

## Kevin M Warsh: Financial markets and the Federal Reserve

Remarks by Mr Kevin M Warsh, Member of the Board of Governors of the US Federal Reserve System, at the New York Stock Exchange, New York, 21 November 2006.

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Thank you for inviting me to speak about the role of financial markets and market discipline in Federal Reserve policymaking. As chief financial officers and business leaders, you work assiduously to incorporate real-time information about your companies - and about the competitive and economic landscape - into your decisionmaking. Similarly, financial market participants quickly assimilate publicly available information to help judge the market clearing price for securities that you issue.

Indeed, this process is what makes the venue for today's discussion - the New York Stock Exchange, home of the world's deepest equities market - so appropriate. The NYSE provides a platform for real-time, information-rich assessments of leading global companies, incorporating both an evaluation of the overall economic outlook and firm-specific considerations. It is also fitting to be speaking today before members of the Securities Industry and Financial Markets Association, who trade in these markets daily.

The Federal Reserve, too, relies on multiple sources of data to help achieve our dual mandate: ensuring price stability and achieving maximum employment. Some of the data upon which we draw - statistical indicators of activity and prices in the real economy - tend to be backward-looking and subject to considerable revision. Other information we use is drawn from financial market prices; although subject to rapid change and "noisy" market signals, this information can be considerably more timely and forward looking.

In its role as a bank regulator and supervisor, the Federal Reserve also often looks to market prices to help assess the safety and soundness of financial institutions.

Today, I will discuss the role of financial markets in effective monetary, regulatory, and supervisory policy making by the Federal Reserve. In particular, I will discuss the potential for markets to inform the Fed's policy judgments - even as our policies also affect markets. I will also describe the important role of markets in disciplining private entities. Of course, the views I will express are my own and not necessarily those of my colleagues on the Federal Open Market Committee (FOMC).<sup>1</sup>

My remarks will cover three points. First, financial markets can inform and, in some cases, complement the actions of the Federal Reserve by providing timely information about the outlook for economic activity, inflation, and the health of individual financial institutions. Second, the Federal Reserve confronts many challenges when trying to extract relevant information from financial market prices - not least because these prices reflect the market's interpretation of our outlook as well as its independent assessments. Third, the market's disciplining of private entities is an important complement to the Federal Reserve's supervisory and regulatory functions, and the Fed can enhance market discipline by improving the flow of information from these regulated entities to the markets.

I will begin with a discussion of how markets, in my judgment, inform the monetary policy process, and then turn to the role of markets in the supervisory and regulatory process.

### Financial markets and monetary policy

Markets affect monetary policy predominantly through the information provided by asset prices. The available menu of prices is extensive, including those of Treasury securities (nominal and real), corporate debt, equities, and derivatives. These prices embed investors' expectations of the future paths of economic growth, inflation, and financial conditions. At least as important, these prices also can provide some insight into the uncertainty surrounding likely outcomes. Monetary policy makers can use economic models and statistical techniques to extract the views of market participants about these key macroeconomic variables.

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<sup>1</sup> [Nellie Liang](#), Wayne Passmore, [Daniel Covitz](#), and [Diana Hancock](#), of the Board's staff, contributed to these remarks.

Let me cite a few simple examples of how we interpret asset prices. Through open market operations, the FOMC sets the target federal funds rate, which is the overnight rate at which depositories lend to each other the balances they hold at the Federal Reserve. Interest rates for periods extending beyond that very short horizon, however, are established by market participants rather than the FOMC, although members of the Committee may be able to influence these longer-term rates somewhat through what is affectionately described as "open mouth operations." In this way, market-based interest rates reflect primarily the path investors expect for monetary policy. That expected path is of keen interest to us as policymakers.

The market's view of very near term policy is reflected in futures contracts on federal funds. Futures on Eurodollars provide information on expectations for the period beyond the next six months or so. For longer time horizons, investors' views can be determined from yields on medium- and long-term Treasury securities. This determination is based on two estimates incorporated in the yield on a nominal Treasury security, such as the ten-year note. The first estimate is essentially a weighted average of the current one-year rate and a sequence of forward rates that contain information about the one-year spot rates expected to prevail over the next nine years. The second estimate is the term premium at each horizon, or the compensation investors require for holding securities an additional period. As might be expected, imprecision about our estimates of these pieces may well increase with the forecast horizon.

Treasury inflation-protected securities (TIPS) are financial market assets that provide a judgment on forward-looking views about inflation. The gap between nominal Treasury yields and yields on TIPS of comparable maturities is called the breakeven inflation rate. The breakeven rate incorporates the market's expectation of inflation and the risk premium for uncertainty about these expectations. It also reflects liquidity differences between the two types of securities, which now are smaller than during the period immediately after TIPS were introduced in 1997. Today, breakeven rates implied by forward prices on TIPS indicate longer-run consumer price index inflation compensation of about 2-1/2 percent, in the middle of the range of the past several years. This is an example of information that may provide monetary policy makers with a reasonable source of market insight and may importantly complement an inflation outlook developed from economic models, survey responses, and other sources. Properly measuring inflation expectations is critically important to the Fed in its formulation of policy.

Markets for corporate equity and debt represent other important sources of information for the Fed. In addition to providing expected interest rates and inflation rates, equity prices incorporate investors' views about the growth of corporate earnings. Corporate bond prices embed expected default and recovery risks. Moreover, derivatives prices can provide other valuable information, and we can learn much by understanding the linkages between primary and derivatives markets.

Let me underscore the role of market signals by discussing monetary policy in the current economic environment. Recent aggregate data indicate that overall economic activity slowed noticeably during the first nine months of the year. In spite of a series of shocks, the economy has proven to be remarkably resilient in recent years, and I expect it to remain so in the period ahead. A sharp pullback in the housing markets is likely to restrain aggregate activity as we move into next year. But as housing markets stabilize, I would expect overall economic performance to strengthen from the levels indicated by preliminary estimates of gross domestic product in the third quarter to a pace more consistent with the economy's long-term trend growth rate. Inflation, though down somewhat from its level earlier this year, remains uncomfortably elevated. Financial market prices imply that inflation will continue its gradual but persistent downward track during the forecast period. There remain, I believe, clear upside risks to that inflation outlook.

Prices on federal funds futures and Eurodollar futures suggest that market participants expect the FOMC to cut the target federal funds rate about 50 basis points during 2007, a view consistent with expectations of a "soft landing." At the same time, market-based options prices on these interest rate futures indicate that implied volatilities are quite low, suggesting a surprising degree of certainty regarding policy expectations. Taken at face value, market participants appear to be reasonably certain of a benign outcome for both economic growth and inflation. In contrast, my own judgmental forecast includes a wider range of possible outcomes than is implicit in these market-based measures.

I am a strong advocate of incorporating forward-looking information from asset prices into the Fed's decision process, but we should not take market readings as determinative of policy. While we should look to financial markets for information, just as market participants look to the Fed for its policymaking views, distilling conclusions from markets is an imprecise exercise.

Why can't market prices be more assuredly relied upon? Asset prices contain term premiums, credit risk premiums, and liquidity premiums that vary over time and are themselves related to market expectations and uncertainty. Consequently, it can be difficult to determine whether movements in asset prices reflect a change in expectations, in uncertainty, or in some combination of premiums.

As an example, consider the changes in Treasury yields since the FOMC initiated the most recent tightening cycle. From mid-2004 to today, the period during which the FOMC raised the target federal funds rate from 1 percent to 5-1/4 percent, the ten-year rate has scarcely changed, on net, and now stands not much above 4-1/2 percent. Whether this configuration is a result of changes in expected rates or term premiums is an important issue for policymakers. Alternative explanations have markedly different implications for policy. If these changes reflect increased strength in underlying demand for longer-term Treasury securities, including from emerging economies, the decline should be reflected in a decline in term premiums. In such a case, all else equal, a tighter monetary policy might be preferred. On the other hand, if the decline reflects investors' views of a weaker path for the economy - the more typical interpretation of a flat or inverted yield curve - policymakers might prefer a more accommodative monetary policy.

Given the complexity of the signal-extraction problem, we should approach our task with considerable humility. We recognize that financial assets prices reflect the collective views of market participants. They may reflect not only changes in expected paths and uncertainty about those paths but also shifting relationships, changes in investor risk preferences, and developments in the structure of various securities markets. Thus, we use market prices alongside many other economic indicators, including statistical releases and large amounts of qualitative evidence.

We can enhance the role of markets by improving the availability of high-quality data for example, about corporate financial conditions and by working to improve our ability to extract signals from market data. The most significant challenge in this setting is, however, perhaps endemic to the task: Our own policies and actions affect market prices. As a result, when we look to financial markets for information, the information we seek may be shaped in part by our own views. The more that "market information" reflects our own actions, the less it is useful as a source of independent information to inform our policy judgments.

We need to be alert to this "mirror problem," in which markets can cease to provide independent information on current and prospective financial and economic developments. In the extreme case, financial markets keenly follow the Federal Reserve, the Federal Reserve is equally attuned to the latest financial quotes, and fundamentals of the economy are obscured. Under such circumstances, asset prices might teach us only about our skills as communicators. Fortunately, the prospect for profits - the critical underpinning of all markets - mitigates this problem. Investors have strong financial incentives to analyze information about inflation and the macroeconomy to better predict the path of monetary policy. After all, Fed communications and forecasts are fallible. The anticipated dispersion of investors' views implies a distribution of returns with substantial rewards for those who get it right.

Market-based information is surely important in determining good monetary policy. This does not mean, however, that the Fed's goal is to align its views with those of the markets or that it wants the markets' views to match its own. Instead, policymakers benefit greatly by listening to views expressed in markets that are at least somewhat independent of FOMC communications. We can further enhance the role of markets by enriching our understanding of the interplay between communication policies of central banks and market prices. Good communication by the Fed should help members of the FOMC interpret market prices. Unnecessary market uncertainty or misinterpretation of our assessments will only muddy the waters.

### **Financial markets and financial supervision and regulation**

In addition to making monetary policy decisions, the Federal Reserve maintains supervisory and regulatory authority over a wide range of financial institutions and activities. The Fed supervises and regulates banks and bank holding companies that together control about 96 percent of commercial banking assets in the United States.

Let us consider the role of market discipline in financial supervision and regulation. First, market prices provide an independent assessment of the current and prospective financial condition of large financial firms. Second, markets can discipline the behavior of firms by adjusting the concomitant funding costs of firms as risks change.

Market discipline, however, may not always be fully effective in this context. The development of the federal safety net - deposit insurance, the discount window, and access to Fedwire and daylight overdrafts - has inevitably impeded the workings of market discipline in the regulatory arena. That is, the various elements of the safety net provide depository institutions and financial market participants with a level of safety, liquidity, and solvency that was far less prevalent before the advent of the Federal Reserve and the subsequent establishment of federal deposit insurance. By deterring liquidity panics, the safety net shields the overall economy from some of the worst effects of instability in the financial system. These benefits, however, are not without costs. The prospect of government intervention distorts market prices and may also engender excessive risk-taking.

The Federal Reserve works to reduce these distortions by enhancing market discipline and limiting expectations of government intervention. Market discipline can improve financial stability by aligning risks and rewards more closely. When risks are both known and measured, they are reflected in asset prices. To this end, bank regulators must continue to strive to develop risk-based capital measures that better reflect underlying risks. At least as important as getting capital levels right, however, are new capital frameworks to provide financial markets with better information on risk-taking by banks. In particular, by leading the development of new capital adequacy regimes, the Fed is actively working to improve the flow of information about financial institutions to market participants.<sup>2</sup> As a consequence of improved flows of information, market participants can better evaluate risks, price securities, and impose their own discipline on firms. These capital and disclosure reforms are aimed at improving the standardization of risk metrics and providing financial markets with meaningful disclosures for risk. Market forces can thus strengthen the incentives for banks to behave more as they would if there were no safety net at all.

For market discipline to work optimally, securities prices for the largest financial firms should reflect investor evaluations of financial risks - credit, market, and operational. Securities prices informed in this way should translate into higher funding costs when greater risks are undertaken, facilitate the appropriate level of monitoring for the effective management of counterparty risk, and help bank supervisors judge the financial condition of firms.

Asset prices, however, will reflect risks only if uninsured creditors perceive that they are at risk of loss. Thus, investors should understand that the resolution procedure for bank failures does not require that all uninsured creditors be made whole. Rather, resolution requires only that uninsured creditors be made no worse off than they would have been if the bank had been liquidated in the marketplace. The ten largest U.S. banking organizations fund less than half their worldwide banking assets with deposits - insured, uninsured, and foreign. Thus, the role for market discipline is substantial: Uninsured creditors must do their own homework because protecting them is not the bank supervisor's job.

Prices for financial firms are not "pure plays" on their expected financial conditions. Rather, the prices also incorporate the value of expected supervisory and regulatory actions should their financial condition deteriorate. These perceptions and levels of government guarantee vary substantially across firms. For example, the corrective actions used by bank supervisors to deal with undercapitalized banks are intended to encourage market discipline and to deter the expectation of regulatory forbearance. In addition, encouraging the issuance of financial market instruments, such as subordinated debt, can provide an important antidote to conjectures of government guarantees and to the misperception that some institutions are "too big to fail." The threat of prohibited payments on the subordinated debt of an institution that becomes undercapitalized should be useful in ensuring vigilance by debt investors. As a result, capital adequacy becomes not the job solely of the regulator, but of market participants as well.

The Federal Reserve also works to enhance the role of market discipline in the broader financial system. For example, the Federal Reserve Bank of New York is working with dealers to improve the settlement and clearing practices of the credit derivatives industry. Reliable recordkeeping is crucial in times of stability; otherwise, it will not be available in times of distress. The Federal Reserve has also highlighted the systemic risks associated with the large portfolios of Fannie Mae and Freddie Mac. The inherent lack of counterparty discipline is a significant problem associated with the regulation of these government-sponsored enterprises (GSEs). Currently, this lack of market discipline, which is a consequence of conjectural federal government guarantees, is self-perpetuating: It has engendered a

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<sup>2</sup> The U.S. banking agencies recently asked for public comment on a notice of proposed rulemaking for implementing Basel II. Pillar three of Basel II is particularly intended to strengthen market discipline.

cost of capital for the GSEs that is nearly comparable to that of the federal government. It should be no surprise, then, that the GSE portfolios have grown dramatically since the early 1990s. Their growth rates have subsided more recently in light of recent accounting, regulatory, and governance problems, but without significant improvements in market discipline, it is likely that the rapid growth of GSE portfolios will resume.

Market information is not a panacea in the formulation of monetary policy and, likewise, it is not one in the context of supervision and regulation. First, market information is unavailable for many banks, often because they issue public debt only infrequently. Second, market discipline for banks is somewhat dependent on the Federal Reserve's policies and actions, and thus it has a "mirror problem" of its own. That is, through a "certification effect," bank supervision can potentially create significant moral hazard in that investors may believe that governmental regulation supersedes their need to assess the firms' financial condition. Third, the objectives of financial markets and the Federal Reserve are not perfectly aligned. For example, equity holders of a failing institution may have an incentive to "bet the bank" and thereby maximize the value of the put option the institution believes it holds from the deposit insurer.

The onus continues to rest with the Federal Reserve and other financial regulators to harness the forces of market discipline as a necessary complement to more traditional modes of supervision and regulation.

## **Conclusion**

In summary, markets inform and, in some cases, complement the monetary, supervisory, and regulatory actions of the Federal Reserve. As I hope that I have made clear, the interaction of market signals and policy is neither simple nor straightforward. You watch us and react to our actions, while simultaneously we monitor you and respond as best we can to the signals you provide about evolving economic and financial conditions. To do our part in preventing the signals from getting crossed, I believe that we at the Federal Reserve should continue our efforts to make our communications and intentions as clear as possible. That may be a tall order, but it is one worthy of our efforts.