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# The vision of Hyman P. Minsky

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**Abstract**

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> On the mezzanine of Littauer, Schumpeter instructed about the primacy of vision: in particular that we — the young who engaged him in conversation — should develop our vision, we should have a view that in a sense is prescientific of what the game is about, about the way the beast functions, about the way the various parts of economics and social science are related and, yes, about our own maps of Utopia. Once we have a vision, then our control of theory, our command of institutional detail, and our knowledge of history are to be marshaled to support the vision... Schumpeter's methodology of vision and theory, with theory a servant of vision, may seem cynical, but, in truth, it is honest. It is a way of systematizing thought so that dialogue could take place. The division between vision and technique leads to a recognition that we are marshaling evidence when we do theory, when we analyze data, and when we read history. Schumpeter's methodology undercuts much of the pretentious nonsense about economics as a science and elevates the importance of discourse, of dialogue, and of just plain good talk for a serious study of society. (Minsky, 1992b, p. 369).

Viewed in historical context, the work of Hyman Minsky (b. 1919) represents a continuation of the American institutionalist tradition of monetary thought, a tradition deeply influenced by roots in American progressivism. [1] Minsky's central research question was the same as the one that guided the research of Allyn Young (b. 1876), Alvin Hansen

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[1] On the American institutionalist tradition of monetary thought, see Mehrling (1997). Important contributions to the secondary literature on Minsky include the festschrift Fazzari and Papadimitriou (1992), Dymski and Pollin (1994), and Papadimitriou and Wray (1998).

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(b. 1887), and Edward Shaw (b. 1908): What is the proper function of the monetary system in a democratic society, and, more specifically, how can money interest be aligned with the public interest? Like the progressives, Minsky saw a competitive free enterprise system as the best guarantor of the common interest in economic growth and a more equitable distribution of the fruits of that growth. Also, like them, he worried that big business was creating a world increasingly distant from that ideal and he looked to government for the solution. For Minsky, the central lesson of Keynes's *General Theory of Employment, Interest and Money* was that big government could make competitive capitalism possible by placing bounds on aggregate fluctuation.

But Keynes came too late, according to Minsky, after the New Dealers had already accepted big business, and big labor too, in their pre-Keynesian attempt to avoid debt–deflation by fostering institutions that would enjoy market power. And when Keynes finally came, his message was misunderstood by the 'economist–courtiers' who advised the politician 'princes' (Minsky, 1986a). (Minsky's language means to evoke Shakespearean tragedy, not to inflict personal insult, but it was not necessarily understood that way.) As a consequence, the opportunity was lost to build a competitive capitalism that would also be stable. Instead, in the post-war period, Keynesian policies were used to stabilize uncompetitive managerial capitalism, with the consequence of increasingly unsatisfactory economic performance after about 1966. Instead of encouraging equity finance of small business, the post-war policy regime encouraged debt finance of big business, which led inevitably to the disastrous and anti-competitive 'too-big-to-fail' doctrine. Encouragement of big business was supposed to be a way of providing for the large-scale capital investments on which progress clearly depended, while avoiding public investment and public ownership. The irony is that fear of socialism ruled out public investment, but the competitive market turned out to be the main casualty, and socialization came in anyway through the back door of subsidies and bailouts. At the macroeconomic level, the consequence was stagnation and inflation.

Living through the post-war period, Minsky had no idea how it would turn out. He kept pushing for own-favored Utopia, using as leverage the threat of financial crisis that he saw emerging from the contradiction between the New Deal institutional legacy and Keynesian macroeconomic policy. He seems to have thought that institutional reform to avoid the thrust to financial instability would take the economy a large step toward the competitive ideal he favored. But it was not to be. With each crisis weathered, managerial capitalism evolved farther away from competitive capitalism and closer toward what Minsky came to call 'money manager capitalism,' Big business went out, but big finance came in.

Though the world evolved away from his Utopia, Minsky never allowed himself to become bitter or disillusioned. For him, the joy was in the fight, not in the victory. He lived his life in the present, not in some hoped-for future. His optimism about the future — he was always optimistic, even when warning of inevitable crisis — came not from soft-minded romanticism but from deep-seated faith in democracy, from faith in the ability of a free people to meet the challenges facing them and to move forward. He did not get his Utopia, but he did get to play a role in the grand drama of developing American society. That he found such a life completely fulfilling is just one more indication of his continuity with the American institutionalist and progressive tradition.

## 1. Life

Hyman Philip Minsky was born 23 September 1919 in Chicago, Illinois, the elder by 7 years of two boys born to Sam Minsky and Dora Zakon. Both parents were Russian Jewish immigrants, who met on a tram going to a socialist rally in honor of Karl Marx' 100th birthday (presumably 5 May, 1918); young Hyman was a socialist born and bred. From his father, who was a successful clothing designer but a failed clothing manufacturer, he learned about the business world. From his mother, who was better educated, he learned to appreciate the world of ideas. He grew up mainly in Chicago, though his family spent some years in Lima, Ohio and in New York City, pursuing various business opportunities. They were living in New York, and Hy was attending George Washington High School, when his parents decided to separate. He returned to Chicago with his mother and enrolled in the University of Chicago as a commuter student starting in September 1937.

The death of his mother the next fall left Hy psychically, if not legally, an orphan. Though his father continued to support him financially, in a larger sense he was on his own in a world almost a decade into Depression and on the eve of World War II. He moved into the Ellis Co-op, close to campus, and the friends he met there became his family. Alienated from his natural father, he transferred his affection to his studies, and to his professors. There is no reason to doubt Minsky's own assessment that two Chicago professors, Oscar Lange and Henry Simons, were the most significant early influences on his thought (Minsky, 1985a). The inspiration to study economics came from Lange, who was at that time working out a synthesis of Marx and neoclassical economics that he called market socialism (Lange, 1938). Henry Simons was the source of Minsky's lifelong interest in finance, as well as the idea that the fundamental flaw of modern capitalism stemmed from its banking and financial structure (Simons, 1948). Taken together, Lange's model of a possible socialism and Simons' model of the 'good financial society,' comprised the central features of Minsky's 'map of Utopia,' a vantagepoint from which he would later analyze and criticize existing economic structures.

In 1941, Minsky graduated from Chicago in mathematics and stayed on for graduate study in economics, but war soon interrupted his studies. First his Chicago professors were called away into service and then, after he shifted to Harvard, Minsky himself was called. War duty took him away for 4 years (see Papadimitriou, 1992). He returned to Harvard in fall 1946 and fell in with the young Keynesians who gathered around Alvin Hansen. Three years later he accepted a position at Brown University in Rhode Island while he finished his dissertation. The death of his supervisor Joseph Schumpeter in 1950 slowed him down, but in 1954 Minsky was granted his Ph.D. for a manuscript titled 'Induced Investment and Business Cycles.' He was 34 years old. The following year he married Esther Doris DePardo, a Providence native of Italian Catholic and socialist extraction whom he had met while at Brown. An invitation to visit Berkeley appeared soon after, a visit that resulted in the offer of a regular position which Minsky accepted starting in the fall of 1958.

So why in 1965 did he leave Berkeley for Washington University, where he would remain until his retirement in 1990? He certainly could have stayed and there was much to keep him. He had tenure at a good university, had become active in state politics as president of the state chapter of the liberal Americans for Democratic Action, had established himself as a banking expert with an edited volume on California banking (Minsky, 1965a, d), and

he had two young children besides. Even given the political turmoil then sweeping the Berkeley campus, it would have been easier to stay, but he chose to leave.

It seems likely that at some point Minsky looked at the way his life was developing and realized that he would have to choose between a life of political activity and one of scholarly activity. Furthermore, at age 45 he could not put off the choice any longer. He had plenty of ideas and it was time to push them or give them up. His 1960 book-length study for the Commission on Money and Credit (published as Minsky, 1964a) had been an impressive work, opening up multiple avenues for future research. But he had done little to follow up except to suggest the possible significance for future economic stability of declining public debt and increasing private debt (Minsky, 1963a, 1964b). Meanwhile, monetarism was making inroads and though he could and did criticize (Friedman in 1963b, Meltzer in 1963c), he had no real alternative to offer. Instead of pushing his research agenda, he had been pushing a political agenda of full employment as an anti-poverty program superior to President Johnson's 'war on poverty,' and public employment of low-wage and unemployed workers as the superior mechanism for achieving that end (Minsky, 1965c, e, 1966c; continued in Minsky, 1968a, d, 1973b, 1986a).

The move to Washington University was a decision to get focused and to get serious about his scholarship. Significantly, for Minsky that meant a return to the style of research that had led to his first significant publication, 'Central Banking and Money Market Changes' (Minsky, 1957a). For that paper, he had spent time in New York City as a kind of participant-observer in a brokerage house learning about new developments in the federal funds market and the use of repurchase agreements. He concluded from that study that the goal of using monetary policy for aggregate stabilization was probably illusory on account of the attendant financial innovation, but that the older and more fundamental central bank function as lender of last resort remained both essential and feasible. It is significant that his first publication at Washington University, titled 'The Evolution of American Banking: The Longer View' (1966a), expanded on this early conclusion, now arguing that attempts to control the money supply by controlling the reserve base were misguided, and that the Federal Reserve had better focus on controlling the pattern of interest rates by encouraging use of the discount window and controlling the discount rate. The pattern of his subsequent research can be best understood as an attempt to develop this view, first, by deepening his understanding of modern bank operations and, second, by reformulating it in the terms of modern academic monetary discourse.

For the first arm of this research strategy, the crucial step was the opportunity to develop a consulting relationship with the fledgling Mark Twain Bank starting in 1967. Over the next 30 years, the bank grew rapidly until it was purchased in 1997 for almost $1 billion by Mercantile Bancorporation. Throughout that period, Minsky was there, not just as an advisor (and eventually a director) but more importantly as a participant-observer. The Bank was Minsky's window on the subsequent evolution of American banking and on the periodic financial crises that marked the stages of that evolution — "the credit crunch of 1966, the Penn Central–Chrysler liquidity squeeze of 1969–70, the Franklin National-REIT debacles of 1974–75, and the Hunt/Bache/Chrysler/First of Pennsylvania fiascoes of 1980" (Minsky, 1983a). From that experience emerged the writings for the financial press that made Minsky's reputation in financial circles (Minsky, 1968c, 1970a, 1972b, 1973a, 1974a, b, c, 1977a, 1978b, c, e, f). Nothing in the Minsky opus is better written or more

clearly argued than these apparently ephemeral articles. Here Minsky is closest to the source material from which all of his higher level theories are spun.

The second arm of the research strategy was less successful. By 1965, the pattern of post-war academic discussion about money had already been established. In the mainstream of economics, the dominant alternative to monetarism was the portfolio view of James Tobin and others, a view that built on the seminal work of Gurley and Shaw that had culminated in their *Money in a Theory of Finance* (1960). In his first years at Washington University, Minsky worked to link up his own developing views with the work of Gurley and Shaw (Minsky, 1967a, b) and Tobin (Minsky, 1969a, c). The Federal Reserve's 1968 project to reappraise the operation of the discount mechanism (published as Minsky, 1972d) offered Minsky the opportunity to formulate his views independently and to spell out the practical consequences for the operation of monetary policy. However, in the ensuing discussion, Minsky's emphasis on the *support* functions of the central bank as lender of last resort lost out to the dominant emphasis on the *control* functions of the central bank as manager of the money supply.

Minsky would later view 1966 as a turning point for developments in the real economy, marking the end of the 'robust' finance of the immediate post-war years and the beginning of the increasingly 'fragile' finance of the decades to follow. It was a turning point in his own life as well because, faced with the choice of following developments in the real economy or developments within the economics profession, he chose the former with the consequence that his work fell increasingly outside the mainstream. The same ideas that found such an appreciative audience among market practitioners found outlet mainly on the institutionalist fringes of the economics profession (Minsky, 1969b, 1972a, 1977e, 1980a, 1981b) and in journals of left opinion (Minsky, 1968b, 1970b, 1975c, 1977d, e, 1980b, 1981a). In the mainstream, what might be called 'monetary Walrasianism' — the style of Hicks, Patinkin, and Modigliani — increasingly became the sole strain of acceptable analysis. In Minsky's view it was a style of analysis at best suited for times of robust finance, such as the remarkably stable period from 1948–1966, but one with little relevance for the emerging problems of fragile finance.

A sabbatical year during 1969–1970 at St. Johns College in Cambridge, England, provided opportunity as well as stimulus for the new direction Minsky would take. Up until this time, he seems to have viewed himself as part of a large and diverse Keynesian camp, and he positioned his work as an examination of certain fundamental institutional issues that had been bracketed by other Keynesians. Afterward, he would move into opposition, not only to monetarism but also to mainstream Keynesianism. Mainstream Keynesian views were not merely too narrow, they were wrong, and the policies implied by their theories were not merely misguided but actively harmful (Minsky, 1972b, c, 1975a). They were wrong not only about the exceptional times of financial crisis, but even about normal times of smooth functioning. And they were wrong not just about money and finance, an area they largely neglected, but even about areas they did not neglect such as the theory of investment. Thenceforth, Minsky presented his own views no longer as a complement to mainstream Keynesianism, but as an alternative.

Signalling his intention to provide something systematic, he presented his views in his book *John Maynard Keynes* (1975) as an interpretation of the Keynes alternative to that of the mainstream. It was not, however, just an alternative interpretation that implied an

alternative policy. It was also an alternative model of a possible economic future, namely, the model of market socialism Minsky had learned from Lange, now opposed to the conservative welfare state/investment subsidy model of capitalism that was being promoted by mainstream Keynesians. In Chapters 7–9 of the book, Minsky projected his preferred model of radical reform onto Keynes, extrapolating from Keynes' famous advocacy for 'euthanasia of the rentier' and 'somewhat comprehensive socialization of investment.' Like so many other interpreters, Minsky looked at Keynes and saw a distorted — or "muddled" (p. 69), "flawed" and "obscure" (p. 79) — version of himself.

The decision to embrace dissident status was not Minsky's alone; there were other dissidents and they welcomed him. He was, however, substantially alone in his emphasis on the financial side of economics and on the financial interpretation of Keynes, and he was not shy about criticizing other dissidents for their neglect of this dimension (Paul Davidson in 1974d; Axel Leijonhufvud in 1977b, 1982e; Nicholas Kaldor in 1981d, 1991a; Piero Sraffa and the surplus approach in 1983c, 1990b; and even the institutionalism of Wallace Peterson in 1983e and the populism of William Greider in 1988d). Nevertheless, he seems to have decided that more could be gained by presenting his work as complementary to a common dissident post-Keynesian project (Minsky, 1977b, c, d, 1978a, 1980d). The most important contribution of his fellow dissidents to Minsky's own thought came through the work of Michal Kalecki (1971). In his early work (1954), Minsky had sketched the idea that financial conditions cause investment which then causes business cycles, an idea that led him to focus his attention on the evolution of financial conditions. For this project, the Kaleckian idea that investment causes profits was critical, because it is profits that ultimately validate debts and so support asset prices. Reflecting the Kaleckian influence, in Minsky's mature accounts of his business cycle theory (e.g. Minsky, 1980c), there is a line of causation that runs from investment to finance as well as from finance to investment. The result is a complex dynamical process of financial evolution that drives business fluctuation.

It is significant that the fullest statement of his business cycle theory was published by the Joint Economic Committee of the U.S. Congress (Minsky, 1980c), and not by any academic journal. The 1970s were Minsky's decade in the wilderness, when government testimony was practically his only opportunity to reach a larger audience (see also Minsky, 1975b, 1977f, 1978d). The election of Reagan in 1980 practically closed off this avenue, but the turbulence of the economy in the early 1980s created a more receptive audience for Minsky's 'financial instability hypothesis' within academia (Minsky, 1982b, d, 1984a). Minsky responded to the new opportunity by reaching out. His reviews of James Tobin and Frank Hahn (Minsky, 1981c, 1984b), while critical, can be understood as attempts to connect the dissident movement with tendencies bubbling up within the mainstream. He was making common cause with the most significant mainstream opponents of the monetarist tendency then sweeping the US and Britain. Renewed engagement with academic economics provided Minsky the impetus to complete the long-awaited comprehensive statement of his mature views in *Stabilizing an Unstable Economy* (Minsky, 1986a). A summing up of his work during the 1970s, the book took little account of the sea change taking place during the Volcker–Reagan years, except to deplore it. Understanding the implications of that sea change would be his main project for the next decade.

Changes in Minsky's own life provided new vantagepoints from which to observe what was happening. In 1980, he joined the faculty of the Center for Advanced Study in Trieste,

Italy, and thereafter lived a bi-continental life. The dollar crisis of 1977 had earlier alerted him to the increased importance of international monetary phenomena (Minsky, 1978b), an importance that was only amplified by the Fed's apparent flirtation with monetarism in 1979–1982. In a series of papers written in the mid-1980s, Minsky worked on understanding the consequences of the relative decline of the United States, paying particular attention to the role of the dollar as world reserve currency and to the ability of the Federal Reserve to conduct an independent domestic monetary policy (Minsky, 1984d, e, 1985c, 1986b, c, e, 1988a, b).

In 1990, upon retirement from Washington University, Minsky accepted a position as Distinguished Scholar at the Jerome Levy Economics Institute at Bard College, 2 hours north of New York City. The stock market crash of 1987 had earlier alerted him to the emergence of what he called 'money manager capitalism' (Minsky, 1988c). His move to New York and engagement with the activities of the Levy Institute put him in a position to educate himself about the operations of the new form of capitalism (Minsky, 1989b, 1990, 1996), and provided him with a platform to push for the social and economic reforms he favored. His last years were spent doing what he loved — 'plain good talk for a serious study of society' — with colleagues and friends, right up to his death on 24 October, 1996.

## 2. Character

The dynamic quality of Minsky's mind and personality can be traced to the dialectical tension between two sides of his character. On the one hand, he was a man of the left who abhorred the injustice of the status quo and dreamed of a better world that might be. On the other hand, he was a man of affairs, fascinated by the combination of luck and good sense that comprised the world of business. Another man might have handled the tension by compartmentalization, but Minsky found economics and managed to channel the tension into an unusually productive program of research. In effect, Minsky's political beliefs tied him to the mast, like Ulysses, and enabled him to attend the siren song of Wall Street without losing the critical distance so vital for intellectual inquiry. In his mature work, he argued that modern capitalism can only be understood by adopting the viewpoint of 'Wall Street' or 'The City,' but also that the fatal flaw of capitalism can be found in the normal operation of its financial apparatus.

A man both hedgehog and fox, Minsky was an exception to Isaiah Berlin's famous dichotomy (as was Leo Tolstoy, the oft-forgotten subject of Berlin's essay)[2] To be sure, he knew one big thing, Money. His way of knowing, however, was the way of the fox. For him, the economy was always embedded in a larger society and his attempts to understand money brought to bear not just economic viewpoints, but also political and sociological, and even historical and literary standpoints. In conversation — and he was a man who loved conversation — Baum's *Wonderful Wizard of Oz* was a much more widely cited text than Keynes's *General Theory of Employment, Interest, and Money*. Furthermore, what Minsky knew, though one big thing, was ultimately a highly contingent thing, *not* a theory of everything in the manner of hedgehogs. For him, money was less a cause (and never a

[2] For another view, see Dymski and Pollin, 1992.

prime cause) than it was an effect. In his view, attention to financial relationships vitiated the determinism of technology and preferences so characteristic of standard economic thinking, but the point was not to replace one determinism with another. Understanding money meant understanding a vital process shaping social evolution, but the future course of evolution remained open-ended and contingent. For Minsky, the social world was not a simple thing with well-defined laws of motion, but a complex thing, a live thing, inherently unstable, constantly in flux and, because of that, endlessly fascinating.

To an unusual degree, Minsky?s mind was comfortable with both the very concrete and the highly abstract, and he leapt readily from one to the other and back again, without spending much time in the middle where most of us live. His was a mind at once preoccupied with the historical instance and the big picture. As such, he had little patience with either thoroughgoing empirical study or fully specified theory, which is to say, with the most typical products of academic economic research. Not for him the narrow positivist examination of evidence for and against previously specified hypotheses. For one, the available data — even Flow of Funds data — failed to address the most interesting questions. For another, the most interesting theory was typically not testable in any straightforward manner, and was better used as a framework for organizing one's thoughts. Minsky preferred to comb the daily newspapers, particularly the financial press, for the pregnant new fact that would set off a new train of thought. The epigraph on his dissertation put an ironic twist on his sense of the intellectual project: "There is something fascinating about science. One gets such wholesome returns of conjecture out of such a trifling investment of fact" (Mark Twain, *Life on the Mississippi*).

He seems to have read economic theory in much the same way as he read the newspaper, not so much to enter the mind of another author but rather to find an idea that would help him develop his own thinking. This habit sometimes gives his writing a certain flavor of the eclectic and even the dilettante — Irving Fisher and Keynes, Henry Simons and Gurley and Shaw, Frank Hahn and Kalecki, all make their appearance to support various stages of the argument. A deeper reading, however, makes clear that Minsky's Fisher is always more Minsky than Fisher — we get debt-deflation but not 'dance of the dollar', a quantity theory of capital prices (e.g. Minsky, 1975a) but not of output prices — and the same goes for the others, even including Keynes. Essentially Minsky had an inductive mind, and he spun his theories from his experience, both direct and vicarious. The ideas of other economists entered only later on as an aid for solidifying and refining his own views, and for communicating them to different audiences.

Perhaps because of the character of his thought processes, Minsky was a marvelous communicator but a poor writer. In conversation, minutes easily became hours as his fluid mind flitted from topic to topic, finding larger meaning in the mundane events of the day, and usually with an ironic twist. It was, however, a style that translated poorly to the written page, where readers (particularly economist readers) expect thesis, argument, and conclusion. When tied down by the need to explain a particular event or financial innovation, his conversational style could work, but when he tried to rise above the specific and write in general terms, he had difficulty making himself understood. In his written work it is often difficult to tell what is the main point and what is subsidiary or supportive, for the simple reason that each point takes on different significance depending on context and viewpoint, which for Minsky were constantly in flux. It did not help matters that Minsky made few

concessions to the mores of the post-war academic style (very little formalism and no econometrics). He was an inspiring teacher, but his students learned to look elsewhere for the nuts and bolts of their professional training.

A final contrast is between the rather old-fashioned style and the almost hyper-modern content of Minsky's work. By his own reckoning, Minsky was an institutionalist economist in the sense that he viewed the structure of the economic world not as immanent in some set of underlying data — such as endowments, technology, and preferences — but rather as constituted by a set of key economic institutions. He was institutionalist too in his insistence that our economy is essentially, not incidentally, monetary in character. His way of fleshing out that idea was to look at every economic unit — firms, households, governments, even countries — as though it were a bank daily balancing cash inflow against cash outflow. From that point of view, the categories that most economists, and most people, take to be solid simply melt into air. Production, consumption, and trade, are nothing more than flows of money in and out and between different economic units. The most real thing is money, but money is nothing more than a form of debt, which is to say a commitment to pay money at some time in the future. The whole system is therefore fundamentally circular and self-referential. There is nothing underneath, as it were, holding it up. In Minsky's hyper-modern institutionalism, institutions do not merely organize the stuff of some pre-existing real world; they are the only real world there is. Financial relationships are not about mediating something else on the 'real' side of the economy; they are the constitutive relationships of the whole system. The veil of money is the very fabric of the modern economy.

In all these ways, Minsky was a man who did not fit in the standard boxes provided by the post-war economics profession. Neither an empiricist nor a theorist, as those terms came to be used, Minsky was both in some measure, just as he was both macroeconomist and microeconomist without fitting into either category very neatly. Too specialized in money and finance to pass as a generalist, he was too broad to be a specialist. He testified to Congress, wrote for the financial press, and promulgated an interpretation of Keynes, but one could not call him a policy economist, a business economist, or an historian of economic thought. He worked outside the main stream of the economics profession, partly by necessity and partly by choice, and yet his name and work became widely known and influential in mainstream circles (see Tobin, 1989). Given the mores of academic economics, he got in trouble for his use of swear words such as 'speculation,' 'Ponzi,' and 'financial fragility,' but he got his point across and it stuck.

A serious scholar who lived in the world of ideas, Minsky was also a playful man who loved life and people. For him, personal relationships were never about mediating something else — neither career, nor political agenda, nor personal influence. Friendships were simply the very substance of life. Ephemeral and transitory, life is nothing except what we make it by our connections with other people. It is not much but, as Peggy Lee memorably sang, that's all there is. Minsky's friendships spanned continents, generations, and even political ideologies. So multi-faceted was he, that there was always some common ground on which conversation could begin, and once conversation began friendship was rarely far behind.

## 3. Vision

The story of the development of Minsky's thought can be told in a number of different ways. There is an internalist story that traces the logical development of Minsky's business cycle model from his dissertation to his mature work. And there is an externalist story that traces the development of Minsky's views in response to the financial developments of his day. Both stories are valid, but both miss something essential. What made Minsky stand out from other economists was not the surface manifestation of his thought in the form of particular theories or empirical interpretations. What made him special was his way of looking at the world, his underlying vision. The story of the development of his thought is at root about the dynamic interaction of this underlying vision with the events and ideas of his time. Every time he wrote about a new subject, he brought another dimension of that vision up to consciousness where he could look at it and develop it. Reversing the process, we can reconstruct the worldview at the core of his thinking.

Minsky's worldview concerned not all economies, but only capitalist economies, by which he meant economies that are characterized by private ownership of the means of production. And it concerned not all capitalist economies, but only the ones that have developed a sophisticated system of finance to facilitate the ownership, creation, and refinance of capital assets. In these economies, so he seems to have thought, financial processes take on a life of their own, so that their logic effectively becomes the logic of finance. In Minsky's own early words: "Capitalism is *essentially* a financial system, and the peculiar behavioral attributes of a capitalist economy center around the impact of finance upon system behavior" (Minsky, 1967a, p.33, my emphasis). This is the core insight that underlies all of Minsky's work, and distinguishes his work from that of other economists. According to Minsky, we need to understand finance not because it is an important part of our modern economy, but because it is the very heart and motive force of that economy.

In the logic of finance, the most basic element of the economy is cash flow and the most basic constraint on the behavior of every economic agent is the "survival constraint" (Minsky, 1954, p.157) which requires that cash outflow not exceed cash inflow. Since the exact coordination of payments is impossible, even this simple constraint typically involves finance in the form of cash balances or a line of credit. If, over time, the cash flowing in to a particular economic unit is expected to exceed the cash flowing out, then whoever owns that unit is said to own a capital asset. From a financial point of view, a capital asset is not a concrete thing but only a stream of future net cash flows. The most important capital assets are those which can be sold or at least hypothecated. The reason they are important is that possession of such assets gives the owner access to current purchasing power in excess of current cash flows, possibly far in excess.

From a social point of view, finance is important most fundamentally because it puts order into the anarchy of decentralized market exchange in the face of a future that is fundamentally uncertain, not just risky. As an institutionalist, Minsky recognized that the institutions of finance are not the only institutions giving form to the void, but he believed they were the central institutions for the capitalist systems with which he was concerned. It is the complex structure of interlinked and overlapping cash commitments, rash promises about an uncertain future, that lends 'coherence' to the system, and financial breakdown is

so dangerous and frightening largely because it represents ‘incoherence’ (Minsky, 1977g, 1980d, 1982c). In Minsky’s way of thinking, cash commitments thus have a two-edged quality. On the one hand, they structure uncertainty and give definite form to an inherently open-ended system. On the other hand, they commit economic agents to perform actions that may turn out to be impossible, and so pose a threat to future coherence. Continual adjustment is required to maintain a balance between these two aspects, which means to keep the pattern of cash commitments in line with the pattern of expected cash flows. Coherence is thus not a once and for-all thing — it is *not* equilibrium — but a temporary and a tenuous thing, constantly in flux as time rolls forward.

Institutional evolution is the most fundamental reason that the balance between cash flows and cash commitments keeps shifting over time. To be sure, even without evolution, realized cash flows would inevitably diverge from the flows expected at the time cash commitments were engaged, simply because of uncertainty. But that is less important, in Minsky’s way of thinking, than the endogenous uncertainty arising from institutional evolution. As time rolls forward, the structure of the system evolves qualitatively, and a critical part of that evolution concerns the institutions of finance that give the system its characteristic shape. Uncertainty is not just the dark forces of time (as Keynes once put it), but more importantly the product of free social evolution. In Minsky’s way of thinking, uncertainty has a two-edged quality. On the one hand, it is a threat to the very coherence of our economic system, a threat that must be defended by institutions that place structure on the set of future possibilities. On the other hand, it is the very source of our ability to act freely, both as individuals and as a society. To eliminate uncertainty would be to eliminate freedom. The balance between cash commitments and cash flows is at root a balance between these two sides of uncertainty.

In an attempt to operationalize these highly abstract ideas, Minsky characterized the financial balance along a scale running from ‘fragile’ to ‘robust’. ‘Fragile finance’ refers to states in which cash commitments are relatively heavy compared to cash flows, so that there is some danger of widespread failure to meet commitments, failure that might cause general breakdown in coherence. ‘Robust finance’ refers to states in which commitments are relatively light compared to cash flows, so that the danger of incoherence is relatively remote. The emphasis on the threat of incoherence is one way of reading the scale. Viewed more positively, what is so appealing about a state of ‘robust finance’ is that it leaves open many different possible future paths for subsequent social evolution. Robust finance is a state of social freedom. What is so tragic about a state of ‘fragile finance’ is that previous commitments leave open only very few possibilities for the future, and maybe no possibilities at all that are consistent with existing commitments. Fragile finance is a state of social constraint.

The degree of fragility or robustness in the economy as a whole ultimately depends on the fragility or robustness of financing arrangements at the level of the constituent economic units. What Minsky called ‘hedge’ finance is an arrangement where cash flows are adequate to meet all foreseeable cash commitments. ‘Speculative’ finance involves cash commitments that can be met only by rolling over debts when they come due. ‘Ponzi’ finance is a particularly precarious form of speculative finance in which it is anticipated that not only the principal, but also the interest on current debts will have to be rolled over. Over time, the behavior and the fortunes of individual units shift them from one category to another, and system-wide financial conditions depend on the proportion of units in each

category. More hedge finance implies robust conditions; more speculative finance implies fragility.

Generally speaking, the tendency is to move from robust finance to fragile finance — this is the Financial Instability Hypothesis — and this is so because in a world of uncertainty, especially endogenous uncertainty, expectations about the future have little objective foundation so that mistakes are inevitable. To be sure, economic units have their own understanding of how the economy works — they have 'a model of the model' as Minsky liked to say — that they use to form expectations about future cash flows. The important point is that any attempt to forecast which of the myriad possible futures will actually be realized comes down to an attempt to forecast the forecasts of one's fellow economic units. Concretely, the cash commitments of each unit depend on the cash commitments of every other unit. The whole web of interlocking commitments is like a bridge we spin collectively out into the unknown future toward shores not yet visible. Mere ideas about the future become realities as they become embedded in financial relations, but inevitably over time the reality embodied in the pattern of cash commitments diverges from the reality embodied in the pattern of cash flows. Inevitably our ideas about the future are wrong, even when we all agree, indeed especially when we all agree. Just so, widespread belief in the 1960s that economists had learned to tame economic fluctuation led units to the 'euphoric' view that future cash commitments were relatively unproblematic, and once this view became embedded in the structure of debt contracts, it became a constraint on future action. The bridge of commitments reaches far out into the future as units (understandably) mistake their common model of reality for reality itself. Robust finance gives way to fragile finance as 'margins of safety' are eroded and commitments leave less and less room for possible shortfalls of cash flow.

The flip side of the tendency toward fragility is the potentially stabilizing effect of the creation of new capital assets by means of investment. The whole point of investment is that it is expected to be profitable, which is to say that future cash inflows are expected to exceed by some margin the cash payment commitments required to finance investment. This means that debt finance is not necessarily a zero-sum tradeoff of current against future purchasing power, or of current freedom against future constraint. At least in principle, debt-financed investment can improve the balance between future cash flows and future cash commitments. This potential relaxation of the survival constraint presents a powerful incentive to the individual units which make investment decisions in a decentralized economy, and finance makes it possible for individual units to act on that incentive. At the aggregate level, growth and development — what Minsky called the 'upward instability' of capitalism — are the consequence. Economic growth is caused by debt-financed expenditures that commit cash flows out into the uncertain future, into the distant hinterlands where the capitalist system has yet to become firmly entrenched, and into the narrow nooks and crannies of the advanced capitalist economies where the logic of finance has yet to penetrate. Finance makes growth possible by providing current purchasing power to those who would use it to expand the boundaries of the system.

What causes trouble, at both the individual and the social level, is the fact that inevitably some expected future cash flows fail to materialize, and this is so even if the world itself does not change in the meanwhile. Some investments work out and others do not, but the debt-financed owners of both face the same cash commitments. Thus, some units find that past

investment has not relaxed their budget constraint as they anticipated. Instead, the balance between their cash commitments and cash flows has worsened, and perhaps even become impossible to bear. Thus, the natural upward instability of the system, which is driven by the hope of breaking through the survival constraint, leaves behind a residue of financial commitments that poses problems for the continuation of growth. Over time the conditions of 'robust finance' which support investment and upward instability give way to conditions of 'fragile finance' in which investment is weak, growth slows, and the continued coherence of the system is called into question. Minsky's slogan — 'stability is destabilizing' — thus has a double meaning. The stability of robust finance leads to instability upward, and the financial residue left by a period of robust economic growth leads to instability downward. The dynamics of growth and the dynamics of fluctuation are intertwined, and at the heart of both is finance.

In Minsky's vision, business cycle fluctuations of employment and income are mere surface manifestations of the deeper fluctuation in financial conditions along the scale from robust to fragile and back again. Like Schumpeter, Minsky understood fluctuation as the way in which the capitalist system grows, but for Minsky the underlying process was not the absorption of technological change but rather the expansion and validation of financial commitments. What worried Minsky was the prospect that, left to its own devices, the financial system would operate to amplify rather than to absorb the naturally cyclical process of growth, as each commitment provides the support for others on the way up, and as default on some commitments undermines other commitments on the way down. Minsky thus saw a natural role for government, as lender-of-last-resort to ensure a lower bound on downward fluctuation in times of crisis, and as regulator during more peaceful times to identify and correct imbalances before they pose a threat to the system.

The reason government is able to prevent a cascade of defaults is that its cash commitments are qualitatively different from those issued by the private sector, for the simple reason that cash is the government's own liability. There can be no question of the government meeting its own cash commitments. Government intervention is able to forestall a crisis because it can relax the survival constraints of private agents without tightening any survival constraint anywhere else. Of course, at a deeper level, its ability to do so rests on the continued acceptance of its liabilities as cash, which means that government must look after the balance of its own inflows and outflows over time. So long as the 'full faith and credit' of government means something, but only so long as it does, the mobilization of that credit can forestall crisis.

All in all, Minsky's is a sophisticated vision of modern capitalism. Probably most people who think this way become investment bankers, from which social position it becomes difficult to see clearly the downside of the logic of finance. For an investment banker, problems may arise, but the solution is always more finance or, more precisely, refinance and restructuring of existing commitments in order to make room for new commitments. Not so for Minsky, who never forgot the lessons of Lange and Simons that the logic of finance tends to produce inequality and instability, effects which history shows tend to undermine democratic political forms. For Lange, the problem was inequality and the solution was retention of the market mechanism for the allocation of inputs and outputs but not for the direction of resource creation (investment) or the ownership of capital assets. For Simons, the problem was instability and the solution was the suppression of

private debt finance in favor of a system of private equity finance and public debt (100% money).

In Minsky's view, the solutions proposed by Lange and Simons came closest to actual implementation during World War II as the state embarked on a program of debt-financed resource creation to supply the Allied war effort. It was disappointing to watch as post-war developments led away from solutions achieved, rather than toward the genuinely competitive capitalism that might have been built on their basis. Not the kind to succumb to veteran's nostalgia, instead Minsky set himself the task of understanding the logic of finance that seemed to be responsible for the increasing divergence of the world from his own preferred utopia.

## 4. Minsky and the world

Minsky's 1954 dissertation and 1964a report for the Commission on Money and Credit can be understood as initial stabs at theoretical and empirical implementation of his underlying vision. On the theoretical side, he introduced financial phenomena into the then-standard Hansen–Samuelson multiplier–accelerator model by treating the parameters of the investment function as endogenous variables that shift with changes in financial conditions. In this framework he was able to capture the idea that capitalism is unstable upward since, given certain parameters, the multiplier–accelerator model is explosive. He was able also to capture the idea that financial evolution causes fluctuation around this upward growth path since, given other parameters, the model traces an oscillating path (see Minsky, 1957b, 1959a, b, c, 1962, 1965b). On the empirical side, he used Flow of Funds data to calibrate the model and to assess the likelihood that the financial system could break down again (Minsky, 1964a, b).

He never repudiated this early work. In fact, late in his career, he reiterated it and expressed hope that the new mathematics of non-linear, complex dynamical systems might offer a way to push the line of thought further. (Compare 1963a to 1982b and 1964b to 1995, and see Ferri and Minsky, 1992). Nevertheless, he seems to have realized that, for his own time, the possibilities along this line were limited. When all is said and done, the multiplier–accelerator model is about the interaction of a Keynesian consumption function with an accelerator investment function, and it has no real place for finance. The need to endogenize parameters is symptomatic of the fact that the core model abstracts from financial phenomena. Similarly, the Flow of Funds data are organized mainly around identifying the sources of funds for investment at a rather aggregative level, and so is of limited use for addressing Minsky's problem of the balance between cash commitments and cash flows. [3] Having found the limits of standard theories, he resolved to build his own from the ground up. Having found the limits of standard data sources for measuring financial conditions

[3] What Minsky needed was something more like the data that would have been produced by the system of 'cash-flow oriented bank examination' that he advocated (Minsky, 1964a, Appendix A–B; Minsky, 1975d). With today's new data sources, such as Compustat and the Survey of Consumer Finances, and today's high-speed inexpensive computing, one can easily do better than Minsky did, at least within the United States. There is of course the problem that today the most relevant scale for empirical investigation of financial conditions is global, so that data problems continue to limit what one can realistically expect to achieve from a purely empiricist approach.

directly, he turned his attention toward finding ways to infer financial conditions from the symptoms of balance and imbalance.

One might think that asset prices are the most obvious symptom, but Minsky focused first on what he viewed as the more direct symptoms that appear in the mechanism of refinance. By definition, speculative financing arrangements require periodic refinance, at which point both borrowers and lenders get to take a second look at the balance between the borrower's future cash flows and future cash commitments in light of the changed financial conditions in the economy as a whole. Any evolution toward fragile finance is therefore bound to show up as increasing difficulty rolling over debts as they mature, difficulty that may manifest itself in various ways depending on the institutional framework, but which ultimately shows up as increased demand for bank lending because banks are the lenders of last resort to non-financial economic units. Significantly, banks are themselves speculative financing units that face their own problems of refinance both because of their extreme leverage and because of the short-term character of their liabilities. Thus, the ability of banks to help other units refinance depends on their ability to refinance their own positions. Problems of refinance generally are thus bound to show up as problems of bank refinance particularly. It follows that one way to track the state of financial conditions is to keep a close eye on the operation of the mechanism through which banks refinance their activities.

This line of thinking explains why, in his early work, Minsky put such emphasis on understanding the developing federal funds and repurchase agreement markets, which were beginning to replace the Treasury bill market as the customary source of bank refinance. When, immediately after the war, Treasury bills were the position-making asset, bank refinance was more or less automatic because of the central bank's responsibility, according to the so-called Treasury Accord, to ensure orderly conditions in the market for government debt. In fact, not just banks but any economic unit holding a Treasury bill could depend on it as a source of refinance in time of need, and conditions in the Treasury bill market were a dependable indicator of financial conditions more generally. However, as non-bank units drew down their wartime accumulation of Treasury bills, banks became more important as a source of refinance, and as banks drew down their own accumulations, they began to develop alternative sources of refinance in the money market. As a consequence, the money market became a more reliable overall indicator of financial conditions. Significantly, unlike the practice for Treasury bills, the central bank did not take responsibility for orderly conditions in the money market. The evolution away from Treasury bills meant therefore that refinance was no longer guaranteed. The consequence was increased volatility as, in effect, the central bank adopted a policy of brinkmanship, providing lender-of-last-resort support only in a crisis instead of regularly as before.

As Minsky came to understand how the policy of brinkmanship worked, increased instability in the source of refinance shows up first of all as increased volatility of short-term interest rates. The reason is that higher rates provide the incentive for stretching liquidity in times of stress, offering a profit motive for such financial innovations as the certificate of deposit, bank commercial paper, and Eurodollar borrowing. But higher rates also mean that refinance of speculative positions can only be achieved by pledging even greater future cash commitments, so that refinance tends to increase fragility rather than to restore robustness. As a consequence, the natural thrust toward fragility is amplified, not damped, by the operation of the financial system. Eventually, refinance becomes impossible for some

particularly overextended units, and crisis erupts. The precise form of the crisis depends on whether the overextended units simply default, with the consequence of unsettling the attempts of others to refinance, or whether instead they attempt to 'make position by selling position' (as Minsky put it) and so drive down longer term asset prices to fire-sale levels, thus undermining collateral support for the outstanding debt structure. Whichever way the crisis happens to unfold, eventually it impels central bank intervention in order to avoid the dread incoherence.

At first, Minsky thought that this policy of brinkmanship might work, after a fashion, by periodically reminding market participants about uncertainty and so causing a return to more conservative financing structures (Minsky, 1969b). What actually happened, however, was almost the opposite. Market participants took the lesson that speculative finance could be sustained provided one was prepared to hold on until the Fed stepped in, as it inevitably would. As a consequence, crisis intervention only ensured that each successive push to fragility went even closer to the brink, with ever greater swings of interest rates and ever more ingenious mechanisms for stretching liquidity.

None of this had to be, according to Minsky. When Treasury bills ran out, the central bank could have instead turned toward greater regular use of the discount mechanism — in effect standing ready to purchase private debts of a definite type just as it had previously stood ready to purchase government debts. The obvious model was the pre-World War I operations of the Bank of England (Sayers, 1936), where financial market conditions were summarized by so-called bank rate. With the central bank guaranteeing refinance, there would have been no incentive for the financial innovation that created a dual banking system in order to stretch liquidity in times of stress. Instead, the incentive would have been to organize the finance of individual units in such a way that their debts would be eligible for discount, and the central bank could have used this channel to exert a powerful influence on the side of hedge rather than speculative finance. It did not have to be, but it was, and the consequence was not only greater volatility of money market rates, but also greater volatility of investment spending and hence of total income and employment.

What Minsky called his 'two-price theory of investment' must be understood primarily as an attempt to explore the mechanism through which such effects were brought about. According to that theory, during periods of tight liquidity, when short rates rise to provide incentive for liquidity stretching, the demand price of capital assets (the first price) tends to fall as the value of today's cash flow rises relative to cash flows in the future. Meanwhile the supply price of investment goods (the second price) tends to rise to the extent that interest is a cost of production. Thus the incentive to invest is reduced. The great danger is that a collapse of investment spending will reduce aggregate demand and so also aggregate income sufficiently that cash flows elsewhere in the economy fall short of their expected levels, so turning hedge finance units into speculative units, speculative units into Ponzi units, and so increasing the fragility of the system. In this way, an investment slump might amplify the financial problems of a few units sufficiently to bring down the whole system in a cascade of debt deflation.

Such a scenario was clearly in Minsky's mind when the economy entered the 1974–1975 recession, but it did not come to pass. It turned out that countercyclical government deficits were sufficient to support aggregate demand and also, more important in Minsky's mind, sufficient to support aggregate profit flows in order to ensure the continued validation of

most debts throughout the crisis. Big government deficit spending was sufficient to prevent debt deflation but it did little to restore the conditions necessary for a return to upward instability. The reason for this, according to Minsky, was that the increased instability in the source of refinance tended to reduce investment even when liquidity was not tight, through its effect on the premium charged for 'borrowers' risk' and 'lenders' risk'. In a world where refinance is problematic, borrowers are less willing to make future cash commitments on given prospective cash flows, and lenders demand additional security, all of which amounts to a systematic bias against long-term capital investment. In the terms of Minsky's two-price theory of investment, the consequence of increased instability in the source of refinance was to drive a larger wedge between the supply price and the demand price of capital goods (both of which include a refinance risk premium). In effect, the lack of institutions to guarantee refinance increases the exposure to uncertainty of both borrowers and lenders, and the effect is a permanent damper on investment. Deficit spending prevented debt-deflation, but it could not prevent stagnation.

Paradoxically, the system of investment subsidies that had been put in place as part of the Kennedy–Johnson strategy of emphasizing economic growth only made matters worse. The reason is that investment undertaken from a genuine profit motive at least has a chance to improve the balance between cash commitments and expected cash flows, whereas investment undertaken from a tax-subsidized profit motive may make money for the investor, but is unlikely to improve financial conditions as a whole. By design, the financial residue of the latter investment cannot be validated by the cash flows accruing to it, but rather requires government funds. The Kennedy–Johnson strategy thus led to inept investment, socialized through the back door, and to an additional burden of private finance that would have been absent in the more direct socialization recommended by Oscar Lange. But why is the additional finance a burden, if it is to be paid by a government that faces no survival constraint when it comes to meeting its own cash commitments? It is a question to which Minsky developed an answer only long after the fact, as a side product of trying to understand the inflation of the 1970s.

Inflation was difficult for Minsky to understand because of the thoroughgoing nominalism of his thought. Unlike the quantity theory of money, which revolves around the balance between the quantity of money and the quantity of goods, Minsky's theory revolves around the balance between cash commitments and cash flows. In Minsky, there is no margin along which the 'real' value of money might be established. At an intuitive level, it seemed clear to him that, in the course of preventing collapse, monetary and fiscal policy had transformed the upward instability of output into an upward instability of prices. The explanation of how exactly this came about was, however, not very clear. Throughout the 1970s, he flirted with a range of candidate explanations, ranging from the price-setting behavior of oligopolistic firms and unions, to the increased weight of unproductive incomes (such as transfers) chasing a given output of consumption goods. Nevertheless, it was hard to ignore the monetary expansion that followed each financial crisis, not to mention the expansion of contingent liabilities and outright government debt. It seemed clear that money and finance were somehow involved in the inflationary process, but how?

Minsky seems to have started from the idea that, because government faces no survival constraint, imbalance between its cash commitments and cash flows shows up not as a tendency to crisis, but as a tendency to depreciation of future cash flows relative to present cash

flows. This tendency takes the form of price inflation domestically and currency depreciation internationally. In effect, socialization of a private imbalance between cash commitments and cash flows (in order to avoid crisis) does not change the fact of imbalance, but only the mechanism through which adjustment takes place. Just so, during the 1970s, inflation continually boosted cash flows beyond what they were expected to be, and so made it possible to meet debt commitments de jure if not de facto because payments were made in depreciated currency. The effect was as if, instead of some fraction of debtors defaulting completely, all debtors defaulted partially.

So far so good, but the precise mechanism linking the ultimate cause (financial imbalance) and effect (inflation) was still not clear. The decisive clue to uncovering that mechanism seems to have come from consideration of the international role of the dollar after the breakdown of the Bretton Woods fixed exchange system in 1977 and the subsequent decline of the dollar. It was only the latest in a series of crises beginning with the demonetization of gold in 1968 and continuing with the devaluation of the dollar in 1971. As Minsky analyzed the situation, the US could be thought of as an ‘ailing bank’ (Minsky, 1978b), facing difficulty refinancing its short-term liabilities because of inadequate cash inflow from its long-term assets to meet the cash outflow from its negative trade balance. As a consequence the dollar tended to depreciate in value relative to other currencies whenever the short-term liability overhang became too large, and it was this depreciation that triggered domestic price inflation. “In a world with pervasive international financial interrelations and relatively unobstructed trade flows, the path for a reserve currency country largely runs from exchange rate changes to domestic inflation. It is not an ‘accident’ that the U.S. inflation has been much worse since 1968, when gold was demonetized, than prior to 1968” (Minsky, 1978b).

Thus, for Minsky, the relevant margin for explaining inflation was not that between money and goods, but that between dollar-money and other forms of money, and what determined the exchange rate was the cash flow pressures set up by the balance of payments. It was a banking theory of exchange rate determination. “The decline in the dollar reflects portfolio adjustments in the light of the recent past, present, and expected near future balance of payments position of the dollar. Only indirectly and peripherally does it reflect differences in prospective inflation rates or in monetary growth” (Minsky, 1978b).

The coincidence of stagnation and inflation came thus because of the coincidence of the push to fragility in domestic finance starting in 1966 and the push to fragility in international finance starting in 1968. But depreciation, and the domestic price inflation it triggered, did little to resolve the underlying problem. In fact, threat of depreciation made the dollar look less attractive as the world reserve currency, so reducing demand for dollars, exacerbating imbalance, and amplifying the pressure for depreciation. The underlying problem was of course extreme trade deficits on account of oil imports added to military expenditures, and Minsky recommended conservation measures. Even without conservation measures, however, the situation could be improved, he thought, by raising domestic interest rates temporarily, refunding into long-term Treasury debt (denominated in foreign currencies), and standing ready to absorb any remaining overhang by selling gold. Once the crisis was weathered, the obvious model (once again) was the pre-World War I operations of the Bank of England under the gold standard (Sayers, 1936). Like England, the US was the world’s bank and as such should aim to scale its trade deficit to the size of its income

on international asset holdings (at least on average), with any surplus income being used to expand international asset holdings. International holdings could be expanded further by borrowing short and lending long, thus providing the world with the short-term dollar assets required to meet international transactions and liquidity demand. Essentially, Minsky looked forward to re-establishing a fixed rate exchange system that would revolve around a strengthened dollar.

It could have happened that way, perhaps, but it did not. Instead, in 1979, Paul Volcker took the helm at the Board of Governors of the Federal Reserve, pledged himself a convert to monetarism, and proceeded to raise interest rates sharply, plunging the economy into recession. Making matters worse, Ronald Reagan was elected President in 1980 on a pledge of deregulation and small government. To Minsky, it looked like the final triumph of his intellectual opponents, and he feared the worst. The subtext of his collection of papers *Can 'It' Happen Again*? (Minsky, 1982a) was the Volcker–Reagan policy regime, which looked like abolishing the very institutions that had so far prevented a repeat of the debt-deflation of the 1930s (see Minsky, 1984c; also Fazzari and Minsky, 1984). Minsky wanted to be on record.

But of course 'It' did not happen, again. Things got pretty exciting for a while, but the system did not collapse. The Reagan tax cuts created such a huge deficit that the domestic economy was supported throughout the monetarist episode of double-digit interest rates. Volcker's high-interest rate policy (abandoned in 1982) succeeded in restoring the reserve currency role of the dollar, though largely at the expense of poor countries who saw their short-term payment obligations on dollar-denominated debt balloon. Furthermore, when the smoke cleared away, much of the traditional financial structure, most notably the savings and loan industry, was in shambles. To make matters worse, the ability of government to help out was constrained by the structural deficit that was the result of the tax cuts. As Minsky understood matters, the Federal government had become a Ponzi unit, borrowing merely to pay the interest on outstanding debt (Minsky, 1993b). On the international front, the stimulation of the Reagan deficits shifted the US from a net creditor to a net debtor position, thereby eliminating the possibility of implementing the system that had worked so well under the Bank of England in the years before World War I. The US as a country had also become a Ponzi unit, borrowing in international capital markets to pay the interest as well as the principal on its international debt (Minsky, 1991b). The financial system was in shambles, and the Federal government had been crippled, but the system continued to function. How could it be so?

Ultimately, Minsky concluded that he had underestimated the flexibility of capitalism. Just as capitalism had proven able to morph into a new form during the crises of his childhood, so in his old age it was morphing once again. Depression and World War had laid waste to the finance capitalism of pre-World War I, but a new form of paternalistic, managerial, and welfare state capitalism rose from the ashes (Minsky, 1993c). After World War II, institutional development transformed the initially robust managerial capitalism into an increasingly fragile version that was finally laid waste during the Volcker–Reagan years. As Minsky put it, Reagan's tax and spend fiscal posture was "equivalent to a war" (Minsky, 1992a, p.16). Years before, worrying about the possibility of debt deflation, Minsky had called for a "depression without a depression" (Minsky, 1975c, p.12) in order to restore the robust financial conditions of the post-World War II decades. What he got instead was

a war without a war, which did not restore anything but rather cleared the way for money manager capitalism.

Paradoxically, it was the success of managerial capitalism that caused its transformation. The apparent stability of profit flows, even in the face of great stress, supported the value of a large and growing structure of financial assets. The accumulation of those assets into large pension and insurance institutions began the process of shifting the center of the system from industry to finance. In the next step, money market mutual funds created alternatives to bank deposits, while securitization of traditional bank assets (most notably mortgages) created alternatives to bank lending. Traditional financial institutions continued to create the paper, but the asset-carrying capacity to hold it increasingly lay elsewhere, with the managers of money. Wielding their new-found financial strength in the market for corporate control, the managers of money came to dominate the managers of industry.

In the last years of his life, Minsky's attention focused on the question of how the new system would work. It was clear to him that it needed a lender of last resort just as much as the previous system. The stock market crash of 1987 proved as much when it revealed the vulnerability of the system of block trading used by institutional investors (Minsky, 1989b). The question was where the other vulnerabilities of money manager capitalism might lie. Perhaps in the mechanics of securitization, which require trustees to maintain collateral even in a falling market? Perhaps in the lack of a lender of last resort at the international level (Minsky, 1986e), now that the US was no longer able to shoulder the task itself? It was also clear to him that the new system continued to rely on the ability of big government to stabilize profits and so also asset prices. The question remained whether the new system would adequately support the capital development of the nation, or whether enterprise would suffer the fate of a mere 'bubble on the whirlpool of speculation' as Keynes had feared. The point was not growth for growth's sake, but rather development for civilization's sake. Nodding to his old mentor Simons, in his last published paper Minsky reminded his audience: "The aim of policy is to assure that the economic prerequisites for sustaining the civil and civilized standards of an open liberal society exist" (Minsky, 1996).

## 5. Minsky and the economists

Minsky began his academic life as an "analytical institutionalist" (Minsky, 1961), which practically meant that he identified with the impulse of thinkers like Wesley Clair Mitchell, but did not follow Mitchell down the empiricist road that Koopmans caricatured as 'measurement without theory.' Minsky was prepared to do theory, and he certainly had the mathematical ability and background for it. His decision to focus his talents on the money question, though structured by early exposure to Simons, was most immediately sparked by the realization that money was the most glaring gap of the Hansen-style Keynesianism he learned at Harvard. Other thinkers were ahead of him, most notably Milton Friedman whose reconstruction of the quantity theory effectively exploited that gap to counter Keynesianism, and James Tobin whose interpretation of the Gurley–Shaw work became the standard Keynesian defense against the monetarist critique. But, despite his Keynesian sympathies,

Minsky could not get interested in the portfolio approach. Liquidity preference always seemed to him more a matter of protection against vulnerabilities inherent in the inherited balance of cash commitments to cash flows, and not a matter of utility functions. And it was more a matter of business finance, not household asset preferences.

Instead of following Tobin in the direction of monetary Walrasianism and short-run stabilization, Minsky worked out his own interpretation of Gurley and Shaw that put greater emphasis on the role of financial institutions in providing the monetary infrastructure for successful capitalist economic development in the long run. Furthermore, rejecting the monetary Walrasian interpretation of Keynes that was implicit in the standard Hicksian IS–LM framework, Minsky worked out his own interpretation that emphasized the determination of investment spending through the interaction of businessmen and bankers. On the surface, Minsky's two-price theory looked a lot like Tobin's $q$-theory of investment. The big difference came from the emphasis on (non-diversifiable systemic) refinance problems as the source of borrower's and lender's risk, since refinance problems have no place in an equilibrium theory of asset pricing. The refinance risk premium opens a gap between the price of capital assets (which comes from future expectations) and the price of investment goods (which comes from production costs). While $q$-theory emphasizes the tendency for these two prices to equalize over time, the two-price theory emphasizes fluctuations in the size of the gap depending on the balance between cash commitments and cash flows in the economy as a whole.

Minsky was about more, however, than an alternative version of Keynesianism. And he was also about more than a special theory of financial crisis. His emphasis on crisis can best be understood as an attempt to attract attention to his own more general way of thinking by focusing on an important phenomenon that could not be understood within the standard framework. It is important to emphasize that, for Minsky, financial crisis was only the most extreme case of an ever-present problem that faces any financially developed economy, the problem of refinance given the shifting balance between cash commitments and cash flows. From this point of view, Minsky's work is best understood as a contribution to the general theory of money. Indeed, it must be said that his work represents the most significant American contribution of his generation to the Banking School tradition of monetary thought that sees money arising as the natural byproduct of business finance. [4]

The Banking School view arose originally to address problems of the early 19th century British monetary system. One way to understand Minsky's work is as an attempt to adapt the Banking School view to the rather different institutional setting of the modern American monetary system. First, and the most important difference between the two systems, the British system was about financing trade, while the American system was about financing the capital development of the nation. Minsky's characteristic emphasis on the nexus between finance and investment, and on the particular difficulties of financing the long-lived capital investments that undergird our modern economy, was no part of the Banking School analysis. Nevertheless, his distinction between hedge and speculative finance is recognizably a modern adaptation of the Banking School distinction between real bills of exchange and finance bills, and his advocacy for hedge or 'to-the-asset' financing is recognizably a modern adaptation of the real bills doctrine (Minsky, 1986a, p. 321). If Minsky drew

[4] For a modern reconstruction of the Banking School view, see Mehrling, 1996.

different policy conclusions — anti-laissez-faire rather than laissez-faire — the reason is that finance has much more obvious and far-reaching effects on investment than it does on trade. Money that finances the capital development of the nation can never be neutral, as Minsky often remarked.

The second key difference was that the British system was based on gold and promises to pay gold while the American system was based on the dollar and promises to pay dollars. The Banking School explained how what they called a 'currency of credit' was maintained as a close substitute of gold money by the 'reflux' of excess currency back to banks of issue in repayment of maturing bills of exchange. Due to the longer term character of bank assets in the modern economy, Minsky had to look elsewhere for the channel of reflux that would explain how bank deposits are maintained as a close substitute for cash dollars. He found the channel in banks' management of their assets and liabilities through the money market, and therefore came to emphasize refinance rather than reflux. (His advocacy for the greater use of the discount window can be understood as an attempt to open a more direct channel for flux and reflux between dollar reserves and bank deposits.) But Minsky faced an additional problem in the fact that the dollar itself is a currency of credit. What makes the dollar money in the larger world context?

Until the breakdown of Bretton Woods, the answer seemed obvious, namely, the flux and reflux of dollars in exchange for gold. After the demonetization of gold, however, the answer became less obvious. If the dollar were not the world reserve currency, one might argue that the flux and reflux of the dollar against foreign exchange was the key. (Minsky's advocacy for fixed exchange rates can be understood as an attempt to keep this channel of reflux open.) But the dollar was the world reserve currency, and that made the problem harder. One cannot explain the moneyness of the dollar by its convertibility into other currencies because the moneyness of the other currencies derives from their convertibility into the dollar. What then made the dollar money? Following Sayers, Minsky eventually came to the view that it is the ability of a unit to force a net cash flow in its favor that gives its liabilities liquidity (Minsky, 1986a). It was the ability of the Fed to make dollars scarce, not so much by reducing the outstanding stock of dollars as by forcing an incoming flow of dollars, that sustained the reserve currency position of the dollar in the dark years of 1979–1982 (Minsky, 1986b). In Minsky's view, the key channel through which Volcker's monetarism bolstered the dollar came through the effect of high interest rates on bolstering capital inflows from short-term dollar-denominated foreign debtors. It is Minsky's answer to a question the Banking School never asked, but it is recognizably a Banking School answer.

If Minsky has not been widely recognized as a modern proponent of the Banking School view, one reason is that during his formative years the channels of reflux that are so important to such a view were blocked by regulations and rigidities established by the New Deal domestically and the Bretton Woods system internationally. To be sure, Minsky always emphasized the 'endogeneity' of money, and the origin of money in business finance. Furthermore, as early as 1972b, he emphasized that the central bank does not (and should not try to) control the quantity of money, but only the conditions of refinance. On the other hand, Minsky recognized that, because of the rules and practice surrounding access to the discount window, the quantity of reserves was in principle an exogenous control

variable. It seems to have been the institutional importance of reserves in the post-war U.S. context that kept Minsky from articulating a full-blown Banking School position. Of course, reserves were always endogenous in a sense, as a consequence of financial innovation (evasion of the reserve constraint) and lender of last resort intervention (abandonment of the reserve constraint in the face of systemic crisis). The declining importance of reserves as a consequence of financial innovation over time moved Minsky closer to a Banking School position as his career progressed.

Given his closeness to the Banking School tradition, it is somewhat surprising that Minsky never addressed the connection, either positively or negatively. Perhaps he was put off by the taint of laissez faire that still clung as a legacy of Laurence Laughlin's earlier advocacy, or by youthful exposure to a critique of the real bills doctrine at the hands of Jacob Viner and Lloyd Mints? One sees something of this in his lifelong interest in Henry Simons' proposal for 100 percent money — as a matter of current institutional fact, money may have its origins in business finance, but in a better world to come (Simon's 'good financial society') it might not. Whatever the reason, though he did not explicitly identify with the Banking School tradition, Minsky was extremely forthcoming about his rejection of the Currency School tradition, at least in its modern monetarist incarnation. Money is different, he would always say. The laissez-faire theorems do not apply because money is the infrastructural prerequisite of the well-functioning market economy to which the theorems refer.

Even here, though, it is hard to separate out Minsky's rejection of equilibrium thinking (and the 'axiom of reals', and the marginal productivity theory of profit) from his criticism of a particular view of money. In the final analysis, the chief obstacle to understanding Minsky's thought is also the chief trait that set him apart from other economists, namely, his unusually comprehensive and distinct worldview. After arguing about the prevalence of disequilibrium, about the essentially monetary character of the economy, and then about the Kaleckian theory of profit determination, neither he nor his antagonists had much energy left to argue about the nature of money. The battle was open on too many fronts to expect a decisive engagement on any one of them. But that reflects who Minsky was. He liked to fight more than he liked to win.

From the standpoint of the history of economic thought, Minsky is likely to be remembered not for his broader institutionalist views, but for his narrower monetary views. Nevertheless, it has to be said that institutionalism was an invaluable intellectual resource for Minsky. Most important, it directed him toward an inductive approach at a time when the available deductive strategies, which is to say the Walrasian general equilibrium approach, had little to offer for the development of monetary theory.[5] Today, Walrasianism is apparently on the decline, however, and alternative formal approaches may have more to offer. Minsky himself enthusiastically embraced the possibilities opened up by inexpensive computing for exploring "multi-dimensional, non-linear, and dynamic" systems (Minsky, 1995, p.86). Of course, given his Schumpeterian priors about methodology, he would have been the first to warn that mere technique is nothing unless and until it is marshaled in support of some underlying vision.

[5] As Frank Hahn (1983, p.1) has pointed out in a passage Minsky was fond of quoting.

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