Problem Set # 5

Answer Key

Answer the following questions. Show your work. As mentioned in class, you are encouraged to work in groups but must write your own answers.

1. **(The Gold Standard)** Why did the Gold Standard collapse during World Wars I and II? Relate this to the features shaping the costs and benefits of a fixed exchange rate.

> Answer: Attending the wars required an immense amount of public spending that needed to be funded with monetary emission. This was incompatible with a peg.
>
> In addition, the benefits of fixing the peg decreased drastically as trade, international financial flows and general economic integration lowered drastically.
>
> With lower benefits from fixing and a higher need to autonomous monetary policies to service the increased public spending the Gold Standard was abandoned.

2. **(Financial Crises)** We often see banking and currency crises happening together. How may a banking crisis (illiquid or insolvent banks) make a currency crisis more likely to occur?

> Answer: Attending a banking crisis requires an expansion of domestic credit, which is used to bail out and help the banking sector to elimitate liquidity and solvency issues.
>
> With a constant money supply this implies lowering the reserves, lowering the backing ratio and putting into doubt the capacity of the central bank to maintain the peg after experiencing shocks. This increases the probability of an speculative attack on the currency by the public.

3. **(Liquidity traps)**

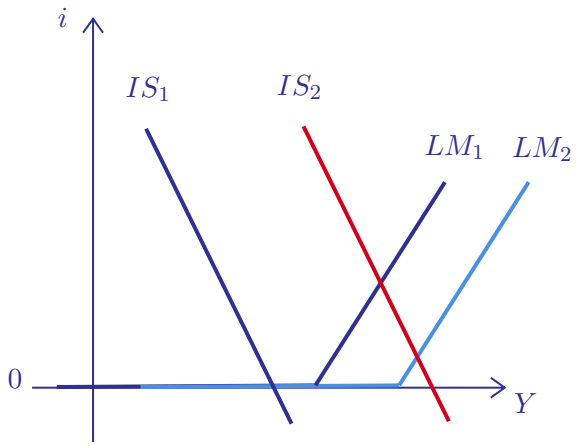
   (a) Define a liquidity trap

> Answer: A liquidity trap refers to a situation in which, usually after experiencing negative demand shocks, the interest rate of an economy drops to zero. In this situation financial assets yield the same returns as cash, zero.
>
> A troublesome feature of a liquidity trap is that monetary policy becomes unable to increase the interest rate by contracting the money supply.

It is called a trap because given the returns of interest-bearing assets and cash are the same, the central bank cannot create incentives for people to switch from one to the other.

(b) Show in an IS-LM figure how a liquidity trap looks

Answer:



(c) What is the role of fiscal policy for taking an economy out of a liquidity trap

Answer: Expansionary fiscal policy becomes a way to overcome the liquidity trap. In this case a positive demand shock increases demand for money for spending (consumption and investment) which has the potential to increase interest rates.

(d) Why is fiscal policy super effective during a liquidity trap in increasing GDP? and how is that similar to the effects of fiscal policy in a fixed exchange rate regime?

Answer: During a liquidity trap the interest rate is stuck. Thus, increasing fiscal expenditure does not lead to a higher interest rate (if the economy remains in the liquidity trap), or does not increase it much (if the trap is overcome). In either case, the crowding out of higher government spending on the investment and trade balance is minimal, relative to a scenario with positive and higher interest rates.

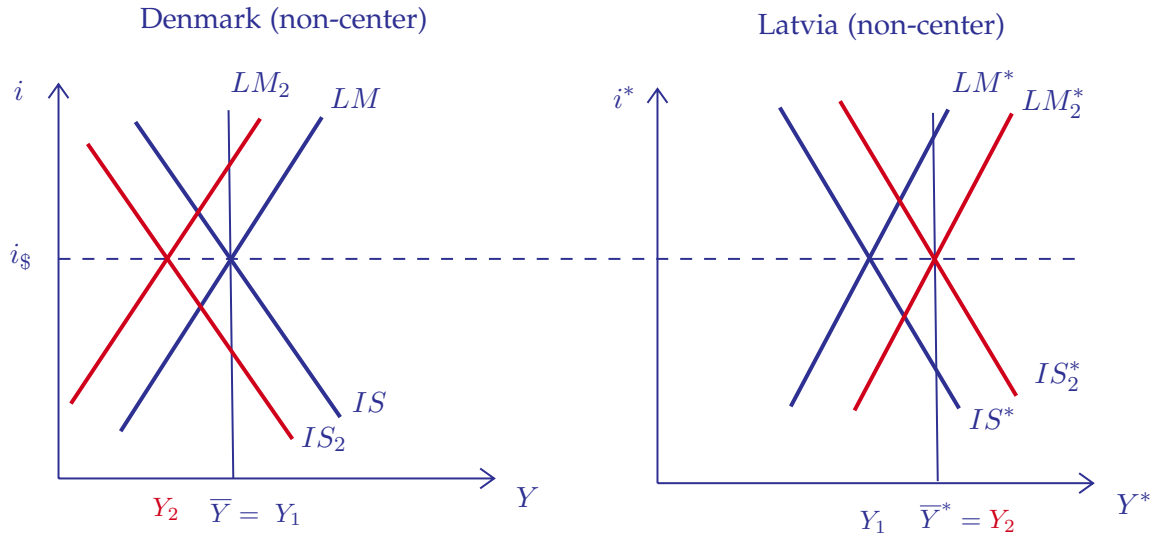
With higher goverment expenditure and little to no crowding out, the output is bound to increase more, making the fiscal policies very effective to expand the economy.

This is similar to a fixed exchange rate regime context because the interest rates are not reacting to the higher government spending in either case, thus minimizing the negative impact on investment and trade-balance.

4. **(Cooperation in ER systems)** Suppose Latvia and Denmark both peg their exchange rates to the Euro.

(a) Denmark is in an equilibrium in which $Y = \bar{Y}$, where $\bar{Y}$ is the target output level. Latvia is suffering from a negative demand shock that shifts its IS curve to the left, putting its equilibrium output (Y^*) below its target output ($\bar{Y}^*$). Use an IS-LM figure for each country to show this situation.

Answer:



The red curves and labels are the solution to part (b)

(b) Suppose Latvia chooses to devaluate its exchange rate against the Euro (i.e., to adjust the level of the exchange rate at which they peg). Show the effect on your figures from part (a)

Answer: See the effect in the plots. Latvia adjusts the peg and devaluates the exchange rate by expanding the money supply (the LM shifts right), this generates an increase in the trade-balance (higher exports to Denmark and other countries) shifting the IS curve to the right. At the end Latvia has increased it's output considerably.

(c) How is Denmark affected by Latvia's choice? Explain.

Answer: The IS curve of Denmark shifts to the left because consumption expenditure shifts from local to Latvian goods (cheaper imports). Denmark needs to defend the peg by preventing the interest rate to lower so it is forced to contract the money supply. As a result, Denmark's output decreased and may be running into a recession.

5. **(Other benefits of a fixed exchange rate)** Explain how implementing a fixed exchange rate regime may facilitate fiscal discipline and how it may stabilize the value of foreign currency debt.

Answer: Running a peg implies that the central bank cannot increase money supply for other reasons than defending the peg itself. Thus, it's not possible for the central government to request debt monetization by the central bank in order to run larger fiscal deficits

(i.e., the central bank cannot print money and buy government bonds with it to fund public debt)

If the peg is sustained the local currency value of public debt denominated in foreign currency will not increase over time as the local currency depreciates.