

# National Income Accounting



## KBW Large Bank Index (Executive Compensation)

			CEO Compensation	
Bank Name	Symbol	% Wt	Total \$ Comp	Incentive % Total
Wells Fargo Company	WFC	9.20	16,194,279	72.0%
J.P. Morgan Chase	JPM	9.09	20,713,613	93.3%
Bank of America	BAC	8.27	23,377,019	78.8%
Citigroup	C	7.09	31,612,143	96.1%
Wachovia	WB	5.88	6,850,876	77.8%
PNC Financial Services	PNC	4.61	22,559,679	76.1%
BB&T	BBT	4.50	5,230,839	50.1%
US Bancorp	USB	4.47	2,332,744	36.8%
Northern Trust	NTRS	4.23	13,256,717	79.7%
Capital One Financial	COF	4.14	73,182,560	99.9%
State Street	STT	4.00	27,988,591	69.6%
Bank of New York Mellon	BK	3.90	18,334,887	62.2%
SunTrust Banks	STI	3.81	2,068,043	38.1%
M & T Bank	MTB	3.80	10,159,716	91.4%
Regions Financial	RF	3.69	4,630,046	27.5%
KeyCorp	KEY	3.24	7,844,982	39.7%
Fifth Third Bancorp	FITB	2.93	4,259,530	76.0%
Zions Bancorporation	ZION	2.54	3,705,189	74.1%
Comerica	CMA	2.44	8,384,985	68.0%
People's United Financial	PBCT	2.30	5,082,234	61.5%
Washington Mutual	WM	1.93	4,866,377	71.3%
Marshall & Ilsley	MI	1.63	1,345,982	23.5%
National City	NCC	1.11	1,441,853	11.9%
Huntington Bancshares	HBAN	1.07	1,088,129	0.0%
<b>Stocks</b>		<b>99.87</b>		

Source: The Corporate Library [www.TheCorporateLibrary.com](http://www.TheCorporateLibrary.com) (June 2008)

# National Income Accounting

- **Microeconomics** is the study of how individual households and firms make decisions and how they interact with one another in markets.
- **Macroeconomics** is the study of the economy as a whole. Its goal is to explain the economic changes that affect many households, firms, and markets at once.
- Macroeconomics answers questions like the following:
  - Why is average income high in some countries and low in others?
  - Why do prices rise rapidly in some time while it is stable in others?
  - Why do production and employment expand and/or contract in others?
- When judging whether the economy is doing well or poorly, it is natural to look at the total income that everyone in the economy is earning.

# National Income Accounting

## What is National Income (NI)?

National income measures the total value of final goods and services produced within the economy over a period of time.

It can be calculated in **three main ways**:

- The sum of factor incomes earned in production;
- Aggregate demand for goods and services;
- The sum of value added from each productive sector of the economy.

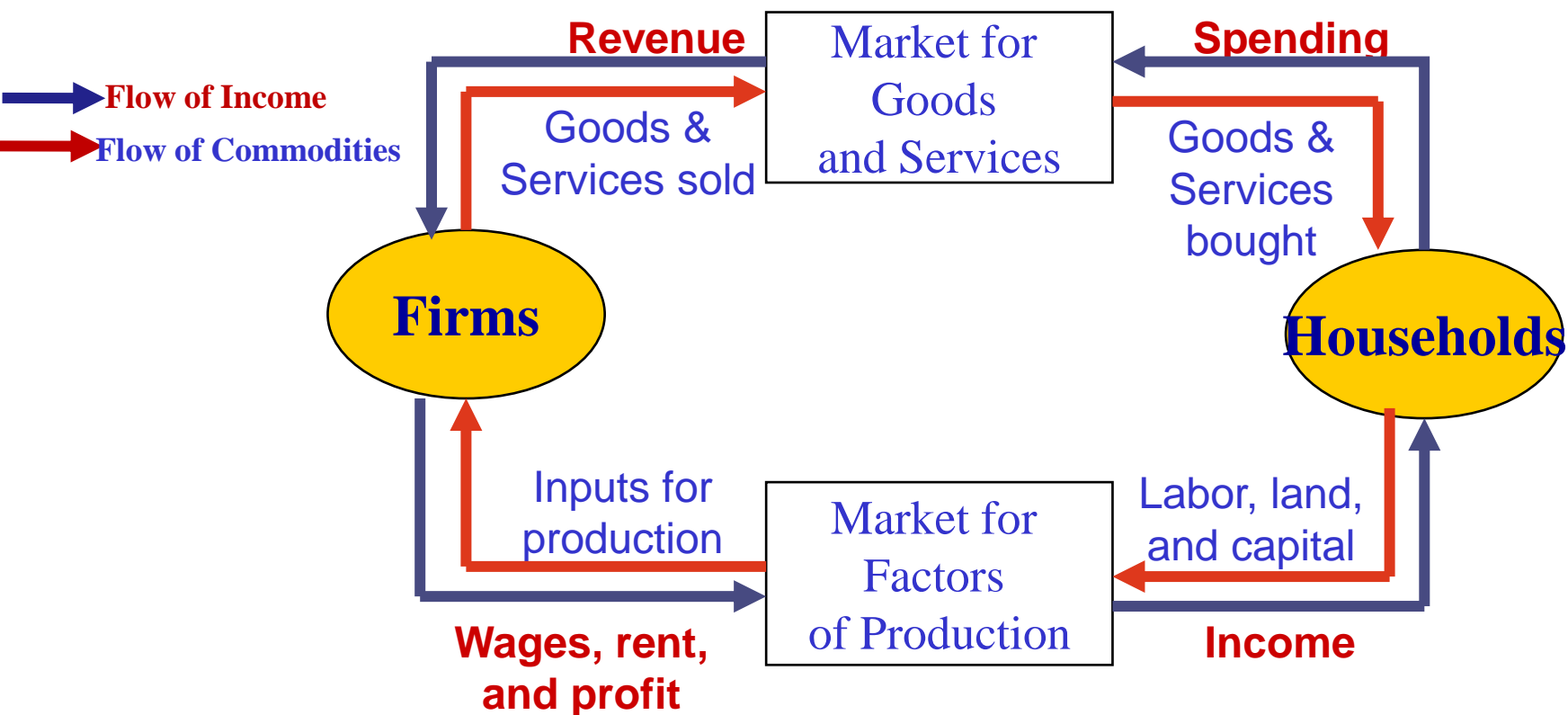
## Why is NI important?

Measuring the level and rate of growth of national income (Y) is important to economists when they are considering:

- Know about **economic growth** and business cycle;
- Changes to average **living standards** of the population;
- Looking at the **distribution of national income**.

# National Income Accounting

## The Circular-Flow Diagram



For an economy as a whole, **income must equal expenditure** because:

- Every transaction has a buyer and a seller.
- Spending by some buyer is a income for some seller.

**National Output = National Expenditure = National Income**

# National Income Accounting

□ **National Income Accounting** refers to the measurement of aggregate economic activity, particularly national income and its components.

➤ Accounts showing the levels of total income and spending in Bangladesh economy;

➤ Allow us to evaluate the performance of the economy of Bangladesh and to compare it with other nations' economies;

➤ Help government policymakers find ways to improve the economy.

# National Income Accounting

**Definition of GDP:** Gross domestic product (GDP) is a measure of the income and expenditures of an economy. It is the total market value of all final goods and services produced within a country in a given period of time.

## The Measurement of GDP:

- Output is valued at market prices.
- It records only the value of final goods, not intermediate goods (the value is counted only once).
- It includes both tangible goods (food, clothing, cars) and intangible services (haircuts, housecleaning, doctor visits).
- It includes goods and services currently produced, not transactions involving goods produced in the past.
- It measures the value of production within the geographic confines of a country.

# National Income Accounting

## ❑ GDP Measurement Problems

- *Non-Market Activities* - Goods and services produced that are not sold in a market
- *Unreported Income* - Market activities not reported to tax or census authorities

## ❑ GDP per capita

- Total GDP divided by total population; average GDP
- GDP per capita is used as a measure of a country's standard of living
- Measures of per capita GDP tell us nothing about how GDP is actually distributed or used



# National Income Accounting

## □ GDP Measurement Approach

- A. Expenditure approach
- B. Output approach
- C. Income approach

## A. Expenditure Approach

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

- C = Private consumption expenditure
- I = Investment Expenditure
- G = Government Consumption Expenditure
- X = Value of Exports
- M = Value of Imports

### Key Issues:

- Expenditure on final goods and services
- Expenditure on imports needed to be deducted from the calculation

# National Income Accounting

## Calculation of Private Consumption (C)

1. Second Hand Goods

Ans: Exclude. There is no current production

2. Commission spent on buying a second-hand bag

Ans: Include. Current production

3. Expenditure on illegal goods/services

Ans: Exclude. No official record

# National Income Accounting

## Calculation of Investment Expenditure (I)

$I = \text{Gross Domestic Fixed Capital Formation} + \text{Change in Stock (Inventories)}$

**Gross Domestic Fixed Capital Formation:** Expenditure on purchasing land, factories, flats, office, machinery, commission, legal charges.

Thus,

$I = \text{Net domestic fixed capital formation} + \text{depreciation} + \text{Change in stock}$

### Example

An investor spent Tk. 1 million to buy 10 new machines and spent Tk.20,000 to repair the old machines.

= Net domestic fixed capital formation (Tk 1 million) + depreciation (Tk.20, 000) + repair (Tk.20,000)

### Exclusion of Investment expenditure:

Investors spend on intermediate goods and services, e.g. raw materials, electricity charges, water charges

➤ Excluded because the value of the final goods already include the value of the intermediate goods and services.

# National Income Accounting

## Calculation of Investment Expenditure (I)

### Example 1:

Change in Stock (Inventories):

Output Value of GM Plastic = Tk.10,000

Sales = Tk.8,000

Stock = +Tk.2,000

$$\text{GDP} = C + I + G + (X - M) = +\$8\ 000 + \$2\ 000 + 0 + (0-0)$$

### Example 2:

Change in stock:

Output value of U2 clothing = Tk.50,000

Sales = Tk.70,000

Stock = - Tk.20,000

$$\text{GDP} = C + I + G + (X - M) = +\$70\ 000 + (-\$20\ 000) + 0 + (0-0)$$

# National Income Accounting

## Government Expenditure (G)

### Items to be Included:

Housing allowance of civil servants  
Medical allowance of civil servants  
Expenditure on building new airport

### Items to be Excluded:

Transfer Payment/Public Assistance

## Net Exports (X-M)

$X - M =$  Domestic Exports of goods

+ Re-exports of goods

+ **Exports of Services**

- Imports of Goods

- Imports of Services

• Count the **VALUES** of import and export

### **Exports of services**

✓ spending of foreign tourists

✓ transportation services

✓ insurance / banking services

✓ medical services

✓ retail services (souvenirs)

✓ hotel accommodation services

# National Income Accounting

## Why to deduct import of goods and services? Why exclude it?

- Walton BD Ltd displayed a new LED TV to sell in Dhaka market with a offer price of Tk. 1,60, 000
- Walton BD Ltd used some imported material to enhance the aesthetics of LED TV which is valued at Tk. 20,000

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

$$= 160,000 + 0 + 0 + (0 - 20,000)$$

- It reflects the production by Walton BD Ltd.

## Expenditure on shares and stock

Ms Sagarika bought 10,000 Shares of Lanka Bangla Finance at the price of Tk 100.00 per Share. The commission fee given to the share dealer is Tk 5,000 and the stamp duty is Tk.1000. Two weeks later, Ms Sagarika decided to sell it at the price of Tk. 120.00.

How much will be included in Gross Domestic Product?

# National Income Accounting

## B. Output Approach

⇒ Production (Valued-added) approach

- Measures the total market value of all final goods and services
- It is difficult to distinguish between intermediate goods and final goods.
- To avoid double counting, valued-added method is used.

**GDP= sum of value-added**

### Example

1. Farmers' value-added = Tk.20 (Wheat) – 0 (Cost) = Tk.20
2. Flour-making factory = Tk.35 (Flour) - Tk.20 (Wheat) = Tk.15
3. Bakery Shop = Tk.50 (Bread) - Tk.35 (Flour) = Tk.25

## C. Income approach

Measure the sum of income for the factors of production.

The rewards to their production of goods and provision of services.

### Income Included or Excluded?

- Scholarships to students
- Commission received by stock brokers
- Insurance compensation to injured workers
- Gift cheque to a bride



# National Income Accounting

## GDP at factor cost

In theory, no government intervention.

Let's take example that local production of cigarettes Tk. 80

So, here Market value = factor income = total cost = total value-added = Tk.80

But if there is indirect tax or subsidies, Market value  $\neq$  total value-added

### Example 1: Cigarettes

Market price of cigarettes = Tk. 80

Indirect business tax = Tk. 4

GDP at market price = Tk. 84

GDP at factor cost = Tk 84 - 4  
= Tk. 80

So, total value-added is Tk.80.00

### Example 2 : Education in university

Subsidy = Tk.20

School fee = Tk.120

GDP at market price = Tk.120

GDP at factor cost =Tk (120+20) = Tk.140  
So, total value-added in university = Tk.140

**GDP at factor cost (total value-added)**

= GDP at market price – indirect business tax (IBT) + Subsidies (S)

# National Income Accounting

## Three formula:

- GDP at market price =  $C+I+G+(X-M)$
- GDP at factor cost = sum of value added
- GDP at factor cost = wage + rent + interest + gross profits + depreciation
- GDP at factor cost + indirect business taxes – subsidies = GDP at market price

# National Income Accounting

## Gross National Product (GNP)

- It measures the total income earned by residents of an economy from engaging in various economic activities, irrespective of whether the economic activities are carried out within the economic territory or outside, in a specified period.
  - Income earned involved in economic activities (production) and
  - Income earned by residents (individuals / organizations) and
  - The economic activities are carried out within or outside the economic territory and
  - In a current year

### From GDP to GNP:

- $GNP = GDP + \text{Income earned by residents outside the economic territory} - \text{Income earned by non-residents within the economic territory}.$
- $GNP = GDP + \text{Net Factor Income from abroad (NIA)}$
- $NIA = \text{Net External factor income flows}$

# National Income Accounting

## GDP Versus GNP

- **Gross National Product (GNP):** Output produced by a nation's factors of production no matter where it takes place
- **GDP** is geographically focused, including only output produced within a nation's borders regardless of whose factors are used.

## Under what situation when GDP is greater than GNP?

- Income earned by non-residents locally is greater than income earned by residents abroad
- Net Income from abroad is negative

# National Income Accounting

- If the money GDP growth rate is greater than the inflation rate, It implies that the output increases in the current year. Then the real GDP increases in comparison.
- The growth rate can be positive and negative. If the growth rate is negative, it implies that the new one is less than the old one.

- **LDC= GDP>GNP Why?**

They have few companies abroad that are repatriating income.

- **NNP = GNP-Depreciation**

## GDP Real vs. Nominal

- Nominal = face value
- Real = adjusted for inflation
- $GDP_r = GDP_{nom}/CPI \times 100$

# National Income Accounting

## ❑ CPI

Base Line= 100

CPI of 106 = 6% increase in prices

## ❑ GDP Deflator

CPI: only consumer goods

GDP Deflator: All goods in GDP

$$\text{GDP}_{\text{real}} = \text{GDP}_{\text{nom}} / \text{Deflator} \times 100$$

## ❑ Real Income per capita: adjusted for inflation

## ❑ International Comparisons of GDP

International Comparisons are difficult for a number of reasons:

1. Different countries use different national income accounting systems
2. International exchange rates into dollars fluctuate
3. Data from other countries may be unreliable

# National Income Accounting

## GDP and Economic Well-Being:

Higher GDP per person indicates a higher standard of living.

GDP is not a perfect measure of the happiness or quality of life, however.

Some things that contribute to well-being are not included in GDP.

- The value of leisure.
- The value of a clean environment.
- The value of almost all activity that takes place outside of markets, such as the value of the time parents spend with their children and the value of volunteer work.

# National Income Accounting

Figure 10.3: Canada's Gross Domestic Product (1993)

Income Approach (\$ billions)		Expenditure Approach (\$ billions)	
Wages and salaries	402.5	Personal consumption (C)	432.9
Corporate profits	38.2	Gross investment (I)	130.2
Interest income	50.7	Government purchases (G)	150.8
Proprietors' incomes and rents	43.0	Net exports (X - M)	-0.8
Indirect taxes	89.4	Statistical discrepancy	-2.4
Depreciation	84.5		
Statistical discrepancy	2.4		
<b>Gross Domestic Product</b>	<b>710.7</b>	<b>Gross Domestic Product</b>	<b>710.7</b>

With the income approach, GDP is the sum of incomes and balancing items, as shown on the left. With the expenditure approach, GDP is the sum of expenditures, as shown on the right. Both totals are reconciled with an equal amount for statistical discrepancy.

SOURCE: Adapted from Statistics Canada, *National Income and Expenditure Accounts, Quarterly Estimates, Fourth Quarter 1993* (March 1994), cat. no. 13-001, vol. 41, no. 4, pp. 3, 5. Reproduced by authority of the Minister of Industry, 1994.



# National Income Accounting

Figure 10.10: Deriving Other Income Measures (1993)

(\$ billions)	
Gross Domestic Product (GDP)	710.7
Deduct: Indirect taxes	(-)89.4
Depreciation	(-)84.5
Statistical discrepancy	(-)2.4
Net Domestic Income (NDI)	534.4
Add: Government transfer payments	112.8
Other payments to persons	72.7
Deduct: Earnings not paid out to persons	(-)59.8
Net investment income to foreigners	(-)24.7
Personal Income (PI)	635.4
Deduct: Personal taxes and other personal transfers to government	(-)145.6
Disposable Income (DI)	489.8

Net domestic income is less than GDP because some payments included in GDP do not represent resource earnings. Personal income is greater than net domestic income because amounts received by households exceed amounts earned. Finally, disposable income is less than personal income because of the effect of personal taxes.

SOURCE: Adapted from Statistics Canada, *National Income and Expenditure Accounts, Quarterly Estimates, Fourth Quarter 1993* (March 1994), cat. no. 13-001, vol. 4, no. 4, pp. 9, 11, 13, 19, 31. Reproduced by authority of the Minister of Industry 1994.

# National Income Accounting

## The Flow of Income, 2008

Income Flow	Amount (in millions)
<b>Gross domestic product (GDP)</b>	Tk.14,265
Less depreciation	(1,832)
<b>Net domestic product (NDP)</b>	12,433
Plus net foreign factor income	133
Less statistical discrepancy	(136)
<b>National income (NI)</b>	12,430
Less indirect business taxes	(983)
Less corporate profits	(1,477)
Less interest and misc payments	(778)
Less Social Security taxes	(996)
Plus transfer payments	1,869
Plus capital income	2,038
<b>Personal income (PI)</b>	12,103
Less personal taxes	(1,461)
<b>Disposable income (DI)</b>	10,642

# National Income Accounting

## The Equivalence of Expenditure and Income (In millions of BDT)

<b>Expenditure</b>		<b>Income</b>	
<b>C: Consumer goods and services</b>	<b>Tk.10,057</b>	<b>Wages and salaries</b>	<b>Tk.8,062</b>
<b>I: Investment in plant, equipment, and inventory</b>	<b>1,994</b>	<b>Corporate profits</b>	<b>1,092</b>
<b>G: Government goods and services</b>	<b>2,882</b>	<b>Proprietors' income</b>	<b>1,072</b>
<b>X: Exports</b>	<b>1,859</b>	<b>Rents</b>	<b>64</b>
<b>M: Imports</b>	<b>(2,529)</b>	<b>Interest</b>	<b>929</b>
		<b>Taxes on output and imports</b>	<b>1,034</b>
		<b>Depreciation</b>	<b>1,832</b>
		<b>Miscellaneous</b>	<b>46</b>
		<b>Statistical discrepancy</b>	<b>136</b>
<b>GDP: Total value of output</b>	<b>Tk.14,265</b>	<b>= Total value of income</b>	<b>Tk.14,265</b>