



The Fed's perceived Phillips curve: Evidence from individual FOMC forecasts

Peter Tillmann *

Department of Economics, Justus Liebig University Giessen, Licher Str. 66, D-35394 Giessen, Germany

ARTICLE INFO

Article history:

Received 17 June 2010

Accepted 25 August 2010

Available online 27 September 2010

JEL classification:

E43

E52

Keywords:

Inflation forecast

NAIRU

Phillips curve

Real-time data

Federal Reserve

ABSTRACT

This paper uncovers the Phillips curve trade-off perceived by US monetary policymakers. For that purpose we use data on individual forecasts for unemployment and inflation submitted by each individual FOMC member, which was recently made available for the period 1992–1998. The results point to significant changes in the perceived trade-off over time with the Phillips curve flattening and the implied NAIRU falling towards the second half of the sample. Hence, the results suggest that policymakers were aware of these changes in real-time.

© 2010 Elsevier Inc. All rights reserved.

1. Introduction

For central bankers, understanding the information content of real economy activity for inflation, also known as the short-run Phillips curve trade-off, is of paramount importance. It is now well-known that the Phillips curve flattened since the beginning of the 1980s, a stylized fact first noted by *Atkeson and Ohanian (2001)*. The period of sustained growth in the second half of the 1990s in the absence of inflationary pressure is widely believed to reflect a further significant structural change in the underlying trade-off. Due to favorable productivity shocks, the argument goes, the Non-Accelerating Inflation Rate of Unemployment (NAIRU) fell.

When did policymakers notice this change?¹ This question is difficult to address based on aggregate macroeconomic data, let alone ex-post revised data. Researchers typically focus on verbal transcripts to illustrate how uncertainty about the Phillips curve affected Federal Reserve decision making. *Meade and Thornton (2010)*, for example, study the debate within the Federal Open Market Committee (FOMC) about the Phillips curve in the 1990s. They document that the FOMC transcripts contain a dramatic increase in references to keywords such as “potential output”, “Phillips curve”, and “NAIRU” towards the second half of the 1990s. They also list examples of FOMC members expressing doubt about the reliability of the Phillips curve as a guideline for interest rate policy. An alternative approach is offered by *Ball and Tchaidze (2002)*. They show that a standard Taylor rule can replicate interest rate setting during the late 1990s only once a falling NAIRU is taken into account. In the 1990s, the Federal

* Tel.: +49 641 99 22170; fax: +49 641 99 22179.

E-mail address: peter.tillmann@wirtschaft.uni-giessen.de

¹ This uncertainty about the Phillips curve relation let research such as *Gorodnichenko and Shapiro (2007)* refer to monetary policy in the second half of the 1990s as the “growth gamble” of the Fed. For a survey on the emergence of the New Economy and the response of monetary policy see *Anderson and Kliesen (2010)*.

Reserve Board's main macroeconomic model, FRB/US, underwent various changes. Tetlow and Ironside (2007) document 30 model vintages. They show that the changing model properties are consistent with a falling NAIRU and a flatter Phillips curve.

This paper addresses these potential changes in the unemployment-inflation nexus and elicits the perception of the Phillips curve trade-off implicit in forecasts of inflation and unemployment of each individual member of the FOMC. Instead of relying on aggregate data or verbal statements, this paper infers the real-time beliefs about this issue directly from policymakers' quantitative forecasts. For this purpose, we employ a data set on individual forecasts, that is, forecasts for inflation and unemployment of each individual FOMC member, which was recently made available in Romer (2010). By submitting these forecasts twice a year, each FOMC member is forced to reveal his notion of the trade-off between real activity and inflation. The data set covers the period 1992–1998, which is the period of heightened uncertainty about the usefulness of the Phillips curve as a guideline for monetary policy.

We estimate a perceived (reduced form) Phillips curve trade-off based on the real-time output gap as a driving variable and, alternatively, with unemployment as the measure of real activity. The former specification allows us to infer changes in the perceived slope or, respectively, the perceived sacrifice ratio, over time. The latter specification can be used to elicit the NAIRU implied by each member's combination of unemployment and inflation forecasts.

The results point to significant changes in the slope of the perceived Phillips curve over time with the Phillips curve flattening towards the second half of the sample. In accordance to Meade and Thornton (2010), we find that the importance of the output gap for the inflation outlook declined. The estimates also suggest that the perceived NAIRU fell over time from about 6.9% in 1992–1994 to 5.3% after 1996. Hence, we conclude that the FOMC forecasts are consistent with the notion that the Phillips curve changed during the second half of the 1990s and that, on average, FOMC members took that into account when submitting their forecasts.

This paper is organized as follows. Section 2 introduces FOMC forecasts and presents the data set. Section 3 contains the empirical approach and discusses the results. Section 4 draws some tentative conclusions.

2. FOMC forecasts

Twice a year at its February and July meetings the FOMC publishes the monetary policy report to congress (Humphrey-Hawkins report).² It contains forecasts of, among other variables, unemployment and the inflation rate. The staff publishes its own set of forecasts in the Greenbook, which is continuously available to FOMC members. Until recently, however, individual forecasts were kept secret. The published report only contains a range of forecasts and the midpoint of this range, also known as the central tendency.

These data received some attention in recent years. Gavin (2003) evaluates the information content of the central tendency and the FOMC's forecasting record, while Gavin and Mandal (2003) compare forecast accuracy between the FOMC, the private sector, and the staff. Likewise, Romer and Romer (2008) contrast FOMC forecasts with Federal Reserve staff forecasts. They provocatively argue that the FOMC forecasts do not contain useful information beyond that already incorporated in staff forecasts. Differences between FOMC and staff forecasts are shown to predict monetary shocks. Gavin and Pande (2008) use data from the survey of professional forecasters to mimic the FOMC's forecasting method and analyse the different measures of forecast consensus.

Recently, the Fed has made available data on individual FOMC member's forecasts for selected years. Based on these releases, Romer (2010) constructs a data set containing forecasts for the period 1992–1998. With this publication, the interest in FOMC forecasting is most likely to be revived. The present paper is one of the first attempts to use this data set.³ In a closely related paper, Banerghansa et al. (2009) employ this data set to study patterns behind the forecast disagreement among members. We use this data set to uncover policymakers' beliefs about the Phillips curve trade-off. By setting a forecast of unemployment and inflation, each FOMC member implicitly reveals her perception of the short-run trade-off between these two variables. The data set contains forecasts from board members as well as from voting and non-voting regional Federal Reserve Bank presidents. It does not, however, contain forecasts from the chairman.

Of course the short sample period available to the researcher is a serious restriction. Fortunately, however, it does at least cover a very interesting episode of US monetary policy as this time span reflects the period of policymakers' heightened uncertainty about possible changes in the trade-off due to favorable shifts in productivity.

In the July report, the FOMC prepares forecasts five quarters ahead and one quarter ahead. The February report contains forecasts for the variables three quarters ahead. The inflation forecast is the expected fourth quarter-to-fourth quarter change of the CPI, while the unemployment forecast refers to the rate of unemployment in the last quarter of the year. The timing conventions are explained in detail in the next section. All forecasts are supposed to be conditional on each member's own judgement of the "appropriate policy" path over the forecast horizon.

For each of the three different forecasts per year, i.e., one at the February meeting and two at the July meeting, the data set contains forecasts for inflation and the unemployment rate for 7 years and 18 FOMC members. Since a couple of FOMC seats were vacant in the sample period, this leaves us with 120 pairs of observations for each forecast horizon.

² Recently, the frequency was increased to four forecasts per year.

³ All data series about FOMC forecasts used in this paper are available at David Romer's website under <http://www.elsa.berkeley.edu/~dromer/>.

متن کامل مقاله

دریافت فوری ←

ISIArticles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات