Elements of Macroeconomics: Homework #6

Name:_____

Section:_____

Due 10/28 or 10/29 in assigned Section

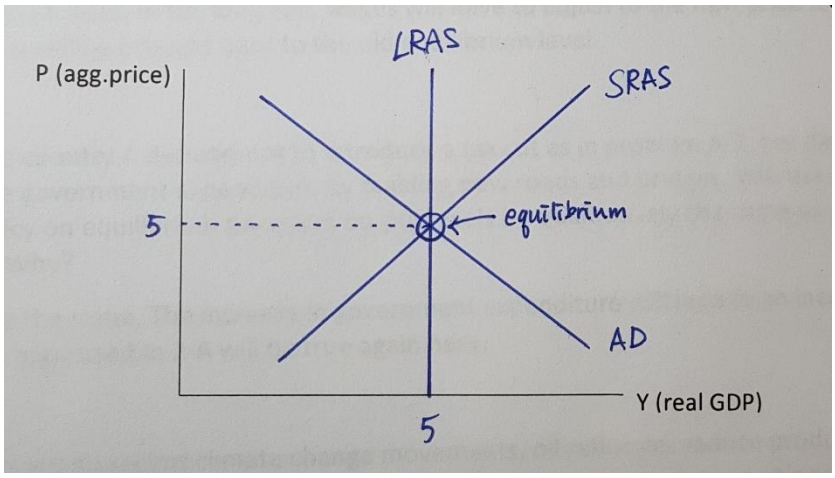
[Part A] Short Questions (20 points, 2 points each)

Fill in the blanks

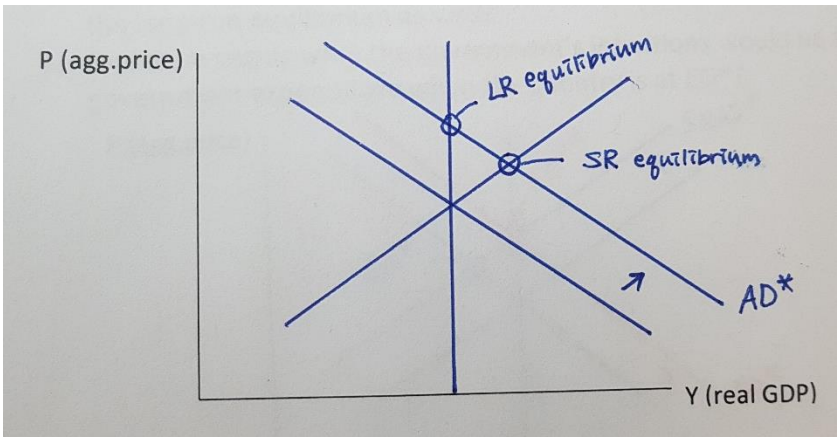
1. Demand curves, for specific goods, are downward sloping.
2. A fall in the overall price level is associated with higher output because of the wealth effect and the interest rate effect.
3. A decrease in interest rates shifts the aggregate demand curve to the right.
4. An increase in household' expectations of their future incomes shifts the aggregate demand curve to the right because consumption spending increases.
5. The long-run aggregate supply curve shows the relationship in the long run between the price level and the quantity of real GDP supplied.
6. In the long run, the level of real GDP is determined by the number of workers, the level of technology, and the capital stock.
7. Prices and wages are said to be sticky when they do not respond quickly to changes in demand or supply.
8. The static long-run macroeconomic equilibrium is achieved at the intersection of three curves; the aggregate demand curve, the short-run aggregate supply curve, and the long-run aggregate supply curve.
9. The short-run Phillips curve represents the short-run relationship between the inflation rate and the unemployment rate.
10. The natural rate of unemployment is sometimes referred to as the non-accelerating inflation rate of unemployment or NAIRU.

[Part B] AD-AS Model (40 points, 8 points each)

1. Suppose country A is at the static long-term macroeconomic equilibrium with P=5 and Y=5. Represent this equilibrium using a graph and label the AD, SRAS, and LRAS curves. (2)



2. Suppose country A decides to permanently decrease taxes paid by households.
   a. Show what will happen to the AD curve and label the new curve AD*.
   b. Show the new short-run equilibrium on the graph.
   c. Show the new long-run equilibrium on the graph.
   d. Explain the transition from the old equilibrium to the new short-run equilibrium and finally to the new long-run equilibrium. In your explanation, mention why the long-run equilibrium and short-run equilibrium are different.



The decrease in taxes shifts the AD curve to the right since consumption increases. In the short-run this will lead to an increase in the equilibrium of goods supplied and demanded. Since there is more demanded, firms will produce more and prices will increase. In the long-run, prices increase even more but the equilibrium level of output will fall back to the old equilibrium level of output. The long-run equilibrium and short-run equilibrium are different because in the short-run wages are sticky. Then, firms can charge more for their goods but wages will remain sticky so output can be pushed above the long-run level. In the long-run, wages will have to adjust to the new price level and so output will be brought back to the old equilibrium level.

3. Suppose country A decided not to introduce a tax cut as in problem A-2, but decided to increase government expenditure by building new roads and bridges. Will the effect of this policy on equilibrium price and output levels be qualitatively the same as a tax cut policy? Why?

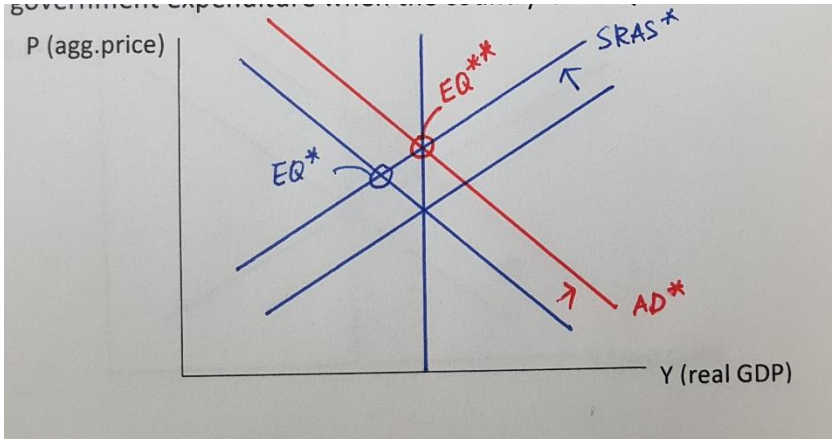
   It will be the same. The increase in government expenditure will lead to an increase in AD. The logic used in 2-A will be true again here.

4. Suppose that following recent climate change protests, oil refineries reduce their production of oil. As a result, the price of oil increases, which affects country A. Country A's production heavily relies on oil.

   a. On a new graph, show what will happen to the SRAS curve of country A following an increase in oil price and denote it as SRAS*.
   b. Show the new short-run equilibrium on the graph and denote it as EQ*

   Suppose that country A is at the EQ*. The government now decides to increase government expenditure such that the output levels back at its old equilibrium level.

   c. Show what will happen to the AD curve of country A on the graph following an increase in government expenditure and denote it as AD*.
   d. Show the resulting short-run equilibrium on the graph and denote it as EQ** Is this the long-run equilibrium as well?
   e. Explain in words why the government would increase government expenditure when the country is at EQ*?



Yes. It is the long-run equilibrium as well.

At EQ*, the economy is underperforming and experiencing inflation at the same time. This is called a stagflation. The government's intentions in increasing government expenditure would be to get out of this situation by providing a boost to aggregate demand.

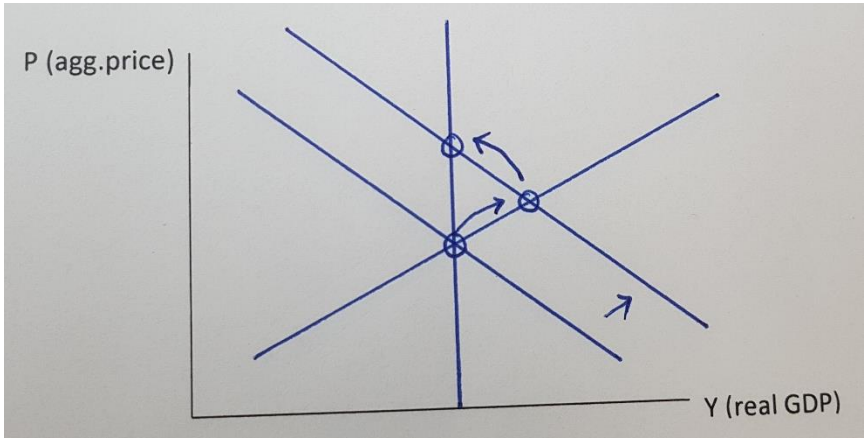
5. Assume that the government cannot increase expenditures when the economy is at EQ*. Instead, the central bank decides to lower interest rates. Will this monetary policy have the same qualitative effects as an increase in government expenditures? Why, why not?
   Yes it will have the same qualitative effects since a decrease in interest rates will increase investment. This boosts aggregate demand and shifts the AD curve to the right.

[Part C] Monetary Policy: Loanable Funds Market and AD-AS Model (40 points, 10 points each)

In this part you will analyze the connection between the loanable funds market and the various policies that can be implemented to affect the AD-AS model. More specifically, you will analyze the effects of government spending, government debt, and interest rates.

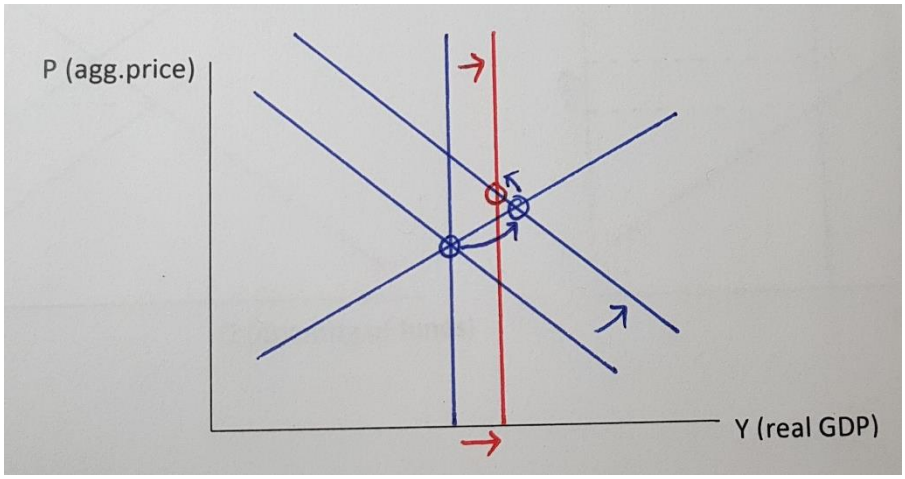
1. Suppose that in the upcoming elections, presidential candidate B promises to increase jobs by building more schools. B claims that by building more schools, more teachers and staff will be hired and thus increasing jobs. B plans to build the schools through government funding.

   Suppose an economist C, an opponent of candidate B, wants to show that B's plan is only good in the short run. C believes that the economy is currently in the long-run equilibrium. Using the AD-AS model how would C show this (draw a chart and provide a verbal explanation)?



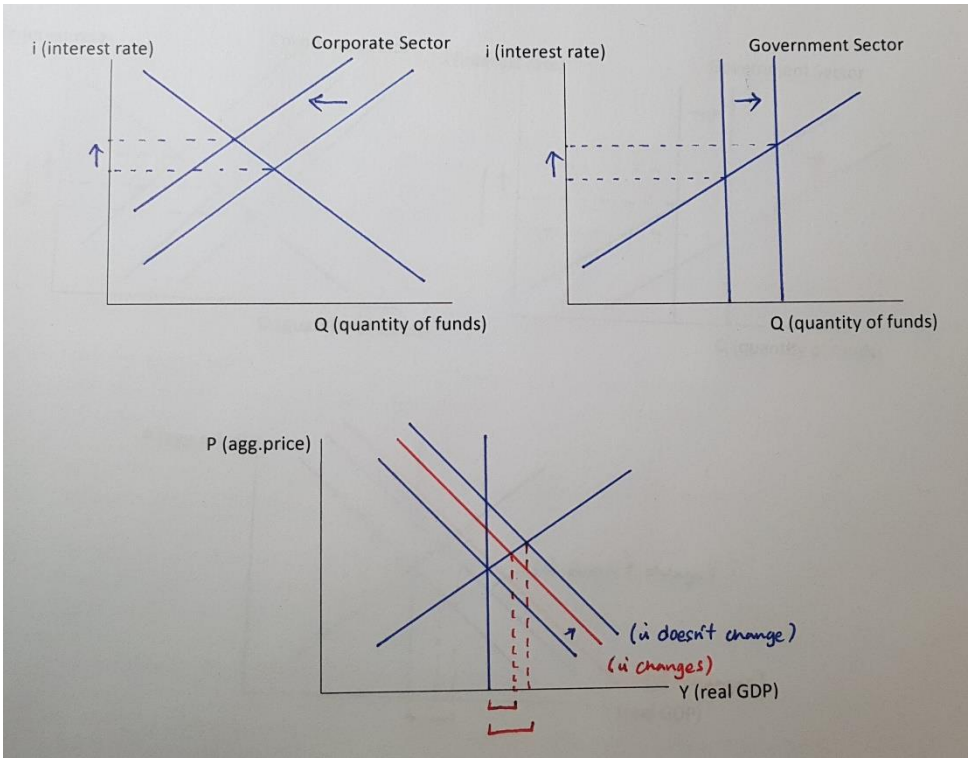
B's plan shifts the AD curve to the right. In the short run this will increase output and jobs, but in the long run it will all revert back to the original level as before.

2. Suppose D is an advocate of candidate B because D believes better education can have positive and lasting effects. More specifically, D believes that having more schools increases productivity of workers in the long run. Using the AD-AS model, how would D show this (draw a chart and provide a verbal explanation)?

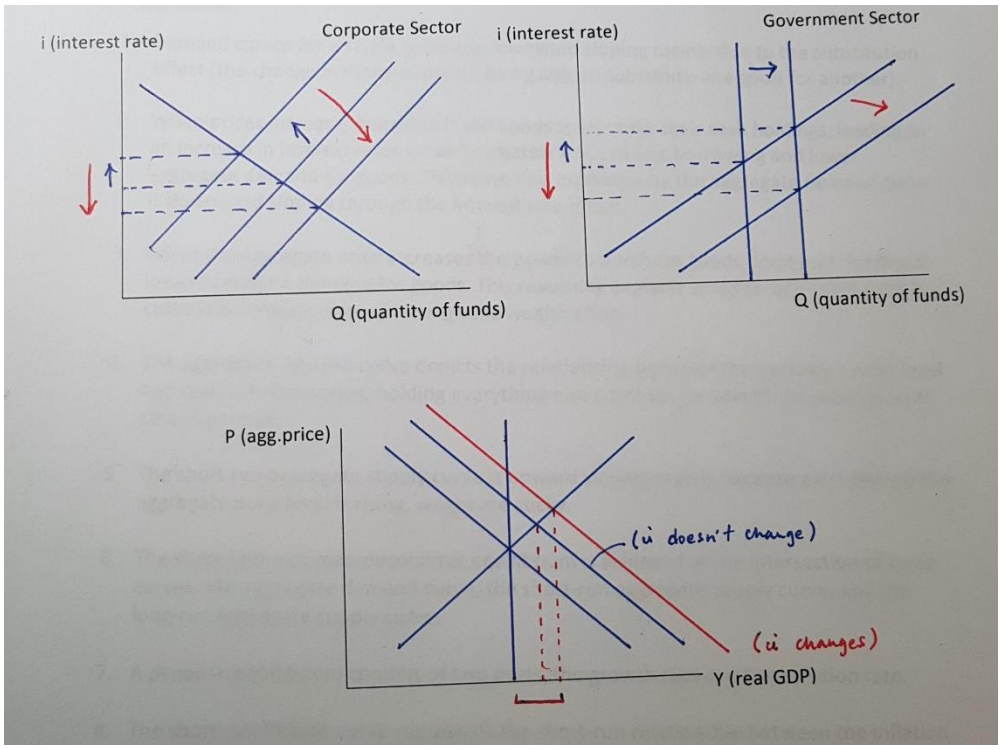


B's plan shifts the AD curve to the right, but it also shifts the LRAS curve to the right a little as well. The long-run equilibrium will have a higher level of output than before.

3. C is an intelligent economist and so C doesn't just use the AD-AS model but combines it with the loanable funds market model. C believes that the increase in government expenditure needed to build new schools will result in higher interest rates. This increase in interest rates would affect aggregate demand. Using the loanable funds market model and the AD-AS model, show this reasoning using the following charts. Show how the new AD curve differs from the one in C-1. Explain.



4. D believes that higher education standards will allow households to better assess their loans to corporations and to the government. According to D, the supply of fund will be higher than before. Suppose this increase in fund supply is observed in the short-run equilibrium. D proposes that this will further boost aggregate demand, so the short-run benefits will be even larger. Using the loanable funds market model and the AD-AS model, show this reasoning using the following charts. Show how the new AD curve differs from the one in C-2. (hint: for higher supply of funds to increase aggregate demand, interest rates in the corporate sector must fall)


i (interest rate)
Corporate Sector
Q (quantity of funds)
i (interest rate)
Government Sector
Q (quantity of funds)
P (agg.price)
(i doesn't change)
(i changes)
Y (real GDP)