How much should central banks talk?
- A new argument

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Abstract The openness of central bank decision making has recently received new attention in the literature. It has been argued that more openness reduces uncertainty for players on financial markets and makes future decisions more transparent. In this paper I argue that the opposite may be the case. The argument is based on a model that studies the interaction of major macroeconomic players with the central bank. In the paper I make a distinction between (i) uncertainty about the central banks objectives and (ii) inflation uncertainty. This distinction turns out to be crucial. I assume that the disclosure of information affects the degree of uncertainty about central bank objectives. However, actual inflation uncertainty is affected by these objectives and by the actions of all macroeconomic players. More uncertainty about future monetary policy leads to more wage discipline, which in turn lowers average inflation. In equilibrium, the variance of inflation may be reduced as well.

1　Introduction

The openness of central bank decision making has recently received new attention in the literature[1]. It has been argued that more openness reduces uncertainty for players on ﬁnancial markets and makes future decisions more transparent (c.f. Blinder et al., 2001). In this paper I argue that the opposite may be the case. The argument is based on a model that studies the interaction of major macroeconomic players with the central bank.

In the paper I make a distinction between uncertainty about the central banks objectives and inﬂation uncertainty. This distinction turns out to be crucial. In the spirit of Cukierman and Meltzer (1986), I assume that the public is uninformed about the weight which the central bank puts on its various objectives. The disclosure of information aﬀects the degree of uncertainty about central bank objectives. However, actual inﬂation uncertainty is aﬀected by these objectives and by the actions of all macroeconomic players. In so far as uncertainty about central bank objectives aﬀect trade unions behavior, it may also have a positive impact both on price stability and on inﬂation uncertainty. More uncertainty about future monetary policy leads to more wage discipline, which in turn lowers average inﬂation. Moreover, the variance of inﬂation may be reduced as well.

2　The Model

The model is a two stage game in which a monopoly union interacts with a central bank. Previous models of this sort can be found in Cukierman and Lippi (1999), Gruener and Hefeker (1999), and others.

Two variables are determined in this game: the nominal wage w and inﬂation

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[1]Recent contributions include Blinder et al. (2001), Cukierman (2001), and Gersbach (2001a,b).

π. The nominal wage is fixed by the monopoly union before the central bank fixes π. Both variables determine the real wage $W = w-\pi$ and unemployment $u = a \cdot W$. Without loss of generality I fix $a = 1$.

The objectives of both players are the following. The central bank cares about real wages and employment. Its utility function is

$$C(\pi;u) = -\,l\pi^2 -\, u^2;\tag{1}$$

where l is a measure of the central bank's inflation aversion. The union cares about the real wage and employment. Its objective is to maximize

$$U(w;\pi) = W - \frac{A}{2}u^2.\tag{2}$$

The reaction function of the central bank can be derived as

$$\pi = b \cdot w;\tag{3}$$

where $b = \frac{1}{1+l}$. The trade union is not perfectly informed about the central bank's preferences. It knows the mean of the inflation reaction $\hat{b}$ and the variance

$$\sigma_b^2 = E\left[\left(b - \hat{b}\right)^2\right].\tag{4}$$

Measures that make the decision process more transparent are assumed to result in a reduction of σ_b^2.

2.1 Equilibrium

Taking into account the central banks expected reaction the union maximizes the following function at stage 1:

$$E\left[\dot{w} - \mu - \frac{A}{2}u^2\right] \tag{5}$$

$$= E\left[\dot{(1-b)w} - \frac{A}{2}((1-b)w)^2\right] \tag{6}$$

$$= E\left[\dot{(1-b)w} - \frac{A}{2}\left(1 - 2b + b^2\right)w^2\right]. \tag{7}$$

The solution of this problem is

$$w = \frac{E(1-b)}{E[A(1-2b+b^2)]} \tag{8}$$

or

$$w = \frac{1-\bar{b}}{A\left(1 - 2\bar{b} + \bar{b}^2 + \sigma_b^2\right)}. \tag{9}$$

2.2 Results

An immediate consequence is

Proposition 1 Uncertainty about central bank preferences reduce wages, average inflation and unemployment.

Proof. Wages decline with σ_b^2 as can be seen from (9). Moreover, according to (3) average inflation and average unemployment decline as well. Q.E.D.

Next we analyze whether more uncertainty about the central bank's preferences necessarily creates more inflation uncertainty. It is useful to define

$$\sigma_\mu^2 := E\left[(\mu - \bar{\mu})^2\right] = E\left[\left(bw - \bar{b}w\right)^2\right] = w^2 \cdot \sigma_b^2. \tag{10}$$

We have

$$\frac{d\sigma_\pi^2}{d\sigma_b^2} \;=\; w^2 + 2w\frac{dw}{d\sigma_b^2}\sigma_b^2 \tag{11}$$

$$=\; w^2 - 2w\sigma_b^2 \frac{1 - b}{A\left(1 - 2b + b^2 + \sigma_b^2\right)^2} \tag{12}$$

$$=\; w^2 - 2w^2\sigma_b^2 \frac{1}{1 - 2b + b^2 + \sigma_b^2}: \tag{13}$$

This derivative is positive i®:

$$1 - 2b + b^2 \;>\; \sigma_b^2 , \tag{14}$$

$$\left(1 - b\right)^2 \;>\; \sigma_b^2: \tag{15}$$

Hence we have:

Proposition 2 In°ation uncertainty increases with uncertainty about central bank preferences when the latter is low. It decreases when uncertainty about b is high.

Proof. see above.

3 Discussion

The present paper adds another theoretical argument in favor of limited central bank transparancy to the contributions by Cukierman (2001), Cukierman and Meltzer (1986) and Gersbach (2001a). According to the present analysis, uncertainty about central bankers' preferences may lead to more wage discipline. Wage setters act more carefully when they know less about the way in which the central bank might react to their wage claims. This reduces equilibrium wage claims, in°ation and unemployment on average. Government that are concerned about in°ation and unemployment should

therefore be careful about introducing too much transparancy. Even sticking to the narrow objective of low in°ation uncertainty, it may not always be optimal to improve the public's information about the central bank's future objectives. This is the case when there is an upper bound on the degree of informedness of the public. Consider e.g. the case where new rules for information disclosure can reduce uncertainty to a level $\sigma_b^2 \geq \sigma_{b;min}^2 > 0$. If this minimum level exceeds $\left(1 - \overset{´}{b}\right)^2$ then any reduction of uncertainty about future moves leads to an increase of in°ation uncertainty.

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