SIMON FRASER UNIVERSITY
Department of Economics

Econ 305
Intermediate Macroeconomic Theory

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PROBLEM SET 4
(Due April 11)

1. (15 points). There has been much recent discussion in the U.S. about reducing the government budget deficit. Suppose that in fact the U.S. does reduce its deficit, by some combination of higher taxes and lower spending. According to the Mundell-Fleming model, what would be the consequences for Canada? Illustrate your answer with a graph. (Hint: Canada has a flexible exchange rate against the U.S. dollar).

2. (15 points). A couple of weeks ago, Iceland announced that it was thinking about adopting the Canadian dollar as its currency. This would not likely have much of an effect on Canada, since Iceland is so small. However, it could have signficant effects in Iceland. Use the Mundell-Fleming model to describe under what conditions this would increase macroeconomic stability in Iceland. Could it actually make Iceland more unstable? (Use graphs to illustrate your answer).

3. (15 points). Use the search model from Chpt. 16 to illustrate how an increase in labor market uncertainty could increase the equilibrium unemployment rate.

4. (15 points). Consider the following 'expectations-augmented Phillips Curve', discussed in Chpt. 17,
$$\pi - \pi^e = a(Y - Y^T)$$
where $\pi$ is actual inflation, $\pi^e$ is the public's expected inflation, $Y$ is actual output, and $Y^T$ is the trend (or 'natural') rate of output. Suppose the Central Bank's objective is to choose inflation so as to minimize the following social welfare function,
$$W(Y, \pi) = \alpha(\pi - \pi^*)^2 + \beta(Y - Y^*)^2$$
where $\pi^*$ is the inflation target, $Y^*$ is output target, and $(\alpha, \beta)$ are fixed parameters summarizing the relative costs of inflation and output deviations.

(a) Calculate the Central Bank's optimal inflation rate as a function of the public's expected inflation rate. Suppose the public has 'Rational Expectations', so that $\pi^e = \pi$. What is the equilibrium inflation rate? How does it depend on the relationship between $Y^*$ and $Y^T$? Explain.

(b) Now suppose the public has 'adaptive expectations', and in particular, suppose the expected inflation rate is equal to last period's actual inflation rate, so that $\pi_t^e = \pi_{t-1}$. Using your answer from part (a) describe how inflation and output will evolve over time. What will be the long-run outcome?

1