

# Central Banks, Credibility and the Financial System

## Exercise 2

Inflation Targets and Private Information about the ability to commit

December 25, 2008

**A.** The following questions refer to the basic one period model with private information about the ability to commit (second section of ch. 16 in **Cukierman** (1992)).

**1.** Show that a dependable policymakers creates a recession and that a weak policymaker creates a boom. How is the size of the recession created by a dependable policymaker affected by reputation,  $\beta$ ? At what level of reputation is the recession size maximized?

**2.** Assume that the reputation of policymakers also reflects the actual proportion of dependable policymakers in the population.

(i) Find the expected value of policymakers' objective function and identify intuitively the various channels through which  $\beta$  affects this expected value. Do all of those channels operate in the same direction? If not, why not?

(ii) Show analytically that an increase in  $\beta$  always raises the expected value of objectives. Try to explain intuitively why.

**B.** The following questions refer to the framework in the article: A. Cukierman, " Establishing a Reputation for Dependability by Means of Inflation Targets ", **Economics of Governance** , 1, February 2000, 53-76.

3. Show that

$$V_{w2}(NS) = A^2\beta_2^2 - \frac{1}{2}(A^2 + \sigma_w^2), \quad V_{w2}(S) = -\frac{1}{2}(A^2 + \sigma_w^2) \quad (1)$$

$$V_{d2}(NS) = -\frac{1}{2}(1 - \beta_2^2)A^2 - \frac{\sigma_d^2}{2}, \quad V_{d2}(S) = -\frac{\sigma_d^2}{2} \quad (2)$$

What is the intuitive meaning (in words) of  $V_{w2}(NS)$ ,  $V_{w2}(S)$ ,  $V_{d2}(NS)$  and  $V_{d2}(S)$ ?

4. In which direction does a change in initial reputation affect the equilibrium policy of each policymaker type in the first period and through which channels? What is the intuition?

5. Consider the extension of the model in which there is a preliminary stage in which each policymaker chooses, once and for all, the precision of his inflation control so as to maximize the expected discounted value of his objectives. Show that, if the choices of precision are internal and precision is not full, the weak (or opportunistic) policymaker chooses less precise control procedures than his dependable counterpart..