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The Economic Contributions of Hyman Minsky: Varieties of Capitalism and Institutional Reform

by

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INTRODUCTION

Hyman (Hy) Minsky was born in Chicago on September 23 1919 and died in Rhinebeck, New York, after a year's battle with pancreatic cancer, on October 24, 1996. The influence of Oscar Lange, Paul Douglas, Jacob Viner, Frank Knight and Henry Simons, all members of the University of Chicago economics faculty in 1937 when Hyman Minsky was an undergraduate there, played a pivotal role in reinforcing his interest in studying economics, even though his B.S. degree was in mathematics. The courses and seminars taught by the "Chicago greats," his friendship with Gerhard Meyer and Abba Lerner as well as the socioeconomic environment of his youth contributed to Hy's decision to further his education in economics, which he did (after a number of years of involvement in the U.S. Army serving in New York, Britain and Germany) at Harvard, from which he earned his master's and doctoral degrees. (Minsky 1985) At Harvard, he asked Joseph Schumpeter to be his doctoral supervisor, which surprised Alvin Hansen, since Hy had been his teaching assistant for the money and banking course which Hansen taught. As it turned out, however, Hy finished the thesis in 1954 under Wassily Leontief because of Schumpeter's untimely death. In his dissertation, and in later research, Hy explored the interrelationships among market structure, banking, the determinants of aggregate demand, and business cycle performance.

Many of his Chicago friends and other acquaintances had moved to the Harvard-MIT community, but he never saw Harvard as his intellectual home. To him, the intellectual powerhouse was the University of Chicago, which continued to influence him during the Harvard days. It was Chicago that he would visit with every chance he had to renew his friendship with Carl Christ, Leonid Hurwicz and other remaining friends at the University and

the Cowles Commission, and to meet new friends including Kenneth Arrow. The classes and seminars at Harvard were not challenging for they lacked the rigor and clarity of those at Chicago. The self-appointed American disciples of Keynes--Alvin Hansen leading them--were content with the conventional and almost mechanistic interpretation of countercyclical fiscal policy, ignoring the significance of uncertainty and the role that money and finance played in a complex capitalist system. Hy's refusal to accept this narrow and fundamentally incorrect interpretation of Keynes, which necessarily led to a simplistic belief that market behavior can be neutralized by interventions affecting aggregate demand, played a significant role in his later research and writings.

His first academic appointment was in the faculty of Brown University where he was tenured and promoted to associate professor. He moved to the University of California at Berkeley in 1957, after having spent a sabbatical year there, two years earlier, which turned into an offer for a permanent appointment. During his years at Berkeley, Hy developed his ideas about the importance of cash flows in contractual commitments in that current borrowing is obtained by committing future cash, a perspective not considered in the traditional flow of funds analysis. (Minsky 1963b) At Berkeley, he felt very pleased to be part of the economics program, which was distinctive in that it offered a broad spectrum of courses taught by a good group of faculty. As the years went by, however, he became disillusioned with the changes that were occurring that tilted the economics program increasingly to an emphasis in mathematics. To be sure, he once confided, the years at Berkeley were very productive --his John Maynard Keynes book was conceived during that time. Also, while at Berkeley, he instituted a banking seminar sponsored by Bank of America,

which helped sharpen his knowledge of institutional innovation in banking and of the details of a bank's internal operations--which proved very valuable later when he joined the board of the Mark Twain Banks in St. Louis. Moreover, the Berkeley years were rewarding in that a number of his honors students --Victoria Chick, Peter Gray, Robert Hall, Thomas Sargent--have distinguished themselves in the economics profession and beyond.[1] In the turbulent 1964-65 year of campus unrest at Berkeley, the decision to accept a permanent appointment at Washington University in St. Louis seemed a good opportunity at least for the near term. As he admitted,

> I frankly went to Washington University with no intention of spending twenty-five years there. I thought I'd go there, get some things done and get out. But, I got involved with the banks [Mark Twain] and when the offer came through from the State University [New York], two or three years later, the bank made it worthwhile to stay. This happened a couple of times (Quoted from Fazzari and Papadimitriou 1992).

On his retirement in 1990 from Washington University, as an Emeritus Professor, he became a Distinguished Scholar at the Jerome Levy Economics Institute of Bard College, where he remained until his death.

Hy's work represents one of the most important links between Post Keynesians and Institutionalists. We begin, in this essay, with a brief summary of some of his earlier work, including his well-known "financial instability hypothesis" and his policy proposals that were designed to reform the financial system, but pay more attention to his writings that explore other analysis and policy proposals that are less well known. These have been for the most

part developed in the later years, after the publication of his Stabilizing an Unstable Economy (1986) book, and during his association with the Levy Institute.

Hy did not like to be labeled "Post Keynesian"; this was probably for three reasons. First, he believed that a more accurate description of his approach was "financial Keynesian", for this singled out his debt to Keynes while focusing on what he believed to be his clarification of, and extension to, the economics of Keynes, namely, the addition of complex financial relations, markets, and institutions. Second, he wanted to distance himself from a tendency in Post Keynesian economics to push institutions into the background in order to develop "general theories". He firmly believed that general theories are either plainly wrong, or are simply too general to be of any use. He would ask: what sort of economic theory can be applied equally well to a tribal society, a peasant economy, a small government capitalism, and a big government capitalism with complex financial arrangements? According to Hy, institutions must be brought into the analysis at the beginning; useful theory is institution-specific. (Minsky 1992d) All of his work emphasized that our economy operates within a modern capitalist system with a big government sector, with long-lived and privately owned capital, and with exceedingly complex financial arrangements.

Finally, as all who knew him would verify, even to his final days Hy never gave up hope that communication with the profession is possible. While he was convinced that mainstream analysis is not only wrong-headed, but that it is also dangerous when it forms the basis of policy formation, he was also convinced that he could "move the discipline"--at least a little. This conviction was amply in evidence in his work at the Jerome Levy Economics

Institute, for otherwise there would have been no reason to attempt to influence policy and theory. To this point, we will return.

Hy had little use for pure exercises in "history of thought", rather, he always argued that he stood "on the shoulders of giants", like Keynes, Schumpeter, and Simons. (His most famous book, John Maynard Keynes, is, of course, most assuredly not about Keynes.) Whether he got their theories "right" was a matter of little consequence to him, for he used their contributions only as a springboard for his own analysis. Thus, it is with some trepidation that we attempt to do what Hy avoided and even disdained: to lay out the ideas of a giant--and surely Hy does qualify as a giant on whose shoulders we can stand. However, we note that he did enjoy being the topic of analysis and was always kind to authors even when they got Minsky "wrong". Thus, we have reason to believe that he would have enjoyed the following, even where it may be flawed. We only wish we could have his reply.

ON BECOMING A MINSKIAN

There has been some controversy over "early" Minsky versus "later" Minsky, with some arguing that Minsky's early work was essentially orthodox and that he really did not become a Post Keynesian until the 1970s.[2] Indeed, Minsky told one of the authors (Wray) that he only very gradually became a "Minskian", with the transformation completed in his John Maynard Keynes. We do not, however, completely agree with this view, even if it is Minsky's view. As noted above, Minsky traced his intellectual heritage primarily to Chicago's Lange, Viner, Knight, and Simons (and to Harvard's Schumpeter), rather than to the Harvard "Keynesians". It might appear somewhat incongruous to claim that this heritage is less

orthodox than the prevailing "Keynesian" tradition, but it must be remembered that Chicago in the 1940s was not the post-Friedman Chicago of today. What Minsky took away from Chicago (and particularly from Simons) was the view "that market structures matter in determining both efficiency and the efficacy of aggregate interventions", thus, rejecting the Harvard notion that analysis could ignore market structure as it focused on control of the economy through aggregate interventions. (Papadimitriou 1992, pp. 18-19) This was Minsky's dissertation theme, which had explored the relations between market structure and aggregate demand, with a special emphasis on banking and investment decisions.

Minsky's first important publication (Minsky 1957a) related institutional innovation to profit opportunities, demonstrating how innovation allows business activity to expand even in the absence of expansionary monetary policy. He showed how the development of the federal funds market allowed a given quantity of aggregate reserves to support a greater expansion of deposits, and how repurchase agreements allowed a given quantity of demand deposits to support a greater volume of loans. He also "endogenized" innovation, making it a function of profit-seeking behavior. As the central bank tightens monetary policy, this raises interest rates and encourages new financial practices that "stretch liquidity" as liquid balances are reduced. This means that tight monetary policy may not reduce the money supply (or even reduce the--more broadly defined--supply of credit) as higher interest rates encourage banks to seek new ways of providing finance. At the same time, these innovations increase the potential for instability because "every institutional innovation which results in both new ways to finance business and new substitutes for cash assets decreases the liquidity of the economy". (Minsky 1957a p. 184) Minsky argued that early in an expansion, the supply curve of credit would be

highly elastic so that rising demand for credit would not have much effect on interest rates (but would instead increase the supply of credit). However, later in the boom, as liquidity falls and the possibility of default increases, the supply curve becomes more inelastic so that rising demand raises interest rates. This, in turn, can induce further innovation, and further fragility.[3] This raises the possibility of a rapid deflation of value of assets should some firms or households fail to meet contracted commitments. Ultimately, the monetary authorities might be called upon to halt a debt deflation process by intervening as a lender of last resort to increase the quantity of liquidity by accepting (at the discount window) illiquid assets. (Minsky 1957a, p. 185) Thus, even in his first important publication, we find many of the ideas that show up later in his work: endogenous money, innovation that stretches liquidity, behavioral changes induced by policy, lender of last resort activity, and instability-enhancing behavior over the course of the cycle. We return to these aspects of his analysis below.

Minsky also tried to extend the conventional multiplier-accelerator analysis to take account of monetary variables and financial institutions in his next two major publications. He bemoaned the fact that "authors who have constructed these accelerator-multiplier models have paid little, if any, attention to the monetary pre-requisites and effects of the assumed processes." (Minsky 1957b, p. 859) He argued that Samuelson's multiplier-accelerator model could be applied only to "small oscillations" which are neither great enough to disturb the accelerator or multiplier coefficients, nor great enough to lead to imposition of new initial conditions; in other words, the model was valid only if cyclical growth of income and production were to occur without affecting behavior or inducing institutional innovation.

(Minsky 1959) Thus, in Minsky (1957b), he "endogenized" the coefficients, and in Minsky (1959), he allowed for changes of initial conditions.

He argued that "[t]he terms (interest rate) and the manner (type of liability) of financing investment are affected by the behavior of the monetary system. In turn, both money-market conditions and the balance-sheet structure of firms affect the response of firms to a change in income. This can be interpreted as making the accelerator coefficient an endogenous variable related to the monetary system." (Minsky 1957b, p. 869) He thus considered "the following alternative monetary systems: (A) neither velocity nor quantity changes; (B) only velocity changes; (C) only quantity changes; (D) both velocity and quantity change."[4] (Minsky 1957b, p. 863) He demonstrated that if an expansion takes place on the basis of an increase of the money supply, then the balance sheet positions of firms worsen. However, if both velocity and the money supply tend to rise over the course of an expansion, the "rise in velocity tends to counteract the deterioration of firms' balance sheets in a business-cycle expansion financed by bank creation of money." (Minsky 1957b, p. 881) A decline in liquidity preference of the household sector can serve as an alternative to expansion of the money supply, in effect "improving financing terms and [...] decreasing the dependence of business firms upon bank financing, rais[ing] the accelerator coefficient. A great stock-market boom, such as in the late 1920's, may be interpreted as reflecting a lowering of liquidity preferences; as a result business expansion could be financed with less reliance upon the banking system than otherwise."[5] (Minsky 1957b, p. 881) On the other hand, rising liquidity preference during a downswing would cause a deterioration of firms' balance sheets, inducing a further fall of investment. Thus, liquidity preference, money supply conditions, and

those factors that affect velocity all influence the financial position of firms, which in turn affects investment decisions and the accelerator process. He concluded that

> [g]overnment deficits financed by borrowing from banks result in an increase int he money supply without any corresponding increase in business debt. [...]This is more conducive to steady growth [...] Therefore government deficit financing, even during a period of sustained growth and secularly rising prices, may be desirable in order to maintain the conditions for further growth. (Minsky 1957b, p. 883)

We will return below to Minsky's later analysis of deficit spending.

Minsky (1959) reworked this model, adding "floors and ceilings" that imposed "new initial conditions" on the model, interpreted as "reflecting effective supply constraints". (Minsky 1959 pp. 133-4) He showed that the time path of income generated by such a linear-accelerator model "can generate either (a) steady growth, (b) cycles, (c) booms, or (d) long depressions". (Minsky 1959, p. 134) He demonstrated that "by feeding financial and money market developments into the formal model through the ratchet in the consumption function, booms and depressions of varying amplitude and length can be generated." (Minsky 1959, p. 135) He used this model to explain the robust growth that followed WWII: forced war-time saving, highly liquid balance sheets (due in large part to war-time deficit spending), and exploitation of war-time technological change and accumulated productive capacity led to high autonomous consumption and high potential ("ceiling") output. He concluded that

> Whenever income fell away from the ceiling--as in 1948 and 1954 in the United States--the financial ease, carried over from the war, resulted in a relatively high and nonfalling floor in income, so that recovery was quick. In order for more serious

depressions to occur, it is necessary for the ratio of equilibrium income to ceiling income to decrease or for depreciation ratios to increase.... [T]his could occur if the downturn were accompanied by a financial crisis or if the preceding boom had been associated with a relatively small increase or even a decrease in the liquid asset position of households and firms. (Minsky 1959, p. 144)

Thus, these early articles included financial positions as "initial conditions" that would influence the path of the economy--whether that be tranquil or unstable--as well as the position Minsky would develop later that the US economy emerged from WWII with "robust" balance sheets, full of government debt, that overtime would become increasingly fragile, generating the conditions that might make "It" (a debt deflation) happen again. Admittedly, these articles tend to rework and extend fairly conventional analysis, however, this was done in directions that would be developed over the next several decades until they appeared in more-or-less finished form in his Stabilizing an Unstable Economy (1986) book.

In the intervening years, three elements were added to the analysis: the "financial theory of investment" presented in John Maynard Keynes (1975), the Kalecki-Levy view of profits, and the "financial instability hypothesis" (FIH). In the remainder of this section, we will briefly discuss the first two elements, leaving the FIH for the next section.

Minsky's John Maynard Keynes (1975)[6] grew out of lectures he gave at Berkeley, discussions with Nicholas Kaldor, Frank Hahn, Donald Winch, Kenneth Arrow, and Hollis Chenery (some taking place during their visits to Berkeley and during a seminar organized by Kaldor at Berkeley), a sabbatical at Cambridge (1969-70, where he was able to develop his views in discussion with Donald Moggridge, Jan Kregel, Joan Robinson, and W.B.

Reddaway), his work during the 1960s on the FIH, and his early work on multiplier-accelerator models. The main contribution made by this book is the "financial theory of investment" which springs from the recognition that in any modern, capitalist society, there are "two price levels": one for "current output" and another for "capital assets". In Minsky's view, the demand price for capital assets must exceed the supply price before investment can take place. The demand price for assets is related to the prospective returns from ownership of any asset; these prospective returns "present views about the future, and therefore are prone to change as views about the future change." (Minsky 1975, p. 95) The supply price of the capital asset depends on production (thus, on "current output price" of investment goods) and finance costs. Minsky built Keynes's "lender's risk" and "borrower's risk" into the model, so that demand price is adjusted (downward) to account for the risk to the borrower of exceeding "internal funds", while supply price is adjusted (upward) to take account of the increasing risk to the lender as the borrower takes on greater debt. These then provide a "margin of security", which itself is subject to "whirlwinds" of optimism and pessimism (the margins can decline in a boom, or rise in a bust). Because investment is the driving variable in the economy, Minsky labeled his approach "a financial theory of investment and an investment theory of the cycle". Thus, he was able to include the proposition that asset positions in a capitalist economy are "financed" positions, and the view that financial position affects behavior in ways that can be destabilizing. (More on this below.)

It is interesting that John Maynard Keynes contains no reference to Kalecki; when questioned, Minsky could not remember when he first adopted the Kaleckian view that investment determines profits, but, surely if he had been familiar with Kalecki's theory, it

would have appeared in the book. Later, Minsky would make great use of the "Kalecki-Levy" profit equation, which is derived from national identities and shows that aggregate profits are identically equal to the government's deficit, plus the trade surplus, plus investment, plus consumption out of profits, and less saving out of wages.[7](Minsky 1992d) He would incorporate this view into his theory as the proposition that "investment today is forthcoming only if investment is expected in the future" as aggregate profits will not exist unless investment occurs. He, then, argued that profits cannot be explained as a result of competition (since in the aggregate they are determined as in the Kalecki-Levy equation); this means that competition and innovation can only redistribute profits among firms.[8] Finally, if investment falls, then profits will fall, which will further discourage investment unless one of the other components of the profit equation should rise in compensation. The likely candidate, of course, is government deficit spending. (Minsky 1980) In this way, he came back to his earlier conclusion that government deficits can be stabilizing; here he added the notion that deficits create profits, and as it is the expectation of profit that drives the economy, countercyclical deficits can be stabilizing. (Minsky 1992d.)

THE FINANCIAL INSTABILITY HYPOTHESIS

During the 1960s, Minsky developed the financial instability hypothesis as he tried to answer the question, "can it happen again?". As readers are no doubt familiar with Minsky's "financial instability hypothesis" (FIH), we only wish to summarize it while emphasizing its institutional nature.[9] According to Minsky, a financial system naturally evolves from a robust

structure to a fragile structure, or from a structure that is consistent with stability to one that is conducive to instability. Note that it is a bit misleading to use the word "stability", for Minsky would emphasize that systems are continually evolving, generally toward fragility, so that a "stable" position is ephemeral. Indeed, he continually argued that "stability is destabilizing": "The first theorem of the financial instability hypothesis is that the economy has financing regimes under which it is stable, and financing regimes in which it is unstable. The second theorem of the financial instability hypothesis is that over periods of prolonged prosperity, the economy transits from financial relations that make for a stable system to financial relations that make for an unstable system". (Minsky 1992c, pp. 7-8)

It is important to emphasize that Minsky's FIH is institutionally-specific, applicable only to a capitalist economy with complex financing of long-lived capital assets. In the absence of long-term finance, undertaken on the basis of longer-term expectations, the Minskian transformation toward fragility would not occur (this does not mean that a simpler capitalism could not experience instability). According to Minsky, financial positions evolve from "hedge" to "speculative" and finally to "Ponzi", first as expectations about future returns become increasingly optimistic, and later as expectations are disappointed or financial arrangements are disrupted.

> It can be shown that if hedge financing dominates, then the economy may well be an equilibrium seeking and containing system. In contrast, the greater the weight of speculative and Ponzi finance, the greater the likelihood that the economy is a deviation amplifying system.... [O]ver a protracted period of good times, capitalist economies tend to move from a financial structure dominated by hedge finance units

> to a structure in which there is large weight to units engaged in speculative and Ponzi finance. (Minsky 1992c, pp. 7-8)

It is precisely the apparent "stability" that generates changes of expectations that leads to adoption of financial positions that cannot be validated should events prove to be less favorable than expected--that is, the transformation from robust (hedge) arrangements to fragile (speculative) positions. These speculative positions then are pushed to Ponzi for a variety of reasons: the terms on which finance is available become less favorable (either because providers become concerned with their own positions or because the central bank adopts tighter policy to head-off perceived inflationary pressures), some expectations are revised, income flows that had been expected are not forthcoming, and so on. In any case, the FIH depends critically on the institutional arrangements of the modern capitalist economy and on the evolution of behavior that is likely to take place given these arrangements.

According to Minsky, "A capitalist, or if you wish a market, economy is a financial system." (Minsky 1992b, p. 16) In contrast, "The neoclassical way of doing economics, which rests upon splitting the financial system off from what is called the real economy, throws no appreciable light on the effect that a financial system has upon the functioning of the economy: the only relevant neoclassical position is that the financial structure makes no difference." (Minsky 1992b, p. 15) It is precisely the absence of credible financial arrangements and institutional detail that renders neoclassical theory useless for analyzing the capitalist system. By explicitly beginning with the financial system, and by analyzing the transformation of the system from "hedge" to "speculative", Minsky's analysis is relevant to

the real world capitalist economy. Analysis devoid of institutions "throws no appreciable light" on real world economies.[10]

Second, from his earliest publications, Minsky realized the importance of explaining the new form(s) of capitalism with which he was concerned, and, in particular, with identifying the reasons why the forms of post-war capitalism were so different from that which existed before WWII. Again, the difference is institutional. Pre-war capitalism not only exhibited much greater amplitude in its business cycles, but financial crises regularly coincided with depressions. For Minsky, a defining characteristic of the Great Depression was the "Fisher" debt deflation in conjunction with loss of real output. He frequently pointed out that while real output only fell by half (and unemployment rose to "only" 25%), asset prices fell by 85%. Certainly he did not mean to minimize the suffering of the unemployed and underemployed, but in his view, the bigger problem for the capitalist system was the complete absence of aggregate profits (or, as he preferred, gross capital income). Further, during the Great Depression, balance sheets were "simplified" as most financial debts and assets were wiped-out. This allowed the financial system to emerge from the Great Depression with "simple", or robust, balance sheets with little leveraging and with most assets taking the form of equity positions. After the war, relatively stable, moderate growth occurred on the basis of hedge finance.

> Economic activity in the early postwar setting began with a cautious use of debt. But as the period over which the economy did well began to lengthen, margins of safety in indebtedness decreased and the system evolved toward a greater reliance on debt relative to internal finance, as well as toward the use of debt to acquire existing assets.

As a result, the once robust financial system became increasingly fragile. (Minsky and Whalen 1996, p. 4)

After 1966, "the amplitude of the business cycle has increased and financial crises have become regular occurrences. Another Great Depression has been prevented, but the same actions that stabilize the economy also validate speculative financial practices." (Minsky and Whalen 1996, pp. 4-5) Thus, even as business cycles have not been eliminated, neither depressions nor widespread balance sheet simplifications have occurred.[11] Something of fundamental importance seems to have occurred to prevent reoccurrence of a Fisher-type debt deflation. Minsky argued that "ceilings and floors" were put into place during the 1930s and in the immediate post-war period to successfully--thus far--prevent another debt deflation.[12] These ceilings and floors take the form of a wide variety of institutional arrangements--some governmental, some private; some automatic, some discretionary; some intentional and some fortuitous. He argued "institutions and interventions thwart the instability breeding dynamics that are natural to market economies by interrupting the endogenous process and "starting" the economy again with non market determined values as "initial conditions"". (Ferri and Minsky, 1991, p. 4)

The two most important "ceilings and floors" are: the growth of big government that is capable of running large (relative to the size of the economy) countercyclical deficits and surpluses and central bank intervention as lender of last resort. Countercyclical deficits and surpluses allow the government to place ceilings and floors on aggregate demand, and, thus, profits, which helps to maintain business income flows in bad times (through deficits) while dampening these flows in booms (through fiscal surpluses). Similarly, the central bank places

a floor on asset prices through its willingness to intervene to provide liquidity that reduces pressure for "firesales" of assets that could cause prices to plummet. In this way, when private spending falls, a government deficit automatically is created that helps to maintain aggregate demand and business gross capital income, allowing firms to continue to service financial positions. Should some firms experience difficulty, central bank intervention can help to prevent problems from spreading. Of course, as Minsky continually emphasized (and long before such came to pass) the problem is that if debt deflations are eliminated, increasingly fragile positions can be taken with no "cleansing" (or balance sheet simplification) ever taking place. This is why other institutional arrangements have to be adopted to place a ceiling on expectations of asset prices. It should be emphasized that Minsky never argued that these constraints must come only from government; indeed, he argued that capitalists had long sought ways to protect asset values. In fact, capitalism without institutional constraints is impossible to imagine as the incentives to try to protect asset values are too great. The point is, however, that the constraints that are possible in a small government capitalist economy were proven to be insufficient to prevent "it" (a debt deflation) from happening.

This analysis led to what he called his "anti-laissez faire theorem", the proposition that "in a world where the internal dynamics imply instability, a semblance of stability can be achieved or sustained by introducing conventions, constraints and interventions into the environment." (Ferri and Minsky 1991, p. 20) Thus, "Apt intervention and institutional structures are necessary for market economies to be successful." (Ferri and Minsky 1991, p. 24) "[I]nstitutions can act as the equivalent of circuit breakers." (Delli Gatti, Gallegati and Minsky, 1994, p. 2) "To contain the evils that market systems can inflict, capitalist economies

developed sets of institutions and authorities, which can be characterized as the equivalent of circuit breakers. These institutions in effect stop the economic processes that breed the incoherence, and restart the economy with new initial conditions and perhaps with new reaction coefficients." (Delli Gatti, Gallegati and Minsky, 1994, p. 3) These institutions are imposed and replace the endogenously determined variables that generate incoherence; these interventions create new initial conditions from which the economy begins on a new path--and "the aptness of institutions and interventions will largely determine the extent to which the path of the economy through time is tranquil or turbulent: progressive, stagnant, or deteriorating." (Delli Gatti, Gallegati and Minsky, 1994, p. 4) Thus, apt intervention is required for "successful capitalism". (Ferri and Minsky 1991, p. 24)

This then provides the framework for Minsky's analysis of the modern capitalist economy: a special kind of instability results because of the primary features of this sort of economy, in particular, the financial arrangements that are necessary in a private, for-profit economy which requires expensive, long-lived capital assets. Instability can be constrained through development of appropriate institutions that provide "ceilings and floors"; however, "stability" cannot be achieved because of the impact that "tranquility" will have on expectations and thus behavior. Still, capitalism with ceilings and floors is preferable to capitalism without institutional constraints, and the constraints that are possible in a small government capitalist economy were insufficient to prevent "it" (a debt deflation) from happening. In contrast, the constraints that are possible with a big government form of capitalism have been sufficient. The problem is that the absence of "it" has changed behavior in ways that are likely to increase the likelihood that "it" will happen again. The question is

what sorts of changes to these institutions can continue to forestall "it" while at the same time promoting the values of a democratic society. We now turn to Minsky's policy analysis.

STABILIZING THE UNSTABLE ECONOMY

In his 1986 book, Stabilizing the Unstable Economy, Minsky argued "The policy problem is to devise institutional structures and measures that attenuate the thrust to inflation, unemployment, and slower improvements in the standard of living without increasing the likelihood of a deep depression." (Minsky 1986, p. 295) His "agenda for reform" addressed four areas: "Big Government (size, spending, and taxing), an employment strategy, financial reform, and market power". (Minsky 1986, p. 295) We will very briefly summarize the reforms advocated.

a) Big Government.

According to Minsky, government must be large enough that the swings of its budget are sufficient to offset swings of private investment; this dictates that government spending should be approximately "the same order of magnitude as or larger than investment." (Minsky 1986, p. 297) This means that at full employment, the budget should be balanced at about 20% of GDP; below full employment, spending would be somewhat more than this while tax revenues would be somewhat less; above full employment, revenues would exceed 20% of GDP while spending would be less. Minsky was quite concerned with maintaining the appearance of credit-worthiness, which necessitates "a tax and spending regime in place that would yield a favorable cash flow (a surplus) under reasonable and attainable circumstances".

(Minsky 1986, p. 302) For this reason, he argued that the fiscal stance of the Reagan administration was out of line; while tax revenues were approximately the right size, spending was several percentage points of GDP too high--even at full employment a deficit would result. Spending cuts would be required.

Most importantly, Minsky wanted to reorder spending priorities toward employment programs, child allowances, and public infrastructure investment, and away from defence and non-Old Age, Survivors, Disability, and Hospital Insurance (OASDHI) transfers. (Minsky 1986, p. 308) He believed that an employment program could substitute for most transfers other than those aimed at the aged, which would allow substantial cuts in non-defence spending. Finally, he wanted to dispense with automatic cost-of-living adjustments so that inflation would move the government's budget toward balance (by increasing tax revenues through "bracket creep" while avoiding increases of social spending). In some respects, Minsky's arguments appear to be very close to those recently discussed and in some cases implemented--i.e., President Clinton's proposal to "end welfare as we know it". However, as we will discuss below, Minsky's employment program would provide a greater "safety net" than do the new welfare "reforms".

Part of the reason that Minsky wanted to reduce transfers is because he was convinced that these impart an inflationary bias to the economy. (Minsky 1986, p. 313) In his view, the level of aggregate demand determines the mark-up at the aggregate level over aggregate costs of production (primarily, wages). As social spending generates income and adds to aggregate demand without contributing much to aggregate supply, the mark-up over costs is higher. If government spending could be shifted away from policies to raise aggregate demand without

increasing production to those that would increase both aggregate demand as well as increase aggregate supply, then prices would be lower. In particular, public infrastructure development as well as "workfare" rather than "welfare" would be expected to reduce inflation.

With regard to taxes, Minsky believed that most taxes are inflationary because they add to costs; in particular, the portion of the Social Security tax paid by employers as well as the corporate income tax were believed to be a cost passed along in price. (Minsky 1986, p. 305) In addition, Minsky feared that the payroll tax encouraged substitution of capital for labor. He thus advocated elimination of the corporate income tax as well as the employer portion of the payroll tax. He supported, as will be discussed in greater detail below, a broad-based value-added tax as an alternative. He also supported greater use of excise taxes to influence behavior; in particular, he advocated a much larger tax on petroleum.

b) Employment.

A key component of Minsky's reform strategy was to remove barriers to labor force participation and to ensure that all who wanted a job would be able to obtain one. (Minsky 1986, p. 308) He argued that various transfer payment programs, in particular AFDC and Social Security program constraints on wage income allowed to the elderly collecting benefits, provide significant barriers to work. His reforms would include substitution of a universal children's allowance for AFDC, as well as elimination of wage income constraints but with an extension of retirement age for Social Security benefits. More importantly, he advocated a true "full employment" policy: the government would act as the employer of last resort, using a program modeled on the New Deal's Civilian Conservation Corps or Works

Progress Administration (WPA). This would guarantee a public sector job to anyone unable to find a private sector job, at some established minimum wage.

> The policy problem is to develop a strategy for full employment that does not lead to instability, inflation, and unemployment. The main instrument of such a policy is the creation of an infinitely elastic demand for labor at a floor or minimum wage that does not depend upon long- and short-run profit expectations of business. Since only government can divorce the offering of employment from the profitability of hiring workers, the infinitely elastic demand for labor must be created by government. (Minsky 1986, p. 308)

He argued that this program would allow full employment without generating inflationary pressures, or, at least, would be no more inflationary than the current system. (Recall that he argued that transfer payments are inflationary because they generate aggregate demand without necessarily generating aggregate supply.) Since WPA-style jobs would pay less than those in the private sector and because they would generate at least some increase of potential output, they would not place significant pressure on either private sector wages or prices.

Minsky argued that the current system actually sets a minimum wage at $0 because if one is unemployed, the wage is zero; in his scheme, a true minimum wage--one set by policy--would be in effect since all could work at the WPA-wage. (Minsky 1986, p. 310) While in the current system, employment is subject to cyclical fluctuation, in Minsky's system, fluctuation of private sector employment would be offset by variations in the proportion of workers in government-sponsored WPA jobs. Also in the current system, employers have to compete with government-provided income given for not working; wages must be set at a

high enough level to induce those receiving transfers to accept employment; in Minsky's system, the alternative to private employment (and to public, non-WPA employment) is WPA employment. As long as the WPA wage is not adjusted upwardly very often, it could even act to dampen wage pressures and thus lead to less inflation potential than the current system.

c) Financial Reform.

As discussed above, Minsky believed that Fed willingness to intervene as lender of last resort generates changes of behavior in financial markets; for this reason, the Fed must take greater responsibility for regulating financial markets to "guide the evolution of financial institutions by favoring stability enhancing and discourage instability-augmenting institutions and practices." (Minsky 1986, p. 314) Foremost among his recommendations was greater reliance on prudential supervision of banks. He favored greater use of the discount window (and correspondingly less use of open market purchases) as the method through which reserves would be provided; this would allow the Fed to reward prudent bank practices with more favorable terms at the window. Further, he favored policies that would tie lending to specific assets--something like a "real bills doctrine"--so that "the payment commitments on the debts used can be closely related to the cash flows that these assets are expected to yield. The financial flow relations are analogous to those that characterize hedge financing." (Minsky 1986, p. 315) Of course, this would not always be possible, but it can be encouraged by opening the discount window to a wide variety of types of financial institutions (he included sales finance companies, life insurance companies and even ordinary corporations) so long as they engage in "to-the-asset financing". (Minsky 1986, p. 322)

While the corporate form is necessary in an economy with extremely expensive capital assets, this sort of institutional arrangement "facilitates the divorce of financing from the ownership and acquisition of particular assets.... Consequently, the corporation, initially a device for extending hedge financing to long-lasting capital assets, can be a vehicle for speculative finance--and because it facilitates both capital intensive modes of production and speculative financing, a destabilizing influence." (Minsky 1986, p. 316) He believed that policies could reduce "instability-enhancing power of corporations"; among these, he included elimination of the corporate income tax, which leads to a bias in favor of debt-financing over equity financing, policies that would favor employment of labor over investment in physical capital (such as elimination of the payroll tax on employers), and reduction of policies that favor "bigness"--as discussed in the next section.

d) Market Power.

Countercyclical government deficits maintain profit flows, allowing firms to validate debt commitments even when private investment spending falls. Minsky saw no alternative to such behavior on an aggregate level. (Minsky 1986, p. 332) However, it is essential that individual firms and banks are allowed to fail, for otherwise there is no market discipline. In Minsky's view, the primary incentive to obtaining market power is the ability to set prices at a sufficient level to service debt. In a small government form of capitalism, collusion and government policy may be warranted to try to maintain prices in conditions of low demand. However in big government capitalism, where government deficits maintain profits, "there is no need for policy to foster market power that protects profits". (Minsky 1986, p. 318) Indeed Minsky feared that conditions favoring large monopolies could be detrimental because they

would lead to firms that are "too big to fail". Thus, he favored policies that would reduce the incentives to "bigness"; in particular, he believed that policies that favored medium-sized banks would also favor medium sized firms, as bank size determines, to a large extent, the size of customers--big banks serve big customers, while medium sized banks serve medium size customers. "A decentralized banking system with many small and independent banks is conducive to an industrial structure made up of mainly small and medium-size firms." (Minsky 1986, p. 319) Policies that would promote such a system include elimination of much of the segmentation of activities (i.e., commercial banking and investment banking)--at least for small-to-medium size banks so they could provide a wide range of services to their small-to-medium size customers, uniform, higher, capital-to-asset ratios (this would favor smaller banks as these typically have higher ratios), and freer entry.

Minsky also argued that "industrial policy" could not only favor smaller firms, but could also favor employment over capital-intensive production techniques. Smaller firms tend to use more labor-intensive techniques merely because their ability to finance positions in long-lived and expensive capital assets is lower. He also favored regulation and government intervention into specific markets wherever these would promote competition. While he agreed with orthodoxy that "competitive markets are devices to promote efficiency", he went on to note that "The market is an adequate regulator of products and processes except when market power or externalities exist; once they exist--whether caused by the government or by market processes--regulation can be necessary to constrain the exercise of power." (Minsky 1986, p. 329) Thus, "An industrial policy that takes the form of promoting competitive industry, facilitating financing and aiding and abetting the development of a labor force that is

trained and productive, is highly desirable." (Minsky 1986, p. 329) Note, by the way, that he credited his teacher, Henry Simons, for this insight. He also saw industrial policy as a viable alternative to anti-trust prosecution, which he believed to be a failure precisely because it cannot create the conditions required to permit smaller firms to prosper.

Finally, Minsky admitted that these policies would have negative impacts on many mega-corps which would find that in the new environment, they would be unable to service debt. He abhorred the way in which the government had "bailed-out" Lockheed, Chrysler, and some electric utilities; he would later criticize the Saving and Loan bail-out. Instead, he favored "socialization of industries that require financial restructuring" through a "government refinancing corporation"; later, he would specifically advocate creation of such an organization to handle the S&L fiasco, modeled on the Reconstruction Finance Corporation (RFC) of the 1930s.

MINSKY'S WORK AT THE JEROME LEVY ECONOMICS INSTITUTE

After taking his post at the Jerome Levy Economics Institute, Minsky continued and indeed intensified his attempts to formulate policy relevant for the institutions of modern capitalism. In particular, he emphasized that a) capitalism is dynamic; b) the 1930s reforms are no longer appropriate to the existing form of capitalism (dubbed "money manager capitalism"); c) the currently dominant conventional wisdom that "free markets" promote stability is flawed and dangerous; and d) new policies are required to reduce insecurity, promote stability, and encourage democracy. These concerns led to proposals regarding bank regulation, community

development banking, tax reform, unemployment and poverty, and introduction of "institutions" rather than "markets" to the formerly socialist states. We first examine his view that capitalism is dynamic, then we turn to policy reform appropriate for the new form of capitalism, and finally to specific policies he advocated.

a) 57 Varieties of Capitalism.

According to Minsky, capitalism comes in many forms: "The Heinz Company...used to have a slogan "57 varieties" [and] I used to say that there are as many varieties of capitalism as Heinz has pickles..." (Minsky 1991b, p. 10) To a great extent, these different forms of capitalism result from different financial arrangements. "Capitalism is a dynamic, evolving system that comes in many forms. Nowhere is this dynamism more evident than in its financial structure...." (Minsky and Whalen 1996, pp. 2-3) "There have been many different financial structures throughout history. These financial systems differ in how they affect economic efficiency and stability as well as the distribution of power in the economy." (Minsky 1991b, p. 5)

After WWII, capitalism in the US took the form that Minsky labeled "paternalistic capitalism" which could be characterized as a relatively high-consumption, big government, and big union form of capitalism that largely resulted from post-war reforms, institutions, and interventions that constrained instability in the financial system. These included: "countercyclical fiscal policy", "low interest rates and interventions by the Federal Reserve", "deposit insurance", "establishment of a temporary, national investment bank (the Reconstruction Finance Corporation) to infuse government equity into transportation, industry

and finance", "and interventions by specialized organizations". (Minsky and Whalen 1996, p. 3)

The relatively stable growth and absence of debt deflations allowed the development of huge portfolios of financial instruments--representing accumulated pensions, distributed profits, personal financial wealth, and retained earnings. In addition, as discussed above, speculative finance increasingly replaced hedge finance--creating a demand for the accumulated financial wealth. As a result, a new form of capitalism emerged. "Capitalism in the United States is now in a new stage, money manager capitalism, in which the proximate owners of a vast proportion of financial instruments are mutual and pension funds." (Minsky 1996b, p. 3) The values of portfolios are daily "marked to market", forcing a "short view" on managers, who have "become increasingly sensitive to the stock market valuation of their firm", and thereby greatly increasing uncertainty. (Minsky and Whalen 1996b, p. 5)

> When one considers the pressures due to both the rapidly evolving financial system and the economy's other structural changes, it is no surprise that economic insecurity is widespread. With the passing of the paternalistic financial structure, corporate paternalism has also faded. Workers at nearly all levels are insecure, as entire divisions are bought and sold and as corporate boards exhibit a chronic need to downsize overhead and to seek out the least expensive set of variable inputs. (Minsky and Whalen 1996, pp. 5-6)

This new form of capitalism not only tends toward financial instability--as evidenced by increasingly frequent and severe financial crises--but has also eliminated the expectation and even the hope of rising living standards for most Americans.

b) Policy Must Be Reformulated.

"Sixty years ago capitalism was a failed economic order....The capitalism that failed over 1929-33 was a small government, constrained central bank essentially laissez-faire economy. The capitalism that had a good run after the second world war was a big government interventionist economy with central banks that were less constrained than during the inter war years." (Minsky 1993, pp. 2, 19) "While the capitalisms of the United States and Western Europe were truly successful societies during the first two and a half decades after the second world war, their performance over the last decade and a half falls short... The successful capitalisms of the 1950s through the 1970s were not the same as the capitalisms that failed in the 1930s." (Minsky 1993, pp. 2-3) "If capitalisms are to be successful in the 21st century they are likely to be quite different from the models we are familiar with." (Minsky 1993, p. 7)

Thus, "Economies evolve, and so too must economic policy." (Minsky and Whalen 1996, p. 8) Existing policies are no longer adequate to deal with the new form of capitalism--a conclusion reached even by orthodox economists. However, because orthodoxy ignores institutional detail, its policy recommendations are dangerous. In his view much of the current debate over policy is driven by a misunderstanding of the way in which an economy with modern capitalist institutions functions. That is, most proposals are based on the belief that a "market" economy is basically stable, that "markets <u>always</u> lead to the promotion of the

public welfare", and that "financial crises and deep depressions arise from one of the following: non-essential institutional flaws which prevent the market from working its wonders, the system of intervention contains openings which allow some dirty rotten scoundrels to operate, or external shocks dislodge the economy. (Minsky 1991a, p. 5) In contrast, "The Keynesian view leads to the proposition that the natural laws of development of capitalist economies leads to the emergence of conditions conducive to financial instability." (Minsky 1991a, p. 5-6)

Minsky argued "Over the past dozen or so years the 1933-1937 model has shown its age. Although it has not broken down as completely as the older laissez-faire model had over the 1929-33 period, quite clearly our current model of capitalism needs to be at least thoroughly overhauled if not replaced. Whether he realizes it or not, the historic task of President Clinton is to discover and put in place a new model capitalism." (Minsky 1993, p. 1)

A number of problems with the new form of capitalism have been exposed. First, the regulatory agencies have lost power--partly due to the deregulation movement, but also due to private innovations that circumvent existing power. Second, the Social Security system was never adjusted for the enormous increase in life expectancy over the post-war period. Third, the existing welfare system locks poor families into a pattern of dependency. Fourth, employment security has eroded as the US abandoned its commitment to nearly full employment. (Minsky 1993)

While the reforms of the 1930s served the economy well for decades, institutional change and the evolution to a fragile system have made many of these outdated; what is

needed "is to put a financial structure in place which is conducive to doing the capital development well." (Minsky 1991a, p. 27) Minsky argued "Because some institutions, such as deposit insurance, the savings and loan industry, and a number of the great private banks, that served the economy well during the first two generations after the great depression, seem to have broken down, the need to reform and to reconstitute the financial structure is now on the legislative agenda." (Minsky 1991a, p. 3) Quick "policy fixes", however, such as a shift from government-insured bank deposits to private insurance will not do; these assume that market forces are inherently stabilizing, thus, all that is needed is to increase reliance on them. Rather, thorough-going reform is required, and no reform can be adopted and then left in place without continual revision to adapt to changing conditions.

c) Promotion of Stability, Security, and Democracy.

Thus, while "The New Deal restructuring of capitalism created institutions which contained uncertainty...[t]he evolution of the economy has decreased the effectiveness of the New Deal reforms and money manager capitalism has radically increased uncertainty. The creation of new economic institutions which constrain the impact of uncertainty is necessary." (Minsky 1996b, p. 4) "The aim of policy is to assure that the economic prerequisites for sustaining the civil and civilized standards of an open liberal society exists. If amplified, uncertainty and extremes in income maldistribution and social inequalities attenuate the economic underpinnings of democracy, then the market behavior that creates these conditions have to be constrained." (Minsky 1996b, p. 15) He advocated a number of policies that he believed could reduce uncertainty while enhancing stability and democracy in the "money manager" form of capitalism. These included: support for stronger trade unions; tax incentives

to lead firms to offer family friendly benefits and work arrangements; universal provision of high level health care and education services; full employment, which requires a larger and more innovative government sector; an enhanced minimum wage; an expanded Earned Income Tax Credit; portable pensions; institutional innovations to constrain money managers; a value added tax as a "backdoor" tariff and export subsidy; and a network of community development banks. (Minsky 1996b; Minsky and Whalen 1996)

Minsky rejected the orthodox belief that government intervention designed to reduce insecurity must necessarily reduce "efficiency" by providing improper incentives. Indeed, he argued that policies to reduce insecurity can actually increase efficiency--by creating the confidence necessary to engage in long-range planning. Similarly, he argued that workers can choose costly and long-term "investments" in self-improvement if there is a sufficient degree of secure employment at the end of the road. He believed that public-private partnerships are needed to promote science and technological advancement. Public infrastructure investment, aided by capital budgeting, is required not only to increase public and private "efficiency" but also to increase the supply of public goods.

Minsky also proposed a number of reforms in the financial arena. These included additional Federal Reserve policies to encourage that credit be directed toward socially desirable activities; and a more secure and prosperous international finance system, including stable exchange rates and an international lender of last resort. (Minsky and Whalen 1996, p. 16) Minsky was always concerned with creating an environment to support financial institutions that would encourage the "capital development of the economy" in appropriate ways, including greater "socialization of investment" through such policies as using

"dedicated taxes" for infrastructure development, capital budgeting, development banks, government holding companies, and greater reliance on government-operated fee-for-service infrastructure. (Minsky 1992b, pp. 24-5) He also argued "Community banks are at the heart of a financial structure that will be biased towards resource creation." (Minsky 1992b, p. 26) These would accept deposits and focus on mortgage loans and loans to local businesses, thereby encouraging local development. (Minsky 1992b, p. 27-8)

Minsky also endorsed a version of "narrow banking" that would separate "the payments mechanism" from "capital development".[13] "We are now in a position to realize the dual set-up of 100% money: financing the capital development of the economy by contingent-valued liabilities such as mutual funds, and a payments mechanism that is based upon a portfolio of government bonds that is held by the authority responsible for the payment system." (Minsky 1994, p. 21) Deposit insurance would not be extended to the "contingent-valued liabilities" and would not be necessary for the "payments mechanism" backed by government bonds. This would reduce or eliminate the concern that federal deposit insurance encourages risk-taking by commercial banks. These would be free to finance commercial enterprise, but could not do so on the basis of government-insured liabilities. A "safe and secure means of payments" would be provided while at the same time much of the functional segmentation of banking could be eliminated. Commercial banks would be permitted to engage in a wider range of activity, including activities that had been restricted to investment banking (although these restrictions are rapidly being removed). Banks would use the "mutual funds financing technique" to finance a variety of activities, with "fire-walls" in place so that each "mutual fund" issued by a bank would be linked to a particular activity

that was financed. In this way, the returns to each "mutual fund" would be related to a "tranche" in the portfolio, varying by the degree of risk. (Minsky 1994, pp. 18-21)

Minsky helped to develop the Levy Institute's proposal to establish a nation-wide system of community development banks (CDBs). This was also linked to Minsky's belief that public policy should encourage creation of small-to-medium size firms. The CDBs would finance the small, local "deals": "Because it is in the public interest to foster the creation of new entrants into industry, trade, and finance, it is also in the public interest to have a set of strong, independent, profit-seeking banking institutions that specialize in financing smaller businesses." (Minsky, et al, 1993, p. 9) Further, as discussed, Minsky frequently advocated public equity investment; the CDBs would be established with government capital infusions that would be gradually retired as they became profitable and accumulated private equity. Again, this followed the RFC model. The CDBs would combine commercial banking, narrow banking, investment banking, and trust banking in a small, community-based bank that could offer a wide range of services to the community.

Minsky also turned his analysis of the sorts of financial institutions and arrangements that would be consistent with money manager capitalism toward an examination of alternatives facing the formerly socialist states. In his analysis of "transitional economies"--formerly socialist economies supposedly on the way to becoming "market economies"--Minsky (1991b, p. 1) argued "The purported intent of achieving a market economy is not a clear directive. Because there are many varieties of market economies, the concept is not precise." Further, "It almost seems self-evident that the so-called planned economies were not in any sense planned" as they never considered "interdependent relations in production and

consumption" as well as the "conditions of the labor force" and "environmental impact" of decisions (Minsky 1991b, p. 1). Minsky thus rejected both aspects of the conventional approach as he denied that these states were moving away from a "planned" form and also denied they were moving toward a "free market" form.

Given the absence of private wealth and financial markets in these economies, both of which are essential to functioning of modern capitalism, "Questions of how to create legitimate titles need to be addressed in discussions of the transformation...." "The lesson from history is that the privatization of the public domain should be done very carefully...." (Minsky 1991b, p. 3) In the absence of private wealth and the absence of a history of profits for the publicly held capital assets, privatization would be particularly difficult--even if the assets could be sold, there would be no basis on which to value them. Thus, Minsky advocated creation of "public holding companies" which would serve as a temporary holder of assets until "markets become thick enough to absorb them". Initially the government would hold the shares and the holding company would direct the subsidiaries to operate "for profit"; as private wealth is accumulated (in savings, pension funds, mutual funds) and as a record of profitability is generated, government ownership is replaced by private ownership. "The public holding company is to be considered as a transitional device. The model is the previously mentioned Reconstruction Finance Corporation..." (Minsky 1991b, p. 20) In Minsky's scheme, "The pace of privatization is ruled by the rate at which enterprises begin to generate believable profit flows and the rate at which the market for equity assets grows..." (Minsky 1991b, p. 21) The transition would be long, and can be contrasted with the market shock approach that was actually adopted in many countries without regard for the institutions that

actually existed. Minsky's approach would have taken into account existing institutions, or lack thereof, and would thereby have avoided much of the pain caused by the market shock approach, which ignored the institutions that actually existed. Further, Minsky's proposal would have encouraged decentralization of power and widespread ownership. This stands in stark contrast to orthodox approaches, which force premature sales, before prices can be established for capital assets, and before private wealth is generated--ensuring that only a few large "players" receive "firesale" prices and will come to dominate the economy.

CONCLUSIONS

Minsky always insisted that theory must be institution-specific. Because there are a variety of possible types of economies, and even "fifty seven" varieties of capitalism, theory must be appropriate to the specific economy under analysis. His analysis concerned an evolving, developed, big-government capitalist economy with complex and long-lived financial arrangements. His policy recommendations were designed to promote a successful, democratic form of capitalism given these financial arrangements. These policies would have to "constrain" instability through creation of institutional "ceilings and floors" while at the same time they would have to address the behavioral changes induced by reduction of instability. The policies would also have to promote rising living standards, expansion of democratic principles, and enhancement of security for the average household. Thus, his proposals go far beyond "invisible handwaves" of free market idealogues, but also well beyond macroeconomic tinkering normally associated with "Keynesians" to take into consideration the required institutional change that would promote the sort of society he desired. In this sense,

we think it is accurate to claim that Minsky successfully integrated "Post" (or, better, "financial") Keynesian theory with an institutionalist appreciation for the varieties of past, current, and feasible future economic arrangements.

NOTES

1. Minsky seems to have produced relatively more students during his few years at Berkeley than he produced during his long tenure at Washington University. Perhaps this was somewhat intentional, for he later said that part of the reason he moved to St. Louis was to obtain more time for his research in a relaxed atmosphere. One of the authors (Wray) notes that Minsky was very tough (at least on first year graduate students; he was notoriously soft-hearted when it came to undergraduates) at Washington University. Students could expect that their papers would be returned "on the wing" as Minsky tossed the paper at the student while proclaiming that the paper was hopelessly confused and unacceptable. Many graduate students were said to be "ABM" (all but Minsky), having completed all course work and exams (and even, in at least one case, having completed the dissertation!), but having failed to deliver an acceptable term paper to Minsky (his criterion was that the paper should be "publishable"). Only a very few, particularly persistent students would make it to the next stage, when Minsky would take them "under his wing" and treat them almost like family members. In any case, Minsky was probably unusual in that most of those who would consider themselves to be "students" of Minsky in the intellectual sense were not students in the more formal sense; and, indeed, his influence on some of his formal students (for example, Hall and Sargent) is not readily apparent. (However, it should be noted that Minsky did claim these "wayward" students and always held out hope that some day their conversion would be complete. During his final weeks he was quite convinced that Sargent is undergoing such a transformation.)

2. See, for example, King (1996), who argues that Minsky only gradually became a Minskian; Lavoie (1985, 1992) argues that at least some of Minsky's work (including the FIH as well as

his early work that concluded the credit supply curve is upward sloping with respect to the interest rate) borders on neoclassical loanable funds theory.

3. This was treated as a velocity-interest rate relation: as interest rates rise, velocity tends to rise; however, innovations can shift the curve out so that velocity can increase even without an increase of interest rates. For monetary policy to be effective in slowing an expansion, it would have to decrease reserves so much that it would compensate for rising velocity that would result from the tight policy (both due to rising interest rates and due to innovations).

4. He noted, by the way, that "Case D of course is similar to the existing monetary system." (Minsky 1957b, p. 863)

5. He concluded, like Keynes, that "[t]here does not seem to be any endogenous factor which would lead to a fall in liquidity preference on a downswing. Changes in liquidity preference seem to be destabilizing." (Minsky 1957b, p. 882)

6. Although published in 1975, this book was finished in 1972.

7. See, for example, Minsky (1980), which explicitly incorporates the Kalecki equation into his "financial theory of investment", arguing that "The fundamental vision in this argument is that private employment is determined by profit opportunities. The aggregate profit opportunities in the economy are in the skeletal and essential analysis determined by investment and the government deficit." (Minsky 1980 [1982], p. 40)

8. See, for example, Minsky (1995) and (1996a).

9. We will also abandon any attempt to present his development of the FIH in a chronological fashion, but will present the theory at a mature stage of development. Interested readers should look at some of the earlier pieces, including Minsky (1963a; 1972; 1977; 1980, Lavoie (1985, 1992) argues that at least some of Minsky's work (including the FIH as well as

10. We can see how the FIH continued his early analysis and rejected the Harvard "Keynesian" analysis. In contrast to the conventional multiplier-accelerator analysis, Minsky concluded that the "free market" system is subject to explosive oscillation because growth over the cycle changed behavioral parameters in a way that promotes instability. However, imposition of institutional floors and ceilings can maintain a semblance of stability.

11. Of course, balance sheet simplifications still occur, but "simplification" at one institution is not normally allowed to spread to others. The Savings and Loan fiasco and bail-out is an example of a rather massive simplification of balance sheets as assets were written-down and liabilities written-off.

12. Note the connection to his earlier (1957b and 1959) articles.

13. See Phillips (1995) for a detailed examination of the narrow banking plan.

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APPENDIX: LIST OF SOME OF MINSKY'S IMPORTANT PUBLICATIONS

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