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# Are public preferences reflected in monetary policy reaction functions?

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## ARTICLE INFO

## ABSTRACT

In this paper, we test whether public preferences for price stability (obtained from the Eurobarometer survey) were actually reflected in the interest rates set by eight central banks. We estimate augmented Taylor (1993) rules for the period 1976Q2–1994Q1 using the dynamic GMM estimator. We find, first, that interest rates did reflect society's preferences since the central banks raised rates when society's inflation aversion was above its long-run trend. Second, the reaction to inflation is was non-linearly increasing in the degree of inflation aversion. Third, this emphasis on fighting inflation did not have a detrimental effect on output stabilization. We conclude with some implications concerning the democratic legitimation of central banks.

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## 1. Introduction

A fundamental principle of democratic societies is that power should not be concentrated in the hands of any single individual or held solely by a small group. However, the mainstream view in economics is that a society is better off if this principle is ignored. Central bank independence and the delegation of monetary policy to a conservative central banker (Barro and Gordon, 1983a; Rogoff, 1985) are considered to be the most appropriate ways of overcoming the so-called time-inconsistency problem in monetary economics (Kydland and Prescott, 1977). And, indeed, there is an increasing tendency around the world to devolve responsibility for managing monetary policy on an independent central bank. Supporting the wisdom of this trend, the vast majority of empirical literature on the topic finds a negative relationship between central bank independence and inflation (see the literature surveys by Eijffinger and de Haan (1996), Berger et al. (2001) and Hayo and Hefeker (2002)).

Delegating monetary policy to a small group of central bankers is not without its costs. Decisions made by the central bank involve trade-offs. Judgments have to be made about whether the risks of inflation are worth the benefits of boosting the real economy and vice versa. Typically, those who make the decisions are not representative of society as a whole

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(Stiglitz, 1998). For instance, according to Rogoff (1985), central bankers should be more conservative with respect to fighting inflation than the rest of society. As a consequence, it is often stressed that central banks lack democratic accountability. Ideally, in a democratic society, it is elected politicians who should be defining and ranking monetary policy objectives (de Haan and Eijffinger, 2000). Accordingly, it is up to the electorate to choose an appropriate institutional setting that fulfills its purposes. In short, in a democracy, monetary policy should reflect the public's preferences.

> The fact that monetary policy involves trade-offs ... has one clear implication in a democratic society. The way those decisions are made should be representative of the values of those that comprise society. At the very least, they [the monetary policy decision-makers] should see as their objective the application of their expertise to reflect broader societal values. The central bank should not be seen as a mechanism for the imposition of the values of a subset of the population on the whole.
>
> [Stiglitz, 1998, 218]

Therefore, it should be straightforward to test empirically if public values or preferences are reflected in monetary policy; however, the extant literature provides only indirect evidence, and not much of even that. For instance, Hayo (1998) shows that some sort of price stability culture exists in low inflation countries. Hayo and Hefeker (2002) model the choice of a certain degree of central bank independence as a two-step process. In the first step, society decides on the importance it attaches to fighting inflation. In the second step, society chooses the best institutional arrangement for achieving price stability.

To date, there has been no direct test of whether public preferences are actually reflected in the interest rates set by central banks. We address this gap in the literature and ask the following research question: *Are public preferences with regard to price stability reflected in monetary policy reaction functions (in addition to the reaction to inflation and output)?* An affirmative answer should provide central banks with a certain degree of democratic legitimation. Reflecting the public's values or preferences in everyday monetary policy should strengthen the authority of the central bank.

We augment a standard Taylor (1993) rule by an indicator that captures public concern about inflation. This indicator is obtained from the Eurobarometer survey, which collects public opinion polls on how people in different countries of the European Community value price stability. It is available as a continuous time series for eight countries and the period 1976–1993. Econometrically, we use the dynamic panel GMM estimator.

## 2. Preferences for price stability and Taylor rules

In a first step, we identify the relationship between a society's preferences for price stability and the Taylor rule by means of an illustrative model. In a second step, we link this relationship to the degree of inflation aversion of central bankers, who—according to economic theory—should be more hawkish than society as a whole.

The economic structure is described by the following New Keynesian Phillips curve and the IS curve, respectively:

$$\pi_t = \beta E_t \pi_{t+1} + \gamma x_t + e_t \tag{1}$$

$$x_t = E_t x_{t+1} - \frac{1}{\sigma}(i_t - E_t \pi_{t+1}) \tag{2}$$

$\pi_t$ is the inflation rate, $x_t$ is the output gap, $e_t = \rho e_{t-1} + \varepsilon_t$ is a persistent supply shock ($\varepsilon_t$ is i.i.d.), $i_t$ the short-term interest rate, and $E_t$ is the expectations operator. The coefficients $\beta$, $\gamma$, and $\sigma$ are strictly positive.

When setting monetary policy objectives, a society faces a trade-off between stabilizing inflation and stabilizing the real economy. The standard quadratic loss function by Barro and Gordon (1983b) is a useful shorthand description of this trade-off:

$$L = \frac{1}{2}\left(\pi_t^2 + \lambda x_t^2\right) \tag{3}$$

$\lambda$ is the weight attached to output gap stabilization relative to inflation stabilization. A society with a small value for $\lambda$ is more willing to tolerate output gap fluctuations than inflation fluctuations. The society minimizes this loss function under discretion, taking expectations of future inflation and future output as given. Optimal monetary policy then results in the standard targeting rule:

$$\pi_t = -\frac{\lambda}{\gamma} x_t \tag{4}$$

Following Walsh (2003), we guess a solution of the form $x_t = \delta e_t$ which provides us with $E_t x_{t+1} = \delta \rho e_t$ for the expected output gap since the supply shock is persistent. Using this solution and inserting the targeting rule (Eq. (4)) into the Phillips curve (Eq. (1)) provides us with equilibrium values for the inflation rate and the output gap:

$$\pi_t = \frac{\lambda}{\lambda(1 - \beta\rho) + \gamma^2} e_t \tag{5}$$