5EN 253
VSE, Spring 2010
Ex. session #8
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Exercise session #8 - IS-LM model I

Problem 1 - IS-LM model; D-F 266-67/1,2

The following equations describe an economy. (Think of C, I, G etc. as being measured in billions and i as a percentage - i.e. 5 percent interest rate implies i=5.

$$\begin{aligned}
C &= 60 + 0.8 * (1 - t) * Y \\
t &= 0.25 \\
I &= 900 - 50 * i \\
\bar{G} &= 800 \\
\overline{TR} &= 100, \overline{TA} = 50 \\
L &= 0.25 * Y - 62.5 * i \\
\frac{\bar{M}}{\bar{P}} &= 500
\end{aligned}$$

- What is the equation that describes IS curve?
- What is the general definition of the IS curve?
- What is the equation that describes the LM curve?
- What is the general definition of the LM curve?
- What are the equilibrium levels of income and the interest rate?
- What is the value of α_G which corresponds to the simple multiplier (with taxes) within the IS curve?
- By how much does an increase in government spending of $\Delta G = 100$ increase the level of income in this model which includes the money market?
- B how much does a change in government spending of $\Delta G = 100$ affect the equilibrium interest rate?
- Explain the difference between the answers to parts (a) and (b).

Lecture 8: Business cycles and IS-LM model

- Why Great Depression could not be explained by classical theory?
- State 3 stylized facts about business cycles.
- Derive the shape of aggregate demand curve from the quantity theory of money.
- Imagine people start to pay more by credit cards. What impact does it have on the framework of quantity theory of money? What effect would it have on aggregate demand curve?
- How does the long run aggregate supply curve look like and what assumption it is based on? What is the impact of the money supply decrease on the AS-AD framework in the long run?
- How does the short run aggregate supply curve look like and what assumption is it based on?What is the impact of the money supply decrease on the AS-AD framework in the short run?
- What do we understand under classical dichotomy? Does it hold in the short run? Does it hold in the long run?
- What is inflationary gap? What implications does it have on the evolution of prices / unemployment?
- What is recessionary gap? What implications does it have on the evolution of prices / unemployment?
- Explain the combined short and long run effects of decrease in money supply.
- Give an example of negative demand shock and positive supply shock.
- How would you define stabilization policy? What is laissez faire policy? What are the tools of fiscal policy? How do they affect aggregate demand? What are the tools of monetary policy? How do they affect aggregate demand? Which part of the economy is affected by supply side policy. What changes to AD-AS framework does it imply. How does the trade policy affect the aggregate demand?
- In case of positive demand shock, describe the optimal government response (think about monetary policy).
- Draw Keynesian cross as a comparison of planned and realized expenditures. What is the intercept of planned expenditure line? What is its slope? If government expenditures would be positive function of output, how would the Keynesian cross change?
- Explain the mechanism of government expenditures multiplicator - why is the effect on the output greater than initial increase in government expenditures?
- Explain the mechanism of tax muliplicator - why is the effect on the output greater than initial cut in taxes?

- Compare tax and government expenditures multiplicator.
- What will be the total effect on output in case that government leads a balanced budget - i.e. finances increased government expenditures by higher taxes?
- How do you derive IS curve from Keynesian cross (picture)?
- How is interest rate determined within IS-LM model?
- How can a central bank affect interest rate in the IS-LM model?
- How do you derive LM curve from equilibrium on money market (picture)?