



National Income Accounting

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Introduction to Economy of Ghana

- Measuring the Economy - National Income Accounting
- Structure of the Economy and Sectoral Outlook
- Economic History of Ghana: pre-independence, 1960-1983, ERP I & II, Current economic issues

Introduction to Economy of Ghana

- Development Financing
- Economic Planning
- Natural Resource Exploitation and Management
- Seminar

National Income Accounting

- GDP: Total market value of all final goods and services produced in the economy in one year
- OR
- GDP: A measure of all currently produced final goods and services evaluated at market prices
- Total Market Value
 - GDP is a measurement of all goods produced in the country so the market value or market prices helps to add different types of goods (apples plus oranges plus buildings) using a common measure - money

GDP

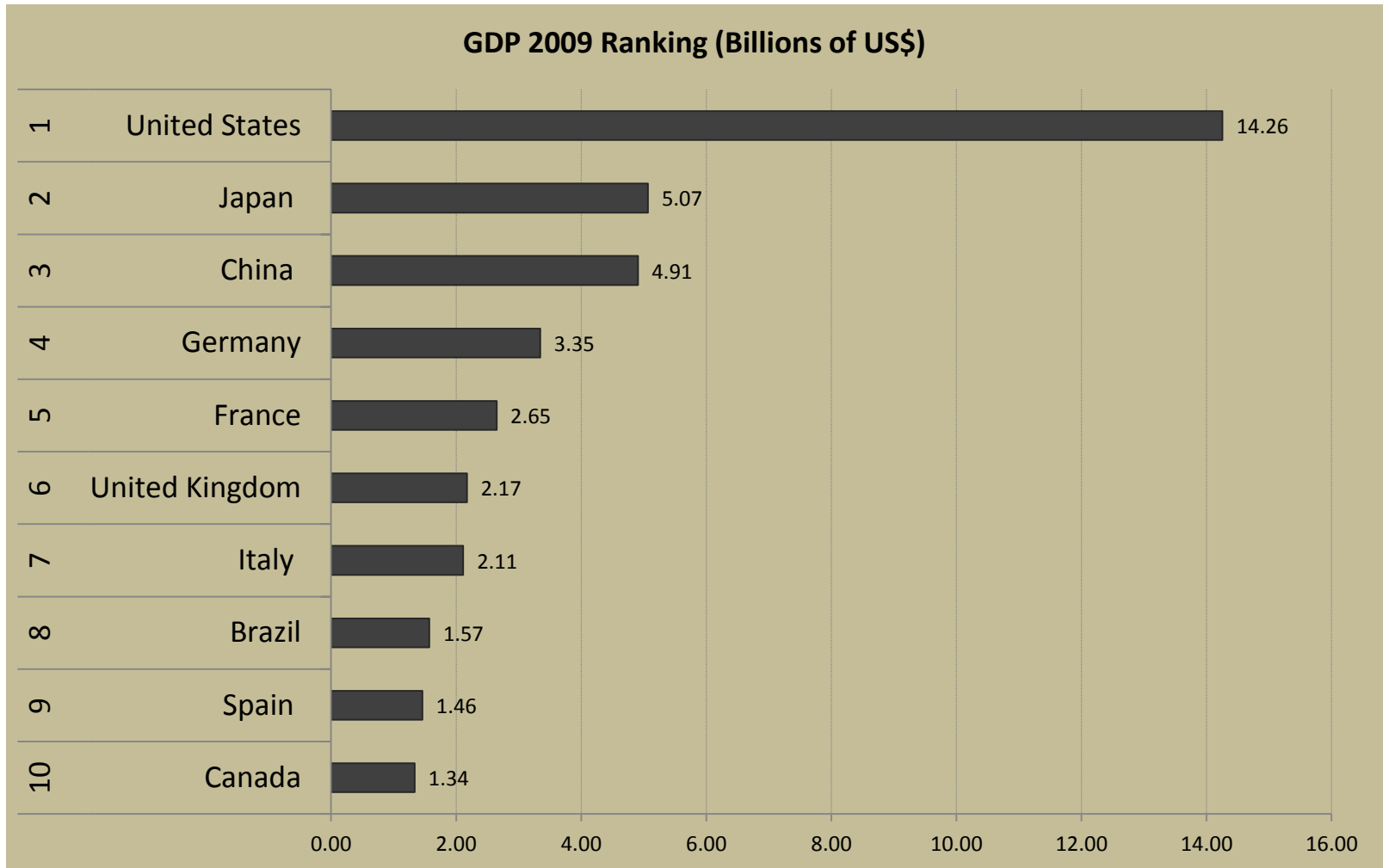
- **Final goods and services produced**
 - Only final goods and services are used to avoid double counting
 - Intermediate goods or goods used in the production of other goods are not included in the GDP measure
 - To avoid double counting, another method – value added method – is used. (Value added is the increase in the value of goods as a result of the production process)

GDP

- **Produced in one year**
 - GDP is what is produced in one year. Therefore 2009 GDP includes real estate built and sold in 2009 and excludes market transactions that involve exchanges of previously used houses
 - Exchanges of financial assets such as shares do not directly involve current production of goods and therefore not included in GDP

Importance of the GDP Measure

- An indication of the growth in the economy. National income accounts let us assess how the economy is doing.
- The output/product approach gives a detailed account of the performance of various sectors which is important for policy makers
- Helps policy makers to identify areas that need policy intervention and the type of intervention
- When converted to per capita GDP, useful in comparing economic growth in different countries



Source: World Development Indicators database, World Bank

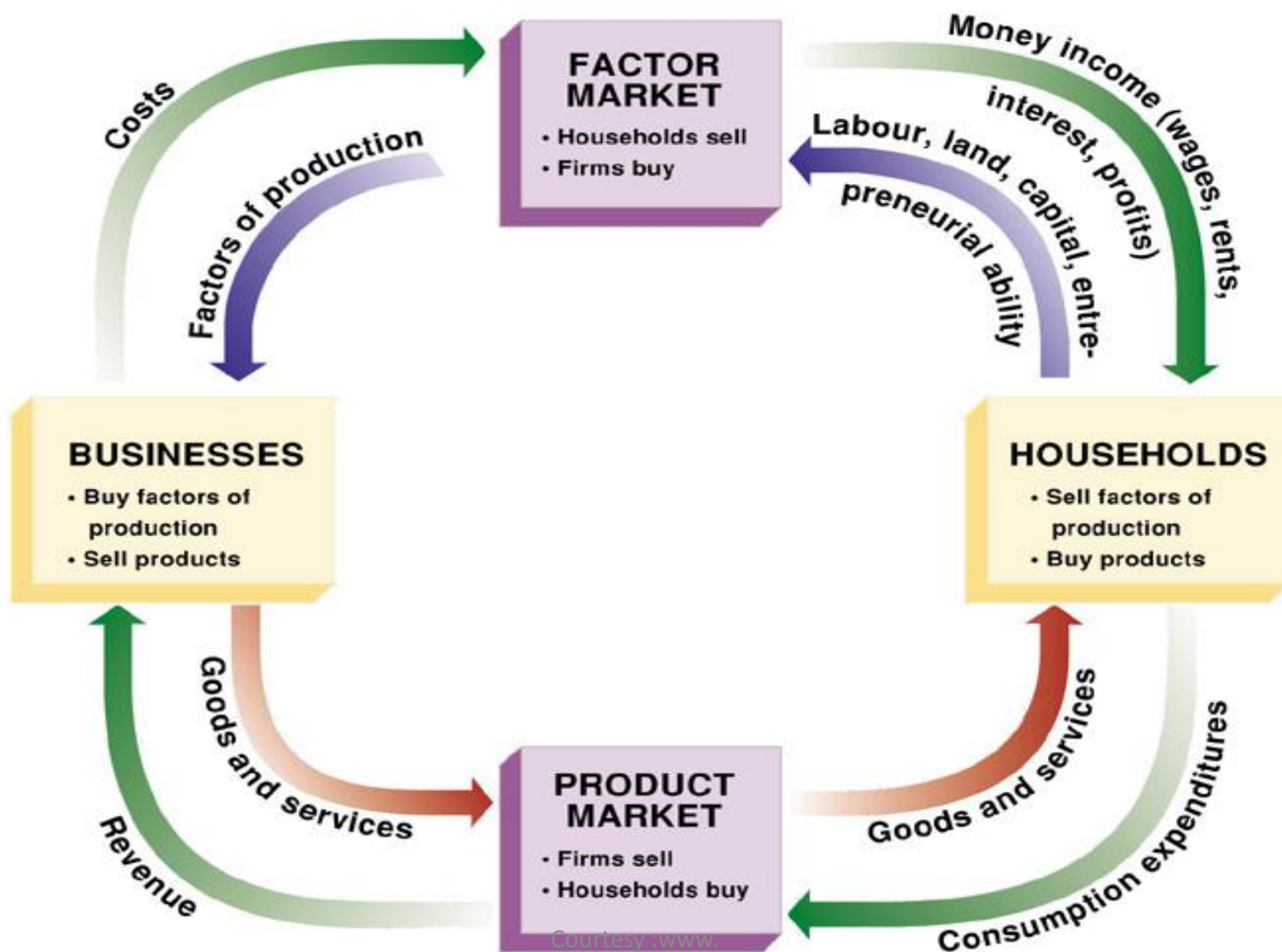
Measuring GDP

- Four main agents affect the economy.
 - Households
 - Firms
 - Government
 - Rest of the World
- Together the decisions of these agents determine the economy's total spending, income and output

Flow of Income between households & Firms

Households	Firms
Supply factor services to firms	Use factors to make output
Receive factor incomes from firms	Rent factor services from households
Buy output of firms	Sell output to households

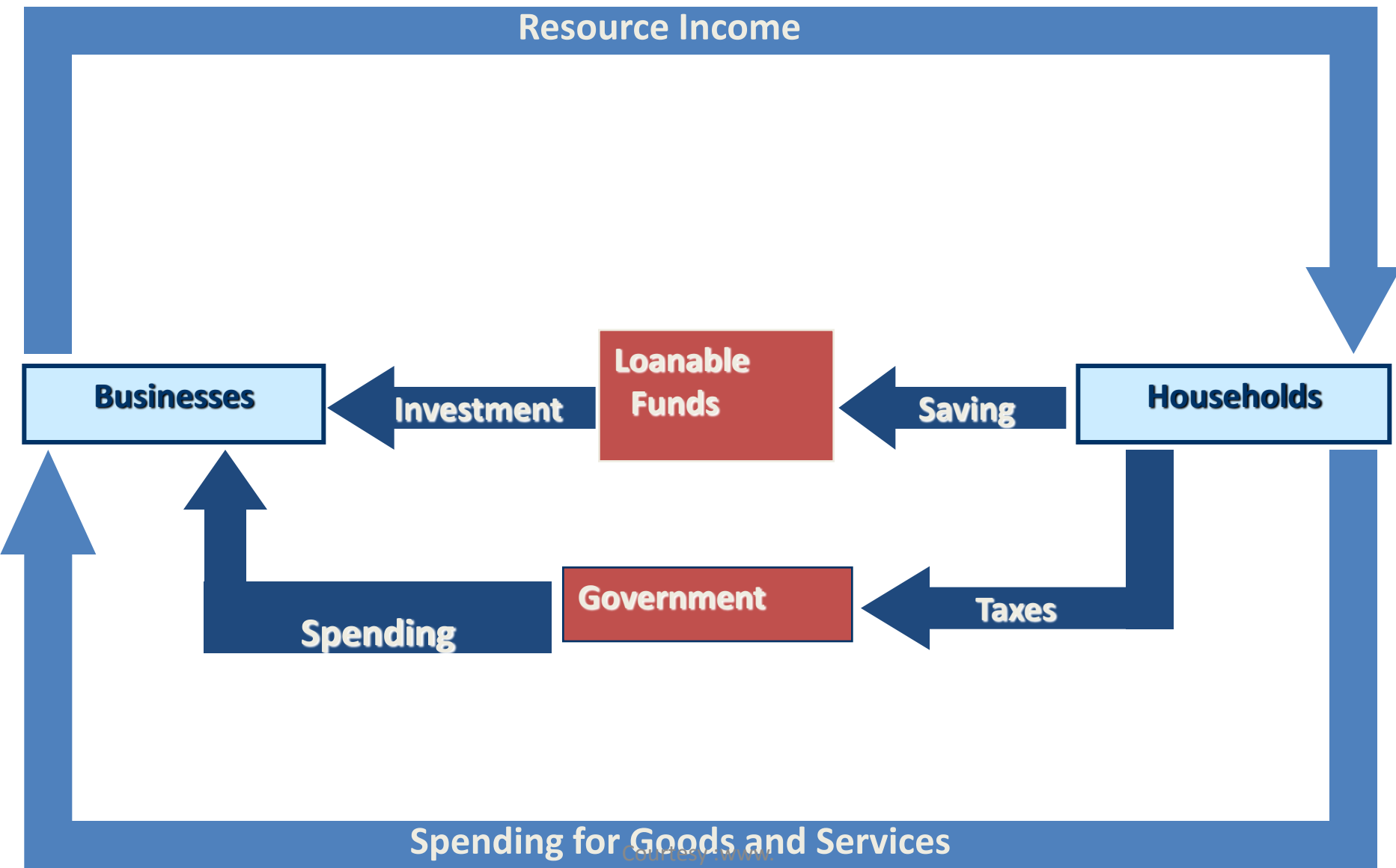
Circular Flow of Income Between Firms and Households



Leakages and Injections

- *Leakages* in the circular flow
 - savings
 - taxes
- *Injections* in the circular flow
 - investment
 - government spending

Flow with Leakages/Injections



Approaches to measuring GDP

- The circular flow of income suggest 3 ways to measure economic activity:
 - The value of goods and service produced – Output Approach
 - The level of factor earnings, representing the value of factor services supplied - Income Approach
 - The value of spending on goods and services – Expenditure Approach

Income Approach

- The first way to calculate GDP is by adding up all INCOME – outer flow in the circular flow diagram is the income received when resources are sold to businesses
- Four types of resources:
 - Land
 - Labour
 - Capital
 - Entrepreneurial ability

Income Approach

- Each of these resource types receives what economists call INCOME when they are sold:
 - labor receives wages
 - land receives rent
 - capital receives interest
 - entrepreneurial ability receives profits
- So we can add up:
Wages + Rent + Interest + Profits
- Because GDP is output at market prices, we add indirect taxes to the above measure. The income approach will now give the same total as the expenditure and output approaches

Income Approach

- However when a foreign owned company earns profits in Ghana some of it will be taken back to their home country to be saved or spent by households
- Hence when there is a net flow of property income between Ghana and other countries, the output and expenditure approach measures of GDP will no longer equal the factor incomes earned by Ghanaian citizens
- Economists use the term Gross National Income (GNI) for total factor earning earned by domestic citizens regardless of the country in which their factor services were supplied.

Expenditure Approach

$$\text{GDP} = C + I_g + G + X - M$$

- Consumption (C) by private individuals (households) can be categorised into:
 - Consumption on durable goods (lasting 3 years or more),
 - Consumption on nondurable goods; and
 - Consumption on consumer services.
- (I_g)- Gross private domestic investment (I) has 3 subcomponents:
 - Business fixed investment

Expenditure Approach

- Construction investment
- Inventory investment
- Gross investment vrs net investment
 - Gross investment is ALL NEW INVESTMENT and includes the identified 3 items
 - Net investment includes only the CHANGES to the nation's capital stock.
- Net investment = Gross Investment - depreciation

Expenditure Approach

- Government Purchase (G)
 - Current year's outputs bought by government
 - Excludes transfer payments and debt interest payment as these do not represent a demand for currently produced goods and services
- Exports
 - Currently produced goods sold to foreign buyers
- Imports
 - Purchases by domestic buyers of goods and services produced abroad

Output Approach

- GDP by product/output approach is measured as in the example below
- Assume that the economy in the example produces only 3 agricultural products and nothing else
- GDP in the first year of ₺1,000
- In the second year it is ₺1,115
- But the increase is only partially due to an increase in output. Part of it is due to the rise in prices for fish and plantain
- To get a measure that is due to only the increase in output, the output in year 2 can be multiplied by the prices in year 1 to give us ₺1,020.
 - This is the method used to obtain Real GDP

Output Approach II

PRODUCTION AND PRICES						
	YEAR 1			YEAR 2		
GOODS	OUTPUT (KG)	PRICES (¢/KG)	VALUE ¢	OUTPUT	PRICES (¢/KG)	VALUE ¢
FISH	10	45	450	10	50	500
MAIZE	10	25	250	12	25	300
PLANTAIN	10	30	300	9	35	315
Nominal GDP			1,000			1,115
Real GDP						1,020

Notice that for agricultural produce we are not deducting any inputs from the output

Nominal GDP and Real GDP

- Nominal GDP is the market value of all final goods and services produced in a year. It is calculated using the current prices prevailing when output is produced.
- Nominal GDP = SUM(this year's prices x this year's quantities)
- = $\sum(P \text{ this year} \times Q \text{ this year})$
- Real GDP is a measure of how much was actually produced after discounting for the price effect
- Real GDP = SUM(base year prices x this year's quantities)
- = $\sum(P \text{ base year} \times Q \text{ this year})$

Nominal GDP and Real GDP

- Alternatively, Real GDP can be calculated with the use of a price index
- $\text{Real GDP} = (\text{Nominal GDP} / \text{Price Index}) \times 100$
- A price index is a measure of the price of a specified collection of goods and services, called a 'market basket', in a given year as compared to the price of an identical collection of goods and services in a reference year (base year)
 - $\text{Price Index}_{2010} = (\text{price of market basket in } 2010 / \text{price of same market basket in base year}) \times 100$

GDP Deflator

- A measure of inflation derived by the following formula:

$$100 \times \text{Nominal GDP} / \text{Real GDP}$$

- From the example, the GDP deflator will be:
- $100 \times 1,115 / 1,020 = 109.3$
- This implies that the general price level rose by 9.3% from year 1 to year 2