Exam: ECON 4330, Spring 2021

1 Investment and Uncertainty (50%)

Discuss how Norway should invest the oil funds (safe bonds, buy capital in Norway, buy capital abroad)? Comment on which assumptions imply which conclusion. Explain your results. Keep your answer concise. There is no benefit from long but imprecise answers.

2 Mundell-Flemming-Tobin Model (50%)

Consider the Mundell-Flemming-Tobin model described by the following equations:

$$\begin{aligned}
Y &= C(Y_p, W_p, \rho, \rho_*) + I(\rho, \rho_*) + G + X(R, Y, Y_*) && (1)\\
Y_p &= Y - \rho_* \frac{EF_*}{P} - T && (2)\\
W_p &= \frac{M_0 + B_0 + EF_{p0}}{P} && (3)\\
\rho &= i - p_e && (4)\\
R &= \frac{EP_*}{P} && (5)\\
r &= i - i_* - e_e(E) && (6)\\
\frac{M}{P} &= m(i, Y) && (7)\\
\frac{B}{P} &= W_p - f(r, W_p) - m(i, Y) && (8)\\
EF_p &= f(r, W_p) && (9)\\
F_g + F_p &= -F_* && (10)
\end{aligned}$$

Y is production, C is consumption, I is private investment, G is government spending and X is exports. Y_p is disposable income, W_p is financial wealth, ρ is real interest rate, i is norminal interest rate, T is transfer/tax, p_e is expected change in price level, P is price, E is exchange rate, R is real exchange rate, M is money, B is bond, F is asset, r is exptected return differential. And $*$ stands for the foreign country.

1. Can this model be applied to explain the short-run or(and) long-run effects of policies?

2. What are the differences between short-run and long-run? (*Hint: Explicate which variables are determined in different ways.)*

3. In this model, are goods in home and foreign contries perfect or imperfect substitutes? Explain why we need this assumption.

4. In equation (1), explain why domestic investments depend on both the home and foreign interest rates: ρ, ρ_*.

5. Explain the intuition of Equation (2), (3), and (8) respectively.

6. Which variable(s) can be used as instruments for government policy? Introduce the policies that correspond to each of the variables that you write down.

7. Point out which equation(s) represent the IS, LM, and BB curves respectively.

8. Now assume that the exchange rate is fixed. Compare the immediate effects on Y, i and F_g of an upward whift in e_e with and without sterilization.

9. Compare also the effects on the current account. Discuss how these effects may alter the equilibrium over time.

Now we endogenize the price index P and foreign debt F_*. We look for equilibrium under this model set up. Suppose there exists a stable equilibrium locus, and it can be characterized in a P-F_* diagram by Figure 1.

1. Explain the direction of each arrow, and how this confirms the equilibrium is stable.

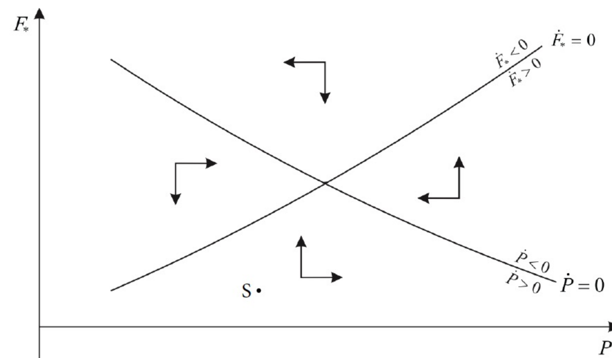

Figure 1: Equilibrium Locus

2. Suppose there is an initial point S. Using the arrows in the diagram, draw the transition path of point S in the F P-F_* diagram.