...vity model.

$$\boxed{T_{ij} = A \times Y_i \times \frac{Y_j}{D_{ij}}}$$

General Gravity Model.

$$\boxed{T_{ij} = A \times Y_i^{a} \times \frac{Y_j^{b}}{D_{ij}^{c}}}$$

Relationship between Price and MR for Monopoly.

$$Q = A - B \times P$$

$$P = Q - A / -B$$

$$= \frac{A-Q}{B} = \frac{A}{B} - \frac{Q}{B}$$

$$TR = P \cdot Q = \frac{A}{B} Q - \frac{1}{B} Q^2$$

$$MR = \frac{dTR}{dQ} = \frac{A}{B} - \frac{1}{B} \cdot 2Q$$

$$= \frac{A - 2Q}{B}$$

$$= \frac{A - Q - Q}{B}$$

$$= \frac{\cancel{A - Q}}{B} - \frac{Q}{B}$$

$$MR = P - \frac{Q}{B}$$

$$\Rightarrow \boxed{MR - P = \frac{Q}{B}.}$$

Q - Q

Total cost and Average cost of a monopoly

$$\boxed{TC = F + c \cdot Q}$$

F - fixed cost
c - MC

$$\boxed{AC = \frac{TC}{Q}}$$

$$AC = \left(\frac{F}{Q}\right) + c.$$

DD eqn for monopolistic comp

$$\boxed{Q = S \times \left[\frac{1}{n} - b \times (P - \overline{P})\right]}$$

$$= \frac{S}{n} - Sb(P - \overline{P})$$

$$\boxed{Q = \underbrace{\frac{S}{n} + Sb\overline{P}}_{A} - \overbrace{Sb}^{B} \times P}$$

when P given const

when $P = \overline{P}$

$$Q = \frac{S}{n}$$

$$MR = P - \frac{Q}{B} \text{ for monopoly}$$

MR for monopolistic comp

$$P - \frac{Q}{B} = P - \frac{Q}{S \times b}$$

$$\boxed{MR = P - \frac{Q}{S \times b}}$$

xternal econ

$$MR = MC$$

$$P - \frac{Q}{S \times b} = c$$

Profit maximisation condition for monopolistic comp

$$P = c + \frac{Q}{S \times b}$$

given $Q = \frac{S}{n}$ when $P = \bar{P}$

$$\boxed{P = c + \frac{1}{b \times n}}$$

$$AC = \frac{F}{Q} + c$$

$$Q = \frac{S}{n}$$

$$AC = \frac{Fn}{S} + c$$

$P = AC$ (Monopoly comp CC-PP intersection)

$$\boxed{n = \sqrt{\frac{S}{bF}}}$$

Intraindustry Trade Index

$$I = \frac{\min\{\text{exports}, \text{imports}\}}{(\text{exports} + \text{imports})/2}$$

no trade $\Rightarrow I = 0$

max $I = 1$