Summary Notes on Managerial Economics I

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Mistakes and errors reserved.

Know thy demand curve (e.g. regression)

Inelastic Demand

Utilized to increase prices and obtain economic profits. Distinguish between Market and Firm Elasticities.

Total Revenue

$$\text{Total Revenue} = P^* \cdot Q$$

For linear demand $a - bQ$: Total Revenue $= aQ - bQ^2$.

Marginal Revenue

$$\text{Marginal Revenue} = P \cdot \left(1 + \frac{1}{\text{Elasticity of Demand}}\right)$$

Elasticities

Own Price Elasticity

$$\text{Own Price Elasticity} = \frac{P}{Q} \times \frac{\Delta Q}{\Delta P}$$

Income Elasticity

$$\text{Income Elasticity} = \frac{I}{Q} \times \frac{\Delta Q}{\Delta I}$$

Cross Price Elasticity

$$\text{Cross Price Elasticity} = \frac{P_y}{Q_x} \times \frac{\Delta Q_x}{\Delta P_y}$$

Advertising Elasticity

$$\text{Advertising Elasticity} = \frac{A}{Q} \times \frac{\Delta Q}{\Delta A}$$

Perfect Competition

Demand Curve

$$Q = P \cdot k + d$$

Profit Maximization

$$MR = MC = P^*$$

Economic profit: $\pi = Q^* \cdot P^* - TC$

Market Forms and Monopoly Strategies

Monopoly, Oligopoly, Monopolistic Competition, Perfect Competition

Different market structures with distinct characteristics.

Monopoly Strategies

Barriers to Entry, Price Discrimination, Product Innovation.

Markup Pricing and Multi-Product Firms

Markup Pricing

Price set as a percentage over cost.

Multi-Product Firms

Consideration of price elasticity. Total Revenue and Marginal Revenue in multi-product firms.

Two-Part Tariffs in Price Discrimination

Two-Part Tariff Components

Entry Fee and Per-Unit Charge.

Consumer Surplus and First-Degree Price Discrimination

Entry fee captures consumer surplus.

Bundling in Price Discrimination

Simple Bundling

No option for consumers to buy goods individually.

Mixed Bundling

Consumers can buy goods individually or as part of a bundle.

Conditions for Successful Bundling

Demand Correlation, Marginal Costs.

Strategies and Effects

Simple Bundling Strategy, Extraction and Exclusion, Inclusion, Effects of Mixed Bundling.

Considerations

Market Dynamics, Single Prices.

Bundling, Tying, and Transfer Pricing

Tying as a Form of Bundling

Bundling of two products, where the purchase of one is contingent upon the acquisition of another.

Transfer Pricing

Financial strategy for pricing goods and services transferred within a company.

Integration of Strategies

Bundling, tying, and transfer pricing can be integrated into a comprehensive pricing strategy.

Monopoly

Output and Prices of a Monopolist

$$MR(Q) = P\left(1 + \frac{1}{\eta}\right) = P\left(1 - \frac{1}{|\eta|}\right) = P - \frac{P}{|\eta|}$$

$$MR < P \text{ in a monopoly}$$

$$MR = P\left(1 + \frac{1}{\eta}\right) < P \text{ when demand is inelastic}$$

$$MC = MR = P\left(1 - \frac{1}{|\eta|}\right)$$

Profit: $\pi = (P - AC) \cdot Q$
Deadweight Loss: $DWL = \frac{1}{2}\left(P_M - P^*\right) \cdot \left(Q_M - Q^*\right)$

Oligopoly and Cartel Behavior

Cartel Dynamics

Joint profit: $\pi = (P - MC) \cdot Q$
Price Leadership, Residual Demand Curve.

Price Competition Models

Cournot Model, Bertrand Model.

Equilibrium and Reaction Functions

Cournot Model Equilibrium, Bertrand Model Nash Equilibrium.

Game Theory in Managerial Economics

Matrix Form Representation

$$G = \begin{bmatrix} (a, b) & (c, d) \\ (e, f) & (g, h) \end{bmatrix}$$

Backward Induction

Players consider future moves and potential outcomes. Decision tree visualization.

Equilibrium

Solution: Nash equilibrium where no player wants to change unilaterally.

Repeated Games

Consideration of repeated interactions, tit-for-tat, and cooperative behavior.

Collusion and Cartels

Collusion to maximize joint profits, challenges in maintaining cooperation.

Incomplete Information

Games with incomplete information involve decision-making under uncertainty.