

NSS Exploring Economics 5 (3rd Edition)
Revision Notes (SAMPLE)

Chapter 1 Measurement of economic performance (I) — GDP and GNI

Gross domestic product (GDP)

1. Gross domestic product (GDP) is the total value of production of all resident producing units of an economy in a specified period (e.g., a quarter or a year).
2. Resident producing units (RPU) of an economy are production units (they can be individuals or organisations) which maintain a centre of predominant economic interest in that economic territory.

They have remained or intend to remain in the economic territory of the economy for at least 12 months (for individuals) or ordinarily operate in the economic territory of the economy (for organisations).

Items not included in GDP

3.
 - a. Items not involving production (e.g., transfer payments, capital gain, financial assets and second-hand goods)
 - b. Items not produced by resident producing units (e.g., imported goods and services)
 - c. Items not produced during the specified period (e.g., past inventories)
 - d. Unpaid services produced by households for self-consumption and voluntary services offered to non-profit making institutions

Production approach / Value-added approach

4. The production approach measures GDP by calculating the total value of production (or value-added) of all resident producing units in all industries during the specified period.
5. Value-added = Value of output – Value of intermediate consumption
6. Sum of value-added of all RPU of an economy = GDP of the economy
7.
 - a. GDP at factor cost = Total value-added of all resident producing units
 - b. GDP at market prices = GDP at factor cost + Indirect taxes – Subsidies

Expenditure approach

8. By the expenditure approach, $\text{GDP at market prices} = C + I + G + X - M$

where C: Private consumption expenditure

I: Gross investment expenditure

= Gross fixed investment expenditure + Changes in inventories

= (Depreciation + Net fixed investment expenditure) + Changes in inventories

= Depreciation + Net investment expenditure

G: Government consumption expenditure

X: Exports

= Exports of goods + Exports of services

= (Domestic exports of goods + Re-exports of goods) + Exports of services

M: Imports

= Imports of goods + Imports of services

Remark:

	Also called ...
Gross investment expenditure	Gross domestic capital formation
Gross fixed investment expenditure	Gross domestic fixed capital formation
Net fixed investment expenditure	Net domestic fixed capital formation
Depreciation	Capital consumption allowance

Gross national income (GNI)

9. Gross national income (GNI) is the total income earned by residents of an economy from engaging in various economic activities in a specified period.

10. Residents of an economy include:

- An individual is a resident of an economy if he/she has remained in the economy for at least 12 months or intends to do so, regardless of his/her nationality.
- An organisation is a resident of an economy if it ordinarily operates in the economy.

11. $\text{GNI} = \text{GDP} + (\text{Factor income from abroad} - \text{Factor income paid abroad})$
 $= \text{GDP} + \text{Net factor income from abroad}$

Chapter 2 Measurement of economic performance (II) — national income statistics and the general price level

Measurement of some national income statistics

1.

	Nominal GDP	Real GDP
Definition	GDP measured at current-period market prices	GDP measured at base-period market prices
Calculation	= Sum of current-period quantities (Q_c) valued at current-period prices (P_c) = $\sum Q_c P_c$	= Sum of current-period quantities (Q_c) valued at base-period prices (P_b) = $\sum Q_c P_b$

2. Real GDP is a better measure of aggregate output than nominal GDP because a change in real GDP must imply a change in the volume of production, but a change in nominal GDP may not.

3. Per capita GDP =
$$\frac{\text{GDP}}{\text{Population}}$$

4. Full employment GDP is the GDP when an economy uses all of its resources efficiently. This is also called potential GDP.

5. Let the values of a statistic at the end of Period 1 and Period 2 be S_1 and S_2 , respectively.

$$\text{Growth rate} = \frac{S_2 - S_1}{S_1} \times 100\%$$

6. Suppose there are three statistics, A, B and C, and their respective growth rates are a%, b% and c%.

$$\text{Given } C = \frac{A}{B} \Rightarrow 1 + c\% = \frac{1 + a\%}{1 + b\%}$$

$$\Rightarrow c\% \approx a\% - b\%$$

Uses of national income statistics

7. a. To assess the economic performance of an economy or an industry
- b. To reflect the economic welfare of an economy
- c. To facilitate international comparison

Limitations of national income statistics

8.

Limitations	Notes
a. Composition of GDP	If GDP consists of a large proportion of investment and exports, GDP may overestimate the standard of living.
b. Value of some unpaid services is not counted	GDP may underestimate the standard of living.
c. Value of leisure is not counted	Increase (decrease) in leisure raises (lowers) the standard of living but this is not reflected in GDP.
d. Undesirable effects of production are not considered	GDP overestimates the standard of living.
e. Distribution of income is not considered	Uneven income distribution leads to overestimation of the standard of living.

Measurement of the general price level

9.

	CPI	GDP deflator
Coverage	Consumer goods and services generally purchased by domestic households	Products related to GDP
Uses	CPI can better reflect the cost of living .	The GDP deflator can better reflect the general price level and the purchasing power of money .
Weights	Updated every five years in Hong Kong (fixed weights)	Updated every year (variable weights)

10. a. In Hong Kong, CPI(A), CPI(B) and CPI(C) reflect the price levels of products generally purchased by domestic households in the lower, medium and higher expenditure ranges, respectively.
- b. The composite CPI reflects the price level of products generally purchased by the above households.

11. GDP deflator in a specified period = $\frac{\text{Nominal GDP in that period}}{\text{Real GDP in that period}} \times 100$

12. The values of the CPI and GDP deflator in the base period are both set at 100.

Chapter 3 Macroeconomic problems

Inflation and deflation

1. Inflation is the phenomenon of a **persistent increase** in the general price level.
2. Deflation is the phenomenon of a **persistent decrease** in the general price level.
3. Disinflation is a persistent increase in the general price level but at a **declining rate**.
4. Inflation (deflation) does **NOT** occur in the following situations:
 - a. A **temporary** rise (drop) in the general price level
 - b. A **one-time-only** rise (drop) in the general price level
 - c. A persistent rise (drop) in the price of a **single good**
5. Inflation rate = Percentage change in price level

$$= \frac{PI_2 - PI_1}{PI_1} \times 100\%$$

where PI_2 is the price level in Period 2

PI_1 is the price level in Period 1

	Inflation	Disinflation	Deflation
Inflation rate	Positive	Positive but decreasing	Negative

Relation between nominal value and real value

$$6. \text{ Real value} = \frac{\text{Nominal value}}{\text{Current-period price index}} \times 100$$

Relation between nominal interest rate and real interest rate

7. Real interest rate = Nominal interest rate – Inflation rate
 - a. **Expected** real interest rate = Nominal interest rate – **Expected** inflation rate
 - b. **Actual or realised** real interest rate = Nominal interest rate – **Actual or realised** inflation rate

Redistributive effects of unanticipated inflation and deflation

8. Income is redistributed between payers and recipients:

	Who gains	Who loses	Reason
Unanticipated inflation (Actual > Expected inflation rate)	Payers of fixed future payments	Recipients of fixed future payments	<ul style="list-style-type: none"> The actual real value or purchasing power of fixed future payments is smaller than expected. Actual real interest rates are smaller than expected.
Unanticipated deflation (Actual > Expected deflation rate)	Recipients of fixed future payments	Payers of fixed future payments	<ul style="list-style-type: none"> The actual real value or purchasing power of fixed future payments is greater than expected. Actual real interest rates are greater than expected.

9. There is **NO** income redistribution in the following situations:

- Future payments are indexed;
- Inflation or deflation is fully anticipated.

Effects of inflation and deflation on wealth

10. During inflation, holders of **monetary assets** lose.

11. During inflation, owners of **real assets** may gain or lose.

- $\% \Delta$ in nominal values > Inflation rate \rightarrow Real values \uparrow \rightarrow Owners gain
- $\% \Delta$ in nominal values = Inflation rate \rightarrow Real values remain unchanged \rightarrow No gain or loss
- $\% \Delta$ in nominal values < Inflation rate \rightarrow Real values \downarrow \rightarrow Owners lose

12. Other effects of inflation:

- The cost of living \uparrow and the purchasing power of money \downarrow .
- The standard of living may \downarrow .
- Resources are reallocated.
- The volume of exports \downarrow while the volume of imports \uparrow .

Unemployment and underemployment

- Unemployed population consists of persons who want a job but have failed to find one.
- Underemployed population consists of persons who involuntarily work less than a specified number of hours.

14. Labour force = Employed population + Unemployed population

$$\text{Unemployment rate} = \frac{\text{Unemployed population}}{\text{Labour force}} \times 100\%$$

$$\text{Underemployment rate} = \frac{\text{Underemployed population}}{\text{Labour force}} \times 100\%$$

15. Costs of unemployment include:

To the unemployed	To society	To the government
<ul style="list-style-type: none"> • Lower living standard • Family problems • Loss of human capital 	<ul style="list-style-type: none"> • Loss of output • Social problems 	<ul style="list-style-type: none"> • Financial burden

Business cycles

16.

Features	Expansion / recovery	Peak / prosperity	Contraction / recession	Trough
Real GDP	↑	Highest	↓	Lowest
For variables that are positively related to GDP : <ul style="list-style-type: none"> • C, I, M • Sales receipts, profits • Tax revenue • Business confidence • Employment level 	↑	Highest	↓	Lowest
For variables that are negatively related to GDP : <ul style="list-style-type: none"> • Unemployment rate • Transfer payments • Inventory levels 	↓	Lowest	↑	Highest
Inflation rate	↑	High	↓	Low