

**Minsky and the Mainstream: Has Recent Research Rediscovered  
Financial Keynesianism?**

by

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## Abstract

Hyman Minsky's research emphasized the central role of finance in modern economies at a time when finance was not important in most mainstream macroeconomic research. But in the 1980s, mainstream research began to explore the role of finance in firm and consumer behavior. This paper examines the extent to which this recent mainstream research captures Minsky's insights and whether it extends his work. I argue that recent work on micro foundations—the link between economic behavior and finance—complements Minsky's contributions and corresponding empirical research provides strong support for his argument that financial conditions affect expenditure. But large differences remain between Minsky and the mainstream paradigm, especially in the role played by the financial system in macroeconomic fluctuations. Furthermore, there is much in Minsky's Big Government–Big Bank policy framework that does not appear in recent mainstream work.

## INTRODUCTION

Hyman Minsky's research career focused on the central role of finance for the performance of modern economies. His "Financial Keynesian" perspective contrasted starkly with the limited role of financial relations in the mainstream macroeconomic debates of the 1960s and 1970s. Although there were exceptions (much of the work of James Tobin, for example), financial relations entered mainstream macroeconomic models that prevailed during Minsky's middle age primarily through the money demand function that provided the foundation for the LM curve.<sup>1</sup> The dominant macroeconomic approach invoked a strong form of the Modigliani-Miller theorem, according to which financial conditions are irrelevant for "real" economic decisions.<sup>2</sup> Finance was viewed largely as a "sideshow" to the underlying engine of economic activity emanating from preferences and technologies. It is therefore not surprising that Minsky's work, with its emphasis on the fundamental connection between finance and economic activity, received little mainstream attention during the golden years of the IS-LM model based on neoclassical microfoundations.

The role of financial factors in mainstream macroeconomics, however, changed in the early 1980s. Developments in the economics of information beginning in the 1970s led to theories of capital markets, based on principles of neoclassical optimization, in which the Modigliani-Miller financial irrelevance proposition failed. Mainstream research began to explore the theoretical and empirical importance of financial factors for investment. By the middle 1990s, this research program was well established. The recent survey by Hubbard (1998), which is hardly exhaustive, cites over 60 recent papers on the topic. While not everyone is convinced, the idea that finance matters in a fundamental way for investment has become a central and credible part of modern mainstream research.

On the surface, this development appears to vindicate the attention Minsky gave to finance in his analysis of investment and macroeconomics long before this topic became fashionable in the mainstream. This paper examines the extent to which the recent explosion of mainstream investment-finance research captures Minsky's insights. Furthermore, I address in places whether this new work extends or deepens what Minsky already knew in the 1970s.<sup>3</sup>

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<sup>1</sup> This point is made by Gertler (1988) in his survey paper.

<sup>2</sup> The Modigliani-Miller (1956) theorem specifies conditions under which financial considerations are irrelevant for real firm investment decisions. Later research, however, interpreted the results from Modigliani and Miller to imply the irrelevance of financial factors for investment.

<sup>3</sup> A related question is whether recent mainstream research recognizes its intellectual heritage. Cites to Minsky's work in this literature are scarce. A Web of Science Social Science citation index revealed only 11 citations to Minsky in papers that might be viewed as part of the new mainstream literature on

Section II considers the microfoundations of the investment-finance link and empirical evidence for it. In section III, I discuss Minsky's cycle theory and compare it with financial aspects of recent mainstream theories of aggregate fluctuations. Minsky's perspective on macroeconomic policy is contrasted with new developments in policy analysis stemming from recent mainstream research on finance and investment in section IV.

## **MICROFOUNDATIONS FOR THE INVESTMENT-FINANCE LINK**

Minsky was fond of saying that Keynes provided an investment theory of output and a financial theory of investment. While all parts of Minsky's rich analytical framework are interdependent, the financial theory of investment provides perhaps the best logical starting point for an examination of his ideas. The theory of investment also provides the best vehicle for comparing his work to recent developments in the mainstream.

With Keynes, and even with the mainstream microeconomic analysis of his era, Minsky shares the behavioral postulate that firms make investment projects to maximize the present value (capitalized value) of expected cash flows that result from investment.<sup>4</sup> Beyond this point of agreement, however, the traditional mainstream and Minsky approaches diverge. In the mainstream model, expectations about technology and market prices for physical inputs and outputs determine expected cash flows, without reference to financial factors. The investment decision in this framework is independent of access to financing or the cost of financing (aside from the opportunity cost of foregoing a market rate of return on financial assets). For Minsky, however, a firm's financial structure is crucial to its investment. The availability and cost of external financing depends on the firm's liability structure, that is, the network of payment commitments that appear on its balance sheet as the result of past investment activity. The cost of debt for Minsky exceeds the opportunity cost of internal cash flow by an amount that depends on the strength of the firm's balance sheet and the prevailing conditions in credit markets. As these financial factors change through time, investment varies, even though the technological characteristics of potential investment projects may remain stable.<sup>5</sup>

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investment and finance from 1989 to 1997. Of these 11 papers, four were co-authored by me and three had Charles Calomiris as author or co-author.

<sup>4</sup> This approach is evident in Minsky's "two-price" system for the determination of investment. The demand price of capital assets is determined by the discounted value of the expected cash flows. For investment to occur, this price must exceed the supply price determined by the current cost of production of capital assets.

<sup>5</sup> I provide only a brief sketch of Minsky's theory here. Refer to Minsky (1975, chapter 5) and Minsky (1986, chapter 8) for exposition of his investment theory.

Minsky (1986, p. 172) writes critically, “[i]n today’s standard economic theory, an abstract non-financial economy is analyzed. Theorems about this abstract economy are assumed to be essentially valid for economies with complex financial and monetary institutions.” This characterization of the mainstream, and the criticism it expresses, were valid through most of Minsky’s career. While the Modigliani-Miller theorem provided only necessary and sufficient conditions under which financial structure would not affect firms’ real investment decisions, the dominant approach in research on the microfoundations of investment invoked Modigliani-Miller as theoretical justification for ignoring any influence of financial structure in empirical modeling of investment. (See Jorgenson, 1971). But at the very time that Minsky wrote these words in the middle 1980s, the mainstream was changing. New research challenged the non-financial microeconomic theory of investment from the inside.<sup>6</sup>

The innovation that initiated the change came from microeconomics. Akerlof (1970) showed that asymmetric information between buyers and sellers could cause markets to function in such a way that transactions that would be optimal in the presence of full information (or even symmetric uncertainty) would not take place. The basic idea is that because of asymmetric information, the seller knows more about the quality of the good than the buyer. This information advantage gives the seller the ability to behave opportunistically, that is, sellers of low-quality goods (such as used car “lemons”) try to pass off their goods at high prices to uninformed sellers. While buyers cannot overcome the barrier of the information asymmetry, they do understand the incentives of sellers to dump lemons. They rationally discount the quality of any item offered for sale in markets with asymmetric information. Sellers of high-quality goods must therefore accept a price below what they know to be the value of the item in markets with full information.

Beginning with Stiglitz and Weiss (1981), these ideas were applied to credit markets. In this case, the “buyer” is the lender and the “seller” is the firm that desires credit. Asymmetric information exists because firms know more about their “quality,” that is, the probability of repayment, than the lenders. Lenders realize their information disadvantage, and they therefore treat loan applications with rational skepticism. The result is that firms with “good” (positive expected net present value) investment projects must pay a premium above the market interest rate (which is the opportunity cost of internal funds in a setting with no costs of intermediation) to obtain loans. Indeed, it is possible for credit to be rationed, as in Stiglitz and Weiss (1981), so that firms with positive net present value investment projects may not be able to obtain credit

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<sup>6</sup> Seminal papers in this research included Stiglitz and Weiss (1981) and Myers and Majluf (1984). Also see the survey in Gertler (1988).

at any price.<sup>7</sup> This research predicts that firms can face financing constraints: firms that have good projects from a technological point of view may not be able to undertake them because the necessary financing is not available at a price that makes the project worthwhile.

This research program spawned numerous theoretical and empirical studies that have received widespread attention in mainstream economics. By now, substantial empirical evidence has been compiled to support the existence of financing constraints.<sup>8</sup> Clearly this transformation moves the mainstream view of the microfoundations of investment closer to Minsky's perspective. To what extent do these theories overlap? In what ways do they provide complementary insights?

Minsky never discussed asymmetric information in explaining why firm investment depends on the availability of financing. Yet, Fazzari and Variato (1994) argue that asymmetric information does help explain the presence of the kind of investment-finance link found in Minsky, Keynes, and other Post Keynesian theories. In brief, we claim that for firms to be financially constrained in a meaningful way it must be the case that they seek external funds for what they consider desirable investment projects (when expected returns are discounted at prevailing interest rates), and that firms find that they cannot obtain the necessary financing at a cost that makes the project worthwhile. This kind of outcome requires that firms and lenders do not evaluate the project symmetrically. Furthermore, we argue that asymmetric information is a fundamental characteristic of a decentralized economy, because decentralization inevitably leads to information differences. Asymmetric information is therefore not a minor "imperfection" of capital markets, but it is inherent to modern economies.

Other authors are not convinced that asymmetric information is a "necessary condition" for the presence of financing constraints on investment of the kind central to Minsky's theory. In particular, they argue that "fundamental" uncertainty, that cannot be adequately modeled in a stationary probabilistic framework, can create financial effects on investment without asymmetric information.<sup>9</sup> This debate has not been fully resolved. Consensus has been reached

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<sup>7</sup> A number of papers, including Myers and Majluf (1984), present related analysis of the market for new equity issues. With asymmetric information, firms that must issue new shares to finance a positive net present value investment project may forego the project because the information asymmetry requires them to sell new shares at a discount relative to their true value, which is known to the firm managers.

<sup>8</sup> While it is fair to say that the possible presence of financing constraints is taken seriously by a large fraction of mainstream economists, such acceptance is certainly not universal. Kaplan and Zingales (1997), for example, argue that many firms do not face financing constraints. Also see Fazzari, Hubbard, and Petersen (1999), however, for a rebuttal.

<sup>9</sup> See Dymski (1994) and Crotty (1996). Also see the response to Crotty in Fazzari and Variato (1996). In personal conversations with the author, Minsky himself expressed ambiguous views on this debate. He neither rejected, nor fully endorsed, asymmetric information as part of the foundation for the investment-finance link in his writings.

that asymmetric information of the kind identified in mainstream theory can explain the presence of Minsky-style financial effects on investment. The claim that asymmetric information is *necessary* for these financial effects remains controversial. I believe that a fair assessment of this debate is that the consideration of asymmetric information in financial markets, kindled by mainstream developments, has pushed researchers in the intellectual tradition of Minsky to more carefully analyze why firm investment depends on financial markets, which is, in my opinion, a positive development.

Although the debate about the theoretical microfoundations has not been resolved, the empirical implications of the new mainstream research on investment in finance echo much of Minsky's writings. Perhaps the primary empirical implication emphasized in the mainstream literature is the dependence of firm investment on cash flow. The reasoning is straightforward. If asymmetric information and the associated moral hazard and adverse selection problems induce a cost premium for external finance, firms will prefer financing from internal cash flow, which has a low opportunity cost. Higher cash flow reduces the need to borrow or raise new funds in equity markets, lowers the marginal cost of financing, and stimulates spending. (This process is most obvious in the limiting case of credit and new equity rationing in which the only way to fund investment is with cash flow.) Minsky describes the link between cash flow fluctuations and investment in a very similar way.<sup>10</sup> As a result, the recent outpouring of empirical research with firm data that tests the link between investment and cash flow, whether motivated from a mainstream or Minsky microeconomic perspective, provides empirical support for Minsky's long-established views.<sup>11</sup>

Minsky also emphasized the importance of firm leverage, or, more broadly, the strength of a firm's balance sheet, as a key determinant of investment. This aspect of his theory induces an inherently dynamic character to the theory. The process of investment spending simultaneously creates a liability structure on the firm's balance sheet which then conditions future investment. If a firm finances investment internally today, then, other things equal, it will have a greater ability to access external funds in the future. But a decision to take on debt now, raises future leverage and, again other things equal, limits the firm's ability to finance future projects with new debt. While the early mainstream research on investment and finance focuses mostly on cash flow, more recent work also emphasizes the access to lending and how a firm's balance sheet will affect its ability to obtain external credit. In their discussion of the "credit

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<sup>10</sup> See Minsky (1975, chapter 5) and Minsky (1986, pages 189-194, especially Figure 8.4).

<sup>11</sup> Hubbard (1998) provides a survey of much of this empirical research. In addition to cash flow, Minsky (1986, pages 189, 191) also recognizes that firms can reduce liquid asset stocks to finance investment. This alternative source of internal investment financing has received less attention in the mainstream, but it can be important for a number of issues, as argued by Fazzari and Petersen (1993).

channel” for monetary policy, Bernanke and Gertler (1995) provide a useful summary of this research. According to this view, higher debt or lower “net worth” raise the “external finance premium” firms must pay for credit, reducing investment.

Again, the empirical implications of the Minsky and mainstream views are similar, although they stem from different microeconomic foundations. In Minsky, leverage and balance sheet effects arise primarily due to concerns about risk as indebtedness rises, in an environment of fundamental uncertainty. (The approach is similar to Kalecki’s principle of increasing risk, as discussed in Fazzari and Mott, 1984.) Uncertainty remains the background in the mainstream theory. Rather, the key problem with higher leverage is the greater moral hazard problem lenders perceive as the stake of the owners of a firm shrinks relative to the stake of creditors.<sup>12</sup>

## **FINANCIAL FACTORS AND THE AGGREGATE BUSINESS CYCLE**

It is clear from his writings that Minsky’s primary interest in understanding the link between investment and finance at the microeconomic level is as a piece of a macroeconomic model designed to explain cyclical fluctuations in advanced capitalist economies. In contrast, some of the mainstream research on finance and investment seems to have a purely microeconomic objective, especially the work that approaches the problem from the point of view of corporate finance. Much of the recent mainstream work, however, is motivated by the desire to better understand macroeconomic fluctuations, especially the way in which monetary policy affects the aggregate economy. This section compares recent mainstream research that has emphasized the importance of financial effects for macroeconomic fluctuations with Minsky’s brand of what he called “financial Keynesianism.”

One strand of the new research is nearly orthogonal to Minsky. Some papers incorporate capital market “imperfections” arising from asymmetric information into the new generation of real business cycle models. These models have no Keynesian features. Supply-side forces, such as technology or preference shocks, drive output fluctuations. Financial factors play a role in such models because they affect the quantity of investment and capital, and thereby affect the economy’s capacity to produce. In the model, this channel may propagate supply-side shocks in a way that helps calibrated real business cycle models better reproduce aspects of historical

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<sup>12</sup> Empirical evidence on the importance of leverage for investment is not nearly as extensive as the evidence linking cash flow and investment. For a recent contribution, see Ndikumana (1998).



fluctuations. But this approach has little, if any, intellectual common ground with Minsky's work.<sup>13</sup>

There may be a closer link between Minsky's conception of macroeconomic fluctuations and recent research that looks for a "credit channel" for the monetary transmission mechanism. The fact that such work focuses on understanding the real macroeconomic effects of monetary policy suggests a Keynesian perspective. A simple and accessible example of this kind of research is Bernanke and Blinder (1988). The authors construct a simple IS-LM model in which access to credit affects investment spending and monetary policy affects access to credit. For this reason, monetary shocks shift the IS curve as well as the LM curve. The financial effects in the IS curve increase the quantitative response of the economy to changes in monetary policy. They also dampen the response of interest rates to monetary changes. This kind of result is emphasized in the credit channel research, because one puzzle to be explained is why monetary policy seems to have important effects on output when the interest elasticities of spending appear to be small empirically.

A subset of the recent credit channel research program bears some resemblance to aspects of Minsky's macroeconomic theory. Bernanke and Gertler (1995) identify a "balance sheet channel" through which monetary policy has real effects on the economy. They argue that the premium firms must pay for external funds depends on the state of the firm's balance sheet, or its "internal net worth." Because of asymmetric information and moral hazard, a highly leveraged firm will have to pay more for new debt than a firm with little debt.<sup>14</sup> Minsky also emphasizes how the cost of debt, even the availability of debt depends on a firm's financial condition. His work often discusses the firm's "margin of safety" for debt incurred due to past investment activities as a fundamental determinant of the firm's ability to finance new investment. Although Minsky usually portrays the margin of safety in flow terms—as the difference between a firm's cash flows and its debt payment commitments—the empirical implications that link investment and leverage in Minsky resemble those rediscovered by mainstream economists who investigate the recently popular credit channel for the monetary transmission mechanism. Indeed, Bernanke and Gertler (1995) choose the interest coverage ratio, a flow measure of debt payments and cash flow, as a useful variable that captures credit channel effects.

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<sup>13</sup> I also question whether it is empirically interesting to explain aggregate output fluctuations as the result of changes in the aggregate capital stock at business cycle frequencies.

<sup>14</sup> According to this theory, these effects create a channel for the monetary transmission mechanism because Bernanke and Gertler (1995), among others, argue that changes in monetary policy will change internal net worth by affecting interest rates and the market value of collateral.

Perhaps this kind of research moves the mainstream view of aggregate fluctuations in the direction of Minsky. But there remains a deep difference in method. In the mainstream, the macro role of financial factors operates through what Bernanke and Gertler (1995) call the “financial accelerator.” As such, financial factors are a “propagation mechanism” for “shocks.” They help explain why fluctuations are substantial, but they do not play any role in explaining the source of fluctuations. In Minsky, the finance-expenditure link not only propagates instability, it is the very source of instability. In his introductory comments to a chapter on the link between investment and finance, Minsky (1986, p. 172) writes, “instability is determined by mechanisms within the system, not outside it; our economy is not unstable because it is shocked by oil, wars, or monetary surprises, but because of its nature.” This view may not be inconsistent with the mainstream credit-channel perspective, but it is deeper and more general. What in mainstream models must be depicted as exogenous “shocks,” Minsky explains as inherent, endogenous features of modern capitalism.

Another aspect of Minsky’s financial Keynesian macroeconomic framework that is not captured in mainstream models is the Kalecki-Levy link between aggregate investment and the aggregate profits or cash flows that provide internal financing for investment. Higher investment today raises profits through macroeconomic channels, feeding the cash flow necessary to raise future investment. This occurs in part because higher cash flows provide sources of internal funds directly and also because higher cash flows raise margins of safety and increase access to debt. The expansion has its limits, however, as the economy approaches capacity constraints that limit the extent to which new investment can generate the profits necessary to validate the debt incurred to finance past investment. Higher leverage ratios that result from the self-sustaining boom also stretch margins of safety and make the economy more susceptible to negative shocks. These phenomena provide a natural ceiling on the expansion, according to Minsky, and necessitate an endogenously generated downturn. This process is the heart of Minsky’s “financial instability” theory of the business cycle.<sup>15</sup> Recent mainstream work on the investment-finance link contains nothing like this endogenous cycle theory. While it is clearly the intention of recent mainstream research to call greater attention to the importance of financial structures in determining the course of the economy, this research program has not come close to giving finance the absolutely crucial role in the business cycle that is the hallmark of Minsky’s writing.

Finally, and in this author’s view fundamentally, Minsky explicitly rejects the neoclassical synthesis view that deflation (or disinflation) pushes the economy to full

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<sup>15</sup> See Minsky (1975, 1986) and Dymski and Pollin (1992) who provide a very clear summary of Minsky’s cycle theory.

employment equilibrium through any kind of “real balance effect.” His rejection of this proposition is also, not surprisingly, based on financial relationships: because historical liability structures are denominated in nominal terms, deflation raises the incidence of bankruptcy and insolvency and lowers investment sufficiently to overcome any stimulus to demand that arises from increasing consumer wealth due to the rising purchasing power of outside money.<sup>16</sup> No theoretical conclusion could turn mainstream macroeconomics more on its head than this one. If it is correct, the textbooks must be re-written. For no good foundation would remain for cherished, and virtually unquestioned, mainstream conclusions such as the long-run neutrality of money or the dominance of supply-side factors (and the exclusion of Keynesian demand-side considerations) in the theory of economic growth. A few of us have been voices attempting to cry in the mainstream “wilderness” about the significance of this issue.<sup>17</sup> But, in spite of the relative openness of more recent mainstream thinking to the idea that financial structure plays an important role for investment (and consumption), little, if any, headway has been made to obtain recognition of what Minsky (and Keynes before him) have known for decades: the linkage between aggregate expenditure and financing implies that deflation or disinflation may very well *not* be stabilizing.<sup>18</sup>

## MACROECONOMICS STABILIZATION POLICY

The title of Minsky’s final book, *Stabilizing an Unstable Economy*, reveals the deep commitment throughout his research career to understanding how macroeconomic policy could be designed to improve the performance of modern capitalism. In particular, he emphasized the link between macro policy and financial instability. A large branch of recent mainstream research focuses on how the link between financial structure and expenditure affects the transmission of monetary policy to the real economy. There are two components to this “credit channel” (as described in Bernanke and Gertler, 1995). One mechanism operates through bank loans. An increase in bank reserves raises the supply of loans. Because of capital market imperfections, some firms, especially small ones, rely on banks for credit. That is, they do not have access to impersonal bond or equity markets. An increase in the supply of bank loans

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<sup>16</sup> Minsky makes this argument in many places, including Minsky (1986, p. 176). For a summary of these ideas, empirical evidence, and many other references, see Caskey and Fazzari (1992).

<sup>17</sup> See, for example, Fazzari, Ferri, and Greenberg (1998).

<sup>18</sup> As inflation rates have come down to near zero in the U.S. at the end of the 1990s, there is some recognition, at least at a casual level reflected in the press, that practically oriented economists fear deflation, sometimes referred to as the “D-word.” This fear is well founded. Yet, analysts steeped in the mainstream tradition do not seem to recognize that this fully justifiable fear is inconsistent with the dominant neoclassical synthesis.

raises the investment spending of such firms by relaxing their credit constraints. The other mechanism works through firms' balance sheets. A rise in firms' "net worth" reduces the "potential conflict of interest with the lender" and therefore affects "the overall terms of credit they face" (Bernanke and Gertler, 1995, p. 35). A loose monetary policy that lowers interest rates will raise net worth and strengthen balance sheets by lowering interest costs and raising asset prices.

As discussed above, the objective of research on these channels is to explain the empirically significant effect of monetary policy changes on real economic activity in ways that do not rely on the empirically small interest elasticities of investment and consumption. This objective moves mainstream research in the direction of Minsky's emphasis on the central role played by financial structure in understanding economic policy. The gap between Minsky and the mainstream on policy has therefore shrunk in recent years, but it still remains large. In Minsky, monetary policy intervention, including lender-of-last-resort activities, comprises a fundamental part of the necessary structure to contain financial instability. Without such intervention, Minsky believes modern capitalism must face repeated financial collapse that likely result in depressions. The recent credit channel research has a much more narrow scope. It may help to understand some links between money and the economy, but it does not tackle deeper questions about the inherent instability of capitalism.

Furthermore, there is nothing in recent mainstream analysis that corresponds to the role played by fiscal policy to contain financial instability. In Minsky's work, government deficits in contractions sustain profits, which helps the system avoid interactive defaults that can change a downturn into a depression. In mainstream "New Keynesian" research, fiscal policy is largely ignored for purposes of economic stabilization.<sup>19</sup> Minsky (1986, chapter 2) provides a detailed analysis of how the deficit of "Big Government" was crucial in maintaining profits during the 1974-75 recession.<sup>20</sup> This perspective may well have current relevance, but it is missing, for the most part, in mainstream analysis.

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<sup>19</sup> One reason for the emphasis on monetary policy rather than fiscal policy is the view that discretionary fiscal policy cannot respond quickly enough to a downturn. Bickering between the Congress and the President on the need for and form of fiscal intervention may make it a blunt instrument. This problem may well arise. This possible lack of flexibility with discretionary fiscal policy, however, does not invalidate the effectiveness of automatic stabilizers. In addition, monetary policy alone may not be adequate to turn an economy around, as seems to be the case for Japan in the late 1990s.

<sup>20</sup> Minsky makes the interesting, and somewhat surprising, point that the annualized rate of contraction of the economy during the first two quarters of 1975 rivaled that of the worst rate of decline during the Great Depression. But big government deficits prevented profits from declining and set the stage for recovery in the second part of the year.

Similarly, Minsky's "Big Bank" perspective, that is, the importance of lender-of-last-resort intervention to contain financial instability, is not captured by recent mainstream research, even though financial factors receive more attention in recent work. Indeed, the emphasis of moral hazard in the mainstream microeconomic analysis of capital market imperfections may have, somewhat paradoxically, pushed mainstream research further from Minsky's views on this issue. Lender-of-last-resort "bailouts" can make moral hazard problems more severe as the Central Bank validates risky financial practices. The mainstream response to such outcomes is to decry intervention. Minsky, however, while he does not deny the possibility of moral hazard, sees these problems as part of a complex dynamic process. Bailouts may increase moral hazard problems, and, in Minsky's terminology, may set the stage for even more "fragile" financial structures that can lead to future instability. But the alternative may be worse, an interactive debt deflation that causes "It," a Great Depression, to "happen again." Recent actions by the Greenspan Fed in the stock market crash of 1987 and the orchestrated bailout of Long-Term Capital Management suggest that Minsky's perspective remains relevant.

## **CONCLUSION**

In the last two decades, the outpouring of mainstream research on capital market imperfections and their relevance for macroeconomic analysis and policy suggests some movement toward the inherently financial perspective that characterizes Hyman Minsky's writing. In my opinion, there are some useful complementarities between the research of Minsky and the mainstream, especially with respect to theories that explore the microeconomics of financial factors for firm and household behavior. Recent extensive empirical research, motivated by new mainstream theories, also provides strong evidence for the kind of microeconomic link between finance and expenditure that is crucial in Minsky.

But large differences remain between Minsky and the mainstream paradigm. Minsky's ideas about the role played by the financial system in macroeconomic fluctuations is much more extensive than the macro-finance connections explored to date in more orthodox work. Furthermore, while mainstream analysis has begun to consider the importance of financial factors in the monetary policy transmission mechanism (the "credit channel"), there is much in Minsky's Big Government-Big Bank policy framework that does not appear in recent mainstream work. Indeed, one might argue that much of Minsky's theory is fundamentally inconsistent with the underlying structure of mainstream macroeconomics. But that big question, interesting though it is, must remain to be addressed in other papers.

## **REFERENCES**

- Bernanke, Ben S., and Alan Blinder. 1988. "Credit, Money, and Aggregate Demand." *American Economic Review*, 78, 435-439.
- Bernanke, Ben S. and Mark Gertler. 1995. "Inside the Black Box: The Credit Channel of Monetary Policy Transmission." *Journal of Economics Perspectives*, volume 9, pp. 27-48.
- Caskey, John P. and Steven M. Fazzari. 1992. "Debt, Price Flexibility, and Aggregate Stability." *Revue d'Economie Politique*, 102, 520-543.
- Crotty, James. 1996. "Is New Keynesian Investment Theory Really 'Keynesian?' Reflections on Fazzari and Variato." *Journal of Post Keynesian Economics*, 18, 333-357.
- Dymski, Gary. 1994 "Asymmetric Information, Uncertainty, and Financial Structure: 'New' versus 'Post' Keynesian Microfoundations." in Gary Dymski and Robert Pollin (eds.), *New Perspectives in Monetary Macroeconomics: Explorations in Honor of Hyman Minsky*, Ann Arbor, MI: University of Michigan Press, 77-104.
- Dymski, Gary, and Robert Pollin. 1992. "Hyman Minsky as Hedgehog: The Power of the Wall Street Paradigm." in Steven Fazzari and Dimitri Papadimitriou (eds.) *Financial Conditions and Macroeconomic Performance*. Armonk, New York: M.E. Sharpe, Inc., 27-62.
- Fazzari, Steven M., Piero Ferri, and Edward Greenberg. 1998. "Aggregate Demand and Firm Behavior: A New Perspective on Keynesian Microfoundations." *Journal of Post Keynesian Economics*, 20, 527-558.
- Fazzari, Steven M., R. Glenn Hubbard, and Bruce C. Petersen. 1999. "Investment-Cash Flow Sensitivites Are Useful: A Comment on Kaplan and Zingales." *Quarterly Journal of Economics*, forthcoming.
- Fazzari, Steven M., and Tracy L. Mott. 1984. "The Investment Theories of Kalecki and Keynes: An Empirical Study of Firm Data, 1970-1982." *Journal of Post Keynesian Economics*, 9, 171-187.
- Fazzari, Steven M., and Anna Maria Variato. 1994. "Asymmetric Information and Keynesian Theories of Investment." *Journal of Post Keynesian Economics*, 16, 351-369.
- . 1996. "Varieties of Keynesian Investment Theories: Further Reflections." *Journal of Post Keynesian Economics*, 18, 359-368.
- Fazzari, Steven M. and Bruce C. Petersen. 1993. "Working Capital and Fixed Investment: New Evidence on Finance Constraints." *Rand Journal of Economics*, 24, 328-342.

- Gertler, Mark. 1988. "Financial Structure and Aggregate Economic Activity: An Overview." *Journal of Money, Credit, and Banking*, 20, 559-588.
- Hubbard, R. Glenn. 1998. "Capital-Market Imperfections and Investment." *Journal of Economic Literature*, 35, 193-225.
- Jorgenson, Dale. 1971. "Econometric Studies of Investment Behavior: A Survey." *Journal of Economic Literature*, 9, 1111-1147.
- Kaplan, Steven N. and Luigi Zingales. 1997. "Do Investment-Cash Flow Sensitivities Provide Useful Measures of Financing Constraints?" *Quarterly Journal of Economics*, 112, 169-215.
- Minsky, Hyman P. 1975. *John Maynard Keynes*, New York: Columbia University Press.
- . 1986. *Stabilizing an Unstable Economy*, New Haven, Connecticut: Yale University Press.
- Modigliani, Franco, and Merton H. Miller. 1958. "The Cost of Capital, Corporation Finance, and the Theory of Investment." *American Economic Review*, 48, 261-297.
- Myers, Stewart C., and Nicholas S. Majluf. 1984. "Corporate Financing and Investment Decisions When Firms Have Information That Investors Do Not." *Journal of Financial Economics*, 13, 187-221.
- Ndikumana, Leonce. 1998. "Debt and Keynesian Investment Theories: Evidence and Implications for Macroeconomic Stability." Manuscript, Department of Economics, University of Massachusetts, Amherst, MA.
- Stiglitz, Joseph E., and Andrew Weiss. 1981. "Credit Rationing in Markets with Imperfect Information." *American Economic Review*, 71, 912-927.