

# Three approaches to calculating GDP

## I. Value added approach

*GDP = Sum of all values added*

## II. Expenditure approach

***GDP = C + I + G + NX***

*Consumption spending (C)*

*= Current consumption + Consumption of durable goods  
+ Payments for services*

*Gross investment (I) = Fixed investment + Inventory investment*

*Private domestic fixed investment*

*= New residential constructions + New non-residential constructions  
+ New equipment, machinery and tools*

*Inventory investment = Production – Sales*

*= Raw materials + Parts (or semi-finished goods)  
+ Unsold finished goods*

*Net investment = I – A*

*A = Replacement investment = Depreciation = Capital consumption allowances*

*Government spending (G) = Government consumption + Government investment  
= Goods purchased by government + Payments to government employees*

*Net exports (NX) = Gross exports (Ex) – Gross imports (Im)*

*GDP = (C<sub>Domestic</sub> + C<sub>Foreign</sub>) + (I<sub>D</sub> + I<sub>F</sub>) + (G<sub>D</sub> + G<sub>F</sub>) + (Ex – Im) = C<sub>D</sub> + I<sub>D</sub> + G<sub>D</sub> + Ex*

*Im = C<sub>F</sub> + I<sub>F</sub> + G<sub>F</sub>*

*National income (NI)*

*= Compensation of employees + Rental payments  
+ Net interest (Interest payments) + Profits*

*Profits = Proprietors' profits + Corporate profits*

*Corporate profits*

*= Corporate profit taxes + Distributed profits (dividends)  
+ Undistributed profits (retained earnings)*

### III. Income approach

$$GDP = NI + A + \text{Indirect taxes} - \text{Subsidies} - \text{Net factor income from abroad}$$

*Net factor income from abroad*

*= Income of citizens of the country received abroad*

*- Income of foreigners received within the country*

$$\text{Net factor income from abroad} = -\text{Net foreign factor income}$$

#### GNP, NDP and NNP

$$\text{Gross national product (GNP)} = GDP + \text{Net factor income from abroad}$$

$$\text{Net domestic product (NDP)} = GDP - A$$

$$\text{Net national product (NNP)} = GNP - A$$

$$NNP = NI + \text{Net indirect taxes}$$

$$\text{Net indirect taxes} = \text{Indirect taxes} - \text{Subsidies}$$

#### Income

*Personal income (PI)*

*= NI - Contributions for social insurance - Corporate profits*

*+ Personal dividend income + Government and business transfers*

*- Net interest + Personal interest income*

$$\text{Disposable income (DI)} = PI - \text{Personal income taxes}$$

$$DI = C + S$$