
**CAPITAL MARKETS, DERIVATIVES
AND THE LAW**

ALAN N. RECHTSCHAFFEN

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FOREWORD

SUSAN M. PHILLIPS*

Alan Rechtschaffen and I met in 1997 when I was a Member of the Board of Governors of the Federal Reserve System. Alan was chairing the International Symposium on Derivatives and Risk; he invited me to speak at Fordham University School of Law where he helped to create one of the first courses of study in the law governing derivatives transactions. I commented at that time that financial engineering had profoundly changed the structure of many leading banks and that these processes continue to reverberate throughout the industry.

Twelve years later, banks continue to engineer products to shift business risks to others that had been borne routinely in the past. The reverse side of the coin is that derivatives allow market participants to assume risks through alternatives to traditional lending and investing. However, it is clear that a lot has changed since 1997.

The events beginning in 2008 demonstrate the effects of unfettered innovation, perhaps even careless contract design without adequate imbedded credit safeguards much less awareness of the interconnectivity of capital market participants. The interconnection of counterparties to one another is the backbone of over-the-counter derivatives market trading activities and at the same time sows the seeds of risks to the system.

Our financial system is built on the ability of participants to meet their obligations. Those accessing capital and using derivatives and other financial instruments to manage risk or to enhance yield trust the fidelity of their counterparties or obligors. Businesses strive to gain market confidence. The breakdown of counterparty reliability, a lack of diligent risk analysis or poor contract design, and incomplete risk management contributed to recent markets events.

The past two years demonstrate that regulators need to continually review and revise their standards to encourage best practices throughout the banking industry and the financial markets. As a former chairman of the Commodity Futures Trading Commission, I encouraged efficient and well informed market practices in the futures markets, including exchange trading and use of centralized credit clearinghouses. As Dean of the George Washington School of Business, I encourage our students to understand and take responsibility for the decisions they will make in business and throughout their careers.

* Dr. Phillips is Dean and Professor of Finance at the George Washington University School of Business. She was a member of the Board of Governors of the Federal Reserve System and a former Chairman of the Commodity Futures Trading Commission.

Market participants strive to be well informed about the risks they take and the financial instruments that they use. Alan Rechtschaffen has incorporated basic descriptions of how financial instruments and the capital markets work in order to bring the reader into the world of capital markets trading activities. His case studies demonstrate the consequences of proper and improper use of derivatives and the other tools of capital exchange.

Sharing the insights gleaned from years of working in the capital markets as a participant and as a sounding board for domestic and international regulators, educator Alan Rechtschaffen demonstrates a common sense and practical approach to understanding the capital markets and derivatives—what works and what does not work.

The incorporation of the insights of his students provides a fresh approach to understanding the law. This book is useful to everybody who works in, thinks about, or has financial exposure to the capital markets. Such an understanding will help market participants and regulators alike make adjustments to trading systems and regulations to minimize the chances of repeating the mistakes of the past.

PREFACE

On June 17, 2009, President Barack Obama made the following observations about innovation in the capital markets:

In recent years, financial innovators, seeking an edge in the marketplace, produced a huge variety of new and complex financial instruments. And these products, such as asset-based securities, were designed to spread risk, but unfortunately ended up concentrating risk. Loans were sold to banks, banks packaged these loans into securities, investors bought these securities often with little insight into the risks to which they were exposed. And it was easy money—while it lasted. But these schemes were built on a pile of sand.¹

The “schemes” the President describes are structures and transactions designed to package, negotiate, and shift risk. Understanding risk is the key to capital market participation. With an appreciation of risk, comes the ability to capitalize on opportunity; awareness of risk and the tools used to manage it facilitates the disposition of unwanted exposure.

Complex financial instruments, like derivatives, are tools designed to shift risk; they also make possible the assumption of risk where an investor is looking to enhance yield. President Obama identifies the repercussions of misunderstood risk shifting and its results on the broader economy. Key to appreciating how derivatives and other financial instruments contributed and arguably caused the financial crisis is looking at how they shift and concentrate risk; understanding their operation requires grasping how they are created, structured, and utilized.

The President describes the far-reaching effects of the misuse of derivatives and other financial instruments. He argues that a lack of understanding coupled with malign intent has affected the health of the broader economy; as market participants have become limited in their ability to access capital, the economy contracted:

Now, we all know the result . . . the failure of several of the world’s largest financial institutions; the sudden decline in available credit; the deterioration of the economy; the unprecedented intervention of the federal government to stabilize the financial markets and prevent a wider collapse; and most importantly, the terrible pain in the lives of ordinary Americans. And there are retirees who’ve lost much of their life savings, families devastated by job losses, small businesses forced to shut their doors.²

1. *Remarks by the President, 21st Century Financial Regulatory Reform*, June 17, 2009, East Room, The White House, available at http://www.whitehouse.gov/the_press_office/Remarks-of-the-President-on-Regulatory-Reform.

2. *Id.*

The capital markets provide market participants the opportunity to access funding and make investments; financial instruments are the tools of that marketplace. As market participants failed over the last two years, the repercussions were felt throughout the economy. President Obama identifies financial instrument abuse and misuse as stimuli for government intervention and regulatory reform. The President declares a need for “. . . sweeping overhaul of the financial regulatory system, a transformation on a scale not seen since the reforms that followed the Great Depression.”³

It is clear that the events of the financial crisis have made people feel defenseless. Desire to stop the bleeding in the economy has given way to Executive steps to reconstruct regulation. Indeed, the U.S. Treasury Department, in its white paper *Financial Regulatory Reform: A New Foundation*,⁴ describes Americans’ suffering as the motivation for regulatory reconstruction:

Over the past two years we have faced the most severe financial crisis since the Great Depression. Americans across the nation are struggling with unemployment, failing businesses, falling home prices, and declining savings.⁵

Whatever the origins of the momentum, one thing is clear: new regulation is coming.

President Obama’s administration is not the first to encourage revision of the current regulatory structure. Indeed, even when the broader economy was relatively healthy, Hank Paulson, the Secretary of the Treasury under President George W. Bush, advanced the notion that “. . . our complex and fragmented regulatory system complicates an already difficult situation. . . . This patchwork structure should be streamlined and modernized.”⁶ Secretary Paulson further describes the target for future regulatory initiatives: “Our goal is to improve oversight and allow our financial services industry to better adapt and compete in the global marketplace.” In recognizing that the need for new regulation predates recent events, President Obama’s Treasury puts the current economic crisis into broader historical context:

The roots of this crisis go back decades. Years without a serious economic recession bred complacency among financial intermediaries and investors. Financial challenges such as the near-failure of Long-Term Capital Management and the Asian Financial Crisis had minimal impact on economic growth in the U.S., which bred exaggerated expectations about the resilience of our

3. *Id.*

4. *Financial Regulatory Reform: A New Foundation*, U.S. Treasury, June 17, 2009, available at http://www.financialstability.gov/docs/regs/FinalReport_web.pdf.

5. *Id.* at page 2

6. Remarks by Secretary Henry M. Paulson, Jr. on Current Housing and Mortgage Market Developments, October 16, 2007, Georgetown University Law Center, available at <http://www.treas.gov/press/releases/hp612.htm>.

financial markets and firms. Rising asset prices, particularly in housing, hid weak credit underwriting standards and masked the growing leverage throughout the system.⁷

Like his predecessor, Secretary Timothy Geithner describes the current regulatory framework as “A patchwork of supervisory responsibility; loopholes that allowed some institutions to shop for the weakest regulator; and the rise of new financial institutions and instruments that were almost entirely outside the government’s supervisory framework left regulators largely blind to emerging dangers. . . . regulators were ill-equipped to spot system-wide threats because each was assigned to protect the safety and soundness of the individual institutions under their watch. None was assigned to look out for the system as a whole.”⁸ Because of the current and fragmented regulatory regime, the Obama administration proposes establishing oversight to bring together the major federal financial regulatory agencies and removing from the Federal Reserve and other regulators, oversight responsibility for consumers.

Consumer protection would be handled under a new Consumer Financial Protection Agency and “will serve as the primary federal agency looking out for the interests of consumers of credit, savings, payment, and other financial products.”⁹ The Obama proposals meet five key policy objectives:

- (1) Promoting robust supervision and regulation of financial firms.
- (2) Establishing comprehensive supervision of financial markets.
- (3) Protecting consumers and investors from financial abuse.
- (4) Providing the government with the tools it needs to manage financial crises.
- (5) Raising international regulatory standards and improve international cooperation.

The challenge for a new regulatory regime is discouraging abuse while encouraging financial innovation; balancing efficiency and stability. The recent crisis strengthens the argument for new regulation. The administration thinks “. . . that the best way to keep the system safe for innovation is to have stronger protections against risk with stronger capital buffers, greater disclosure so investors and consumers can make more informed financial decisions, and a system that is better able to evolve as innovation advances and the structure of the financial system changes.”¹⁰

7. See note 5.

8. Treasury Secretary Tim Geithner’s Opening Statement before the U.S. Senate Banking Committee, Financial Regulatory Reform Opening Statement—As Prepared for Delivery, June 18, 2009.

9. *Id.*

10. *Id.*

xxii **PREFACE**

The first step to understanding new regulation is appreciating how the capital markets function and how financial instruments and derivatives work. Making informed economic, regulatory, and legal decisions requires facts about the products involved. *Capital Markets, Derivatives and the Law* provides the knowledge necessary for making informed, well-reasoned decisions about capital market participation, derivative utilization, and adherence to regulation present and future.

Alan N. Rechtschaffen
July 2009

INTRODUCTION

The year 2008 witnessed dramatic events affecting the global economy. Alan Greenspan called the 2008 market events a “once-in-a-century credit tsunami.”¹ Kevin Warsh, a Member of the Board of Governors of the Federal Reserve System recently observed that, “if you have seen one financial crisis, you have seen one financial crisis.”² It is the goal of this book to demonstrate the basic knowledge necessary to weather financial storms, providing the knowledge necessary to understand this and future financial crises and to participate in the capital markets.

Disruptions in the financial markets can be particularly disturbing to the global economy because these markets represent the opportunity for an enterprise to access capital. Ensuring the stability of the capital markets, therefore, is of paramount concern for the Federal Reserve and other financial market regulators in order to prevent systemic failure. By shoring up the capital markets, the Fed furthers its legislated goals of fostering an environment with maximum sustainable growth, maximum employment, and reasonable inflation.³ In this book we will look at the steps the Fed has taken to meet its goals while attempting to save the financial system. In that context we will describe financial instruments and the capital markets.

The capital markets play an essential role in the world economy, providing a means for individuals and institutions to access capital and to enhance return on their investments. Financial instruments also allow market participants to manage risk by shifting unwanted risk to a counterparty who might be more willing or able to manage or capitalize on that risk. A number of enterprises facilitate capital market participation, including banks, brokers engaging in securities and derivatives transactions, and government-sponsored entities.

In the wake of the recent mortgage crisis, the Federal Reserve has actuated its role of preventing systemic failure. The liquidity crisis, which resulted in part from inefficient and inappropriate lending practices and the creation of financial instruments supported by those pools of loans, provided the backdrop for the Federal Reserve to flex its muscle in its operation within the capital markets. By providing liquidity, the Federal Reserve seeks to facilitate the function of the capital markets. A functioning capital market is essential to providing financing

1. Alan Greenspan (Testimony before the House of Representatives Committee on Oversight and Government Reform, October 23, 2008).

2. Kevin Warsh (Q&A Session, New York University School of Law Global Economic Policy Forum 2008, April 11, 2008).

3. See Federal Reserve Act §2a, 12 U.S.C. §225a.

opportunities and allowing counterparties to negotiate risk packaged in a variety of financial instruments. By understanding the Fed and its function the reader will gain the knowledge necessary to understand the implications of Fed action.

During the recent market turmoil, the Federal Reserve has navigated United States' interest rates lower. Lower interest rates affect the pricing of all assets—interest rates are a vital component of asset valuation. Economic pricing depends on incorporating certain pricing assumptions into valuation models in order to determine the “value” of an asset. Value is determined by the future expected cash flow discounted at a rate that reflects the riskiness of the cash flow.

The recent headlines publicize the dangers inherent in capital market trading activities. The credit crunch roiling the financial markets and the breakneck speed at which giants of the industry went from major financial firms to illiquidity demonstrate the state of readiness required by corporate fiduciaries in managing capital market activities during times of economic weakness and crises in confidence. When markets behave in unpredictable ways, corporate fiduciaries may be held responsible to stakeholders (i.e., shareholders, regulators, and unit holders) for not taking steps to control or manage risk. Derivatives-related losses have heightened the awareness of directors, senior managers, regulators, customers, and shareholders to the potential risks associated with inefficient or insufficient risk management practices. This book serves as a primer to corporate fiduciaries to help them to take steps to prevent liability.

The book also describes litigation issues that arise out of capital market participation. A variety of litigation issues may arise in the context of financial instruments and derivatives transactions. These issues can involve violations of federal securities laws, commodities laws, failure to follow the rules set down by self-regulated organizations, common-law theories such as fraud and negligence, and violations of state securities laws. This book looks at those litigation issues.

Much of the work contained in this treatise was adapted from outstanding research by others. Where a regulator, a judge, or an economist describes a financial instrument or a situation better than the author might have, that commentary has been included in its entirety or paraphrased for editorial consistency. In synthesizing materials such as the speeches of the Chairman of the Board of Governors of the Federal Reserve System, leading judicial rulings, descriptions of financial instruments, and government sources, the book is designed to immerse the reader in the world of the capital markets. This book is based on the lectures of the author, incorporating the outstanding directed research of a number of his students in the areas of derivatives, risk management, and financial instruments.

This treatise offers real world examples of how financial instruments actually work. The outline and methodology is unique. The treatise is designed to cover the functioning of the credit markets and the various applicable regulatory regimes. The subject matter cuts across a number of legal disciplines including securities, corporate finance, banking, financial institutions, and commodities.

The cases are drawn to describe the subject matter and to demonstrate to the reader the functioning of the capital markets. The pedagogical approach is to describe financial instruments in a way that everyone can understand them. As capital market events evolve, it is impossible to freeze time. The treatise seeks to serve as a foundation for understanding world economic events as they unfold.

This book begins with an analysis of the global economic events in the 2008 market. Using the American economic crisis and mortgage meltdown as a starting point, the book discusses how the Federal Reserve participates in the capital markets to prevent systemic and market failures. This book goes on to describe various financial instruments affected by changes in interest rates and indicates the regulatory impact of utilizing a particular instrument to further financial goals.

This book covers the basic issues affecting capital markets trading, regulation, litigation, financial instruments, risk management, or internal controls without delving in so deep that the author cannot accomplish his primary goal of making the reader comfortable with the basics of capital market trading activities. This work focuses on outlining the basic knowledge that every participant in the capital markets should have of the complexity of the role of the Federal Reserve in domestic capital markets, the use of financial instruments to manage risk and to enhance yield, the steps corporations take to prevent operational risk, and the steps regulators take to prevent systemic risk.

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I. THE FEDERAL RESERVE

The Federal Reserve system was created by Congress under the Federal Reserve Act¹ “to provide for the establishment of Federal reserve banks, to furnish an elastic currency, to afford means of rediscounting commercial paper, to establish a more effective supervision of banking in the United States, and for other purposes.”²

1. Ch. 6, 38 Stat. 251 (1913).

2. See *The Federal Reserve System, Purposes and Functions* 2 (Board of Governors of the Federal Reserve System, 9th Ed. 2005), available at http://www.federalreserve.gov/pf/pdf/pf_1.pdf.

The Federal Reserve's duties include:

- Conducting the nation's monetary policy by influencing the monetary and credit conditions in the economy in pursuit of maximum employment, stable prices, and moderate long-term interest rates;
- Supervising and regulating banking institutions to ensure the safety and soundness of the nation's banking and financial system and to protect the credit rights of consumers;
- Maintaining the stability of the financial system and containing systemic risk that may arise in financial markets; and
- Providing financial services to depository institutions, the U.S. government, and foreign official institutions, including playing a major role in operating the nation's payments system.³

A. Recent Market Turmoil and the Fed's Reaction

In the wake of the recent mortgage crisis, the Federal Reserve has actuated its role of preventing systemic failure. The liquidity crisis referenced in Chapter 1 of this treatise, which resulted from inefficient lending practices and the creation of financial instruments supported by those pools of loans, provided the backdrop for the Federal Reserve to flex its muscle in its operation within the capital markets. By providing liquidity, the Federal Reserve seeks to facilitate the function of the capital markets. A functioning capital market is essential to providing financing opportunities and allowing counterparties to negotiate risk packaged in a variety of financial instruments.

Federal Reserve Chairman Ben S. Bernanke recently described the mortgage crisis and the Fed's reaction in creating a new Term Auction Facility to provide liquidity for the financial markets in the United States.⁴ Bernanke noted the strain that the financial markets in the United States and a number of other industrialized countries have been under since the summer of 2007. This turmoil has affected the broader economy, principally through its effects on the availability and terms of credit to households and businesses. This has made it difficult for investors to assess future earnings and asset values, and has made forecasting the course of the economy even more difficult than usual.

In June 2006, the target for the federal funds rate was 5.25 percent—a level that, in the judgment of the Federal Open Market Committee (FOMC), would best promote the policy objectives given to it by Congress.⁵ The economy continued to perform well into 2007, but was faced with a challenge in the form of a

3. *Id.* at 1.

4. Ben S. Bernanke, *Financial Markets, the Economic Outlook, and Monetary Policy*, (Remarks at the Women in Housing and Finance and Exchequer Club Joint Luncheon, Washington, D.C., January 10, 2008.) The complete text of the remarks can be found at <http://www.federalreserve.gov/newsevents/speech/bernanke20080110a.htm>.

5. *See* Sec. IV, *infra*.

sharp and protracted correction in the housing market, which followed a multi-year boom in housing construction and house prices. This housing contraction would have been considerably milder had it not been for adverse developments in the subprime mortgage market, in particular the high and rising delinquency rates of subprime mortgages, especially those with adjustable interest rates (subprime ARMs):

Although poor underwriting and, in some cases, fraud and abusive practices contributed to the high rates of delinquency . . . in the subprime ARM market, the more fundamental reason for the sharp deterioration in credit quality was the flawed premise on which much subprime ARM lending was based: that house prices would continue to rise rapidly. When house prices were increasing at double-digit rates, subprime ARM borrowers were able to build equity in their homes during the period in which they paid a (relatively) low introductory (or “teaser”) rate on their mortgages. Once sufficient equity had been accumulated, borrowers were often able to refinance, avoiding the increased payments associated with the reset in the rate on the original mortgages. However, when declining affordability finally began to take its toll on the demand for homes and thus on house prices, borrowers could no longer rely on home-price appreciation to build equity; they were accordingly unable to refinance and found themselves locked into their subprime ARM contracts. Many of these borrowers found it difficult to make payments at even the introductory rate, much less at the higher postadjustment rate. The result . . . has been rising delinquencies and foreclosures, which will have adverse effects for communities and the broader economy as well as for the borrowers themselves.⁶

As a result, the availability of credit for nonprime borrowers has disappeared, and few new loans are being made. The loss of this source of demand for housing has exacerbated the downturn, adding to the sharp decline in new homebuilding and putting downward pressure on house prices. The addition of foreclosed properties to the inventories of unsold homes is further weakening the market. These losses in the subprime mortgage market have triggered a substantial reaction in other financial markets. Following a period of more aggressive risk-taking, the subprime crisis has led investors to reassess credit risks more broadly and, perhaps, to become less willing to take on risks of any type. Investors have also been concerned that, by further weakening the housing sector, the problems in the subprime mortgage market may lead overall economic growth to slow. Moreover, the subprime mortgage crisis has contributed to a considerable increase in investor uncertainty about the appropriate valuations of a broader range of financial assets, not just subprime mortgages.

6. Bernanke, *supra* note 1.

Even as their balance sheets expanded, banks began to report large losses, reflecting the sharp declines in the values of mortgages and other assets. Thus, banks too became subject to valuation uncertainty. . . . The combination of larger balance sheets and unexpected losses also resulted in a decline in the capital ratios of a number of institutions. Several have chosen to raise new capital in response, and the banking system retains substantial levels of capital. However, on balance, these developments have prompted banks to become protective of their liquidity and balance sheet capacity and thus to become less willing to provide funding to other market participants, including other banks. As a result . . . banks have become more restrictive in their lending to firms and households. More expensive and less available credit seems likely to impose a measure of financial restraint on economic growth.⁷

Market strains have been serious, and they continue to pose risks to the broader economy. The Federal Reserve has responded with two courses of action: (1) efforts to support market liquidity and functioning, and (2) the pursuit of macroeconomic objectives of maximum sustainable employment and price stability through monetary policy.⁸ In order to support market liquidity, the following has occurred:

The Federal Reserve [has] cut the discount rate—the rate at which it lends directly to banks—by 50 basis points, or 1/2 percentage point, and it has since maintained the spread between the federal funds rate⁹ and the discount rate at 50 basis points, rather than the customary 100 basis points. The Fed also adjusted its usual practices to facilitate the provision of discount window financing for as long as thirty days, renewable at the request of the borrower. Loans through the discount window differ from conventional open market operations in that the loans can be made directly to individual banks. In contrast, open market operations are arranged with a limited set of dealers of government securities. In addition, whereas open market operations involve lending against government and agency securities, loans through the discount window can be made against a much wider range of collateral.

The changes to the discount window were designed to assure banks of the availability of a backstop source of liquidity. Although banks borrowed only moderate amounts at the discount window, they substantially increased the amount of collateral they placed with Reserve Banks. This and other factors suggest that these changes to the discount window facility, together with the

7. *Id.*

8. See Sec. IV, *infra*, for more detailed discussion of how the Federal Reserve achieves these objectives.

9. See Sec. II.C., *infra*.

statements and actions of the FOMC, had some positive influence on market conditions.¹⁰

In addition, the Federal Reserve recently introduced a term auction facility, or TAF, through which prespecified amounts of discount window credit can be auctioned to eligible borrowers.¹¹ This and other liquidity-related actions appear to have had some positive effects.

The Federal Reserve continues to use monetary policy (that is, the management of the short-term interest rate) as its best tool for pursuing its macroeconomic objectives, namely to promote maximum sustainable employment and price stability.¹² In total, the FOMC has brought the funds rate down by several percentage points from its level just before financial strains emerged. By lowering short-term interest rates, the Fed hopes to stimulate the economy. As interest rates approach zero, however, the Fed has found it necessary to take extraordinary measures in its monetary policy by purchasing longer term securities such as U.S. Treasury bonds and mortgage-backed debt in order to influence the rates that matter most—those that affect the purchase of longer-term assets (i.e., longer-term interest rates).

The Federal Reserve took these actions to help offset the restraint imposed by the tightening of credit conditions and the weakening of the housing market. However, in light of recent changes in the outlook for and the risks to growth, additional policy easing may well be necessary. The Committee will, of course, be carefully evaluating incoming information bearing on the economic outlook. Based on that evaluation, and consistent with our dual mandate, we stand ready to take substantive additional action as needed to support growth and to provide adequate insurance against downside risks.¹³

B. Background

Providing liquidity to the market allows continued participation and transactions in the myriad of financial instruments that are the backbone of a healthy economy. Financial instruments are economic tools allowing users to manage risk or to enhance yield (make money). Financial instruments are also used as a means of accessing capital from investors. Individuals and institutions use financial instruments as a means of furthering economic goals. Central banks use these same financial instruments as tools for implementing monetary policy.

10. Bernanke, *supra* note 1.

11. See the complete text of Bernanke's remarks, <http://www.federalreserve.gov/newsevents/speech/bernanke20080110a.htm>, for a complete discussion of TAF and its effects.

12. See Sec. IV.B., *infra*.

13. Bernanke, *supra* note 1.

The first step to understanding an individual financial transaction or a financial instrument is to determine its economic purpose and the goal that particular financial transaction or instrument is designed to achieve. Changes in the economy have a significant impact on the value of a particular financial instrument. Federal governments and private industry release data describing changes in the economy. Each economic data point gives capital market participants insight into the direction of interest rates.

Wall Street focuses on the myriad of financial reports to recalibrate interest variables in financial formulas. Central Banks influence interest rates to control economies. By making money more expensive (raising interest rates) economies slow because there is less money available to invest. Central banks will readjust interest rates to the best of their ability as a clearer picture of the economy emerges.

The United States economy is the sum of all the assets, liabilities, and investment decisions made by investors in the United States. Asset pricing is based on mathematical valuation models and market perceptions. Incorporated into these models are certain assumptions about the future direction of the economy. These assumptions might be as simple as how many iPods Apple will sell next year, or as complex as the repercussions of an inverted yield curve.

Underpinning any formula for the determination of the value of a particular asset are the prevailing interest rates in the market for capital. The simplest component of this variable is the risk free interest rate, to which all other returns on capital might be compared. The risk free interest rate is determined by an analysis of the interest paid by the United States Government on its short-term obligations. These Federal IOU's are considered virtually risk free because they are of short duration, are extremely liquid, and have virtually no credit risk.

During the recent financial market crises, rates on these short-term U.S. Government IOU's have reached historic lows. Indeed, auctions for new treasury bills have been effectuated at a return of absolute zero to the investor, and Treasury securities in the secondary market are trading at negative interest rates. A negative interest rate means that the purchaser is willing to *pay* for the privilege of owning treasury securities to assure as close to absolute credit security as possible. The crisis in confidence in the broader financial markets has caused investors to gravitate to absolute safety in terms of credit risk. Within the credit markets, that absolute safety can only be achieved in the form of short term Treasury obligations. So serious has the crisis in confidence become that investors have, in the waning months of 2008, been willing to accept negative yields on Treasury securities, thereby paying the seller for the privilege of owning treasury bills.

Historically, prior to the crisis of 2008, the yields on the shortest-term interest bearing financial instruments were most directly affected by the activities of the Federal Open Market Committee of the Federal Reserve in its targeting of the federal funds rate. In November 2008 the Federal Reserve announced that it

will begin a process of purchasing longer term instruments issued by Government Sponsored Entities (GSEs). The Fed described this decision as a means to reduce the cost and increase the availability of credit for the purchase of houses, which in turn should support housing markets and foster improved conditions in financial markets more generally. On March 18, 2009, the Fed announced that it would be purchasing U.S. Treasury bonds to influence longer-term rates and loosen credit conditions:

In these circumstances, the Federal Reserve will employ all available tools to promote economic recovery and to preserve price stability. The Committee will maintain the target range for the federal funds rate at 0 to ¼ percent and anticipates that economic conditions are likely to warrant exceptionally low levels of the federal funds rate for an extended period. To provide greater support to mortgage lending and housing markets, the Committee decided today to increase the size of the Federal Reserve's balance sheet further by purchasing up to an additional \$750 billion of agency mortgage-backed securities, bringing its total purchases of these securities to up to \$1.25 trillion this year, and to increase its purchases of agency debt this year by up to \$100 billion to a total of up to \$200 billion. Moreover, to help improve conditions in private credit markets, the Committee decided to purchase up to \$300 billion of longer-term Treasury securities over the next six months. The Federal Reserve has launched the Term Asset-Backed Securities Loan Facility to facilitate the extension of credit to households and small businesses and anticipates that the range of eligible collateral for this facility is likely to be expanded to include other financial assets. The Committee will continue to carefully monitor the size and composition of the Federal Reserve's balance sheet in light of evolving financial and economic developments.¹⁴

The Fed uses its open-market operations to affect the broader economy. To understand how the Fed affects the economy through its open market operations, it is necessary to understand how federal funds work. Federal reserves are traded in the form of Federal Funds between banks, as they are needed to meet Federal Reserve Capital Requirements. By targeting the rate at which transactions in these reserves are conducted between member institutions, the Federal Reserve can affect the amount of money flow in the economy. By studying economic data, the Federal Reserve makes determinations on the amount of money flow it believes will be best for consistent economic expansion while limiting inflation. The process of targeting the federal funds rate is fluid and will adjust as economic conditions change.

When the Federal Reserve changes the target rate at which federal fund transactions are conducted between participant depository institutions, asset

14. Federal Reserve Press Release: March 18, 2009.



valuations are affected. A change in perception as to the direction of the Federal Reserve's approach can have a ripple effect on all asset valuation models; these effects are not limited to the yield on short-term, risk-free investments. Since all long-term investments are really a series of short-term investments melded together, a subtle change in short term interest rates can affect the value of stock prices, a house, a car or even a complex long term derivative financial instrument.

Because of the almost immediate effect on the underlying assumptions underpinning the valuation of assets, the Federal Reserve has unique and far-reaching control over the growth of the economy. The mere expectation of lower interest rates at the Federal Reserve can have an immediate and profound impact on investment decisions. Therefore, the capital markets are uniquely focused on the activities of the Federal Reserve, not only on the ultimate decisions taken at meetings of the Federal Open Market Committee, but also on the myriad of data points released in the economy that might affect the Federal Reserve's interest rate bias. This near obsession with the Federal Reserve's interest rate posture leads capital market participants to closely scrutinize the speeches of Federal Reserve officials and the data upon which their decisions are made. It is for these reasons that market participants closely follow economic data releases.

Generally, economic news or statements by officials have the greatest effect on short-term interest rates; the effect of a change in Federal Reserve posture directly and immediately affects short-term financial instruments.¹⁵ Historically, the effects on longer-term investments are visible as market participants change their underlying assumptions about market valuations. By direct intervention in longer-term capital market trading through the purchasing securities issued by treasuries and GSEs, the Federal Reserve hopes to be able to directly affect longer-term interest rates and directly impact the market through market participation. The Fed described its decision to purchase longer-term securities as follows:

The Federal Reserve announced on Tuesday that it will initiate a program to purchase the direct obligations of housing-related, government-sponsored enterprises (GSEs)—Fannie Mae, Freddie Mac, and the Federal Home Loan Banks—and mortgage-backed securities (MBS) backed by Fannie Mae, Freddie Mac, and Ginnie Mae. Spreads of rates on GSE debt and on GSE-guaranteed mortgages have widened appreciably of late. This action is being taken to reduce the cost and increase the availability of credit for the purchase of houses, which in turn should support housing markets and foster improved conditions in financial markets more generally.

15. See THE FEDERAL RESERVE SYSTEM, PURPOSES AND FUNCTIONS 17 (Board of Governors of the Federal Reserve System, 9th Ed. 2005), <http://www.federalreserve.gov/pf/pf.htm>.



Purchases of up to \$100 billion in GSE direct obligations under the program will be conducted with the Federal Reserve's primary dealers through a series of competitive auctions and will begin next week. Purchases of up to \$500 billion in MBS will be conducted by asset managers selected via a competitive process with a goal of beginning these purchases before year-end. Purchases of both direct obligations and MBS are expected to take place over several quarters. Further information regarding the operational details of this program will be provided after consultation with market participants.¹⁶

II. THE ROLE OF THE FEDERAL RESERVE IN DOMESTIC CAPITAL MARKETS

A. The Federal Reserve Banking System

The United States Constitution (Article I, Section 8) gives Congress the power over money and the regulation of the value of the American currency. As a result of financial panics in the nineteenth and early twentieth centuries, which led to bank failures and business bankruptcies that severely disrupted the economy, Congress created the Federal Reserve and delegated those responsibilities to it.¹⁷ Congress passed the Federal Reserve Act¹⁸ in 1913 "to provide for the establishment of Federal reserve banks, to furnish an elastic currency, to afford means of rediscounting commercial paper, to establish a more effective supervision of banking in the United States, and for other purposes." A network of twelve Federal Reserve banks and their branches currently carry out a variety of Federal Reserve System functions, including operating a nationwide payments system. Each Reserve bank also acts as a depository for the banks in its own District.¹⁹ These banks, although heavily regulated, are independent, privately owned, and locally controlled corporations.²⁰

I. Composition The Federal Reserve System comprises a central Board of Governors and twelve regional Reserve banks. Monetary policy is set by the Federal Open Market Committee, which consists of the members of the Board of Governors, the president of the Federal Reserve Bank of New York, and presidents of four other Federal Reserve Banks, who serve on a rotating basis.²¹ Monetary policy is implemented through open market operations, that is,

16. Federal Reserve Press Release, November 25, 2008. See Appendix B, *infra*, for further information regarding this program.

17. See THE FEDERAL RESERVE SYSTEM, PURPOSES AND FUNCTIONS I–2.

18. See 12 U.S.C. §221 *et seq.*

19. See THE FEDERAL RESERVE SYSTEM, PURPOSES AND FUNCTIONS 6.

20. Lewis v. United States, 680 F.2d 1239 (9th Cir. 1982).

21. See THE FEDERAL RESERVE SYSTEM, PURPOSES AND FUNCTIONS 3.

the purchase and sale of government securities.²² Open market operations are funded with reserves supplied by participating banks, and these operations are profitable for the Federal Reserve. The Federal Reserve banks also provide check clearing and other banking services to financial institutions.²³

2. Purpose When the System was founded, its principal legal purpose was to provide “an elastic currency,” by which was meant a supply of credit that could fluctuate as needed to meet seasonal and other changes in credit demand. In this regard, the Federal Reserve was an immediate success. The seasonal fluctuations that had characterized short-term interest rates before the founding of the Federal Reserve were almost immediately eliminated, removing a source of stress from the banking system and the economy. The Federal Reserve today retains important responsibilities for banking and financial stability, but its formal policy objectives have become much broader. Its current mandate, set formally in law in 1977 and reaffirmed in 2000, requires the Federal Reserve to pursue three objectives through its conduct of monetary policy: maximum employment, stable prices, and moderate long-term interest rates.²⁴

The Federal Reserve has the responsibility to issue paper money. It serves as banker for both the government and commercial banks, and acts as lender of last resort.

As the lender of last resort, the bank has regulatory responsibilities. The Federal Reserve requires member banks to maintain reserve deposits. The Federal Reserve, in managing Reserve Deposits, manages monetary policy.²⁵

3. Responsibilities The Federal Reserve has two broad sets of responsibilities. First, it has a mandate from the Congress to promote a healthy economy—specifically, maximum sustainable employment, stable prices, and moderate long-term interest rates. Second, since its founding, the Federal Reserve has been entrusted with the responsibility of helping to ensure the stability of the financial system. The Federal Reserve likewise has two broad sets of policy tools. First, it makes monetary policy, mainly by targeting the overnight interest rate, that is, the federal funds rate.²⁶ Second, the Federal Reserve has a range of powers with respect to financial institutions, including rule-making powers, supervisory oversight, and a lender-of-last resort function made operational by the its ability to lend through its discount window. The Federal Reserve focuses its monetary policy instruments on achieving its macro goals—price stability

22. See Sec. IV, *infra*, for more detailed discussion.

23. See generally 12 U.S.C. §§221 *et seq.*

24. Ben S. Bernanke, *The Benefits of Price Stability*, (remarks at the Center for Economic Policy Studies and on the Occasion of the Seventy-Fifth Anniversary of the Woodrow Wilson School of Public and International Affairs, Princeton University, Princeton, New Jersey, February 24, 2006).

25. See Sec. IV, *infra*, for more detailed discussion.

26. See Sec. IV, *infra*, for more detailed discussion.

and maximum sustainable employment—while using its regulatory, supervisory, and lender-of-last resort powers to help ensure financial stability.²⁷

B. Federal Funds Transactions

Federal Reserve depository institutions actively trade balances (federal funds) held in their accounts at an interest rate known as the “federal funds rate.”²⁸ Federal funds market participants include commercial banks, thrift institutions, agencies and branches of banks in the United States, federal agencies, and government securities dealers. Transactions in federal funds are conducted directly between banks and through brokers. Either the borrower or the lender may initiate the transaction. Community banks find willing counterparties in the form of regional correspondents. Therefore, selling banks are able to easily shift excess funds to borrowing institutions.

Since banks are not always able to predict the amount of excess reserves they will have each day, federal fund transactions are generally conducted on an overnight basis. The duration of a contract in federal funds ranges between overnight (“continuing contracts”) to one year (“term federal funds”). Term federal funds are subject to a 15 percent lending limit with anyone counterparty.

Continuing contracts are automatically renewed unless either the buyer or the seller terminates the contract. Correspondents who purchase overnight federal funds from respondent banks typically employ this type of arrangement. Unless notified to the contrary by the respondent, the correspondent will continually roll the interbank deposit into federal funds, creating a longer-term instrument of open maturity. A bank may sell overnight federal funds to any counterparty without limit. Sales of federal funds with maturities of one day or less or under continuing contract have been specifically excluded from lending limit restrictions.²⁹

The interest payments on continuing-contract federal funds loans are computed from a formula based on each day’s average federal funds rate. Federal funds transactions are generally unsecured loans and expose the lender to credit risk. Banks purchase federal funds up to the line limits set by the selling bank. Since these line limits are not generally disclosed, purchasing banks might test line limits to establish parameters for transactions when they are actually needed. The Federal Reserve bank examiners look to see that banks evaluate the credit quality of any bank to whom they sell federal funds and set a maximum line for each potential counterparty. If the “lender” is not comfortable with the

27. Ben S. Bernanke, *Asset-Price “Bubbles” and Monetary Policy*, (remarks before the New York Chapter of the National Association for Business Economics, New York, New York, October 15, 2002).

28. See THE FEDERAL RESERVE SYSTEM, PURPOSES AND FUNCTIONS 16.

29. 12 CFR 32.

creditworthiness of the borrower, the correspondent bank selling the reserves may require collateral from its counterparty.

Transactions in federal funds are accomplished exclusively using Federal Reserve Bank accounts. The Federal funds are transferred between the transacting institutions when the selling bank authorizes its district Federal Reserve Bank to debit its reserve account and credit the reserve account of the buying institution. The lender bank informs its correspondent that it intends to sell funds. In response, the correspondent bank purchases funds from the lender by reclassifying the respondent's demand deposits as federal funds purchased. The respondent does not have access to its deposited money as long as it is classified as federal funds on the books of the correspondents. The banks then use the Federal Reserve's electronic funds and securities transfer system "Fedwire" to complete the transaction. Upon maturity of the loan, the respondent's demand deposit account is credited for the total value of the loan plus interest. On the maturity date, the buying institution uses Fedwire to return the funds purchased plus interest.

The federal funds rate is a key rate for the money market because all other short-term rates are linked to it. The difference between the bid and offer prices of federal funds is usually small because of the liquidity of the market place. The overnight market is highly liquid. As there is no secondary market for term federal funds rates, their liquidity is directly related to their maturity.

Since federal funds are generally of a short-term duration, banks rarely hedge exposure to federal fund contracts. There is a derivatives market for federal funds and, where necessary, a bank wishing to hedge its federal funds exposure might use the federal funds futures market.

C. The Federal Funds Rate

The Federal Reserve implements its control over the federal funds interest rate by affecting the market for deposits held at the Federal Reserve banks. The "targets" the Federal Reserve uses to affect the desired interest rate outcome have evolved over time. During the 1970s, the Federal Reserve had as its objective affecting the growth of the monetary aggregate. The monetary aggregate represents the amount of money in the economy; by affecting the monetary aggregate, the Federal Reserve believed that it could control how much money was available for investment and spending. It was believed that the amount available to the economy had a direct and ongoing relationship to economic activity. Raising and lowering the fed fund target interest rates can effectively control this aggregate by affecting the amount of money financial institutions have on deposit with the Federal Reserve banks. Lowering interest rates, for example, makes having money on deposit less attractive, thereby influencing the investor's decision whether to keep money in the bank.

The problem with the monetary aggregate goal-oriented approach was that the Federal Reserve was often forced to make large rate movements to bring the monetary aggregate back into line. Because of the profound impact of substantial changes in the federal funds rate, the Federal Reserve was often unable to react to inflationary pressures resulting from oil price shocks and excessive monetary growth over the decade.³⁰

By the end of the 1970s, the Federal Reserve began to focus on controlling the amount of reserves held in the vaults of depository institutions. The goal of the Federal Reserve was no longer to affect the amount of aggregate money in the economy but to affect the money held on deposit. By targeting a specific amount of unborrowed money, banks would be required to pay higher interest to shore up their reserves, thereby affecting prevailing interest rates. The Federal Reserve could influence the rate that the market would bear for borrowing funds by affecting the discount window borrowing rate.

The discount window is the means of extending credit from the Federal Reserve to financial institutions when all other borrowing opportunities have been exhausted. During the 2008 crisis, the discount window has been opened to primary dealers of government securities in order to flood the capital markets with liquidity. When, however, market uncertainties discouraged financial institutions from borrowing from the discount window, the Federal Reserve sought a more direct means of influencing the interest rates financial institutions used to borrow funds from each other. In July 1995, the Federal Reserve announced that it would directly target the rate banks charge each other to borrow deposits held at Federal Reserve Banks.³¹

In the wake of recent market turmoil caused by the mortgage crisis, the Federal Reserve opened up a program similar to the discount borrowing offered to member banks to its primary dealers. Primary dealers are banks and securities broker-dealers that trade in U.S. Government securities with the Federal Reserve Bank of New York. To reduce the potential for counterparties and creditors to make a run on other primary dealers, the Federal Reserve used its emergency lending authority to create a new Term Auction Facility that provided the primary dealers with a liquidity backstop similar to the discount window available to banks in generally sound financial condition.³²

D. Banks and Federal Funds

Control over the banking system generally and over federal funds in particular allows the Federal Reserve to influence interest rates and implement monetary

30. See THE FEDERAL RESERVE SYSTEM, PURPOSES AND FUNCTIONS 28.

31. *Id.* at 29.

32. See Sec. I.A., *supra*.

policy. Influence over capital market liquidity allows the Federal Reserve to inject liquidity into its member banks and now to its primary dealers. The effect of providing access to liquidity can be seen in the following example:

Assume, for example, a hypothetical bank, USA First America Bankcorp (USAFB) offering depositors two options to attract their money:

1. Depositors can buy a six month CD paying 2.5 percent on an annualized basis, or
2. Depositors can deposit funds in an interest-bearing checking account paying 0.5 percent.

USAFB has two customers: Big Money Incorporated and Able Lotsamoney. Big Money Incorporated (BMI) deposits three million dollars into the CD and ten million dollars into the checking account. USAFB uses the money from BMI to make loans. The bank offers two options for borrowers who are taking on a mortgage:

1. A fixed-rate mortgage at 7 percent for ten years or
2. A floating rate mortgage at the Federal Funds Rate plus 1 percent (100 basis points).

Able Lotsamoney, a successful Chicago trader, decides to buy a number of condo apartments on Lake Shore Drive for fifteen million dollars. Able takes a thirteen million dollar loan to be able to purchase the condos and agrees to pay the floating rate.

To USAFB, the loan is an asset and represents capital of the bank, similar to other assets such as its building, computers, and desks. The Federal Reserve requires that USAFB maintain sufficient capital to meet obligations should depositors like BMI wish to withdraw their funds from their checking account.

In addition to capital requirements, the Federal Reserve Act requires “each depository institution [to] maintain reserves against its transaction accounts as the Board may prescribe by regulation solely for the purpose of implementing monetary policy.”³³ In order to comply with this requirement, known as “Regulation D,” USAFB must maintain in vault cash or on deposit with its local Federal Reserve Bank 3 percent of its current liabilities on checking account deposits between 8.5 million and 10 million dollars.³⁴ Since the CD is a time deposit, it is not subject to Regulation D. USAFB, therefore, must maintain

33. 12 U.S.C. §461.

34. *Regulation D: Reserve Requirements of Depository Institutions*, 12 CFR 204 §204.9. This regulation specifies the reserve ratios for net transaction accounts, nonpersonal time deposits, and eurocurrency liabilities, and also identifies the amount of net transaction deposits reservable at three percent and the amounts of reservable liabilities that are exempt from reserve requirements. These amounts are subject to adjustment every year to reflect changes in the monetary aggregate.

\$45,000 (3% of 1.5 million dollars) on deposit with its local Federal Reserve Bank or in cash in its vault in order to meet its Regulation D reserve requirements.³⁵

USAFB profits by collecting the difference between the amount of interest it pays to BMI and the amount of interest it collects from the loan to Lotsamoney. Since all its cash is committed to the transaction with Lotsamoney, USAFB will need to purchase Federal Funds (\$45,000 dollars worth) to meet its Regulation D requirements. That purchase will function as a loan of Federal funds and will be acquired at the current Federal funds rate.

III. ECONOMIC INDICATORS AND INTEREST RATES

A. The Economic Calendar

The Federal Reserve targets and maintains the federal funds rate based on its perception of the economy. Banks use this targeted rate to loan each other excess federal reserves. The Federal Reserve and markets participants carefully watch the release of economic data in order to gauge how the Federal Reserve will adjust the target federal funds rate. The economic calendar includes Federal Reserve meeting dates, release of market sensitive data, and important economic information affecting our economy.

A typical week of financial information releases is represented in the next section.

B. Key Economic Statistics

Date	Statistic	For	Actual	Forecast	Market Expects	Prior
13-Jul	Export Prices ex-ag.	Jun	-0.10%	NA	NA	-0.40%
13-Jul	Import Prices ex-oil	Jun	-0.40%	NA	NA	-0.30%
13-Jul	Trade Balance	May	-\$55.3B	-\$56.0B	-\$57.0B	-\$56.9B
13-Jul	Treasury Budget	Jun	\$22.4B	\$21.0B	\$28.0B	\$19.1B

35. Regulation D requirements have nothing to do with the safety of the bank. The Federal Reserve has other requirements regarding sufficient working capital, which are not relevant to a discussion of Regulation D or federal funds. The exclusive purpose of the Regulation D requirement is to allow the Federal Reserve to affect interest rates by targeting the Federal funds rate and by participating in open market operations to achieve that rate.

Date	Statistic	For	Actual	Forecast	Market Expects	Prior
14-Jul	Core CPI	Jun	0.10%	0.20%	0.20%	0.10%
14-Jul	CPI	Jun	0.00%	0.10%	0.30%	-0.10%
14-Jul	Initial Claims	Jun	336K	325K	322K	320K
14-Jul	Retail Sales	Jun	1.70%	0.90%	0.90%	-0.30%
14-Jul	Retail Sales ex-auto	Jun	0.70%	0.60%	0.50%	0.00%
15-Jul	Business Inventories	May	-	0.20%	0.40%	0.30%
15-Jul	Core PPI NY Empire State	Jun	-	0.20%	0.10%	0.10%
15-Jul	Index	Jul	-	10	9	11.6
15-Jul	PPI	Jun	-	-	-	0.20%
15-Jul	Capacity Utilization	Jun	-	79.70%	79.60%	79.40%
15-Jul	Industrial Production	Jun	-	0.50%	0.40%	0.40%
15-Jul	Michigan Sentiment	Jul	-	95	94.5	96

Each economic data point provides a picture of the health of the economy. By analyzing this data, the Federal Reserve determines the current domestic economic condition. In response to each data release, the market will adjust its perception of how assets should be valued. There are several key economic releases that economists use to analyze the economy:

Import Price Indexes. Import price indexes measure the average change in import prices of a fixed basket of goods. The prices are generally either “free on board” (f.o.b.) foreign port or “cost, insurance, and freight” (c.i.f.) United States port transaction prices, depending on the practices of the individual industry.³⁶

Balance of Trade. The balance of trade reflects the difference in the value of exports and imports in the American economy. Where exports exceed imports there is a trade surplus; the reverse is a trade deficit. The United States Census Bureau and the United States Bureau of Economic Analysis, through the Department of Commerce, release the statistics of the total monthly exports and imports.³⁷

36. See U.S. Bureau of Labor Statistics definition at <http://data.bls.gov/>.

37. See Bureau of Economic Analysis at www.bea.gov.

Treasury Monthly Budget. Issued by the United States Treasury, the Treasury Monthly Budget contains information on the monthly budget deficit. Generally, a growing deficit will increase the yield on United States Government bonds. The effect of a trade deficit is that the Treasury will have to issue more bonds to finance its operations. As the government issues more bonds, the new supply pressures bond price, thereby pushing interest rates higher.

Consumer Price Index (CPI). The Consumer Price Index, issued by The Bureau of Labor Statistics (BLS) demonstrates changes in retail prices that American consumers paid for a basket of goods. This report provides a measure of domestic economic activity. The BLS gathers price information from selected department stores, supermarkets, service stations, doctors' offices, rental units, and so forth. About 80,000 prices are recorded in 87 urban areas. The information contained in the CPI provides an accurate picture of the increase or decrease in prices that consumers are paying for their goods.³⁸

Initial Jobless Claims. The United States Department of Labor reports on the number of people who have filed for unemployment insurance or unemployment benefits during the prior week. By analyzing these statistics, the Federal Reserve and the capital markets are better able to understand the employment picture in the United States on a weekly basis. Because maximum unemployment is a key goal of the Federal Reserve, these statistics provide valuable insight into the health of the economy and the resulting direction of interest rates.

Retail Sales. A monthly report issued by the United States Census Bureau measures the cost of all goods sold by retailers based on a sampling of various retail stores. This report is a solid indication of the Consumer Confidence Index, a monthly survey of 5,000 households designed to measure Americans' optimism about their current and future situation, which is issued by the Conference Board, a research organization for businesses. Since automobile sales can be quite volatile but are nonetheless included in the weekly retail sales report, many economists look at the retail sales report but exclude automobile sales.

Business Inventories. A monthly report issued by the United States Department of Commerce measures the change on a month-to-month basis in manufacturers,' retailers,' and wholesalers' inventories. These changes are reflected on a percentage basis. The ratio of inventories to sales is particularly important because an increase in the ratio of inventory to sales might indicate a slow down in the economy.

Producer Price Index (PPI). Released monthly by the Bureau of Labor Statistics, this index measures changes in prices on the wholesale level. Included in the PPI are prices of food, certain commodities, and energy products. The PPI, therefore, is a direct measure of inflation on a wholesale level. Increases in wholesale prices are likely to carry over into the consumer market place and may

38. See U.S. Department of Labor Bureau of Labor Statistics at <http://www.bls.gov>.

have an impact on consumer spending and the CPI. The core CPI that excludes food and energy (components which are generally more price volatile) is usually more indicative of macroeconomic inflationary trends. When inflation increases, yields rise, and the market will confirm its reaction to the release of the PPI data when the CPI is released.

New York Empire State Index. The New York Federal Reserve Bank's New York Empire State Index reflects the results of a monthly survey of 175 manufacturing CEO's and presidents regarding certain business indicators. Respondents give their views regarding the likely direction of these same indicators six months ahead. This index is seasonally adjusted using the Philadelphia Federal Reserve's seasonal factors because there is insufficient historical data of its own to make a meaningful adjustment. Market participants follow the economic indicators reflected in this index to better understand the direction of regional economic activity. Excessive growth in these indicators may indicate inflationary pressure on the markets for capital.

Capacity Utilization. The Capacity Utilization report, released by The Board of Governors of the Federal Reserve System, measures the operating capacity of resources in the economy. This report gauges the use of economic resources throughout the economy and measures the amount of current productive capacity utilized. Industrial production data gives data watchers an indication of actual output relative to potential economic output throughout the domestic economy. These rates will generally rise during economic expansions and fall during recessions. Where capacity utilization is increasing month to month, the market may infer that the economy is expanding, resulting in increased inflation and higher interest rates.

Industrial Production. The report on industrial production, issued by The Federal Reserve, measures the total output of United States factories and mines. It is considered a key economic indicator measuring the all of the goods produced by the economy. Industrial production rises during economic expansions and falls during recessions. Higher levels of industrial production signal growth in the economy. Bond yield will often rise in response to higher industrial production numbers, reflecting capital market inflation concerns.

The University of Michigan's Consumer Survey. The University of Michigan's *Consumer Survey* reports on the results of a survey of 500 American households conducted monthly by the University of Michigan. The sentiment of American consumers is directly correlated to consumer spending. Consumer spending has a great influence on asset valuation in that it is a strong influence on demand for goods and services throughout the economy. Consumer spending accounts for more than two-thirds of the economy, so the markets are constantly examining the consumer attitude towards spending. The more confident consumers are about their personal economic situation, the more likely they are to spend money to increase economic productivity.³⁹

39. See <http://www.nasdaq.com/econoday/reports/>.

C. Asset Pricing and Short-Term Interest Rates

As economic data changes, the Federal Reserve and the capital markets react by affecting prevailing interest rates. As asset prices revalue in response to changes in short-term rates, the prices of stock as well as other asset classes will advance or decline. As the assets are revalued, there is a global change in perception and wealth. When stock or housing prices rise in reaction to lower interest rates, people are richer and thus are more willing to spend money to fuel economic growth. When people have more money they buy more cars, employ more laborers, and fuel economic growth in a meaningful way.

Changes in interest rates also directly affect the value of the dollar as compared to other currencies. As interest rates rise in the United States, the return on dollar-based investments (investment in American capital markets) becomes more attractive. The increasing value of the dollar thereby affects the global economic relationship of the United States to its trading counterparties. A stronger dollar may mean cheaper Japanese imports and therefore a higher living standard for those who benefit from using the latest and greatest imported Japanese technology. However, this increasing strength of the dollar, which allows for Americans to import more goods, has the unfortunate consequence of affecting exports by American companies. As dollar-denominated goods become more expensive to foreigners, American companies are less able to sell their goods abroad, thereby limiting expansion for the American manufacturer. This limiting quality of a strong dollar can reduce domestic expansion and cause economic contraction. The Federal Reserve watches and is aware of the balance of trade and includes this statistic in its formulation of monetary policy.

Each interest rate move at the Federal Reserve has a profound effect on asset valuation and domestic spending. For example, a company may not be willing to make an investment in a new plant because its cost to borrow money is too high. However, a change in the prevailing interest rate might allow it to make an investment that would otherwise have been untenable. Similarly, lower mortgage rates allow homebuyers to purchase more expensive homes than they would have otherwise, thereby increasing housing activity and prices in the housing market. Such an increase in housing prices increases the consumer wealth, allowing the consumer to spend more money. Indeed, when housing prices rise, homeowners may withdraw equity from their homes to buy cars, expand businesses, and to otherwise fuel the economy. A similar effect occurs from higher stock prices, where increased consumer wealth leads to increased spending in the economy.

During the recent credit crisis, however, low interest rates have done little to spur the economy. Banks' inability or unwillingness to part with cash for credit had made low interest rates somewhat meaningless to borrowers who are unable to access capital. In response, the Federal Reserve has become a direct short term lender by participating in the short-term commercial paper market in order to keep those windows of borrowing open where no cash has been forthcoming from normal market participants and to facilitate short term spending by the borrowers of that capital.

The aggregate spending and investing activities of Americans and corporations fuels the domestic economy. While lower interest rates will ordinarily spur the economy, a rising interest rate environment can have the opposite effect, thereby causing a reduction in economic spending and activity. Where economic data leads the Federal Reserve to conclude that there is a general slowdown in the economy, the Federal Reserve can ease monetary policy by lowering interest rates, thereby stimulating growth. The increased access to capital facilitated by lower interest rates stimulates demand. This will ordinarily be effective when credit markets are functioning normally, which has not been the case in 2008.

By contrast, in a period of broad economic growth, where the economy grows unfettered, inflation pressures begin to seep into the supply and demand equation. As demand increases in an expanding economy, the price of goods rises as supply is unable to absorb the increased demand in consumer spending. As prices increase, consumers will buy less consumer goods. When inflation begins to affect economic growth, the Federal Reserve steps in to forestall that growth by raising interest rates.

For example, when everyone has lots of money and wants to buy cars, those car prices will rise. Once those prices rise to a level where the car is no longer an attractive purchase, consumers will stop buying. Reduced demand for American goods and services can result in an economic bust. In this example, the automobile manufacturer will stop selling cars, close plants, and eliminate labor. These unemployed laborers will no longer have money to spend in the economy and the economy might quickly reverse course. In response to an economy where the Federal Reserve perceives inflationary pressures, the Federal Reserve will be inclined to tighten the availability of money by raising interest rates and slowing growth to a more sustainable level. By doing so, the Federal Reserve is able to bring supply back in line with demand, thereby maintaining growth.

Another source of inflation may stem from too much liquidity in the system. That is to say, as the Fed prints more dollars the dollar loses value. A major concern stemming from the steps the Fed has taken in 2008 and from any subsequent liquidity efforts it may undertake is when the line is crossed that will lead to creating inflation from the glut of dollars in the system. Tempering this concern is the fact that as stock markets and assets decline in value, the domestic impact on wealth may be so deflationary that the influx of excessive liquidity may be unimportant until the economy begins to improve.

D. Monetary Policy Decisions

In forming monetary policy, the Federal Reserve is faced with numerous and often contradictory data points, which make the job of setting interest rates subtle and often quite difficult. The Federal Reserve studies data points reflecting *past* economic activity; it is sometimes difficult to determine what is going on in the economy at a given moment in the *present*. Policy makers must rely on economic assumptions and reasonable projections in steering the economy;

Federal Reserve economists analyze data using statistical probabilities to determine likely outcomes. The actions of the Federal Reserve reflect the best efforts of the central bank to determine the correct course of action for the American economy; however, the Federal Reserve cannot guaranty that its adjustments in the target federal funds rate will in fact have the desired impact on economic expansion or contraction.

IV. THE ROLE OF THE FEDERAL OPEN MARKET COMMITTEE

The Federal Reserve sets United States monetary policy. It has a mandate from Congress to determine and implement monetary policy “so as to promote effectively the goals of maximum employment, stable prices, and moderate long-term interest rates.”⁴⁰

A. Affecting the Federal Funds Rate

The Federal Reserve currently implements monetary policy by directly affecting the federal funds rate, that is, the market rate for deposits held at Federal Reserve Banks as negotiated between financial institutions. By announcing a target federal funds rate, and then participating in the marketplace while setting reserve requirements to manifest those rates, the Federal Open Market Committee directly affects the federal funds rate. The Federal Reserve exercises control over the supply and demand for federal funds and thereby implements its policy targets and objectives.

The Federal Reserve accomplishes its monetary policy objectives, in part, by targeting the federal funds rate. By adjusting the target for the federal funds rate the Federal Reserve hopes to influence liquidity in the economy. To achieve its mandated objectives of sustainable growth with maximum employment, the Federal Open Market Committee influences the course of the United States economy, helping it to grow rapidly enough to make full use of available resources but not so rapidly as to stoke inflation.

Historically, it was somewhat of a misconception to assume that the Federal Reserve “controls interest rates.” The funds rate is the rate needed to achieve equality between the demand for and the supply of reserves held at the Federal Reserve, and that is a market rate, not an administered rate set by fiat. As the Fed increases its involvement in direct market participation by purchasing longer term obligations, the interest rates that affect the economy most, those of longer duration, will be directly affected. The Federal Open Market Committee’s main goal is to take the appropriate actions, and set policy that will steer the economy on a sustainable path of growth while preventing risk to the system.

40. 12 U.S.C. §225a.

According to a 2004 speech by Governor Bernanke, “[t]he current funds rate imperfectly measures policy stimulus because the most important economic decisions, such as a family’s decision to buy a new home or a firm’s decision to acquire new capital goods, depend much more on longer-term interest rates, such as mortgage rates and corporate bond rates, than on the federal funds rate. Long-term rates, in turn, depend primarily not on the current funds rate but on how financial market participants expect the funds rate and other short-term rates to evolve over time. For example, if financial market participants anticipate that future short-term rates will be relatively high, they will usually bid up long-term yields as well; if long-term yields did not rise, then investors would expect to earn a higher return by rolling over short-term investments and consequently would decline to hold the existing supply of long-term bonds. Likewise, if market participants expect future short-term rates to be low, then long-term yields will also tend to be low, all else being equal. Monetary policy makers can affect private-sector expectations through their actions and statements, but the need to think about such things significantly complicates the policymakers’ task.”⁴¹

Federal funds are reserves held in a bank’s Federal Reserve Bank account. If a bank holds more federal funds than is required to cover its Regulation D reserve requirement, those excess reserves may be lent to another financial institution with an account at a Federal Reserve Bank. To the borrowing institution, these funds are federal funds purchased. To the lending institution, they are federal funds sold.

Federal funds purchases are not government insured and are not subject to Regulation D reserve requirements or insurance assessments. They can be borrowed only by those depository institutions that are required by the Monetary Control Act of 1980 to hold reserves with Federal Reserve Banks: commercial banks, savings banks, savings and loan associations, and credit unions. These transactions generally occur without a formal, written contract, which is a unique feature of federal funds.⁴²

It was only after the passage of the Monetary Control Act of 1980 that state chartered banks were required to join the Federal Reserve System and to maintain non-interest-bearing reserves with the central bank; prior to 1980, state-chartered banks could elect to join, but their participation in the system was not mandatory. When inflation rates rose in the late 1970s and interest rates increased, voluntary participation of state-chartered banks in the Federal Reserve System declined, as did the level of reserve deposits.

41. Remarks by Governor Ben S. Bernanke, “The Logic of Monetary Policy” Before the National Economists Club, Washington, D.C. December 2, 2004.

42. Board of Governors of the Federal Reserve System, *TRADING AND CAPITAL-MARKETS ACTIVITIES MANUAL* §4005.1.

B. Treatment of Federal Funds

The Monetary Control Act of 1980 required that all depository institutions hold “sterile” reserves with the Federal Reserve as deposits earning no interest. These deposits are held in the form of currency known as “vault cash.”⁴³ The Federal Reserve recently implemented a program for the payment of market-rate interest on these reserves in order to increase bank liquidity and to take up the slack resulting from banks that were unwilling to engage in counterparty transactions with banks whose fortunes could change overnight. The Federal Reserve described its decision in an October 6, 2008, press release:

The Federal Reserve Board on Monday announced that it will begin to pay interest on depository institutions’ required and excess reserve balances. The payment of interest on excess reserve balances will give the Federal Reserve greater scope to use its lending programs to address conditions in credit markets while also maintaining the federal funds rate close to the target established by the Federal Open Market Committee. . . .

These actions should encourage term lending across a range of financial markets in a manner that eases pressures and promotes the ability of firms and households to obtain credit. The Federal Reserve stands ready to take additional measures as necessary to foster liquid money market conditions. . . .

The Financial Services Regulatory Relief Act of 2006 originally authorized the Federal Reserve to begin paying interest on balances held by or on behalf of depository institutions beginning October 1, 2011. The recently enacted Emergency Economic Stabilization Act of 2008 accelerated the effective date to October 1, 2008.

Employing the accelerated authority, the Board has approved a rule to amend its Regulation D (Reserve Requirements of Depository Institutions) to direct the Federal Reserve Banks to pay interest on required reserve balances (that is, balances held to satisfy depository institutions’ reserve requirements) and on excess balances (balances held in excess of required reserve balances and clearing balances).

The interest rate paid on required reserve balances will be the average targeted federal funds rate established by the Federal Open Market Committee over each reserve maintenance period less 10 basis points. Paying interest on required reserve balances should essentially eliminate the opportunity cost of holding required reserves, promoting efficiency in the banking sector.

The rate paid on excess balances will be set initially as the lowest targeted federal funds rate for each reserve maintenance period less 75 basis points. Paying interest on excess balances should help to establish a lower bound on the federal funds rate. The formula for the interest rate on excess balances may be adjusted subsequently in light of experience and evolving market conditions.

43. 12 U.S.C. §461(c).

The payment of interest on excess reserves will permit the Federal Reserve to expand its balance sheet as necessary to provide the liquidity necessary to support financial stability while implementing the monetary policy that is appropriate in light of the System's macroeconomic objectives of maximum employment and price stability.

The Board also approved other related revisions to Regulation D to prescribe the treatment of balances maintained by pass-through correspondents under the new rule and to eliminate transitional adjustments for reserve requirements in the event of a merger or consolidation. In addition, the Board approved associated minor changes to the method for calculating earnings credits under its clearing balance policy and the method for recovering float costs.⁴⁴

Historically, the United States Treasury had opposed the paying of interest on these deposits because it views the payment of interest as an unwarranted use of "taxpayer resources."⁴⁵

The Federal Reserve has taken the position that

noninterest-bearing reserve requirements represent a tax on depository institutions that is not borne by other suppliers of financial services [and which] impairs the efficiency of resource allocation. . . . Paying such interest would circumvent the ill effects of reserve requirements while preserving their advantages for monetary policy. . . . Reserve requirements provide for a reasonably predictable demand for overall reserve balances [which] is essential for the effective implementation of open market operations.⁴⁶

With the crisis of 2008 in full swing, the Federal Reserve has begun to pay interest of federal funds.

C. Implementing Monetary Policy

The Federal Open Market Committee oversees open market operations, which is the main tool used by the Federal Reserve to implement monetary policy.⁴⁷ The FOMC meets eight times each year to discuss monetary policy and implement change when necessary. The FOMC can also meet by conference call if necessary in between scheduled meeting dates. As a result of these deliberations,

44. Federal Reserve Press Release, October 6, 2008.

45. Testimony of Treasury Acting Undersecretary Donald V. Hammond before the Subcommittee on Financial Institutions and Consumer Credit of the Committee on Financial Services, U.S. House of Representatives, March 13, 2001.

46. *Texas State Bank v. United States*, 423 F.3d 1370 (Fed. Cir. 2005), citing Letter from Alan Greenspan, Chairman, Board of Governors of Federal Reserve System, to Rep. Stephen Neal, Chairman, Subcommittee on Domestic Monetary Policy of House Committee on Banking, Finance, and Urban Affairs (March 6, 1992).

47. See THE FEDERAL RESERVE SYSTEM, PURPOSES AND FUNCTIONS 3, <http://www.federalreserve.gov/pf/pf.htm>.

monetary policy is set and Federal Reserve open market participation is determined. Congress mandates that the FOMC works to ensure price stability and the greatest sustainable employment. The FOMC works to encourage sustained growth in the economy without fostering inflation. The Federal Reserve, through open market operations, can affect short-term interest rates.

The Federal Open Market Committee's main goal is to take appropriate actions and set policy which will steer the economy on a sustainable path of growth. At times, when the economy is slowing down, the FOMC might lower its target on Federal Fund Rates to provide financial stimulus for the economy. By making money cheaper to borrow, more money is available to be used for endeavors stimulating economic growth. "Financial stimulus" is not an exact science, but its target is to encourage households, consumers, and corporations to spend money more freely. A good example of the stimulating effect of lower interest rates may be seen in the United States housing market, which has grown immensely since 2002 as a result of lower mortgage rates. The increased value in homes allows consumers to feel richer, to borrow more money on their home equity, and to spend more money. This spending helps the economy to grow. The Federal Reserve walks a fine line between maintaining growth while not fostering inflation.

To increase the supply of reserves, the Federal Reserve will purchase securities, crediting the seller with an increase in reserve balances on deposit with the Federal Reserve corresponding to the amount of the purchase. If the seller is not a bank, the Federal Reserve credits the reserve account of the seller's correspondent bank. Similarly, a sale of securities from the Federal Reserve's portfolio results in debits of the counterparty to the transactions, thereby draining reserve balances from the system. In practice the Federal Reserve does not sell securities but will allow its own securities to mature without replacing them when it wants to drain reserves from the system.

The manager of the open market desk of the Federal Reserve bears the responsibility of adjusting Federal funds to maintain the funds rate at or near the target rate established by the FOMC. Open market operations are set in motion to achieve that target rate. In addition the Federal Reserve stands ready to lend depository institutions federal funds at a rate of proximately 100 basis points over the target federal funds rate.

D. Open Market Operations

In a March 2005 speech on "Implementing Monetary Policy" then Governor Ben S. Bernanke offered a unique look into the targeting of the federal funds market rate:

The funds rate is a market rate, not an administered rate set by fiat—that is, the funds rate is the rate needed to achieve equality between the demand for and the supply of reserves held at the Fed . . . [T]he demand for reserve balances arises both because banks must hold required reserves and because

reserve balances are useful for facilitating transactions. Because of the scale of and volatility in daily payments flows, the demand for reserve balances can vary substantially from one day to the next.

The supply of reserve balances is largely determined by the Federal Reserve—at the operational level, by the specialists at the Federal Reserve's Open Market Desk, located in the Federal Reserve Bank of New York in the New York financial district. For example, to increase the supply of reserves, the Open Market Desk purchases securities (usually government securities) on the open market, crediting the seller with an increase in reserve balances on deposit at the Fed in the amount of the purchase, thus, a purchase of a billion dollars' worth of securities by the Open Market Desk increases the supply of funds available to lend in the fed funds market by the same amount. Similarly, sales of securities from the Fed's financial portfolio result in debits against the accounts of commercial banks with the Fed and thus serve to drain reserve balances from the system. Collectively, these transactions are called open-market operations. Factors outside the control of the Open Market Desk can also affect the supply of reserve balances. For example, when the Federal Reserve receives an order for currency from a bank, it debits the reserve account of the bank in payment when the currency is shipped, thereby reducing reserve supply. When deciding upon open market operations to control the supply of reserves, the Open Market Desk must take account of these external factors.

In practice, the Open Market Desk uses several methods of performing open-market operations. In some cases it purchases securities outright, that is, with the intention of holding the securities in its portfolio indefinitely. Outright purchases are used to offset long-lasting changes in factors affecting the demand for and supply of reserves. For example, long-term increases in the private sector's demand for currency have largely been met by outright purchases of securities. Over the years, the Fed has accumulated a portfolio of more than \$700 billion of Treasury securities, mostly as an offset to its issuance of currency. In contrast, in cases in which variations in the demand for reserves or in external factors affecting reserve supply appear likely to be temporary, the Desk typically prefers to conduct open-market operations through short-term or long-term repurchase agreements, known as repos. Under a repurchase agreement, the buyer and seller of a security agree to reverse the transaction after a certain fixed period. Thus, when the Open Market Desk purchases securities under a repo agreement, the resulting increase in reserve balances lasts only until the time at which the transaction is reversed. Over the course of a year, the value of repos on the Fed's books on any given day may range from a few billion dollars to \$30 billion or more. In the period before the millennium date change (Y2K), when the demand for currency was temporarily very high, the daily value of repos peaked at nearly \$150 billion.

The manager of the Open Market Desk and his team bear the responsibility of adjusting the supply of fed funds to maintain the funds rate at or near the target established by the FOMC. Meeting this objective on a daily basis is technically challenging. To hit the funds rate target, the Desk staff must forecast the daily demand for balances as well as changes in external factors affecting reserves supply. Open-market operations are then set in motion to balance the supply of and demand for reserves at the target funds rate.

Shortly after 9 a.m. each morning, the Desk staff and staff members at the Board of Governors confer over the phone to discuss their respective estimates of the day's demand for balances as well as to consider factors that may affect supply. The Desk manager and his staff also keep in close touch with fed funds brokers and other market participants so as to be able to assess general market conditions. The Desk's market contacts are useful not only for controlling the funds rate but also for obtaining broader financial-market information for the use of Fed policymakers.

At 9:20 a.m., a conference call is held between the Desk staff, Board staff, and the President of a Reserve Bank. The Desk staff summarize the projections for reserves demand and supply, report on conditions in the federal funds market and global financial market developments, and present to the President their plans for open-market operations for his or her comment.⁴⁸

E. Targeting the Federal Funds Rate

As an additional means for managing the federal funds, the Federal Reserve stands ready to lend reserves to depository institutions that request them. Financially sound banks are eligible to borrow from the Fed at what is called the "primary credit rate," which to date has been set at 100 basis points (1 percentage point) above the target funds rate. Historically, reserve shortages occasionally caused the funds rate to "spike" well above its target, once even hitting 100 percent (in 1991). The primary credit facility is designed to avoid such spikes by providing an elastic supply of reserves at a rate not far above the funds rate target.

The Federal Reserve recently announced its intention to target interest rates at or near zero. In observing the weakness in the economy, the Federal Reserve has taken unprecedented steps to spur growth. The Federal Reserve Open Market Committee explained its decision as follows:

The Federal Open Market Committee decided today to establish a target range for the federal funds rate of 0 to 1/4 percent.

Since the Committee's last meeting, labor market conditions have deteriorated, and the available data indicate that consumer spending, business

48. Governor Ben S. Bernanke, Implementing Monetary Policy, Remarks at the Redefining Investment Strategy Education Symposium (March 30, 2005).

investment, and industrial production have declined. Financial markets remain quite strained and credit conditions tight. Overall, the outlook for economic activity has weakened further.

Meanwhile, inflationary pressures have diminished appreciably. In light of the declines in the prices of energy and other commodities and the weaker prospects for economic activity, the Committee expects inflation to moderate further in coming quarters.

The Federal Reserve will employ all available tools to promote the resumption of sustainable economic growth and to preserve price stability. In particular, the Committee anticipates that weak economic conditions are likely to warrant exceptionally low levels of the federal funds rate for some time.

The focus of the Committee's policy going forward will be to support the functioning of financial markets and stimulate the economy through open market operations and other measures that sustain the size of the Federal Reserve's balance sheet at a high level. As previously announced, over the next few quarters the Federal Reserve will purchase large quantities of agency debt and mortgage-backed securities to provide support to the mortgage and housing markets, and it stands ready to expand its purchases of agency debt and mortgage-backed securities as conditions warrant. The Committee is also evaluating the potential benefits of purchasing longer-term Treasury securities. Early next year, the Federal Reserve will also implement the Term Asset-Backed Securities Loan Facility to facilitate the extension of credit to households and small businesses. The Federal Reserve will continue to consider ways of using its balance sheet to further support credit markets and economic activity.⁴⁹

F. How the Federal Reserve Talks Up the Market

Central banks around the world have become noticeably more open and transparent over the past fifteen years or so.⁵⁰ Policymaking committees have adopted various mechanisms to enhance their communication with the public, including more informative policy announcements, postmeeting press conferences, expanded testimony before the legislature, the release of the minutes of policy meetings, and the regular publication of reports on monetary policy and the economy.

This increased openness is a welcome development, for many reasons. Perhaps most importantly, as public servants whose policy actions affect the lives of every citizen, central bankers have a basic responsibility to give the public full and compelling explanations of the rationales for those actions. Besides satisfying the principle of democratic accountability, a more open policymaking

49. Federal Reserve Press Release, December 16, 2008.

50. Ben S. Bernanke (remarks at the Meetings of the American Economic Association, San Diego, California January 3, 2004).

process is also likely to lead to better policy decisions, because engagement with an informed public provides central bankers with useful feedback in the form of outside views and analyses. Yet another benefit of full and timely release of information about policy decisions and their rationales is a reduced risk that market-sensitive information will dribble out through inappropriate channels, giving unfair advantage to some financial market participants.⁵¹

The fact that market expectations of future settings of the federal funds rate are at least as important as the current value of the funds rate in determining key interest rates such as bond and mortgage rates suggests a potentially important role for central bank communication. If effective communication can help financial markets develop more accurate expectations of the likely future course of the funds rate, policy will be more effective and risk in financial markets should be reduced as well.⁵²

G. Inflation Targeting

A rich recent literature on learning and macroeconomics has emphasized that actual inflation and inflation expectations may to some degree evolve independently, and that effective monetary policy stabilizes inflation expectations as well as inflation itself.⁵³ It is far easier to make sense of the term structure of Treasury yields if one assumes that expectations about long-run inflation adjust in a reasonable adaptive manner.⁵⁴

The Federal Reserve has become increasingly more open about its processes and about its decision making. The Federal Reserve has an important responsibility to maintain strong and sustained employment growth and continues to use the federal funds targeting approach to implement monetary policy. In recent years, a promising new approach to effecting monetary policy has emerged: inflation targeting. This approach has been adopted by a number of European Central Banks, and has been considered by Federal Reserve Chairman Ben S. Bernanke and other leading economists as a potential course for United States monetary policy.

Inflation targeting is a process whereby the central bank publicly announces and pursues specific targets for the rate of inflation. Inflation targeting is a framework for monetary policy characterized by the public announcement of official quantitative targets (or target ranges) for the inflation rate over one or

51. *Id.*

52. *Id.*

53. Ben S. Bernanke, *Inflation Targeting: Prospects and Problems*, (Remarks at the 28th Annual Policy Conference: Federal Reserve Bank of St. Louis, St. Louis, Missouri, October 17, 2003).

54. Ben S. Bernanke, *Monetary Policy Modeling: Where Are We and Where Should We Be Going?* (remarks at the Federal Reserve Board Models and Monetary Policy Conference, Washington, D.C. March 27, 2004).

more time horizons, and by explicit acknowledgement that low, stable inflation is monetary policy's primary long-run goal. Among other important features of inflation targeting are vigorous efforts to communicate with the public about the plans and objectives of the monetary authorities, and, in many cases, mechanisms that strengthen the central bank's accountability for attaining those objectives. Inflation targeting can be described as a form of "constrained discretion." Under a constrained discretion approach, central banks adhere to a conceptual structure while maintaining flexibility.

Inflation targeting represents continuity with the existing approach of the Federal Reserve System. The existing approach of the Federal Reserve System focuses on maintaining medium- and long-term inflation stability as the primary contribution that the Federal Reserve can make to maintaining stability of the general economy.

The inflation targeting ideas simply are an attempt to perhaps codify or strengthen this important commitment of the Federal Reserve to maintaining low inflation. One of the best ways is to maintain, in the medium and long term, low and stable inflation and inflation expectations. To the extent that naming a long-term inflation objective can help to stabilize those expectations and keep inflation under control, it actually significantly advances the Federal Reserve's ability to meet the dual mandate and to increase employment growth.⁵⁵

Inflation targeting, at least in its best-practice form, consists of two parts: a policy framework of constrained discretion and a communication strategy that attempts to focus expectations and explain the policy framework to the public. Together, these two elements promote both price stability and well-anchored inflation expectations; the latter in turn facilitates more effective stabilization of output and employment. Thus, a well-conceived and well-executed strategy of inflation targeting can deliver good results with respect to output and employment as well as inflation.⁵⁶ With the recent events creating a crisis mode at the Fed, discussions of inflation targeting have taken a back seat to implementing specific steps to preventing economic collapse.

55. Hearing Regarding Ben Bernanke's Nomination to be Chairman of the Board of Governors of the Federal Reserve, November 15, 2005, U.S. Senate Committee on Banking, Housing and Urban Affairs.

56. Ben S. Bernanke, *A Perspective on Inflation Targeting*, (remarks at the Annual Washington Policy Conference of the National Association of Business Economists, Washington, D.C., March 25, 2003).

APPENDIX A
SAMPLE FOMC MINUTES

The FOMC holds eight regularly scheduled meetings during the year, and other meetings as needed. It is required by the Federal Reserve Act to keep records of these meetings and to include them in its annual report to Congress. The Federal Reserve releases the minutes of regularly scheduled meetings three weeks after the date of the policy decision.

The release of Federal minutes is only one of the means by which the FOMC communicates with the public. When the FOMC meets, they release a statement on the same day they make a policy decision. Also, through speeches by members of the FOMC and through the Chairman's testimony the FOMC communicates biases and impressions of the capital markets.⁵⁷

The minutes try to explain in plain language what happened at a particular FOMC meeting, and follow a standard organizational structure. Following are annotated minutes from the meeting of the FOMC held on May 9, 2007. These minutes reflect a calmer time in America's economic history than the latter half of 2007 and 2008 and are presented here to demonstrate how the Fed observes data under "normal" circumstances.

MINUTES OF THE FEDERAL OPEN MARKET COMMITTEE⁵⁸

May 9, 2007

A meeting of the Federal Open Market Committee was held in the offices of the Board of Governors of the Federal Reserve System in Washington, D.C., on Wednesday, May 9, 2007 at 8:30 A.M.

Section I: Lists the Attendees at the meeting. "Members" are the twelve voting Members of the FOMC. "Participants" includes voting and nonvoting Bank Presidents. "Staff" refers to those economists and other Federal Reserve staff members attending the meeting. The comments of all the participants at the meeting are reflected in the minutes. This section will also describe any organizational changes and approval of any FOMC documents.

57. Deborah J. Danker and Matthew M. Luecke, *Background on FOMC Meeting Minutes*, Federal Reserve Bulletin, p. 175 (Spring 2005).

58. Available at www.federalreserve.gov.

IIO CAPITAL MARKETS, DERIVATIVES AND THE LAW

Present:

Mr. Bernanke, Chairman
Mr. Geithner, Vice Chairman
Mr. Hoenig
Mr. Kohn
Mr. Kroszner
Ms. Minehan
Mr. Mishkin
Mr. Moskow
Mr. Poole
Mr. Warsh
Mr. Fisher, Ms. Pianalto, and Messrs. Plosser and Stern, Alternate Members
of the Federal Open Market Committee

Messrs. Lacker and Lockhart, and Ms. Yellen, Presidents of the Federal Reserve
Banks of Richmond, Atlanta, and San Francisco, respectively

Mr. Reinhart, Secretary and Economist
Ms. Danker, Deputy Secretary
Ms. Smith, Assistant Secretary
Mr. Skidmore, Assistant Secretary
Mr. Alvarez, General Counsel
Mr. Baxter, Deputy General Counsel
Ms. Johnson, Economist
Mr. Stockton, Economist
Messrs. Connors, Evans, Kamin, Madigan, Rasche, Slifman, Tracy, and
Wilcox, Associate Economists

Mr. Dudley, Manager, System Open Market Account

Messrs. Clouse and English, Associate Directors, Division of Monetary Affairs,
Board of Governors

Ms. Liang and Mr. Struckmeyer, Associate Directors, Division of Research and
Statistics, Board of Governors

Messrs. Leahy and Wascher, Deputy Associate Directors, Divisions of Inter-
national Finance and Research and Statistics, respectively

Mr. Dale, Senior Adviser, Division of Monetary Affairs

Mr. Blanchard, Assistant to the Board, Office of Board Members, Board of
Governors

Mr. Small, Project Manager, Division of Monetary Affairs, Board of Governors

Mr. Luecke, Senior Financial Analyst, Division of Monetary Affairs, Board of Governors

Mr. Carlson, Economist, Division of Monetary Affairs, Board of Governors

Ms. Low, Open Market Secretariat Specialist, Division of Monetary Affairs, Board of Governors

Ms. Green, First Vice President, Federal Reserve Bank of Richmond

Mr. Rosenblum, Executive Vice President, Federal Reserve Bank of Dallas

Mr. Hakkio, Ms. Perelmuter, Messrs. Rolnick, Rudebusch, Sniderman, and Weinberg, Senior Vice Presidents, Federal Reserve Banks of Kansas City, New York, Minneapolis, San Francisco, Cleveland, and Richmond, respectively

Messrs. Dotsey, Tallman, and Tootell, Vice Presidents, Federal Reserve Banks of Philadelphia, Atlanta, and Boston, respectively

The Manager of the System Open Market Account reported on recent developments in foreign exchange markets. There were no open market operations in foreign currencies for the System's account in the period since the previous meeting. The Manager also reported on developments in domestic financial markets and on System open market transactions in government securities and federal agency obligations during the period since the previous meeting. By unanimous vote, the Committee ratified these transactions.

By unanimous vote, the Committee extended for one year beginning in mid-December 2007 the reciprocal currency ("swap") arrangements with the Bank of Canada and the Banco de Mexico. The arrangement with the Bank of Canada is in the amount of \$2 billion equivalent and that with the Banco de Mexico is in the amount of \$3 billion equivalent. Both arrangements are associated with the Federal Reserve's participation in the North American Framework Agreement of 1994. The vote to renew the System's participation in the swap arrangements maturing in December was taken at this meeting because of the provision that each party must provide six months' prior notice of an intention to terminate its participation.

Section II: Describes the current economic conditions, economic forecasts based on recent data, and any topics that might come before the FOMC. In this section the FOMC will refer to the economic reports described in Section III.B., above.

The information reviewed at the May meeting suggested that economic activity had expanded at a below-trend pace in recent months. Gains in payroll

employment had moderated, and the unemployment rate appeared to have stabilized after a period of decline. Housing construction remained under pressure from weak demand and large inventories of unsold homes, and consumer spending appeared to have slowed in recent months. Business fixed investment remained subdued. Manufacturing production, however, showed signs of strengthening after a period of considerable softness. Rising energy prices pushed up total PCE price inflation in March, while the twelve-month increase in core PCE prices was just slightly above its year-earlier pace.

The average monthly increase in payroll employment through the first four months of this year was well below the relatively strong pace recorded in the fourth quarter of 2006. In April, the construction industry continued to shed jobs, manufacturing employment declined further, and retailers reduced hiring after a large gain in March. The unemployment rate stood at 4.5 percent in April, similar to its average in the first quarter, and the labor force participation rate moved down.

Industrial production increased at a modest annual rate of 1.4 percent in the first quarter, with the monthly pattern reflecting fluctuations in the output of utilities, which was influenced importantly by swings in weather conditions. Manufacturing output declined, on net, over the six months ending in February as a result of inventory-related adjustments in a number of industries. However, factory production turned up in March. The output of high-tech industries rose briskly; the production of consumer goods increased; and the output of business equipment, construction supplies, and materials picked up. The limited information available on industrial production for April suggested that output had been boosted by the scheduled pickup in motor vehicle assemblies.

Real consumer expenditures increased at a brisk pace in the first quarter, although monthly gains in spending slowed over the course of the quarter, in part because of swings in weather-related outlays on energy goods and energy services. Retail sales of both autos and light trucks moved up in the first quarter, but eased a bit in April. Real spending on goods other than motor vehicles, which had shown exceptional vigor late last year, was broadly flat between December and March. However, outlays on non-energy services were reported to have posted solid gains, especially in March. Real disposable personal income rose smartly in the first quarter. Wages and salaries increased solidly, on average, and the Bureau of Economic Analysis estimated that income in January was boosted by unusually large bonus payments and stock option exercises. The household wealth-to-income ratio likely ticked down in the first quarter, as the stock market rose only a little and house prices remained soft. However, given the surge in stock prices in April, much of the lost ground had probably since been made up.

Residential construction activity remained soft as builders attempted to work off elevated inventories of unsold new homes. Single-family housing starts moved up in March, almost certainly boosted by unusually warm and dry

weather; single-family permit issuance also increased. Although existing home sales declined in March, the level of sales was only slightly below the steady pace that had prevailed in the second half of 2006. By contrast, new home sales fell sharply in the first two months of the year and had recovered only a bit in March. All told, recent readings on home sales suggested that housing demand had weakened further. House-price appreciation continued to slow, and some measures were again showing declines in home values.

Real spending on equipment and software rose modestly in the first quarter after having fallen in the fourth quarter of 2006. Spending on high-tech equipment, boosted by a surge in outlays on computers, posted a substantial increase in the first quarter. In addition, purchases of communications equipment—which tend to be volatile quarter to quarter—rebounded strongly after a fourth-quarter dip. By contrast, spending on transportation equipment declined significantly: Although domestic spending on aircraft jumped after three weak quarters, purchases of medium and heavy trucks dropped sharply, largely as a consequence of a pull-forward of truck purchases in the latter part of last year in anticipation of the tighter emissions standards that took effect in January. Business investment in equipment other than high-tech and transportation dropped in the first quarter, although the weakness in this broad category appeared to have been especially pronounced around the turn of the year and to have lessened somewhat over the course of the quarter. Robust corporate cash reserves and continuing declines in the user cost of high-tech goods remained supportive of equipment and software spending going forward. Real outlays for nonresidential construction regained some momentum in the first quarter of this year after having hit a lull in late 2006.

Real nonfarm inventory investment excluding motor vehicles increased at a slower pace in the first quarter of 2007 than in the previous quarter. The downshift in inventory investment had helped to reduce the apparent overhangs that had emerged in late 2006. In the motor vehicle sector, the sharp decline in the pace of assemblies over the past few quarters appeared to have brought inventories back into line with sales. In April, surveys indicated that the net number of firms who viewed their customers' inventory levels as too high had dropped back from elevated readings over the previous two quarters.

The U.S. international trade deficit narrowed in February, reflecting a steep drop in imports, which more than offset a sizable decline in exports. Within imports, the value of oil imports plunged, reflecting decreases in both prices and quantities, and imports of industrial supplies, capital goods, and automotive parts also fell. The lion's share of the February decline in exports was of capital goods. Smaller decreases occurred in exports of industrial supplies, consumer goods, and services.

Economic activity in advanced foreign economies appeared to have grown at a steady rate in the first part of the year. Canada's growth seemed to have rebounded from a disappointing fourth quarter. Renewed household demand in

Japan pointed to further strong growth in the first quarter, while investment demand seemed to be underpinning growth in the United Kingdom. Although euro-area exports had slowed from the rapid pace set in the fourth quarter and the hike in the German value-added tax likely depressed consumption, overall economic conditions remained solid. Economic activity in the emerging market countries appeared to have continued to advance at a robust pace in the first quarter. Surging growth in China was a highlight of the strong performance of most countries in Asia. In Latin America, indicators pointed to further lackluster growth in Mexico and some weakening in Argentina, but in other countries, especially Brazil, conditions appeared more positive.

The total PCE price index rose substantially in both February and March. The advance in February was distributed across a broad range of categories, while the March increase was driven largely by a jump in the index for energy. Core PCE prices were unchanged in March after an upswing in February. Smoothing through the high-frequency movements, the twelve-month change in the core PCE price index in March was just a touch higher than the increase over the year-earlier period. Accelerations in the costs of housing and medical services were major contributors to both core CPI and core PCE inflation over the past year. Household surveys conducted in April indicated that the median expectation for year-ahead inflation had moved up, consistent with the recent pickup in headline CPI inflation. Median expectations of longer-term inflation had edged higher but were still in the narrow range seen over the past few years. Average hourly earnings for production or nonsupervisory workers, which had accelerated noticeably over the past couple of years, posted moderate increases in March and April.

At its March meeting, the Federal Open Market Committee (FOMC) maintained its target for the federal funds rate at 5.25 percent. The Committee's accompanying statement noted that recent economic indicators had been mixed and that the adjustment in the housing sector was ongoing. Nevertheless, the economy seemed likely to expand at a moderate pace over coming quarters. Recent readings on core inflation had been somewhat elevated. Although inflation pressures seemed likely to moderate over time, the high level of resource utilization had the potential to sustain those pressures. The Committee's predominant policy concern remained the risk that inflation would fail to moderate as expected. Future policy adjustments would depend on the evolution of the outlook for both inflation and economic growth, as implied by incoming information.

Market participants had largely anticipated the FOMC's decision at its March meeting to leave the target federal funds rate unchanged. Nevertheless, the expected path for monetary policy moved lower on the announcement, as investors apparently interpreted the accompanying statement as suggesting that the Committee's economic outlook had become somewhat more balanced. However, subsequent FOMC communications—including the Chairman's testimony

before the Joint Economic Committee, speeches by various FOMC members, and the minutes from the March meeting—were generally seen as emphasizing the Committee’s concern about upside risks to inflation. Over the intermeeting period, yields on nominal Treasury securities edged up at all maturities. Measures of inflation compensation based on inflation-indexed Treasury securities were little changed despite a significant rise in oil prices. Yields on investment-grade corporate bonds rose in line with those on comparable-maturity Treasury securities, leaving their spreads little changed at fairly low levels. Spreads on speculative-grade corporate bonds narrowed. Equity prices climbed steeply amid solid earnings reports and improved sentiment, more than reversing the declines in the previous intermeeting period. The foreign exchange value of the dollar against other major currencies moved lower, on balance.

Gross bond issuance by nonfinancial businesses slowed from its torrid first-quarter pace in April, but acquisition-related financing continued to fuel the issuance of both investment- and speculative-grade corporate bonds. Commercial paper outstanding declined, but bank lending accelerated. In the household sector, the rise in home mortgage debt likely slowed a bit further in the first quarter, as home-price appreciation appeared to have remained sluggish. Consumer credit continued to expand at a moderate pace early in the year. M2 accelerated during March and April, primarily reflecting faster growth in liquid deposits, which were likely boosted in April by tax-related flows.

In its forecast prepared for this meeting, the staff expected the pace of economic activity to pick up from weak first-quarter growth to a rate a little below that of the economy’s long-run potential for the remainder of this year and to increase at a pace broadly in line with potential output in 2008. The projected gradual acceleration in economic activity largely reflected the expected waning of the drag from residential investment, although recent readings on sales and inventories of new homes had been interpreted by the staff as suggesting that the ongoing contraction in residential investment would continue for longer than previously expected. In response to data received over the past year, the staff had marked down slightly its estimate of structural productivity growth and nudged up its estimate for the increase in labor supply—leaving its estimate of the overall growth of potential GDP broadly unchanged. The increases in energy and other commodity prices over the intermeeting period had led the staff to revise up its forecast for headline PCE inflation during the first half of the year. Nonetheless, the staff continued to expect core inflation to edge lower over the course of the next two years.

Section III: Describes individual participants’ evaluation of current economic data and the macroeconomic situation. This section will vary from meeting to meeting based on the ensuing consideration of the topics at hand.

In their discussion of the economic situation and outlook, participants noted that their assessments of the medium-term prospects for economic growth and inflation had not changed materially from the previous meeting. The pace of economic expansion had slowed in the first part of this year, but the recent sub-par performance probably exaggerated the weakness of underlying demand, and the rate of economic growth was expected to pick up in coming quarters. Meeting participants anticipated that real GDP would advance at a pace a little below the economy's trend rate of growth through the remainder of this year and then pick up to a rate broadly in line with the economy's trend rate in 2008. Most participants continued to expect core inflation to slow gradually, although considerable uncertainty surrounded that judgment and the Committee's predominant concern remained the risk that inflation would fail to moderate as expected.

The incoming data on new home sales and inventories suggested that the ongoing adjustment in the housing market would probably persist for longer than previously anticipated. In particular, the demand for new homes appeared to have weakened further in recent months, and the stock of unsold homes relative to sales had increased sharply. That said, participants also noted that sales of existing homes appeared to have held up somewhat better since the beginning of the year. Moreover, the turmoil in the subprime market evidently had not spread to the rest of the mortgage market; indeed, mortgage rates available to prime borrowers remained well below their levels of last summer. Nevertheless, most participants agreed that, although the level of inventories of unsold homes that homebuilders desired was uncertain, the correction of the housing sector was likely to continue to weigh heavily on economic activity through most of this year—somewhat longer than previously expected.

Growth in consumer spending appeared to have slowed over the past few months. Real spending on goods had flattened out, and contacts in both the retail sector and the consumer credit sector reported a softening in the expansion of demand. In contrast to the rapid gains of recent years, meeting participants expected household expenditure to grow at a more moderate pace in coming quarters. Consumption was likely to be supported by continued advances in employment and incomes, as well as gains in stock prices; but the recent increases in gasoline prices probably would damp households' spending power in the near term, and the effect of the anticipated leveling out in home-price appreciation on household wealth was expected to contribute to a gradual increase in the personal saving rate over the medium run. Participants remained concerned that the housing market correction could have a more pronounced impact on consumer spending than currently expected, especially if house prices were to decline significantly.

The growth of business fixed investment seemed most likely to move higher in coming quarters, supported by strong corporate balance sheets and profits, favorable financial conditions, and a gradual strengthening in business output. The downside risks to business capital spending appeared to have diminished

somewhat since the previous meeting. In particular, participants took note of the upturn in orders and shipments of capital goods, and of more upbeat surveys of business conditions. However, participants cautioned against drawing too much comfort from the most recent few data observations, and recognized that the current sluggishness of equipment outlays could persist for longer than currently anticipated, especially if financial market conditions became less supportive. Participants were also encouraged that, outside of the construction sector, the correction of inventories to more comfortable levels appeared well advanced, thus reducing the possibility that going forward this adjustment process could trigger shortfalls in business spending and output.

Economic activity in the rest of the world continued to advance briskly. Participants noted that strong foreign expansion should help to underpin demand for U.S. exports, but expressed some concern that the strength of global demand could contribute to price pressures at home. Prices of non-energy commodities, especially metals, had moved up markedly since the previous meeting. Moreover, inflationary pressures in a number of overseas economies appeared to have increased of late, perhaps partly in response to heightened levels of capacity utilization in those countries, and this development had the potential to add to the prices of U.S. imports. In that regard, several participants noted that the decline in the foreign exchange value of the dollar over the intermeeting period could reinforce the upward pressure on import prices.

Participants discussed how best to reconcile the slowdown in output growth over the past year with the relatively strong performance of the labor market. This apparent tension could partly reflect measurement issues; in particular, participants noted that the more-rapid gains in estimates of gross domestic income over this period might better capture the pace of activity than the modest advances in measured GDP. Aside from measurement problems, a possible explanation was that these differing trends largely related to the lagged adjustment of employment to the slowing pace of expansion. In that regard, several participants observed that the recent moderation in economic growth had been concentrated in the construction sector, but that measured employment in construction had not yet declined by a corresponding amount. This suggested that increases in overall employment in coming quarters may possibly be held down by notable declines in construction employment as the adjustment of the labor force in that sector played out. A slowing in employment could then occur in conjunction with a strengthening in productivity growth. Alternatively, some of the recent weakness in measured productivity growth could reflect a decline in the underlying trend in productivity and so might persist. Although this explanation might help account for some of the downshift in measured productivity growth, participants agreed that there appeared to be little other evidence pointing to a significant slowing of advances in structural productivity. In the context of this discussion, many participants commented that their view of potential output growth was somewhat more optimistic than that of the staff.

Labor markets appeared to remain relatively tight. Unemployment continued around the low levels seen since last fall, and many business contacts reported difficulties in recruiting suitably qualified workers, especially for certain types of professional and skilled positions. However, several participants observed that aggregate measures of labor compensation had so far increased only modestly, perhaps suggesting that the labor market might be less stretched than it appeared. Moreover, even if wages and salaries did accelerate, the resulting cost pressures might be absorbed by a narrowing in firms' profit margins from current elevated levels, rather than being passed on in the form of higher prices. On the other hand, some participants reported that their business contacts appeared very resistant to any squeeze in profit margins. All told, for most participants, the apparent tightness of the labor market remained a significant source of upside risk to inflation.

Nearly all participants viewed core inflation as remaining uncomfortably high and stressed the importance of further moderation. Although readings on core inflation in March had been more favorable, this followed several months of elevated inflation data and price pressures were not yet viewed as convincingly on a downward trend. Most participants expected core inflation to moderate gradually, fostered in part by stable inflation expectations and a likely deceleration in shelter costs. Some participants also expected the anticipated slight easing of pressures on resources to help nudge inflation lower, although others felt that small movements in resource utilization were unlikely to have discernible effects on inflation. All participants agreed that the risks around the anticipated moderation in inflation were to the upside; and some noted that a failure of inflation to moderate could entail significant costs particularly if it led to an upward drift in inflation expectations.

In the Committee's discussion of monetary policy for the intermeeting period, all members favored keeping the target federal funds rate at 5.25 percent. Recent developments were seen as supporting the Committee's view that maintaining the current target rate was likely to foster moderate economic growth and a gradual ebbing in core inflation. Members continued to view the risks to economic activity as weighted to the downside, although with turmoil in the subprime market appearing to have remained relatively well contained and business spending indicators suggesting a more encouraging outlook, these downside risks were judged to have diminished slightly. Members agreed that considerable uncertainty attended the prospects for inflation, and the risk that inflation would fail to moderate as desired remained the Committee's predominant concern.

In light of the recent economic data and anecdotal information, the Committee agreed that the statement to be released after the meeting should acknowledge that economic growth had slowed in the first part of the year. The Committee thought that the statement should reiterate the view that the adjustment in the housing market was ongoing, but that nevertheless the economy seemed likely

to expand at a moderate pace over coming quarters. While readings on core inflation were lower in March, members felt that it was appropriate to emphasize that core inflation remained somewhat elevated. The Committee agreed that the statement should continue to note that their predominant policy concern was the risk that inflation would fail to moderate as expected, and that future policy adjustments would depend on the evolution of the outlook for both inflation and economic growth.

Section IV: Describes any policy decisions taken at the meeting and the result of any votes. This section further announces the date of the next FOMC meeting and the result of any actions that were taken between meetings.

At the conclusion of the discussion, the Committee voted to authorize and direct the Federal Reserve Bank of New York, until it was instructed otherwise, to execute transactions in the System Account in accordance with the following domestic policy directive:

“The Federal Open Market Committee seeks monetary and financial conditions that will foster price stability and promote sustainable growth in output. To further its long-run objectives, the Committee in the immediate future seeks conditions in reserve markets consistent with maintaining the federal funds rate at an average of around 5.25 percent.”

The vote encompassed approval of the text below for inclusion in the statement to be released at 2:15 P.M.:

“In these circumstances, the Committee’s predominant policy concern remains the risk that inflation will fail to moderate as expected. Future policy adjustments will depend on the evolution of the outlook for both inflation and economic growth, as implied by incoming information.”

Votes for this action: Messrs. Bernanke, Geithner, Hoenig, Kohn, and Kroszner, Ms. Minehan, Messrs. Mishkin, Moskow, Poole, and Warsh.

Votes against this action: None.

Meeting participants briefly discussed the next steps in their review of communication issues and agreed to consider them at the next FOMC meeting, confirmed for June 27–28, 2007.

The meeting adjourned at 1:15 P.M.

Notation Vote

By notation vote completed on April 10, 2007, the Committee unanimously approved the minutes of the FOMC meeting held on March 20–21, 2007.

Vincent R. Reinhart
Secretary

APPENDIX B

FAQs: MBS PURCHASE PROGRAM

The following frequently asked questions (FAQs) provide further information about the program to purchase agency mortgage-backed securities (agency MBS) that was announced by the Federal Reserve on November 25, 2008. This agency MBS program will be managed at the direction of the Federal Open Market Committee (FOMC) by the Federal Reserve Bank of New York (New York Fed). The New York Fed has selected four investment managers to help implement the agency MBS program.

Effective December 30, 2008

Q. What is the policy objective of the Federal Reserve's program to purchase agency mortgage-backed securities?

A. The goal of the program is to provide support to mortgage and housing markets and to foster improved conditions in financial markets more generally.

Q. Why is it necessary for the Federal Reserve to transact in the agency MBS market via external investment managers?

A. The operational and financial characteristics of MBS purchases are significantly more complicated than those associated with the assets that have traditionally been purchased by the Federal Reserve. The Federal Reserve has chosen external investment managers as a means of implementing the MBS program quickly and efficiently while at the same time minimizing operational and financial risks.

Because of the size and complexity of the agency MBS program, a competitive request for proposal (RFP) process was employed to select four investment managers and a custodian. The investment managers are BlackRock Inc., Goldman Sachs Asset Management, PIMCO and Wellington Management Company, LLP. The selection criteria were based on the institution's operational capacity, size, overall experience in the MBS market and a competitive fee structure. The contract for a custodian is not yet final.

Q. What securities are eligible for purchase under the program?

A. Only fixed-rate agency MBS securities guaranteed by Fannie Mae, Freddie Mac and Ginnie Mae are eligible assets for the program. The program includes, but is not limited to, 30-year, 20-year and 15-year securities of these issuers. The program does not include CMOs, REMICs, Trust IOs/Trust POs and other mortgage derivatives or cash equivalents. Eligible assets may be purchased or sold in specified pools, in "to be announced" (TBA) transactions, and in the dollar roll market.

Q. What is the investment strategy that will be employed?

A. Investment managers will employ a passive buy and hold investment strategy in accordance with investment guidelines prescribed by the Federal Reserve.

Purchases will be guided by commonly referenced market indices. The agency MBS program will involve the outright purchase of up to \$500 billion in agency MBS by the investment managers on behalf of the Federal Reserve by the end of the second quarter of 2009. The New York Fed will adjust the pace of its purchases based on input from the investment managers about market conditions and the impact of the program. The investment managers will be required to purchase securities frequently and to disclose the Federal Reserve as principal.

The investment strategy may involve the use of dollar rolls as a supplemental tool to smooth market supply and demand. A dollar roll is a transaction involving the sale of agency MBS for delivery in the current month and the simultaneous agreement to repurchase substantially similar (although not the same) securities on a specified future date.

Q. Does the agency MBS program expose the Federal Reserve to increased risk of losses?

A. Assets purchased under this program are fully guaranteed as to principal and interest by Fannie Mae, Freddie Mac, and Ginnie Mae, so the Federal Reserve's exposure to the credit risk of the underlying mortgages is minimal. The market valuation of agency MBS can fluctuate over time based on the interest rate environment; however, the Federal Reserve's exposure to interest rate risk is mitigated by the conservative, buy and hold investment strategy of the agency MBS purchase program.

Q. When will the purchases begin?

A. Purchases are expected to begin in early January, 2009.

Q. Who will the investment managers trade with and who is eligible to sell agency MBS to the Federal Reserve under the program?

A. Initially, the investment managers will trade only with primary dealers who are eligible to transact directly with the Federal Reserve Bank of New York. Primary dealers are encouraged to submit offers for themselves and for their customers.

Q. Will the agency MBS held by the Federal Reserve through this program be eligible for lending through the Treasury Securities Lending Facility (TSLF) or the daily System Open Market Account (SOMA) securities lending operations conducted by the New York Fed?

A. There are no plans for the agency MBS held by the SOMA to be available for borrowing through the TSLF or the daily securities lending program.

Q. How will purchases under the agency MBS program be financed?

A. Purchases will be financed through the creation of additional bank reserves.

Q. What is the legal basis for the agency MBS purchase program?

A. Purchases of agency MBS in the open market, under the direction of the FOMC, are permitted under section 14(b) of the Federal Reserve Act.

Q. How is the Federal Reserve's agency MBS purchase program related to the U.S. Treasury's efforts to purchase agency MBS?

A. The Federal Reserve's agency MBS program is separate and distinct from the U.S. Treasury's program but both programs are aimed at fostering improved conditions in mortgage markets.

Q. How will holdings under the agency MBS program be reported?

A. Balance sheet items related to the agency MBS purchase program will be reported after settlement occurs on the H.4.I. statistical release titled "Factors Affecting Reserve Balances of Depository Institutions and Condition Statement of Federal Reserve Banks." There will be an explanatory cover note on the release when the new items appear for the first time. However, these data may be published well after trade execution due to agency MBS settlement conventions. In addition, the New York Fed will publish the SOMA agency MBS activity in more detail on its external website on a weekly basis.

Q. What measures will the Federal Reserve take to ensure that an investment manager implementing the MBS program will not have an unfair advantage relative to other market participants due to the information it receives about the MBS program?

A. Each investment manager will be required to implement ethical walls that appropriately segregate the investment management team that implements the Federal Reserve's agency MBS program from other advisory and proprietary trading activities of the firm. The New York Fed will monitor each investment manager's compliance with this requirement.

Q. Where should questions regarding the MBS purchase program be directed?

A. Questions regarding the MBS program should be directed to the New York Fed's Public Affairs department: 212-720-6130.