ECON 200A
Spring 2008

IS/MP/IA Model

This supplement includes several questions to practice using the IS/MP/IA model.
Consider the standard IS/MP/IA model:

$$
\begin{aligned}
IS &: \quad Y = C(Y - T) + I(r) + G + CF(r) + \varepsilon_{IS} \\
MP &: \quad r = r(Y, \pi) + \varepsilon_{MP} \\
IA &: \quad \pi = \pi(Y - \bar{Y}) + \varepsilon_{IA}
\end{aligned}
$$

Evaluate whether each statement below is TRUE, FALSE, or UNCERTAIN. The statements below require that you make modifications to the model above - some require that you derive a new A matrix. If so, I recommend rewriting the model above with the change incorporated. In illustrating your diagrams, focus on the short-run effects only.

1. Suppose that investment is a function of both the real interest rate and output in a closed economy. In this situation, it is possible for an increase in government spending to lead to an increase in investment. (HINT: Compute dI/dG after computing dY/dG and dr/dG)

2. Suppose that consumption is a function of both the real interest rate and disposable income in a closed economy. In this economy, monetary policy has a smaller effect on output, compared with the standard model.

3. If inflation is fixed, then fiscal policy has a larger effect on output, compared with the standard model.

4. Consider a closed economy in which inflation adjusts immediately to deviations in output from its potential value (in the short run). In this economy,

   (a) Fiscal policy is able to affect the level of real ouput, whereas monetary policy cannot.

   (b) Monetary policy affects the composition of real output. (HINT: Compute $dI/d\varepsilon_{MP}$ after computing $dY/d\varepsilon_{MP}$ and $dr/d\varepsilon_{MP}$)

   (c) Fiscal policy affects the composition of real output. (HINT: Compute dI/dG after computing dY/dG and dr/dG)

5. Consider an open economy versus a closed economy.

   (a) In an open economy, changes in government spending have a larger effect on output.

   (b) In the open economy, changes in monetary policy have a larger effect on output.

6. Suppose that we distinguish between the real versus nominal interest rate. While the central bank is able to control the nominal interest rate (r), it is unable to directly set the ex ante real rate $rr = r - \pi^e$. Assume that investment decisions are made based on the ex ante real interest rate. In this economy, an increase in expected inflation will lead to an increase in investment and output, while causing a decrease in actual inflation, π.

7. Suppose that consumption is a function of the real interest rate. In this case, a change in governmenting will have a larger effect on output (versus the standard model above).

Evaluate whether each statement below is TRUE, FALSE, or UNCERTAIN. The statements below require that you make modifications to the model above - some require that you derive a new A matrix. If so, I recommend rewriting the model above with the change incorporated. This statements require evaluating the model in the long run (as $\pi'_Y \to \infty$).

8. Policy questions

   (a) Monetary policy shocks are neutral in the long run (e.g., they have no real economic effects).

   (b) Fiscal policy shocks, such as a shock to government spending are neutral in the long run.

   (c) If the government increases taxes and spending by the same amount, then output, interest rates, and inflation remain unchanged.

9. An increase in potential output leads to an increase in inflation in the long run.

10. If households suddenly anticipate higher inflation, this will lead to an increase in inflation and a reduction in output.