

Recap Information 6:

Rules versus discretion: Credibility problems (I)

“Monetary Economics: Macro Aspects,” Spring 2004

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The lecture slides associated with this part of the course provide the most comprehensive information about what I find of relevance. Nevertheless, this note briefly lists the key concepts that you are supposed to know and be able to explain. An example of an exam question is provided at the end of the note.

Key concepts you should know

Inflation and discretionary monetary policy

- The concept of time inconsistency of optimal policies in macroeconomic policy
- The concept of the suboptimality of time consistent, discretionary policies
- The concept of the optimality of time inconsistent, commitment-based policies
- The Barro Gordon 1983 model
 - Version with utility linear in output (no output stabilization motive)
 - Version with utility quadratic in output (an inflation stabilization motive)
- Real effects of unanticipated inflation
- The resulting inflation bias under discretion in version with utility linear in output
- The time inconsistency of commitment policy
- The resulting inflation bias under discretion in version with utility quadratic in output: An output objective above the natural rate
- Optimal stabilization properties of discretion and commitment policies

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- The model turned “upside down” avoids “inflation surprise” explanations

Reputational solutions to credibility problems

- Reputation building when interaction is repeated
- The temptation to deviate versus the enforcement following a deviation
- The role of the discount factor for securing low inflation

Delegation and independent central banks

- The idea of setting up institutions shaping central banks’ incentives so as to mitigate the inflation bias/credibility problems
- The “conservative” central banker
 - Trade-off: Lower inflation, but too unstable output
 - Some conservatism, however, always optimal
- Incentive contracts
 - The linear inflation contract
 - No trade-off: Eliminates inflation bias and delivers optimal stabilization
- Targeting rules
 - Flexible versus strict
 - Flexible inflation targeting and relationship with Rogoff-conservativeness
 - Flexible inflation targeting and relationship with linear contract

Sample question 3

Consider a closed economy characterized by the following aggregate supply schedule:

$$y_t = (p_t - w_t), \quad (1)$$

where y_t is the log of aggregate output, w_t is the log of nominal wages, and p_t is the log of the price level. Nominal wage determination in period t is assumed to be characterized by the signing of one-period nominal wage contracts in period $t - 1$. These contracts can partly or fully be indexed to the actual price level in period t . Nominal wages are therefore assumed to be given by:

$$w_t = (1 - \beta) E_{t-1} [p_t] + \beta p_t, \quad 0 \leq \beta \leq 1, \quad (2)$$

where $E_{t-1} [p_t]$ is the (rationally) expected price level and β is an indexation parameter.

- (i) Find the economy's aggregate supply schedule when nominal wages are determined according to (2). Interpret the expression.
- (ii) p_t is determined by a central bank whose utility function is

$$U = \sigma y - \frac{1}{2} (p_t - p_{t-1})^2, \quad \sigma > 0, \quad (3)$$

Derive the utility-maximizing choice of p_t for given price expectations, and subject to the aggregate supply schedule derived in (i).

- (iii) What are the time consistent solutions for y_t and $p_t - p_{t-1}$? Why is inflation positive?
- (iv) What is the optimal degree of nominal wage indexation in the economy (i.e., optimal value of β), when the central bank's utility function (3) is the welfare measure? Provide an intuitive explanation.
- (v) Discuss whether your answer to (iv) would be modified if the central bank's utility function is quadratic in output and equation (1) is replaced by $y_t = (p_t - w_t) - \varepsilon_t$, where ε_t is a supply shock.