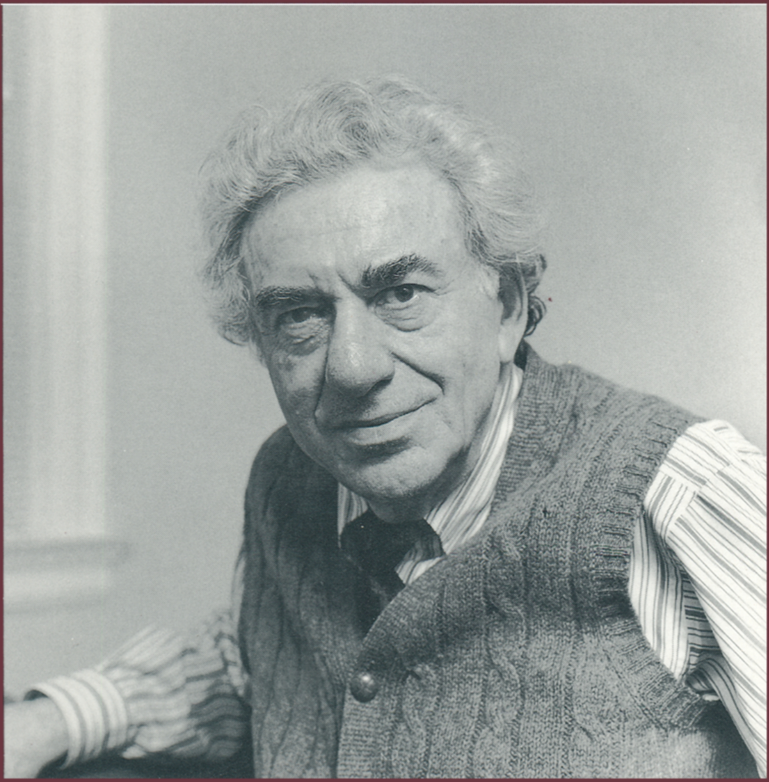
Financial Conditions and Macroeconomic Performance

Essays in Honor of Hyman P. Minsky



Steven Fazzari
and
Dimitri B. Papadimitriou
Editors

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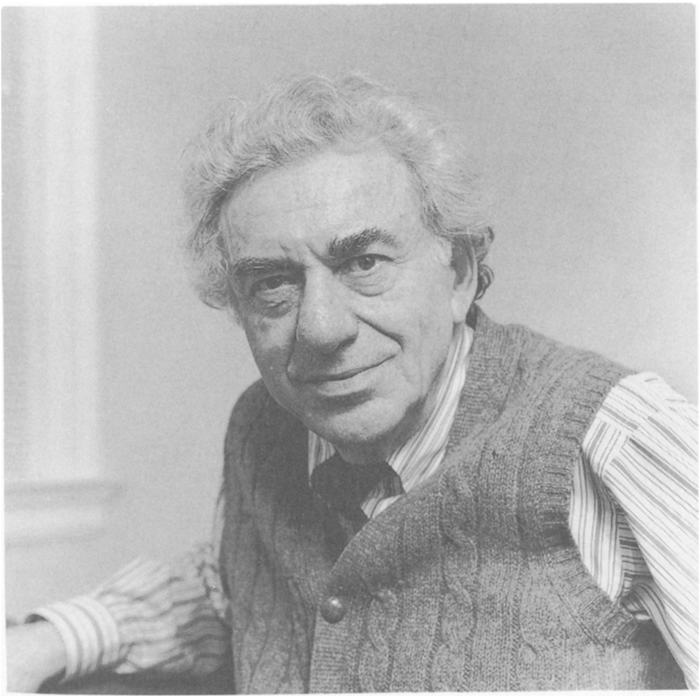
To

Hyman P. Minsky

Our mentor and critic



Hyman P. Minsky, distinguished scholar at the Jerome Levy Economics Institute of Bard College, and Professor Emeritus of Washington University-St. Louis, is a nationally known economist who, in the words of *Business Week* columnist Robert Kuttner, merits a Nobel Prize as one of the great institutionalists of the economics profession, a man "whose work begins with the complexity and turmoil of actual markets rather than with the presumed equilibrium of theoretical ones." Professor Minsky's best known works include *John Maynard Keynes* (1975), *Can 'It' Happen Again?* (1982), and *Stabilizing an Unstable Economy* (1986). Born in Chicago in 1919, he received his B.S. in mathematics from the University of Chicago and a Ph.D from Harvard.

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FOREWORD

Henry B. Kaufman

Hyman Minsky has labored hard and well in the labyrinths of economics and finance where few have worked with clarity and coherence. While linking business with finance is essential to understanding how forecasts and events interact in our world, rational theories of this linkage have been sparse. Hyman Minsky, however, has provided a definitive analysis. The rest of us, of course, have free rein to question his logic and quibble with his assumptions. But these are largely secondary matters. The relevant point is that the overall thrust of his position is clear, and his conclusions are disturbing. Events of the post–World War II period have vividly supported his basic argument.

Hyman Minsky, through his analysis, saw early on the increasing fragility of our financial system. He began with the insight of Keynes concerning the volatility of investments, and then pointed out that the underlying uncertainty of the cash flow from investments has powerful repercussions on the balance sheet of business. In turn, the government intervenes in an attempt to reduce the risks in this process, essentially by taking expansionary policies that prevent a debt deflation. According to Hyman Minsky, such counteraction by government does not produce a long period of economic equilibrium, but, again, lays the groundwork for another investment boom driven by a wave of new debt. According to Minsky this sequence of booms, government intervention to prevent debt contraction, and new booms entails a progressive buildup of new debt, eventually leaving the economy much more fragile financially.

Having worked in the financial markets for my entire professional career, I became aware of the risk of a debt explosion in the 1960s and was attracted to Hyman Minsky's thinking. I saw this debt buildup through my work in the flow of funds. I attribute the subsequent rapid growth of debt to the removal of circuit breakers such as official interest rate ceilings, the rapid deregulation of markets and institutions, the many financial innovations that promoted debt, and the globalization of financial markets. In the wake of these sweeping changes, no effective official supervision was imposed over markets and institutions. Thus, regrettably, Hyman Minsky's view of increasing fragility has come true.

This volume is a fitting tribute to Hyman Minsky. It matters not whether we are monetarists, Keynesians, or disciples of any other economics persuasion. He deserves our accolades because of the persuasiveness of his analysis, and because he was a crusader. He foresaw the irregular weakening of our financial institutions that has brought the issue of financial fragility to dead center. It is now high time that we find the way out of this abyss.

PREFACE

In September 1965, Hyman P. Minsky was appointed professor of economics at Washington University in St. Louis, Missouri. He taught many generations of students, influenced the direction of the economics department, and contributed greatly to Washington's research reputation with his prodigious scholarly work. In June 1990, Minsky retired from his teaching duties to take up the position of distinguished scholar at the Jerome Levy Economics Institute of Bard College in New York.

To mark this occasion, several institutions collaborated to put on a conference in honor of Minsky's contribution to the economics discipline and to his institutional home of nearly thirty years. Major support for this event came from the Jerome Levy Economics Institute and from Mark Twain Bancshares of St. Louis, an institution with which Minsky has had a long association, most recently as a member of its board of directors. Additional support came from Washington University departments and student organizations. The conference commissioned essays that examined Minsky's contributions to economic theory and policy analysis written by scholars from all over the world who had a close association with Minsky, or who have been influenced greatly by his research. The conference was held in St. Louis on April 20 and 21, 1990 and included a keynote address to the Washington University community by Benjamin Friedman.

The conference essays are collected in this volume. Although they touch on many aspects of Minsky's work, they do not constitute an exhaustive survey of his contributions. The piece by Gary Dymski and Robert Pollin provides an overview of Minsky's research from the authors' perspective. The remainder of the essays cover topics chosen by their authors, developing aspects of their own research in ways that reveal the influence of Minsky's far-reaching contributions.

The conference and this volume of essays owe their existence to the dedicated work of many individuals. This project originated from discussions among Minsky's colleagues at Washington University. The conference was organized by Steven Fazzari, Edward Greenberg, and Laurence Meyer, whose initial idea sparked the conference. Financial support from the Levy Institute and Mark Twain Bancshares, our major donors, as well as various Washington University sources, made the conference possible. Trudi Spigel and her staff from the special programs office of Washington University provided invaluable advice and support in planning the logistical details of the conference. Karen Rensing, of the

economics department, kept track of myriad clerical details and helped to organize the organizers. The participants in the conference, many of whom traveled to St. Louis for the occasion, contributed lively, sometimes heated, discussion that influenced the final forms of the papers collected here. Finally, we thank Hyman Minsky who has contributed so much, personally and professionally, to the discipline of economics, to Washington University and the Levy Economics Institute, and to us.

Steven Fazzari
Dimitri B. Papadimitriou
March, 1991

JEROME LEVY ECONOMICS INSTITUTE OF BARD COLLEGE

Founded in 1986, the Jerome Levy Economics Institute of Bard College is an autonomous, independently endowed research organization. It is nonpartisan, open to the examination of diverse points of view, and dedicated to public service. The support of the Institute made this volume possible.

The Institute believes in the potential for economic study to improve the human condition. Its purpose is to generate viable, effective public policy responses to important economic problems. It is concerned with issues that profoundly affect the quality of life in the United States, in other highly industrialized nations, and in countries with developing economies.

The Institute's present research agenda includes such issues as financial instability, poverty and problems associated with the distribution of income, and economic growth. In all its endeavors, the Institute places heavy emphasis on the values of personal freedom and justice.

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CHAPTER ONE

Introduction: Conversations with Hyman Minsky

STEVEN FAZZARI

I came to know Hyman Minsky toward the end of his time at Washington University when I joined the faculty as an assistant professor right out of graduate school in fall 1982. My conversations with Minsky since then have greatly influenced my research and professional development. When the authors of the papers collected in this volume were presenting their ideas at the conference honoring Minsky at Washington University, I was struck by how closely the major ideas in these papers related to the themes Minsky emphasized in conversation with his colleagues and students. Therefore, I try to show in this essay how the major themes in each contribution connect to the ideas Minsky emphasized, almost on a daily basis, to those around him. As a result, this chapter does not summarize the papers. The reader will have to go to the papers themselves to discover their individual messages. This introduction attempts to draw together the diverse ideas expressed in the individual chapters, relating them to the view of economic activity that Minsky conveys at a personal level. For an impression of how Minsky perceives the world he has experienced, see the following chapter, "Minsky on Himself," by Dimitri B. Papadimitriou.

Finance, the Economy, and Policy

Within the first minutes of any conversation with Hyman Minsky, one learns that economic theory is hopelessly sterile unless it recognizes the fundamental impact of finance. He would often talk about theories that abstracted from finance and money as "village fair" models, possibly applicable to tangential barter in a subsistence society, but wholly inadequate to the task of understanding the driving forces of modern capitalism. Not surprisingly, then, the central role of financial and monetary relations in the economy is emphasized in all the papers in this volume.

The author is associate professor of economics at Washington University, St. Louis. He thanks Edward Greenberg for excellent comments.

These effects arise at *all* levels of analysis. At the microeconomic level, for example, Kindleberger (chapter 5) explores the historical and logical foundations of financial intermediation in the functioning of the market system; particularly the importance of information in the intermediation process. Similarly, Fazzari (chapter 8) analyzes the microeconomic mechanism that links real investment with financial structure. At the macroeconomic level, the impact of finance on the aggregate performance of modern, "financially sophisticated" economies, to use Minsky's phrase, appears in most of these papers. Delli Gatti and Gallegati (chapter 9), for example, argue that the evolution of financial structure over the business cycle systematically pushes the system from a dynamically stable regime to instability. Similar themes are emphasized by Ferri (chapter 7). These are a few examples. Every paper in this volume reflects Minsky's vision of finance as central to an understanding of economic activity in our times.

Another strong impression that one gets from a conversation with Minsky is that theoretical economics and economic policy analysis are inextricably linked. As Friedman states in the keynote address for the conference (chapter 4), Minsky's ideas are relevant today, not just for economic theory, but also for the "actual prospects and risks facing our economy." The papers in this volume, particularly those by Dymski and Pollin, Ferri, Friedman, Kregel, and Wray, explore Minsky's particular view of financial capitalism and its implications for the conduct of fiscal and monetary policy, as well as for various proposals about institutional reform.

The Theory of Investment and Endogenous Money

Minsky sees himself as an expositor of "financial Keynesianism." At the core of his financial interpretation of Keynes' work is the theory of investment; fluctuations in macroeconomic activity primarily arise from fluctuations in investment.

In modern mainstream thinking, the key determinant of investment in plant and equipment is the (marginal) productivity of capital which is determined technologically. The income streams generated by the productivity of capital are appropriately discounted at a real interest rate common to all agents in the economy that, itself, can be explained ultimately by preferences and technology. Minsky does not deny a role for the productivity of capital in determining the expected cash flow generated by an investment project. In conversation, he accepts that the "*Q*s" (following Keynes' notation for the expected cash flows from investment) can be affected by the productivity of capital. The problem of meaningfully defining the physical quantity of capital as a single aggregate has little impact on his thinking. There are those, however, who believe his indifference to this issue weakens his overall impact. (See the end of the paper by Dymski and Pollin [chapter 3] for discussion.)

But to leave the determination of investment *entirely* to technology and the market interest rate, as is common in most neoclassical investment models, is to ignore the essential explanation for investment fluctuation: finance. Minsky talks about how the key decisions that drive investment, and therefore animate the business cycle in a modern capitalist economy, take place in the "board rooms" of major firms where the financing of major projects is granted or denied. Minsky calls this his "Wall Street" view (see Dymski and Pollin) to describe great pools of finance capital moving swiftly among places and accounts. More recently, he uses the term "money-manager capitalism" to describe the evolution of intermediation along these lines as discussed in Kindleberger's paper.

The conditions under which finance for investment is forthcoming drive variations of investment more than anything else. This view places Minsky out of the neoclassical mainstream. He emphatically denies the independence of *real* investment from *nominal* financial conditions. Minsky often says that the only "real" interest rate is the one that actually appears on financial contracts and affects cash flows: the nominal interest rate in conventional economic jargon. He denies the validity of the "Modigliani-Miller" theorem, not because of the subtleties of the tax law, but because of the structure of capitalism.

The paper by Fazzari (chapter 8) takes on the task of explaining why such a fundamental link between investment and finance must arise in a decentralized economy. The key insight, which Fazzari draws from recent developments in the mainstream literature and applies to Minsky's view, is that borrowers and lenders, by the very nature of their distinct roles, do not have the same information about the quality and likely success of an investment project, i.e., their information is "asymmetric." For this reason, what Minsky, following Keynes, calls "lenders' risk" arises. This risk will be magnified or attenuated by characteristics of the agents involved in financing an investment project (e.g., reputation and collateral), and the magnitude of lenders' risk can vary independently from the technological productivity of that project. Fazzari argues that asymmetric information is both inherent to capitalism and fundamental to understanding the investment-finance links that are central to Minsky's theory.

The paper by Dymski and Pollin and the paper by Wray also examine lenders' risk (as well as the corresponding concept of borrowers' risk). Wray, in particular, emphasizes the special relationship between borrowers and lenders and its importance in the process of investment finance. This relation is not impersonal like the market link between suppliers and demanders in the simplest microeconomic model. An exchange between borrowers and lenders does not depend solely on price. Kindleberger analyzes the special role of banks as financial intermediaries in an historical context. The complexity of this relationship between banker and entrepreneur is a cornerstone of Minsky's vision which has been discovered finally by mainstream economists (for a useful survey, see Gertler 1988). These developments in the mainstream are evidence of the pervasiveness of Minsky's vision.

The idea, emphasized especially by Fazzari, that these mainstream developments are consistent with Minsky's views, and indeed, may provide a new dimension to his insights, has spawned controversy which is reflected in several of the papers in this volume. Kregel argues that asymmetric information is not necessary to support financial instability at the macroeconomic level. If, for some reason, banks restrict credit, firms will be unable to finance investment. In the aggregate, reduced investment will force cash flow down, limit the ability of firms to service debt, and validate the bankers' original decision to tighten credit. In this sense, financial constraints on investment, regardless of their microeconomic basis, become a self-fulfilling prophecy. Dymski and Pollin argue that "fundamental uncertainty" about investment projects necessitates financial effects on investment whether or not the information available to borrowers and lenders is asymmetric. This argument is pursued further by Dymski (1991) in a paper inspired, in part, by the lively discussion of this point at the conference.

The microfoundations of financial effects on investment constitute only the starting point of Minsky's theory of investment. Any discussion of "financial constraints" with him quickly leads to the systemic instability induced by the investment-finance link. Investment creates financial relations that stretch both backward and forward in time. Minsky often emphasizes what Dymski and Pollin call the "financial trails" of investment. As Kregel points out (chapter 6), the decision to hold capital is also the decision to finance capital because past investment created a set of cash payment commitments. Firms' fulfillment of these commitments, or their failure, is a key element in determining the direction of the business cycle. In addition to these historically determined relations, Wray identifies another common thread that Minsky emphasizes about the systemic behavior of investment: investment today is only possible if investment in the future can be expected to generate the aggregate cash flows necessary to validate the liabilities that new investment creates.

These concerns have current relevance for the U.S. economy. As Friedman's lecture demonstrates, the proportion of corporate income that goes to service debt (that is, to validate historical commitments) has risen from about 16 percent in the financially robust 1950s and 1960s to approximately 60 percent in the 1980s. Friedman notes that although the U.S. economic structure may have changed in ways that can support such a dramatic increase in debt leverage, the danger of a collapse of investment finance looms on the horizon if an economic downturn results in widespread repudiation of these massive new debt obligations.

Because Minsky emphasizes the central role of finance for investment and the volatility it induces, he strongly rejects the idea that any meaningful measure of "money," the liability side of financial transactions, can be exogenous. This critique of conventional thought is not unique to Minsky's view. But his thinking drives in the direction of endogenous money. These ideas are discussed by Dymski and Pollin and developed in detail by Wray (chapter 10). He argues that to recognize the endogeneity of money resurrects the Keynesian concept of liquidity preference as a central cause of the volatility of macroeconomic activity. Yet, some of the endogenous money literature suggests that the Federal Reserve's attempt to impose quantity constraints on the banking system is irrelevant. As Wray makes clear, Minsky's view is more subtle. Financial innovation and liability management give banks great flexibility in determining the quantity of money. But quantity constraints imposed by the Federal Reserve can have important effects on the cost and availability of credit. Thus, Minsky's monetary theory is more complex than either the mainstream exogenous measure-of-money view, or the perspective that Federal Reserve quantity constraints are irrelevant for credit markets because only the discount rate matters.

Financial Instability

The theories of investment and endogenous money are the building blocks of Minsky's broader ideas about macroeconomics and are key to his central concern: the financial instability that drives fluctuations in the economy as a whole. This idea flows from the microfoundations of investment and financial markets discussed previously. As Dymski and Pollin emphasize, and any talk with Minsky confirms, the idea of macro instability induced by finance is part of Minsky's "preanalytic vision." He rejects the notion of a simple exchange economy in which money and finance are "veils" as a starting point.

Ferri's paper lays out the abstract character of economic activity that underlies Minsky's more particular contributions on financial instability. The formal structure of what Ferri calls Minsky's "general systems view" is inherently dynamic and nonlinear. This vision stretches back to his earliest published work, but in recent years he has adopted the perspective of the new mathematics of nonlinear dynamics, especially chaos theory. This general view of economic activity complements Minsky's more specific contributions on financial instability.

As Kregel makes clear, however, the *possibility* of instability as the result of nonlinear dynamics is not the essential issue. The key, rather, is the substance of the model's structure that generates nonlinearities and instability. Ferri argues that "money," broadly defined, is the central source of nonlinearity in the model that underlies Minsky's view. Nonlinearities arise when economic phenomena feed back on asset values. This analysis ties monetary theory, investment, and macrodynamics together to explain how financial instability emerges as an inherent feature of the capitalist business cycle.

The model presented by Delli Gatti and Gallegati (chapter 9) analyzes this phenomenon. In their structure the importance of internal funds for investment, and the endogenous generation of internal funds by the macro system, creates a nonlinear feedback loop that increases the Keynesian multiplier and can push the system's dynamics from a stable to an explosive regime. In this model, as Minsky often emphasizes, maintaining an adequate flow of internal funds to fulfill past commitments, "validating the liability structure" in Minsky's terminology, creates the basis for acceptable system performance.

But for Minsky, "stability is destabilizing" (see Dymski and Pollin); full employment is not a "natural equilibrium point but a transitory moment in a cycle." This result is implied by the Delli Gatti–Gallegati model. In most conventional analyses, to the extent that they address financial conditions at all, the financial structure becomes continually stronger as an upswing continues. For Minsky, however, the longer a boom continues, the more the liabilities of firms must be increased to finance investment, i.e., the greater the demands on current cash flows to finance debt payments. This increased "financial fragility" sows the seeds of the next downturn, placing financial instability in an inherently dynamic and cyclical context.

Wray argues that these financial dynamics will cause the ultimate demise of any constant money growth policy rule. If the Federal Reserve's policy is successful at constraining money growth in the face of a strong demand for credit created by boom conditions, the leverage and fragility of the system will rise. As this process continues, debt repudiation eventually follows, the Federal Reserve's lender-of-last-resort hand is forced, and the "monetarist" rule must be abandoned. Wray uses this idea to explain why the Federal Reserve's crisis containment function was called upon often in the 1980s: it was a result of their success in constraining the expansion of reserves that ultimately stretched the system's liquidity dangerously near the breaking point.

In day-to-day conversations, it is clear that Minsky has little patience with interpretations of his cyclical perspective that tie predictions of endogenous instability to "irrational" behavior on the part of investing firms or financing agents. The behavior at the micro level may be quite rational, even essential to survival. Banks must seek to expand finance and maintain market power to maintain their position in the competitive struggle. They may be quite aware of increasing systemic fragility, but this problem is financial externality over which individual agents have no control. The view that financial institutions need continually to seek market power shows, in Wray's opinion, Minsky's Schumpeterian roots, and thus, ties Minsky, as a Harvard graduate student, to his teacher (see chapter 2).

Minsky's perspective on financial instability clearly distinguishes his work from the mainstream neoclassical synthesis view of macro, which treats financial relations "summarily," as Dymski and Pollin put it. Most textbook Keynesian analyses relegate financial influences to money demand and the traditional LM curve. Recent work within the mainstream tradition, however, has proposed a more fundamental role for finance in the determination of macroeconomic activity (see the survey by Gertler, 1988). This work derives "credit rationing" and financial influences on investment from microeconomic fundamentals that include impediments to information transfer between borrowing and lending units.

There is a debate among the expositors of Minsky's ideas regarding the significance and relevance of this recent work in the development of what Minsky calls ''financial Keynesianism." There is little doubt that these new develop-