Book 2 – Economics

FORMULAS

price elasticity of demand = $\dfrac{\text{percent change in quantity demanded}}{\text{percent change in price}} = \dfrac{\%\Delta Q}{\%\Delta P}$

where: percent change = $\dfrac{\text{change in value}}{\text{average value}} = \dfrac{\text{ending value} - \text{beginning value}}{\left(\dfrac{\text{ending value} + \text{beginning value}}{2}\right)}$

cross elasticity of demand = $\dfrac{\text{percent change in quantity demanded}}{\text{percent change in price of substitute or complement}}$

income elasticity of demand = $\dfrac{\text{percent change in quantity demanded}}{\text{percent change in income}}$

price elasticity of supply = $\dfrac{\text{percent change in quantity supplied}}{\text{percent change in price}} = \dfrac{\%\Delta Q}{\%\Delta P}$

total cost = total fixed cost + total variable cost

marginal cost = $\dfrac{\text{change in total cost}}{\text{change in output}}$, or MC = $\dfrac{\Delta TC}{\Delta Q}$

average fixed cost = TFC / Q

average variable cost = TVC / Q

average total cost = AFC + AVC

unemployment rate = $\dfrac{\text{number of unemployed}}{\text{labor force}} \times 100$

labor force participation rate = $\dfrac{\text{labor force}}{\text{working-age population}} \times 100$

employment-to-population ratio = $\dfrac{\text{number of employed}}{\text{working-age population}} \times 100$

$$CPI = \frac{\text{cost of basket at current prices}}{\text{cost of basket at base period prices}} \times 100$$

Formula Sheet

$$\text{inflation rate} = \frac{\text{current price level} - \text{year-ago price level}}{\text{year-ago price level}} \times 100$$

aggregate demand = consumption + investment + government spending + net exports

potential deposit expansion multiplier = 1 / (required reserve ratio)

potential increase in money supply = potential deposit expansion multiplier × increase in excess reserves

equation of exchange:

$$\text{money supply} \times \text{velocity} = \text{GDP} = \text{price} \times \text{real output}$$

quantity theory of money:

$$\text{price} = \frac{MV}{Y}$$

balance of payments:

current account + capital account + official reserve account = 0

$$\begin{pmatrix}\text{forward premium} \\ \text{or discount}\end{pmatrix} = \left(\frac{\text{forward rate} - \text{spot rate}}{\text{spot rate}}\right)\left(\frac{360}{\text{number of forward contract days}}\right)$$

interest rate parity using direct quotes:

$$\frac{\text{forward}}{\text{spot}} = \left(\frac{1 + r_D}{1 + r_F}\right)$$

$$\text{covered interest differential} = (1 + r_D) - \left(\frac{(1 + r_F)(\text{forward rate})}{\text{spot rate}}\right)$$

purchasing power parity:

$$\text{expected exchange rate at time 1} = \text{exchange rate at time } 0 \times \left[\frac{1 + \text{domestic inflation}}{1 + \text{foreign inflation}}\right]$$

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Notes