



What determines the stock market's reaction to monetary policy statements? ☆

Alexander Kurov *

College of Business and Economics, West Virginia University, Morgantown, WV 26506, USA

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ABSTRACT

We find that information communicated through monetary policy statements has important business cycle dependent implications for stock prices. For example, during periods of economic expansion, stocks tend to respond negatively to announcements of higher rates ahead. In recessions, however, we find a strong positive reaction of stocks to seemingly similar signals of future monetary tightening. We provide evidence that the state dependence in the stock market's response is explained by information about the expected equity premium and future corporate cash flows contained in monetary policy statements. We also show state dependence in the average stock returns on days of scheduled FOMC meetings and in the impact of monetary policy statements on stock and bond return volatility.

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1. Introduction

At a media dinner in April 2006, the Fed Chairman Ben Bernanke told CNBC reporter Maria Bartiromo that investors underestimated his willingness to use monetary policy to fight inflation. Immediately after Ms. Bartiromo reported it on her program, the S&P 500 index dropped by about 0.8% and Treasury bond yields jumped to four-year highs. Investors interpreted Mr. Bernanke's remark as a sign that the Fed may continue its interest-rate boosting campaign longer than previously thought. That casual remark became the biggest business news story of the day, if not the whole week.¹ Speaking at a conference a few weeks later, the Fed Chairman reiterated his concern about inflation. The reaction of the stock market was summarized in a New York Times headline the following morning: "Bernanke Speaks, and Shares Tumble."

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* Tel.: +1 304 293 7892; fax: +1 304 293 3274.

E-mail address: alkurov@mail.wvu.edu.

¹ The *Financial Times* reported two days later: "Traders are calling it "The Bartiromo Affair." Comments made by Ben Bernanke, Federal Reserve chairman, to a reporter at the weekend continued to reverberate yesterday after moving the markets on Monday." (Hughes, 2006).

Market participants analyze every word of Fed officials for clues of possible directions of monetary policy because monetary policy affects asset prices, particularly stock prices. Monetary policymakers are also mindful of the effects of their words on financial asset prices because monetary policy influences the real economy primarily through financial markets, including the stock market.² Therefore, it is important for central bankers to understand what determines the market's reaction to their statements.

Most recent studies looking at the effect of monetary policy on the stock market (e.g., Bernanke & Kuttner, 2005; Ehrmann & Fratzscher, 2004) measure monetary policy shocks by estimating unexpected changes in the current federal funds target rate. Gürkaynak, Sack, and Swanson (2005) demonstrate, however, that the reactions of asset prices to monetary news are determined by two factors. The first factor can be interpreted as the unexpected change in the current target rate. The structural interpretation of the second factor, called the path factor, relates to the information about the future path of

² For example, Blinder, Ehrmann, Fratzcher, De Haan, and Jansen (2008, p. 913) state: "... it is widely accepted that the ability of a central bank to affect the economy depends critically on its ability to influence market expectations about the futures path of overnight interest rates." Also, consider this statement made by Alan Greenspan during an FOMC meeting: "The problem that we have here is that monetary policy works through its effects on overall financial markets. ... The only way to eliminate the wealth effect, which has to be eliminated, is for the discount rate—the market interest rate used by investors to calculate the present value of expected earnings—to rise. ... The question is how we can facilitate that rise." (Transcript of February 1–2, 2000 FOMC Meeting, p. 124–125.).

monetary policy communicated to the market, for example, through policy statements of the Federal Open Market Committee (FOMC). An alternative and complementary view of information conveyed by monetary policy statements is informed by [Kohn and Sack \(2004\)](#), who show that such statements affect Treasury yields largely by communicating the Fed's assessment of economic outlook.

[Gürkaynak et al. \(2005\)](#) show that FOMC statements have a large effect on long-term Treasury yields but almost no effect on U.S. stocks. [Hausman and Wongswan \(2006\)](#) report similar results for international markets. This finding seems counterintuitive and contradicts anecdotal evidence that the stock market often responds strongly to statements of Fed officials. [Gürkaynak et al. \(2005\)](#) argue that the weak effect of the path factor on stock prices may be related to information about the future economic conditions contained in FOMC statements. For example, if the Fed signals that monetary policy is likely to stay accommodative for an extended period, market participants are likely to revise downwards their forecasts of corporate earnings. This revision of expectations will tend to mute the positive effect of the lower expected interest rates on stocks.

We argue that the information content of FOMC statements varies with business conditions, leading to an asymmetric stock market response. Once we allow for business cycle variation in the effect of monetary policy statements on stocks, the stock market response becomes both economically and statistically significant. For example, during periods of economic expansion stocks tend to rise following the Fed's indications of lower rates ahead. When the economy is in recession, however, stock prices tend to fall in response to similar signals, which are frequently motivated by the Fed's downbeat assessments of the economic outlook. These results indicate that the Fed's assessment of the future economic conditions made during recessions is more important to equity investors than the future stance of monetary policy.

We also examine expected stock returns on scheduled FOMC meeting days, as well as state dependence in the effect of monetary policy statements on volatility of stock and bond returns. The results show that the equity premium earned on policy announcement days is much higher in recessions than in good economic times. We also find that monetary policy statements are associated with higher conditional volatility of stock and bond returns in recessions but not in expansions. Taken together, these results support the conclusion that information about the economy contained in monetary policy statements is particularly important to investors in recessionary periods, which are characterized by high economic uncertainty.

In further analysis, we investigate possible explanations for the state dependence in the stock market's response to monetary policy statements, including information about the future risk-free interest rate, expected equity risk premium and revisions in expectations of future corporate cash flows. The results show that the state dependence is explained by the effect of FOMC statements on cash flow expectations and the equity premium in recessionary periods.

Our paper makes several contributions to the literature. First, we provide evidence consistent with the notion that the Federal Reserve has important information about future economic conditions that is unknown to market participants. We show that this information moves stock prices when it is revealed through monetary policy statements. This finding contributes to the literature on central bank communication. Second, we show that the information content of monetary policy statements, and therefore the response of equity investors to such statements, depends on the stage of the business cycle. This finding adds to the literature on state dependence in the response of financial markets to macroeconomic news and should help Fed policymakers implement an effective monetary policy. Our third contribution is to show that the expected stock returns on days of scheduled FOMC meetings and the impact of monetary policy statements on asset return volatility also depend on the state of the economy. These results contribute to the literature on the effect of macroeconomic risk on asset returns.

2. Related literature and hypothesis development

2.1. Do central banks have superior information about the economy?

The research literature on central bank communication is large and rapidly growing. [Blinder et al. \(2008\)](#) provide an excellent survey of this literature. They conclude that the existing evidence strongly suggests that central bank communications often move financial markets, making such communications a potentially important tool for achieving monetary policy objectives. Discussing issues for future research, [Blinder et al. \(2008\)](#) note that there has been relatively little research on the directional impact of central bank messages on financial markets. Our paper contributes to filling this gap in the literature.

According to [Blinder et al. \(2008\)](#), one of the conditions under which central bank communications will influence market expectations is if the central bank is believed to have superior information on the economic outlook. The issue of asymmetric information between the central bank and the public remains relatively unexplored. The present subsection briefly reviews several studies in this area.

[Kohn and Sack \(2004\)](#) provide evidence that the effect of FOMC statements about the future direction of monetary policy on one- and two-year ahead Treasury forward rates is driven primarily by information about the economic outlook, rather than by the expected policy actions themselves. The evidence in [Kohn and Sack \(2004\)](#) is consistent with [Romer and Romer \(2000\)](#), who show that the Federal Reserve has information about future economic conditions that is not reflected in commercial forecasts. [Romer and Romer \(2000\)](#) find that some of the Fed's information is communicated to market participants through the Fed's monetary policy actions. However, [Faust, Swanson, and Wright \(2004\)](#) examine a more recent sample period and find little evidence that the Fed's target rate surprises reveal superior information about the current state of the economy.

Monetary policy actions may not be a very effective communication tool. On the other hand, FOMC statements are designed to convey the Fed's view about the economic outlook, and one would expect them to be a more effective means of communicating such information. We add to the literature on central bank communication by providing evidence that information about the Fed's view of the economic outlook determines the stock market's reaction to monetary policy statements. This finding is consistent with the notion that the central bank is perceived to have superior information about the economy.

2.2. State dependence in the reaction of stock returns to economic news

Studies that do not account for the economic state often find little reaction of stocks to macroeconomic news, implying that stock market investors may not process such information efficiently. The literature on state dependence in the response of markets to macroeconomic news shows that the true impact of news on the stock market becomes apparent only when the effect of business conditions is incorporated into the empirical model. In a pioneering study, [McQueen and Roley \(1993\)](#) find a stronger relation between macroeconomic news and stock prices after allowing for business cycle variation in the stock market response. [Boyd, Hu, and Jagannathan \(2005\)](#) show that news of rising unemployment is viewed by the stock market as good news in economic expansions and bad news in recessions. [Andersen, Bollerslev, Diebold, and Vega \(2007\)](#) find similar results for a wide range of macroeconomic announcements. Similarly, [Basistha and Kurov \(2008\)](#) show that the reaction of stock returns to unexpected changes in the fed funds target is much stronger in recessions and in tight credit conditions than in good economic times. We contribute to this literature by examining state dependence in the stock market's reaction to monetary policy statements.

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