CHAPTER 1 – INTRODUCTION TO MACROECONOMICS

Content

- Meaning & Definition of Macroeconomics
- Scope of Macroeconomics

Article

In April 2017, in its South Asian Report, the World Bank forecast that the Indian economy will grow at the rate of 7.5 percent in 2018-19. The report said that the growth of the Indian economy could face problems due to the effect of demonetisation on the informal sector, the stress in the financial sector, rising oil and material prices and uncertainties in the global economy. Economic growth will get a

MEANING

Macroeconomics studies the economy as a whole and analyses its functioning. It deals with the behaviour of aggregates such as national income, employment level, general price level, investment level and balance of payments.

DEFINITION

According to K. E. Boudling* "Macroeconomics is that part of economics which studies the overall averages and aggregates of the economic system. It does not deal with individual incomes but with national income, not with individual prices but with the general price level, not with individual output, but with national output".

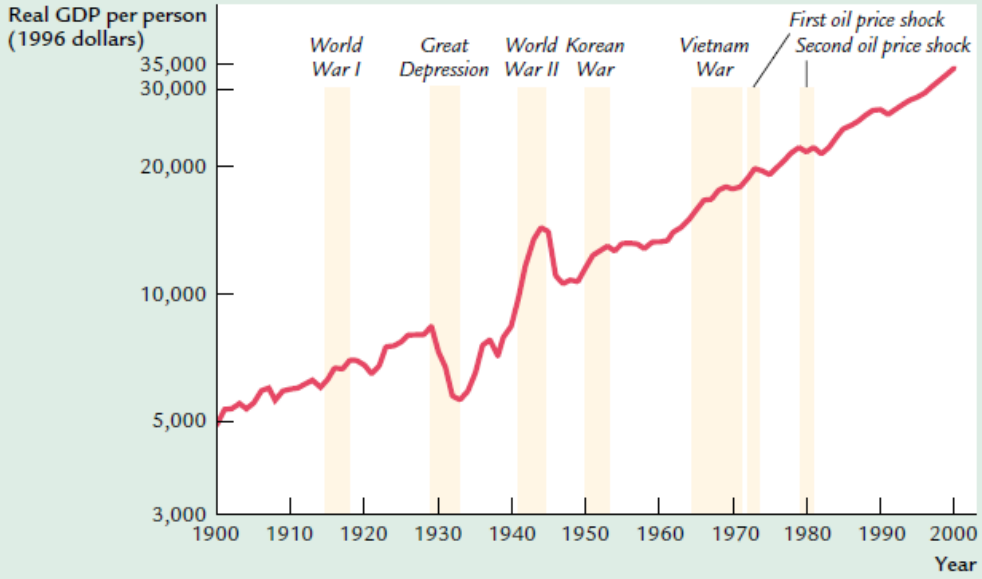
CASE STUDY

The Historical Performance of the U.S. Economy

Economists use many types of data to measure the performance of an economy. Three macroeconomic variables are especially important: real gross domestic product (GDP), the inflation rate, and the unemployment rate. Real GDP measures the total income of everyone in the economy (adjusted for the level of prices). The inflation rate measures how fast prices are rising. The unemployment rate measures the fraction of the labor force that is out of work. Macro- economists study how these variables are determined, why they change over time, and how they interact with one another.

Figure 1-1 shows real GDP per person in the United States. Two aspects of this figure are noteworthy. First, real GDP grows over time. Real GDP per person is today about five times its level in 1900. This growth in average income allows us to enjoy a higher standard of living than our great-grand- parents did. Second, although real GDP rises in most years, this growth is not steady. There are repeated periods during which real GDP falls, the most dramatic instance being the early 1930s. Such periods are called recessions if they are mild and depressions if they are more severe. Not surprisingly, periods of declining income are associated with substantial economic hardship.

figure 1-1

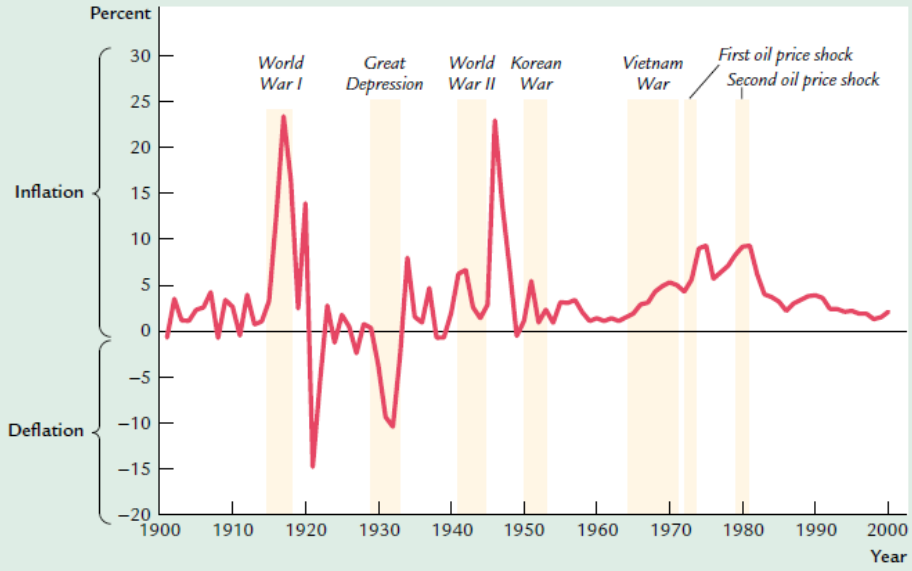


Real GDP per Person in the U.S. Economy
Real GDP measures the total income of everyone in the economy, and real GDP per person measures the income of the average person in the economy. This figure shows that real GDP per person tends to grow over time and that this normal growth is sometimes interrupted by periods of declining income, called recessions or depressions.

Figure 1-2 shows the U.S. inflation rate. You can see that inflation varies substantially. In the first half of the twentieth century, the inflation rate averaged only slightly above zero. Periods of falling prices, called deflation, were almost as common as periods of rising prices. In the past half century, inflation has been the norm. The inflation problem became most severe during the late 1970s, when prices rose at a rate of almost 10 percent per year. In recent years, the inflation rate has been about 2 or 3 percent per year, indicating that prices have been fairly stable.

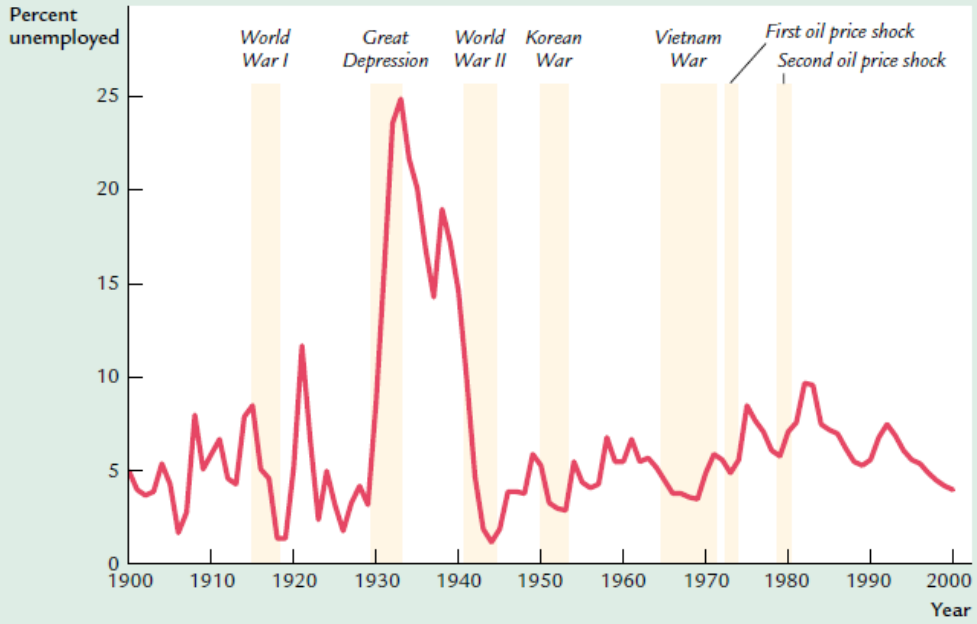
Figure 1-3 shows the U.S. unemployment rate. Notice that there is always some unemployment in our economy. In addition, although there is no long- term trend, the amount of unemployment varies from year to year. Reces- sions and depressions are associated with unusually high unemployment. The highest rates of unemployment were reached during the Great Depression of the 1930s.These three figures offer a glimpse at the history of the U.S. economy. In the chapters that follow, we first discuss how these variables are measured and then develop theories to explain how they behave.

figure 1-2



The Inflation Rate in the U.S. Economy
The inflation rate measures the percentage change in the average level of prices from the year before. When the inflation rate is above zero, prices are rising. When it is below zero, prices are falling. If the inflation rate declines but remains positive, prices are rising but at a slower rate.

figure 1-3



The Unemployment Rate in the U.S. Economy
The unemployment rate measures the percentage of people in the labor force who do not have jobs. This figure shows that the economy always has some unemployment and that the amount fluctuates from year to year.

SCOPE AND SUBJECT MATTER OF ECONOMICS

1) Determination of National Income: The primary, focus of macroeconomics is the study of the factors that determine a country's national output and income. The growth of the national income is a very important part of macroeconomic study as it is used to compare the relative

performances of different countries. Per capita income is used to understand how national income is distributed among people.

2) Economic Fluctuations or Business Cycles: Free-market economies experience business cycles which refer to fluctuations in national income and employment with alternating periods of prosperity and recession. Such fluctuations cause large scale involuntary unemployment as well as inflation. Analysis of the effects of economic fluctuations has been the main focus of macroeconomics, particularly since the Great Depression.

3) Theory of income and employment: Keynes explained that the level of employment and national income is determined by aggregate demand. The focus of macroeconomics is to analyze components of aggregate demand like, consumption' investment, government expenditure and net exports. Aggregate supply can be increased in the long run through improvement in productivity, investments, technological changes and policies.

4) Employment and Unemployment: During recession, due to lack of aggregate demand, the economy experiences large scale involuntary unemployment, this is cyclical unemployment experienced by developed economies. In developing economies the problem of unemployment is different from that of developed economics. In such economies disguised unemployment, underemployment and mass unemployment takes place due to low level of economic activities. Macroeconomics studies the causes of unemployment and provides the basis for employment policies.

5) Money and Price Level: Macroeconomics is concerned with the study of inflation, deflation and more recently, stagflation. Inflation is faced by both developed and developing economies. It has far reaching impact on people's welfare and economy's growth. In 1970s, developed economies experienced a situation which could not be explained by the existing macroeconomic models. This was stagflation (stagnant inflation), a period where there is unemployment as well as rapid rise in price level. This was explained as cost-push inflation by supply-side economic models.

6) Economic Growth and Development: In the 1950s and 1960s, a branch of economics called Development Economics emerged to study the development process in low-income economies. The main areas of study of this branch of macroeconomics are economic growth/ economic development and structural changes in developing economies. One of the first models to explain growth theory was the Harrod-Domar Model. Other economists who have contributed significantly to theories of growth and development are Arthur Lewis, W.W. Rostow, Robert Solow, James Meade and in more recent times economists like Amartya Sen, Paul Romer and Robert Lucas.

7) Balance of Payments and Exchange Rate: Macroeconomics explains the factors which determine a country's balance of payments and identifies the causes of deficit. It suggests policy measures to correct such deficits. Exchange rate between different currencies is one of determinants of balance of payments position, of an economy.

SELF-CHECK REVIEW QUESTION

1. State what is the Scope of Macroeconomics

2. Is economic growth and development a part of macroeconomics
3. Explain the meaning and definition of macroeconomics
4. In order to understand the big picture of economy which are three basic indicator are used

CHAPTER 2 – CIRCULAR FLOW OF INCOME

Content

Closed economy

- **a. Two sectors without saving and investment**
- **b. Two sectors with saving and investment**
- **c. Three sector economy**

Open economy

CIRCULAR FLOW OF INCOME

The circular flow of income and expenditure explains the process that determines national income and national output simultaneously.

An economy performs certain economic activities which enable it to function smoothly. The important activities are (i) production (ii) exchange (iii) consumption and (iv) distribution.

TWO SECTOR CIRCULAR FLOW WITHOUT SAVING The circular flow of income is explained by considering a simple economy in which there are only two sectors, that is, households and firms. The circular flow is explained with the help of the following assumptions.

Assumption

- There are no corporations, corporate savings or retained earnings. (No saving – No Investment)
- All prices (including factor prices), supply of capital and technology remain constant.
- The government sector does not exist and therefore, there are no taxes, government expenditure or transfer payments.
- The economy is a closed economy i.e., foreign trade does not exist; there are no exports and imports and external inflows and outflows.

Household Sector

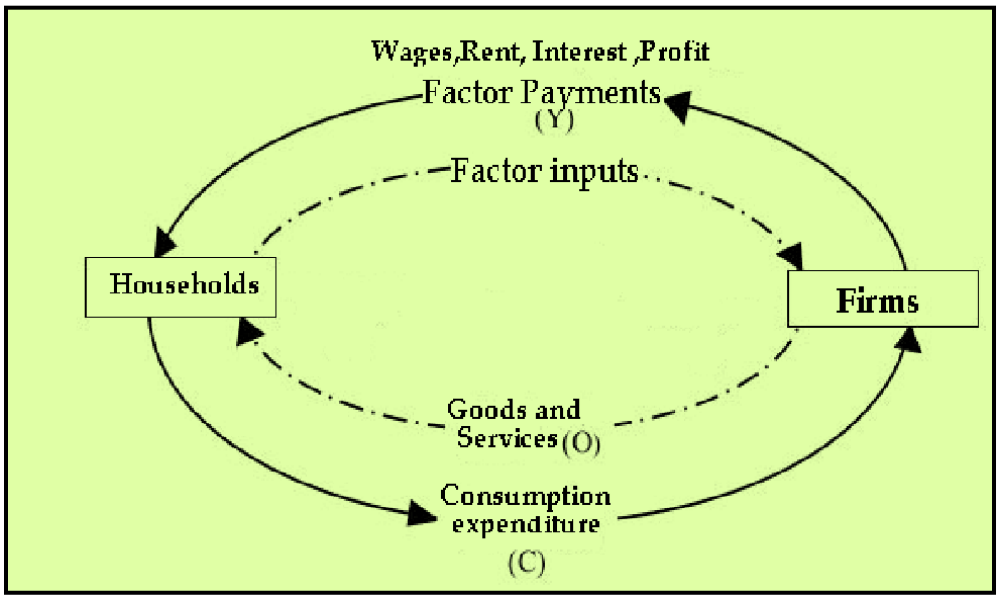
Households Sector own all factors of production

- They (sell) their factor services to earn factor incomes
- They entirely spent their income(purchase) to consume all final goods and services produced by business firms.

Business Units

Firms Produces goods and services

- The business firms are assumed to hire(Purchase) factors of production from the households;
- They produce and (sell) goods and services to the households and they do not save.
- The total income produced, Y, accrues to the households and equals their disposable personal income Yd i.e., Y = Y d.



Product Market

- Business Units – Sell Goods and Service
- Household Unit – Buy Goods and Service

Factor Market

- Household unit – Sells factor service
- Business unit – Buys factor service

Diagrammatical Presentation

The circular flow of income and expenditure which presents the working of the two- sector economy is illustrated in a simple manner.

- The circular broken lines with arrows show factor and product flows and present 'real flows.
- The continuous line with arrows shows 'money flows.
- These two circular flows-Real flows and Money flows-They both are in opposite directions and the value of real flows equal the money flows
- There are no injections into or leakages from the system.

TWO SECTOR CIRCULAR FLOW WITH SAVING AND INVESTMENT

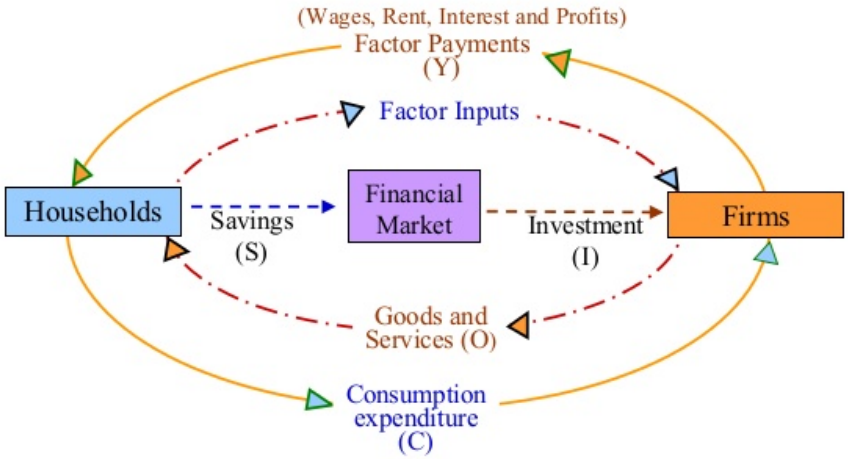
Let's consider a hypothetical simple two-sector economy with saving and investment.

Assumption

- All prices (including factor prices), supply of capital and technology remain constant.
- The government sector does not exist and therefore, there are no taxes, government expenditure or transfer payments. (No Government Sector)
- The economy is a closed economy i.e., foreign trade does not exist; there are no exports and imports and external inflows and outflows. (No foreign Sector)
- All investment outlay is independent (not determined either by the level of income or the rate of interest); all investment is net
-

Financial Market

- Surplus unit – Save the fund (Supply the funds)
- Deficit Unit – Invest the fund (Demand the funds)



Relationship between leakage and injection

- Saving: Act as leakage
- Investment: Act as injection
- If I>S – Expansion in the economy
- If I<S - Contraction in the economy
- If I=S Equilibrium

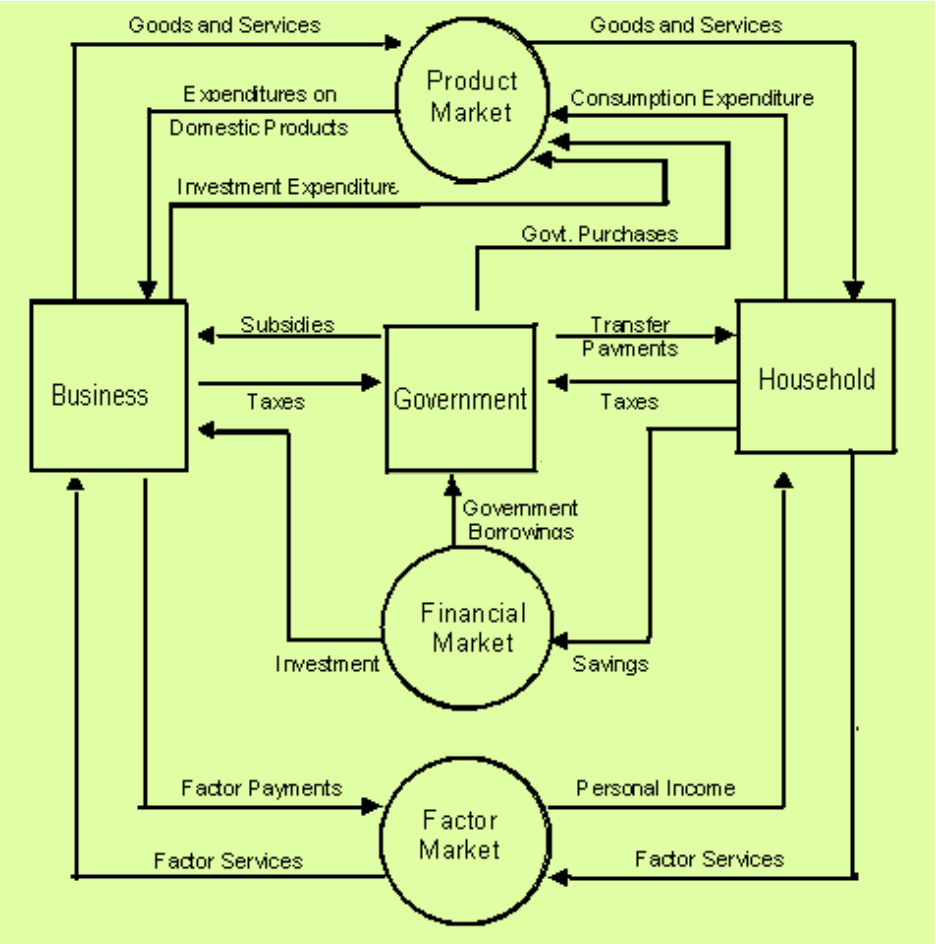
THREE SECTOR MODEL

Assumption

- All prices (including factor prices), supply of capital and technology remain constant.
- The economy is a closed economy i.e., foreign trade does not exist; there are no exports and imports and external inflows and outflows. (No foreign Sector)
- All investment outlay and Government expenditure is independent (not determined either by the level of income or the rate of interest); all investment is net

Role of Government Sector

- Collect taxes from Household and Business unit
- Transfer Payment and Subsidies to Household and Business Unit
- Purchase goods from Product Market
- Borrow from Financial Market



Relationship between leakage and injection

- Leakage - Saving & Taxes
- Injection – Investment Expenditure and Government Expenditure
- If I + G > S+ T – Expansion
- If I + G < S+ T – Contraction
- If I + G = S+ T – Equilibrium

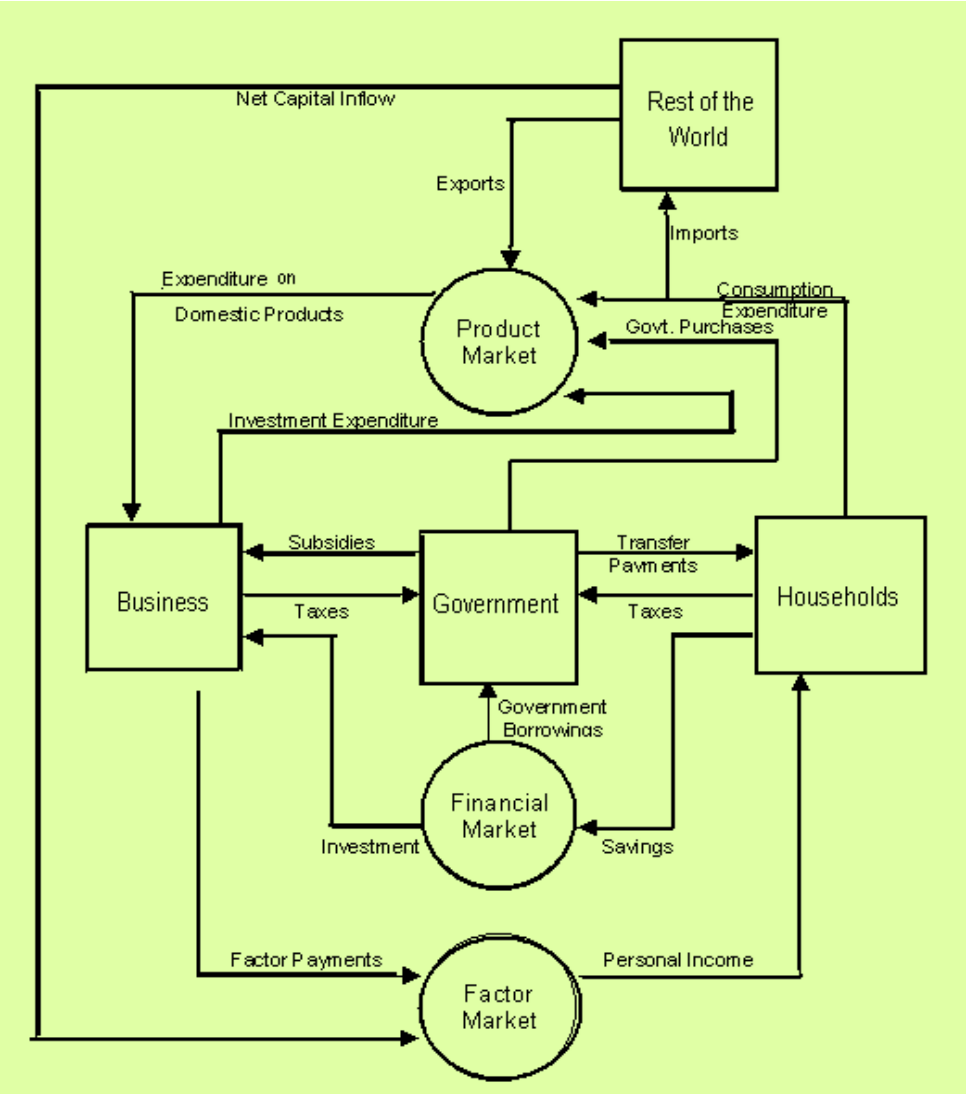
I + G = S + T

G-T (Budget Deficit) = S-I (Borrowing from FM)

CIRCULAR FLOW IN AN OPEN ECONOMY OR FOUR SECTOR ECONOMY Let's consider a hypothetical simple two-sector economy with saving and investment.

Assumption

- All prices (including factor prices), supply of capital and technology remain constant.
- All investment outlay, Government Expenditure and Foreign Sector is independent (not determined either by the level of income or the rate of interest); all investment is net



Role of Flow Foreign Sector

- Import & Export
- Receipt & Payment

Relationship between saving and leakages

- Leakage -Saving, Taxes and import
- Injection – Investment expenditure, Government expenditure and Export
- If I + G + X> S+ T +M – Expansion
- If I + G + X< S+ T +M– Contraction
- If I + G + X= S+ T +M – Equilibrium

SELF-REVIEW QUESTION

1. State two sector economy circular flow of economy and its equilibrium
2. In order to attained equilibrium in three sector economy what is equilibrium identity
3. Explain the four-sector circular flow of income
4. State the difference between money flow and circular flow of income

CHAPTER 3 NATIONAL INCOME

Content

- Meaning of National Income
- Concept of National Income accounting
- Measurement of National Income in India
- Concepts of National Income
- Real GDP, Nominal GDP and GDP Deflator
- Limitation of GDP as a standard for welfare

NATIONAL INCOME

National Income is defined as the net value of all economic goods and services produced within the domestic territory of a country in an accounting year plus the net factor income from abroad.

According to the Central Statistical Organisation (CSO) 'National income is the sum total of factor incomes generated by the normal residents of a country in the form of wages, rent, interest and profit in an accounting year'

NATIONAL INCOME ACCOUNTING

National Income Accounting, pioneered by the Nobel prize-winning economists Simon Kuznets and Richard Stone is a set of principles and methods used to measure the **income** and production of a country. It is a bookkeeping system that a government uses to measure the level of the country's economic activity in a given time period.

MEASUREMENT OF NATIONAL INCOME IN INDIA

National Accounts Statistics (NAS) in India

Complied by:

i) National Accounts Division in the Central Statistics Office (CSO),

ii) Ministry of Statistics and Programme Implementation.(MoSPI)

Publicity:

i) It is the key source-material for all macroeconomic data of the country.

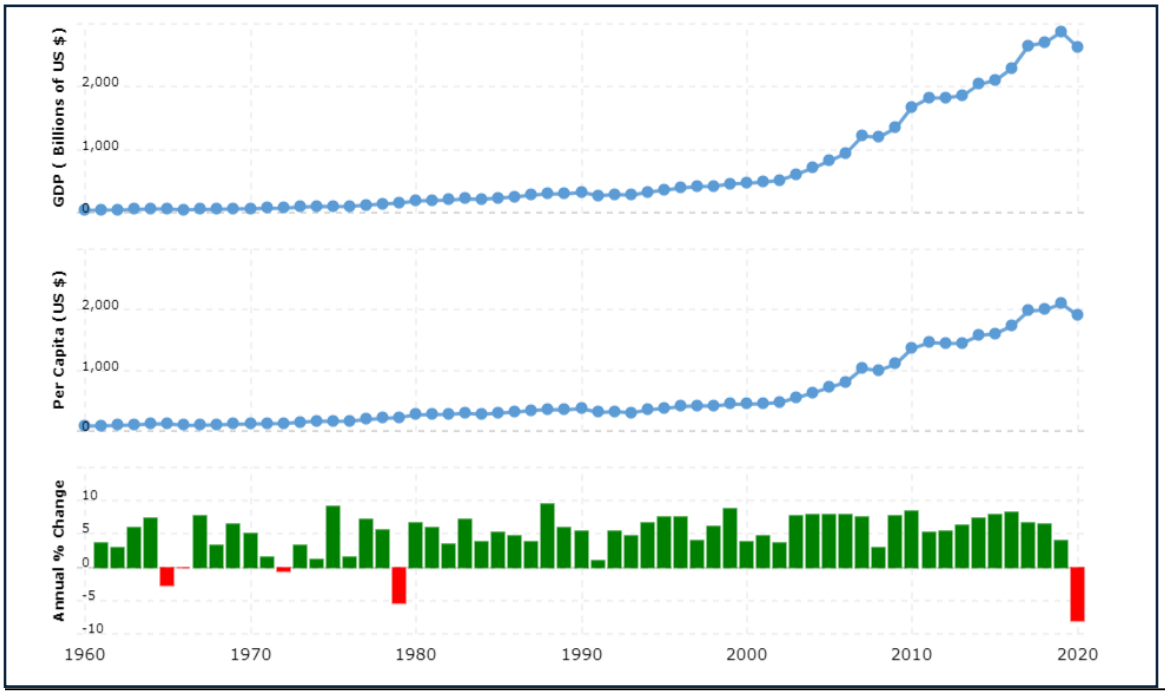
ii) As per the mandate of the Fiscal Responsibility and Budget Management Act 2003, the Ministry of Finance uses the GDP numbers (at current prices) to determine the fiscal targets.

Amendments:

MOPI has released the new series of national accounts, revising the base year from 2004-05 to 2011-12.

In the revision of NAS done by Central Statistical Organization (CSO) in January 2015, it was decided that sector-wise estimates of Gross Value Added (GVA) will now be given at basic prices instead of at factor cost.

(Basic price = Amount receivable by the producer from the purchaser for a unit of a product – Tax on the product + subsidy on the product.)



Source: Trading economics

CONCEPTS OF NATIONAL INCOME

GROSS DOMESTIC PRODUCT (GDP):

GDP is a measure of the market value of all final economic goods and services, gross of depreciation, produced within the domestic territory of a country during a given period

GDP is the sum total of 'value added' by all producing units in the domestic territory and includes value added by current production by foreign residents or foreign-owned firms.

GDP include

(i) **Only final goods and services-** The value of only final goods and services or only the value added by the production process would be included in GDP

(ii) **Only the value added by the production process** - By 'value added' we mean the difference between value of output and purchase of intermediate goods. Value added represents the contribution of labour and capital to the production process

(iii) **Goods and services which are produced in the current period-** National income is a 'flow' measure of output per time period—for example, per year—and includes only those goods and services produced in the current period i.e. produced during the time interval under consideration.

(iv) **The net change in inventories of final goods** Additions to inventory stocks of final goods and materials belong to GDP because they are currently produced output.

GDP excludes

(i) **Intermediate goods** used to produce other goods (Ex. Producer goods). Intermediate goods used to produce other goods rather than being sold to final purchasers are not counted as it would involve double counting.

(ii) **Non-economic activities** e.g. services of family members that are done out of love and affection etc.

(iii) **Previously Produced Market transactions** such as exchange of goods which already exist

or are previously produced (Ex: Second hand goods, value of assets such as stocks and bonds)
(iv) **Transfer payments** (Ex: Pensions, scholarships, unemployment allowances etc.)
(v) **Un-reported output** generated through illegal transactions such as narcotics and gambling (also known as 'bads' as opposed to 'goods' which GDP accounts for).

MEASURING GDP

A. EXPENDITURE APPROACH

The Expenditure Approach has 4 Components

- Final Consumption Expenditure
- Gross domestic capital formation
- Government Expenditure
- Net Exports of Goods and Services

Formula GDP = C+I+G+X-M

In the expenditure approach, also called Income Disposal Approach, national income is the aggregate final expenditure in an economy during an accounting year. In the expenditure approach to measuring GDP, we add up the value of the goods and services purchased by each type of final user mentioned below.

GDP_{MP} = Final consumption expenditure + Gross domestic capital formation + Net exports.

1. Final Consumption expenditure:

a) Private Final consumption Expenditure (PFCE):

To measure this, the volume of final sales of goods and services to consumer householders and nonprofit institutions serving households acquired for consumption (not for use in production) are multiplied by market prices and then summation is done.

It includes:

i) Only expenditure on final goods and services produced in the accounting period.
ii) The value of primary products (produced for own consumption by the households).
iii) Payments or domestic services which one household renders to another,
iv) The net expenditure on foreign financial assets or net foreign investment.
v) Net foreign investment

It excludes:

b) Government Final Consumption expenditure:

i) Since the collective services provided by the governments such as defence, education, health care etc. are not sold in the market, the only way they can be valued in money terms is by adding up the money spent by the government in the production of these services. This total expenditure is treated as consumption expenditure of the government.

ii) Government expenditure on pensions, scholarships, unemployment allowance etc. should be excluded because these are transfer payments.

2. Gross Domestic Capital formation:

Gross domestic fixed capital formation includes

i) Final expenditure on machinery and equipment
ii) Own account production of machinery and equipment,
iii) Expenditure on construction (Land and residential building constructed by households),
iv) Expenditure on changes in inventories,
v) Expenditure on the acquisition of valuables such as, jewelry and works of art.

3. Net Exports:

i) Net export are the difference between exports and imports of a country during an accounting year.

ii) It can be positive or negative.

Clear It Up

What does the word "investment" mean?

What do economists mean by investment, or business spending? In calculating GDP, investment does not refer to purchasing stocks and bonds or trading financial assets. It refers to purchasing new capital goods, that is, new commercial real estate (such as buildings, factories, and stores) and equipment, residential housing construction, and inventories. Inventories that manufacturers produce this year are included in this year's GDP—even if they are not yet sold. From the accountant's perspective, it is as if the firm invested in its own inventories. Business investment in 2016 was $3 trillion, according to the Bureau of Economic Analysis.

	Components of GDP on the Demand Side (in trillions of dollars)	Percentage of Total
Consumption	$12.8	68.8%
Investment	$3.0	16.1%
Government	$3.3	17.7%
Exports	$2.2	11.8%
Imports	–$2.7	–14.5%
Total GDP	**$18.6**	**100%**

Table 6.1 Components of U.S. GDP in 2016: From the Demand Side (Source: http://bea.gov/iTable/index_nipa.cfm)

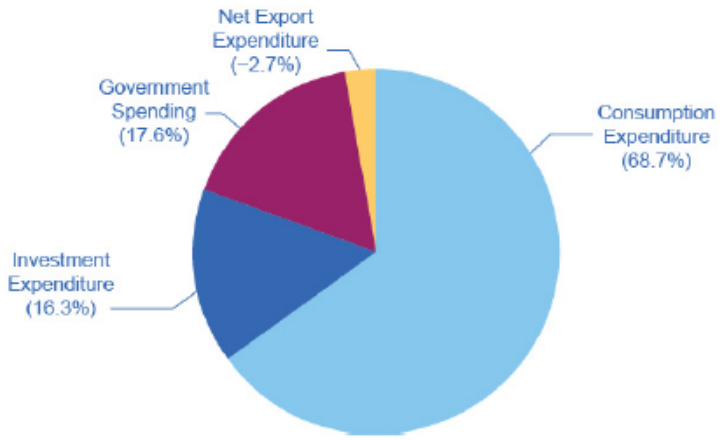


Figure 6.3 Percentage of Components of U.S. GDP on the Demand Side Consumption makes up over half of the demand side components of the GDP. (Source: http://bea.gov/iTable/index_nipa.cfm)

Work It Out

Calculating GDP, Net Exports, and NNP

Based on the information in Table 6.4:

a. What is the value of GDP?

b. What is the value of net exports?

c. What is the value of NNP?

Government purchases	$120 billion
Depreciation	$40 billion
Consumption	$400 billion
Business Investment	$60 billion
Exports	$100 billion
Imports	$120 billion
Income receipts from rest of the world	$10 billion
Income payments to rest of the world	$8 billion

Table 6.4

Step 1. To calculate GDP use the following formula:

$$\begin{aligned} \text{GDP} &= \text{Consumption} + \text{Investment} + \text{Government spending} + (\text{Exports} - \text{Imports}) \\ &= C + I + G + (X - M) \\ &= \$400 + \$60 + \$120 + (\$100 - \$120) \\ &= \$560 \text{ billion} \end{aligned}$$

Step 2. To calculate net exports, subtract imports from exports.

$$\begin{aligned} \text{Net exports} &= X - M \\ &= \$100 - \$120 \\ &= -\$20 \text{ billion} \end{aligned}$$

Step 3. To calculate NNP, use the following formula:

$$\begin{aligned} \text{NNP} &= \text{GDP} + \text{Income receipts from the rest of the world} \\ &\quad - \text{Income payments to the rest of the world} - \text{Depreciation} \\ &= \$560 + \$10 - \$8 - \$40 \\ &= \$522 \text{ billion} \end{aligned}$$

B. INCOME APPROACH

The Income Approach has 5 Components

- Compensation of Employees (Labour Income)
- Gross Operating Surplus (Non Labour Income + Capital Consumption)
- Gross Mixed Income
- Taxes less Subsidies

Formula = Compensation of employees + Gross operating Surplus +Gross mixed income +Taxes Less Subsidies

The values of the following items are Included:

a) Only incomes earned by owners of primary factors of production (EX: Wages of Labourers) are included in

b) Labour income (wages and salaries, bonus, commission, employers' contribution to provident fund and compensations in kind.)
c) Non-labour income (Ex: dividends, undistributed profits of corporations before taxes, interest, rent, royalties and profits of unincorporated enterprises and of government enterprises.)
d) Mixed income includes all those incomes which are difficult to separate labour income from capital income (EX: agriculture, trade, transport etc. in underdeveloped countries including India)

The values of the following items are excluded:

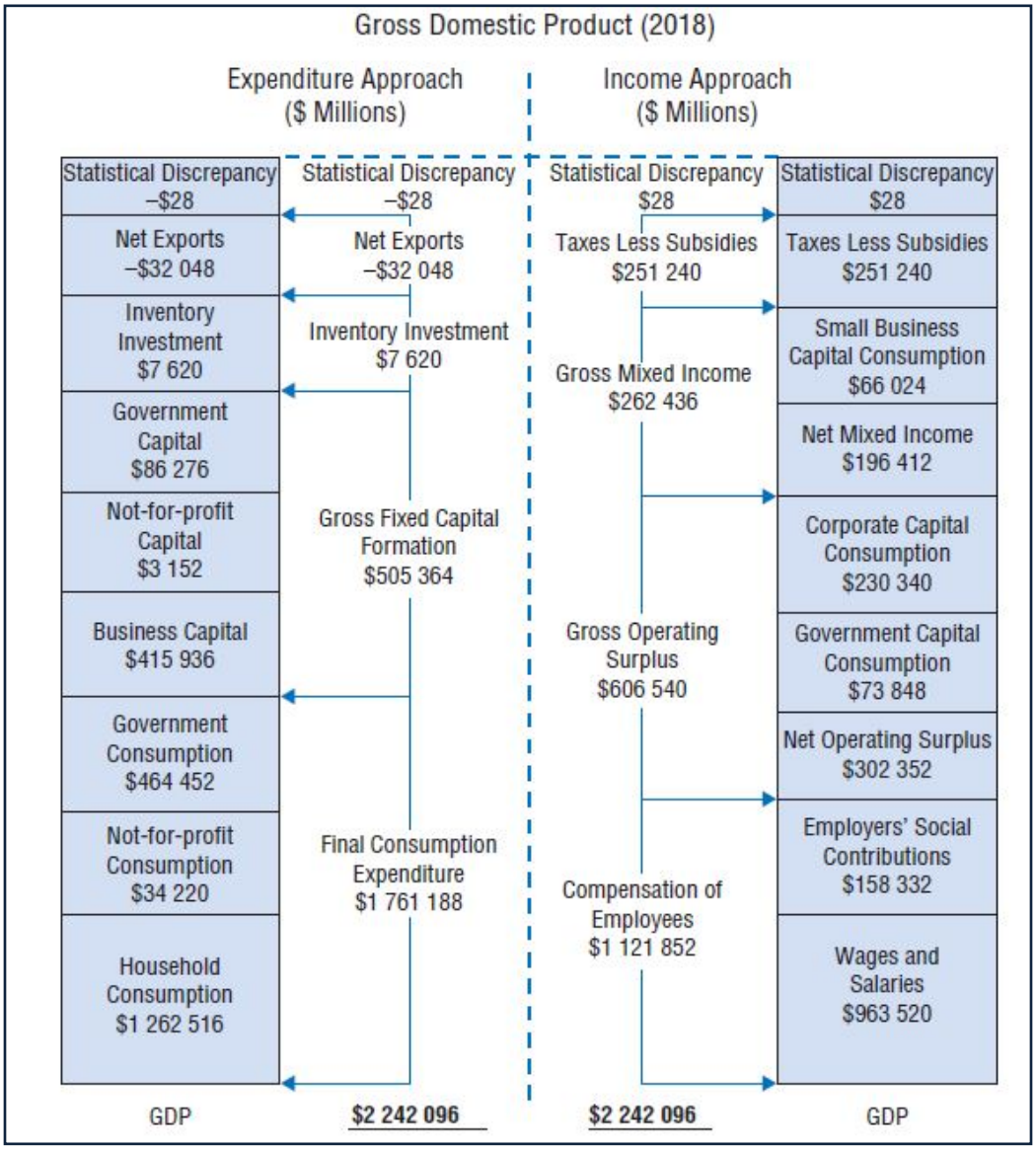
a) Transfer incomes Ex: pensions of retired workers)
b) Income from the sale of second hand goods
c) Illegal Incomes

Statistical Discrepancy: an accounting item that ensures that the income and expenditure approach yield the same result.

– Small errors in original data and differences in estimation techniques mean the income and expenditure approaches will give slightly different values for GDP.
– National Account statistics takes the difference between the two approaches, divides it in half, and adds one half to the lower of the two estimates and subtracts the other half from the greater of the two estimates.

The statistical discrepancy is just 0.00001% of GDP. (tiny)

Statistics Canada tracks both income and spending to calculate GDP



SOURCES: Statistics Canada, "Gross Domestic Product, Income-Based, Canada, Quarterly (*1,000,000)," Table 36-10-0103-01; and "Gross Domestic Product, Expenditure-Based, Quarterly (*1,000,000)," Table 36-10-0104-01.

C. <u>VALUE ADDED METHOD OR PRODUCT METHOD APPROACH</u>

a) Value Added Method is also called Industrial Origin Method or Net Output Method.

This method involves the following steps:

Step 1. Identifying the producing enterprises and classifying them into different sectors according to the nature of their activities

a) All the producing enterprises are broadly classified into three main sectors namely:

i) Primary sector,

ii) Secondary sector, and

iii) Tertiary sector or service sector

b) These sectors are further divided into sub-sectors and each sub-sector is further divided into commodity group or service-group.

Step 2. Estimating the gross value added (GVA MP) by each producing enterprise
Gross value added (GVA MP) = Value of output – Intermediate consumption
= (Sales + change in stock) –Intermediate consumption

Step 3. Estimation of GDP

a) Added by the sub-sector.

b) By adding gross value-added of all the sub- sectors of a sector, we get the Gross domestic product

The values of the following items are also included:

i) Own account production of fixed assets by government, enterprises and households.
ii) Production for self- consumption, and
iii) Imputed rent of owner-occupied houses.

Firm	Value of Product	Value Added	
Diavik Diamond Mine	Value of raw diamond = $500	Value added by diamond miner	= $500
Gem cutter	Value of cut diamond = $700	Value added by diamond cutter = ($700 - $500)	= $200
Jewellery designer	Value of set diamond = $1000	Value added by jewellery designer = ($1000 - $700)	= $300
Jewellery store	Value of diamond rin = $1500	Value added by jewellery store = ($1500 - $1000)	= $500
	Total Value Added		= **$1500**

DIFFERENCE BETWEEN NOMINAL GDP AND REAL GDP

Nominal GDP	Real GDP
1. GDP in terms of current market prices is termed as "Nominal GDP' or 'GDP at current prices'.	1. GDP in terms of constant prices of a chosen base year is termed as 'real GDP' or 'GDP at constant prices'.
2. Nominal GDP which is essentially a quantity measure is sensitive to changes in the average price level.	2. Real GDP changes only when production changes.
3. Nominal GDP rise without any real increase in physical output.	3. The real GDP when available by industry of origin, give a measure of the structural changes in the pattern of production in the country is vital for economic analysis.

TABLE 20.1 Real and Nominal GDP

This table shows how to calculate real GDP, nominal GDP and the GDP deflator for a hypothetical economy that produces only apples and potatoes.

	Prices and quantities			
Year	Price of apples per kg (€)	Quantity of apples (kg)	Price of potatoes per kg (€)	Quantity of potatoes (kg)
2013	1	100	2	50
2014	2	150	3	100
2015	3	200	4	150

Year	Calculating nominal GDP
2013	(€1 per kg apples × 100 kg) + (€2 per kg potatoes × 50 kg) = €200
2014	(€2 per kg apples × 150 kg) + (€3 per kg potatoes × 100 kg) = €600
2015	(€3 per kg apples × 200 kg) + (€4 per kg potatoes × 150 kg) = €1,200

Year	Calculating real GDP (base year 2013)
2013	(€1 per kg apples × 100 kg) + (€2 per kg potatoes × 50 kg) = €200
2014	(€1 per kg apples × 150 kg) + (€2 per kg potatoes × 100 kg) = €350
2015	(€1 per kg apples × 200 kg) + (€2 per kg potatoes × 150 kg) = €500

Year	Calculating the GDP deflator
2013	(€200/€200) × 100 = 100
2014	(€600/€350) × 100 = 171
2015	(€1,200/€500) × 100 = 240

GDP DEFLATOR

The GDP deflator is the ratio of nominal GDP in a given year to real GDP of that year.

GDP Deflator = Nominal GDP/ Real GDP x 100

The deflator measures the change in prices that has occurred between the base year and the current year

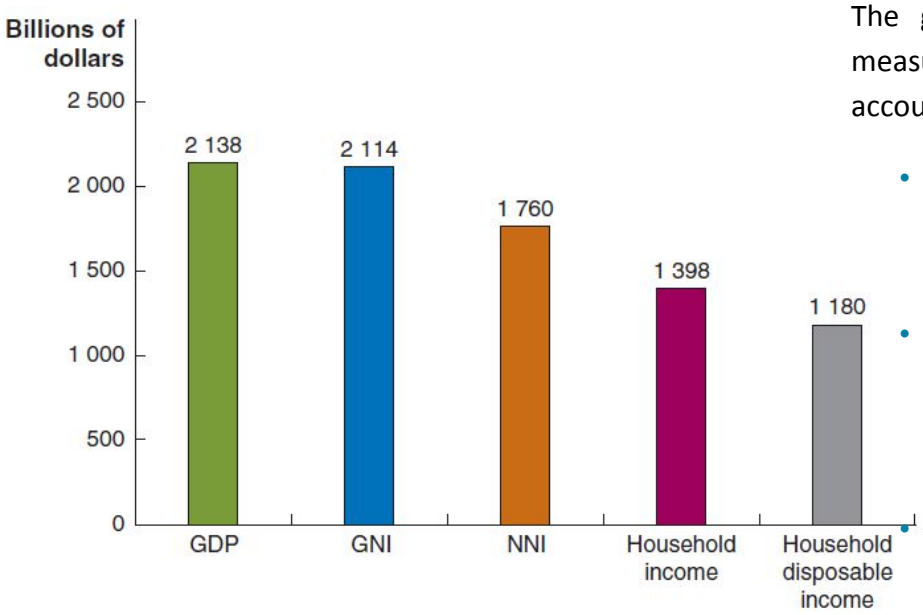
Using the GDP deflator, the inflation rate between two consecutive years can be computed using the following procedure:

Inflation Rate = GDP deflator in year 2 - GDP deflator in year 1/GDP Deflator in Year 1 x 100

Another related concept

Gross National Income (GNI)	***Incomes received by Canadians for the use of their factors of production, no matter where the production occurs.*** **- includes foreign production by Canadian firms but excludes Canadian production by foreign firms**
Net National Income (NNI)	***GNI minus the consumption of fixed capital (depreciation).***
Household Income	***Income received by households*** **- includes transfer payments, but excludes firms' retained earnings**
Household Disposable Income	***Household income minus personal tax payments*.** **- It is the best measure of the income households**

actually have to spend.



The graph shows the various measures of national income accounts for Canada in 2017.

- Net national income must be smaller than GNI, since it is GNI minus depreciation.
- Household disposable income must be less than household income, since it is household income minus taxes.

Each measure is useful in different contexts.

SOURCES: Statistics Canada, "Gross Domestic Product, Expenditure-Based, Canada, Quarterly (*1,000,000)," Table 36-10-0104-01 and author's calculations

SHORTCOMINGS OF GDP

As a measure of total production

Two important types of production are omitted from Statistics Canada's measurement of GDP:

Household Production

• Household production such as childcare, cleaning, and cooking is not typically paid for with money. However, such contributions are real—if they were performed by a non-household-member, they *would* be paid for and counted in GDP.

The Underground Economy

• Buying and selling of goods and services might be concealed from the government to avoid taxes or regulations, or because the goods and services are illegal. This constitutes the **underground economy.**

As a Measure of Well-Being

GDP per capita (i.e. GDP divided by population) is often used to represent differences in **standards of living** from country to country.

However, GDP would not reflect:

– *The value of leisure*
– *Pollution and other negative effects of production*
– *Crime and other social problems*
– *The distribution of income*
–

SELF-CHECK QUESTIONS

1. Country A has export sales of $20 billion, government purchases of $1,000 billion, business investment is $50
billion, imports are $40 billion, and consumption spending is $2,000 billion. What is the dollar value of GDP?

2. Which of the following are included in GDP, and which are not?
a. The cost of hospital stays
b. The rise in life expectancy over time
c. Child care provided by a licensed day care center
d. Child care provided by a grandmother
e. A used car sale
f. A new car sale
g. The greater variety of cheese available in supermarkets
h. The iron that goes into the steel that goes into a refrigerator bought by a consumer.

3. Explain briefly whether each of the following would cause GDP to overstate or understate the degree of change
in the broad standard of living.
a. The environment becomes dirtier
b. The crime rate declines
c. A greater variety of goods become available to consumers
d. Infant mortality declines

4. What are the main components of measuring GDP with what is demanded?
5. What are the main components of measuring GDP with what is produced?
6. Why must you avoid double counting when measuring GDP?
7. List some of the reasons why economists should not consider GDP an effective measure of the standard of living in a country.

Chapter 4 Unemployment & Inflation

Content

- **Concept of Unemployment**
- **Measurement of Unemployment**
- **Unemployment in India**
- **Types of Unemployment**
- **Meaning of inflation**
- **Measurement of Inflation**

Figure 8.1 Out of Business Borders was one of the many companies unable to recover from the 2008-2009 economic recession. (Credit: modification of work by Luis Villa del Campo/Flickr Creative Commons)

Bring it Home

Unemployment and the Great Recession

Nearly eight million U.S. jobs were lost as a consequence of the Great Recession, which lasted from December 2007 to June 2009. At the outset of the recession, the unemployment rate was 5.0%. The rate began rising several months after the recession began, and it peaked at 10.0% in October 2009, several months after the recession ended, according to the Bureau of Labor Statistics (BLS). The job loss represented a huge number of positions gone. Subsequently, the recovery was tepid. Companies added some positions, but as of summer 2013, four years after the end of the recession, unemployment was about 7.5%, well above the pre-recession rate. Employment began increasing at the outset of 2010, and reached its pre-recession level in mid-2014. However, because of population and labor force growth, the unemployment rate at that point was still slightly above 6%. The economy only returned to an unemployment rate of 5.0% in September 2015, and it has remained at or slightly below that level since then, up through January 2017.

This brief overview of unemployment during and after the Great Recession highlights a few important points. First, unemployment is a lagging indicator of business activity. It didn't begin to increase until a few months after the onset of the recession, and it didn't begin to decline until several months after the recovery. Second, the decline in the unemployment rate was quite slow, with the pre-recession unemployment rate only reaching a higher level than six years after the recession ended. This reflects a combination of slow increase in the number of jobs and ongoing increases in the size of the population and the labor force.

One aspect of economic performance is how well an economy uses its resources. Because an economy's workers are its chief resource, keeping workers employed is a paramount concern of economic policymakers. The unemployment rate is the statistic that measures the percentage of those people wanting to work who do not have jobs.

Labour Market

Labour markets (job markets) function through the interaction of workers and employers.
Workers supply labour in exchange for wage paid by demanding firms
Labour market is studied by both macroeconomists and microeconomist
Macroeconomists are interested in the aggregate condition and the interrelation between the labour market and other markets of the economy.

Labour Force Participation rate

Labour force participation rate (or economic activity rate) the percentage of the adult population that is in the labour force

Labour Force participation rates = Labour force/Adult Population x 100

Labour Force

Labour force the total number of workers, including both the employed and the unemployed

Labour force = Number of employed + Number of unemployed

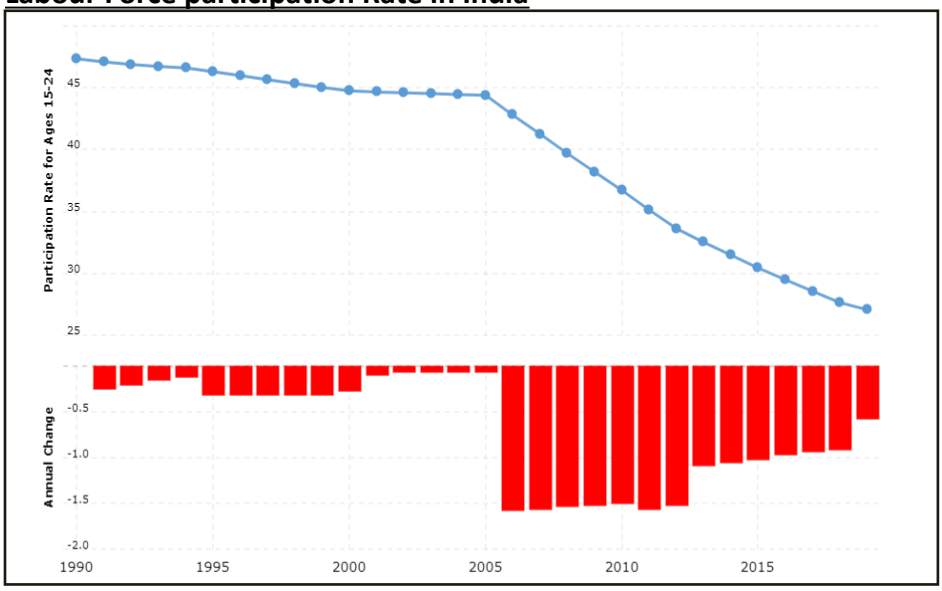
People are then classified as:

Employed: did paid work, unpaid work for a family business, or worked for themselves (or were temporarily away from their jobs).

Unemployed: Someone who is not currently at work but who is available for work and who has actively looked for work during the previous four weeks.

Not in the labour force, if neither of the above apply.

Labour Force participation Rate in India



Source: Trading Economics

Unemployment Rate

Unemployment rate can be measured as the percentage of the labour force that is unemployed:

unemployment rates the percentage of the labour force that is unemployed:

Unemployment rate = number of unemployed/ Labour force x 100

Total adult population over the age of 16	254.082 million
In the labor force	159.716 million (62.9%)
Employed	152.081 million
Unemployed	7.635 million
Out of the labor force	94.366 million (37.1%)

Table 8.1 U.S. Employment and Unemployment, January 2017 (Source: https://data.bls.gov)

Work It Out

Calculating Labor Force Percentages

How do economists arrive at the percentages in and out of the labor force and the unemployment rate? We will use the values in Table 8.1 to illustrate the steps.

To determine the percentage in the labor force:

Step 1. Divide the number of people in the labor force (159.716 million) by the total adult (working-age) population (254.082 million).

Step 2. Multiply by 100 to obtain the percentage.

$$\begin{aligned}\text{Percentage in the labor force} &= \frac{159.716}{254.082}\\ &= 0.6286\\ &= 62.9\%\end{aligned}$$

To determine the percentage out of the labor force:

Step 1. Divide the number of people out the labor force (94.366 million) by the total adult (working-age) population (254.082 million).

Step 2. Multiply by 100 to obtain the percentage.

$$\begin{aligned}\text{Percentage in the labor force} &= \frac{94.366}{254.082}\\ &= 0.3714\\ &= 37.1\%\end{aligned}$$

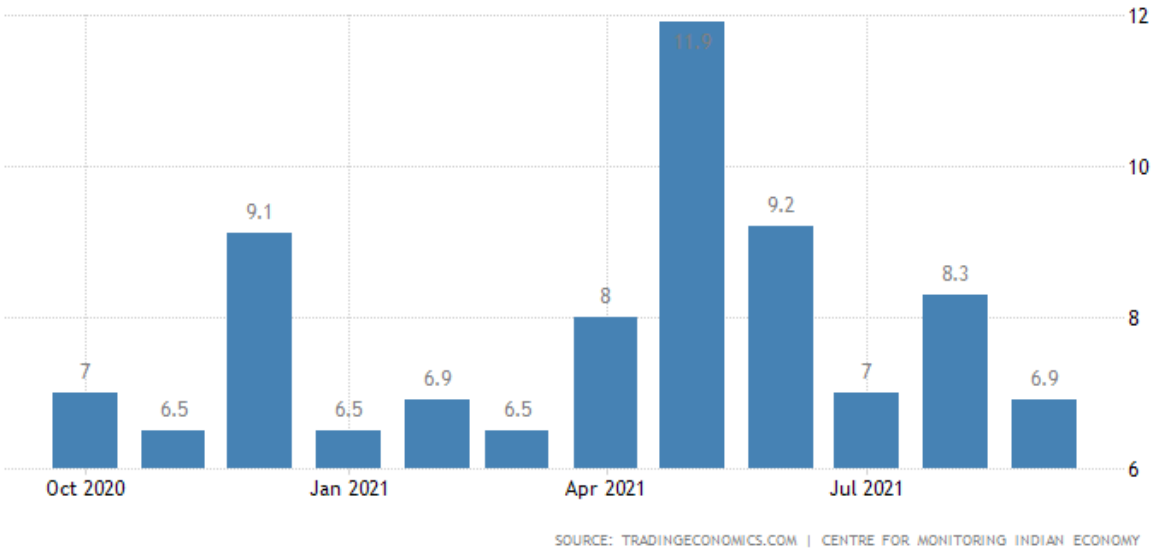
To determine the unemployment rate:

Step 1. Divide the number of unemployed people (7.635 million) by the total labor force (157 million).

Step 2. Multiply by 100 to obtain the rate.

$$\begin{aligned}\text{Unemployment rate} &= \frac{7.635}{159.716}\\ &= 0.0478\\ &= 4.8\%\end{aligned}$$

UNEMPLOYMENT RATE IN INDIA



The unemployment rate is not a perfect measure of joblessness in the economy. Why?

It may understate unemployment:

Distinguishing between people who are unemployed and not in the labour force requires judgment (should we exclude "discouraged workers"?)

It only measures employment, not intensity of employment (full-time vs. part-time; some people are underemployed)

It may overstate unemployment:

People might claim falsely to be actively looking for work

May claim to be unemployed to evade taxes or keep criminal activity unnoticed

HOW LONG ARE PEOPLE TYPICALLY UNEMPLOYED?

Long periods of unemployment are bad for workers, as their skills decay and they risk becoming discouraged and depressed.

Statistics of Canada

Length of Time Unemployed	2006	2010	2014	2018
4 weeks or less	37.5%	31.7%	33.2%	36.8%
5 to 13 weeks	27.7%	26.5%	26.9%	25.9%
14 to 25 weeks	12.7%	13.1%	14.6%	14.1%
26 weeks or more	15.2%	22.3%	21.3%	18.2%

Most people are unemployed for less than a few months at a time.

In recessions, it takes longer to find a job and people remain unemployed for longer

CASE STUDY ON UNEMPLOYMENT IN EUROPE

CASE STUDY **Long-Term Unemployment in the European Union**

A report published by the European Employment Observatory Review (see European Employment Observatory Review *Long Term Unemployment 2012. September 2012*) highlights some key trends in long-term unemployment in the EU. The report notes the significant costs both to the individual and to society of long-term unemployment which include loss of self-esteem, increasing difficulties of finding work because of the erosion of skills, damage to health, material deprivation, social exclusion and the cost of supporting the long-term unemployed.

Some 10 million people in the EU have been unemployed for longer than a year. Of these, 1.9 million have not had a job for over two years, 3 million have not had jobs for up to 17 months and 3.2 million have been out of work for between 24 and 47 months. The overall rate of long-term unemployment (LTU) in the EU sits at around 4.1 per cent in 2011 but some countries are faring better than others. In Spain the LTU rate has risen from 2 per cent in 2008 to 9 per cent in 2011 whereas in Germany the rate has decreased from 4.9 per cent in 2007 to 2.8 per cent in 2011.

The countries which have the lowest rates of LTU tend to be the more developed countries of northern Europe such as Norway, Sweden, Luxembourg, the Netherlands, Austria and Denmark, all of whom have LTU rates under 2.0 per cent, whereas the former Soviet Bloc countries have the highest: Latvia, Hungary, Estonia and Slovakia all have rates in excess of 8.0 per cent. Ireland too has a LTU rate of over 8.0 per cent, largely due to the effects of the financial crisis in 2007–2008 which led to the rate increasing from under 2.0 per cent to around 8.5 per cent.

One of the dangers of long-term unemployment is that workers find it impossible to find work because the longer they are out of work the less likely it is that firms will see these people as being serious contenders for jobs. The result is what is called **hysteresis** – the lagging effects of past economic events on future ones. Those who are unemployed for long periods gradually adjust to a lower standard of living, they also find it increasingly harder to get work and so may lose interest in returning to the labour market.

hysteresis the lagging effects of past economic events on future ones

When looking at the breakdown of the LTU, it seems that older people are more likely to be victims of LTU but a worrying trend is the increasing number of young people across the EU who are falling into the LTU bracket. Prior to the financial crisis it was women who were more likely to be LTU but this has now shifted and more men are now LTU.

The rise in youth unemployment across Europe is a grave concern. For many young people without jobs, the future looks bleak.

FOUR TYPES OF UNEMPLOYMENT

Frictional unemployment

Frictional unemployment: Short-term unemployment that arises from the process of matching workers with jobs.

- Frictional unemployment occurs mostly because of ***job search***: people entering or re-entering the labour force, or being between jobs need to look for jobs.
- Some frictional unemployment is unavoidable because the *process of job search takes time*, and some workers will always be in the process of finding new jobs.
- Some frictional unemployment *increases* economic efficiency by allowing for better job matches.

Structural unemployment

Structural unemployment: Unemployment that arises from a *persistent mismatch* between the skills and attributes of workers and the requirements of jobs.

- Structural unemployment is associated with longer unemployment spells.
- Workers who are structurally unemployed may require retraining in order to obtain "modern" job, or need to relocate to a different area.

Cyclical unemployment

Cyclical unemployment: Unemployment caused by a business cycle recession.

- In February 2009, Chrysler announced to temporarily close its assembly plant in Brampton, Ontario, due to low sales. The laid-off employees experienced cyclical unemployment.
- In normal recoveries after a recession, unemployment due to cyclical factors will fall.

Seasonal unemployment

Seasonal Unemployment is due to *seasonal factors,* like weather or fluctuations of demand due to the time of the year.

- The importance of seasonal unemployment varies by region.
- Seasonal unemployment can make the unemployment rate artificially high in winter and artificially low in summer.

Full employment

When all unemployment is due to frictional and structural factors, we say that the economy is at *full employment*. This means there will always be *some* unemployment in the economy.
Economists call this the **natural rate of unemployment**: The normal rate of unemployment, consisting of frictional unemployment and structural unemployment.
a "long-term" concept. Economists have estimated different natural rates of unemployment for different periods.

INFLATION

Content

- Meaning and Definition of Inflation
- Concept of Inflation
- Measuring Inflation

Figure 9.1 Big Bucks in Zimbabwe This bill was worth 100 billion Zimbabwean dollars when issued in 2008. There were even bills issued with a face value of 100 trillion Zimbabwean dollars. The bills had $100,000,000,000,000 written on them. Unfortunately, they were almost worthless. At one point, 621,984,228 Zimbabwean dollars were equal to one U.S. dollar. Eventually, the country abandoned its own currency and allowed people to use foreign currency for purchases. (Credit: modification of work by Samantha Marx/Flickr Creative Commons)

INFLATION

A continuous increase in general price level is called inflation.

Note: A mere high level of general price need not be inflationary. It is a process where there is a sustained rise general price level.

Definition

Inflation according to Professor Ackley is "a persistent and appreciable rise in the general level or average prices". A rise in price to be termed as inflationary must be persistent and high.

Price of a Basket of Goods

To calculate the price level, economists begin with the concept of a basket of goods and services, consisting of the different item's individuals, businesses, or organizations typically buy.

To calculate the CPI in a given year, we need:

A basket of goods

- The cost to purchase the basket of goods in a base year
- The cost to purchase the basket of goods in the current year

Work It Out

Calculating an Annual Rate of Inflation

Consider the simple basket of goods with only three items, represented in Table 9.2. Say that in any given month, a college student spends money on 20 hamburgers, one bottle of aspirin, and five movies. The table provides prices for these items over four years through each time period (Pd). Prices of some goods in the basket may rise while others fall. In this example, the price of aspirin does not change over the four years, while movies increase in price and hamburgers bounce up and down. The table shows the cost of buying the given basket of goods at the prices prevailing at that time.

Items	Hamburger	Aspirin	Movies	Total	Inflation Rate
Qty	20	1 bottle	5	-	-
(Pd 1) Price	$3.00	$10.00	$6.00	-	-
(Pd 1) Amount Spent	$60.00	$10.00	$30.00	$100.00	-
(Pd 2) Price	$3.20	$10.00	$6.50	-	-
(Pd 2) Amount Spent	$64.00	$10.00	$32.50	$106.50	6.5%
(Pd 3) Price	$3.10	$10.00	$7.00	-	-
(Pd 3) Amount Spent	$62.00	$10.00	$35.00	$107.00	0.5%
(Pd 4) Price	$3.50	$10.00	$7.50	-	-
(Pd 4) Amount Spent	$70.00	$10.00	$37.50	$117.50	9.8%

Table 9.2 A College Student's Basket of Goods

To calculate the annual rate of inflation in this example:

Step 1. Find the percentage change in the cost of purchasing the overall basket of goods between the time periods. The general equation for percentage changes between two years, whether in the context of inflation or in any other calculation, is:

$$\frac{(\text{Level in new year} - \text{Level in previous year})}{\text{Level in previous year}} \times 100 = \text{Percentage change}$$

Step 2. From period 1 to period 2, the total cost of purchasing the basket of goods in Table 9.2 rises from $100 to $106.50. Therefore, the percentage change over this time—the inflation rate—is:

$$\frac{(106.50 - 100)}{100.0} = 0.065 = 6.5\%$$

Step 3. From period 2 to period 3, the overall change in the cost of purchasing the basket rises from $106.50 to $107. Thus, the inflation rate over this time, again calculated by the percentage change, is approximately:

$$\frac{(107 - 106.50)}{106.50} = 0.0047 = 0.47\%$$

Step 4. From period 3 to period 4, the overall cost rises from $107 to $117.50. The inflation rate is thus:

$$\frac{(117.50 - 107)}{107} = 0.098 = 9.8\%$$

This calculation of the change in the total cost of purchasing a basket of goods accounts for how much a student spends on each good. Hamburgers are the lowest-priced good in this example, and aspirin is the highest-priced. If an individual buys a greater quantity of a low-price good, then it makes sense that changes in the price of that good should have a larger impact on the buying power of that person's money. The larger impact of hamburgers shows up in the "amount spent" row, where, in all time periods, hamburgers are the largest item within the amount spent row.

The commonly-used measure is Consumer price index (CPI):

Consumer Price Index

The consumer price index is a measure of the average change over time in the prices a typical household pays for the goods and services they purchase.

The CPI over estimates changes in prices for 4 reasons:

Substitution Bias: Consumers switch to alternate goods once the price of a good rises, the constant basket doesn't account for this.
Increase in Quality Bias: The quality of most products rise over time. A car today is more fuel efficient, safer, and more reliable than in the past. Increases in the prices partly reflect improved quality.
New Product Bias: New products aren't included in the CPI basket right away. If a new product is introduced, for example, iPads were not in the basket before, any changes in price of iPads won't be captured by the CPI.
Outlet Bias: When prices rise, consumers change where they shop, switching from boutiques to warehouse stores with lower prices. The CPI's constant basket doesn't consider this change.

Bring it Home

A $550 Million Loaf of Bread?

If you were born within the last three decades in the United States, Canada, or many other countries in the developed world, you probably have no real experience with a high rate of inflation. Inflation is when most prices in an entire economy are rising. However, there is an extreme form of inflation called hyperinflation. This occurred in Germany between 1921 and 1928, and more recently in Zimbabwe between 2008 and 2009. In November 2008, Zimbabwe had an inflation rate of 79.6 billion percent. In contrast, in 2014, the United States had an average annual rate of inflation of 1.6%.

Zimbabwe's inflation rate was so high it is difficult to comprehend, so let's put it into context. It is equivalent to price increases of 98% per day. This means that, from one day to the next, prices essentially double. What is life like in an economy afflicted with hyperinflation? Most of you reading this will have never experienced this phenomenon. The government adjusted prices for commodities in Zimbabwean dollars several times *each day*. There was no desire to hold on to currency since it lost value by the minute. The people there spent a great deal of time getting rid of any cash they acquired by purchasing whatever food or other commodities they could find. At one point, a loaf of bread cost 550 million Zimbabwean dollars. Teachers' salaries were in the trillions a month; however, this was equivalent to only one U.S. dollar a day. At its height, it took 621,984,228 Zimbabwean dollars to purchase one U.S. dollar.

Government agencies had no money to pay their workers so they started printing money to pay their bills rather than raising taxes. Rising prices caused the government to enact price controls on private businesses, which led to shortages and the emergence of black markets. In 2009, the country abandoned its currency and allowed people to use foreign currencies for purchases.

SELF-CHECK QUESTIONS

1. Suppose the adult population over the age of 16 is 237.8 million and the labor force is 153.9 million (of whom
139.1 million are employed). How many people are "not in the labor force?" What are the proportions of employed?
unemployed and not in the labor force in the population? *Hint*: Proportions are percentages.
2. Using the above data, what is the unemployment rate? These data are U.S. statistics from 2010. How does it
compare to the February 2015 unemployment rate computed earlier?

3. What is the difference between being unemployed and being out of the labor force?
4. How do you calculate the unemployment rate? How do you calculate the labor force participation rate?
5. Are all adults who do not hold jobs counted as unemployed?
6. If you are out of school but working part time, are you considered employed or unemployed in U.S. labor
statistics? If you are a full-time student and working 12 hours a week at the college cafeteria are you considered
employed or not in the labor force? If you are a senior citizen who is collecting social security and a pension
and working as a greeter at Wal-Mart are you considered employed or not in the labor force?
7. What happens to the unemployment rate when unemployed workers are reclassified as discouraged
workers?
8. What happens to the labor force participation rate when employed individuals are reclassified as unemployed? What happens when they are reclassified as discouraged workers?
9. What are some of the problems with using the unemployment rate as an accurate measure of overall joblessness?
10. Table shows the fruit prices that the typical college student purchased from 2001 to 2004. What is the amount spent each year on the "basket" of fruit with the quantities shown in column 2?

Items	Qty	(2001) Price	(2001) Amount Spent	(2002) Price	(2002) Amount Spent	(2003) Price	(2003) Amount Spent	(2004) Price	(2004) Amount Spent
Apples	10	$0.50		$0.75		$0.85		$0.88	
Bananas	12	$0.20		$0.25		$0.25		$0.29	
Grapes	2	$0.65		$0.70		$0.90		$0.95	
Raspberries	1	$2.00		$1.90		$2.05		$2.13	$2.13
Total									

11. Construct the price index for a "fruit basket" in each year using 2003 as the base year.
12. Compute the inflation rate for fruit prices from 2001 to 2004.
13. Edna is living in a retirement home where most of her needs are taken care of, but she has some discretionary spending. Based on the basket of goods in Table, by what percentage does Edna's cost of living increase between time 1 and time 2?

Items	Quantity	(Time 1) Price	(Time 2) Price
Gifts for grandchildren	12	$50	$60
Pizza delivery	24	$15	$16
Blouses	6	$60	$50
Vacation trips	2	$400	$420

14. How to Measure Changes in the Cost of Living introduced a number of different price indices. Which price index would be best to use to adjust your paycheck for inflation?
15. The Consumer Price Index is subject to the substitution bias and the quality/new goods bias. Are the Producer Price Index and the GDP Deflator also subject to these biases? Why or why not?

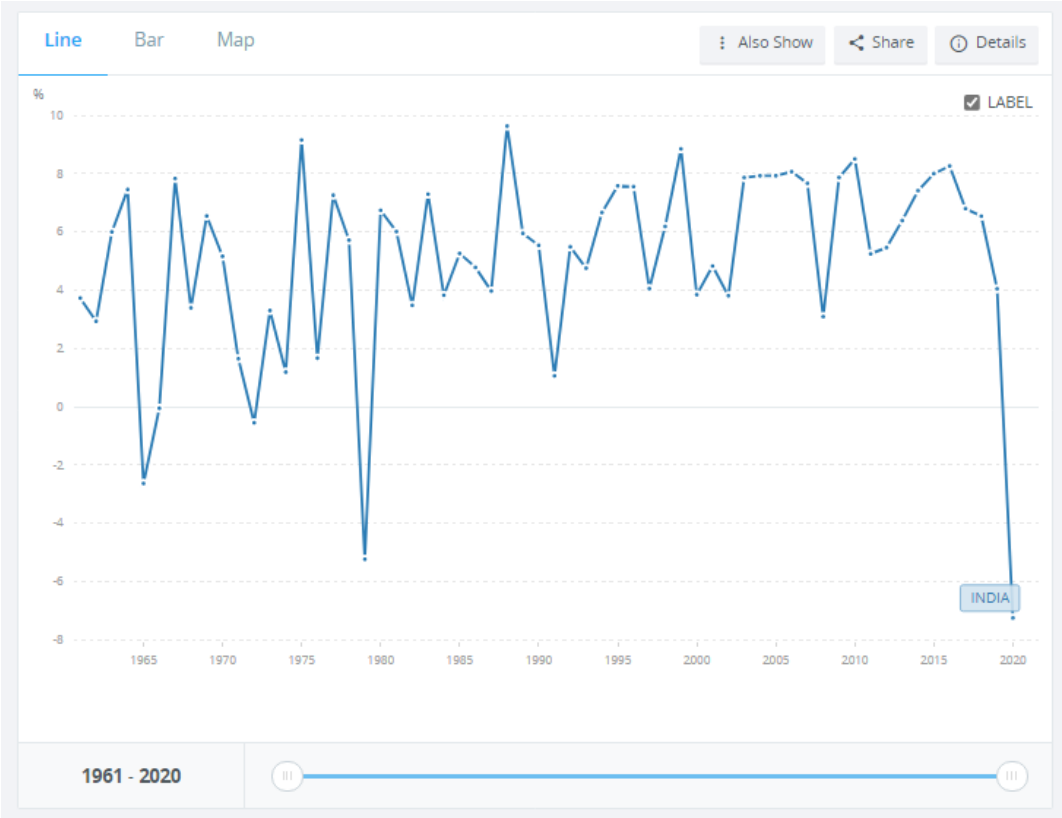
Chapter 5 -TRADE CYCLES

Content

- **Meaning of trade cycles**
- **Phases of Trade Cycles**
- **Indicator of Trade Cycle**

Trade cycle or business cycle is a part of the economic system.
According to Keynes, "A trade cycle is composed of periods of good trade, characterised by rising prices and low unemployment percentages, altering with periods of bad trade characterised by falling prices and high unemployment percentages".According to the above definitions, business conditions vary from time to time i.e. a period of prosperity is followed by depression and so on, affecting GNP, employment, real incomes, price level, profits, etc.
Note: the pattern of cycles is irregular. Any two business or trade cycles are not the same.
Features of trade cycle1. Fluctuations in Aggregate Economic Activity: Trade cycles are fluctuations in the level of "aggregate economic activity" rather than fluctuations in a single, specific economic variable. It involves changes in many variables such as employment, investment, profits as well as financial market variables leading to changes in GDP. **2. Expansions and Contractions:** Trade cycles are accompanied by expansions and contractions (or recession). The important characteristics of an expansion are: (i) Rising consumption, production and real GDP: During expansion, consumption expenditures rise sharply as businessmen react with raising production, real GDP rises. As a consequence, business investment in plant and machinery also rises sharply. (ii) Increase in employment: The demand for labour increases during expansion. This leads to higher employment. (iii) Rise in prices: As demand for goods and materials rises their prices start rising. This may be accompanied by rise in wages and prices of services. Hence prices tend to rise during expansion. (iv) Rise in profits, demand for credit and stock prices Business profits rise sharply during expansion. Anticipating this, stock prices rise as investors expect a business upturn. Since the demand for credit rises sharply the interest rates may also rise during expansion. The important features of a contraction (recession) are the opposite of that of expansion. They are:(I) Falling consumption, production and real GDP: During, consumer purchases decline sharply, while inventories of consumer durables increase unexpectedly. As businessmen react by cutting down production, real GDP falls. Consequently, business investment in plant and equipment also falls sharply. (ii) Increase in unemployment: The demand for labour falls during contraction. This is followed by layoffs and higher unemployment. (iii) Fall in prices: As demand for goods and materials declines, their prices tumble. Wages and prices of services are not likely to decline, but they tend to rise less rapidly during economic downturns. (iv) Fall in profits, demand for credits and stock prices: Business profits fall sharply during recession. On the anticipation of this, stock prices usually fall. Since the demand for credit falls, the interest rates also fall during recession.

3. Comovement of Variables: The tendency of many economic variables to move together in a predictable way over the trade cycle is called comovement of variables. Many economic variables such as output, employment, prices, investment, profits, stock prices, etc. have regular and predictable patterns of behaviour over the course of a trade cycle. Generally, they tend to fall during recession and rise during expansion.
4. Recurrent but not Periodic: A trade cycle is not periodic. It does not occur at regular, predictable intervals and does not last for a fixed or predetermined length of time. Even though the pattern of cycle is irregular, it is recurrent, that is, the standard of pattern of contraction - trough - expansion - peak recurs again and again in industrial economies. India's GDP growth



rate

PHASES OF TRADE CYCLE The ups and downs in the economy are reflected by the variations/ fluctuations in macro-economic variables such as GNP, investments, profits, prices, employment, wages etc. The variations in these show different phases of a trade cycle. The four phases of the trade cycle as shown in are: (1) Depression (2) Recovery (3) Prosperity and (4) Recession

Depression

- Depression is a period of low economic activity. Growth rate goes below the steady growth. There is considerable reduction in production, employment, income, investment, demand and price' during this phase.
- Bank deposits and credit shrink due to general decline in economic activities. Investment in stock becomes less profitable and least attractive.
- Business profits would be low or even negative.At the depth of depression all economic activities touch the bottom point called trough.
- The trough may be short lived or it may continue for a long time. But gradually limiting forces are set in motion which tends to bring this to an end.

Recovery

- Various exogenous and/or endogenous factors are responsible for reviving the economic.
- When the economy enters the phase of recovery, it registers an upward trend in output, income, employment, etc. But the growth rate may still remain below the steady growth rate There May be a replacement of semi-durable goods or capital stock which will lead to an increase in demand. To meet this increased demand, investment and employment increase.

- As a result, output and income also start to rise.
- Once the revival starts, the process cumulative. It should be noted that in the early stages of the recovery phase, output increases without proportionate increase in 'the total costs due to excess capacity in the economy. But later costs rise and output less elastic which may result in the rise in prices and profits. Business optimism exists as the recovery takes place.
- This tends to raise the demand for bank credits which leads to credit expansion. When the cumulative expansion of income, employment, consumption expenditure, investment, prices etc. exceed the steady rate, the economy enters the phase of prosperity.

Prosperity

- Increase in output, employment, investment demand, profits, bank loans, prices, standard of living, etc. are the main features of the phase of prosperity. We 'can observe the following important features during this phase.
- Idle funds are channelized into productive areas since stock prices are higher due to high profitability.
- Money supply increases and it continues to flow in all kinds of economic activities.
- Excess capacity gradually disappears creating shortage of labour and raw materials.
- After the full employment is achieved, a further increase in demand leads to an increase in prices. But factor remuneration like wages, interest rates, rents, taxes etc. do not rise in proportion to the rise in prices, so business continues to remain profitable.
- This increases investment especially of inventories. Demand for bank credit increases, In this way, the expansionary process becomes cumulative and the economy reaches the Peak.The peak point is generally characterized by stagnation in demand.

Recession

- The recession is a period of contraction or slowing down of economic activity. This phase begins when the downward process in the growth rate becomes rapid and output, employment, prices, etc. register a decline. The growth rate may still remain above the steady growth line. Recession is generally of a short duration.
- After the peak, in some sections, the demand starts declining. The existing production thus becomes excess and investment results into over investment. As a result, future investment plans are given up which leads to fall in demand for inputs. This ultimately causes demand recession.
- During this phase, business profits fall. This leads to fall in share prices. Due to lack of investment opportunities, the demand for bank credit falls. This leads to a fall in the rate of interest. Employment, investment, income and demand decline.
- Recession may be mild or severe. The severe recession might lead to a sudden crisis arising out of the banking system or the stock exchange.
- If recession continues for long, investment reduces to a very low level. Ultimately this reaches to a period of full depression

INDICATORS

Economists use changes in a variety of activities to measure the business cycle and to predict where the economy is headed towards. These are called indicators.

A. Leading Indicator

- A leading indicator is a measurable economic factor that changes before the economy starts to follow a particular pattern or trend. In other words, those variables that change before the real output changes are called 'Leading indicators.
- Leading indicators often change prior to large economic adjustments. Changes in stock prices, profit margins and profits, indices such as housing, interest rates and prices are generally seen as precursors of upturns or downturns.
- Similarly, value of new orders for consumer goods, new orders for plant and equipment, building permits for private houses, fraction of companies reporting slower deliveries, index of consumer confidence and money growth rate are also used for tracking and forecasting changes in business cycles.

B. Lagging Indicator

- Lagging indicators reflect the economy's historical performance and changes in these indicators are observable only after an economic trend or pattern has already occurred. In other words, variables that change after the real output changes are called 'Lagging indicators.
- If leading indicators signal the onset of business cycles, lagging indicators confirm these trends.
- Lagging indicators consist of measures that change after an economy has entered a period of" fluctuation. Some examples of lagging indicators are unemployment, corporate profits, labour cost per unit of output, interest rates, the consumer price index and commercial lending activity.

C. Coincidental indicator

- A third type of indicator is coincident indicator. Coincident economic indicators, also called concurrent indicators, coincide or occur simultaneously with the business-cycle movements. Since they coincide fairly closely with changes in the cycle of economic activity, they describe the current state of the business cycle.
- In other words, these indicators give information about the rate of change of the expansion or contraction of an economy more or less at the same point of time it happens.
- A few examples of coincident indicators are Gross Domestic Product, industrial production, inflation, personal income, retail sales and financial market trends such as stock market prices.

SELF-REVIEW QUESTION

1. What do you mean trade cycle or business cycle?
2. State the features of business cycle

3. Explain the difference in economic indicator during expansion and contraction of economy
4. State different phases of trade cycle
5. State any two leading indicator which can be used in an economy with an example
6. State any two-lagging indicator which can be used in an economy with an example
7. State any two coincident indicator which can be used in an economy with an example