



Are the Fed's inflation forecasts still superior to the private sector's?

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ABSTRACT

We examine the relative improvement in forecasting accuracy of the Federal Reserve (Greenbook forecasts) and private-sector forecasts (the Survey of Professional Forecasters and Blue Chip Economic Indicators) for inflation. Previous research by Romer and Romer [Romer, Christina, David, Romer, 2000. Federal reserve information and the behavior of interest rates. *American Economic Review* 90, 429–457], and Sims [Sims, Christopher, 2002. The role of models and probabilities in the monetary policy process. *Brookings Papers on Economic Activity* 2, 1–62] shows that the Fed is more accurate than the private sector at forecasting inflation. In a separate line of research, Atkeson and Ohanian [Andrew, Atkeson, Ohanian, Lee E., 2001. Are Phillips curves useful for forecasting inflation? *Federal Reserve Bank of Minneapolis Quarterly Review* 25, 2–11] and Stock and Watson [Stock, James, Watson, Mark, 2007. Why has U.S. inflation become harder to forecast? *Journal of Money, Credit and Banking* 39] document changes in the forecastability of inflation since the Great Moderation. These works suggest that the reduced inflation variability associated with the Great Moderation was mostly due to a decline in the variability of the predictable component of inflation. We hypothesize that the decline in the variability of the predictable component of inflation has evened the playing field between the Fed and the private sector and therefore led to a narrowing, if not disappearance, of the Fed's relative forecasting advantage. We find that the Fed's forecast errors remain significantly smaller than the private sector's but the gap has narrowed considerably since the mid-1980s, especially after 1994.

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1. Introduction

...I've been in the forecasting business for 50 years. ... I'm no better than I ever was, and nobody else is. Forecasting 50 years ago was as good or as bad as it is today. And the reason is that human nature hasn't changed. We can't improve ourselves."

Alan Greenspan, the Daily Show with Jon Stewart, Tuesday, September 18, 2007.

Romer and Romer (2000) and Sims (2002) show that the Federal Reserve's staff forecasts of inflation are superior to the forecasts produced by commercial forecasters in the private sector.¹ Independent of those studies, there has been a number of studies showing that the economy experienced a Great Moderation starting around the mid-1980s.² Coinciding with that Great Moderation, the forecastability of the economy changed as well. The overall volatility of inflation has dropped, and therefore, in

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¹ Romer and Romer (2000) and Sims (2002) also look at the Fed's forecast errors for real output growth.

² Although most studies focus on the decline in output variability (see Bernanke, 2004; McConnell and Perez-Quiros, 2000; Kim et al., 2004; Stock and Watson, 2003 and Blanchard and Simon, 2001) Kahn et al. (2002) find a break in inflation volatility in the mid-1980s as well.

one sense, it is easier to forecast the average rate of inflation. But the bulk of that drop in volatility appears to have come from a drop in the volatility of the predictable component of inflation (Atkeson and Ohanian, 2001; Stock and Waston, 2007). As a result, the marginal contribution of forecasters has dropped sharply since the mid-1980s. Referring to the post-1984 period, Stock and Waston (2007, p. 4) state “it has become much more difficult for an inflation forecaster to provide value added beyond a univariate model.”

We investigate whether the change in inflation forecastability that coincided with the Great Moderation has caused the Fed's forecasting advantage to decline relative to the private sector. To the extent that the Fed had an advantage in forecasting prior to the Great Moderation, that advantage was limited to the predictable component of inflation. We therefore hypothesize that the decline in the volatility of the predictable component of inflation has led to a decline in the Fed's forecasting advantage as well. We also investigate whether there has been further decline in the Fed's relative forecasting advantage since the Fed moved toward greater transparency starting in 1994 greater transparency provides information to the private sector.

We test these hypotheses by comparing the Federal Reserve's Greenbook forecast errors to two sets of private-sector forecast errors: The Survey of Professional Forecasters (SPF) and the Blue Chip Economic Indicators (BC) as well as a naïve forecast represented by the lagged value of inflation (random walk). We find that the Fed's forecasting advantage remains but the size of their advantage has declined significantly. Specifically, the gap between the Fed's forecast errors and the private-sector's forecast errors has declined. In addition, the decline in the predictable part of inflation implies that the naïve (random walk) model produces forecasts that are statistically indistinguishable from the Fed's after 1994.

Our paper proceeds as follows. Section 2 reviews the related literature. Section 3 describes our data. Section 4 compares the Fed's root mean squared forecast errors (RMSE) over various sub-samples with the RMSEs from the private sector and naïve forecasts. Section 5 looks at whether the Fed's *relative* forecast errors have changed over various sub-samples. Section 6 looks at whether the Fed forecasts contain information not contained in private sector and naïve forecasts. Section 7 concludes.

2. Related literature

Using data spanning the late 1960s through the early to mid 1990s, Romer and Romer (2000) and Sims (2002) show that the Federal Reserve is “better” at forecasting inflation. By “better” they mean specifically: (1) the Fed's Greenbook forecasts have lower root mean squared errors (RMSE) than the private sector and (2) given the Fed's Greenbook forecast, private-sector forecasts have little or no additional explanatory power for inflation.

Romer and Romer (2000, p. 437) attribute the Fed's forecasting advantage to the fact that the “Federal Reserve commits far more resources to forecasting than even the largest commercial forecasters.” Similarly, Sims (2002) suggests two reasons for the Fed's forecasting advantage. The first is that the Fed has knowledge of its own likely policy actions and the second is that the Fed is better at collecting detailed information about current and recent movements in the economy. Sims' empirical results are consistent with both explanations. Faust and Wright (2007) test Sims' second conjecture and find that for inflation, the Fed's forecasting advantage does not appear to stem from their ability to collect detailed information about the economy. Their results leave open the possibility that the Fed's forecasting advantage arises from its knowledge of its own policy actions or some other source such as superior modeling.

In a separate line of research, Atkeson and Ohanian (2001) and Stock and Waston (2007) examine changes in the forecastability of inflation after the onset of the Great Moderation in the mid-1980s. Atkeson and Ohanian find that the coefficient on unemployment in the short-run Phillips curve is significantly negative over the sample 1960–1983. After 1983 they find that the coefficient on unemployment in the short-run Phillips curve drops to zero implying that inflation is best forecasted with a random walk model. Stock and Watson find that inflation has become both easier and more difficult to forecast. Inflation has become easier to forecast in the sense that the overall volatility of inflation has dropped and therefore so have RMSEs produced by univariate as well as Phillips-curve type forecasting models. But the relative improvement in RMSEs across these two types of models is striking. In the post-1984 sample, univariate forecasting models perform just as well as Phillips-curve models, suggesting that in the post-1984 period it is difficult for a forecaster to improve upon a simple univariate forecasting model.

The research by Atkeson and Ohanian, and Stock and Watson compares the forecast performance of Phillips-curve models to time series models in which inflation depends only on its past values. Unlike our research, they do not directly compare the forecast performance of the Fed and the private sector. However, our hypothesis follows from their results combined with the results of Romer and Romer, and Sims that the Fed's forecasting advantage arises from the resources they expend on modeling and information gathering. In particular, Atkeson and Ohanian, and Stock and Watson find that inflation forecasting models which rely on correlations among variables such as the Phillips curve have deteriorated in performance relative to models that rely only on past values of inflation. The large amount of resources that the Fed devotes to modeling and gathering detailed information regarding price pressures will lead to superior forecasts only if more complex, multivariate forecasting models out-perform simple univariate models. The findings of Atkeson and Ohanian, and Stock and Watson suggest that after 1984 this is not the case and so it follows that the Fed's advantage in resources and information gathering no longer necessarily implies an advantage in forecasting. The private sector, which has equal access to simple univariate forecasting models, should produce forecasts of inflation that are just as accurate as the Fed's.

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