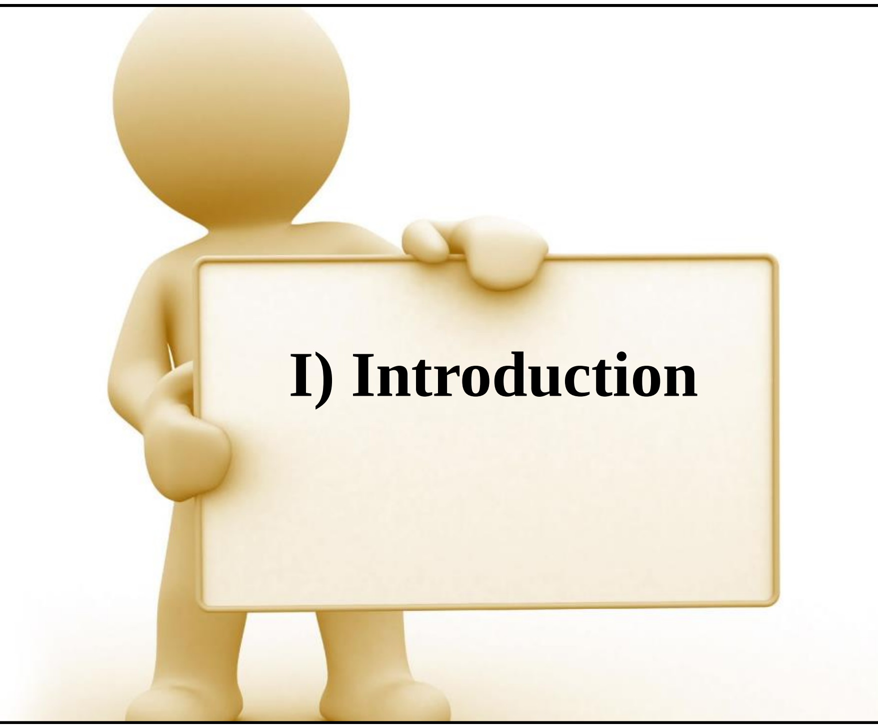
Aggregate Demand and the Powerful Consumer

Dr. Ashraf Samir
Website: ashraffeps.yolasite.com

Contents



Introduction

As mentioned in chapter 23, the goal of macroeconomic policy focused on two main tasks:

1. Growth policy

Ensuring that the economy sustains a high **long-run** growth rate of potential GDP

2. Stabilization policy

Keeping actual GDP reasonably close to potential GDP in the short run, so that society is plagued by neither high unemployment nor high inflation

Thus,

The three **main pillars** of **growth**
The **determinants** of **potential** GDP
the economy's **capacity** to produce

are

(1)
The rate at which the economy builds up its **stock** of **capital**

(2)
The rate at which **technology** improves

(3)
The rate at which **workforce quality** (or "human capital") is improving

Thus,

More Capital

Improved Workforce Quality

Better Technology

=

Shift the Production Function Upward

(a higher potential GDP)

Note:

Those three pillars are obvious sources of **large disparities** between **rich nations**, which tend to have more stock of capital, better technology, and well-educated populations, and **poor nations**, which do not.

Rich Nations

Poor Nations

How Could Capital Formation be Encouraged?

Ans. (by)

- low real interest rates
- rapid technical change
- favorable tax treatment
- political stability that protects property rights
- rapid growth of demand

How Could Technological Advances be Encouraged?

Ans. (by)

- More Education
- Higher rates of Investment
- Direct expenditures (public and private) on research and development (R&D).

How Could Workforce Quality be Encouraged?

Ans. (by)

- education
- training

Let's consider in this chapter the factors determining ***actual GDP***

Which means: "how much of the potential GDP is actually utilized"

There are two possible cases:

Case 1: Will the demand for goods and services exceeds production (**aggregate demand** is greater than **aggregate supply**), therefore the economy has trouble with **inflation**.

Case 1: will the supply of goods and services exceeds demand (**aggregate demand** is less than **aggregate supply**), therefore the economy has trouble with **unemployment**.

Definition 20 **Aggregate demand**

- It is the total amount that all **consumers**, **business firms**, **government** agencies, and **foreigners** spend on final goods and services, holding all other things constant.
- The aggregate demand curve is a **downward-sloping** curve.

Definition 21 **Aggregate supply**

- It is the quantity of goods and services that all the **nation's businesses** are **willing** to **produce** during a specified period of time, holding all other things constant.
- The aggregate supply curve is an **upward-sloping** curve.

Components of Aggregate demand

- ✓ The **value** of aggregate demand depends on the **price level**.
- ✓ The **level** of aggregate demand also depends on a variety of other factors—such as **consumer incomes**, various **government policies**, and **events** in **foreign countries**.

Major components of aggregate demand

Consumption (C) + **Investment (I)** + **Government purchases (G)** + **Net exports (x-IM)**

Rule 11 **Aggregate Demand (AD)**

$$AD = C + I + G + (X-IM)$$

Definition 22 **Consumer expenditure "consumption" (C)**

- It is the total amount spent by consumers on newly produced goods and services (excluding purchases of new homes, which are considered investment goods).

Definition 23 **Investment spending (I)**

- It is the sum of the expenditures of business firms on new plant and equipment and households on new homes. Financial "investments" are not included, nor are resales of existing physical assets.

Definition 24 **Government purchases (G)**

- It refers to the goods (such as airplanes and paper clips) and services (such as school teaching and police protection) purchased by all levels of government.

Definition 25 **Net exports (X – IM)**

- It refers to the difference between exports (X) and imports (IM). It indicates the **difference** between what we sell to foreigners and what we **buy** from them.

Definition 26 **National Income (NI)**

- It refers to **before-tax incomes**.
- It is the **monetary value of the flow of output of goods and services** produced in an economy over a period of time.
- It tells us the **total amount** of **money** earned within a country.

Rule 12 **National Income (NI)**

It is the **sum** of the **incomes** that all individuals in the economy earn in the forms of **wages (W)**, **interest (I)**, **rents (R)**, and **profits (P)**.

Note: It excludes government transfer payments and is calculated before any deductions are taken for income taxes.

NI=W+I+R+P

Definition 27 **Disposable Income (DI)**

- It refers to **after-tax incomes**. It tells us how much of Income consumers actually have **available** to **spend** or to **save**.

Rule 13 **Disposable Income (DI)**

It is the **sum** of the **incomes** of all individuals in the economy **after all taxes** have been **deducted** and all **transfer payments** have been **added**.

DI = NI-T+TB

DI =GDP - Taxes + Transfer payments

=GDP - (Taxes - Transfers)

=GDP - net taxes (nt)

Definition 28 Transfer payments (TB)

- They are **sums** of **money** that the **government** gives certain individuals as outright **grants** rather than as **payments** for **services rendered**.
- **Note:** Examples of transfer payments are unemployment compensation and Social Security benefits.

Major components of aggregate demand

- **Consumption (C)**
- **Investment (I)**
- **Government purchases (G)**
- **Net exports (x-IM)**

NI=W+I+R+P

DI= NI+T-TB

The three **main pillars** of **growth**:

- better **technology**
- more **stock** of **capital**
- improved **workforce quality**

rich nations achieves the three main pillars

poor nations fails to achieves the three main pillars

Summary

Capital Formation
- low real interest rates
- favorable tax treatment
- rapid technical change
- protects property rights
- rapid growth of demand

Technological Advances
- More Education
- Higher rates of Investment
- Spending on R & D

Workforce Quality
- education
- training

III) The Circular Flow of Spending, Production, and Income

Definition 29 The Circular Flow Model

- The **circular flow** of income and spending shows **connections** between different sectors of an economy.
- It shows **flows** of **goods** and **services** and **factors** of **production** between **firms** and **households.**
- The circular flow shows graphically how **National Income** or **Gross Domestic Product** is calculated

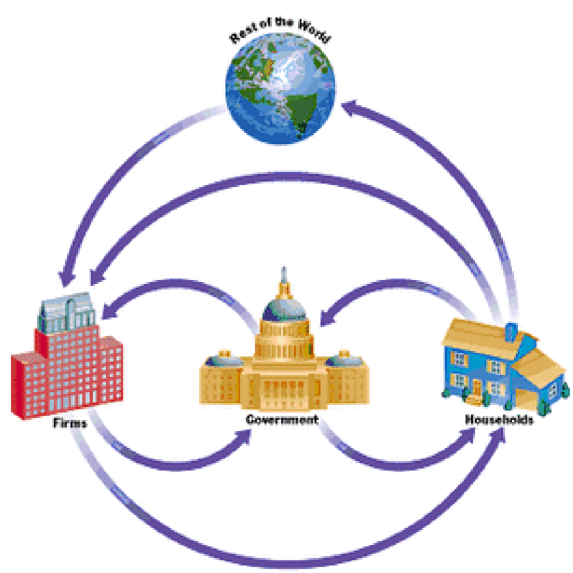
Significance of circular flow in income

- It reflects structure of an economy.
- It shows interdependence among different sectors.
- It gives information about injections and leakages from flow of money.
- It helps in estimation of national income and related aggregates.

The circular flow

In our economic system there are four sectors:

1) The household sector;
2) The business sector (investors);
3) Government;
4) Rest of the world.



Households

- Households **demand** <u>consumer</u> <u>goods</u>, like: cars, computers, washers, etc.
- Households **provide** <u>labor resources</u> to business and own most of the resources of production.

Businesses

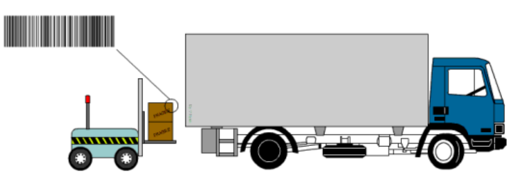
- Businesses **produce** and **supply** <u>goods and services</u>.
- Businesses **demand** <u>resources for production</u>: land, labor, capital, and entrepreneurs

Businesses

Households

These two sectors **interact** in two markets:

1) The Product Market
2) and The Factor Market



Product Markets

- They are markets where **households acquire finished** (consumer) **goods** & **services, such as** retail markets.
- Examples include: Wal-Mart, gas stations, Burger King, Best Buy,and Amazon.

Factor Markets

- They are markets where **business** acquire the factors of **production** (land, labor, capital..)
- Example, when you are looking for a job you are in the factor (labor) market.

Governments

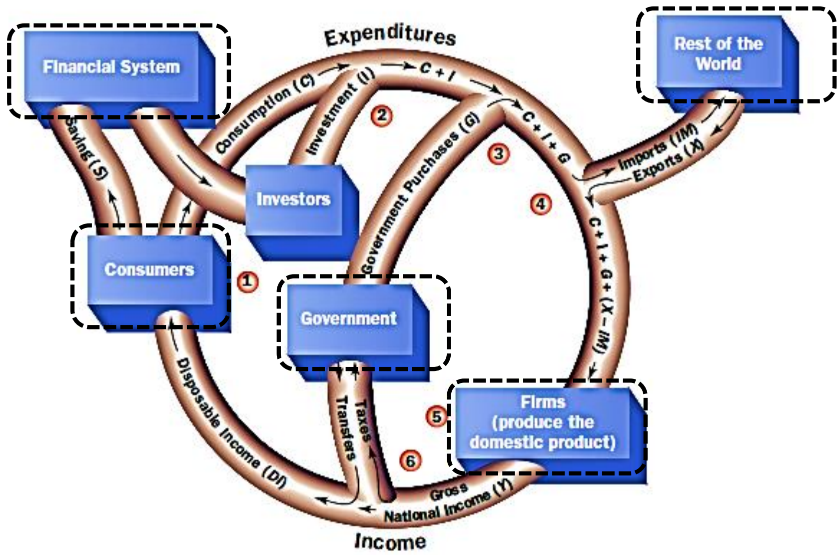
- Central & Local Governments require resources to provide services
- To purchase these resources governments collect taxes.

Financial system

- Financial institutions are **primary intermediaries** between **savers** and **investors** (or lenders and borrowers).
- All **lending** and **borrowing** are channeled through **capital market**.

External Sector

- In the case of **imports**: money flows to the rest of world.
- In the case of **exports**: money flows in from the rest of world .



Definition 30 Injections

- The amount of money that is added to the flow of income in the economy.
- These include: (i) **Consumption**; (ii) **investment** spending, (iii) **government** spending and (iv) **export** earnings.

Definition 31 Leakage

- The amount of money which is withdrawn from the flow of income.
- These include: (i) **savings**, (ii) **taxes** by households and firms and (iii) **import** spending.

Injections

1

Consumers

Consume goods and services (consumption) from the business sector (firms)

2

Investors

(Business firms & home buyers)

Provide investments to the business sector (firms)

3

Government

Purchases goods from the business sector (firms)

4

External sector

Firms receive values of exports from abroad

leakages

1

Savings

A part of **income** earned by **households** from firms **flows into** the financial system via

banks, mutual funds, and so on.

2

Taxes

They are imposed by the government. These include:

1) **Direct taxes** (income tax, wealth tax) from the households ;

2) **Corporate taxes** from the firms.

3

Import

Money flows to the rest of world

How consumer spending is influenced by changes in disposable income?

Expenditure

$$C + I + G + X - M$$
$$\equiv$$
$$Y$$

↓

Two-Way link between Aggregate Expenditure and Real GDP

An increase in real GDP ➡ increases aggregate expenditure

An increase in aggregate expenditure ➡ increases real GDP

Two main components are related to expenditure plans

Consumption | **Saving**

Disposable income (YD) → **Consumption and Saving**

(income remaining after deduction of **taxes**, available to be **spent** or **saved**).

Remember rule 13 disposable income (YD)

- YD = real GDP (Y) - net taxes (T)

  YD = income (Y) - net taxes (T)

$$YD = Y - T$$

$$YD = C + S$$

Rule 14 **Net taxes**

- Net taxes= taxes - transfer payments.

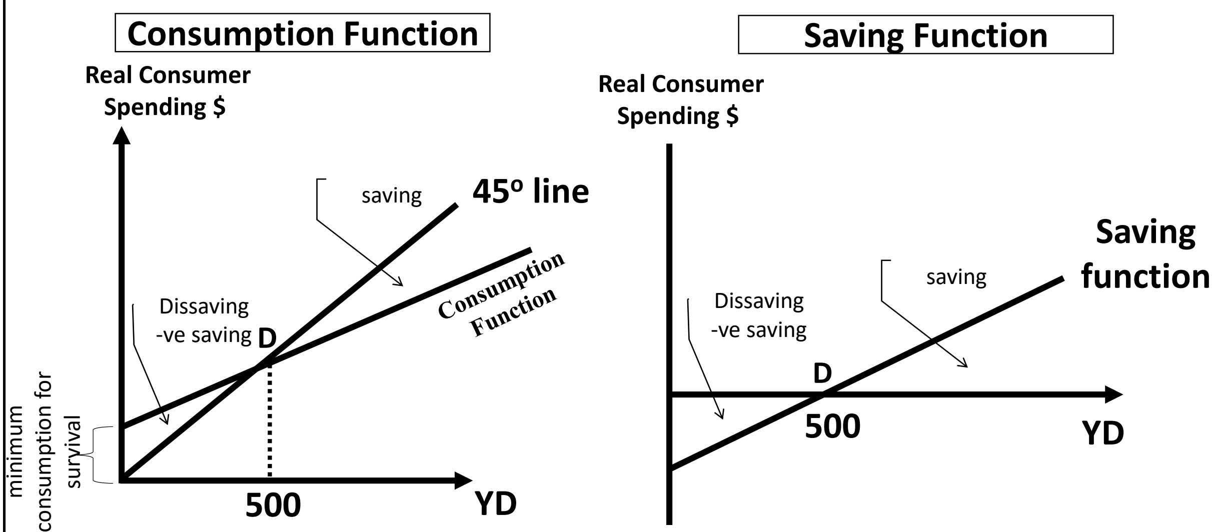
Rule 15 **Consumption expenditure**

- C = disposable income (YD) – Savings (S)

Rule 16 **Savings**

- S = disposable income (YD) – Consumption (C)

Graphically , it is possible to represent consumption and savings



Definition 32 The Consumption Function

- It shows the relationship between total **consumer expenditures** and **total disposable income** in the economy, holding all other determinants of consumer spending constant.

Definition 33 The Marginal Propensity to Consume (MPC)

- It tells us how much additional spending will be induced by each dollar change in disposable income.
- On a graph, it appears as the **slope** of the consumption function.
- It is the **ratio** of the **change** in **consumption** relative to the **change** in **disposable income**.

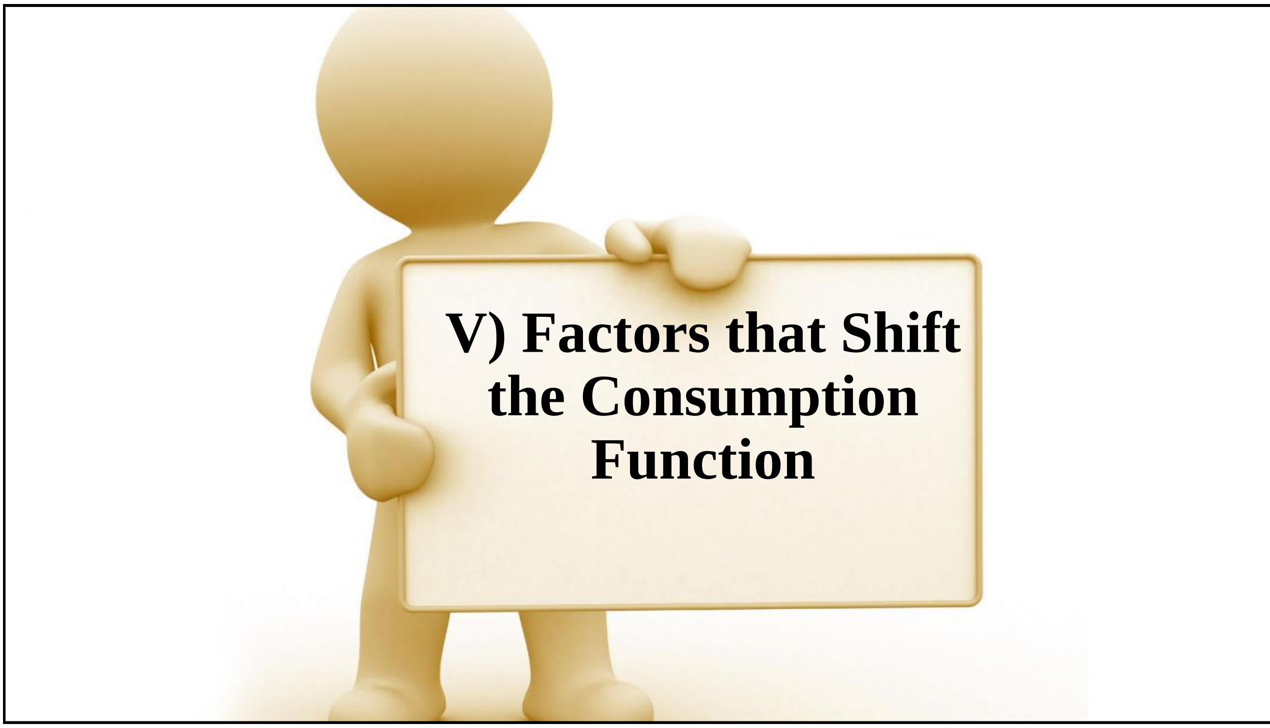
MPC & MPS

- **The slope of the consumption function is called:**
- **The marginal propensity to consume**
- "the fraction of a change in disposable income spent on consumption"
- $MPC = \frac{\Delta C}{\Delta YD}$

- **The slope of the saving function is called:**
- **The marginal propensity to save**
- "the fraction of a change in disposable income spent on Saving"
- $MPS = \frac{\Delta S}{\Delta YD}$

Rule 17 **MPC and MPS**

- $MPC = \frac{\Delta C}{\Delta YD}$
- $MPS = \frac{\Delta S}{\Delta YD}$
- **MPC + MPS = 1**



✓Any change in **disposable income** moves us along a given consumption function.

✓A change in any of the other **determinants of consumption shifts** the entire **consumption schedule.**

The following factors shifts the entire consumption function:

1) Consumers' Wealth

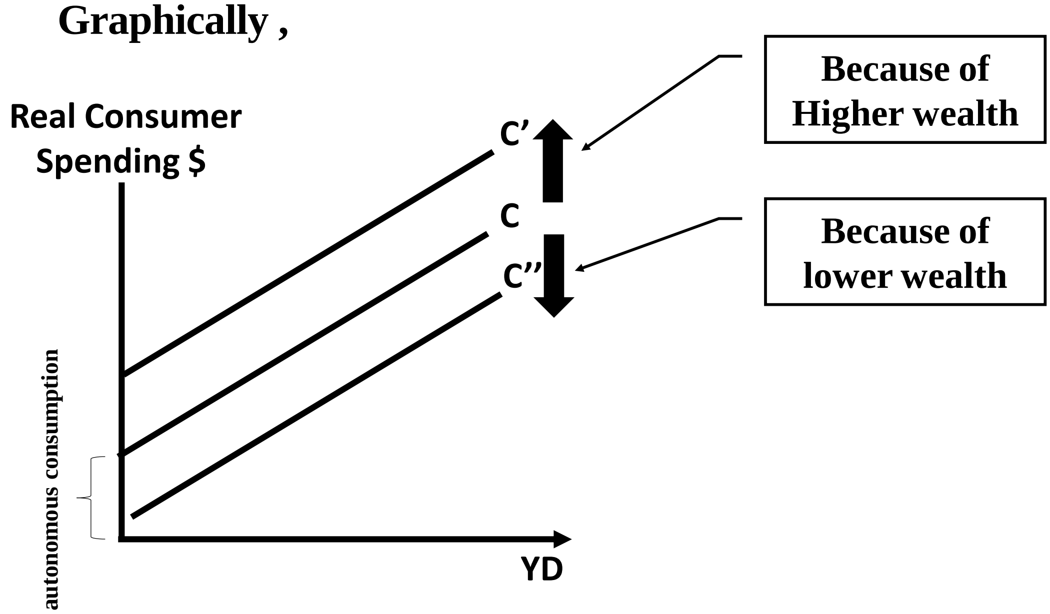
Higher consumers' wealth	→	Shift consumption function upward
Lower consumers' wealth	→	Shift consumption function downward

Note:

1)A collapse of stock prices reduces consumers' wealth and thus lowers the consumption function

2) A stock market boom adds to consumers' wealth and thus raises the consumption function

Graphically ,

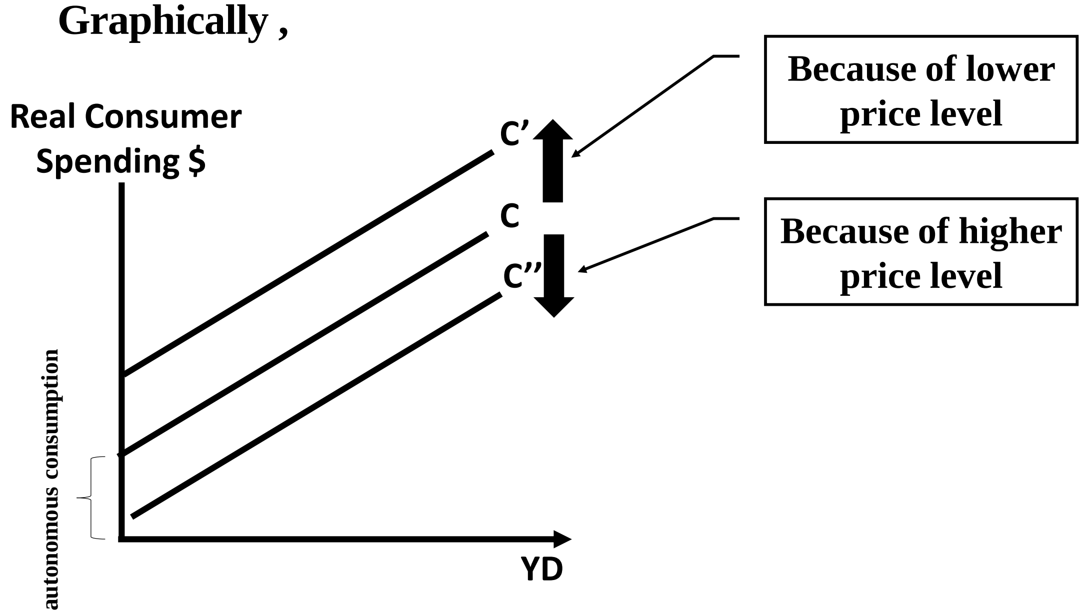


2) The Price Level

As the price level falls	→	Shift consumption function upward
As the price level rises	→	Shift consumption function downward

Note:
1) a decline in the price level increases the purchasing power of money-fixed assets. Thus, the consumption function shifts upward.
2) a raise in the price level decreases the purchasing power of money-fixed assets. Thus, the consumption function shifts downward

Graphically ,

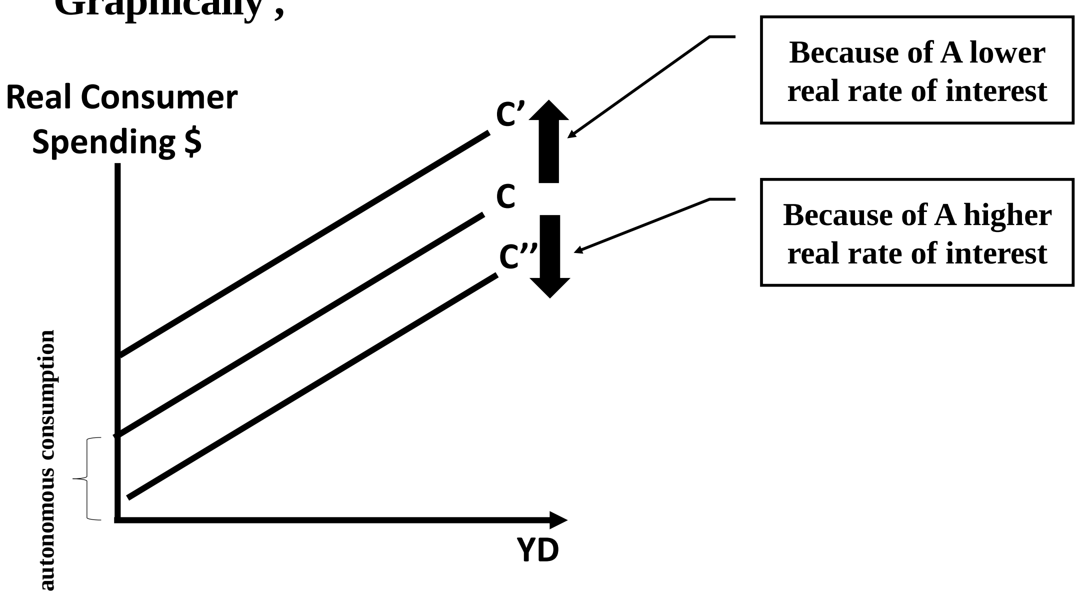


3) Real Interest Rate

A lower real rate of interest	➡	Shift consumption function upward
A higher real rate of interest	➡	Shift consumption function downward

Note:
A higher real rate of interest **raises** the rewards for saving. This will **encourage saving** and therefore **discourage spending**

Graphically ,

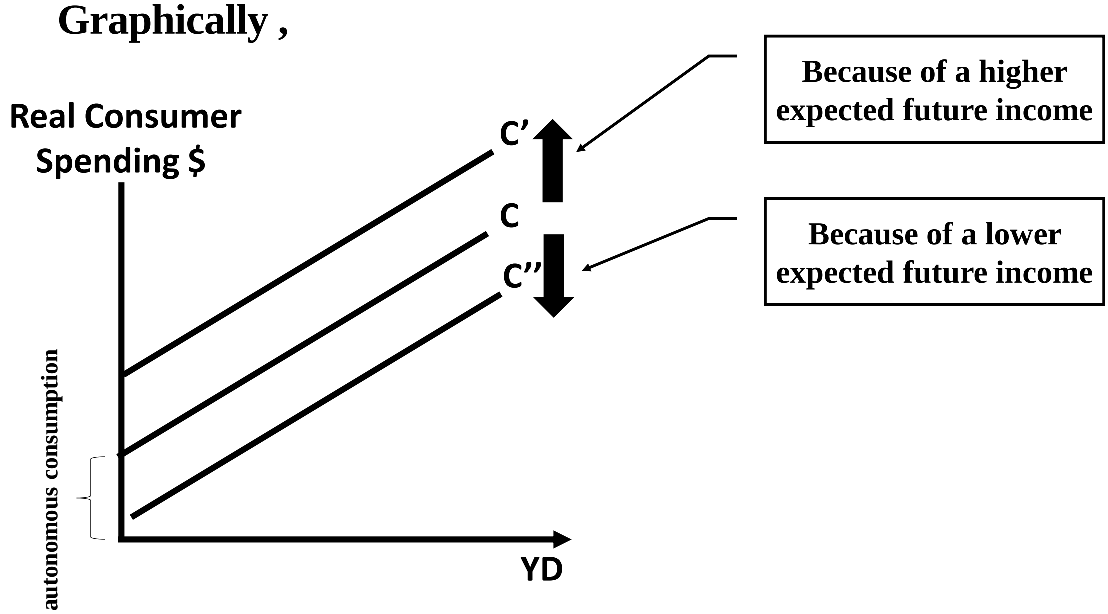


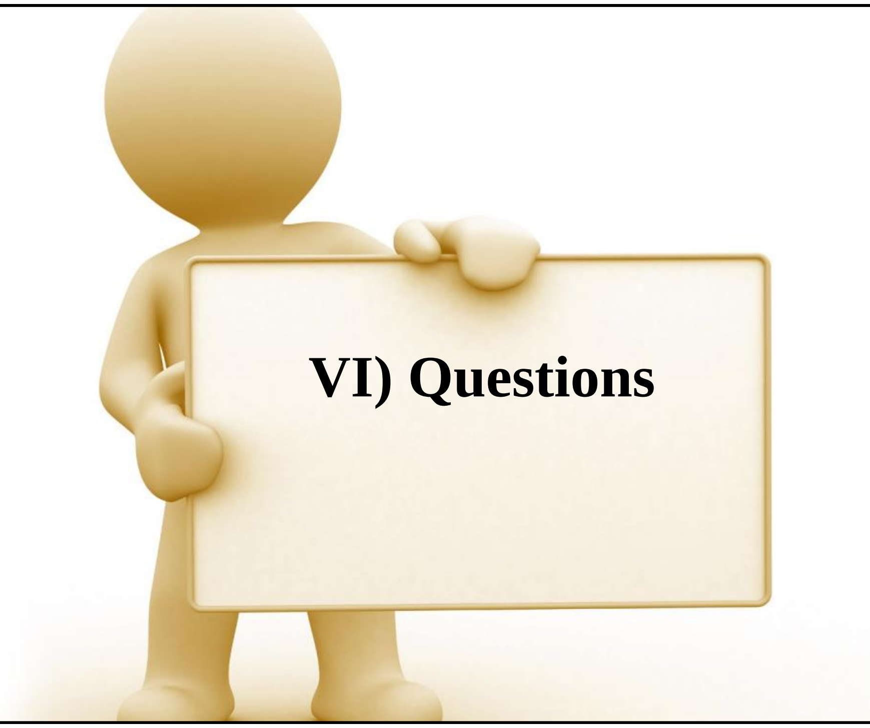
3) Future Income Expectations

A higher expected future income	➡	Shift consumption function upward
A lower expected future income	➡	Shift consumption function downward

Note:
Consumers' expectations about their future incomes should affect how much they spend today.

Graphically ,





1) The aggregate demand curve

A) has a negative slope.

B) has a positive slope.

C) is vertical.

D) is horizontal.

Ans. (A)

2) Aggregate demand is the relationship between the quantity of real GDP demanded and the ________.

A) price level

B) money wage rate

C) real wage rate

D) nominal GDP demanded

Ans. (A)

3) Moving along the aggregate demand curve, a decrease in the quantity of real GDP demanded is a result of

A) a decrease in the price level.

B) an increase in the price level.

C) an increase in income.

D) a decrease in income.

Ans. (B)

4) Other things constant, the economy's aggregate demand curve shows that

A) as the price level falls, real GDP decreases.

B) any change in the price level shifts the aggregate demand curve.

C) the quantity of real GDP demanded decreases when the price level rises.

D) the quantity of real GDP demanded and the price level are not related.

Ans. (C)

5) The aggregate demand curve shows the ________ relationship between the price level and ________.

A) positive; the quantity of real GDP demanded

B) negative; aggregate labor demanded

C) positive; aggregate labor demand

D) negative; the quantity of real GDP demanded

Ans. (D)

6) The quantity of real GDP demanded equals $12.2 trillion when the price level is 90. If the price level rises to 95, the quantity of real GDP demanded equals

A) less than $12.2 trillion.

B) $12.2 trillion.

C) more than $12.2 trillion.

D) more information is needed to determine if the quantity of real GDP demanded increases, decreases, or does not change.

Ans. (A)

7) If the economy is in short run equilibrium then

A) real GDP equals potential GDP.

B) nominal GDP equals potential GDP.

C) real GDP cannot be equal to potential GDP.

D) real GDP can be greater than, less than, or equal to potential GDP.

Ans. (D)

8) Short-run macroeconomic equilibrium occurs when the quantity of real GDP demanded ________.

A) equals potential GDP

B) equals full-employment GDP

C) does not equal full-employment GDP

D) equals the quantity of real GDP supplied

Ans. (D)

9) Disposable income is equal to

A) consumption expenditure minus taxes plus transfer payments.

B) aggregate income minus taxes plus government expenditures on goods and services.

C) aggregate income minus taxes plus transfer payments.

D) aggregate income plus transfer payments.

Ans. (C)

10) The *MPC* is the fraction of

A) total disposable income that is consumed.

B) total disposable income that is not consumed.

C) a change in disposable income that is consumed.

D) a change in disposable income that is saved.

Ans. (C)

11) The *MPC* is equal to

A) $\Delta C / \Delta S$.

B) $\Delta S / \Delta C$.

C) $\Delta C / \Delta YD$.

D) $\Delta S / \Delta YD$.

Ans. (C)

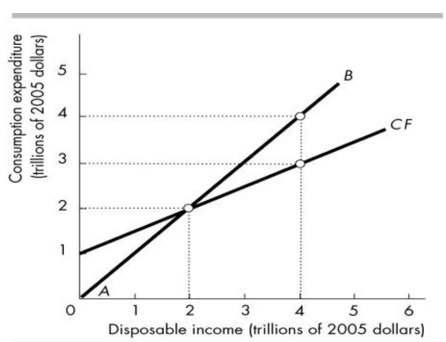
In the figure, consumption and disposable income are equal at

A) any point along the consumption function.

B) a saving level of $1 trillion and disposable income level of $4 trillion.

C) a disposable income level of $0.

D) a disposable income level of $2 trillion.



Ans. D

In the figure, the line *AB* is called the 45-degree line. (True)

In the figure, at a disposable income level of $2 trillion, saving equals disposable income. ( )

(X) Ans. saving equals zero

Calculating MPC

Q) Based on the following table, calculate MPC in years 2006 & 2010.

Consumption and Income in a Hypothetical Economy (Amounts are in billions of dollars).			
Year	**Consumption (C)**	**Disposable Income, DI**	**MPC**
2005	2,700	3,200	-
2006	3,000	3,600	
2007	3,300	4,000	
2008	3,600	4,400	
2009	3,900	4,800	
2010	4,200	5,200	

Ans. based on rule 17, MPC in 2006 = (3000-2700)/(3600-3200) = 0.75

Ans. based on rule 17, MPC in 2010 = (4200-3900)/(5200-4800) = 0.75

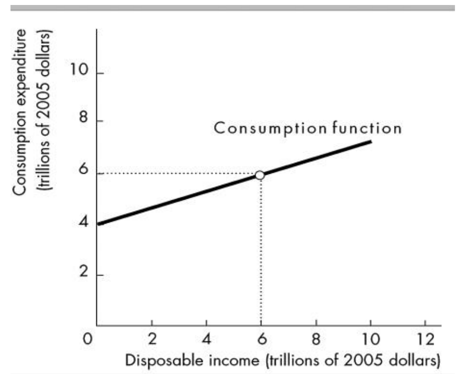
Q) When disposable income equals $800 billion, consumption expenditure equals $600 billion, and when disposable income equals $1,000 billion, consumption expenditure equals $640 billion. What is the level of saving when disposable income is $800 billion?

Ans. $200 billion

S = disposable income (YD) – Consumption (C) = 800-600 = 200

Q) The figure illustrates an economy's consumption function. What is the marginal propensity to consume in this economy?

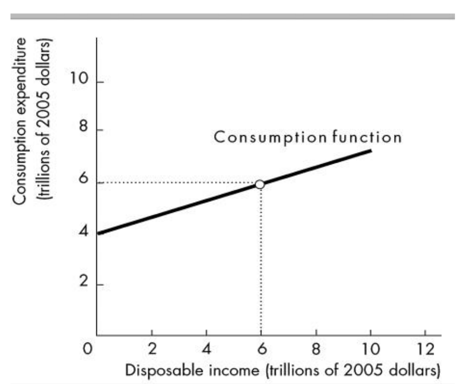
A) 0.67
B) 1.00
C) 0.75
D) 0.33



Ans. D (0.33) $MPC = \frac{\Delta C}{\Delta YD} = \frac{2}{6} = 0.33$

Q) The figure illustrates an economy's consumption function. What is the marginal propensity to save in this economy?

A) 0.67
B) 1.00
C) 0.75
D) 0.33



Ans. A (0.67) MPS =1-MPC= 1-0.33 = 0.67

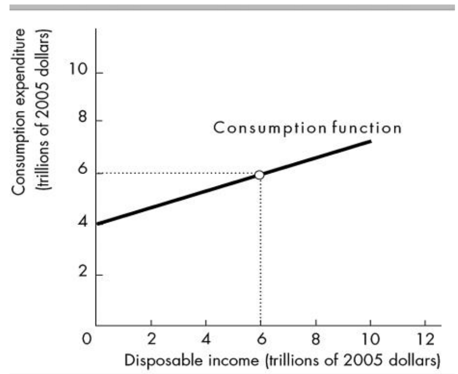
Q) The figure illustrates an economy's consumption function. What is autonomous consumption in this economy?

A) $0

B) $4 trillion

C) $6 trillion

D) NOTA.



Ans. B

True/False:

- Disposable income changes when either real GDP changes or net taxes change ( )

  Ans. True

- If tax rates don't change, real GDP is the only influence on disposable income, so consumption expenditure is a function of real GDP. ( )

  Ans. True

- A tax increase decreases after-tax income and a tax reduction increases it ( ).

  Ans.


thank
you