Business Learning Center - Econ 101 (Hansen)

Review Sheet (also known as "The Giant Flash Card") for Topics Covered in Final Exam[1]

The following topics have been covered in lectures and discussion sections after Midterm 2 and will be asked in Final Exam. The final exam is cumulative, so all the material from the beginning is covered! **If you can't remember what we have done so far, a good starting point is the review sheet I made for Midterm 1 and Midterm 2.** (They are still on my website!) You are expected to know all these topics and be able to solve the problems with accuracy and speed.
There will be 50 questions in 120 minutes, so you should average out 2 minutes 24 seconds per question. Even if some questions might take you less than 30 seconds, others might take as long as 5 minutes, spare your time accordingly. *Rule of thumb: if the additional (marginal) benefit is greater than additional (marginal) cost, do it! Otherwise, don't! (In fact, this is the main idea of every economic concepts!) You are maximizing the probability of getting the questions right, subject to the time constraint – if the additional time cost needed to get them right is higher the additional benefit, then you should do other questions!*
Topics studied so far are inter-related, you should expect something to cross-over with each other, e.g. production and cost will show up in perfect competition or monopoly problem, price discrimination and topics in efficiency, etc.

Market Structures Comparison

	Perfect Competition	Monopolistic Competition	Oligopoly	Monopoly
Number of Firms	Many	Many or Few	Few (2, 3 or more)	One
Product	Homogeneous	Slightly Different	Different or Same	Unique
Demand Curve Facing	Perfectly Elastic	Market for Your Good	??	Market
Profit Max. Rule	$P = MR = MC$	$MR = MC$	Game Theory	$MR = MC$
Pricing Power of Firm	Price Taker	To a certain degree		Price Setter
Barrier to Entry	None	Slightly/None	Maybe	Yes (What?)
Production Technology	Same	Same or Different	Same or Different	Exclusive
Short-run Equilibrim	Pos. or Neg. Profit	Pos. or Neg. Profit	Not applicable	Pos. or Neg. Profit
Long-run	Zero Proft	Zero Profit		Pos. or Zero Profit
Example	...	...	...	...

Monopoly

- What is the demand curve facing the firm? Why is it different from the case firms in perfectly competitive market? What is marginal revenue? How to find marginal revenue?
- What is the profit maximizing rule for a monopolist? What does it mean? At such quantity, what is the cost to monopolist? What is the price charged to consumers? What is the total revenue? What is the profit? Should monopolist produce in the short-run or shutdown? Should monopolist exit in the long-run? Why? (Be sure you don't get tangled in the spaghetti of curves!)
- Why does monopolist not exist in the inelastic portion of demand curve?
- What is the consumer surplus? What is producer surplus? (This is clearly different from the profit! How and why?) What is the deadweight loss?
- Why are there deadweight losses? (Monopolist, in the effort to maximize profit, do what?) What is allocative efficiency? Why there is none of the efficiency? How to restore efficiencies? What is the social optimum? How to achieve such social optimum? Is it possible to sustain social optimum?

[1] Prepared by Kanit Kuevibulvanich. (http://www.kanitk.com) This version: December 4, 2015. Disclaimer: Although summarized from textbook, homework and lectures, this note does not constitute as the official guidelines for the course, comments welcomed.

Natural Monopoly

- Again, answer the same questions as the usual monopolist for the natural monopolist. What is natural monopoly? Why there is such characteristic? Why do there exist such monopolist? Why going bigger in scale is better and not going smaller? Is it beneficial to have smaller firms in this kind of industry? How do the cost curves look like?

Price Discrimination

- What is price discrimination? What are the requirements (initial conditions/rules) for a firm (in what market?) to price discriminate? How does the monopolist discriminate prices?
- First-degree price discrimination: How does a monopolist charge each consumer? How many demand curves are there? What is the rule of charging prices and how many prices are there? At what price and sell at what quantity? What are the consumer surplus, producer surplus and deadweight loss? Do we have allocative efficiency?
- Third-degree price discrimination: What gives rise to the rationale of doing third-degree instead of first-degree?
  - If a monopolist cannot distinguish between groups of consumers (How many groups?), how would the monopolist charge the consumers and sell at what quantity? How many prices are there? How to find the market demand curve (recall before Midterm 1) and the market marginal revenue? Should the monopolist ignore any type at all and what is the criteria?
  - If a monopolist can distinguish between groups of consumers, how does a monopolist charge each consumer? How many demand curves are there? Why elasticities have anything to do with? What price must the monopolists never drop below? What is the rule of charging prices and how many prices are there? At what price and sell at what quantity? What are the consumer surplus, producer surplus and deadweight loss? Do we have allocative efficiency? Why does deadweight loss look like so?

Oligopoly (Collusion Model/Price Leadership Model/Cournot Model)

- What is oligopoly? What are the characteristics of firms in oligopoly? How is game theory applied to the interactions of firms in the oligopoly settings?
- What is a collusion? What is a tacit collusion? What is a cartel? What are firms acting like when they collude? What is the starting point where we are dividing the profits pie? How would each of the firms under collusion produce? Are there incentives to cheat?
- What is a price leadership model? How many firms are there in the model and who are they? How is this game played? From the market demand and the supply curve of small firms, can you find the residual demand (demand for dominant firms)? What is the demand each firm is facing? What is the relationship between the three? ($Q_{Market} = Q_{Dominant} + Q_{Small}$) What is the marginal revenue for the dominant firms? How does the dominant firm act like in the leading phase given its marginal cost? What is the price and quantity that the leader sells? What is the price that the followers take? What is the marginal revenue for the follower firms? What is the decision of the small firms? How to find the quantity the followers produce? How to verify your answers? What is the final price being sold in the market and the quantity? Can you work backward and trace out the marginal cost of the dominant firms or the market demand when the information is missing?
- What is a Cournot model? How many firms are there in the model and who are they? How is this game played? Given the market demand and the marginal costs of each firm, how do you find the quantity a firm produces given what the rival does? When the rival does not produce anything, what do you become and what do you produce? When do you not produce anything (no room for you) if the rival produce which quantity? How do you find the reaction functions (the best response functions) of each firm? How to find the Cournot equilibrium? What quantity each firm produces? What is the profits

to each firm? Why is the intersection of both reaction functions the equilibrium in Cournot model? If he produces this much, I will respond by producing that much, so he sees me producing this much and respond by producing that much, etc.

Game Theory

- What is a game? A game (in Econ 101) consists of PAP "Players-Actions-Payoffs." How to write a payoff table with all the elements of PAP?
- What is a dominant strategy? Action A is a dominant strategy if "No matter what my opponent does, I'm always better off doing action A." Can you find the outcome of the game? What is the equilibrium of a game under dominant strategy? Recall the PAP – Players do what Actions and receive what Payoffs. Are there always equilibrium under dominant strategy?
- What is a Nash strategy? Action A is a Nash strategy if "Given what my opponent does, Action A is my best response." Can you find the outcome of the game? What is the Nash equilibrium of a game? Are there always Nash equilibrium, or are they unique?
- What is a Collusion equilibrium? How to find the best possible outcomes/size of pie to share among the two players? Is it sustainable? Are there incentives to cheat?
- What is a Maxmin strategy? Action A is a Maxmin strategy if "Given the worst possible outcomes from each of the actions, Action A gives the best payoff given all the worst possible that could happen to me." Can you find the outcome of the game? What is the equilibrium of a game under Maxmin strategy? Are there always equilibrium under Maxmin strategy, or are they unique?
- Can you find the possible values of payoffs that makes an action the dominant, Nash, or Maxmin strategy?

Monopolistic Competition

- What are the characteristics of monopolistic competition market? What are the characteristics of products in this market? Can firm enter or exit, when and why? What is the profit-maximizing quantity and price? How to differentiate products? What is the optimal sales effort, i.e. advertising?
- The basic problem – In the short-run, it is essentially a monopolist problem with positive economic profit. So what is the economic incentives to make entry occur? So in the long-run what happen? Is it actually the demand side or producer side who make the changes? Is it converging to the perfect competition or zero economic profit and how? Be careful with how you draw the demand curve in the long-run and clearly $P \neq \min ATC$ necessarily!

Externalities

- What we have studied so far consider only private side of costs and benefits, what is the consequences of such thoughts? What is externality? What is postive externality? What is negative externality?
- What is the difference between Marginal Private Benefits and Marginal Social Benefits? What is the difference between Marginal Private Costs and Marginal Social Costs?
- What is Coase Theorem? What is property rights? How would this solve the problem in the case of externalities?
- Without the consideration of externality, what would happen in the optimal quantity? Are there any underproduction or overproduction? Why?
- How to find Marginal Social Benefits and Marginal Social Costs? What is the socially optimal quantity? Is it solving the problem of underproduction or overproduction? What should be the socially optimal price of a good?

- As government, how to intervene? What kind of tax or subsidy should incentivize the firms or consumers? Which side should the tax or subsidy be applied?
- When the tax is applied, how to calculate the new price, new quantity, price of goods traded to consumer's hand, price that producer receives, government cost/revenue, deadweight loss? What is the consumer's burden and producer's burden of taxation?

Public Goods and Common Resources

- Classification of goods, according to exclusivity and rivalry:

	Non-rivalry	Rivalry
Non-excludable (Non-exclusivity)	Public Goods	Common Resources
Excludable (Exclusivity)	Club Goods	Private Goods

- What are the differences between excludable and non-excludable? What are the differences between rivalry and non-rivalry? In each of the characteristics, what are examples? Why there are such phenomena in each case?
- What is property rights? How would this solve the problem in the case of common resources?
- Public good
  - Why does public good admit vertical summation? What is the meaning of vertical summation? Does one unit or that unit of a public good have the value to only one person or more than one person? How to find the market demand/total demand for public good? (Recall what does the demand curve represent? Recall that the commodities we have studied so far are private goods, when we find the market demand for the private good, we do horizontal summation. What does it mean? Does one unit of that good has any value to other person? How have we done that?)
  - If there is a free-riding, what is the output being produced? (When P = MC, but what demand curve? Why? When there is a free-riding, only who sees the value of public good?) Why there is underprovision of public goods?
  - If everyone contributes and sees the value, how to find the socially optimal outcome/provision of public good? (When P = MC, but what demand curve?) Who should contribute how much per unit?

☺ *THE END — Good Luck for Your Final Exam!* ☺