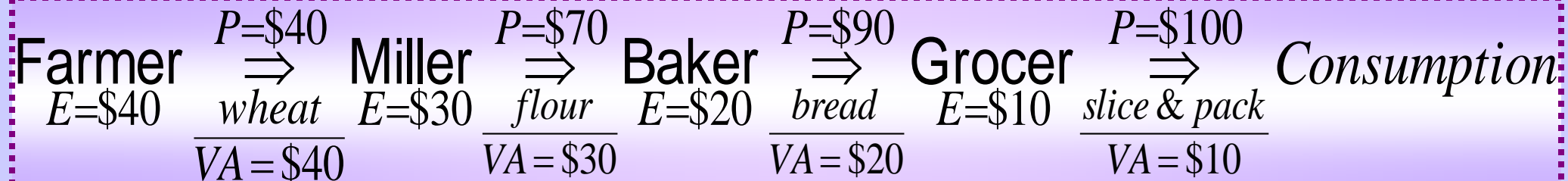
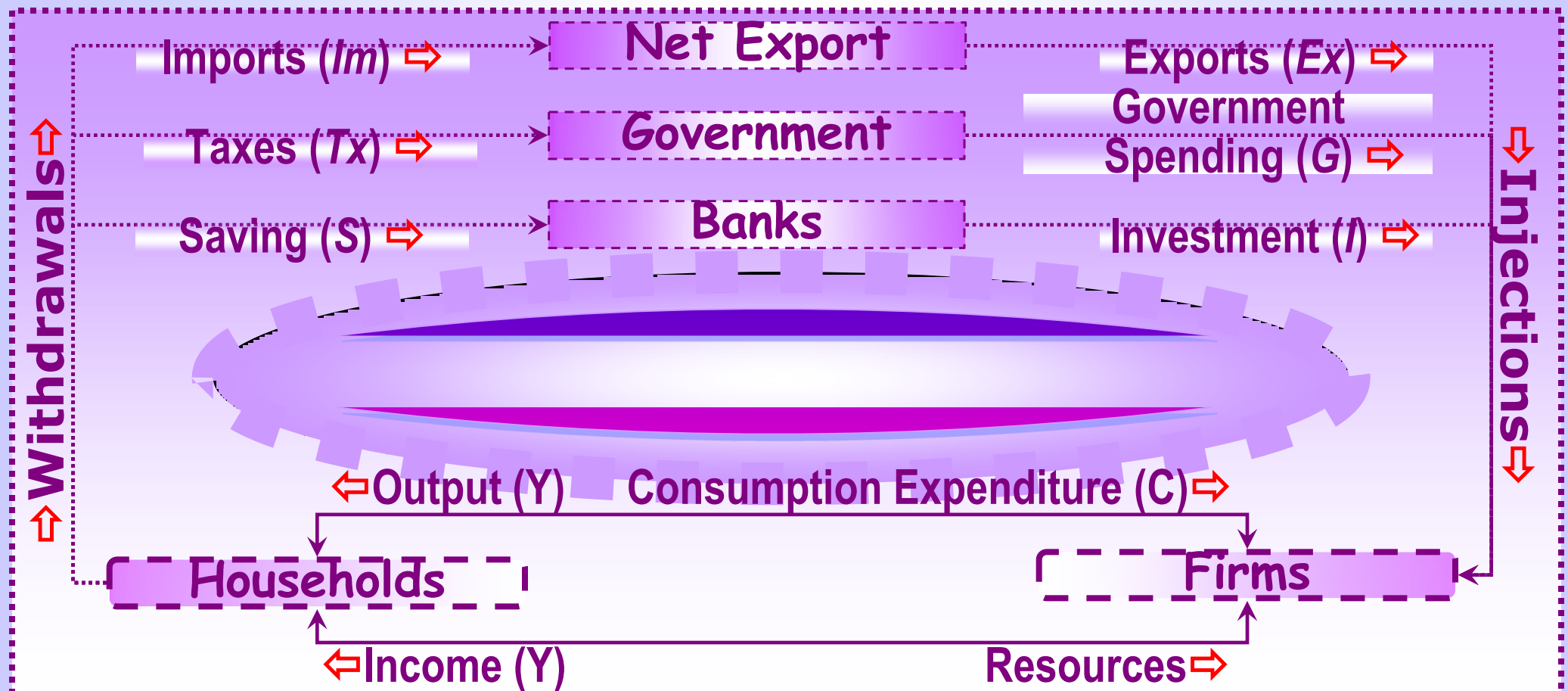


Two & Five Sector Models of Economy



$$\Sigma \text{INCOME} = \Sigma \text{PRODUCTION} = \Sigma \text{EXPENDITURE} = \text{Value Added}$$



Main Measure of the Economy: GDP & Its Components

- The Gross Domestic Product (GDP) is the most comprehensive measure of a nation's production of goods and services. It comprises the money (\$, £, ¥, €, AED,...) value of consumption (C), gross private domestic investment (I), government purchases (G), and net exports (NX) produced within a nation during a given year:

✓ $GDP (Y) = C + I + G + NX$ (Identity Equation)

- Two ways to measure economy:

✓ Flow-of-Product (Expenditures, Final Goods) Approach: the major components of GDP are final G&S sold in the product markets.

✓ Earnings (Income) & Cost (Resource Cost) Approach: the major components of GDP are wages, interests, rents, and profits.

- Both approaches yield the same total GDP.

$Y = C + I + G + Ex$
(Identity Equations)
 $Y = C + S + Tx + Im$

⇒

1. $(G - Tx) = (S - I) + (Im - Ex)$
2. $I = S - (G - Tx) - (Im - Ex)$
3. $(G - Tx) = S - I - (Im - Ex)$

✓ *Example 1: Absorption Equation* - with no changes in S & I, increase in a budget deficit will tend to be offset by a greater trade deficit.

✓ *Examples 2 & 3: Crowding out investments* - Government budget deficit is financed by: ↑ S, ↓ I (domestic & foreign)

Versions & Decomposition of GDP

➤ Two popular GDP modifications:

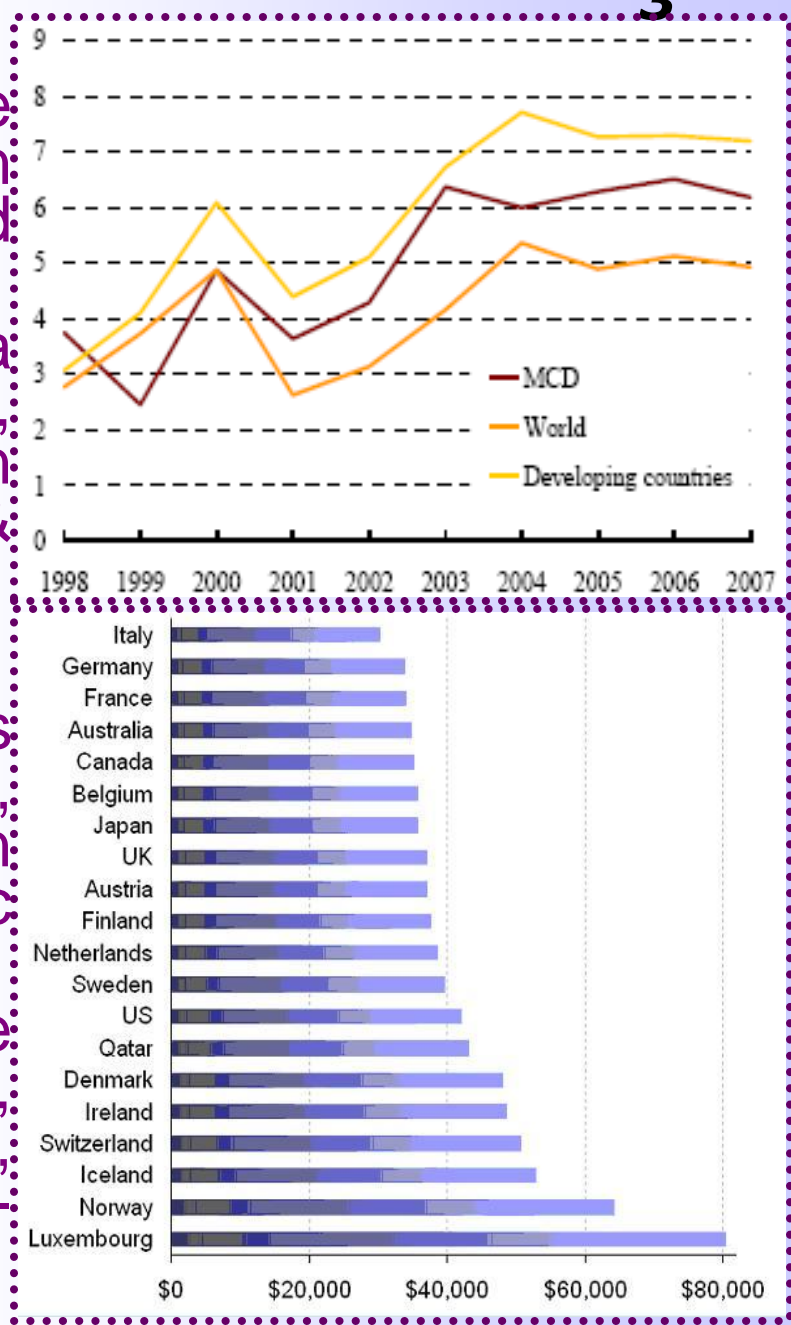
✓ **GDP Growth**: annual percentage change of GDP, used to compare current situation with the previous periods and international comparisons

✓ **Per Capita (Head) GDP**: GDP of a country divided by its total population, indicates how wealthy this people are on average - also used for national & international comparisons.

➤ **Decomposition of GDP:**

✓ **National Income (NI)** the sum of all types of income (wages, net interest, profits, and net rental income) earned in a given time period by any type of economic agent (individuals or corporation)

✓ **Disposable Income (DI)** is what people actually have left - after all tax payments, corporate saving of undistributed profits, & transfer adjustments have been made - to spend on consumption or to save.



GDP ↔ Disposable Income

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➤ GDP

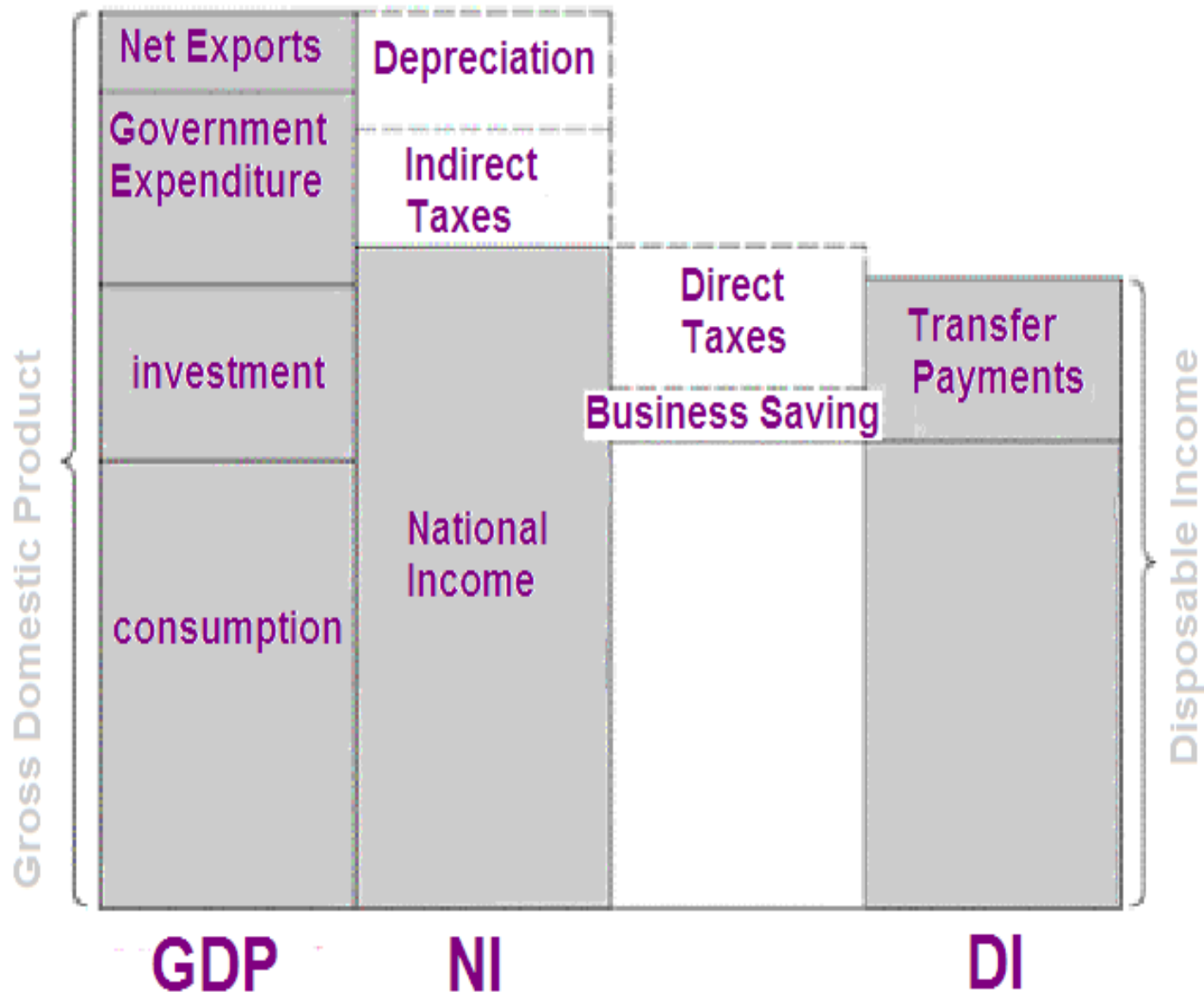
- ✓ – depreciation
- ✓ – indirect taxes

➤ National Income (National Product)

- ✓ – direct taxes
- ✓ – net corporate savings
- ✓ ± transfer payments

➤ Disposable Income

From GDP to National & Disposable Income



Two Ways to Measure Inflation

➤ Rate of Inflation

$$\pi = \frac{P_1 - P_0}{P_0} * 100\% \quad 5$$

➤ To eliminate the effects of changing prices, **Real** or **Constant-Dollar GDP** is used:

$$GDP_R = \frac{GDP_N}{deflator_{GDP}}$$

➤ **Variable Weight (GDP Deflator):**

$$\frac{\sum P_1 \cdot Q_1}{\sum P_0 \cdot Q_1} = \frac{(8 \cdot 5) + (12 \cdot 6)}{(6 \cdot 5) + (10 \cdot 6)} = \frac{112}{90} = 1.2444$$

✓ **Fixed Weight (CPI/PPI):**

$$\frac{\sum P_1 \cdot Q_0}{\sum P_0 \cdot Q_0} = \frac{(8 \cdot 2) + (12 \cdot 4)}{(6 \cdot 2) + (10 \cdot 4)} = \frac{64}{52} = 1.2308$$

✓ **Example Data:**

	Q_0	Q_1	P_0	P_1
Product A	2	5	6	8
Product B	4	6	10	12

Key Concepts

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- GDP: production = income = expenditure = value added
- final/intermediate goods, value added
- two approaches to measure national output/income
- two sector vs. five sector model of economy
- circular flow: withdrawals and injections
- national income identity equation: $Y = C + I + G + X$
- versions and uses of national income identity equation:
 - ✓ absorption
 - ✓ twin deficit
- decomposition of GDP: $GDP \Rightarrow NI \Rightarrow DI$
- GDP growth
- GDP per capita
- measuring inflation:
 - ✓ fixed weight indicators: (CPI), (PPI)
 - ✓ variable weight indicators: GDP deflator
- GDP and its growth: real vs. nominal
- price indexes: GDP deflator, CPI/PPI

Course Web Support:

- ✓ <http://www.skylinecollege.info/mosesov/macro/>
- ✓ www.mhhe.com/economics/samuels17/students/Ch21.mhtml
- ✓ <http://www.imf.org/external/ns/cs.aspx?id=29>