Key Formulas for Macroeconomics

Measures of Economic Activity

- GDP (Income) = GDP (Expenditure)
- GDP (Expenditure) = C + I + G + (X – M)
- Net Investment = Gross Investment – Depreciation
- PDI = PI – T
- Per Capita GDP = GDP / Population
- Per Capita Real GDP = Real GDP / Population

Inflation & Unemployment

- Real Income = Nominal Income / CPI
- Real GDP = Nominal GDP / GDP Deflator
- Real Interest Rate = Nominal Interest Rate – Inflation Rate
- Participation Rate = Labor Force / Labor Force Population x 100%
- Unemployment Rate = Unemployed / Labor Force x 100%
- Okun's Law: GDP Gap = (Unemployment Rate – Natural Unemployment Rate) x 2.5%

Economic Fluctuations

- Real Value of Financial Assets = Nominal Value / Price Level
- AD = C + I + G + (X – M)
- Labor Productivity = Real Output / Total Hours Worked
- AD = AS (equilibrium)
- I + G + X > S + T + M (expanding)
- I + G + X < S + T + M (contracting)
- I + G + X = S + T + M (stationary)

Fiscal Policy

- MPC = Consumption Domestically / Income
- MPW = Withdrawals / Income
- MPC + MPW = 1
- Spending Multiplier = Output / Spending or 1 / MPW
- Budget Surplus or Deficit = Government Revenues – Government Expenditures

Money

- Required Reserves = Desired Reserves / Deposits
- Excess Reserves = Cash Reserves – Desired Reserves

- Money Multiplier = 1 / Required Reserves
- MS = Excess Reserves x Money Multiplier

Monetary Policy

- Velocity = Nominal GDP / M
- M x V* = P x Q* (where * is fixed)
- Δ M = M2 – M1 / M1 x 100%
- Δ P = P2 – P1 / P1 x 100%
- % Δ M = % Δ P