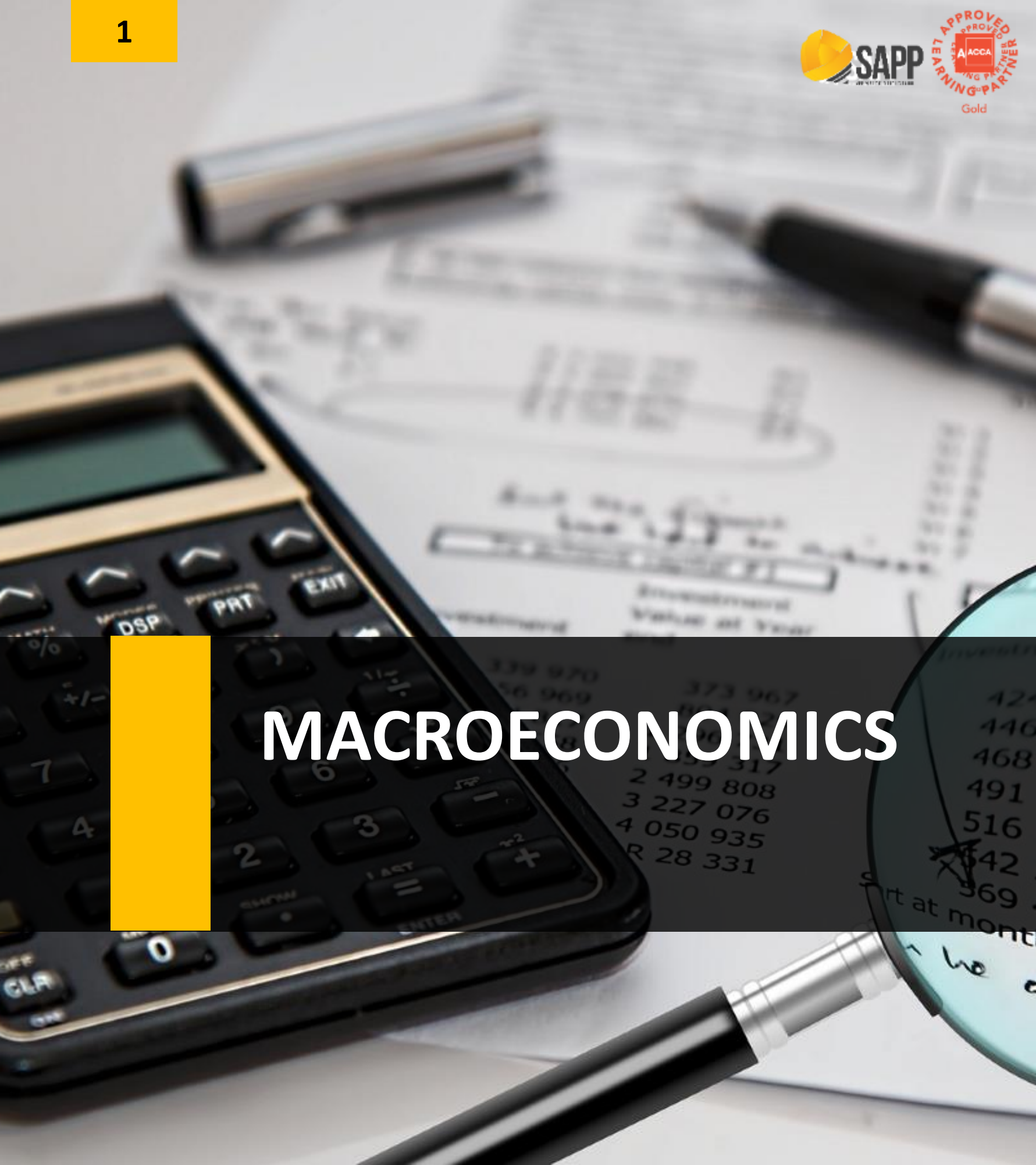


MACROECONOMICS

LEARNING OUTCOME

- Definition of GDP
- Method of calculating GDP
- Describe economic growth and factors that affect it
- Describe phases of a business cycle and their characteristics
- Describe economic indicators and their uses and limitations
- Define inflation and cause
- Describe and compare monetary and fiscal policy
- Vocabulary

I. GROSS DOMESTIC PRODUCT AND THE BUSINESS CYCLE

1. GDP

Definition

Gross domestic product (GDP) is the total value of all final products and services produced in a country over a period of time.

2 calculation methods

Expenditure approach	Income approach
GDP = C + I + G + (X-M) C = Consumption spending I = Business/private investment G = Government purchase X = Export M = Import	**GDP = NI + IBT+ D** NI = the sum of all salary, rent, interest, and profit IBT = Indirect Business Taxes D = Depreciation

GDP (Expenditure method) = GDP (Income method)

C + I + G + (X-M) = NI + Indirect Business Taxes + Depreciation

I. GROSS DOMESTIC PRODUCT AND THE BUSINESS CYCLE

1. GDP

GDP calculation examples

For the following figures:

Gross Private Investment (I) $124
Net Exports (X-M) $18
Government Purchases (G) $156
Household Consumption (C) $304
Indirect Business Taxes $142
Depreciation $36
Rental Income: $74
Business Profits: $350

Expenditure approach	Income approach
GDP = C + G + I + (X - M) = $304 + $156 + $124 + $18 = $602	Rental Income: $74 Business profits: $350. → **NI** is: $74 + $350 = $424 **GDP = NI + IBT+ Depreciation** GDP = $424 + $142 + $36 GDP = $602

I. GROSS DOMESTIC PRODUCT AND THE BUSINESS CYCLE

1. GDP

Nominal GDP and Real GDP

Bases	Nominal GDP	Real GDP
Meaning	Nominal GDP **is sum-total of economic output** produced in a year **valued at current market price**	Real GDP is **sum – total of economic output** produced in a year valued at a **pre - determined base market price**
Expressed in	Current market price	Base year's market price
Uses	Can be compared with various quarters of the given year	Can be compared with two or more financial years
Economic Growth	Economic growth can't be analysed easily	Real GDP is a good indicator of economic growth
Effect of Inflation	Nominal GDP doesn't take inflation into account	Real GDP is a Inflation-Adjusted GDP

I. GROSS DOMESTIC PRODUCT AND THE BUSINESS CYCLE

1. GDP

Example: The following table shows a basket of 2 goods: Book and Pen. The base year is 2020.
Calculate the Nominal GDP and Real GDP each year.

Year	Price of pens	Quantity of pens	Price of books	Quantity of books
2019	4	80	8	30
2020	3	100	10	50
2021	2	120	12	70

Answer:

Year	Nominal GDP	Real GDP
2019	4 x 80 + 8 x 30 = 560	3 x 80 + 10 x 30 = 540
2020	3 x 100 + 10 x 50 = 800	3 x 100 + 10 x 50 = 800
2021	2 x 120 + 12 x 70 = 1080	3 x 120 + 10 x 70 = 1060

I. GROSS DOMESTIC PRODUCT AND THE BUSINESS CYCLE

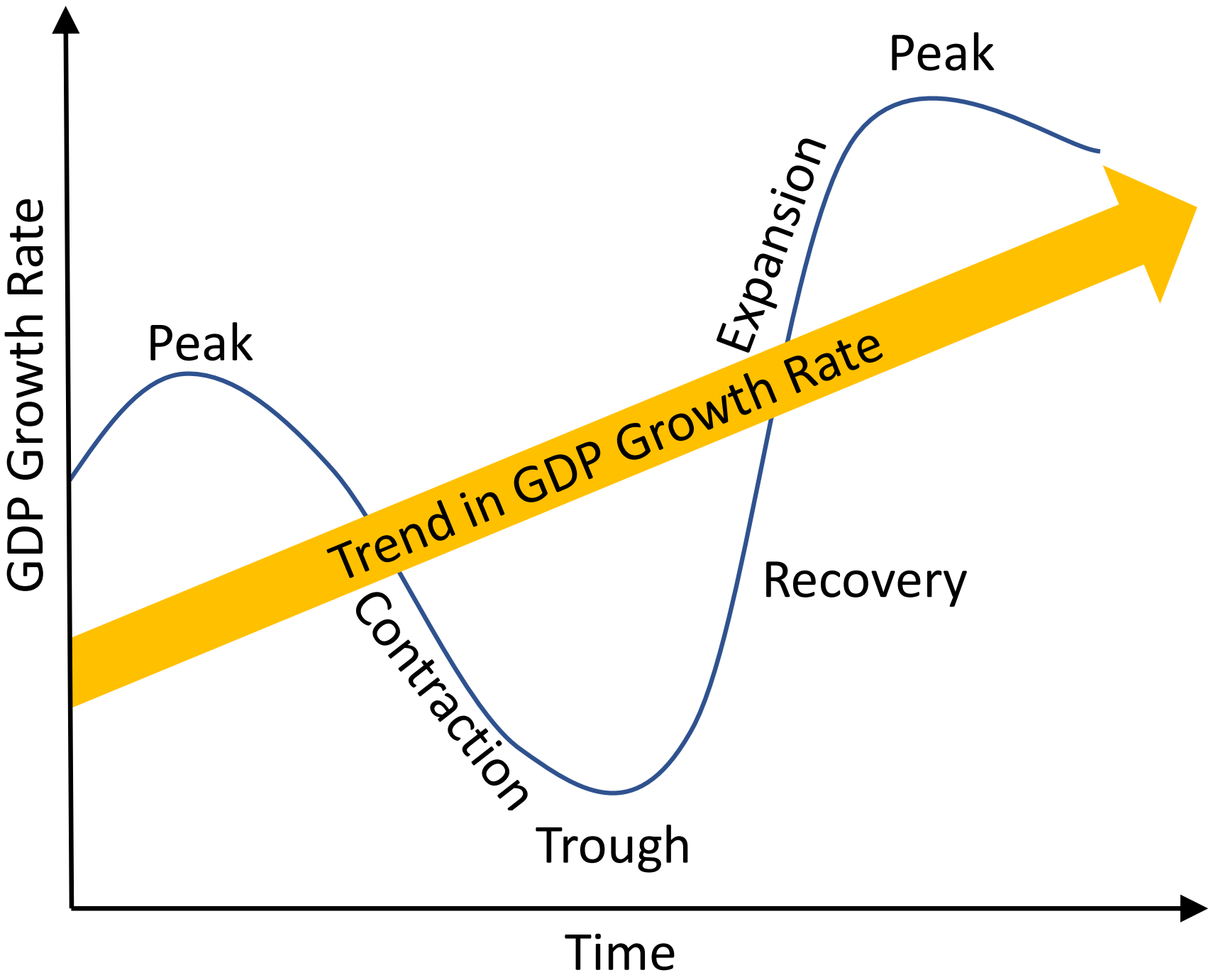
2. Economic Growth & GDP Growth

Economic growth
Economic growth is measured by the percentage change in real output (usually real GDP) for a country.

GDP growth is determined by**:**		
Growth of the labour force	**Productivity gains**	**Availability of capital**
Represent the increase in labour force in the market	Represent growth in output per unit of labour	Represents inputs other than labour necessary for production

I. GROSS DOMESTIC PRODUCT AND THE BUSINESS CYCLE

3. The Business (or Economic) Cycle



I. GROSS DOMESTIC PRODUCT AND THE BUSINESS CYCLE

3. The Business (or Economic) Cycle

Peak	• **Economic growth:** highest and **begins to slow** • **Inflation**: further **accelerates** → Central banks may **implement policies** to **slow the economy** and **control inflation.**
Contraction	• The economy as a whole is in a **decline** • **Inflation and interest rates**: tend to **fall** • **Unemployment rate** becomes **higher, lower wages** due to the decrease in productivity
Trough	• **Economic growth**: lowest • **Inflation and interest rate**: low → Encourage more borrowing to finance spending → Economic growth rate begins to improve
Recovery	• The economic growth rate begins to improve and the **economy rebounds**. • **GDP grows, incomes rise,** and **unemployment falls**
Expansion	• **Growth accelerates** • **Inflation and interest rate: increase** • **Unemployment rate decrease** as hiring accelerates

I. GROSS DOMESTIC PRODUCT AND THE BUSINESS CYCLE

4. Economic Indicators

Definition	**Economic indicators** are **measures** that offer insight regarding **economic activity** and are **reported with greater frequency** than GDP.	
Usages	guide **forecasts** of **future economic activity**	
	forecast of activity and performance in the **financial markets** and **exchange rates**	
Classification: 3 types	**Lagging indicators**	Signal a **change** in economic activity **after output** has already changed.
		Ex: Employment rate tends to fall after economic activity has declined
	Coincident indicators	Reveal **current economic conditions**, but do not have predictive value.
		Ex: Industrial production and personal income statistics
	Leading indicators	Signal **changes** in the economy in the **future.**
		Ex: The stock & housing markets, consumer confidence

I. GROSS DOMESTIC PRODUCT AND THE BUSINESS CYCLE

Vocabulary

Vocabulary	Meaning
GDP (Gross Domestic Product)	Tổng sản phẩm quốc nội
Expenditure approach	Phương pháp chi tiêu
Income approach	Phương pháp thu nhập
Consumption spending	Chi tiêu tiêu dùng
Investment	Đầu tư
Export/ Import	Xuất khẩu/ Nhập khẩu
National income	Thu nhập quốc dân
Indirect business tax	Thuế doanh nghiệp gián thu
Depreciation	Khấu hao
Productivity	Năng suất
Labour force	Lực lượng lao động
Capital	Nguồn vốn

I. GROSS DOMESTIC PRODUCT AND THE BUSINESS CYCLE

Vocabulary

Vocabulary	Meaning
Accelerates	Tăng thêm
Unemployment rate	Tỉ lệ thất nghiệp
Peak	Đỉnh điểm
Contract	Suy thoái
Trough	Đáy
Recovery	Hồi phục
Expansion	Mở rộng
Forecast	Dự báo
Financial market	Thị trường tài chính
Exchange rate	Tỉ giá hối đoái
Lagging indicator	Chỉ báo trễ
Coincident indicators	Chỉ báo trùng
Leading indicator	Chỉ báo sớm

II. INFLATION

1. Inflation

Definition of Inflation

Inflation is the **decline** of **purchasing power** of a given **currency** over time.
The rise in the level of prices, means that a unit of currency can buy less than it did in prior periods.

Example

In 1946, Hungary increased money supply to pay reparations after the world war. Too much money made it become worthless. During this period, prices of goods in Hungary doubled every 15 hours.

Causes

The Monetary Authority prints more money to pay for the country's spending

↓

Increase in the money supply

↓

There is more money chasing the same number of goods

↓

The prices of goods increase

II. INFLATION

2. Measuring Inflation

The construction of indexes used to measured inflation

Consumer Price index (CPI)	Producer price index (PPI)
Measures the cost of a fixed basket of goods and services compared to the cost in a base period $CPI = \frac{\text{Cost of basket at current price}}{\text{Cost of basket at base period price}} x100$	Measure the average selling price of products in the economy $PPI = \frac{\text{Current price of basket}}{\text{Base price of basket}} \times 100$
Inflation rates and price indices	**Implicit GDP deflator**
Measures the change in CPI of a country in two consecutive years. $Inflation\ rate = \frac{\text{CPI this year} - 100}{100} \times 100$	Measures the current level of prices relative to the level of prices in the base year $GDP\ deflator = \frac{\text{Nominal GDP}}{\text{Real GDP}} \times 100$

***NOTE**: A goods basket is calculated by consolidating some of the goods and services in the market that a person buys*

II. INFLATION

2. Measuring Inflation

Example: The following table shows a basket of 2 goods: Book and Pen. The base year is 2020.
Calculate the CPI, PPI, Inflation rate and GDP Deflator for 2021

Year	Price of pens	Quantity of pens	Price of books	Quantity of books
2020	3	100	10	50
2021	4	120	12	70

Answer:

$$CPI = \frac{4x100+12x50}{3x100+10x50} \times 100 = 125$$

$$PPI = \frac{4x100+12x50}{3x100+10x50} \times 100 = 125$$

$$\text{Inflation Rate} = \frac{CPI\ 2021-100}{100} \times 100 = \frac{125-100}{100} \times 100 = 25\%$$

$$\text{GDP Deflator} = \frac{\text{Nominal GDP}}{\text{Real GDP}} \times 100 = \frac{4x120+12x70}{3x120+10x70} \times 100 = 124{,}53$$

II. INFLATION

2. Measuring Inflation

Comparison between CPI and GDP Deflator	
CPI	**GDP Deflator**
Reflects the prices of all goods and services bought by consumers	Reflects the prices of goods and services domestically
Include imports for consumption	Exclude imports
Only consumer goods and services	Also investment, gov. purchases, exports

II. INFLATION

3. The Effects of Inflation

Consumer	Buying now instead of saving leads to economic growth in the short run.
	If unemployment is high then labour's bargaining power declines, and real consumer spending may weaken.
Business	Budgeting becomes more difficult because of the uncertainty created by rising prices and costs.
	Companies' profits may decline as costs rise.
Investment	Any investment paying a fixed cash amount will decline in value if interest rates rise.
	Shares may be a good hedge (protection) against inflation.

II. INFLATION

Vocabulary

Vocabulary	Meaning
Deflation	Giảm phát
Inflation	Lạm phát
Purchasing power	Sức mua
Currency	Tiền tệ
Hyperinflation	Siêu lạm phát
Double	Gấp đôi
GDP deflator	Chỉ số giảm phát GDP
Shares	Cổ phiếu
Bargain	Trả giá
Consumer Price Index (CPI)	Chỉ số giá tiêu dùng
Producer Price Index (PPI)	Chỉ số giá sản xuất
Implicit GDP deflator	Hệ Số Khử Lạm Phát Tính Theo GDP

III. MONETARY AND FISCAL POLICIES

1. Monetary policy

Monetary policy: central bank influences the money supply, credit and interest rate to meet macroeconomic goals

Monetary policy's tools

Open market operations	Central Bank Lending Rates	Reserve requirements
The **buying /selling of government securities** to regulate the money supply that is on reserve in banks, thus available to loan out to businesses and consumers.	Lower interest rates encourage lending & spending by consumers and businesses, vice versa, higher rate leads to the consumption reduction; thus, price falls and decrease inflation.	**Amount that must be held in bank** rather than be lent to borrowers. Increase in the reserve requirement will reduce access to credit in the economy because bank lending is reduced.

Macroeconomic goals

Sustainable growth	Price stability	Employment

III. MONETARY AND FISCAL POLICIES

1. Monetary policy

Limitations of Monetary Policy

Time lags	It is estimated that interest rate changes take up to 18 months to have the full effect. This means **monetary policy** needs to **try and predict the state of the economy** for up to **18 months** ahead. Collecting and discussing data take time. A variety of **events might occur** in this period.
Liquidity Trap	Liquidity trap is a situation in **which interest rates are too low**, rendering monetary policy ineffective. In a liquidity trap, consumers choose to **keep their money** instead of purchasing Treasury securities. Bank **cannot raise capital**, business cannot borrow, leads to **low economy growth rate**
Risk associating with conducting quantitative easing	Quantitative easing is that the central bank **increases purchasing bonds** in order to increase the money supply in the economy, which leads to the **decrease in interest rate**. However, the central bank might take risk if they buy **risky securities** and cannot receive payment from borrowers.

III. MONETARY AND FISCAL POLICIES

2. Fiscal policy

Fiscal policy: government's use of spending and taxation to meet macroeconomic goals

Fiscal policy's tools

Tax	Government spending
For example, economy has slowed down. The government will cut tax. And due to tax cuts, families have more money and spend on goods and services, thus boosting the spending and aggregate demand.	Increased government spending is likely to cause a rise in aggregate demand (AD), and thus, raise the price level and the quantity traded in the economy. This can lead to higher growth in the short-term.

Macroeconomic goals

Sustainable growth	Price stability	Employment

III. MONETARY AND FISCAL POLICIES

2. Fiscal Policy

Limitations of Fiscal Policy

Time lags	A variety of **events have to occur** in the **interim period.** Policy-makers need **time for policy to realize** that a problem exists.
As with monetary policy, consumers and companies **may not respond** as expected to changes in fiscal policy.	**Unexpected responses by consumers and companies**
Unintended consequences	If the government raise spending in order to increase aggregate demand and GDP. ⇒ Aggregate demand ↑, employment ↑ ⇒ A tightening labour market and rising wages and prices. ⇒ The economy (GDP) grew as planned, but **inflation also increased.**

III. MONETARY AND FISCAL POLICIES

3. Comparision between Fiscal and Monetary Policy

	Fiscal Policy	Monetary Policy
Organization	Set by the Government	Set by Central Bank
Tools	Government spending and tax rates	Interest rate / money supply
Effect	Side effect on Government budget/ borrowing	Side effect on cost of borrowing and exchange rate
Political influence	Strong political dimension to change tax rates	Mostly independent from the political process

III. MONETARY AND FISCAL POLICIES

Vocabulary

Vocabulary	Meaning
Fiscal policy	Chính sách tài khóa
Monetary Policy	Chính sách tiền tệ
Central bank	Ngân hàng trung ương
Government	Chính phủ
Influence	Ảnh hưởng, tác động
Credit	Tín dụng
Price stability	Ổn định giá
Central Bank Lending Rates	Lãi suất cho vay của NHTW
Reserve requirements	Tỉ lệ dự trữ bắt buộc
Liabilities	Các khoản nợ
Liquidity trap	Bẫy thanh khoản
Quantitative easing	Nới lỏng định lượng

III. MONETARY AND FISCAL POLICIES

Vocabulary

Vocabulary	Meaning
Government securities	Chứng khoán chính phủ
Consumption	Sự tiêu thụ/ tiêu dùng
Lending	Cho vay
Borrowing	Đi vay
Government spending	Chi tiêu của chính phủ
Mortgage	Thế chấp
Time lags	Trễ thời gian
Unintended consequences	Hậu quả không lường
Aggregate supply	Tổng cung
Aggregate demand	Tổng cầu