

# NATIONAL INCOME ACCOUNTING

राष्ट्रीय आय

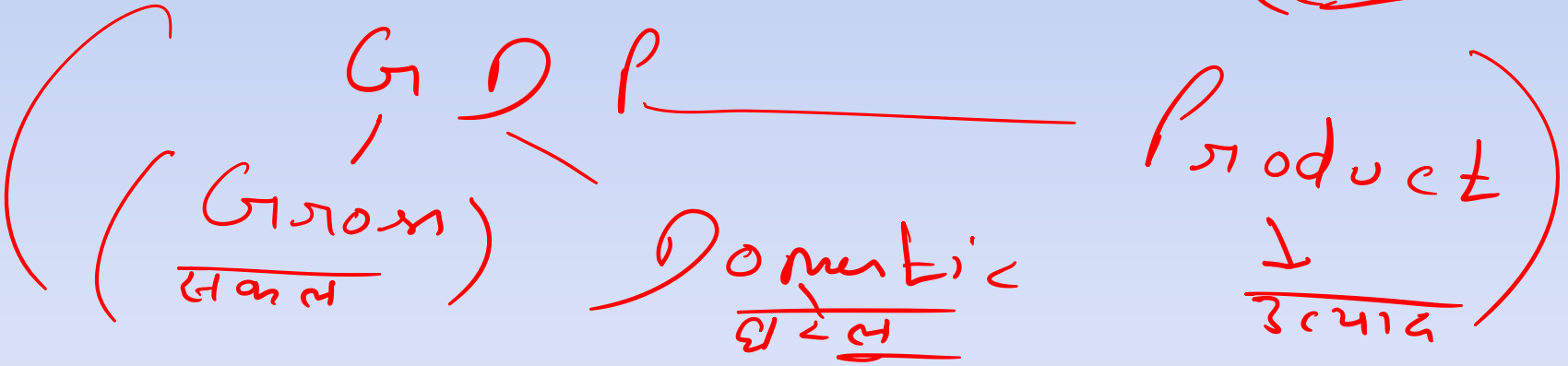
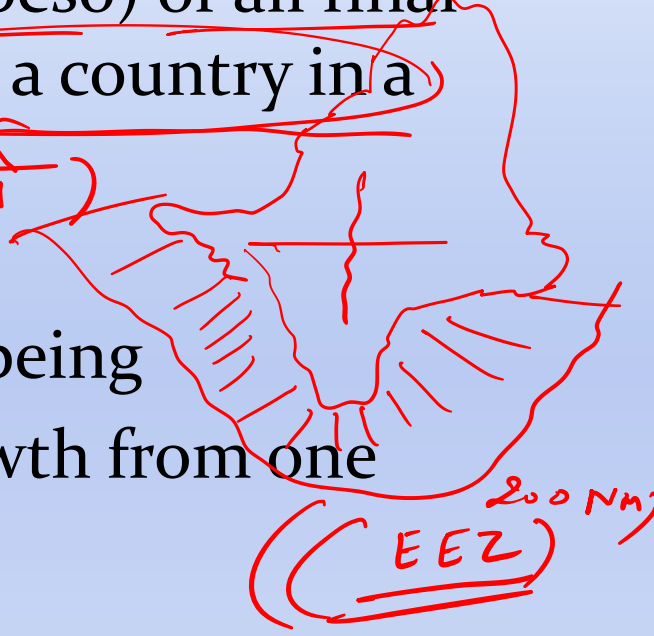
## GDP: An Economic Barometer

- What exactly is GDP?
- How do we use it to tell us whether our economy is in a recession or how rapidly our economy is expanding?
- And how do we compare economic well-being across countries?
- How do we take the effects of inflation out of GDP to compare economic well-being over time?

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# What is gross domestic product (GDP)?

- Currency value (such as Philippine peso) of all final goods and services produced within a country in a given period (1 April - 31 May)
- Total income of a nation
- Measure of nation's economic well-being
- Measure of a nation's economic growth from one period to the next.



# Gross Domestic Product



**GDP** or **gross domestic product** is the market value of all final goods and services produced within a country in a given time period.

This definition has four parts:

- Market value
- Final goods and services
- Produced within a country
- In a given time period

# Gross Domestic Product

## Market value

- GDP is a market value—goods and services are valued at their market prices.
- To add apples and oranges, computers and popcorn, we add the market values so we have a total value of output in pesos.

(₺)

# Gross Domestic Product

## Final goods and services

- GDP is the value of the final goods and services produced.
- A **final good** (or service) is an item bought by its final user during a specified time period.
- A final good contrasts with an intermediate good, which is an item that is produced by one firm, bought by another firm, and used as a component of a final good or service.
- Excluding intermediate goods and services avoids double counting.

# Let's Check Your Understanding

Which of the following are final goods or services, and which are intermediate goods or services?

1. A new automobile
2. An oil filter purchased in a new automobile
3. Banking services
4. Gasoline
5. A processor chip inside the tablet
6. A bread flour

# Gross Domestic Product

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## Produced within a country

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- GDP measures production within a country—domestic production.



## GDP versus GNP

**Gross Domestic Product** is the total market value of all final goods and services produced in a country in a given time period.

**Gross National Product** is the total market value of all final goods and services produced by the citizens of a country in a given time period.

GNP equals GDP plus net factor income received from or paid to other countries.

# Gross Domestic Product

## **In a given time period**

- GDP measures production during a specific time period, normally a year or a quarter of a year.

## What's included in GDP?

$$GDP = \underline{C} + \underline{I} + \underline{G} + (\underline{X} - \underline{M})$$

- Consumption expenditure
- Investment
- Government expenditure on goods and services
- Exports of goods and services
- Imports of goods and services

# What's included in GDP?

**Consumption expenditure** is the spending by households on consumption goods and services.

**Investment** is the purchase of new capital goods (tools, instruments, machines, and buildings) and additions to inventories.

**Government expenditure on goods and services** is expenditure by all levels government on goods and services.

**Net exports of goods and services** is the value of exports of goods and services minus the value of imports of goods and services.

# Consumption Expenditure

**Consumption expenditure** is the spending by households on consumption goods and services.

- Goods: groceries, clothes, gadgets
- Services: haircuts, oil changes

# What's included in GDP?

## **Investment** by businesses and households

- Fixed assets for production
- New homes
- Inventories

# What's included in GDP?

**Government expenditures** by local and national government

- Roads and bridges
- School buildings
- Other public services
- Excluding transfer payments

# What's included in GDP?

## **Net exports**

- the value of exports of goods and services minus the value of imports of goods and s



# What are not included in GDP?

- Intermediate goods
- Used goods or Second-hand Sales
- Underground production (black market)
- Financial transactions
- Household production and consumption
- Transfer payments

# What GDP does not tell us?

- Does not measure income distribution
- Does not measure non-monetary output or transactions (e.g., barter, household activities)
- Does not take into account desirable externalities, such as leisure or environment
- Does not measure social well-being
- Correlates to standard of living but is not a measure of standard of living

# Real and nominal GDP

When GDP is computed in the current year's prices, rising prices (inflation) can make it difficult to determine if a change in GDP from one year to the next is due to the country's production of more goods and services or to increases in the price level.

- **Nominal GDP:** GDP that is not adjusted for inflation. This reflects the current value of goods and services in current prices. Thus, it ignores the effect of inflation on the growth of GDP.
- **Real GDP:** measures the value of goods and services adjusted for change in the price level. It reflects the real change in output. This measure is called constant or adjusted GDP or constant money GDP.
- Nominal GDP is GDP at current price Real GDP is GDP adjusted for inflation.

# Calculation of Nominal GDP

Year	Quantity	Price	Nominal GDP
Good A	1,000	850	850,000
Good B	2,000	1,750	3,500,000
Good C	1,500	25,800	38,700,000
Good D	4,000	350	1,400,000
Good E	2,500	755	1,887,500
Good F	1,800	475	855,000
TOTAL			47,192,500

*Nominal GDP = Price x Output*

# Calculation of Real GDP

Year	Quantity (Aggregate Output)	Price	Nominal GDP	Price Index	Real GDP
2009	1,000	50	50,000	33	1,500
2010	1,000	100	100,000	67	1,500
2011	1,000	150	150,000	100	1,500
2012	1,000	200	200,000	133	1,500
2013	1,000	250	250,000	167	1,500

\*Base Year is 2011

$$Real\ GDP = \frac{Nominal\ GDP}{Price\ Index}$$

$$PI = \frac{Price\ in\ a\ given\ year}{Based\ year}$$

# GDP Deflator

**GDP deflator** (implicit price deflator for GDP) is a measure of the level of prices of all new, domestically produced, final goods and services in an economy.

It helps to adjust the Nominal GDP to a Real GDP figure

$$GDP\ Deflator = \frac{Nominal\ GDP}{Real\ GDP} \times 100$$

# GDP and the Circular Flow of Expenditure and Income

- GDP measures the value of production, which also equals total expenditure on final goods and total income.
- The equality of income and output shows the link between productivity and living standards.
- The circular flow diagram illustrates the equality of income, expenditure, and the value of production.

# Approaches in GDP Calculation

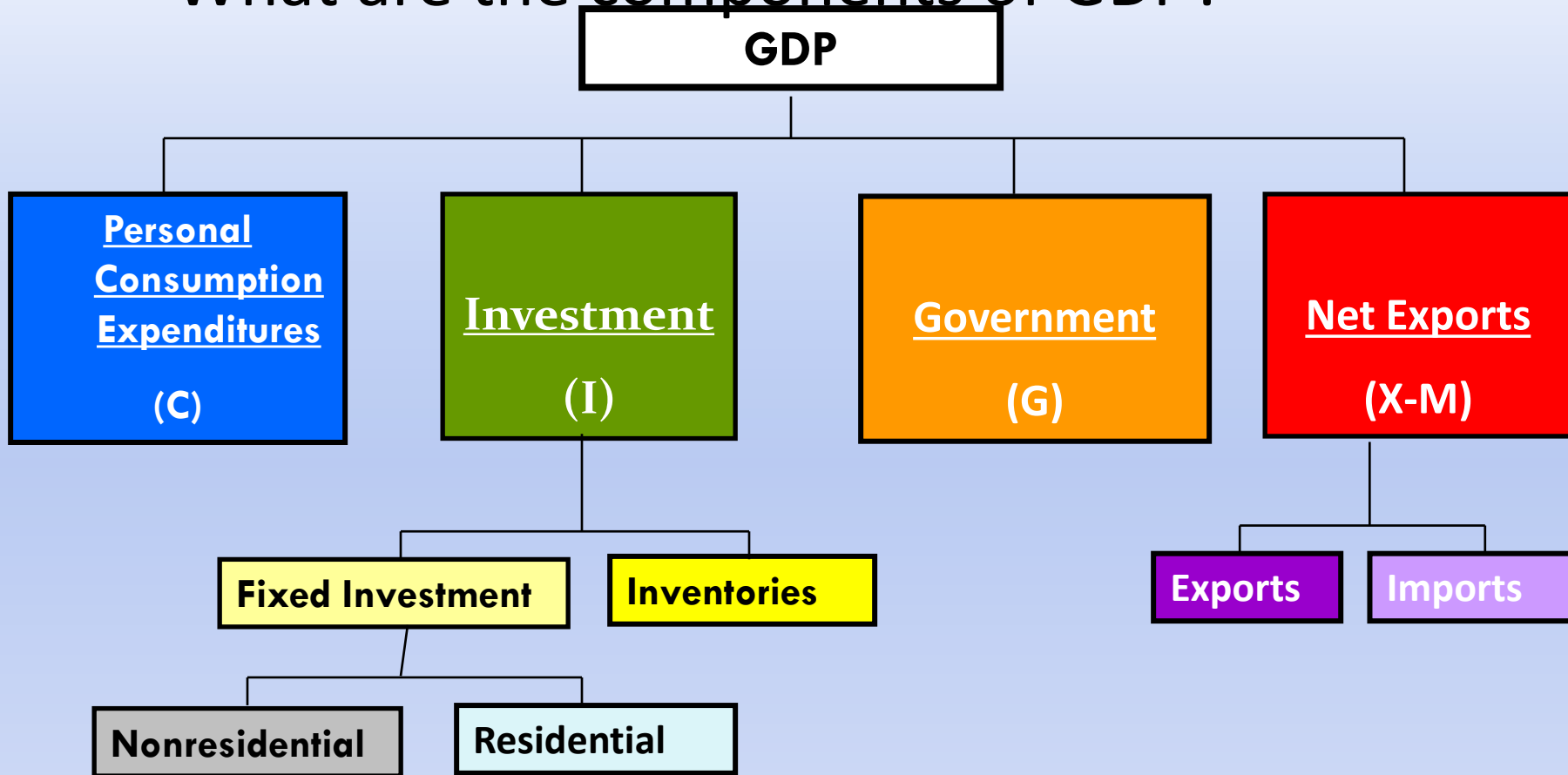
1. Expenditure Approach
2. Production Approach
3. Income Approach



# Expenditure Approach

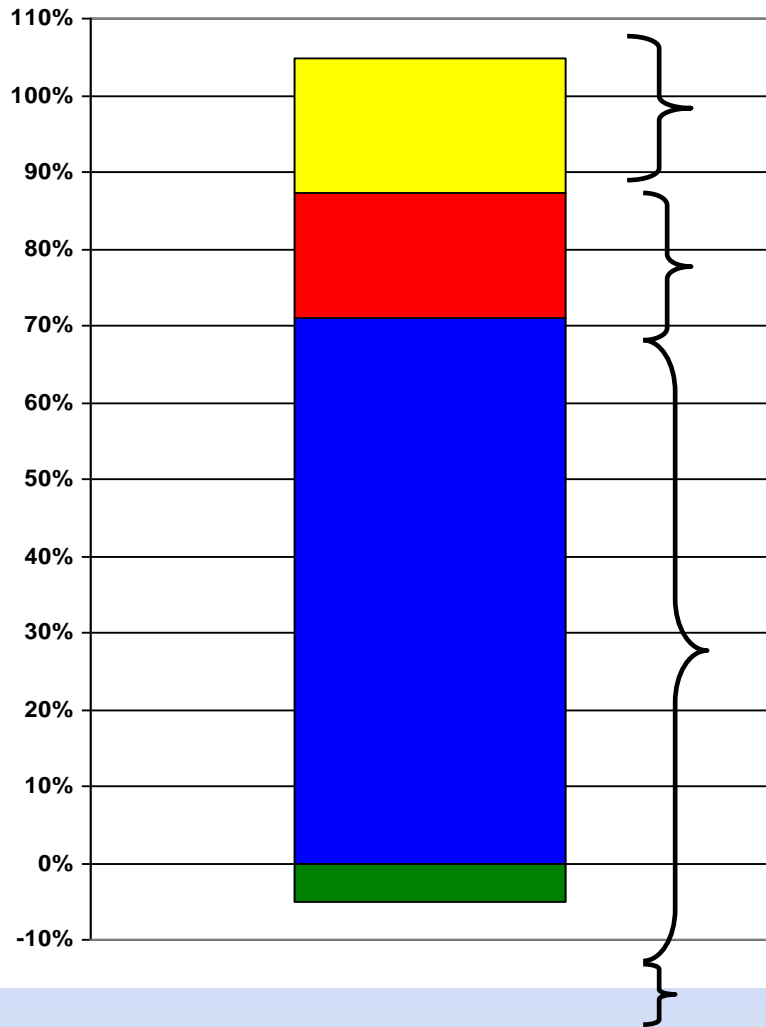
The **expenditure approach** adds all the expenditures of the end-users of the output produced in a given year. It divides GDP into four areas: households (consumption), businesses (investment), government, and foreigners (net exports).

# What are the components of GDP?



$$\text{GDP} = C + I + G + (X-M)$$

# How much of GDP is each component?



<u>Component</u>	<u>% of GDP</u>
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Government	19%
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Investment	16%
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Consumption (PCE)	70%
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Net Exports	-5%
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<b>GDP</b>	<b>100%</b>
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# Production Approach

The **production approach** looks at GDP from the standpoint of value added by each input in the production process.

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## Income Approach

The **income approach** divides GDP according to who receives the income from the spending flow. In addition to aggregate income, national income and personal income are also used as measures of income.

# Expenditure and Income Approach

<b>GDP</b>	<b>Amount (Billion Pesos)</b>
Corporate profits	305
Consumption of fixed capital or Depreciation	479
Gross private domestic investment	716
Personal taxes	565
Personal saving	120
Government expenditures	924
Imports	547
Net interest	337
Compensation of employees	2,628
Rental income	19
Exports	427
Personal consumption expenditure	2,966
Indirect business taxes	370
Contributions for social security	394
Transfer payments	543
Proprietor's income	328

Suppose the following are data for a given year from the annual report of NEDA. Calculate GDP using the expenditure approach and income approach

# Expenditure and Income Approach

## a. Expenditure Approach

$$\begin{aligned}GDP &= C + I + G + (X - M) \\ &= 2,966 + 716 + 924 + (427 - 547) \\ &= 4,486\end{aligned}$$

## a. Income Approach

$$\begin{aligned}GDP &= \text{compensation of employees} + \text{rents} + \text{profits} + \\ &\text{net interest} + \text{indirect taxes} + \text{depreciation} \\ &= 2,628 + 19 + 653 + 337 + 370 + 479 \\ &= 4486\end{aligned}$$

# National Income

<b>GDP</b>	<b>Amount (Billion Pesos)</b>
Corporate profits	305
Consumption of fixed capital or Depreciation	479
Gross private domestic investment	716
Personal taxes	565
Personal saving	120
Government expenditures	924
Imports	547
Net interest	337
Compensation of employees	2,029
Rental income	19
Exports	427
Personal consumption expenditure	2,966
Indirect business taxes	370
Contributions for social security	394
Transfer payments	543
Proprietor's income	328

Using the data in no. 8, compute the national income (NI) by making the required subtraction from GDP. Explain why NI might be a better measure of economic performance than GDP.



# National Income

$$***NI = GDP - Depreciation***$$

$$*NI = 4,486 - 479*$$

$$*NI = 4,007*$$

# Personal Income and Disposable Income

<b>GDP</b>	<b>Amount (Billion Pesos)</b>
Corporate profits	305
Consumption of fixed capital or Depreciation	479
Gross private domestic investment	716
Personal taxes	565
Personal saving	120
Government expenditures	924
Imports	547
Net interest	337
Compensation of employees	2,029
Rental income	19
Exports	427
Personal consumption expenditure	2,966
Indirect business taxes	370
Contributions for social security	394
Transfer payments	543
Proprietor's income	328

Again using the data in no. 8, derive personal income (PI) from national income (NI). Then make the necessary adjustments to PI to obtain disposable income (DI).

# Personal Income and Disposable Income

## a. Personal income (PI)

*Personal Income (PI) = NI – Profits –  
Contributions for Social Security + Transfer Payments*

$$PI = 4,007 - 633 - 394 + 543$$

$$PI = 3,523$$

## a. Disposable income (DI)

*DI = PI – Personal taxes*

$$DI = 3,523 - 565$$

$$DI = 2,958$$