



The impact of economic news on expected changes in monetary policy

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ABSTRACT

Asset prices may react to news through changes in expected monetary policy. We examine whether economic news directly affects expected changes in monetary policy, measured by changes in federal funds rate futures prices. Because these prices depend on monthly averages of the effective funds rate, the timing of FOMC meetings relative to news announcements is important and we derive a method of weighting the news that incorporates this timing. We find that the market raises (lowers) its expected change in the funds rate target after news that inflation was higher (lower) than expected or employment was stronger (weaker) than expected.

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“...asset prices will also respond to revisions in *expectations* about future policy, which in turn may be driven by news about changing economic conditions.” [Bernanke and Kuttner \(2005\)](#)

1. Introduction

It is well-known that “news about changing economic conditions” affects asset prices. Empirical work largely supports the prediction that asset prices quickly respond to news, although identified news events (the arrival of news observed by the researcher) typically explain only a small fraction of asset price changes. While there are many studies of the effects of news on asset prices, there is still no consensus on why the news causes such changes.¹ The Bernanke/Kuttner conjecture that news about economic conditions affects expectations of future policy, which we test in this paper, bears on the question of why economic news affects asset prices.

Researchers generally assume that the news causes agents to revise their expectations of the future values of the fundamental variables that affect asset prices. But as [Faust et al. \(2007\)](#) point out, agents may also factor in the likely response of the Federal Reserve. For example, news that inflation was higher than expected is thought to raise the expected inflation rate, which should cause nominal interest rates to rise via the Fisher Effect. However, it may be that the market expects monetary policy to respond to the inflation surprise and raise interest rates directly. The importance of these alternative mechanisms can be seen by considering the response of exchange rates to news of unexpected inflation. In this case, an increase in expected inflation would cause the domestic currency to depreciate while the prospect of tighter monetary policy would cause it to appreciate. [Andersen et al. \(2003, p. 59\)](#) note that

A positive U.S. inflation surprise would tend to produce dollar depreciation (e.g. when the U.S. central bank reaction function assigns relatively low weight to the level of inflation), whereas in other interpretations it would produce dollar appreciation (e.g. when the U.S. central bank reaction function shows strong preference for low inflation, as in [Taylor \(1993\)](#))

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¹ The literature in this area is large. Recent papers include [Faust et al. \(2007\)](#), [Andersen et al. \(2007\)](#), [Balduzzi et al. \(2001\)](#) and [Neeley and Dey \(2010\)](#).

In this paper we isolate the influence of news on expected changes in monetary policy by investigating how news changes the market's expectation of the federal funds rate target. Previous work shows that short-run changes in federal funds rate futures prices are an appropriate measure of the market's short-run expectations of Fed policy moves.² We use these short-run changes as our dependent variable and estimate models relating changes in federal funds futures prices to standard measures of economic news. Since the data provide strong evidence that economic news affects expected monetary policy we explore various aspects of the effects. We consider how rapidly federal funds futures prices react to news, the symmetry of responses to positive and negative news, the possible dependency of the effects on the state of the economy, and the stability of the relationships over time.

The paper is organized as follows. Section 2 briefly reviews past work on news and asset prices. Section 3 shows how the timing of FOMC meetings must be taken into account when specifying how news affects expected monetary policy changes and describes our data. Section 4 presents our empirical specifications and our estimated results and section 5 concludes.

2. Past work on news and asset prices

Much of the empirical work connecting economic news to asset price changes was made possible by the availability of survey data on forecasts of economic announcements. Researchers generally find that asset prices respond very quickly to news as measured by the unexpected component of these economic announcements.³ Engel and Frankel (1984), among others, argued that the connection between news and asset prices depends on the effects of news on expected monetary policy. The literature supports the hypothesis that changes in expected monetary policy, as measured by the change in federal funds futures rates, affect asset prices. Andersen et al. (2003) find that the dollar appreciates after the FOMC announces an increase in its target rate while Faust et al. (2007) report that a positive change in the federal funds futures interest rate is followed by an appreciation of the dollar. Hamilton (2008) reviews and updates work showing that nominal interest rates are positively related to daily changes in the federal funds futures rate.

It remains to be shown that there is a meaningful connection between economic news and expected changes in monetary policy. Two earlier papers also investigate this issue. Burger (2004), using daily data, finds that expected monetary policy, as measured by the federal funds futures rate, responds to economic news events. More recently, Taylor (2010) looks at how higher frequency federal funds futures data react to news. These two papers ignore the timing of FOMC policy decisions and the arrival of news. Our approach differs from these by recognizing that a policy change in the target federal funds rate affects the federal funds futures market by affecting the expected average effective federal funds rate for the month.⁴ News can only affect the federal funds futures rate for a given month if the news arrives before the FOMC meets. Moreover, this effect is smaller the later in the month the policy change occurs. For example, we would not expect a news event to affect the current-month federal funds futures contract price if the event took place in a month in which there was no scheduled FOMC meeting or if the event occurred after that month's FOMC meeting. We would expect a small effect on the federal funds futures contract price if the FOMC meets late in the month and, therefore, any decision will only affect the effective federal funds rate for a small part of the month. Burger (2004) and Taylor (2010) use specifications that implicitly assume that surprises have the same effects on futures prices regardless of the timing of FOMC meetings.⁵

Since we find evidence that economic news affects federal funds futures rates it is worth noting that previous studies have explored the details of the connection between news and asset prices. For example, Andersen et al. (2003), Aggarwal and Schirm (1998), and Sheehan and Wohar (1995) report evidence of asymmetric responses to positive and negative news while Faust et al. (2007) find that the effect of some news events changes over time. Papers have also examined whether the state of the economy affects the impact of news on asset prices. McQueen and Roley (1993), Adams et al. (2004), Boyd et al. (2005), and Andersen et al. (2007) report evidence that stock price responses to news depend on whether the economy is in an expansion or contraction. The latter paper attributes the negative response of stock prices to news that the economy is stronger than expected, when the economy is already in an expansion, to an expectation that monetary policy will raise real rates and hence the rate of discount of future cash flows. Given these findings, we explore whether the effects of news on expected changes in monetary policy also reflect these patterns.

3. Data

3.1. Measuring changes in expected monetary policy

We use daily and higher frequency fed funds futures prices to extract our measure of expected monetary policy. These futures contracts are based on the average daily effective funds rate for all calendar days in the month, using the previous

² See Bundick (2007), Hamilton (2008) and Hamilton et al. (2011). Piazzesi and Swanson (2008) argue that some adjustment to the change in futures prices must be made to account for risk premiums for monthly measures of expected monetary policy, but that changes in daily futures prices, as used in our paper, should adequately difference out risk premiums that change little over short intervals.

³ Among the studies in this literature are Flannery and Protopapadakis (2002) on stock prices, Balduzzi et al. (2001) on interest rates, and Andersen et al. (2003) on exchange rates. Faust et al. (2007) investigate both interest rates and exchange rates.

⁴ This is explained in Section 3.

⁵ Hamilton et al. (2011) also use federal funds futures data and economic news variables but explore how these data can be used to estimate a Taylor-type rule for expected monetary policy.

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