

**THE FEDERAL  
RESERVE,  
MONEY,  
AND  
INTEREST RATES**

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**The Volcker Years  
and Beyond**

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**Michael G.  
Hadjimichalakis**

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## *Preface*

In this book I have endeavored to present a theoretical framework capable of explaining and evaluating the conduct of monetary policy in the recent past while guiding the conduct of monetary policy in the foreseeable future. Also, I have put the theoretical framework into practice by applying this theory to the conduct of monetary policy during the (ongoing) Volcker years, a period that has witnessed a substantial reduction in inflation and two steep recessions: The first one was brief, but the other was a prolonged and painful economic depression. We inquire whether these recessions were deliberate, that is, expected by the policymakers, or whether they were inadvertent, the results of errors made by the policymakers. Finally, I present this analysis in a rigorous yet nonmathematical manner so that it will be accessible to policymakers and financial analysts, as well as to undergraduate students, graduate students, and their teachers. And although this book is primarily addressed to economists, its great bulk is accessible even to laymen who are interested in Federal Reserve policies.

The book is organized into three parts. Part I, consisting of Chapter 1, sets the stage by familiarizing the reader with the Federal Reserve—its goals, instruments, and its formulation and reporting of United States monetary policy—and provides a bird’s-eye view of the Fed’s record during the Volcker years. The remaining three parts correspond to the analysis of the three subperiods that constitute the Volcker years. Since each of these subperiods is dominated by a different institutional force, a theory tailored for each period and incorporating the institutional arrangements of the relevant period is designed. Part II, consisting of Chapters 2 and 3, examines the implications of the first major change in the financial landscape, namely, the change in the Federal Reserve’s operating procedures. Part III, consisting of Chapter 4, examines the effects of the second major jolt to the financial environment, the nationwide introduction of NOW accounts. And, finally, Part IV, consisting of Chapters 5 to 8, examines the policy implications of the full emergence of the new financial environment.

In this book we shall see that important errors were committed by the Fed during the Volcker years. First, the unexpected increase in volatility of monetary aggregates, in addition to the expected increase in volatility in interest rates which followed the October 1979 change

in operating procedures, resulted partly from the Fed's insufficient understanding of the workings of the monetary regime it introduced with these changes. And although the economic consequences of these errors were relatively minor, the Fed became vulnerable to monetarist criticism; and the Fed's reaction to criticisms of these errors, the adoption of even stronger monetarist principles, later caused additional and crucial errors. These latter errors were responsible for the economic depression of 1981-82. In late 1982 monetarism was suspended because the new financial environment rendered monetary aggregates poor indicators of economic activity, thereby increasing the probability of errors, and, more important, the new environment made the economic consequences of such errors prohibitive. This reversal of Federal Reserve policy prevented a deeper depression and fostered the subsequent economic recovery.

During two of those Volcker years, from 1980 to 1982, I was a visiting scholar at the Federal Reserve Board. Because of this association, I must emphasize that my reasoning and the criticism of Federal Reserve errors do not rely on any confidential material. On the contrary, with some trivial exceptions, never during my stay at the Board was I privy to any such confidential material. It is evident from this book that the errors of the Fed stemmed almost exclusively from either a lack of a theoretical framework suited to the issues examined or from misapplication of theory. And recognizing these errors does not require confidential information.

Of course, I do not mean to say that this book has not benefited from my stay at the Fed. On the contrary, if it had not been for the time I spent there, this book never would have been written. During my two years at the Fed I was fortunate to acquire a firsthand knowledge of the institutional aspects of the real-life conduct of monetary policy: discount-window borrowing, bank credit, bank profitability, data gathering, the workings of the money market, and even the jargon of the Federal Reserve. Lack of such knowledge is an effective barrier to understanding and evaluating Federal Reserve actions. To the extent that I have acquired sufficient knowledge to write this book on the Federal Reserve, I am indebted to the many economists at the Fed who cheerfully gave so much of their time to explain the intricacies of the Fed to me. Finally, if it were not for my stay at the Federal Reserve Board and for the many discussions with staff members, I would not have identified the problems which confronted the Fed and, hence, I would not have designed theories that apply to those problems.

My greatest debt is to my wife, Karma G. Hadjimichalakis, who was a visiting professor in the Banking Section of the Federal Reserve Board from 1980 to 1982. It is upon that experience that she has drawn

in writing the “Glossary of Monetary and Financial Terms” at the end of this book. More important, it is on this experience that she relied when she became my severest critic during the writing of this book. Without her criticisms and insights this book would have been different and much diminished.

And, as usual, I relied on Dollmarvelene Flood Pardi to edit the manuscript.

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# ***Introduction and Overview***

This book develops systematically a framework for understanding and evaluating the Federal Reserve's conduct of monetary policy in the recent past, the present, and in the future. This framework is then applied to an examination of what we term the "Volcker years."

The Volcker years must be divided into three distinct subperiods, each dominated by a different institutional force. The first subperiod, from October 1979 to roughly December 1980, encompasses the first institutional jolt to the financial system: the switch in the Federal Reserve's own operating procedures, from targeting a short-term (federal funds) interest rate to targeting reserves, thereby reassigning interest rates to their natural role as market-clearing variables. The switch in operating procedures was resolved on October 6, 1979, exactly two months after Paul A. Volcker took the oath of office as chairman of the Board of Governors of the Federal Reserve System. The change in procedures was undertaken in an effort to reduce the volatility in the growth of the various measures of money, even though it was expected to increase the volatility of interest rates. However, this first subperiod was characterized by an increase in the volatility of monetary aggregates in addition to an increase in the volatility of interest rates.

The second subperiod, from January 1981 to December 1982, was dominated by another institutional change: the nationwide introduction of NOW accounts, that is, checking accounts that pay interest, which is regulated by a specifically created regulatory authority, the Depository Institutions Deregulation Committee (DIDC). The payment of interest on checking accounts (demand deposits proper) had been prohibited since 1935, although NOW accounts were permitted in the New England states and in the states of New York and New Jersey a few years before their nationwide introduction. The second subperiod was dominated by problems created by NOW accounts: in particular, by disparate growth rates for the narrow and the broad monetary aggregates, and by the Fed's misreading of the signals emitted by these aggregates. The result was the great economic contraction of 1981-1982.

The second subperiod, however, was merely an interim period, a transition period toward the new financial environment that characterizes the third period, from December 1982 to the present. The change

in operating procedures, regulatory changes, and financial innovations produced this new environment whose key characteristic is that non-regulated, market-determined interest rates are paid on checking accounts and, in fact, on the typical liability of financial institutions. In such an environment, the volume of demand deposits and, hence, of money is determined by supply and by demand, instead of being demand determined, as was the case in the previous financial environment.

As we shall see in this book, the payment of a market-determined deposit rate is a structural change of revolutionary proportions. This change not only increased the potency of monetary policy and, hence, the magnitude of the harmful effects of errors, but also increased the probability of the occurrence of such errors. As a result, the monetary aggregates have deteriorated both as indicators of economic activity and as measures to be targeted by the monetary authority. It is in such a setting that, on October 5, 1982, the Federal Reserve decided to suspend its practice of targeting monetary aggregates—a practice which was first introduced informally in 1970, was incorporated into law in 1978, and was reinforced in 1979 with the switch in operating procedures.

To understand and evaluate the conduct of monetary policy under the disparate institutional arrangements that dominate the three sub-periods of the Volcker years, we must develop theories that incorporate the institutional framework of each period examined. This is the major reason why our analysis will primarily be theoretical rather than empirical. A second, and equally important reason, will appear in our results which show that crucial errors made by the Fed did not arise from a lack of good empirical analysis, but rather from faulty application of theory or from the lack of an appropriate theoretical model. Nevertheless, our study is forward aiming and, as such, must develop a theory to fit the new financial environment that has emerged; in particular, our study must distill the policy implications of such a major structural change. Therefore, regardless of its current, specific application to past and present policies of the Fed, this framework stands on its own as a new theory, relevant for the present and for the future.

The book is organized into three parts. Part I, consisting of Chapter 1, sets the stage by familiarizing the reader with the Federal Reserve: its goals, its instruments, and its formulation and reporting of U.S. monetary policy, along with a bird's-eye view of its record during the Volcker years. Part II, consisting of Chapters 2 and 3, examines the implications of the first major change in the financial landscape, namely, the change in the Federal Reserve's operating procedures. Part III, consisting of Chapter 4, examines the effects of the second major

jolt to the financial environment, namely, the nationwide introduction of NOW accounts. And finally, Part IV, consisting of Chapters 5 to 8, examines the policy implications of the full emergence of the new financial environment.

In what follows we present an overview of this book, by summarizing the aim and the content of each chapter, especially Chapters 2 through 8.

Chapter 1 aims at familiarizing the reader with the Federal Reserve System to which the U.S. Congress has delegated the responsibility of conducting monetary policy. We examine the Fed's structure and goals, as well as its decision-making, operating, and reporting procedures. We provide a brief history of Federal Reserve targeting, along with the theoretical underpinnings of current targeting. And we examine the financial and economic setting at the time Paul Volcker became chairman of the Federal Reserve Board and the record since then. Extra care is taken throughout Chapter 1 to equip the reader with terms, jargon, and knowledge of key institutional aspects associated with the Fed and its conduct of monetary policy, aspects that usually create a barrier to understanding monetary policy in a real-world setting or to evaluating Federal Reserve practices.

Chapters 2 and 3 examine the implications of the first major change in the financial landscape, namely, the change in Federal Reserve operating procedures. In Chapter 2 we derive the theoretical implications, or, predictions, of the switch in operating procedures. In the next chapter we evaluate the experience with the new procedures.

Of course, to examine the theoretical predictions of the switch in procedures, we must first design a theory capable of incorporating such a switch. This we proceed to do. We see that the change in operating targets was essentially a reversal in the role played by nonborrowed reserves and by short-term interest rates. Under the old, federal funds interest rate operating target, a short-term (federal funds) interest rate was treated as a policy parameter, while the volume of nonborrowed reserves was permitted to passively adjust to whatever level was consistent with clearance of the reserves (and other) markets. In other words, under the old operating procedures the interest rate was treated as an exogenous variable and the volume of nonborrowed reserves as an endogenous variable. Under the reserves operating target the volume of nonborrowed reserves is the policy parameter, while the (federal funds) interest rate resumes its traditional market-clearing role; that is, under the new operating target the volume of nonborrowed reserves is an exogenous variable and the interest rate an endogenous variable.

The regimes are compared with respect to the response of interest

rates and the response of monetary and reserves aggregates to changes in the three tools of monetary policy as well as to pure stochastic shocks. We find that there are quantitative differences in the effects of the three tools on monetary aggregates, differences that, if ignored, can cause misses in the intermediate target, that is, misses in targeted money growth. There are also quantitative differences in the effects of all three tools on interest rates, which are expected to be more volatile under the new operating procedures. Furthermore, for the supplementary instruments, we find that there are qualitative as well as quantitative differences, which underscore how fundamental the structural change in operating procedures is. And, of course, these qualitative differences, if ignored, further complicate precision in monetary control.

The expected greater variability or even volatility in interest rates enhances the role of borrowed reserves under the new operating regime. It is this enhanced role of borrowed reserves that causes the quantitative differences in the effects of the primary tool of monetary policy, open market operations. And this enhanced role of borrowed reserves lies at the root of every major problem that the Fed faced during the first year of implementing the new operating procedures. It also lies directly or indirectly at the center of every issue, controversy, or suggested remedy for problems that emanated from the change in operating procedures, as we shall see in Chapter 3.

The theoretical analysis begins in Section III. But in Section II we examine the backdrop against which the decision was made, on October 6, 1979, to change the operating targets. Extreme inflationary pressures in the United States and a weak dollar, under speculative attack internationally, were the reasons cited. It was considered prudent, therefore, to permit short-term interest rates to vary (upward) sufficiently to reduce inflationary pressures and to support the dollar. However, we also find that the decision in October 1979 ushered in a new era of strong monetarist practices, in particular, reliance on the principle of fixed annual growth rates for money, irrespective of economic conditions; and growth rates gradually and continuously reduced through time.

Section III introduces the basic framework for the analysis, a framework in which monetary aggregates and interest rates are the result of interactions of the decisions made by financial institutions, by the nonfinancial (business and nonbusiness) public, and by the Federal Reserve. For realism the model examines five assets, namely, reserves, demand deposits (money), government securities (called T-bills), bank loans, and equity capital. The three rates of return, or interest rates, that are determined within the system simultaneously with the quan-



tity of money (demand deposits) are the bill rate (identified with the short-term, federal funds, rate), the loan rate, and the equity capital rate. The section concludes by pinpointing how the switch in operating procedures reverses the roles of nonborrowed reserves and the federal funds (bill) rate, transforming the problem of the change in operating targets into an “endogeneity” issue: a problem centering on which magnitude is exogenous and which endogenous.

In Section IV we derive and then compare the effects of open market operations on interest rates, on monetary aggregates, and on reserves aggregates under each operating regime. We concentrate on the different mechanisms of adjustment that bring about the effects, following an open market change in reserves: the old, federal funds interest rate operating regime relied on a quantity adjustment, while the new, reserves, operating regime relies on a price adjustment, that is, an interest-rate adjustment to establish market clearance. We find that, in terms of the effects of open market operations, the two regimes are analytically the same but operationally different. And we can pinpoint the reason: the quantitative difference in the negative relation between nonborrowed and borrowed reserves in the two regimes.

In Section V we see that the difference in the mechanisms by which the financial system adjusts to a new equilibrium produces even qualitative differences in the effects of a change in the discount rate or in the reserve requirement ratio—and in any stochastic shock for that matter. It is important to note that under the old operating procedures, an increase, for example, in the discount rate was accompanied by an increase in nonborrowed reserves, whereas under the new procedures nonborrowed reserves do not change.

This and similar results, which are compared in more detail in Section VI, have important implications for monetary control. First, under the new operating procedures the Federal Reserve regains full control of nonborrowed reserves (ignoring the “noncontrolled factors affecting reserves”). This control was partially lost under the old procedures because the Fed had to react passively to changes in the discount rate by injecting or withdrawing nonborrowed reserves. Second, and more important, it renders multipliers, computed from financial data generated under the old regime, useless or even deleterious for use under the new operating regime; supplementary instruments such as the discount rate have been used for a long time in conjunction with the primary instrument and, hence, have distorted the effect of this primary instrument. And, to the extent that the Fed relies on such multipliers, it will miss hitting its (intermediate) monetary target. Finally, Section VI concludes with a further examination of the quantitative differences in the effects of open market operations, differences caused