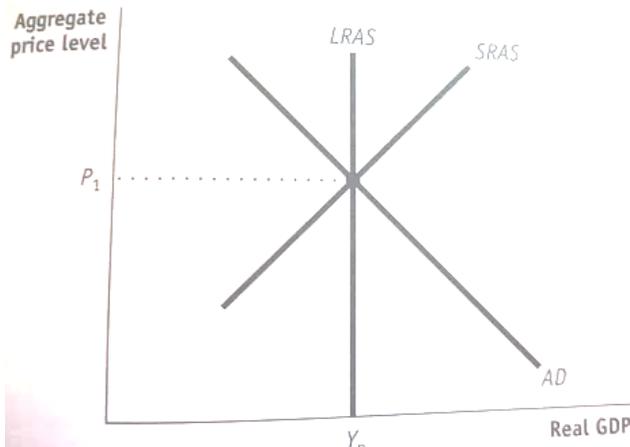


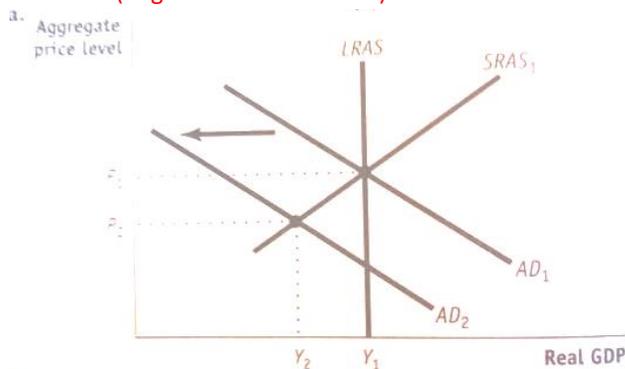
AP Macroeconomics Unit 3 Review Session

Aggregate Demand-Aggregate Supply Model and Long-Run Macroeconomic Equilibrium

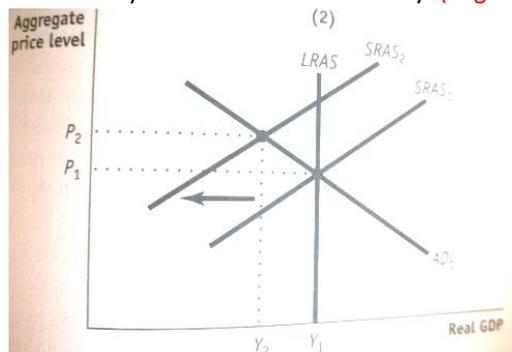
1. Draw an AD-AS graph showing long-run macroeconomic equilibrium. Label AD, SRAS, LRAS, potential output, equilibrium aggregate price level, and output.



2. Consider an economy in long-run equilibrium. Draw a graph of the AD-AS model to show the effect of each of the following (ceteris paribus) changes.
 - a. The economy's central bank decreases the money supply. **Interest rates increase, therefore, investment spending increases (negative demand shock)**

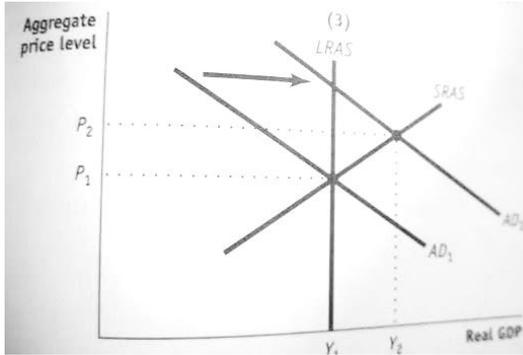


- i. What happens to the aggregate output and price level? **$Y \downarrow$, $PL \uparrow$**
 - ii. Does this economy face a short-run recessionary gap or an inflationary gap? **recessionary**
 - iii. What active stabilization policy can offset this particular shock? **Expansionary monetary or fiscal policy**
 - iv. What would happen in the long run to the aggregate price and output levels without an active stabilization policy? **Nominal wages become flexible and fall, SRAS shifts to the right, output \uparrow to potential output**
- b. Productivity decreases in the economy. **(negative supply shock)**

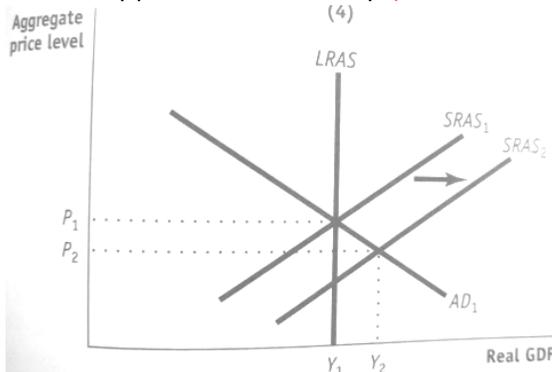


- i. What happens to the aggregate output and price level? **$PL \uparrow$, $Y \downarrow$**
- ii. Does this economy face a short-run recessionary gap or an inflationary gap? **Recessionary gap**
- iii. What active stabilization policy can offset this particular shock? **Contractionary monetary policy/ expansionary fiscal policy (must hit inflation first)**

- iv. What would happen in the long run to the aggregate price and output levels without an active stabilization policy? **Nominal wages become flexible and fall, SRAS shifts to the right, output \uparrow to potential output**
- c. Consumer confidence in the economy increases. **Consumers now buy more (positive supply shock)**

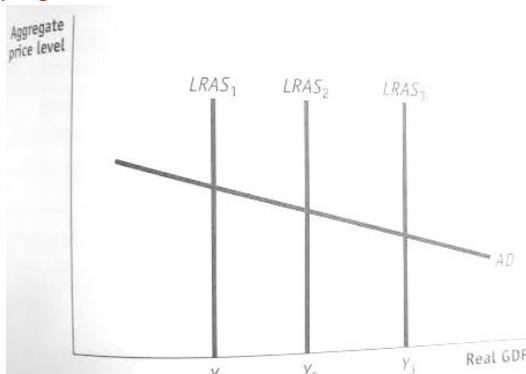


- i. What happens to the aggregate output and price level? **PL \uparrow , Y \uparrow**
- ii. Does this economy face a short-run recessionary gap or an inflationary gap? **Inflationary gap**
- iii. What active stabilization policy can offset this particular shock? **Contractionary monetary or fiscal policy**
- iv. What would happen in the long run to the aggregate price and output levels without an active stabilization policy? **Nominal wages become flexible and rise, SRAS shifts to the left, actual output decreases to potential output**
- d. Commodity prices fall dramatically. **(commodities: production inputs ex. Oil, steel, copper) (positive supply shock)**



- i. What happens to the aggregate output and price level? **PL \downarrow , Y \uparrow**
 - ii. Does this economy face a short-run recessionary gap or an inflationary gap? **Inflationary gap**
 - iii. What active stabilization policy can offset this particular shock? **Contractionary monetary or fiscal policy**
 - iv. What would happen in the long run to the aggregate price and output levels without an active stabilization policy? **Nominal wages become flexible and rise, SRAS shifts to the left, actual output decreases to potential output**
3. Use a graph of the AD-AS model to illustrate long-run economic growth in an economy. Explain how your graph illustrates economic growth. Assume AD does *not* change over time.

LRAS will shift over time to the right. This is a result in an increase in quantity and quality of resources, and technological progress.



4. Macroland is a small, closed economy that is currently operating at the long-run equilibrium level of output (Y_p). Its aggregate price level is P_1 .
 - a. Draw a graph of long-run equilibrium for Macroland depicting the AD, SRAS, and LRAS curves. Label both axes, identify Y_p and P_1 on your graph.
 - b. Suppose that Macroland experiences a negative demand shock. Graph the short-run changes in the original equilibrium that will occur because of this demand shock. On your graph, identify the new short-run equilibrium level of output (Y_2) and the new short-run equilibrium aggregate price level (P_2). Label any shifts in AD or AS clearly.
 - c. Given the change in part (b), graph the long-run adjustment to the negative demand shock (assuming no active stabilization policy). Label any shifting curves clearly, and identify the long-run equilibrium level of aggregate output (Y_3) and the new long-run aggregate price level (P_3).
 - d. Given the change in part (b), suppose the government wishes to engage in activist fiscal policy in order to restore the economy to its initial equilibrium. Provide two fiscal policies that would accomplish this. **To offset a negative demand shock, the government needs to shift the AD curve to the right. Monetary policy that increases the money supply will shift the AD curve to the right and return the economy to P_1 and Y_p .**

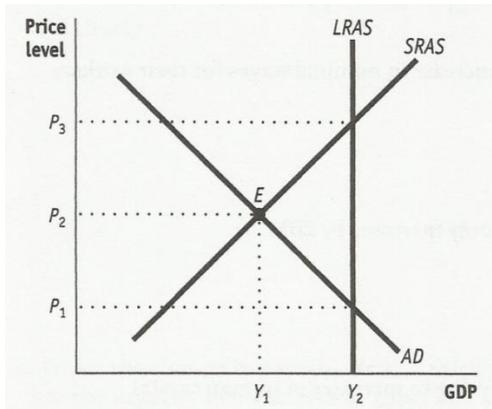
5. For each of the following, describe the effect on the AD, SRAS, and LRAS curves, identify whether the effect causes a shift of or a movement along the curve, and identify the direction of the shift/movement.
 - a. An increase in the money supply causes interest rates to fall. **The AD curve shifts to the right and there is movement upward along the SRAS curve. There will be no change in the LRAS curve.**
 - b. The price of commodities increases by 10% this year. **This causes the SRAS curve to shift to the left. There will be a movement along the AD curve. There will be no change in LRAS.**
 - c. The price of oil falls. **SRAS shifts to the right and results in a downward movement along the AD curve. There is no change in the LRAS.**
 - d. Labor unions successfully negotiate an increase in nominal wages for their workers. **SRAS shifts to the left.**
 - e. The supply of unsold houses in an economy increases by 20%. **When the inventory of unsold houses increases in an economy, this implies that the level of investment is high and there is therefore less incentive for firms to invest in this economy. As investment spending falls, AD shifts to the left.**
 - f. There is an increase in labor productivity due to increases in human capital. **SRAS shifts the the right, but also causes LRAS to shift to the right because the economy can now produce a higher potential output level.**
 - g. The government increases spending in order to finance a war. **AD shifts to the right**

6. The AD-AS model is said to have a self-correcting mechanism. Explain what this means and how it works. Use a graph to illustrate your answer. **The AS-AD model is self-correcting; it will always return to long-run equilibrium if given a sufficient amount of time for the short-run AS to adjust to economic changes through changes in the nominal wage. This adjustment process comes from the short-run AS curve shifting due to changes in the nominal wage until that point at which AD intersects both the short –run and the long-run AS curves at potential output.**

Stabilization

7. For each of the following scenarios, identify whether it is an example of expansionary discretionary fiscal policy, contractionary discretionary fiscal policy, or an automatic stabilizer.
 - a. During 2006, tax revenue for Macrovia falls as the economy enters a recession. **Automatic stabilizer: as GDP in Macrovia falls, this leads automatically to smaller tax collections for a give tax rate.**
 - b. During 2006, in light of projected deficiencies in AD, Macrovia’s legislation authorizes an expenditure of \$200 million to build a new hydroelectric dam. **Expansionary discretionary fiscal policy: additional government expenditure will increase AD.**
 - c. In 2009, fearing a too rapidly expanding economy, Macrovia adopts a budget that calls for 10% spending cuts in all government departments for the following fiscal year. **Contractionary discretionary fiscal policy: Macrovia moves to cut government spending, which will reduce AD and slow economic expansion.**
 - d. In 2008, unemployment benefits rise 5% in response to rising unemployment in Macrovia. **Automatic stabilizer: as unemployment rises, this leads to lower AD. But the payment of unemployment benefits lessens this fall in agg spending and results in a smaller overall impact on AD.**

8. The following graph depicts the economy of Macroland's SRAS, LRAS, and AD. Macroland is currently producing at point E.



- Is potential GDP for Macroland equal to Y_1 and Y_2 ? Potential output level for Macroland is Y_2 . Currently, Macroland is producing Y_1 at price level P_2
 - Does Macroland have a recessionary gap or an inflationary gap? Recessionary gap. Explain your answer. Macroland has the potential to produce a higher level of output than it is currently producing.
 - Ceteris paribus, which of the following policy initiatives might help Macroland produce at its potential output? Explain how each would help/hinder Macroland's economy from reaching potential output.
 - The government initiates policies that encourage private investment spending. Shifts AD to right; government policies that stimulate private investment spending lead to higher levels of agg spending and a rightward shift in AD. New gov spending will also increase AD.
 - The government increases taxes on consumers and corporations. Reduces disposable income and leads to lower levels of agg spending; AD shifts left.
 - The government authorizes new spending programs. Shifts AD to right; government policies that stimulate private investment spending lead to higher levels of agg spending and a rightward shift in AD. New gov spending will also increase AD.
 - What is the current price level in Macroland? P_2 If Macroland engages in expansionary fiscal policy so that AD shifts and actual output equals potential output, what will happen to the price level? If gov engages in fiscal policy that results in a shift of AD to the right, returning to the potential level of output, and leading to an increase in the price level from P_2 to P_3 .
9. Explain why automatic stabilizers reduce the size of the multiplier. Provide several examples of automatic stabilizers and their effect on the economy during economic fluctuations. Automatic stabilizers act to moderate the effects of economic recessions or economic expansions. In the case of recessions, automatic stabilizers provide a source of additional spending that occurs as the economy goes into the recession. For example, as production and spending slow in the economy, the amount of taxes people pay naturally decrease as their income levels decrease, and this moderates the fall in consumer spending. Or, as unemployment rates increase, the number of people receiving unemployment compensation rises, and this enables people to spend more than they would otherwise be able to spend. In the case of expansions, the automatic stabilizers slow down spending; as people's incomes rise, their taxes also rise, reducing the overall increase in consumer income, which moderates the expansion.

Consumption Function, Marginal Propensity to Consume/Save, and the Spending Multiplier

10. In Mainland, a small, closed economy with no government sector, when disposable income is \$800, consumer spending is \$800, and when disposable income is \$1,800, consumption spending is \$1,600. Assume that the aggregate price level and the interest rate are fixed in mainland.
- What is the value of autonomous consumer spending in Mainland?
Recall that consumption function can be written as $C = A + MPC(Y_d)$. Next find the MPC, which is the change in consumer spending divided by the change in disposable income, or $800/100=0.8$, substitute one of the consumer spending and disposable income combinations into the consumption function to find the value of autonomous consumer spending: thus, $C = A + .8 \times Y_d$ and $800 = A + (.8 \times 800)$. $A = \$160$.
 - What is the value of the MPC in Mainland? $MPC = 0.8$
 - What is the consumption function in Mainland? The consumption function is $C = 160 + 0.8 \times Y_d$

11. Suppose you are given the following information about Macroland, a small, closed economy. Assume that government spending is currently \$0, taxes are constant at \$50, and the aggregate price level is originally fixed at \$100.

Year	Real GDP	Taxes	Consumption Spending	Planned Investment Spending
1	\$100	\$50	\$40	\$50
2	150	50	80	50
3	300	50	200	50

a. Fill in the following table, using the information given above.

Year	Disposable Income
1	\$50
2	100
3	250

- b. What is the MPC for this economy? $MPC = 40/50 = 0.8$
 c. What is the MPS for this economy? $MPS + MPC = 1$; $MPS = 0.2$
 d. What is the value of the spending multiplier for this economy? $Spending\ Multiplier = 1/(1-MPC) = 5$
 e. What is the consumption function for this economy? $Consumption\ Function: C = A + MPC \times (Y - T)$. MPC is 0.8, and taxes are constant at \$50. Thus $C = A + 0.8(Y - 50)$. Using one of the disposable income and consumption pairs from the table, you can solve this equation for the value of A, the autonomous level of consumption spending. Therefore, $40 - A + 0.8(100-50)$, or $A = 0$. The consumption function is $C = .8 \times (Y - T)$.

12. Funlandia's economists estimate its potential output is \$100 in year 1 and grows 5% per year. Assume Funlandia is a closed economy.

a. Fill in the following table for Funlandia, given the above information.

Year	Potential output
1	\$100
2	105
3	110.25
4	115.76

Suppose Funlandia's economists provide you with the following data. (All numbers are in dollars.)

Year	Potential output	Actual output	Taxes (T)	Disposable income (YD)	Consumption spending (C)	Investment spending (I)	Government spending (G)
1	100	100	10	90	55	30	15
2	105	104	10	94	57	30	17
3	110.25	115	10	105	62.5	30	22.5
4	115.76	118	10	108	64	30	24

- b. What is the consumption function for this economy? $C = A + MPC(Y - T)$. $MPC = 9/18 = 0.5$. To find A, plug in one combination of consumption spending and disposable income. So, $55 = A + 0.5(90)$. $A = 10$. $C = 10 + 0.5(Y - T)$.
 c. Fill in the missing values for the table, using the information you have been given or that you computed in parts (a) and (b).
 d. Fill in the following table for Funlandia.

Year	Recessionary gap	Inflationary gap	Actual output equals potential output
1	No	No	Yes
2	Yes	No	No
3	No	Yes	No
4	No	Yes	No

- e. Suppose Funlandia maintains a policy of using discretionary fiscal policy to ensure that actual output equals potential output. Summarize the recommended discretionary fiscal policy necessary to achieve this goal in the following table.

Year	Discretionary fiscal policy

1	No policy necessary
2	Increase government spending or decrease taxation
3	Decrease government spending or increase taxation
4	Decrease government spending or increase taxation