Lista 1 - Macroeconomia II

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10.17. Uncertainty and policy. (Brainard, 1967.) Suppose output is given by $y = x + (k + \varepsilon_k)z + u$, where z is some policy instrument controlled by the government and k is the expected value of the multiplier for that instrument. ε_k and u are independent, mean-zero disturbances that are unknown when the policymaker chooses z, and that have variances σ_k^2 and σ_u^2. Finally, x is a disturbance that is known when z is chosen. The policymaker wants to minimize $E[(y - y^*)^2]$.

(*a*) Find $E[(y - y^*)^2]$ as a function of x, k, y^*, σ_k^2, and σ_u^2.

(*b*) Find the first-order condition for z, and solve for z.

(*c*) How, if at all, does σ_u^2 affect how policy should respond to shocks (that is, to the realized value of x)? Thus, how does uncertainty about the state of the economy affect the case for "fine-tuning"?

(*d*) How, if at all, does σ_k^2 affect how policy should respond to shocks (that is, to the realized value of x)? Thus, how does uncertainty about the effects of policy affect the case for "fine-tuning"?

10.18. Growth and seignorage, and an alternative explanation of the inflation-growth relationship. (Friedman, 1971.) Suppose that money demand is given by $\ln(M/P) = a - bi + \ln Y$, and that Y is growing at rate g_Y. What rate of inflation leads to the highest path of seignorage?

10.19. (Cagan, 1956.) Suppose that instead of adjusting their real money holdings gradually toward the desired level, individuals adjust their expectation of inflation gradually toward actual inflation. Thus equations (10.59) and (10.60) are replaced by $m(t) = Ce^{-b\pi^e(t)}$ and $\dot{\pi}^e(t) = \beta[\pi(t) - \pi^e(t)]$, $0 < \beta < 1/b$.

(*a*) Follow steps analogous to the derivation of (10.64) to find an expression for $\dot{\pi}^e(t)$ as a function of $\pi(t)$.

(*b*) Sketch the resulting phase diagram for the case of $G > S^*$. What are the dynamics of π^e and m?

(*c*) Sketch the phase diagram for the case of $G < S^*$.