Optimal Monetary Policy with a Flexible Price-setting Rule

By David Nickerson*, Vancouver

A controversial topic in recent macroeconomic literature concerns the ability of systematic monetary policy to influence short run values of real output. Consider an economy where private agents know both the strategy of the monetary authority and the structural relation between money and the price level, where deviations in aggregate supply result from random forecast errors about the price level, and where the price level adjusts to clear markets in each period. For such an economy, *Lucas* (1973, 1975) and *Sargent* and *Wallace* (1975) demonstrated that there exists no beneficial role for systematic monetary policy. Any predictable monetary change influences nominal values while leaving real values constant. Serious doubt about the empirical relevance of price flexibility and market clearing led *Gordon* (1976, 1977) and *Modigliani* (1977) to argue that the practical implications of such policy neutrality results are small if prices in the actual economy are relatively rigid or subject to gradual adjustment. This view received theoretical support from *Fischer* (1977), *Phelps* and *Taylor* (1977), *Fethke* and *Policano* (1979, 1981) and others. Their papers featured a two-period rigid wage or price which created a channel of influence on output for monetary policy even in the presence of rational expectations about future prices. *McCallum* (1977, 1978, 1979, 1980) offered contrary theoretical evidence supporting policy neutrality by demonstrating that certain non-equilibrium prices were compatible with zero degree homogeneity of the aggregate supply function with respect to systematic monetary policy[1]. The implications of this disparate theoretical evidence for the practical conduct of monetary policy are contradictory. The results are weakened by the specificity of the price-setting rules employed.

---

* Assistant Professor of Economics, Duke University and University of British Columbia. I would like to thank *Martin Bronfenbrenner, Ed Burmeister, Marsha Courchane, Mukesh Eswaran, Robert J. Gordon, Bennett McCallum, Keizo Nagatani, John Taylor, E. Roy Weintraub* and *John Weymark* for helpful comments on an earlier version of this paper.

[1] Some of *McCallum*'s conclusions have recently been questioned (*Frydman* 1981; *Nickerson* 1985) in regard to the role of inventories in models with excess demand.

This paper reconsiders previous theoretical arguments over policy neutrality by examining the effects of systematic policy on real output in a representative model featuring a flexible price-setting rule. Both the equilibrium price and the two-period rigid price found in *Fischer*, et al., develop as special cases. After a characterization of the channel of monetary influence and the design of an optimal monetary policy which minimizes the variance of both real output *and* the observed price level, systematic monetary policy is shown to influence real output deviations for a continuum of values of the price-setting rule arbitrarily close to the market clearing value. This indicates the existence of a beneficial role for policy in the presence of rational expectations and an almost complete degree of price flexibility. A measure of the magnitude of the impact of policy on output deviations is then calculated and is shown to be linearly decreasing in the difference between the equilibrium and non-equilibrium values of the price-setting rule. Finally, the optimal monetary policy is shown to be independent of the degree of flexibility in the actual price level, resulting in a potential information cost saving to the monetary authority.

The paper is organized as follows. The representative model and the general price-setting rule are described in Section I. Equilibrium and non-equilibrium values of real output and the price level are given and the deviation of non-equilibrium output from its equilibrium value is interpreted in terms of the parameters of the price-setting rule and the equation describing monetary policy. Section II contains the derivation of an optimal monetary policy and a characterization of the effectiveness and magnitude of the impact of the optimal policy on output in terms of the parameters of the price-setting rule. A conclusion is presented in the final section.

I. The Representative Economy

Consider the representative economy to be composed of a number of identical price-setting firms. Given implicit costs of price adjustment, each firm must set a price at which it will trade two periods ahead, based on its conditional expectation of the price that would be optimal for it to charge in that period[2]. The representative firm has an optimal or equilibrium price-output pair $(\bar{p}_t, \bar{y}_t)$ that would describe its profit maximizing behavior for

[2] A macroeconomic model with price-setting firms also appears in *McCallum* (1979). Assuming any response of output supplied to nonzero values of excess commodity demand renders the presence of a notional supply function superfluous in determining the neutrality of monetary policy, as shown in *Nickerson* (1985).

each period t in the absence of the need for the two-period forecast. Implicit inventory movements accomodate deviations in the firm's sales of the common good from its optimal or equilibrium value[3].

The economy consists of an aggregate demand curve (1), proportional to the demand curve faced by the representative firm, an exogenous stochastic process describing equilibrium output in each period for the firm, a feedback rule describing monetary policy and a price-setting rule for the firm[4]. Assume all variables to be in logarithms. The aggregate demand curve for period $t+1$ is:

$$y^d_{t+1} = \beta_0 + \beta_1 (m_{t+1} - p_{t+1}) + \beta_2 E_t (p_{t+2} - p_{t+1}) + v_{t+1}; \quad \beta_1 > 0, \beta_2 \geq 0 \tag{1}$$

where p_{t+1} denotes the actual aggregate price level, m_{t+1} is the stock of nominal money balances, β_0 is a constant and v_{t+1} is a random disturbance[5]. Agents' expectations of prices are unbiased in the sense that $E_{t-j}\, p_{t+i}$, $i, j \geq 0$ is the true conditional expectation of p_{t+i} calculated from the probability distribution contained in the model and a commonly held set of observations through the period $t-j$, $j \geq 0$. The optimal output for the firm to supply is specified, for convenience, to be a random walk:

$$\bar{y}_{t+1} = \bar{y}_t + u_{t+1} \tag{2}$$

The monetary feedback rule is described by:

$$m_{t+1} = m_t + \psi\, \eta_t + \varepsilon_{t+1} \tag{3}$$

where $\psi = (\psi_1, \psi_2, \psi_3)$ is a vector of feedback coefficients and $\eta' = (u, v, \varepsilon)$ is a vector of white noise disturbances in the processes describing equilibrium output, demand and monetary growth respectively. These disturbances are mutually and serially uncorrelated with zero means and respective variances $\sigma^2_u, \sigma^2_v, \sigma^2_\varepsilon$. The general price-setting rule is a function with a domain containing the forecast value of the equilibrium price and the actual value of the equilibrium price in the relevant period. The rigid price-setting rules found in *Fischer*, et al., consist only of the former value while the price rule in market clearing models consists only of the latter value. Consider allowing

---

[3] Explicit examination of inventories in a stochastic macroeconomic model appears in *Blinder* and *Fischer* (1981).

[4] Since firms are identical, proportionality coefficients on the demand and supply expressions are suppressed while individual and aggregate price-setting rules coincide.

[5] For convenience, and without loss of generality, β_0 will be normed to zero in subsequent expressions.

the firm to trade at any point in the continuum described by these two values. Formally, the price-setting rule for the representative firm in any period $t+1$ is:

$$p_{t+1} = (1-\lambda)\,\bar{p}_{t+1} + \lambda\, E_{t-1}\,\bar{p}_{t+1}\,;\ 0 \leq \lambda \leq 1 \tag{4}$$

where $\bar{p}_{t+1}$ is the equilibrium price, optimal for the firm in the absence of adjustment costs, p_{t+1} is the actual price at which the firm will sell its output in $t+1$ and λ is a built-in adjustment parameter in the price-setting rule, measuring the deviation of the actual from the equilibrium price[6]. As a function of the adjustment parameter, the rule (4) encompasses the antipodal cases of the equilibrium price in each period ($\lambda = 0$) and a price fixed at its forecast value, as found in *Fischer, Phelps - Taylor,* and others, as well as all linear combinations of these values. While the rule (4) allows the price set by firms to change in each period, it incorporates the presence of a two-period lagged expectation of the current equilibrium price for prices arbitrarily close to the equilibrium price, which is the essential element of the rigid price models.

Solution of the model for the observed values of price and output exchanged proceeds from an explicit derivation of the optimal price level. The series describing optimal output (2) and the money supply (3) determine the optimal price level through the aggregate demand curve (1). The solution for the optimal price level is:

$$\bar{p}_{t+1} = E_t\, m_{t+1} - \beta_1^{-1}\, E_t\, \bar{y}_{t+1} + (\varepsilon_{t+1} + \beta_1^{-1}\,(v_{t+1} - u_{t+1})) \tag{5}$$

where $E_t\, m_{t+1} = m_{t-1} + \psi\eta_{t-1} + \psi\eta_t + \varepsilon_t$ and $E_t\, \bar{y}_{t+1} = \bar{y}_{t-1} + u_t$. The price at which firms trade in any period $t+1$ is, from (4), a weighted average of the realized value of the optimal price (5) and its expectation, conditional on information available two periods previously. Substitution of the realized and expected values of the optimal price into the pricing rule (4) yields an explicit solution for the price at which firms trade in any period $t+1$:

$$\begin{aligned} p_{t+1} = {} & (E_{t-1}\, m_{t+1} - \beta_1^{-1}\, E_{t-1}\, \bar{y}_{t+1}) + (1-\lambda)\,((\psi_1 - \beta_1^{-1})\, u_t + \\ & \psi_2\, v_t + (1+\psi_3)\,\varepsilon_t) + (1-\lambda)\,(\varepsilon_{t+1} + \beta_1^{-1}\,(v_{t+1} - u_{t+1})) \end{aligned} \tag{6}$$

The elements of the first term of (6) are common to both the actual and expected values of the optimal price and so appear in p_{t+1} with a coefficient of unity. Elements of the remaining two terms appear only in the actual value

[6] An explicit optimization problem for a monopolist facing discrete price adjustment costs in a stochastic inflationary environment, yielding a similar form of nominal price rigidity, is analyzed in *Nickerson* (1984). Some microeconomic justification for such pricing policies is also presented in *McCallum* (1977, 1980).

of the optimal price and so enter the expression for p_{t+1} with the coefficient $(1-\lambda)$.

A solution for the actual value of output exchanged in any period $t+1$ proceeds by initially considering the effect of forecast inflation in the actual price level, $E_t\,(p_{t+2}-p_{t+1})$, on aggregate demand. This term may be decomposed into two simple components by considering (4):

$$E_t\,(p_{t+2}-p_{t+1}) = (1-\lambda)\,E_t\,(\bar{p}_{t+2}-\bar{p}_{t+1}) + \lambda\,(E_t\,\bar{p}_{t+2} - E_{t-1}\,\bar{p}_{t+1}) \tag{7}$$

Specification of the processes for optimal output and the money supply implies that the difference $E_t\,(\bar{p}_{t+2}-\bar{p}_{t+1})$ must be zero. An expression for $E_t\,\bar{p}_{t+2}$ may be obtained from (5), allowing the inflation forecast (7) to be expressed as:

$$E_t\,(p_{t+2}-p_{t+1}) = \lambda\,((\psi_1-\beta_1^{-1})\,u_t + \psi_2\,v_t + (1+\psi_3)\,\varepsilon_t) \tag{8}$$

The forecast change in successive observed price levels is a sum of the innovations in optimal output, demand, and the money supply at the time of the forecast, weighted by coefficients dependent on the feedback parameters. As will be shown below, optimal monetary behavior will involve smoothing the optimal price path over time, implying a zero value for expected inflation.

Substitution of (3), (6), and (8) into (1) yields an explicit solution for the value of observed output in $t+1$:

$$\begin{aligned} y_{t+1} = \bar{y}_{t+1} + \lambda\,(\beta_1+\beta_2)\,((\psi_1-\beta_1^{-1})\,u_t + \psi_2\,v_t + (1+\psi_3)\,\varepsilon_t) + \\ (\beta_1\,\varepsilon_{t+1} + v_{t+1} - u_{t+1}) \end{aligned} \tag{9}$$

Equation (9) expresses the deviation in output from its optimal value as a sum of the current real and monetary disturbances plus a combination of these same disturbances from the previous period, weighted by terms dependent on the feedback parameters. Anticipated monetary policy can affect the deviation of output from its mean optimal value for all nonzero values of λ, $0<\lambda\leq 1$. Equivalently, anticipated monetary policy can affect output deviations for all values of the firm's price-setting rule (4) arbitrarily close to, but not equal to, the equilibrium or optimal price $\bar{p}_{t+1}$[7].

The nature of the deviation in actual output from its mean is a direct function of the nature of the price set by the firm. As shown in equations (5)

[7] The idea that the limiting behavior exhibited by an economic system, as a crucial parameter approaches zero, does not coincide with the system's behavior for a zero value of that parameter has been examined in other contexts. An example is the study by *Graham* and *Weintraub* (1972) of information costs in uncertain bilateral exchange.

and (6), the elements common to both components of the firm's actual price are $E_{t-1}\, m_{t+1}$ and $E_{t-1}\, \bar{y}_{t+1}$. Consideration of (4) and (6) implies that the combination $(E_{t-1}\, m_{t+1} - \beta_1^{-1}\, E_{t-1}\, \bar{y}_{t+1})$ appears in the actual price with a coefficient of unity while the term $\psi \eta_t + (\varepsilon_t - \beta_1^{-1}\, u_t) + (\varepsilon_{t+1} + \beta_1^{-1}\, (v_{t+1} - u_{t+1}))$ present in $\bar{p}_{t+1}$ but not in its forecast value $E_{t-1}\bar{p}_{t+1}$, will appear in p_{t+1} with a coefficient of $(1-\lambda)$. The direct incorporation of the innovations u_t and ε_t in their respective series as well as their role in the feedback portion of the monetary growth expression implies their presence in $\bar{p}_{t+1}$ with the respective coefficients $(\psi_1 - \beta_1^{-1})$ and $(1+\psi_3)$. Their absence from the forecast value $E_{t-1}\bar{p}_{t+1}$ implies that their presence in the actual trading price is weighted by the coefficient $(1-\lambda)$. Since v_t is solely a transitory disturbance to aggregate demand in the intermediate period, it appears in p_{t+1} solely through the impact of the feedback portion of m_{t+1} on $\bar{p}_{t+1}$.

Consideration of (2), (3), (6) and (8) then yields the following interpretation of the output deviation expressed in equation (9). The systematic component of monetary growth $E_{t-1}m_{t+1}$ does not affect this deviation because it appears in the current money stock m_{t+1} and is precisely reflected in the actual price firms set, p_{t+1}. It was observed above that the term consisting of current and lagged disturbances, $\beta_1(((\psi_1 - \beta_1^{-1})\, u_t + \psi_2 v_t + (1+\psi_3)\,\varepsilon_t) + (\varepsilon_{t+1} + \beta_1^{-1}\,(v_{t+1} - u_{t+1}))$, appears in p_{t+1} with a coefficient of $(1-\lambda)$ due to the difference between $\bar{p}_{t+1}$ and $E_{t-1}\bar{p}_{t+1}$. This same term appears separately in y_{t+1} with a coefficient of unity, as can be seen from the deletion of $E_{t-1}m_{t+1}$ from m_{t+1}, the structure of $\bar{y}_{t+1}$, and the separate appearance of v_{t+1}. The net impact of this term on y_{t+1} through its role in m_{t+1} and p_{t+1} is $\lambda\beta_1((\psi_1 - \beta_1^{-1})\, u_t + \psi_2\, v_t + (1+\psi_3)\,\varepsilon_t) + (\beta_1\varepsilon_{t+1} + v_{t+1} - u_{t+1})$. The lagged portion of this term appears symmetrically, and for similar reasons, in the inflation forecast $E_t(p_{t+2} - p_{t+1})$ with a coefficient of $\lambda\beta_2$. Note that the output solutions considered in *Fischer*, et al., correspond to the case of $\lambda = 1$ in (9), while the case of $\lambda = 0$ deletes these terms from the output solutions in the market clearing models.

II. Optimal Monetary Policy

Assume that the monetary authority desires to reduce the variance of observed output around its mean value and it does so by choosing optimal feedback coefficients ψ_i^*, $i = 1, 2, 3$, to minimize the asymptotic variance of y[8]:

---

[8] Minimization of this variance corresponds to the case of minimizing the variance of output around its competitive equilibrium value when the difference in output between the two cases involves merely a change of scale regardless of price; for

(10) $$\lim_{t \to \infty} E\,(y_{t+1} - \bar{y}_{t+1})^2 = \lambda^2 \{ (1 + (\beta_1 + \beta_2)^2 (\psi_1 - \beta_1^{-1})^2)\, \sigma_u^2 + \lambda\,(1 + \psi_2^2 (\beta_1 + \beta_2)^2)\, \sigma_v^2 + (\beta_1^2 + (\beta_1 + \beta_2)^2 (1 + \psi_3)^2\, \sigma_\varepsilon^2 \}$$

The optimal feedback coefficients are $\psi_1^* = \beta_1^{-1}$, $\psi_2^* = 0$, $\psi_3^* = -1$, involving feedback to the lagged innovation u_t in optimal output for firms, a complete offsetting of the lagged monetary disturbance ε_t and no response to the transitory demand disturbance v_t. Optimal monetary behavior involves the use of the money stock to smooth the path of actual output to optimal output and to smooth the path of the optimal price level over time. It does this by offsetting lagged innovations in optimal output and monetary growth which do not appear with a unit coefficient in the actual price level p_{t+1} and hence are not fully reflected in aggregate demand y_{t+1}^d, relative to the mean output level $\bar{y}_{t+1}$, for reasons discussed above. The optimal feedback rule minimizes both the asymptotic variance of actual output around the optimal output level and the asymptotic variance of the price set by firms around the optimal price level. Evaluated at the optimal values of the feedback coefficients, these variances are respectively:

$$\lim_{t \to \infty} E\,(y_{t+1} - \bar{y}_{t+1})^2 = \lambda^2\,(\beta_1^2\,\sigma_\varepsilon^2 + \sigma_v^2 + \sigma_u^2)$$

$$\lim_{t \to \infty} E\,(p_{t+1} - \bar{p}_{t+1})^2 = \lambda^2\,(\sigma_\varepsilon^2 + \beta_1^{-2}\,(\sigma_v^2 + \sigma_u^2))$$

Now evaluate equations (6) and (9) at the optimal feedback coefficients. The resulting paths of observed output and the price level set by firms may be solved respectively as:

(11) $$y_{t+1} = E_0\, y_1 + \lambda\,(\beta_1\, \varepsilon_{t+1} + v_{t+1} - u_{t+1}) + \sum_{i=0}^{t} u_{t-i}$$

(12) $$p_{t+1} = E_0\, p_1 + (1 - \lambda)\,(\varepsilon_{t+1} + \beta_1^{-1}\,(v_{t+1} - u_{t+1}))$$

Two other features of the model are relevant to optimal monetary policy. First, suppose the relative magnitude of monetary power can be measured by the incremental change in the absolute value of the output deviation, as given by (9), per incremental change in a feedback coefficient, all other values constant. In this case the power of monetary policy to influence output is a linear function of the firm's adjustment parameter λ:

(13) $$\frac{\partial \mathrm{D}}{\partial \psi_1} = \lambda\,(\beta_1 + \beta_2)\, u_t,\ \frac{\partial \mathrm{D}}{\partial \psi_2} = \lambda\,(\beta_1 + \beta_2)\, v_t,\ \frac{\partial \mathrm{D}}{\partial \psi_3} = \lambda\,(\beta_1 + \beta_2)\, \varepsilon_t$$

---

instance, when monopolistic firms face a linear demand curve and have constant marginal costs.

where $D = |y_{t+1} - \overline{y}_{t+1}|$. The magnitude of the effects of monetary policy on output declines continuously with the value of λ, from the rigid price case ($\lambda = 1$) to the equilibrium case ($\lambda = 0$). However, the ability of monetary policy to affect output is a discontinuous function of λ: anticipated monetary policy is neutral at $\lambda = 0$ but has an effect on output for all values of λ in the open set (0, 1); that is, monetary policy is effective for all values of the preset price arbitrarily close to the optimal or equilibrium price. Second, the value of the firm's price adjustment parameter λ does not appear in any of the optimal feedback coefficients. Since the magnitude of the deviation of the preset price from the optimal or equilibrium price is not relevant to the design of the optimal feedback rule, a potentially significant information cost is saved by the monetary authority.

III. Conclusion

Contradictory conclusions concerning the neutrality of systematic monetary policy have appeared in various recent papers featuring macroeconomic models with rational expectations and non-equilibrium prices. This paper generalizes several previous arguments by examining monetary policy effects in a representative model featuring a flexible pricesetting rule that encompasses both the equilibrium price and the two-period rigid price found in *Fischer* (1977), *Phelps* and *Taylor* (1977) and others as special cases. For this model: (1) Systematic monetary policy influences real output for a continuum of non-equilibrium prices arbitrarily close to the equilibrium price, indicating that monetary policy may have a stabilizing role in an economy with almost complete price flexibility; (2) An optimal monetary policy which minimizes the variance of both output and the price level is derived and has an impact on deviations of observed output that is linearly decreasing in a measure of price flexibility; (3) The implementation of this policy is independent of this measure of price flexibility, implying a potentially significant saving in information costs to the monetary authority.

References

Blinder, A. and *Fischer,* S.: "Inventories, Rational Expectations and the Business Cycle," Journal of Monetary Economics, November 1981, 4, 277 - 304. – *Fethke,* G. and *Policano,* A.: "Labor Contracts, Informational Discrepancies and the Role of Monetary Policy," Journal of Macroeconomics, Winter 1979, 1, 1 - 18. – *Fethke,* G. and *Policano,* A.: "Cooperative Responses by Public and Private Agents to Aggregate

Demand and Supply Disturbances," Economica, May 1981, 155 - 171. – *Fischer,* S.: "Long-Term Contracts, Rational Expectations and the Optimal Money Supply Rule," Journal of Political Economy, February 1977, 85, 191 - 205. – *Frydman,* R.: "Sluggish Price Adjustments and the Effectiveness of Monetary Policy Under Rational Expectations," Journal of Money, Credit, and Banking, February 1981, 13, 94 - 101. – *Gordon,* R. J.: "Recent Developments in the Theory of Inflation and Unemployment," Journal of Monetary Economics, February 1976, 2, 185 - 219. – *Gordon,* R. J.: "The Theory of Domestic Inflation," American Economic Review, February 1977, 67, 128 - 134. – *Graham,* D. and *Weintraub,* E. R.: "Costless Information: A Limiting Assumption?," Discussion Paper, Duke University, 1972. – *Lucas,* R. E.: "Some International Evidence on Output-Inflation Trade-Offs," American Economic Review, June 1973, 63, 326 - 334. – *Lucas,* R. E.: "An Equilibrium Model of the Business Cycle," Journal of Political Economy, December 1975, 83, 1113 - 1144. – *McCallum,* B.: "Price-Level Stickiness and the Feasibility of Monetary Stabilization Policy with Rational Expectations," Journal of Political Economy, June 1977, 85, 627 - 634. – *McCallum,* B.: "Price Level Adjustments and the Rational Expectations Approach to Macroeconomic Stabilization Policy," Journal of Money, Credit, and Banking, November 1978, 10, 418 - 436. – *McCallum,* B.: "A Monetary Policy Ineffectiveness Result in a Model with a Predetermined Price Level," Economics Letters, 1979, 3, 1 - 4. – *McCallum,* B.: "Rational Expectations and Macroeconomic Stabilization Policy: An Overview," Journal of Money, Credit, and Banking, November 1980, 12, Part 2, 716 - 746. – *Modigliani,* F.: "The Monetarist Controversy, or Should We Forsake Stabilization Policies?", American Economic Review, March 1977, 67, 1 - 19. – *Nickerson,* D.: "A Theorem on Policy Neutrality," European Economic Review, forthcoming, 1985. – *Nickerson,* D.: "The Neutrality of Systematic Monetary Policy in Models with a Disequilibrium Price Level," Economics Letters, January 1984, 14, 1 - 8. – *Sargent,* T. and *Wallace,* N.: "Rational Expectations, the Optimal Monetary Instrument and the Optimal Money Supply Rule," Journal of Political Economy, April 1975, 83, 241 - 254.

Zusammenfassung

Optimale Geldpolitik bei einer flexiblen Regel der Preissetzung

Die Neutralität systematischer Geldpolitik wird in einem repräsentativen makroökonomischen Modell untersucht, das durch eine flexible Regel der Preissetzung gekennzeichnet ist, die als Spezialfälle sowohl einen Gleichgewichtspreis einschließt, wie bei *Sargent* und *Wallace* (1975), als auch Preisstarrheit über zwei Perioden, wie bei *Fischer* (1977), *Phelps* und *Taylor* (1977) und anderen. Es wird für ein Kontinuum von Ungleichgewichtspreisen gezeigt, daß systematische Geldpolitik den realen Output beeinflußt. Dabei können die Ungleichgewichtspreise dem Gleichgewichtspreis beliebig nahekommen. Geldpolitik kann also in einer Volkswirtschaft mit nahezu vollständiger Preisflexibilität eine stabilisierende Rolle spielen. Eine optimale Geldpolitik wird hergeleitet, die durch Outputvarianz wie auch die Preisvarianz minimiert. Der Einfluß dieser Politik auf den Output fällt linear mit einem Maß der Preisflexibilität. Die Parameter dieser Politik sind unabhängig von dem Maß der Preisflexibilität. Dies impliziert eine möglicherweise signifikante Ersparnis an Informationskosten für die geldpolitische Instanz.

Summary

Optimal Monetary Policy with a Flexible Price-setting Rule

The neutrality of systematic monetary policy is examined in a representative macroeconomic model featuring a flexible price-setting rule that encompasses both an equilibrium price, as found in *Sargent* and *Wallace* (1975) and two-period price rigidity, as found in *Fischer* (1977), *Phelps* and *Taylor* (1977) and others, as special cases. Systematic monetary policy is shown to influence real output for a continuum of non-equilibrium prices arbitrarily close to the equilibrium price, indicating that monetary policy may have a stabilizing role in an economy with almost complete price flexibility. An optimal monetary policy which minimizes both output and price variance is derived and shown to have an impact on output that is linearly decreasing in a measure of price flexibility. The parameters of this policy are independent of the measure of price flexibility, implying a potentially significant saving in information costs to the monetary authority.

Résumé

Politique monétaire optimale avec une règle de fixation des prix flexible

La neutralité d'une politique monétaire systématique est analysée dans un modèle macroéconomique représentatif caractérisant une règle de fixation des prix flexible. Celle-ci enveloppe aussi bien un prix d'équilibre, comme chez *Sargent* et *Wallace* (1975), une rigidité de prix de deux périodes, comme chez *Fischer* (1977), *Phelps* et *Taylor* (1977) et autres, que des cas spéciaux. Il est montré qu'une politique monétaire systématique influence l'output réel pour une continuité de prix de déséquilibre, arbitrairement près du prix d'équilibre, indiquant que la politique monétaire peut avoir un rôle stabilisateur dans une économie où la flexibilité des prix est presque complète. Une politique monétaire optimale qui minimise output et variation des prix est dérivée et on montre qu'elle influence l'output qui décroit linéairement selon le degré de flexibilité des prix. Les paramètres de cette politique sont indépendants du degré de flexibilité des prix, impliquant une économie significative potentielle des coûts d'information aux autorités monétaires.