Formula Sheet: Final
Econ 3133
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$GDP = C + I + G + (X - IM)$

National income = Employee compensation + Corporate profits + Proprietors' income + Rental income of persons + Net interest

Net national product = National income + Sales and excise taxes + Business transfers – Net subsidies to government businesses + Statistical discrepancy

Gross national product = Net national product + Depreciation

Gross domestic product = Gross national product – Net factor payments from abroad

Personal income = National income – Contribution for social insurance – Corporate retained earnings + Non-business interest + Transfer payments from government and business

Disposable income = Personal income – Personal income taxes

Government savings = Taxes – Government spending – Transfer payments – Interest on the government debt

Private savings = GDP + Net factor payments from abroad + Transfer payments + Interest on the government debt – Taxes – Consumption

National savings = Private savings + Government savings

Direct foreign investment in the U.S. = – Net exports – Net factor payments from abroad

Investment = Private Savings + Government savings + Direct foreign investment in the U.S.

Adult population = Labor force + Not in the labor force

Labor force = Working + Unemployed

Unemployment rate = (Unemployed/Labor force)×100

Labor force participation rate = (Labor force/Adult population)×100

$$\pi = (P/P_{-1} - 1)\times 100$$

$$(Y - Y^*)/Y^* = -2\times(u - u^*)$$

$$(Y/AP)_n = (Y/AP)\times(1 + G)^n$$

$$\%\Delta Y = \%\Delta A + (2/3)\times\%\Delta N + (1/3)\times\%\Delta K$$

$$Y_d = (1 - t)\times Y$$

$$C = a + b\times Y_d$$

$$I = e - d\times R$$

$$(X - IM) = (g_X - g_{IM}) - (n_X + n_{IM})\times R - m\times Y_d$$

$$M^S = (k\times Y - h\times R)\times P$$

$$\Delta Y = [1/(1 - b\times(1 - t))]\times\Delta I$$

(the same equation holds for a Δa, ΔG, or $\Delta(X - IM)$ on the right-hand side)

$$\Delta Y = [1/(1 - (b - m)\times(1 - t))]\times\Delta I$$
(the same equation holds for a Δa, ΔG, or ΔX on the right-hand side)

$$\pi = \pi^e + f[(Y_{-1} - Y^*)/Y^*]$$

$$C = MPC_{LR}\times Y^d$$

$$\Delta C = MPC_{SR}\times\Delta Y^d$$

$$A_{+1} = A + R\times A + E - T - C$$

$$Y^d = R\times A + E - T$$

$$S = R\times A + E - T - C$$

$$R = r + \pi^e$$

$$R_K = (R + \delta_K)\times P_K$$

$$R_K = (R + \delta_K)\times P_K - (P_{K(+1)} - P_K)$$

$$I_K = K^* - K^*_{-1} + \delta_K\times K^*_{-1}$$

$$K^* = v\times Y$$

$$I_K = v\times(Y - Y_{-1}) + \delta_K\times v\times Y_{-1}$$

$$I_K = s\times(K^* - K_{-1}) + \delta_K\times K_{-1}$$

$$R_K = [(1 - z)\times(R + \delta_K)\times P_K]/[1 - u]$$

$$R_H = (R + \delta_H)\times P_H$$

$$I_H = H^* - H_{-1} + \delta_H\times H_{-1}$$

$$R_{IN} = R\times P_{IN}$$

$$E_R = (E\times P)/P_W$$

$$E_R = q + q_R\times R$$

$$(X\text{–}IM) = (g_{EX} - g_{EIM}) - (v_X + v_{IM})\times E_R - m\times Y_d$$

Actual deficit = Structural deficit + Cyclical deficit

$$D_{+1} = BD + D$$

CU = Paper money + Coins

TR = Bank deposits held at the Fed + Vault cash

$$M^B = CU + TR$$

M_1 = CU + ChD + savings accounts

M_2 = M_1 + small time deposits (CDs) + money market mutual funds

$$TR = rr\times ChD$$

$$CU = c\times ChD$$

$$M^S = [(1 + c)/(rr + c)]\times M^B$$

Total reserves = Borrowed reserves + Nonborrowed reserves

$$OC_M = R - R_M$$

$$M = Y_M/(2\times z)$$

$$M = ((k\times Y_M)/(2\times OC_M))^{1/2}$$

$$R = \pi + \beta_\pi\times(\pi - \pi^*) + \beta_Y\times[(Y - Y^*)/Y^*] + r^{e*}$$

$$Y_i = h\times(P_i - P^e) + Y_i^*$$

$$P^e = P^f + b\times(P_i - P^f)$$

$$Y = n\times h\times(1 - b)\times(P - P^f) + Y^*$$

$$W = ½\times(X + X_{-1})$$

$$X = ½\times(W + W_{+1}) - (d/2)\times[(U - U^*)+(U_{+1} - U^*)]$$

M^B = Domestic credit + Foreign reserves

$$\text{Stress} = R^E - R$$

$$R = \pi + \beta_\pi\times(\pi - \pi^*) + \beta_Y\times[(Y - Y^*)/Y^*] + r^{e*} - \beta_E\times E_R$$