

Macroeconomics on One Page

Macroeconomics seeks to explain & predict the behaviour of the economy “as a whole.” Managers need macro knowledge to interpret news & form reasoned views of the likely impact of policy changes.

1 Four macro “markets”

Focus on five key variables (& their “relatives”): GDP, unemployment, interest rates, inflation rates, & exchange rates. Many macro variables have “real” versions that adjust raw (“nominal”) data to take into account price variation. While interdependent, each variable can be thought of as determined within a particular market.

All goods & services markets: GDP (Y), GNI, net vs gross, price level (CPI & GDP deflator: P), inflation ($\pi = \Delta P/P$).¹ Potential GDP (\bar{Y}), real GDP ($Q = Y/P$). GDP measured by summing final expenditure categories, industry value-added, or factor incomes ($wL + rK$).

Labour markets: employment rate (L/N), job gains/losses (ΔL), unemployment rate ($u = U/L$), vacancies (V), hours, wages (w , real: w/P). *Under-employment:* involuntary part-time. Unemployment causes: job search (extended by high U benefits), mis-match, minimum wages, sticky wages, seasonal & cyclical demand changes. u cannot fall below the *natural rate*, \underline{u} (NAIRU), w/o accelerating inflation.

Financial markets: interest rates, nominal, r , & real, $r - \pi$. Normal yield curve: higher r for longer term bonds. Central banks lower r via bank rate cuts and buying bonds (to increase reserves). Credit crunches \implies TED spread \uparrow .

Currency markets: exchange rates, nominal, e , & real, $e[P^H/P^F]$ = relative price of domestic goods.² Real depreciation increases X , lowers M . Purchasing power parity for Y comparisons and e predictions. Fixed vs. floating e .

¹ ΔP means the year-on-year change in the price level. Divide by initial price level to make it a rate of change.

² P^H & P^F are price levels in home (H) & foreign (F) currency units (CU), e in FCU/HCU.

2 Macro relationships

Composition of nominal GDP

$$Y = C + I + G + (X - M)$$

C = personal consumption of durable & non-durable goods + services

I = private investment in structures (inc. residential) & equipment + change in inventories

G = gov't consumption (G^C) + investment (G^I)

$X - M$ = exports minus imports (trade balance)

Aggregate Production Function

$$Q = Af(K, L)$$

Real GDP $\uparrow \iff$ tech. progress ($A \uparrow$), capital accumulation ($K \uparrow$), labour supply growth ($L \uparrow$).

Money supply & inflation

Money base, B , is currency + reserves, money supply M is currency + deposits. Money multiplier, due to reserve ratios, $= \Delta M/\Delta B > 1$.

“Quantity Theory of Money”: Holding V and Q constant in $MV = PQ$ implies inflation ($\pi = (P_{t+1} - P_t)/P_t$) = money supply growth: $(M_{t+1} - M_t)/M_t$.

Recessions

Reductions in GDP, accompanied by extended periods of high u , low V/L , declining L , π , followed by recoveries ($Y \rightarrow \bar{Y}$).

Accumulation of Capital & Debt

$$K_{t+1} = (1 - \delta)K_t + I_t + G_t^I$$

$$\text{Debt}_{t+1} = (1 + r)\text{Debt}_t + \text{PBD}_t$$

Primary budget deficit = $(G_t^C + G_t^I + S_t) - T_t$

Structural budget deficit = $\text{PBD}(\bar{Y}_t) + r\text{Debt}_t$.

Trade deficit = $M - X \rightarrow$ increase in foreign claims

3 Macro Controversies

Keynesians attribute recessions ($Y \downarrow$) to insufficient demand and advocate raising C and I by $r \downarrow$ and $T \downarrow$. Spending multiplier: $G \uparrow \implies \Delta Y > \Delta G$.

Chicago school argues budget deficits reduce C (savings to pay future taxes) I (public borrowing “crowds out” private borrowing), leaving $\Delta Y \approx 0$.

Supply-siders advocate reduced marginal tax rates (MTR) to increase I & L , $\implies Y \uparrow$. Laffer-curve claim: $\text{MTR} \downarrow \implies T \uparrow$.