Module 13 - Key Concepts (Ch. 15 & 16)

Overview of Market Structures

The 4 market types:

Feature	Perfect Competition	Monopolistic Competition	Oligopoly	Monopoly
Sellers	Many	Many	Few	One
Product	Identical	Differentiated	Either	Unique
Market Power	None	Some	Some	A lot
Price Control	Price taker	Some control	Strategic	Most control
Entry & Exit	Free	Free	Barriers	No entry

The key insight: **Long-run profitability depends on the ability of firms to ENTER or EXIT the market.**

Chapter 15 - Entry, Exit, and Long-Run Profits

Economic Profit vs. Accounting Profit

- **Accounting profit** = revenue − *explicit* costs
- **Economic profit** = revenue − (explicit + *implicit* costs)
  - Includes opportunity costs
  - A firm can have positive accounting profit but **zero economic profit**
    Zero economic profit = you're earning what you could earn elsewhere → **not bad**.

Costs and Firm Decisions

- **Total Cost = Fixed Cost + Variable Cost**
- **Marginal Cost (MC)** = cost of producing one more unit
  - Key to output decisions (MR = MC, or MB = MC)

Long-Run Entry and Exit

Entry

- If firms earn **positive economic profit**, new firms enter the industry.
- Entry shifts **supply right**, lowering price. May flatten the firm's (residual) demand and shift back.
- This continues until **profit = 0**.
  Exit
- If firms earn **negative economic profit**, firms leave the industry.
- Exit shifts **supply left**, raising price. May steepen the firm's (residual) demand and shift out.
- This also continues until **profit = 0**.
  Long-Run Equilibrium

With free entry and exit:

$$P = \text{Average Cost} \quad \text{and} \quad \text{Economic Profit} = 0$$

Barriers to Entry

If entry is **not** free:

- Profitable industries can maintain **positive long-run profits**
- Barriers include:
  - Legal barriers (patents, licenses)
  - High fixed costs
  - Brand loyalty
  - Network effects
  - Control of natural resources

Chapter 16 - Price Discrimination

Perfect Price Discrimination (First Degree)

- Firm charges **each customer their max willingness to pay**
- No consumer surplus
- Not realistic in practice, but a theoretical benchmark

Group Pricing (Third-Degree)

Different groups get different prices:

- Students
- Seniors
- Resident vs. non-resident
- Business vs. leisure airline travelers

Groups with **more inelastic demand** get **higher prices**.

The Hurdle Method (Second-Degree)

If firms can't easily identify groups, they create a **hurdle**:

- Wait in line
- Buy in bulk
- Use coupons
- Go at off-peak times (matinee movie tickets)

Elastic customers jump over the hurdle to get the low price.
Inelastic customers pay the high price.

Why Price Discriminate?

Because with a single price:

- Selling more units requires lowering the price on **all** units → MR < P
  With discrimination:
- Firm gets **more surplus**
- Firm expands output
- Firm increases profits

Module 14 - Game Theory (Ch. 18)

What Is Game Theory?

Game theory studies **strategic interactions** where the outcome for each player depends on the actions of others. We focus on **simple 2×2 games**.

Setup of a 2×2 Game

Assumptions:

- **Two players** (e.g., firms, people, countries).
- **Two strategies each** (e.g., advertise/not advertise).
- Creates **4 possible outcomes**, each with payoffs.

Dominant Strategies

A player has a **dominant strategy** if it gives a higher payoff **regardless of what the other player does**.

Nash Equilibrium

A set of strategies where:

- Each player is doing the **best they can**, given the other player's choice.
- No one has an incentive to deviate.

The Prisoner's Dilemma

- **Both players have dominant strategies**.
- When both play their dominant strategies, the outcome is **worse for both** than if they cooperated.
- Explains failures to cooperate even when cooperation is mutually beneficial.

Games Without Dominant Strategies

If one or both players lack dominant strategies:

- Best choice depends on what the other player is expected to do.
- Still can have **Nash equilibria**, but they require strategic reasoning.
- To solve, circle the best strategy of each player holding fix an action of the opponent.

- The outcome with 2 circles is the Nash Equilibrium (can have multiple).

1. Coordination Games

- Players want to choose the **same** action.
- Multiple Nash equilibria.
- Some equilibria may be “better” than others.

2. Anti-coordination Games

- Players want to choose the **opposite** action.
- Also typically have **two Nash equilibria**.

Repeated Games

In **indefinitely repeated games**, cooperation can emerge.

- Repetition allows **punishment strategies**.
- Firms might collude if defection can be punished in future rounds.

Common Strategies:

- **Tit-for-tat**: the player begins by cooperating and then, in subsequent rounds, simply mirrors the opponent's last move.
- **Grimm trigger**: the player cooperates until the opponent defects, at which point the player defects forever.