

---

MACRO ECONOMY: GDP, Inflation, Import & Export, International Trade, Foreign Exchange, Money Quantity, Unemployment,

Goods Market (Production, Lager), Capital Market (Savings, Investments), Labor Market (Employment, Population Structure), Price vs. Value, Demand vs. Supply, Access to Resources, Trade & International Contracts

Assumin no waste.

Supply:

$$E = C + S + T + M - X \quad (1)$$

$$E = W + E_P + E_B + T_B + E_G - Z_G \quad (2)$$

Demand:

$$V_I = C + I + G + X - M \quad (3)$$

Equilibrium:

$$\begin{aligned} E &= V_I \\ W - C &= S = I \\ C + S &= W \\ C + I &= R \end{aligned} \quad (4)$$

Domestic Production & International Trade:

$$V_S = E + T - B + D \quad (5)$$

$$V_S = V_I + R_M - R_X \quad (6)$$

$$V_N = V_S - D \quad (7)$$

$$V_N = E + T - B \quad (8)$$

Productivity & Monetary Value:

---


$$P \cdot V_I = U \cdot Q \quad (9)$$

acronyms see ?@sec-acroecomacro

acronyms

---

$C$ = Consumption of Private Households	$S$ = Savings
$T$ = Taxes	$M$ = Import of Goods and Services
$G$ = Government Expenses, incl. Social Insurances	$X$ = Export of Goods and Services
$E$ = National Income of total Economy, Turnover	$B$ = Subsidies
$D$ = Depreciations (Reinvestments)	$V_N$ = Net Naöional Production, Society NNP
$Q$ = Monetary Quantity	$U$ = Monetary Turnover Velocity
$V_I$ = Gross Domestic Product GDP = $\frac{Output}{Input}$ , Tradevolume	$P$ = Price niveau (Inflation adjusted Value)
$W$ = Wages (Salaries, ...)	$R$ = Returns, Earnings, Gains
$E_B$ = Income of priv. Business (Companies, Services, Real Estate Rentals, Retained Profits)	$E_P$ = Income from priv. Capital (Interests, Coupons, Dividends, ... of priv. Assets, Investmens, Credits, Debits, Bonds, Equity)
$T_B$ = Tax on Capital of Comapies (Business Assets)	$E_G$ = Governmental Income from Assets, Services, Social Institutions/Insurances
$Z_G$ = Interests on Governmental Debt	$V_S$ = Gross National Produkt, Society GNP
$I$ = Investments on Assets, incl. Storage Change	$R_M$ = Capital Earnings and Wages from Abroad
$R_X$ Capital Earnings and Wages to Abroad	...

---

Input:

$$Input = f(Resouces, Labor, Capital) = Work = \Delta Energy \quad (10)$$

Output:

$$Output = V_I = Goods + Services = Production = \Delta State \quad (11)$$

---

Productivity:

$$Productivity = \frac{Output}{Input} = \frac{\Delta State}{\Delta Energy} = \frac{Production}{Work} = \frac{V_I}{p \cdot v} \quad (12)$$