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CHAPTER 4. FISCAL POLICY AND FOREIGN TRADE POLICY

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OUTLINE

4.1. Fiscal Policy

4.2. Automatic Fiscal Factors

4.3. Foreign Trade Policy

4.1. Fiscal policy

- Fiscal policy is the way that a government **changes budget revenues and expenditures** to **influence economic activity.**
- Goals: economic stabilization
- Tools: Changes in **T and/or G** => change(s) in **(AD)** => change in **macro variables** such as: Y, unemployment and price level

4.1. Fiscal policy

- Viewpoints on fiscal policy
  - ✓**Subjective fiscal policy:** The government should proactively influence the economy with **fiscal policies** (Keynes).
  - ✓**Automatic fiscal policy:** The government only needs to use **automatic stabilizers** and fiscal policy will automatically be implemented.

4.1. Fiscal policy

Subjective Fiscal Policy

Expansionary Fiscal Policy
- By increasing G and/or decreasing T
- Being used to avoid from recession

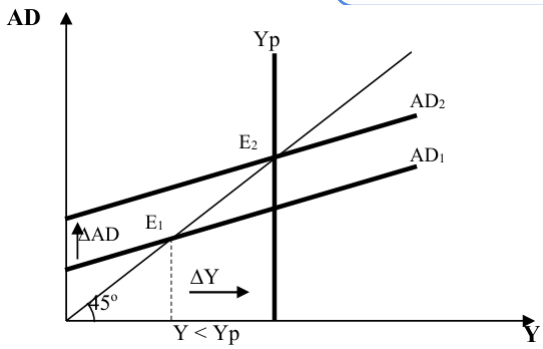
Contractionary Fiscal Policy
- By decreasing G and/or increasing T
- Being used to avoid high inflation rate

IMPACTS OF SUBJECTIVE FISCAL POLICY

$Y_E < Y_P$
- **Recession**

In order that $Y_E = Y_P$
- Using expansionary fiscal policy

Way to do:
- $T_x \downarrow, T_r \uparrow \Rightarrow T \downarrow \Rightarrow Y_d \uparrow \Rightarrow C \uparrow \Rightarrow AD \uparrow \Rightarrow Y_E \uparrow$
- $G \uparrow \Rightarrow AD \uparrow \Rightarrow Y_E \uparrow$



IMPACTS OF SUBJECTIVE FISCAL POLICY

$Y_E > Y_P$

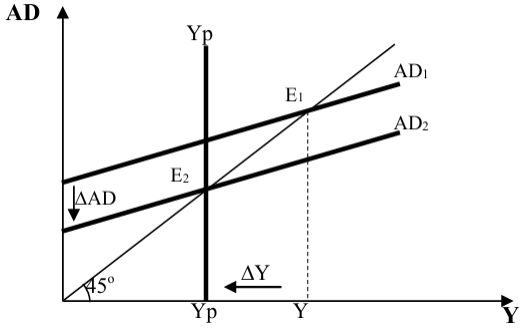
- High Inflation Rate

In order that $Y_E = Y_P$

- Using contractionary fiscal policy

Way to do

- $T_x \uparrow, T_r \downarrow \Rightarrow T \uparrow \Rightarrow Y_d \downarrow \Rightarrow C \downarrow \Rightarrow AD \downarrow \Rightarrow Y_E \downarrow$
- $G \downarrow \Rightarrow AD \downarrow \Rightarrow Y_E \downarrow$



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4.1. Fiscal policy

Criteria	Expansionary fiscal policy	Contractionary Fiscal Policy
Characteristic	A policy to increase government spending on goods and services or reduce tax revenue	A policy to cut spending on goods and services or increase tax revenue.
Tool	Increase government spending G Increase transfer payment Tr (subsidy payments, social insurance payments...) Reduce Tx tax Change both expenditure G and net taxes T	Decrease government spending G Decrease transfer payment Increase Tx tax Change both expenditure G and net taxes T
Goal	Increase aggregate demand => increase national output to fight recession	Reduce output to fight inflation
Applicable cases	When the economy has real output Yt < Yp	When the economy has Yt > Yp

The Financial Crisis as a Market Failure

- ✓ In the US and other countries, households were offered “sub-prime” loans, which allowed those who would not have typically qualified for a home loan to borrow money and buy a house.
- ✓ Borrowers were told that the debt they were taking on would not be a problem due to the fact that “home prices always rise”, information that was thought to be factual by most who bought homes at the time.
- ✓ Banks "bundled" these loans into securities that they sold to investors all over the world, who assumed that the lending banks were correct in their assumption that house prices would continue to rise.
- ✓ Developers built houses in record numbers based on the assumption that they'd be able to sell them at higher and higher prices.
- ✓ Supply of houses grew faster than demand, and eventually house prices began to fall.
- ✓ Borrowers found they could not make their monthly payments because their loans were "adjustable rate" meaning they required higher payments over time, causing foreclosures to increase and the supply of houses for sale to grow even more, forcing prices down even more.
- ✓ Now investors and banks all over the world hold securities made up of bad loans to Americans that were made based on the incorrect assumption that house prices would always rise. With bad assets on their "balance sheets" banks are unable to make new loans to consumers and firms, so spending in the economy has slowed, meaning recession and high unemployment.

“home prices always rise”.

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Quantitative Fiscal policy

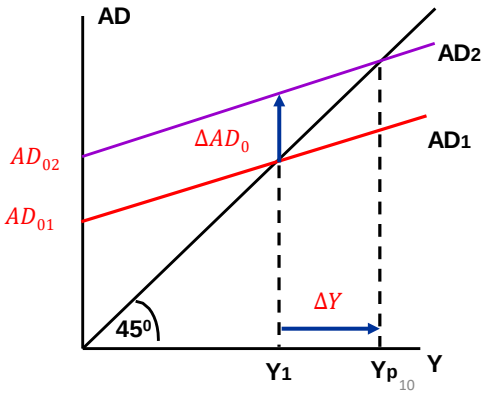
Goal: Changing G & T in order that Ye = Yp

When Y1 < Yp => $\Delta Y = Yp - Y1$

$\Delta Y = k.\Delta AD_0$ or $\Delta AD_0 = \frac{\Delta Y}{k}$

Whereas:

$$k = \frac{1}{1 - Cm(1 - Tm) - Im + Mm} = \frac{1}{1 - ADm}$$



Quantiative Fiscal policy
*Goal: Changing G & T in order that **Ye = Yp***

- *Case 1: Changing G and T unchanged => $\Delta \boldsymbol{G} = \Delta \boldsymbol{AD_{0G}}$*
- *Case 2: Changing T, G unchanged*
- $\Delta Yd = -\Delta T$
- => $\Delta C = Cm.\Delta Yd = -Cm.\Delta T$

=> $\Delta AD_{0\mathrm{T}} = \Delta C = -Cm.\Delta T$ => $\Delta T = -\frac{\Delta AD_{0\mathrm{T}}}{Cm}$

Quantiative Fiscal policy
Goal: Changing G & T in order that Ye = Yp

- *Case 3: Changing both G and T*

ΔAD_{0G} is the change of AD caused by changing G

$\Delta AD_{0\mathrm{T}}$ is the change of AD caused by changing T

$$\Rightarrow \Delta G = \Delta AD_{0G} \qquad \Delta T = -\frac{\Delta AD_{0\mathrm{T}}}{Cm}$$

Vì: $\Delta AD_{0G} + \Delta AD_{0\mathrm{T}} = \Delta AD_0$

$$\Rightarrow \Delta G + (-Cm.\Delta T) = \Delta AD_0$$
$$\Rightarrow \Delta G - Cm.\Delta T = \Delta AD_0$$

Quantitative Fiscal policy

Goal 2: Changing G and T to keep AD unchanged

- Supposed that Ye = Yp, but the government needs to increase G.

=> The govt has to increase T to keep AD unchanged.

=> $\Delta C = Cm.\Delta Yd = -Cm.\Delta T$

- In order to keep Ye = Yp, the decrease of C = the increase of G

=> $\Delta C = -\Delta G \Leftrightarrow -Cm.\Delta T = -\Delta G$ => $\Delta T = \frac{\Delta G}{Cm}$

Fiscal Policy and Aggregate Demand

- **Fiscal policy**: the setting of the level of govt spending and taxation by govt policymakers
- **Expansionary** fiscal policy
  - an increase in ***G*** and/or decrease in ***T***
  - shifts *AD* right
- **Contractionary** fiscal policy
  - a decrease in ***G*** and/or increase in ***T***
  - shifts *AD* left
- Fiscal policy has two effects on *AD*...

The Multiplier Effect

- If the govt buys $20b of planes from Boeing, Boeing's revenue increases by $20b.
- This is distributed to Boeing's workers (as wages) and owners (as profits or stock dividends).
- These people are also consumers and will spend a portion of the extra income.
- This extra consumption causes further increases in aggregate demand.

Multiplier effect: the additional shifts in *AD* that result when fiscal policy increases income and thereby increases consumer spending

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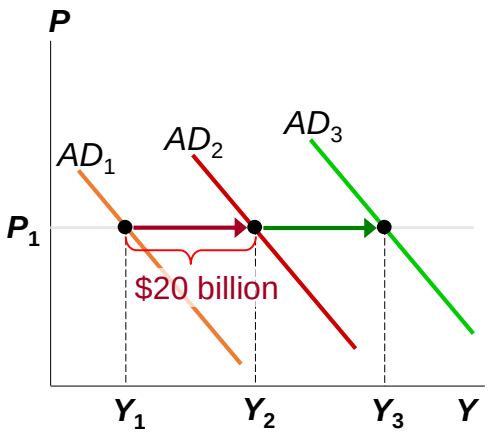
The Multiplier Effect

A $20b increase in ***G*** initially shifts *AD* to the right by $20b.

The increase in ***Y*** causes ***C*** to rise, which shifts *AD* further to the right.



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Marginal Propensity to Consume

- How big is the multiplier effect?
  It depends on how much consumers respond to increases in income.
- **Marginal propensity to consume (MPC)**:
  the fraction of extra income that households consume rather than save

  E.g., if *MPC* = 0.8 and income rises \$100,

  C rises \$80.

A Formula for the Multiplier

Notation: $\Delta \boldsymbol{G}$ is the change in ***G***,
$\Delta \boldsymbol{Y}$ and $\Delta \boldsymbol{C}$ are the ultimate changes in ***Y*** and ***C***

$\boldsymbol{Y} = \boldsymbol{C} + \boldsymbol{I} + \boldsymbol{G} + \boldsymbol{NX}$	identity
$\Delta \boldsymbol{Y} = \Delta \boldsymbol{C} + \Delta \boldsymbol{G}$	***I*** and ***NX*** do not change
$\Delta \boldsymbol{Y} = MPC\, \Delta \boldsymbol{Y} + \Delta \boldsymbol{G}$	because $\Delta \boldsymbol{C} = MPC\, \Delta \boldsymbol{Y}$
$\Delta \boldsymbol{Y} = \dfrac{1}{1 - MPC} \Delta \boldsymbol{G}$	solved for $\Delta \boldsymbol{Y}$

The multiplier

A Formula for the Multiplier

The size of the multiplier depends on *MPC*.

E.g., if *MPC* = 0.5 multiplier = 2
if *MPC* = 0.75 multiplier = 4
if *MPC* = 0.9 multiplier = 10

$$\Delta Y = \frac{1}{1 - MPC} \Delta G$$

The multiplier

A bigger *MPC* means changes in ***Y*** cause bigger changes in ***C***, which in turn cause more changes in ***Y***.

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Other Applications of the Multiplier Effect

- The multiplier effect:
  Each $1 increase in ***G*** can generate more than a $1 increase in agg demand.
- Also true for the other components of GDP.

  Example: Suppose a recession overseas reduces demand for U.S. net exports by $10b.

  Initially, agg demand falls by $10b.

  The fall in ***Y*** causes ***C*** to fall, which further reduces agg demand and income.

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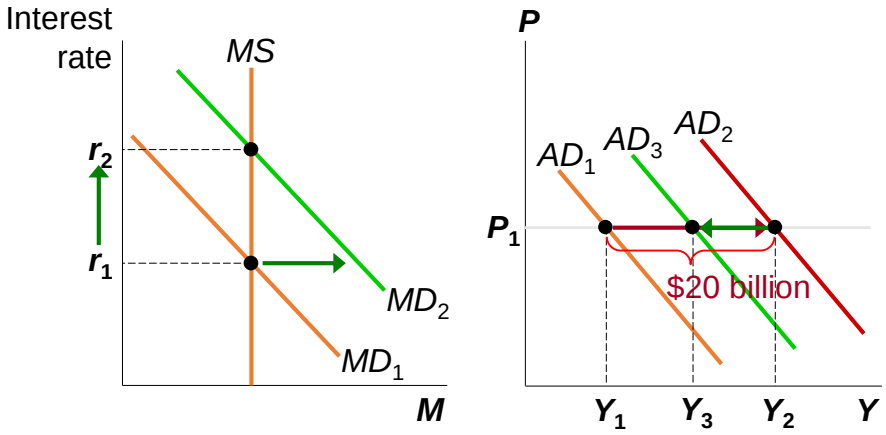
The Crowding-Out Effect

- Fiscal policy has another effect on *AD* that works in the opposite direction.
- A fiscal expansion raises ***r***,
  which reduces investment,
  which reduces the net increase in agg demand.
- So, the size of the *AD* shift may be smaller than the initial fiscal expansion.
- This is called the **crowding-out effect**.

How the Crowding-Out Effect Works

A $20b increase in ***G*** initially shifts *AD* right by $20b



But higher ***Y*** increases *MD* and ***r***, which reduces *AD*.

Changes in Taxes

- A tax cut increases households' take-home pay.
- Households respond by spending a portion of this extra income, shifting *AD* to the right.
- The size of the shift is affected by the multiplier and crowding-out effects.
- Another factor: whether households perceive the tax cut to be temporary or permanent.
  - A permanent tax cut causes a bigger increase in ***C*** – and a bigger shift in the *AD* curve –
    than a temporary tax cut.

ACTIVE LEARNING *3*
Exercise

The economy is in recession.
Shifting the *AD* curve rightward by $200b
would end the recession.

A. If *MPC* = 0.8 and there is no crowding out, how much should Congress increase ***G*** to end the recession?

B. If there is crowding out, will Congress need to increase ***G*** more or less than this amount?

ACTIVE LEARNING 3
Answers

The economy is in recession.
Shifting the *AD* curve rightward by $200b would end the recession.

A. If *MPC* = .08 and there is no crowding out, how much should Congress increase ***G*** to end the recession?

Multiplier = 1/(1 – .8) = 5

Increase ***G*** by $40b
to shift agg demand by 5 x $40b = $200b.

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ACTIVE LEARNING 3
Answers

The economy is in recession.
Shifting the *AD* curve rightward by $200b would end the recession.

B. If there is crowding out, will Congress need to increase ***G*** more or less than this amount?

Crowding out reduces the impact of ***G*** on *AD*.

To offset this, Congress should increase ***G*** by a larger amount.

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ACTIVE LEARNING 1

The initial information of an economy is given as below:

Y1 = 1000; Yp = 1180; MPC= 0,75;

How does the government do with fiscal policy?

MULTIPLE CHOICE

1. If the government wants to expand aggregate demand, it can _____ government purchases or _____ taxes.

a. increase; increase

b. increase; decrease

c. decrease; increase

d. decrease; decrease

4.2. AUTOMATIC FISCAL POLICY (AUTOMATIC STABILIZERS)

- Automatic stabilizers are the factors that themself decrease fluctuations of the business cycle.
  - *Progressive income tax, unemployment insurance benefits,… are automatic stabilizers*

4.2. AUTOMATIC FISCAL POLICY (AUTOMATIC STABILIZERS)

- Ex: Unemployment Insurance Benefits
- Recession=> unemployment rises=> Unemployment Insurance Benefits rises => Tr rises = > T falls => Yd rises => C rises

=> Decreasing the recession

Using Policy to Stabilize the Economy

- Since the Employment Act of 1946, economic stabilization has been a goal of U.S. policy.
- Economists debate how active a role the govt should take to stabilize the economy.

The Case for Active Stabilization Policy

- Keynes: "Animal spirits" cause waves of pessimism and optimism among households and firms, leading to shifts in aggregate demand and fluctuations in output and employment.
- Also, other factors cause fluctuations, *e.g.,*
  - booms and recessions abroad
  - stock market booms and crashes
- If policymakers do nothing, these fluctuations are destabilizing to businesses, workers, consumers.

The Case for Active Stabilization Policy

- Proponents of active stabilization policy believe the govt should use policy to reduce these fluctuations:
  - When GDP falls below its natural rate, use expansionary monetary or fiscal policy to prevent or reduce a recession.
  - When GDP rises above its natural rate, use contractionary policy to prevent or reduce an inflationary boom.

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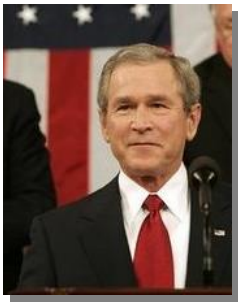
Keynesians in the White House

1961:
John F Kennedy pushed for a tax cut to stimulate agg demand. Several of his economic advisors were followers of Keynes.



2001:
George W Bush pushed for a tax cut that helped the economy recover from a recession that had just begun.

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The Case Against Active Stabilization Policy

- Monetary policy affects economy with a long lag:
  - Firms make investment plans in advance, so ***I*** takes time to respond to changes in ***r***.
  - Most economists believe it takes at least 6 months for mon policy to affect output and employment.
- Fiscal policy also works with a long lag:
  - Changes in ***G*** and ***T*** require Acts of Congress.
  - The legislative process can take months or years.

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The Case Against Active Stabilization Policy

- Due to these long lags, critics of active policy argue that such policies may destabilize the economy rather than help it:

  By the time the policies affect agg demand, the economy's condition may have changed.
- These critics contend that policymakers should focus on long-run goals like economic growth and low inflation.

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Automatic Stabilizers

- **Automatic stabilizers**:
  changes in fiscal policy that stimulate
  agg demand when economy goes into recession,
  without policymakers having to take any deliberate
  action

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Automatic Stabilizers: Examples

- The tax system
  - In recession, taxes fall automatically,
    which stimulates agg demand.
- Govt spending
  - In recession, more people apply for public assistance (welfare, unemployment insurance).
  - Govt spending on these programs automatically rises, which stimulates agg demand.

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MULTIPLE CHOICE

2. Which of the following is an example of an automatic stabilizer? When the economy goes into a recession,

a. more people become eligible for unemployment insurance benefits.

b. stock prices decline, particularly for firms in cyclical industries.

c. Congress begins hearings about a possible stimulus package.

d. the Fed changes its target for the federal funds rate.

MULTIPLE CHOICE

3. If actual output is 100 and potential output is 150, the government should

a. Increase budget expenditures and reduce tax revenues

b. Reduce budget expenditures and reduce tax revenues

c. Increase budget spending and increase tax revenue

d. Reduce budget spending and increase tax revenue.

MULTIPLE CHOICE

4. Which of the following is considered an automatic stabilizer of the economy:

a. Exports

b. Progressive income taxes and subsidies

c. Investment

d. Cumulative income taxes

Fiscal Policy and Aggregate Supply

- Most economists believe the short-run effects of fiscal policy mainly work through agg demand.
- But fiscal policy might also affect agg supply.
- Recall one of the Ten Principles from Chap 1:
  People respond to incentives.
- A cut in the tax rate gives workers incentive to work more, so it might increase the quantity of g&s supplied and shift *AS* to the right.
- People who believe this effect is large are called "Supply-siders."

Fiscal Policy and Aggregate Supply

- Govt purchases might affect agg supply. Example:
  - Govt increases spending on roads.
  - Better roads may increase business productivity, which increases the quantity of g&s supplied, shifts *AS* to the right.
- This effect is probably more relevant in the long run: it takes time to build the new roads and put them into use.

4.3. FOREIGN TRADE POLICY

=> Aim to increase exports and restrict imports

4.3. FOREIGN TRADE POLICY
POLICY OF INCREASING EXPORTS (ΔX)

Type equation here.

- Affecting national output

: $\Delta AD_{0X} = \Delta X$

$\Rightarrow \Delta Y = k.\Delta AD_{0X} = k.\Delta X$

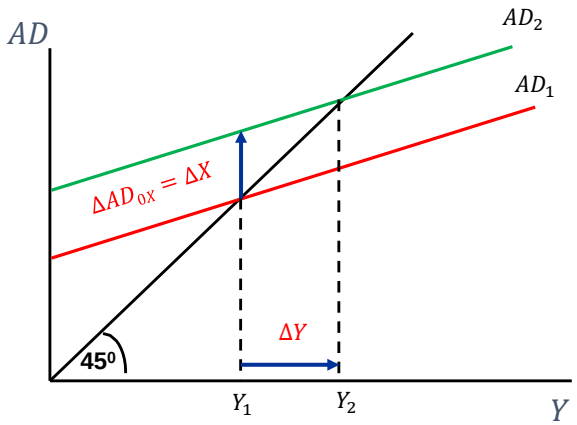
- Affecting foreign trade

X rises => Y rises => M rises

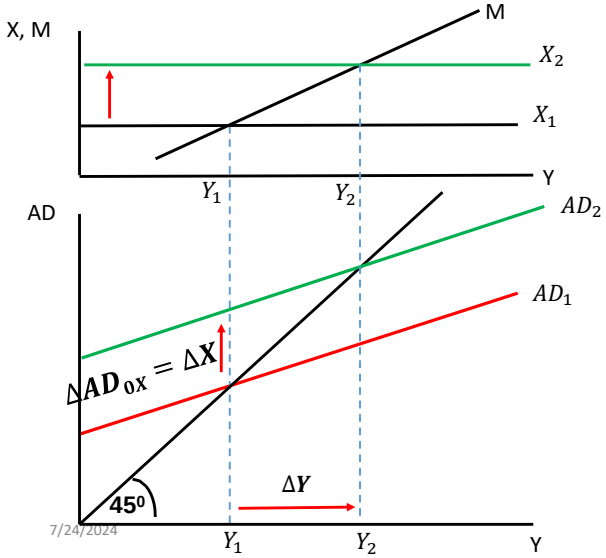
$$M = Mo + Mm.Y$$

Y rise => $\Delta M = Mm.\Delta Y = Mm.k.\Delta X$

3 cases:



4.3. FOREIGN TRADE POLICY
POLICY OF INCREASING EXPORTS (ΔX)



- Case 1: $Mm.k < 1 \Leftrightarrow \Delta M < \Delta X$

$\Rightarrow$Propensity to be surplus

- Case 2: $Mm.k > 1 \Leftrightarrow \Delta M > \Delta X$

$\Rightarrow$Propensity to be deficit

- Case 3: $Mm.k = 1 \Leftrightarrow \Delta M = \Delta X$

$\Rightarrow$Trade unchanged

ACTIVE LEARNING 2

THE FUNCTIONS ARE GIVEN AS BELOW:

- $C = 100 + 0{,}75Yd$ $I = 50 + 0{,}05Y$ $G = 300$
- $T = 40 + 0{,}2Y$ $M = 70 + 0{,}15Y$ $X = 150$

a. Compute the equilibrium output.

b. Give ***comments on the trade*** at the equilibrium output.

c. Supposed that ***exports increase by 100***, Give comments on the trade after this change

4.3. FOREIGN TRADE POLICY
POLICY OF IMPORT RESTRICTION (ΔM)

- Import restriction aims to improve the foreign trade.
- Import restriction used by: tax, quota, currency depreciation,…

4.3. FOREIGN TRADE POLICY
POLICY OF IMPORT RESTRICTION (ΔM)

- Affecting Y

$$\Delta Y = k.\Delta AD_0 = k.(-\Delta M) > 0$$

ACTIVE LEARNING 3

The functions of economy's components are given as below:

$C = 70 + 0.75Yd$ $I = 100 + 0.2Y$ $G = 320$

$X = 500$ $M = 350 + 0.25Y$ T = 200 + 0,1Y

a. Compute the equilibrium output

b. Supposed that export rises by 20, investment rises by 10 and consumption rises by 50. Compute the new equilibrium output.

EXERCISE 1

1. The functions of economy's components are given as below :

C = 0.8Yd + 1,000 T = 0.25Y + 500 G = 1,500

M = 0.1Y + 1,000 X = 400 I = 500

a. Compute the eq'm output. How is the govt budget?

b. Use the multiplier to compute the new eq'm output when the govt rises by 100. Do you have any comments on the govt budget?

c. If the govt doesn't change G, how much T will be decreased to achieve the same level output in question (b).

d. From the question (a), If the govt increases T and G each by 100 how much will the eq'm output change?

e. Which kind of the above fiscal policies you support most? Why?

EXERCISE 2

2. The functions of economy's components are given as below : (Unit: billion USD)

C = 100 + 0.8Yd I = 300 G = 250

X = 300 M = 50 + 0.12Y T = 0.1Y Yp = 2500

a. Compute the eq'm output

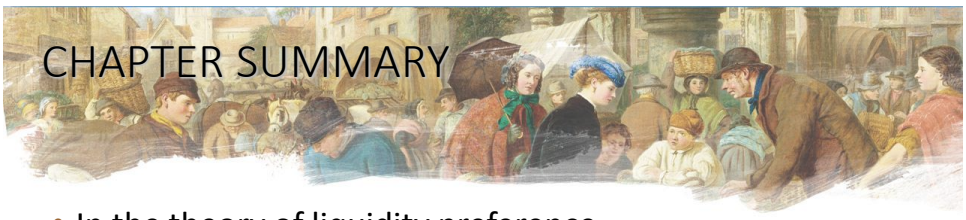
b. Give comments on the govt budget and trade surplus at the eq'm output.

c. Supposed that export rises by 20, will the trade balanced?

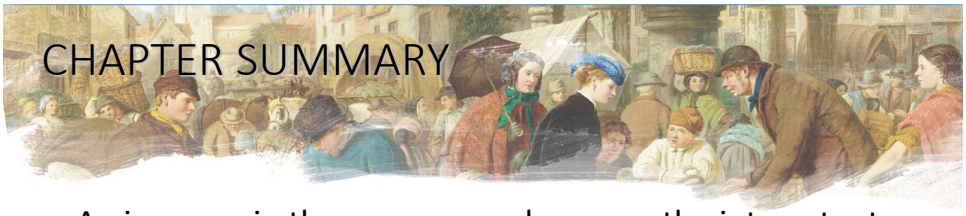
d. In order that Yt = Yp, which kind of fiscal policy will be used? Quantify the fiscal policy in this situation (3 cases).

CONCLUSION

- Policymakers need to consider all the effects of their actions. For example,
  - When Congress cuts taxes, it should consider the short-run effects on agg demand and employment, and the long-run effects on saving and growth.
  - When the Fed reduces the rate of money growth, it must take into account not only the long-run effects on inflation but the short-run effects on output and employment.



- In the theory of liquidity preference, the interest rate adjusts to balance the demand for money with the supply of money.
- The interest-rate effect helps explain why the aggregate-demand curve slopes downward: an increase in the price level raises money demand, which raises the interest rate, which reduces investment, which reduces the aggregate quantity of goods & services demanded.



- An increase in the money supply causes the interest rate to fall, which stimulates investment and shifts the aggregate demand curve rightward.
- Expansionary fiscal policy – a spending increase or tax cut – shifts aggregate demand to the right. Contractionary fiscal policy shifts aggregate demand to the left.

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- When the government alters spending or taxes, the resulting shift in aggregate demand can be larger or smaller than the fiscal change:
  - The multiplier effect tends to amplify the effects of fiscal policy on aggregate demand.
  - The crowding-out effect tends to dampen the effects of fiscal policy on aggregate demand.

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CHAPTER SUMMARY

- Economists disagree about how actively policymakers should try to stabilize the economy.
- Some argue that the government should use fiscal and monetary policy to combat destabilizing fluctuations in output and employment.
- Others argue that policy will end up destabilizing the economy because policies work with long lags.