
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

Assumptions 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 = Goverment 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 Naötional 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:

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

Productivity:

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