Economics 222
Assignment 4
due March 24

1- **Temporary oil shock and monetary policy in Sweden.**
Suppose that Sweden is a closed economy that can be represented by the following equations:

$$\begin{aligned} C^d &= 116 + 0.7(Y - T) - 150r \\ I^d &= 125 - 625r \\ G &= T = 300 \\ \frac{M^d}{P} &= \frac{Y}{8 + 50r} \end{aligned}$$

For part a) and b) assume $M = 100$ and assume $\bar{Y} = 1000$ for part a) and c).

a) Find the long-run values for r, C, I, P and V (velocity) in Sweden.

b) Due to a temporary oil shock, full-employment output is reduced to: $\bar{Y} = 974.16$. First draw a diagram to explain what is happening. Then, find the new long-run values for r, C, I, P and V in Sweden. Is velocity constant?

c) Forget about b). The Swedish government decides to downsize: $G = T = 274.16$. What must be M if the Central Bank does not what to have any inflation or deflation following the government downsizing? Again explain with a diagram before finding the new long-run values for r, C, I, P and V in Sweden.

2- **Interest Rate Parity in North America.**
An investor has the following data about some US and Canadian financial variables (Canada is the home country): $P_{\text{CAN}} = 120$, $P_{\text{US}} = 100$, $i_{\text{CAN}} = 6\%$, $i_{\text{US}} = 2\%$ and $e_r = 0.84$.

a) What is the future nominal exchange rate (e^f_{nom}) ?

b) One year later the prices have changed: $P_{\text{CAN}} = 132$ and $P_{\text{US}} = 108$. Assume that the relative PPP holds. What was $\%\Delta e_{\text{nom}}$ over the period?

c) Did the interest rate parity condition yield a good prediction of the future nominal rate?

3- **International Business Cycle Transmission.**

Canada is a small open economy which is well integrated to the US economy. This question investigates the economic consequences in Canada of a fiscal expansion by the domestic government and those of a decline of the US economy. Suppose that the Canadian economy can be represented by the following equations:

$$\begin{aligned} C^d &= 100 - 50r + 0.8(Y - T) \\ I^d &= 540 - 50r \\ NX &= 0.2(Y^{US} - Y) - 2000e \\ e &= 0.75 + 0.1(r - r^{US}) \\ \frac{M^d}{P} &= Y - 187.5(r + \pi^e) \end{aligned}$$

You also have that: $\bar{Y} = 1500$, $Y^{US} = 9000$, $r^{US} = 4$, $T = 300$, $G = 300$, $\pi^e = 0$, $M = 750$ and $P^{US} = 1$.

a) Find the long-run values of: r, C, I, NX, e, e_{nom} and P.

b) The Canadian government increases its expenditures: $G = 450$. Find the short-run and the long-run values of: r, C, I, NX, e, e_{nom} and P.

c) Forget about part b) and c). The US economy suffers from an adverse technological shock and cuts in the military spending: $Y^{US} = 8500$ and $r^{US} = 3$. Find the short-run and the long-run values of: r, C, I, NX, e, e_{nom} and P in Canada.