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Do people understand monetary policy?☆

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ABSTRACT

We combine questions from the Michigan Survey about future inflation, unemployment, and interest rates to investigate whether households are aware of the basic features of U.S. monetary policy. Our findings provide evidence that some households form their expectations in a way that is consistent with a Taylor (1993)-type rule. We also document a large degree of variation in the pattern of responses over the business cycle. In particular, the negative relationship between unemployment and interest rates that is apparent in the data only shows up in households' answers during periods of labor market weakness.

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1. Introduction

> "Improving the public's understanding of the central bank's policy strategy reduces economic and financial uncertainty and helps households and firms make more-informed decisions. Moreover, clarity about goals and strategies can help anchor the public's longer-term inflation expectations more firmly and thereby bolsters the central bank's ability to respond forcefully to adverse shocks." (Bernanke, 2010).

Central bankers often emphasize the need to communicate with the public to improve its understanding of monetary policy. As the argument goes, this should allow households and firms to make better-informed price- and wage-setting decisions, and improve policy effectiveness. More generally, agents' understanding of how policies that affect their decisions are conducted is perceived to be a key ingredient in the policy transmission mechanism. This perception is guided by economic theories in which the behavior of the economy depends on the interaction between the actual conduct of policy and agents' understanding of it.[1]

In this paper we take a step back from the literature on central bank communication, expectations formation, and monetary policy effectiveness, and try to answer the more basic question of whether economic agents – U.S. households in particular – understand how the Fed conducts monetary policy.

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[1] This interaction is well articulated in the work of Eusepi and Preston (2010), for example. In their model, if agents are not fully aware of the central bank's behavior, policies that would otherwise guarantee stable inflation expectations might leave the door open to expectations-driven fluctuations.

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Since the work of Taylor (1993), it became standard practice to posit that the Fed sets interest rates according to a "Taylor rule" that specifies a target for the policy rate as a function of deviations of inflation from its objective and some measure of slack in economic activity, such as the output gap. Our goal is to assess whether U.S. households are aware of what we refer to as the *basic principles underlying the Taylor rule*: that the policy interest rate tends to increase with inflation and to decrease with slack in economic activity. Most of the time, these principles provide a qualitative description of how the Fed pursues its so-called dual mandate of price stability and full employment.

While there is a large empirical literature on estimation of central banks' interest rate policy functions,[2] there is much less empirical work on the question of whether households understand monetary policy. One may wonder why this is the case. A possible answer is that this question is not important. In a world with complete asset markets, it arguably suffices that agents who participate in financial markets understand monetary policy. If so, asset prices will correctly reflect current and future policy developments, and those who do not understand monetary policy can simply rely on asset prices to make fully informed consumption and investment decisions.

Under incomplete markets, however, households' expectations about future monetary policy may affect their behavior. An extreme case is that of an economy with only a one-period nominal bond. In that case, the short-term nominal bond price only reveals the current interest rate, and thus its price is not informative of financial market participants' views about future monetary policy. Hence, households' intertemporal decisions will hinge on individual beliefs about the future course of the economy – and of monetary policy in particular.[3]

Beyond these theoretical considerations, the effort that the Federal Reserve devotes to educating the general public and communicating about monetary policy suggests that the question posed in this paper is important for policymaking.[4] So, perhaps the lack of empirical work in this area simply reflects the fact that households' perceptions about monetary policy are not directly observed nor surveyed.

This paper addresses the question of interest by combining households' answers to survey questions about future inflation, unemployment, and interest rates from the Survey of Consumers (Michigan Survey). At an intuitive level, our simple empirical approach is based on the idea of separating survey answers about interest rates, inflation, and unemployment that are consistent with the basic principles underlying the Taylor rule from those that are not. To fix ideas, suppose that the Fed's target for the federal funds rate depends positively on contemporaneous inflation and negatively on contemporaneous unemployment, and changes only with these two variables. Then, to be consistent with the aforementioned principles, survey answers that indicate unemployment will go down and inflation will go up in one year would necessarily have to be accompanied by an answer that the Fed will tighten monetary policy over the same period. Likewise, answers that unemployment will go up and inflation will drop must be associated with a call that the Fed will ease policy.[5]

More generally, however, an answer that is inconsistent with a particular version of the Taylor rule need not imply a misunderstanding of monetary policy. The reason is that no specific interest rate rule is a perfect description of policy. To address this issue and provide an answer to our research question that can be relied on more generally, we look for consistency in households' answers by testing whether various empirical frequencies of households' responses about future interest rates, inflation, and unemployment differ from each other in a way that is consistent with the basic principles underlying the Taylor rule. To give a concrete example, given a response about future unemployment, our empirical approach is to test if forecasts that interest rates will go up are more prevalent among households that predict higher inflation than among those that predict lower inflation.

Despite important limitations, the Michigan Survey data turn out to be informative of the question posed in this paper. Our results are broadly consistent with the view that (at least some) U.S. households are aware of the basic principles underlying the Taylor rule when forming their expectations about interest rates, inflation, and unemployment. The extent to which this happens, however, is not uniform across income and education levels. Moreover, there are important differences in the patterns of responses over the business cycle. Specifically, households' answers are more consistent with a Taylor rule during times of labor market weakness. Our findings survive an extensive battery of robustness checks.

While our tests are based on a reduced-form empirical approach, the relationships uncovered between households' answers about inflation and unemployment on one side and interest rates on the other side can be given a causal

[2] For a survey, see Hamalainen (2004). Overall, Taylor-type interest rate rules are seen as a reasonable description of how policy has been conducted in the United States during most of the time since the late 1980s (see, e.g., Judd and Rudebusch, 1998). At times, however, monetary policy seems to deviate more substantially from what Taylor rules would imply (e.g., Taylor, 2007).

[3] This argument is consistent with the literature that studies the macroeconomic implications of expectations formation. For example, Woodford (2013) studies models with possibly heterogeneous expectations in which agents' understanding of fiscal and monetary policies matters. Eusepi and Preston (2013) show that asset market structure – in particular the maturity profile of government debt – matters in a model in which agents have to learn about fiscal and monetary policies.

[4] Such effort includes, for example, lectures about monetary policy and programs to educate the general public (e.g., http://www.federalreserve.gov/newsevents/lectures/about.htm, http://sffed-education.org/chairman/, and http://www.newyorkfed.org/education/fedchallenge_college.html). The concern with the public's understanding of monetary policy is shared by policymakers other than Chairman Bernanke. For example, Yellen (2013) states that "Like the Chairman, I strongly believe that monetary policy is most effective when the public understands what the Fed is trying to do and how it plans to do it."

[5] Our approach relies on the maintained identification assumption that households' answers about future changes in interest rates are conditional on their answers about future inflation and unemployment. We later discuss how alternative assumptions might affect the interpretation of our results.

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