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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:

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

acronyms see ?@sec-acroecomacro

acronyms

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|---|--|
| $C$ = 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  | ...  |

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Input:

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

Output:

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

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Productivity:

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