in particular is likely to create new challenges and opportunities for low and lower-middle-income countries. Global warming will influence agricultural productivity, leading to severe problems in some countries, especially those affected by drought and water scarcity, and to higher productivity in some temperate regions. Many poor developing countries are particularly vulnerable to the impacts of climate change. Coastal lowlands – such as the densely populated delta regions of the Ganges, the Nile and the Mekong – will be affected by rising sea levels. For Sub-Saharan Africa, climate change is expected to reduce the carrying capacity of rural ecosystems quite drastically (Collier / Conway / Venables 2008, 4 ff.). The IPCC (2007) projects a decline of up to 50 % in rain-fed agricultural production in this region. According to the WBGU (2009), water scarcity will soon become a very critical growth constraint in many countries which have not had severe water problems in the past, for instance as a consequence of deglaciation in the Andes and Himalaya or of droughts, which are expected even in the Amazon basin. At the same time, agriculture, fishery, tourism and other economic activities directly dependent on the sustainable use of natural resources account for a relatively large part of GDP in low and lower-middle-income countries, and the livelihoods of the rural poor may be affected in particular.

This fact has ramifications for industrial policy. Since many traditional activities may become less productive or even unviable, the shift towards less vulnerable economic activities needs to be accelerated, both within and across sectors. In agriculture, for example, there is a need to develop new crops and agricultural techniques. Outside agriculture, it is

necessary to strengthen competitive advantages in manufacturing and services in order to cope with an accelerated exodus from rural areas (Collier / Conway / Venables 2009, 12 f.). Also, energy conservation and efficiency measures can help save costs for companies and enhance their competitiveness.

All countries will come under increasing international pressure to reduce emissions. The emissions trading scheme under the UN Climate Change Convention has introduced a price for carbon. While the main cost of this price system will be borne by industrialised countries with high per capita emissions, the establishment of binding international agreements for carbon emissions is also relevant for low and lower-middle-income countries.

First, the international community may soon agree to demand objectively verifiable national decarbonisation road maps (WBGU 2009, 3). Thus even poor countries will have to start switching towards a resource efficient and low-carbon economy – even though countries with low per capita emissions would benefit from longer adaptation periods.

Second, as some countries, or groups of countries, introduce carbon taxes or carbon trading systems, international trade will be affected in a number of ways. If some countries do not participate, investors will have an incentive to shift investments to other destinations and to import goods, rather than producing them in markets with high carbon costs. On one hand, given their much lower per capita emissions, low and lower-middle-income countries will benefit from supplying emission allowances. Even now, developing countries can benefit from the Clean Development Mechanism – although few low-income countries are actually able to implement credible proposals (for Africa, see Collier / Conway / Venables 2008, 21). On the other hand, developed countries may put trade policy measures in place to penalise free-riders who do not tax carbon emissions, such as border tax adjustments, food miles, carbon standards and labelling. This may adversely affect low and lower-middle-income countries (UNCTAD 2009, v); for instance, these countries may have to introduce costly certification systems to document the carbon footprint of production and eventually pay taxes for exports to countries that tax their own carbon emitters.

Third, new opportunities may arise from growing international demand for clean energies. Production of biofuels – in particular biodiesel from *Jatropha* cultivation on semi-arid land – is one promising option (Altenburg et al. 2009); establishment of large-scale solar power systems for electricity export is another (DESERTEC Foundation 2009). The challenge will be to organise technological learning in a way that allows developing countries to order to a way that use these opportunities

In sum, environmental concerns, and climate change in particular, will definitely become a major driver of change in global economic relations. Hence, it will also affect low and lower-middle-income countries. As with any driver of global change, it is important to anticipate the manifold opportunities and risks for national development, and to take action at an early stage: first, because delayed action increases mitigation and adaptation costs; second, because countries may benefit from a first-mover advantages if they start seizing emerging opportunities now (UNCTAD 2009, vi). Low and lower-middle-income countries may take advantage of huge financial transfers, but only if the capacity needed to be able to absorb investments in credible and certified low-carbon projects is developed.

Moreover, many countries will need to invest in climate change adaptation, such as enhancing agricultural research for new (drought-resistant, etc.) varieties to help protect national natural resources and – importantly from an industrial policy perspective – to exploit new market opportunities and prevent the loss of markets that might result if producers do not adapt early enough to changing international demand conditions.

3.2.5 Donor influence in shaping industrial policy

In many poor countries, industrial policy programmes are almost entirely donor-financed. Donors thus need to be taken into account as important political actors in efforts to shape and implement policies. Their role, however, is ambivalent. On the one hand, donor engagement creates additional opportunities for governments to implement industrial policies, both in terms of funding and institutional capacity building. On the other hand, donors may undermine the industrial policy management capabilities of the host country.

On the positive side, few industrial policy projects in low and lower-middle-income countries would have been feasible without the financial or technical support of donors. Most activities aimed at boosting supply-side capacity, such as upgrading of technical and vocational training systems, cluster and value chain initiatives or building trade capacity, are heavily reliant on international support.

Even more importantly, donors support capacity building and thus the quality of institutions. In most cases, partner institutions are encouraged to make policy formulation and service delivery more participatory and inclusive, which tends to promote better standards in terms of customer orientation, outreach, and monitoring and evaluation.

On the negative side, four issues are a matter of concern.

First, donors may try to impose ideological concepts that undercut acceptance of active industrial policies. In particular, the structural adjustment programmes of the 1980s imposed neo-liberal conditionality upon recipients. Scholars from developing countries in particular criticise the Bretton Woods institutions in particular for weakening the governance capacity of developing states by systematically stripping them of their assets, such as by reducing public sector remuneration and triggering the exodus of personnel from the public sector, substituting foreign advisors for the decision-making role of national bureaucracies, de-legitimising developmental visions, undermining the morale of national bureaucrats, and privatising strategic functions of the state (Olukoshi 2004, 66). This critique may be biased inasmuch as it does not acknowledge the widespread abuse of state functions. However, it rightly criticises the unrealistic assumption that latecomer development is possible without a capable national bureaucracy. With few exceptions – the IFC’s Doing Business agenda being the most notable one – donors seem largely to have left behind their anti-statist attitude towards proactive private sector development policies and adopted additional heterodox approaches. Nevertheless, they may still send biased messages. Following the structural adjustment programmes, donors encouraged recipient countries to draft Poverty Reduction Strategy Papers that were clearly biased towards social sector spending at the expense of investment in infrastructure and enterprise development (Hewitt / Gillson 2003; World Bank 2004a, 9). Again, this new “fashion” among

donors turned a blind eye to the need for investments in productive assets and failed to encourage targeted private sector initiatives.

Second, large inflows of aid – relative to GDP – may reduce the competitiveness of productive sectors. These inflows lead to currency appreciation if they generate additional imports or increased domestic demand. Currency appreciation may crowd out productive investments and reduce export competitiveness (Dutch disease effect). Aid inflows can also drive inflation if the government spends these funds locally (Birdsall 2007, 13).

Third, the most talented and entrepreneurial people may prefer to work for aid institutions rather than to engage in private business. Especially in highly aid-dependant countries, donors and international organisations often attract a huge percentage of the available highly-skilled workforce. According to Knack and Rahman (2004), a high number of donor organisations in a country correlates with declines in the quality of bureaucracy.

Fourth, donor fragmentation and non-alignment with national strategies may undermine the industrial policy management capabilities of recipient countries. Currently this appears to be the most worrying by-product of foreign aid. The recent agreements of Paris and Accra involve commitments to support country-driven strategies. The idea is that recipient countries set their own economic strategies for poverty reduction, define targets and improve their institutions, especially with a view to making them more accountable. Donors should align with these objectives. Moreover, they should use local systems for planning, service delivery, monitoring and evaluation whenever possible, and they should simplify procedures and coordinate with other donors to avoid duplication and reduce the transaction costs imposed on their partners.

Many donors, however, remain reluctant to harmonise with other donors and align with country strategies. Quite often they set up new implementation units that, even if they are located in the relevant counterpart organisation, operate de facto as independent entities.²⁵ This unwillingness also reflects a weakness of the host country. Governments obviously often lack the capacity to develop operational national strategies and to ensure that all donors are aligned with these strategies. In fact, it is common to observe several donors engaging in similar activities, setting up their own specialised institutions and applying their own methodologies for analysis, implementation and monitoring. In Ethiopia, for example, about ten donors were involved in supporting the development of value chains in 2006 according to an internal report by the Development Assistance Group (a platform to coordinate donor activities). The Development Assistance Group did not try to homogenise the different methodologies, nor were there any discernible efforts by the Ethiopian government to develop a “country-owned” value chain approach and align donor contributions with it. Research by McCormick and Schmitz (2009) confirms the weakening influence

25 In Mozambique, the World Bank recently set up a new competitiveness and private sector development project with a volume that far exceeds that of the technical counterpart, the Ministry of Industry and Commerce (MIC). Project content and design are mainly defined by the World Bank. Implementation will be done through a project implementation unit located within the Ministry and headed by the former National Director for Industry of MIC, who left MIC for this purpose. The tasks of the Project overlap with those of a newly founded National SME Institute, and it is not clear to what extent the project will operate as a parallel agency (Kaufmann / Krause, forthcoming).

that donor proliferation had on Kenya's and Indonesia's policies for inclusive industrialisation.

Hence the ability of governments to manage donor contributions consistently and to impose the discipline necessary for donor harmonisation and alignment with country strategies is an important determinant of the success or failure of industrial policy in poor countries.

3.2.6 Different external policy conditions

International trade and investment rules reduce the scope for domestic industrial policy. For members of the World Trade Organisation, the use of certain policy instruments widely used by Western countries when they started to industrialise and by successful Asian latecomers is no longer permitted; mostly, the changes affect quantitative import restrictions, differential treatment of foreign and local firms, national ownership requirements and local content requirements. Export subsidies are banned for all but the least developed countries. Protection of intellectual property rights makes it illegal to imitate foreign technologies and engage in 'reverse engineering' to attain technological mastery of imported products. Additional restrictions may be included in bilateral trade agreements.

Some authors therefore argue that trade and investment rules rule out important policy options which countries need to climb the ladder from low cost to sophisticated knowledge-based competitive advantages:

"When they were trying to catch up with the frontier economies, the NDCs [now-developed countries, T.A.] used interventionist industrial, trade and technology policies in order to promote their infant industries. ... In relative terms ..., many of them actually protected their industries a lot more than the currently developing countries. If this is the case, the currently recommended package of "good policies", emphasizing the benefits of free trade and other laissez-faire ITT policies, seems at odds with historical experience, and the NDCs seem to be indeed "kicking away the ladder" that they used in order to climb up to where they are now." (Chang 2003, 28).

However, three arguments qualify the relevance of this point.

First, those industrial policies that have been banned have often done more harm than good. While infant industry protection through trade and trade-related investment measures (such as local content and trade-balancing requirements) *can* be helpful to nurture competitive infant industries, few countries have made good use of them. While import restrictions have arguably been important in East Asia, the respective rents created for local incumbents have in most cases not been used productively. Likewise, restrictions on foreign ownership and local content requirements often scared investors away and undercut the competitiveness of local products (Moran 1999). Import restrictions have arguably led to losses in economic welfare in most of the cases concerned.

Second, even under WTO rules, countries – and developing countries in particular – are still allowed to protect their industries to a considerable degree. While tariffs have to be reduced, and can in most cases not be raised again, a good number of tariffs can still be

retained. In addition, there are several provisions in effect which allow countries to impose import surcharges when imports threaten to destabilise the balance of payments or when sudden import surges emerge that may jeopardise local industries. Protective measures can also be taken to ensure food security, although all these safeguards are limited to a maximum of eight years. With regard to foreign investments, governments are allowed to carry out Economic Needs Tests and deny investment licenses if they expect, for example, negative employment effects. They can require investors to use local labour and to transfer technology. Certain subsidies, credits and infrastructure investments can be specifically targeted to attract “developmental” industries (Chang 2009, 19). Moreover, governments are still allowed to offer subsidies for R&D, regional development and environment friendly activities as well as incentives for firms to locate in science parks (Di Maio 2009, 127). Least developed countries are furthermore allowed to make use of export subsidies and benefit from a number of preferential trade agreements. The fact that only a very few poor developing countries have been able to take advantage of preferential trade agreements and other special provisions suggests that the binding constraints are not international trade and investment rules but supply-side constraints and structural problems, such as the increasing economies of scale required for exports.

Third, failure to comply with WTO commitments almost never leads to legal enforcement against poor, and especially least developed, countries. Bown and Hoekman show that “through the end of 2006, only two low-income WTO members (India and Pakistan) have been formally challenged by WTO litigation. Put more starkly, of the more than 350 formal WTO dispute settlement cases through 2006, none of the 32 WTO Members classified by the United Nations as LDCs have been challenged” (Bown / Hoekman 2008, 178). There are three main reasons: litigation is expensive; action against poor countries is politically sensitive; and these countries can fall back on special provisions that offer them special and differential treatment (ibid., 179).

In sum, even if certain policy instruments are no longer available for developing countries, their remaining policy space is still considerable. Low and lower-middle-income countries still have many industrial policy tools in their hands which they can use legally, and they can even use policies that, while not in compliance with WTO agreements, are de facto tolerated, given that other countries rarely initiate dispute settlement procedures against poor countries. Especially for modern industrial policy that encourages search processes rather than protecting incumbents, the field is wide open. Lack of policy space does not seem to be a major problem; the main constraint is the ability to make reasonable and creative use of the tools that remain.

While WTO membership is not a big problem for industrial policy, it may cost developing countries policy space with regard to two other developments.

First, industrialised countries now negotiate individual agreements with developing countries or groups of countries and may impose less favourable conditions on poor countries, even restricting their policy space. Low and lower-middle-income countries would probably be much better off with a reliable multilateral trade regime than having to negotiate bilateral and regional free trade agreements on a case-by-case basis.

Second, private standards are gaining importance. These standards can be imposed by lead firms in global value chains or by strong industry associations. Poor countries are typically standard-takers (Nadvi / Wältring 2002). They have to comply if they want to trade with partners who adhere to a certain standard, without having any effective means to participate in their formulation.

3.3. Do low and lower-middle-income countries need more or less active industrial policies – and what should they look like?

3.3.1. Market failure *cum* government failure – the basic dilemma

Our analysis has highlighted the central dilemma of industrial policymaking in low and lower-middle-income countries:

On the one hand, there are good reasons to cast doubt on many governments' ability to manage industrial policies effectively. Financial and administrative resources are scarce, and the democratic institutions that hold governments accountable are often rather weak. Many scholars therefore hold that countries at early levels of institutional development should avoid selective policies and focus instead on reforming the overall investment climate. The World Development Report 2005, for example, highlights the need to get the investment climate right and is full of warnings about and references to the risks of selective interventions (World Bank 2004b). Even Lall (2004, 101), a strong supporter of industrial policy, argued that *"in general, the lower the capabilities, accountability and commitment of the government the lower the degree of selectivity it can safely be entrusted with."*

On the other hand, market failure is pervasive, especially in poor countries where the development of entrepreneurship and market institutions is relatively recent. Box 2 illustrates the most important market failures and what they look like in poor countries. Developing countries are caught in poverty traps, with mutually reinforcing constraints on the supply and the demand side. In many poor countries, "a viable capitalist class has not yet emerged" (Khan 2004, 182). The main part of the "private sector" consists of micro and small entrepreneurs who do not meet the most basic preconditions for confronting international competitors – in terms of overall education, technical and managerial skills, market information, finance, mobility, etc. Moreover, market transactions are embedded in manifold non-market customs and rules that hamper competitiveness-based resource allocation. For all these reasons, the productivity gap separating today's developing countries from the top industrial countries is much larger than the gap that the now developed industrial latecomers had to overcome in the 19th Century to catch up with Britain and other front-runners (Chang 2003, 27).

Despite the limitations of the public sector it is therefore hard to imagine ways to unleash a virtuous circle of productivity development without a government that builds consensus on a national project of industrial transformation, encourages investment in human capital, accelerates the emergence of an entrepreneurial class, builds trust and helps to organise

producers, and reforms a range of other formal and informal institutions. At early stages of development, the size of the productivity gap between rich and poor countries, the lack of entrepreneurial competences and manifold market failures call for a particularly interventionist role industrial policy (Reinert 2009). As countries move up the income ladder, more and more government functions can, and should, of course be transferred to market actors.

Box 3: The most important market failures in poor countries

Informational externalities arise because information about new markets and viable business ideas are not freely available, and those who bear the risks of exploring new products and markets are unable to fully appropriate the benefits. In low and lower-middle-income countries, we can assume that the relevant information is even harder to come by than it is in rich countries. It is quite clear that there are fewer and less reliable statistics and commercial providers of market analysis. Even if entrepreneurs have access to certain codified information, they mostly operate in less diversified social environments, where they are rarely able to experience how other entrepreneurs have developed innovative business models, such as how they have anticipated trends, networked with related entrepreneurs, observed the success and failure of similar product launches, tested options, received feedback from customers, etc. Such tacit knowledge is key to innovative entrepreneurship, and it requires embeddedness in a learning environment with very dense information flows, which is why large global cities are “entrepreneurial hotspots”. The environment in poor countries tends to be information-scarce, with fewer entrepreneurial role models, less product diversity, less-demanding customers, fewer specialised business media, etc., especially for micro and small enterprises and rural environments.

A similar argument applies for dynamic scale economies and knowledge spillovers. When economic structures are hardly diversified and the policy environment discourages experimenting with new business ideas, firms are more likely to miss out on future competitive advantages.

Coordination failure is also extremely relevant for latecomer development. Coordination failure may occur when investment projects require simultaneous investments in related activities to become viable. Take the example of a country with promising locational and agro-ecological conditions for horticulture exports. Even if a country offers an excellent investment climate and investors recognise its potential, it will typically start off with a lack of irrigation; bad roads; no cooling chain facilities in place; no high quality inputs and specialised technical support services available; inefficient port and airport facilities; high freight rates due to low trade volumes; and so on. Developing all the necessary infrastructure facilities and services simultaneously far exceeds the possibilities of most individual investors. Unless a major coordinated effort is organised to develop complementary assets – either by a very big corporate investor or an ambitious developmental state – the potential for horticultural exports will remain unexploited. In addition, latecomer countries face competition from early movers who have, over decades, gradually built the necessary cluster synergies and therefore benefit from economies of specialisation and scale.

For several reasons, the difficulties for building competitive industries in latecomer countries tend to increase even further:

- Markets are now much better integrated, in terms of trade and investment rules and in terms of the costs of information, communication, and transportation. The most efficient competitors can offer their products on a global scale and even reach out to very remote markets. Isolation no longer protects less efficient producers.
- International trade increasingly takes place in “governed” value chains which require compliance with increasingly sophisticated standards, implying higher entry barriers for newcomers (Gereffi 1999). Compliance entails a dedicated institutional infrastructure to harmonise national and international standards, test products and processes, ensure traceability, etc.

- The unprecedented rise of China has cut off many of the remaining avenues for technological upgrading (Kaplinsky / Morris 2008). In the past three or four decades, many developing countries have been able to take advantage of lower labour costs vis-à-vis industrialised countries in order to propel export-oriented industrialisation. Some of these countries have been able to develop gradually more productive and knowledge-intensive industries, either upgrading within the same industries or shifting into more sophisticated new industries. More recently, however, China has been moving into most of the respective market segments at even lower costs. No other developing country can currently match China's advantages in terms of labour supply and market size. Chinese exports have therefore taken away many of the traditional export markets of other developing countries, such as for garments and shoes. Moreover, China is increasingly also capturing higher-end markets, where it combines labour cost advantages with technological competence. Last, but not least, Chinese producers are massively penetrating developing countries' domestic markets and substituting local production.

Rising entry barriers and increased competition may easily overburden the learning capacity of domestic firms and thus frustrate the incipient processes of entrepreneurship development in latecomer economies. To avoid this outcome and exploit the opportunities of open markets, local externalities, such as specialised infrastructure and complementary financial and business development services, need to be strengthened. Yet, this is where we find a classic case of coordination failure. Commercial providers are unlikely to take the risk of investing in specialised facilities as long as demand for them is not well established, and vice versa. Strong collective efforts may be required to develop local cluster synergies with the necessary scales before the respective activity takes off.

It should also be noted that anticipating the broad directions of structural change is not as difficult and risky for developing economies as it is in advanced economies. Critics of industrial policy rightly argue that bureaucrats are unlikely to anticipate new market opportunities better than entrepreneurs (Pack / Saggi 2006), especially with regard to cutting-edge, "new to the world" innovations. In poor developing countries, however, the main challenge of structural change is not to push the technological frontier but to adopt patterns of specialisation already well established elsewhere. For instance, it is obvious that traditional retail systems are increasingly being replaced by global retail chains; in turn, there is a need for economies of scale and increasing quality standards on the part of all their suppliers. In such a situation, governments can adopt selective measures that help to make the changes to the national retail system that are manifestly necessary – such as by regulating the market entry of foreign chains to encourage supplier development and franchise systems, improve quality assurance among potential suppliers, etc. In general terms, the development of comparative advantages is incremental and based on initial factor conditions. In factor-driven economies, this limits the range of available options. In a country with appropriate agro-ecological conditions and proximity to major OECD markets, for example, it is not very risky to adopt selective policies in favour of horticultural production.

On balance, it is plausible to assume that the risks of political capture, wasted scarce public resources, and market distortion are greater in less developed political-administrative systems; but it clearly becomes more and more difficult for latecomers to produce tradable goods (whether for exports or domestic consumption) in the presence of enormous interna-

tional asymmetries in productivity, scales, and externalities. Collective action, including selective promotional activities for particular promising sectors, is needed to cope with the latecomer situation. The question is not whether low and lower-middle-income countries should apply industrial policies or not, but what can be done to improve their effectiveness and avoid political capture. This problem, however, is anything but trivial.

3.3.2 How can policy effectiveness be ensured and political capture minimised?

Government failure stems from inability and unwillingness (Chapter 1.2.1). As far as ability is concerned, many basic principles of good industrial policy are well known (Chapter 1.5) and can thus be learned. Government agencies can be trained – in the case of low and lower-middle-income countries possibly with the help of donors – to practice such principles. Moreover, systematic learning routines can be built into these agencies. It should also be noted that governments may choose among more and less sophisticated policy instruments (Figure 2). Thus agencies can start with policies that are simple and imply little risk and gradually move towards more differentiated approaches or riskier interventions as they increase their management capabilities.

It is much more difficult to increase policy effectiveness when the core of the problem is political, such as when lobby groups bring about special treatment and politicians depend on backing from interest groups. It is obviously hard to introduce checks and balances in any political system when they jeopardise the interests of firmly established rent-seeking groups. However, change is possible. The countries discussed in Chapter 3, for example, mostly evolved from socialist planning to market economies and in some cases (such as Vietnam and Ethiopia) now implement modern competitiveness-enhancing policies, as was also observed in traditionally rents-based economies like Egypt. Change may come from (a combination of) different sources and it may be radical or incremental.

Some countries, such as many developing countries that switched from socialist planning to market economies, underwent *radical* system transitions. Radical changes were also introduced during the Structural Adjustment Programmes of the 1980s and 90s, triggered by a combination of unsustainable fiscal and trade deficits and external pressure. In both cases, the previously pursued industrial policy packages were largely discredited.

But even if countries do not experience major system transitions and crises, *gradual* changes may be introduced by development-oriented political leaders, often with support from development agencies. Many countries have embarked on civil service reform programmes that reform the incentive structure of public services in order to make them more effective and transparent and hold service providers accountable. Incremental improvement at the level of meso-institutions and specific policies and instruments, in turn, *may*, in some cases, have a positive impact on the underlying politics (Brautigam 2000, 5 f.), because:

- if economic institutions are improved, such as by introducing compulsory performance measurement of economic programmes or by institutionalising feedback mechanisms

from the target group back to public service providers, the cost of bad policies becomes more transparent, which may mobilise the business community, civil society, and reform groups within the government to sustain and deepen reforms;²⁶

- if a considerable number of indigenous businesses start to grow as a result of reforms, the constituency for these reforms may grow;
- more exchange with private sector organisations and professional service providers is likely to improve the government's understanding of the importance of a growing private sector and the need for effective industrial policies.

As Ohno (2009) shows, the likelihood of success increases greatly with a visionary political leadership that ensures that reforms are implemented against the resistance of interest groups that benefit from the status quo.

Decisions regarding industrial policy should thus take the possibility of *policy learning* into account. Hence industrial policies should not be easily dismissed on the grounds of weak *present* industrial policy management capabilities. However, learning routines should be built into the policy process.

4 Stories of success and failure: Insights from seven comparative country case studies

The previous sections have taken stock of the industrial policy debate and its relevance for low and lower-middle-income countries. The analysis was based on stylised facts (although important differences within this group of countries were acknowledged). This chapter further highlights specific country conditions on the basis of case studies.

During 2009 and early 2010, seven case studies were carried out to analyse the potentials and risks of industrial policy in the following low and lower-middle-income countries: Egypt, Ethiopia, Mozambique, Namibia,²⁷ Syrian Arab Republic, Tunisia, and Vietnam. Detailed reports for each of these countries have been, or will soon be, published separately (see Annex 1). This section identifies some shared characteristics and differences between the seven countries.

A caveat is necessary at this point. It should be noted that the following observations are qualitative. Data on policy implementation are not easily available. Costing of programmes is usually not transparent, and, even more importantly, the impact of policies is hardly ever evaluated. Our country case studies therefore largely built on visible evidence (such as whether industrial parks or incubators actually attracted investors), qualitative

26 Benchmarking exercises that compare countries or regions have sometimes become drivers of change. The Doing Business ranking is a good case in point. Especially in low and lower-middle-income countries, many governments took measures explicitly to improve their rank place. Hundreds of administrative reform steps have been documented in the annual Doing Business reports.

27 In 2009, Namibia was reclassified by the World Bank as an upper-middle-income country. Despite its fairly high average income, Namibia still shares most of the structural characteristics of poorer countries as described in the previous chapter.

information gathered from experts, published case studies and grey literature. Judgements on the quality of programmes and perceived policy gaps are therefore somewhat subjective. Moreover, some of the sample countries have recently undergone major transitions of their economic and political systems, and the quality of institutions may therefore change considerably within short periods of time. To avoid mistakes or unfair judgements, we have carefully tried to cross-check our information and invited country experts to provide feedback on preliminary conclusions.

4.1. Research design and selection of case studies

The country cases have been selected among those low and lower- middle-income countries that

- are partners of German development cooperation and
- have “sustainable economic development” (according to the classification of the German Federal Ministry for Economic Cooperation and Development, BMZ) as a focal area of the respective bilateral programmes.²⁸

This selection is pragmatic. First, the studies – which were funded by BMZ – provide background information and practical guidance for ongoing development programmes; second, German implementing agencies have been engaged for many years and have built up trustful relationships with key economic stakeholders, which greatly facilitated our access to information. Most of the bilateral programmes operate with networks of local partners, including ministries, agencies for economic development in different sub-sectors, business associations and other non-governmental organisations, both at the national level and in regions. In particular, the GTZ offices in each of the countries were extremely supportive in accessing important national informants from different spheres of government and society.

BMZ identified 18 potential candidates for country studies: Algeria, Cambodia, Egypt, Ethiopia, Ghana, Honduras, Kyrgyz Republic, Lao Peoples Republic, Morocco, Mongolia, Mozambique, Namibia, Sri Lanka, Syrian Arab Republic, Tunisia, Uganda, Uzbekistan und Vietnam. Out of this pre-selected group, seven case studies were chosen that represent a large variation with regard to two criteria:

1. *Competitiveness*. This criterion is based on the assumption that industrial policy requirements change with increasing diversification and sophistication of the economy. We used the World Economic Forum’s indicator for “competitiveness” as a proxy. This indicator is a weighted average of many different components, ranging from general framework conditions (macroeconomic stability, infrastructure, and health) to the

28 Only partner countries were taken into account where bilateral programmes address a broad reform agenda in the field of economic development, excluding those where the focal area “sustainable economic development” only comprises a narrow range of activities (only vocational training, only financial market reform, etc.).

efficient functioning of markets (for goods, finance, and labour) and indicators of technological readiness, business sophistication and innovation.

2. *Government effectiveness*. We used the World Bank's indicator as a proxy for the countries' „industrial policy management capacity“. It measures the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.

A simple matrix was created based on these two indicators. Based on this exercise and some pragmatic considerations (such as the availability of support at the country level), the following country case studies were selected: Egypt, Ethiopia, Mozambique, Namibia, Syrian Arab Republic, Tunisia, and Vietnam.

According to the indicators, Tunisia is the most competitive and Mozambique amongst the least competitive of Germany's partner countries. Their industries can be expected to face substantially different challenges. With regard to the effectiveness of policymaking, high-ranking Namibia and Tunisia should be able to implement better policies and avoid political capture more effectively than low-ranking Syria.

Table 3: Selection of country case studies

Partners of German development cooperation engaged in well established bilateral programmes in “sustainable economic development”. Bold letters indicate country case studies

Competitiveness (World Economic Forum [WEF], Global Competitiveness Indicators 2009 – 2010)				Government effectiveness (World Bank, 2009)
< 3.4	3.4 – 3.8	3.8 – 4.2	> 4.2	
		Namibia	Tunisia	<i>Fairly high</i> > 0.0
Mozambique	Ghana	Morocco Sri Lanka		<i>Moderate</i> - 0.3 – 0.0
Kyrgyz Republic	Uganda Ethiopia Mongolia	Egypt Vietnam Algeria Honduras		<i>Low</i> - 0.7 – - 0.3
	Syria Cambodia			<i>Very low</i> < - 0.7
Uzbekistan and Lao PR both rank “very low” with regard to “government effectiveness” but are not included in the World Economic Forum's ranking of “competitiveness”.				
Source: World Economic Forum (Global Competitiveness Indicators 2009–2010) / World Bank, 2009				

As we have mentioned earlier, however, such indicators should be treated with considerable caution. For instance, *government effectiveness* assesses the government's *overall*

performance, which may be better or worse than the effectiveness of the *specific subset* of industrial policies. Moreover, there is no consensus on what “effective” government policies imply. For example, the definition of the concept does not account for the ability of governments to identify appropriate support and create societal support for long-term transformation strategies. Thus the indicators might be biased towards “Western” notions of good policymaking that favour neutral policies over proactive, targeted “developmental” policies. The indicators should thus be regarded as rough proxies that help to select countries with different characteristics and thus ensure variance within the sample. Detailed country analyses are necessary to qualify these aggregate indicators and identify more specific challenges and capacities with regard to industrial transformation. The following sections summarise some of the key findings. Unless indicated otherwise, they draw on the seven country case studies.

4.2. Mixed performance

Table 4 compares the performance of the countries included in the sample with regard to GDP growth, share of manufacturing value added, and overall competitiveness. It underlines the big differences in terms of competitiveness – ranging from rank 40 for Tunisia to 129 for Mozambique – and industrialisation – with shares of manufacturing value added in GDP between 4.8 (Ethiopia) and 21.1 % (Vietnam).

Changes in growth and competitiveness, and even in industrial development, depend on many factors beyond industrial policy, including political and macroeconomic stability, commodity prices and international demand conditions. Moreover, industrial policy, as defined in this study, may also target non-manufacturing activities. Table 4 thus does not reveal much about the effectiveness of industrial policy. Nevertheless, it helps to put the subsequent qualitative analysis of industrial policies into perspective.

Table 4: Performance indicators						
	Average GDP growth 2000–2008	MVA/ GDP 2000	MVA/ GDP 2009	Competitiveness*		
				Score 2005	Score 2009/2010	Rank 2009/2010
Egypt	4.9	19.4	15.7	4.10	4.04	70
Ethiopia	7.9	5.5	4.8	2.85	3.43	118
Mozambique	7.4	12.2	13.9	3.17	3.22	129
Namibia	4.8	12.8	13.5	3.80	4.03	74
Syria	4.3	6.5	12.8	n.d.	3.76	94
Tunisia	4.8	18.2	17.9	4.48	4.50	40
Vietnam	7.5	18.6	21.1	3.91	4.03	75
* Score: 1 (least competitive) to 7. Rank: N = 133 countries.						
Sources: World Development Indicators 2009; Global Competitiveness Report 2009–2010						

During the period 2000–2008, all seven countries benefited from high rates of economic growth. Growth was especially impressive in Ethiopia, Vietnam and Mozambique, although starting from very low levels. For Ethiopia and Mozambique, the last decade was a period of recovery from previous civil wars and failed socialist policies. Against this backdrop, high growth rates reflect a return to normalisation. Despite its growth, Mozambique hardly increased its competitiveness, indicating that growth was based on singular events – such as a big investment in an aluminium smelter – rather than systematic improvement of the policy environment. Ethiopia, in contrast, made a considerable leap forward in terms of competitiveness, though it did not lead to industrialisation. Competitiveness increased due to progress in construction and commercial agriculture, whereas manufacturing activities grew at a slower rate than overall GDP. Vietnam had the most impressive performance in terms of economic growth based on increased competitiveness and industrialisation. Increased export competitiveness in labour-intensive manufactures and primary products including oil, coffee and seafood, explain Vietnam's success. The country study concludes, however, that Vietnam is not well prepared to make the transition from labour-cost to more knowledge-based advantages.

The other countries grew moderately. Namibia slightly increased its competitiveness and industrial output. Competitiveness stagnated in Tunisia and Egypt, though, especially in Tunisia, at a quite high level. The country study describes how Tunisia managed to shift from a largely rent-based to a private-sector and export-driven economy. GDP growth in Egypt was driven by high oil and gas prices, leading to a marked decrease of the manufacturing share of GDP. Manufacturing nevertheless grew slightly and became more diversified. Syria's state-led economy had the lowest growth rate of all countries. Still, the country managed to double the share of manufacturing value added in GDP, according to official figures.

4.3. Increasing recognition of the private sector as the engine of growth...

All of the countries of our sample went through phases of state-driven development and heavy-handed regulation of private businesses. Vietnam, Mozambique and Ethiopia were closely aligned with the Soviet Union and pursued centrally planned economic policies until the collapse of the Soviet Union. In Ethiopia, the pro-Soviet regime was ousted by a guerrilla movement, which formed a new government in 1991, but even that movement built on a Marxist ideological background. In Namibia, the South-West Africa People's Organisation (SWAPO), a liberalisation movement supported by the Soviet Union, Libya and Cuba, took office after defeating the South African Apartheid regime and ending its administration of Namibia in 1988. However, the incoming governments in Ethiopia and Namibia pragmatically shifted towards market economies. The same applies to Mozambique, where the liberation movement Frente da Libertação de Moçambique (FRELIMO) retreated from its Marxist inclination, established a democratic multi-party system and shifted to a market-based economy in the 1990s. Egypt and Tunisia countries applied central planning during the 1970s and built up large state-owned enterprise sectors, but have incrementally liberalized their economies since: Tunisia mainly during the 1990s and Egypt a decade later. In Syria, the transition is even more recent. Especially during the last Five-Year Plan (2006–2010), which was entitled “Towards a Social Market Economy”,

private investments greatly accelerated, thereby increasing their share in manufacturing at the expense of the mostly uncompetitive state-owned enterprises.

All these countries strongly felt the limitations of centrally planned economies. For instance, Vietnam was at the brink of bankruptcy in the late 1980s; Mozambique suffered from a combination of inefficient central planning (which ended in the late 1980s), civil war and sabotage (until 1992); in Ethiopia, the situation was similar until 1991. When Namibia became independent, the eastern bloc was already in full decay, so that SWAPO had already abandoned some of its socialist rhetoric before independence. Moreover, the collapse of the Soviet Union obligated countries to rethink their trade relations. In the MENA region, the economic crises – triggered by decreasing oil and gas prices and increasing debt service in the 1980s – were less severe, but the inefficiency of the state-led economy had also become very evident.

Today, at least six of the seven countries embrace the principles of the market economy and regard the private sector as the main driver of productivity enhancement and economic growth; only in Syria, the state socialist ideology still prevails and the transitions towards a market-economy proceeds very slowly. All of the countries have privatised a significant number of state enterprises. According to the World Bank Privatisation Database,²⁹ privatisation transactions between 2000 and 2008 amounted to 11.6 billion US\$ in Egypt, 3.6 billion in Tunisia, and 0.9 billion in Vietnam. Transactions in the other countries were much smaller, but in some cases, the numbers of privatised (often relatively small-sized) companies was considerable. Also, trade and investment regimes have gradually been liberalised. Simultaneously, macroeconomic management has improved; for instance, fiscal deficits and inflation have been reduced below the level of previous decades.

4.4. ... but state-business relationships are rarely collaborative and governments are unwilling to soften control of ‘strategic’ sectors

While there is a remarkable consensus about the centrality of the private sector, the attitude of most governments towards the private sector remains ambivalent. In all countries, certain consultative processes with business associations are in place, but governments still tend to have a paternalistic and “command and control” attitude towards the business sector, rather than adopting a facilitating role. Bureaucratic procedures still hamper private sector development considerably. In 2010, only Tunisia and Namibia (ranking 55th and 69th, respectively, from a total of 183 countries) ranked fairly high on the Doing Business indicator. Syria (144th) performed worst in this regard.

Decision-making with regard to industrial policy is still mostly top-down, i.e. neither local governments nor non-governmental actors, such as business associations, have significant influence. Mistrust towards the private sector is often deep-seated. In Ethiopia, for example, following political conflicts related to the 2005 national elections, the government intervened in the Ethiopian Chamber of Commerce in order to change its management.

29 <http://rru.worldbank.org/businessplanet/default.aspx?pid=4>. The database is not a fully comprehensive resource.

Subsequently, entrepreneurs perceived the Chamber and most sector associations as organisations through which the government communicates its industrial policies rather than as independent institutions for lobbying or policy dialogue. In single-party systems, like Vietnam and Syria, decision-making power is even more centralised in the party and the central government.

As the number of large national companies tends to be fairly small, they have often direct access to high levels of government and therefore have little incentive to engage in an open and broad-based dialogue (see also Brautigam 2000, 15). The government in turn usually depends on these businesses, which are important contributors to the national GDP and export earnings, and is thus responsive to their interests. The interests of the large majority of small and medium-sized businesses, in contrast, are only weakly organised and represented and therefore not capable of effecting a more open and inclusive public-private dialogue (Rosendahl 2010).

Moreover, all governments in our sample of developing countries have established clear limits to economic liberalisation. First, they are unwilling to relax direct control of “strategic” or “sensitive” industries, such as telecommunications, mining, energy and banking. The willingness to privatise is especially low in Syria, where key sectors like oil refineries, power generation, ports operation, air transportation and water distribution are under strict government control. In Ethiopia, the governments’ unwillingness to soften control of telecommunications and banking is the main obstacle for its WTO accession. Even in Tunisia – the most competitive country of the sample and the one with the most effective government according to Table 3 – many enterprises remain under state control, and private investment in construction, infrastructure, transport, communication, culture, education, publishing, and food processing is still dependent on the express authorization of the public authorities. Vietnam’s privatisation policy (called ‘equitisation’ here) is an illustrative example of the ambiguity of governments towards privatisation. On the one hand, state-owned enterprises are notoriously uncompetitive and account for the lion’s share of bad loans in the banking system; on the other, authorities are often “*reluctant to promote equitisation lest they would be criticized as deviating from socialism*” (Dinh 2003, 12). Recently, the government privatised many small state-owned enterprises but at the same time created large state-owned industry groups, such as in textiles and shipbuilding, as politically controlled vehicles to push the development of the respective sectors, exploit economies of scale, and establish internationally competitive brands – following the Korean *chaebol* model. As Perkins and Vu (2009, 4) state, “*the relevant ministries see the main task of industrial policy as one of protecting and promoting the state owned sector.*”

Second, governments are hesitant when it comes to deregulating factor markets for labour, land and capital. Especially in the case of land and labour markets, governments need to strike a careful balance between the need to abolish regulations that might hold back investments and the desire to maintain social peace and political stability. Hence there is a tendency to encourage commercial investments by offering generous land lease rights without fully privatising land markets. Likewise, governments tend to eliminate overly rigid labour regulations (which had often proven to be dysfunctional and prompted employers to bypass legal contracts) but still maintain fairly high levels of protection in the formal labour market.

4.5. Understanding the political economy

The reluctance to further privatise state-owned enterprises and deregulate factor markets has social as well as political reasons. First, there are concerns about the *social costs* of market reforms. For example, rapid privatisation typically lays off large quantities of redundant workers. In the same vein, fully liberalised land markets are likely to spur the concentration of land ownership, which may threaten the livelihood of those displaced in the process.

Second, *political considerations* play an important role – although they are usually not openly debated. To consolidate political stability, all countries in our sample build on systems of strongly centralised decision-making (such as strong presidentialism and the party-state) and patronage. Governments are sustained by *inner circles of power* (the president and intimates who typically occupy leading positions in the ruling party, the top bureaucracy, state-owned and other connected enterprises, and the security apparatus) and *outer circles of clientelist networks*, which benefit particular groups in society, including those employed in state-owned or other protected enterprises (parastatals, party-affiliated or military-owned enterprises), the state bureaucracy and politically affiliated organisations, such as the SWAPO-affiliated trade union in Namibia or the Vietnamese Women's Union and Peasant Union. The civil service is often part of the patronage system, which makes it difficult reform the system in order to make it more performance-based and customer-oriented. In Mozambique, for example, in practice only members of the ruling party FRELIMO get access to the civil service. Public procurement is another source of patronage, as tender procedures are often not transparent and competitive.

Governments are often strongly interlocked with leading national enterprises. The connections may be via direct state ownership, but indirect links are often even more important. We typically find different business groups with privileged access to the president or other political decision-makers. Depending on country conditions, politically connected enterprises may include those owned by the ruling parties (or political endowment funds, as in Ethiopia); those owned and managed by the army; companies in which leading politicians hold shares; or former state-owned enterprises that have been transferred to private businessmen with close government ties. Other informal relationships also play a role, for instance on the basis of friendship or family and kinship ties. Well connected entrepreneurs are often invited to take leading position in government; for instance, all of the ministers related to industrial development in Egypt are owners of large enterprises. Conversely, political leaders sometimes use their power to become owners of strong business groups – for example the former president Chissano and the actual president Guebuza in Mozambique. Also, business associations are quite often politically dependent on governments or dominated by a small group of powerful entrepreneurs, thus not representing sector-wide interests. Some mainly serve the purpose of transmitting messages from government to the business community, rather than lobbying for the interests of the latter.

Strategic policy decisions are to a large extent adopted within closed circles of top decision makers, mostly members of the ruling parties who also control the upper ranks of the state bureaucracy, state-owned enterprises and parastatals. As a result, lines of accountability are often blurred, and it is difficult to disentangle when government officials influ-

ence resource allocation to pursue strategic policy targets and when they favour personal or political friends.

While these systems are politically exclusive, they often seek to enhance their political legitimacy via redistributive measures. As Erdle (2011) states for the case of Tunisia, the government approach is to be “inclusive on the distributive (‘output’) side, while remaining exclusive on the participatory (‘input’) side”. Namibia’s Black Economic Empowerment discourse and Ethiopia’s strong emphasis on poverty reduction and outstanding achievements towards the Millennium Development Goals are typical examples. In Vietnam, members of the Communist party concede that their legitimacy depends on their ability to ensure increasing living standards for the ordinary citizens and social protection schemes, which primarily focus on state officials and public sector workers as a way of keeping supporters aligned. Labour market regulations that strongly favour the workforce in the formalised segment of the economy play a similarly stabilising role. In addition, legitimacy is often sought through a nationalist or other ideological discourse, especially by leaders who gained authority for their successful struggle against colonial powers.

The constituencies on which governments and politico-economic elites rely vary from country to country, and patronage resources are more or less equally distributed. Typically, those employed in the public sector, state-owned and other protected enterprises receive a range of benefits – high wages, subsidies, pension and insurance schemes, severance payments, public holidays, etc. – not granted to other citizens. Patronage relations may also be defined along ethnic lines, either officially (such as Black Economic Empowerment in Namibia) or informally. In Ethiopia, people claim that Tigray people have better access to politics than other ethnicities, although it is not easy to find evidence for these allegations.

Patronage systems are meant to secure the loyalty of key political and economic groups. The strong tendency to keep control of state-owned enterprises and policy areas that provide patronage resources – from state banks to telecom companies and pension funds – must be interpreted from a political power perspective rather than a narrow angle on economic efficiency. Such a perspective also explains why all countries are fairly risk-averse when it comes to market reforms that might provoke political resistance, such as radical labour market reforms or privatisation programmes.

As a result, hybrid forms of economic governance have emerged which rely on the private business as the driver of economic growth but only marginally involve private sector organisations in policy formulation, and governments continue to interfere heavily in investment decisions in a number of ways – ranging from regulations to indirect control of the management and even direct ownership. The private sector is gaining importance, but competition is still constricted and informal arrangements interfere with the rules of a market economy; the business community has better access to politicians, but these relationships are often informal and very unevenly distributed.

4.6. Are ‘national transformation projects’ being pursued?

Chapter 1.5 stressed the importance of channelling development efforts towards a ‘national project’ of industrial transformation that builds on a broad social consensus and gives direction to government entities and private investors alike. All of the countries have laid down their visions and goals in plans, including Five-Year Plans, Industrial Development Strategies and specific “vision” documents that outline medium-term targets for 2020 or 2025. The case studies, however, revealed that, in practice, the willingness and capability for building consensus on a long-term national project of industrial transformation varies greatly among the seven countries.

Some governments are highly committed to an agenda of industrial development and upgrading of competitive advantages and make great efforts to invest in human capital and specialised supporting institutions. Such vision and determination is clearly discernible in Ethiopia and Tunisia – even if one may not always agree with their routes to implementation. Here, governments put great emphasis on human resource development and invest considerably in industrial upgrading. Ethiopia clearly recognised the lack of competitive industries as a key obstacle for its development and therefore engaged in an exceptional programme of building up technical universities and a vocational training system, establishing a national system of quality management, and setting up technological institutes for the most important industries (such as leather; textiles; meat and dairy).³⁰ In addition, Ethiopia embarked on an industrial upgrading programme aimed at increasing the productivity and export performance of large and medium-sized firms. Likewise, Tunisia’s leadership defined a strategy to develop manufacturing industries catering for the European market. It was the first country on the southern rim of the Mediterranean to implement a free trade zone with the EU. In parallel, Tunisia launched an industry upgrading programme that heavily subsidised investments of manufacturing firms, reaching a total of 4,428 firms, and invested more in training engineers and technicians than its neighbours did.³¹ As a result, Tunisia embarked on a successful export-driven growth path. The country achieved sustained GDP growth rates of over five per cent per year since the early 1990s, clearly above the regional average, and created 500,000 jobs in the manufacturing industry. In clear contrast to Tunisia is Syria, a country for which the signing of the EU Association Agreement is still pending and potential benefits therefore remain untapped.

The other governments mostly confine themselves to incremental reforms of the investment climate or initiating discrete investment projects without having a clear strategy for the future. Although some “vision” documents are usually drafted by the central governments, there is no clear perspective on the *direction of change* in terms of priority sectors, untapped potentials, latent comparative advantages, and no *specific strategy* to identify next steps, specific constraints and ways to overcome them. Likewise, there is no strong,

30 In only four years, the number of students in undergraduate programmes of public universities more than doubled, reaching more than 250,000 in 2009. In parallel, a technical and vocational training system was established, enrolling 815,000 students in 2010 and aiming at 1,130,000 in 2015 (Trah et al. 2010).

31 Presentation by Amara Meftah, Tunisian industry and development perspectives for the years leading up to 2016, Bonn, 17 November 2009.

centralised and systematic process for agreeing on a national transformation project and to mobilise stakeholder support.

Vietnam has some elements of a national transformation strategy. The Vietnamese government has strongly supported the successful establishment of new export activities including coffee, shrimp, and fish (pangasius) farming. Also, it has set up two modern Science Parks to facilitate the transition from labour-cost based assembly operations for export to knowledge-based activities. At the same time, the country does not have a clear roadmap for industrialisation and no concrete sector-specific action plans. *“As a result, many important policy questions remain unanswered, including the future roles of State-Owned Enterprises (SOEs), private firms and FDI, respectively; the choice between export orientation and import substitution under deepening integration; and the scope and extent of official support to emerging as well as declining industries”* (Ohno 2009, 73). Likewise, the country has neglected the necessary investments for the next stage of industrial development, such as in higher education. According to Porter (2010), Vietnam’s wealth is due to “inherited endowments”, including its natural resources, its location and abundance of diligent young labourers, whereas the country failed to create new competitive advantages.

In Namibia, a strategy for industrial development and productivity growth is even less discernible. Its ‘White Paper on Industrial Development’ from 1992 is still formally valid, but it fails to identify clear policy priorities, and although the Ministry of Trade and Industry has been in a process of revising it for the past ten years, it has not been able to achieve consensus on the general direction of a new policy. As Rosendahl (2010) summarises in her country study, *“there is a ‘policy void’ when it comes to policies and strategies for private sector development and industrial transformation.”* While a few industrial development projects have been pursued (such as to establish industrial parks) – in most cases with rather limited success – they are not embedded in any long-term strategy. In a similar vein, Mozambique has set up a linkage programme to develop suppliers to the large aluminium smelter MOZAL, but lacks a convincing overall strategy for economic diversification and upgrading. Although different sector strategies and a SME strategy exist on paper, these are neither integrated nor properly budgeted. Strategy documents are often not even known within the competent ministries or implementing institutions.

4.7. Do countries engage in selective policies?

All seven countries in our sample apply selective policies in favour of specific industries and groups of firms. Industrial development plans identify economic sectors (such as agro-industries) that should receive special support – even if the selection is often rather unspecific and not derived from a systematic upgrading strategy (see above); specific programmes are implemented to improve the efficiency of particular clusters or value chains (such as for the textile and garment industries); export industries are in some cases favoured over producers for domestic markets; SME programmes offer incentives depending on firm size, etc. While the theoretical debate about the advantages and disadvantages of selective, i.e. sectorally targeted (and thus market-distorting), policies

continues, policymakers in all countries have clearly made their choice in favour of selective interventions.

Grand projects – aimed at building up big state-led investments in “key industries” or completely new activities for which the country currently has no comparative advantage – are only exceptionally pursued. Vietnam’s support for building up a national ship-building industry on the basis of a large state-owned conglomerate is one of the few exceptions. Instead, industrial development strategies mostly focus on incremental improvement of existing comparative advantages. Most countries try to increase the value added of their agricultural products. Vietnam restricts concession for garment-assembling export companies in order to encourage investors to move into other labour-intensive industries where it perceives better upgrading opportunities.

The evidence from the country studies supports the adoption of selective policies, but it also underlines the risks. On the one hand, many sector support programmes produced promising results, especially where support built on latent comparative advantage (although causality cannot be proven for lack of counterfactual evidence). Tunisia’s success in export industries, Vietnam’s boom in the coffee, shrimp and fish industries and the more modest success cases of Ethiopia’s cut flower industry and Namibia’s exports in high-value products for the cosmetics and pharmaceutical industries all relied on selective supporting policies. On the other hand, a number of sector programmes failed due to poor programme design.

4.8. Planning vs. searching: How do countries develop new activities?

An overall impression is that industrial development plans and programmes are not very creative in identifying opportunities for upgrading and diversification – neither in the *choice of priority sectors* nor in the *way policies are designed*.

With regard to *choice of priority sectors*, most priorities are derived from the desire to develop either forward or backward linkages from existing industries or resource bases. Most policies aim to increase forward linkages. In Namibia, discussions on industrial policy usually focus on “beneficiation of raw materials” as core objective (MTI 2003, 3, 10). The country provides incentives for the beneficiation of diamonds, semi-precious stones and minerals and encourages meat and fish processing; for instance, it obligated the Namdeb Diamond Corporation to process a certain share of its high-quality diamonds locally, thereby giving rise to the establishment of several cutting and polishing companies in Namibia. Mozambique taxes raw cashew exporters to encourage investments in domestic processing industries. Syria’s goal is to produce and export cotton yarn and textiles instead of raw cotton. Ethiopia has created technology institutes for leather processing and meat & dairy industries. In the leather industry, the country imposed a new tariff on exports of raw hides and skins in order to force exporters to add value locally. With regard to backward linkages, most countries of the sample have fairly strong garment industries and support the establishment of textile and yarn industries in order to complement the value chain within their own national boundaries.

This focus reflects a widely held assumption that the domestic value chains should be as complete as possible. This, however, need not always be the case. In some cases it may be better to concentrate on upgrading options that are more in line with existing comparative advantages than to try building up complementary value chain functions for which there are no comparative advantages. In the garment and textile industry, for example, it may be better to increase added value by offering full package supply, reducing the time to market, or targeting fashion markets *within the garment industry* and to import textiles, yarns and accessories. Attempts to produce the latter in small countries have often failed as these industries are highly capital-intensive and require large economies of scale and scope. For example, Namibia's only textile company has had to shut down, as Namibian textile manufacturing is not competitive. Even for Vietnam, where garment assembly is the number one export activity, analysts are highly sceptical about whether the government strategy of backward integration (driven mainly by the large state-owned textile and garment conglomerate Vinatex) can be successful in an open economy and given the proximity to China. Goto (2007) suggests focusing on product and process upgrading within the garment industry rather than vertical integration. In the case of leather, Ethiopia's policy to tax exports of raw hides and skins led to an export drop that could not yet be compensated for by increases in exports of *processed* leather.

This is not an argument against incentives for vertical integration; however, governments need to assess carefully whether the new activities they want to induce are viable in terms of factor endowment, scale economies and complementary assets. However, we did not come across many systematic appraisals of this type. Although it is not always easy to recapitulate how priority sectors were chosen, not many examples of detailed master plans for specific industries are based on thorough research and national consultations.

While systematic analytical work supported by stakeholder consultation is one way to identify upgrading opportunities, governments should also encourage decentralised entrepreneurial search processes. In fact, we identified a few successful cases of such policies, such as the promotion of indigenous plant products for export in Namibia. In 1999, the government provided several million Namibian dollars for research and promotion on indigenous plant products, which indirectly led to the formation of an Indigenous Plant Task Team (IPTT), a multi-stakeholder coordinating body mainly driven by NGOs and donors. The IPTT promotes the search for new products that have an export market and can be cultivated in a socially inclusive way. The IPTT has successfully developed markets for high-value plants for the cosmetics and pharmaceutical industries.

Another example is the Ethiopian cut flower industry. The initiative to export flowers was fully private-sector driven. The government, however, was highly supportive in providing tax incentives, permitting low-cost access to suitable land, negotiating competitive freight tariffs with the national airline, and establishing a National Horticulture Development Agency to respond to industry needs. Hence the government supported a comparative advantage where it spontaneously emerged, rather than defining a priority area and creating support structures in a top-down manner.

Regarding the *way, programmes are designed*, we identified a certain neglect of instruments aiming to unleash entrepreneurial creativity and encourage experimentation. Typically, governments offer some sort of support to make incumbent firms more competitive,

including highly subsidised consultancy services aimed at improving process organisation at the factory level. Beneficiaries are typically selected on the basis of company characteristics (size, sub-sector, etc.) rather than an assessment of the viability of their investment projects. Furthermore, all countries have a range of instruments to offer physical infrastructure – such as industrial parks, business incubators and individual factory buildings. In contrast, there are not many programmes that encourage the search for new market opportunities and business models. While most countries have some technology centres that aim to encourage the use of innovative technologies, their outreach is very limited.³²

Above, we argued that latecomer countries typically have too few entrepreneurs able to detect new markets or business models (even if they are “new to the country” rather than “new to the world” innovations) and thereby create new opportunities for followers. One reason is that potential entrepreneurs are often locked into information-scarce environments (e.g. characterised by low educational attainment, few demanding customers and lack of entrepreneurial role models); also, innovations that are only “new to the country” do not benefit from intellectual property protection, even though developing them may be costly for the local pioneer. Hence there are good reasons to encourage the search for new markets and business models. Appropriate tools range from time-bound subsidies for non-traditional exports to business plan competitions, venture capital funds, coaching of innovative start-up companies, curricula that focus on entrepreneurship development in vocational training and universities, incentives to lure the diaspora into new business activities, etc. Such tools, however, are rarely used in the seven countries.

4.9. Fragmentation of business

Production systems in all countries of our sample are fragmented along different lines. The most conspicuous gap exists between micro/small and large firms. These are not only differentiated by size, but also display enormous productivity gaps, different degrees of formality, different regulatory barriers, and different institutional arrangements for business transactions. But fragmentation can also be observed between state-owned and private enterprises. State-owned enterprises still play an important role in all seven countries. While the general trend is toward privatisation, SOE will play an important role in the foreseeable future, and in several cases are promoted as backbones of the development of the respective sector. Further divisions exist within the private sector. One important division relates to national vs. foreign-invested firms, which is often exacerbated by differentiated incentive systems for both groups. Some incentives to attract foreign investors, such as temporary admission regimes, deliberately encourage companies not to trade with local companies. The division between national and foreign “offshore” companies is most pronounced in export-oriented Vietnam and Tunisia. In some countries (such as Namibia), the partition of the business community is also due to differences between ethnic minority-owned and other domestic firms. Finally, special business networks exist in relation to

32 Egypt’s technology centres have serviced about 1,000 companies so far, which is probably the highest outreach in our sample of countries.

national institutions, such as the military in Egypt and the party-affiliated endowment funds in Ethiopia. Interactions *within* these groups – in terms of shareholding, trade relations and informal ties – are much more common than interactions *between* groups, suggesting that business communities are indeed highly fragmented.

Such fragmentation is harmful. For three reasons, it would be crucial to create linkages between the various groups:

1. Firms in integrated production systems can focus on their core competences and buy all necessary parts and services from equally specialised partners. All firms thus benefit from the advantages of specialisation, thereby raising overall productivity;
2. When firms interact, factor mobility between them increases. Workers and capital can be reallocated more easily from less efficient to more efficient firms. Specifically, interaction lowers the entry barriers to move from the informal into the formal labour market;
3. Linkages also spur knowledge spillovers. For example, when traditional small enterprises become suppliers to modern companies, they have to learn how to meet international standards; quite often, customers train and audit their suppliers.

Linkage creation thus contributes to pro-poor growth. It raises overall productivity *and* helps to reduce the existing large productivity gaps, thus making industrial development more socially inclusive.

Interestingly, industrial policies in our sample of countries largely neglect the problem of fragmentation. Some policy documents do mention the need for better linkages, and measures are taken to create or strengthen new upstream or downstream industries, for example, expanding from garment production to textile and yarn (see previous section). Very little is undertaken, in contrast, to link large (foreign, state-owned or private domestic) companies with SME suppliers or distributors and to accelerate knowledge transfer in favour of the latter. Ethiopia, for example, supports (or even *pushes*) some of the largest companies to improve their business processes with the help of heavily subsidised consultants. The government expects that once the leading companies are internationally competitive, small companies will benefit from their progress, directly via business linkages or indirectly by emulating their business practices. However, there is little indication of such spontaneous spillovers, and there are no programmes to stimulate them. The few examples of business linkage programmes we found in other countries – including an automotive supplier development programme in Egypt and a supplier development programme for Mozambique's large aluminium smelter MOZAL – were limited to specific sectors and the linkage creation with local SMEs was not significant. The MOZAL programme mainly benefits foreign companies.

Most countries have created special ministries and supporting agencies and drafted development plans for *small and medium-sized enterprises*, on the one hand, and for *industry*, on the other.³³ As a consequence, policy formulation and implementation for SMEs is not

33 In Syria, for example, the Ministry of Industry is responsible for the manufacturing industry whereas the Ministry of Economy and Trade is in charge of SME development.

harmonised with the overall industrial policy strategies. This creates additional barriers to knowledge diffusion and foregoes opportunities for the productive integration of SMEs, such as by combining investment promotion with programmes for the development of local SME suppliers. Furthermore, it may distort incentives. For example, subsidies for SMEs and exemptions from (or non-enforcement of) tax and labour rules induce companies to remain small, thus shifting the average enterprise size away from the optimum and reducing aggregate productivity (Pagés 2010, 219). Finally, lack of policy alignment may lead to situations where foreign large-scale investors are attracted and supported without consideration of their impact on local SMEs, which may lead to net job losses.

This outcome is in strong contrast to some successful late industrialising countries, like Singapore, Malaysia and Ireland, which made linkage building a pivotal point of their industrialisation strategies (Battat / Frank / Shen 1996). Here, linkage creation covers a range of activities, from subcontracting exchange schemes, franchising and supplier development programmes to industry clubs and electronic platforms for knowledge-sharing.³⁴ SME policies are thus well aligned with the overall industrial development strategy.

4.10. Climate change mitigation and adaptation

Climate change mitigation and adaptation are not yet convincingly incorporated in industrial policies. As we have argued earlier, climate change will have an important influence on the direction of structural change in low and lower-middle-income countries. First, there will be mounting global pressure to reduce the consumption of fossil fuels and change the energy mix in favour of renewable sources. Reduced demand will compel oil and gas exporters in particular to diversify their economies. Second, countries need to adapt production systems to changing climate conditions. In agriculture, crop varieties and technology packages need to be adapted to different temperature and rainfall patterns; for instance, new irrigation systems may be needed where rainfalls become less regular. Third, carbon taxes and carbon pricing policies will increasingly affect production costs. Even if low and lower-middle-income do not tax energy consumption themselves and do not participate in emissions trading systems, they will be affected by policy changes in the North. The emergence of carbon markets is already stimulating investments in new energy sources in developing countries. Also, the Kyoto Protocol allows industrialised countries to meet part of their commitments by developing Clean Development Mechanism (CDM) emission reduction projects in developing countries. Furthermore, carbon taxes and markets in the North will affect the relative competitiveness of economic activities that depend on energy and carbon prices, such as long-distance tourism.

These new opportunities and risks are of course perceived in the seven countries of our sample. In the Maghreb countries, large European industry initiatives are underway to exploit solar and wind energy with a view to providing much of Europe's energy from the North African desert.³⁵ Sub-Saharan Africa is starting to receive major investments in bio-

34 See also Altenburg (2000) for an overview of best practice linkage policies.

35 See Desertec (http://www.desertec.org/de?gclid=CLnn_4KK2KUCFQaGDgod42HajQ) and Erdle (2010).

fuel projects. At the same time, climate-related risks increasingly receive public attention; for example, the negative impacts of rising sea levels are expected to threaten Vietnam's thriving aquaculture in coastal areas.

In most countries, however, these trends are not yet taken up in industrial development plans. On the one hand, there are no intentions to adapt price policies in a way to internalise environmental costs. Energy costs in particular remain heavily subsidised, reflecting that universal access to energy is much higher on political agendas than emissions reduction is. Subsidies for renewable energy are mainly financed from international sources, such as the Global Environment Facility. On the other hand, there are few activities to systematically explore new opportunities related to the international climate agenda and to assess the related economic risks. Although some of the countries have published official documents outlining their climate change policies – such as Nationally Appropriate Mitigation Action (NAMA) and National Adaptation Programme of Action (NAPA) plans or reports to the UN Framework Convention on Climate Change, these are not yet integral part of the economic planning systems. Hence they are neither mainstreamed in national policies nor translated into concrete roadmaps for implementation (see Ellis / Baker / Lemma 2009).

Only few initiatives have been identified that aim to exploit the opportunities for diversification related to climate change. Tunisia has drafted a 'Solar Plan' comprising 40 projects related to renewable energies and energy efficiency. These cover solar energy, wind energy, energy efficiency, electric interconnection with Italy, and manufacture of photovoltaic solar panels. Egypt tries to establish itself as one of the top generators of solar energy in North Africa by 2017. In 2010, Egypt's first 20 MW solar thermal power plant will already be completed, and a 100 MW solar plant as well as several wind parks are to follow. Whether the two countries will be content to attract foreign investment in renewables or whether they will proactively try to build up domestic technological capabilities, is not yet clear. In the other countries, only isolated initiatives have been identified, such as Namibia's Ministry of Trade and Industry is preparing to set up a CDM office.

4.11. Effectiveness of policy implementation

Chapter 1.5 summarised principles of successful industrial policy implementation. Our empirical studies indicate that in all seven countries, industrial policy processes deviate strongly from these good practices. In the detail, however, there are notable differences among countries. This is what one would have expected from the countries' different ranking on governance indicators. Table 5 shows how the seven countries rank on selected indicators related to industrial policy, including measures of government effectiveness and steering capability, transparency of policymaking, favouritism and corruption, judicial independence, and the like. Overall, the data paint a fairly favourable picture for Tunisia and Namibia and a very unfavourable one for Syria and Vietnam. The other countries rank somewhere in-between.

For the particular field of *industrial policy*, however, the picture is somewhat different. While our studies confirm the rank places of some countries (such as the substantial steering and implementing capabilities for Tunisia and considerable weaknesses for Syria), our assessment of the other countries diverges from the message conveyed in Table 5. Na-

mibia and Mozambique, which rank reasonably high with regard to “government effectiveness” (World Bank indicators) and “steering capability” (Bertelsmann Transformation Index), in fact revealed lesser capabilities for managing industrial policy processes than in lower-ranking Ethiopia and Egypt.³⁶ This holds for several dimensions of *industrial policy management capability*, including the capabilities to identify opportunities for industrial development and identify incremental steps towards their achievement; to build consensus around this strategy; and to deliver services cost-effectively. As we have seen, Ethiopia has been able to launch a highly ambitious ‘national transformation project’ to make the economy competitive, involving big investments in export-related infrastructure, higher education, vocational training, technology institutes and firm-level programmes. Egypt has been able to implement at least some quite effective policy initiatives, such as the Industrial Modernisation Centre, which supports enterprise upgrading, and the improvement of its investment promotion policy. Namibia and Mozambique, in contrast, both lack comprehensive industrial development strategies, and their governments’ initiatives for industrial development have largely failed.³⁷ It should be noted, however, that we also encountered significant differences in terms of industrial policy effectiveness among sectors or policy areas *within* countries.

Let us now look at several dimensions of policy implementation in detail.

36 Vietnam is a unique case, as it has been able to go through a rapid process of structural change – manifested in the highest share of manufacturing added value in GDP among the seven countries, rapid economic diversification and a substantial increase in labour productivity, two thirds of which are explained by shifts towards higher productivity sectors (Porter 2010) – without adopting proactive industrial policies.

37 In Mozambique, efforts to create a class of national entrepreneurs or capitalists by offering privatised assets to politically connected persons and supporting them with subsidised credits largely failed, and large parts of the credits were never paid back (Hanlon / Smart 2008, 106). Likewise, programmes to support SMEs – including the *Fundo de Fomento a Pequena Industria* and the *Instituto de Desenvolvimento da Industria Local* – failed to achieve any discernible impact and are now being closed down. Namibia’s programme to promote investments in Export Processing Zones (EPZ) is another example of policy failure. To date, EPZ employ only about 5,000 workers (20% of the envisaged target) and only have minimal impact in terms of technology transfer and skill development (Rosendahl 2010).

Table 5: Selected governance indicators related to industrial policy									
Indicator	What it measures	Range of scores	Egypt	Ethiopia	Mozambique	Namibia	Syria	Tunisia	Vietnam
Government effectiveness (WGI)	<i>Quality of public services, quality of civil service and degree of its independence from political pressures; quality of policy formulation and implementation; credibility of government's commitment to such policies</i>	-2.5 (low) to 2.5 (high)	-0.44	-0.45	-0.06	0.17	-0.88	0.46	-0.41
Voice and accountability (WGI)	<i>Extent to which country's citizens are able to participate in selecting their government; freedom of expression; freedom of association; free media</i>		-1.24	-1.19	-0.06	0.58	-1.77	-1.22	-1.61
Steering Capability (BTI)	<i>How far political leadership sets and maintains strategic priorities, how effective it is in implementing reform programmes, how flexible and innovative it is to learn from past experiences</i>	1 (low) to 10 (high)	4.00	4.67	5.00	6.33	3.00	4.67	5.00
Consensus building (BTI)	<i>Ability of political leadership to establish a broad consensus on reform with other actors in society without sacrificing its reform goals</i>		4.50	4.60	4.4	6.40	2.00	4.00	3.80
Fundamentals of market-based competition (BTI)	<i>Freedom of pricing; currency convertibility; freedom to participate in the market and set up a business; free use and transfer of profits; non-discrimination among various forms of companies and sizes of businesses</i>		5	4	5	7	2	8	4

Overall implementing capacity of the state bureaucracy. Across the seven countries, considerable differences exist with regard to the attitude and effectiveness of the national bureaucracies. Those countries that effectively manage their industrial policies invested in their central state bureaucracy at an early state. In Tunisia, for example, the central state bureaucracy had already been created by the Husaynid reformers in the 19th century and was further strengthened by the French colonial authorities. Likewise, Ethiopia started relatively early to build sovereign national institutions. Already in 1909, Emperor Menelik II appointed nine ministers and started to build up a modern civil service (Taffesse 2008, 373), thereby giving the country an advantage vis-à-vis many other Sub-Saharan countries. Vietnam's administration also builds on well educated administrative cadres, which enables the government to provide fairly good public services covering the whole national territory. For example, the availability of extension services for coffee farming and aquaculture was decisive for the rapid take-off of these activities.

Checks and balances. Compared to mature democracies, politics in all seven countries is subjected to few democratic checks and balances, as is reflected in their low scores, with the exception of Namibia, on the “voice and accountability” indicator (which measures the extent to which citizens are able to participate in selecting their government, enjoy freedom of expression, freedom of association, and free media). Especially in the three MENA countries, the governments exercise rigid and repressive controls over the social, economic and political life of their populations; but also some of the other countries – including Vietnam and Ethiopia – are currently passing laws that restrict the activities of NGOs and independent research centres, thereby further reducing opportunities to disclose incidences of corruption or highlight risks involved in particular institutional arrangements. Moreover, there is very little independent monitoring and evaluation of industrial policies, except for some donor-financed programmes. Vietnam and Ethiopia stand out for their quite detailed Five-Year Plans which define detailed policy targets and indicators and are subjected to critical mid-term reviews. Egypt and Tunisia also impose fairly detailed reporting requirements on implementing agencies. All this reporting, however, is focused on *activities* and does not provide much information on *outcomes* or even *impact*. Furthermore, evaluation is not independent and rarely challenges fundamentals of industrial policy programmes, even in evident cases of poor performance.

Evidence-based policymaking. As impact monitoring is weak, there is little hard evidence of policy effectiveness on which policymakers can build. Also, we found very few signs of systematic reflection on policies. Although our case studies revealed a range of different *policy styles* even within countries – such as Ethiopia's sector policy for leather is government-driven, whereas the policy for the flower industry is industry-led – these cases are not compared with a view to policy learning. With the exception of Vietnam,³⁸ local policy think tanks are typically weak, and policymakers only rarely invite them to review policies and inform their decisions.

38 These include the Central Institute for Economic Management (CIEM), the Economic Institute under the Vietnamese Academy of Social Sciences (VASS), the National Institute for Science and Technology Policy and Strategic Studies (NISTPASS) and the Institute for Industry Policy and Strategy (IPSI). For the role of these institutes in the Vietnamese reform process see Rama (2008, 36 ff).

Quality of service provision. Business development services – such as trade and investment promotion, consultancies for process organisation, technology development or marketing, lab testing services and certification of products and processes – are mainly provided by state agencies which are fully subjected to the rules of public administration. Hence they find it difficult to operate in a business-like manner, i.e. to “speak the language” of business people and respond rapidly to their needs, which explains the poor performance of many government institutions, including the Offshore Development Corporation in Namibia, Ethiopia’s Investment Promotion Agency and the National Institute for Standardization and Quality in Mozambique. With few exceptions,³⁹ the countries do not systematically delegate the delivery of business development services to private service providers or create semi-autonomous economic promotion agencies. Moreover, services are often highly, or even fully, subsidised, leading to substantial deadweight effects. Egypt’s Industrial Modernisation Centre subsidises upgrading services for fairly large companies with up to 95 %. Similar subsidies are offered by the Industry Upgrading Programmes in Syria and Tunisia and the factory benchmarking programme in Ethiopia. Also, exit strategies for these subsidies are often not well defined. While some international donors undertake efforts to trigger markets for private service providers, governments mostly consider these services a state subject.⁴⁰ In other cases, particularly where many foreign investors call for responsive behaviour, fairly flexible institutional arrangements have been established. The Investment Promotion Agency in Ho Chi Minh City, Vietnam, and the Horticulture Development Agency have a relatively high degree of autonomy in responding to the needs of their customers.

Policy coordination. Industrial policies are generally not well coordinated with other related policies, in particular SME policies, investment promotion and trade policies, science and technology policies, education and training policies, infrastructure development and agricultural policies. The ministries in charge tend to draft stand-alone policy documents and establish incentive systems that are not harmonised with the rest. Particularly in Egypt, many different ministries are in charge of industrial development.⁴¹ Although the lack of policy coordination is frequently recognised by governments, there are obviously political reasons that work against policy harmonisation; for instance, ministries are assigned to different political factions in the government. This policy fragmentation exacerbates the difficulty to agree on a national transformation project.

39 In Egypt, many training, advisory, certification and other business development services are delivered through private institutes that compete with each other and are subject to quality control by the government.

40 E.g. GTZ dropped its activities to develop partly private business development services for lack of interest on the Ethiopian side.

41 E.g. the Ministries of Industry and Trade; Economic Development; Investment; Local Development; and Military Production.

5 Conclusions: Rethinking the role of industrial policy in low and lower-middle-income countries

It is now widely accepted that the countries that managed to catch up with the old industrialised and high-income countries are the ones whose governments proactively promoted structural change, encouraging the search for new business models and markets, and channelling resources into promising and socially desirable new activities. Evidence of failed industrial policy experiments, however, is also abundant. Hence, while market failure justifies public intervention in principle, inappropriate policies may have worse results than non-intervention. The question is thus not whether industrial policies should be adopted or not, but how they can be implemented more effectively – an especially challenging question for latecomer economies, where market failure is particularly common, and government action is required to form even the most basic market institutions, such as creating a national entrepreneurial class and encouraging the formation of business associations. At the same time, the effectiveness of the state is typically low, and the risks of political capture are considerable as the political systems often build on favouritism and lack political checks and balances.

Our study of industrial policy in low and lower-middle-income countries revealed examples of success and failure. It confirmed that industrial policies may be implemented successfully even in low-income countries with weak institutions, but it also identified a number of failed policies or at least raised doubts about cost-effectiveness. Generally, most policies deviated considerably from the good practice principles described in the first Chapter. Both the positive and negative observations, however, allow us to extract seven key **lessons** for industrial policy in low and lower-middle-income countries.

First, the political leaders must have the firm will to pursue a **national project of productive transformation** aimed to diversify their economies and develop new competitive advantages in higher-value activities. As such activities usually require a range of assets unavailable in poor countries, they are unlikely to emerge spontaneously without a coordinating agent (or they only emerge slowly compared to international competitors who pursue a proactive strategy). Governments must therefore coordinate competent ministries and implementing agencies, public and private actors, central and local governments as well as the support of international donors.

Second, these transformation projects need to **build on existing comparative advantages and define incremental upgrading pathways** that are manageable for the relevant national actors. Very ambitious targets may overestimate the learning capacity of the domestic private sector – and/ or the supporting institutions – and thus waste government resources. It should be noted, however, that the opposite of industrial policy – wholesale liberalisation – may also overburden domestic entrepreneurs, with the effect that importers and foreign investors destroy the embryonic technological capabilities that exist. The key is to increase competition and apply non-market incentives in a way that induces the private sector to upgrade without overstraining its capacities and without creating unproductive rents.

Third, the transformation should **balance economic, social and environmental objectives**. Low and lower-middle-income countries are typically characterised by deep and even widening productivity gaps. The lack of productive integration of large parts of the

workforce perpetuates poverty and forgoes opportunities for interfirm specialisation that would make the whole economy more competitive. Unless productive integration is proactively supported, competition on an uneven playing field typically crowds out large numbers of less efficient producers and destroys traditional jobs without being able to create a comparable number of employment opportunities in the emerging, more efficient, activities. The desirable effect of creative destruction then tips over, leading to a detrimental increase of necessity entrepreneurship and informality. Liberalisation must therefore go hand in hand with targeted and temporary protection as well as proactive policies for knowledge transfer and capacity building. Again, the challenge is to encourage productivity growth at a pace that allows for integration of local producer groups and protection of the most vulnerable groups. Likewise, environmental sustainability needs to be built into industrial development strategies. As the world will increasingly shift towards a low-carbon economy, even countries with low per-capita emissions will be affected. Governments are therefore well-advised to anticipate these changes and to try to exploit early mover advantages.

Fourth, these optimal upgrading pathways – in terms of manageable incremental steps, social inclusion and environmental sustainability – can only be identified if industrial policy is devised as a **collaborative process of experimental learning**, involving stakeholders and ensuring feedback loops between planning, implementation and impact measurement. Policies need to be agreed upon in a collaborative manner, inviting the private sector, public entities and civil service organisations to bring in their expertise. Public funds should usually be matched with private contributions to make sure that beneficiaries have ownership for the respective programmes. Implementing agencies should operate in a business-like, customer-oriented manner, and hence be authorised to recruit and promote personnel based on performance criteria. Service providers, both public and private, should be subject to as much competition as possible, and there should be mechanisms for customers to hold them accountable. Performance should be measured regularly and independently, and results should be fed back into the process of policy formulation in order to adapt policies. To safeguard impartiality, the different roles of government – policy formulation, financing, implementation, evaluation, etc. – should be unbundled. Independent policy think tanks may further ensure that policy decisions are evidence-based and rent-seeking behaviour is avoided.

Fifth, the focus of industrial policy should shift from promoting established firms in traditional industries to **supporting innovative ideas and encouraging experimentation**. There is a strong case for subsidising the search costs of innovators, because testing a new business concept involves costs and risks of failure. When the concept is successful, however, competitors will usually copy it and thus dissipate the rents that can be obtained from the business innovation. Due to this non-appropriability, market-enhancing entrepreneurship will typically be undersupplied – unless governments encourage the search process. This problem is particularly severe in poor countries where information diffuses slowly – for instance, because entrepreneurs lack access to demanding export or urban markets where new niche markets usually emerge, and because some countries have institutional disincentives for risk-taking entrepreneurs.

Sixth, strengthening of linkages between firms and segments of the business community is crucial. Poor developing countries are typically characterised by segmented enterprise structures, with few linkages between different groups of enterprises, such as foreign-invested firms, large national firms, and micro and small firms. Large productivity gaps impede integration of the latter in specialised business networks. In order to exploit economies of specialisation and stimulate knowledge spillovers, efforts are needed to integrate these groups through supplier development programmes, incentives for technology transfer, encouragement of joint ventures, franchising arrangements and the like.

Seventh, international trade and investment links should be gradually increased. Economies of scale become more and more important, which tends to reduce the competitiveness of firms operating in closed national markets. Creating larger markets is therefore particularly important for firms in low and lower-middle-income countries. This has a number of implications. Regional economic integration is one way of improving investment and trade opportunities in an environment that is often not as challenging as the world market. Regional integration calls for a greater emphasis on regional infrastructure projects, international harmonisation of economic governance as well as reforms to reduce other costs of trading across borders. Insertion of developing-country producers in value chains co-ordinated by global lead firms is another promising option. It allows domestic firms to adopt product and process innovations, to access large markets and thereby overcome the limitations of small-scale production.

Low and lower-middle-income countries need to pursue proactive industrial policies to surmount the disadvantages of latecomer development. If governments bear the above lessons in mind, they can significantly accelerate upgrading and diversification of their economies. Beyond these general lessons, a good deal of trial-and-error learning is needed to find the most appropriate industrialisation pathway for each particular country. Some low and lower-middle-income countries have embarked on promising, albeit different, pathways, despite relatively low levels of government effectiveness and weak political checks and balances. More research is needed to fully understand the political economy behind these processes, i.e. what moves political leaders, or growth coalitions, to embark on national projects of productive transformation and what explains their different willingness and ability to manage the risks of political capture.

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