Lecture 1 Notes

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1. Economics — The study of how people manage scarce resources to achieve their goals
2. Economic Groups:
   (a) Individuals, Households, and Consumers — Consume goods or services and provide factors of production
      i. Goals: Maximize utility from consuming goods or services and providing factors of production
      ii. Resources: Income to purchase goods or services, time
   (b) Firms, Entrepreneurs, Businesses, Companies, and Producers — Produce goods or services and use factors of production
      i. Goals: Maximize profit from producing and selling goods or services and using factors of production
      ii. Resources: Labor, Natural Resources, Capital, and Entrepreneurship
   (c) Governments — Spend their budget to implement their policies or social welfare programs
      i. Goals: Maximize the well-being of consumers and producers
      ii. Resources: Budget
3. Three Economic Assumptions:
   (a) People are rational
      i. People make decisions to achieve their highest goals given scarce resources and available information
      ii. Economists assume that people are rational on average even though not everyone behaves rationally
      iii. Ex. Individuals consume goods or services to maximize their utility given income and prices of goods or services
   (b) People respond to incentives

i. An incentive is something that causes a change in the trade-offs that people face

ii. Incentive involves total benefit and total cost

A. Total Benefit — Total amount of gain by doing the activity

B. Total Cost — Total amount paid or forfeited to do the activity

iii. Positive incentives makes people do more of an activity, while negative incentives (disincentives) decrease likelihood of performing an activity

(c) People make marginal decisions

i. Rational people make decisions by comparing marginal benefit to marginal cost

A. Marginal Benefit is the benefit of performing an additional unit of an activity: $B_M = \frac{TB_1 - TB_0}{Q_1 - Q_0}$, where TB_1 is the new total benefit, TB_0 is the old total benefit, Q_1 is the new amount of activity, and Q_0 is the old amount of activity

B. Marginal Cost is the cost of performing an additional unit of an activity: $C_M = \frac{TC_1 - TC_0}{Q_1 - Q_0}$, where TC_1 is the new total cost, TC_0 is the old total cost, Q_1 is the new amount of activity, and Q_0 is the old amount of activity

ii. Decision criteria depends on how much of an activity people take to maximize net benefit ($TB - TC$)

A. If $B_M > C_M$, more of an activity should be done to increase net benefit

B. If $B_M < C_M$, less of an activity should be done to increase net benefit

C. If $B_M = C_M$, the level of activity should be maintained to keep benefit in equilibrium

iii. This process is known as the **marginal decision-making process**

4. **Scarcity**:

(a) Peoples' wants are unlimited or infinite, but resources are limited, scarce, or finite

(b) Peoples' wants are constrained by scarce resources

(c) People need to make a choice among alternatives

(d) Ex. Individuals need to make a choice among different products given income

5. **Trade-off**:

(a) A trade-off occurs when people forfeit one activity to do another activity or when people give up more of one activity to get more of another activity

(b) Ex. The U.S. Government reduces its spending on education and social welfare to raise its defense spending

6. **Opportunity Cost**:

(a) The opportunity cost is the value of the second-best option given up to choose the best option

(b) It is the quantitative measure of trade-off relationships among alternative options

(c) Economists often express opportunity cost as a dollar value to compare alternatives

(d) Not all opportunity costs are measured in dollar or monetary values

(e) Ex. Toyota can produce 2 Corollas or 1 Camry with the same resources. What is the opportunity cost of 1 Camry? 2 Corollas

7. **Efficiency**:

   (a) Efficiency occurs when resources are used to create the greatest economic value within a society

   (b) Productive efficiency occurs when goods or services are produced at the minimum cost or when goods or services are produced to maximize profit

   (c) Allocative efficiency occurs when goods or services produced satisfy consumers' preferences most or when consumers obtain goods or services to maximize their efficiency

8. **Economic Growth**:

   (a) Economic growth is an increase in the production of goods or services

   (b) Three ways to obtain economic growth exist:

      i. Increase resources (labor, capital, natural resources, and entrepreneurship)

      ii. Technological advancement (progress) or positive technological change or innovation

      iii. Specialization and trade — Gains from trade with the right terms of trade

9. **Economic Model**

   (a) A simplified representation or version of a real economic phenomenon (situation)

   (b) Focuses on essentials of the complex reality by simplifying through assumptions, getting useful and approximate answers to economic problems, and obtaining predictions for the future

   (c) May be expressed in three ways: words, graphs, and equations

   (d) Ex. Circular flow model (words and diagrams) and Production possibilites frontier (in words, graphs, and equations)

10. Characteristics of a good model

    (a) Makes clear and reasonable assumptions (based on economic theory and data)

(b) Predicts cause and effect relationship among economic variables (focuses on causal relationship between two economic variables, assuming all else to be constant)

(c) Accurately describes the real world (data)

i. Does not need to include all complex details from reality

ii. Needs to approximately replicate reality

11. Developing a good economic model

(a) Make reasonable assumptions based on theory

(b) Formulate a testable hypothesis[1]

(c) Test a hypothesis through data collection and statistical models: null hypothesis (the hypothesis one wants to accept) and alternative hypothesis (hypothesis one wants to reject)

(d) Revise the model by changing assumptions, data, or both if the null hypothesis is rejected

(e) Use the revised model to explain or predict economic events

12. Developing a demand model

(a) Assume that everything else is constant, other than the price of a specific product

(b) Theoretical model: $P = a + bQ_d$, where P is price, and Q_d is the quantity determined

(c) Null hypothesis (H_0): There is a negative relationship between price and quantity determined ($b < 0$)

(d) Alternative hypothesis (H_A): There is either no relationship or a positive relationship between the price and quantity determined ($b \geq 0$)

(e) Statistical model: $P = a + bQ_d + \varepsilon$, where ε is the error term

(f) Collect data on price and quantity demanded to estimate b

(g) If data rejects the null hypothesis, revise the model by changing data or assumptions. Collect data once again on price and quantity demanded to estimate b

(h) Ex. $P = 10 - 2Q_d$ — If the quantity demanded increases by 1, the price will decline by \$2, or, if the price rises by \$1, the quantity demanded will decline by .5

13. Economic Model Examples

(a) Basic Circular Flow Model

i. Assumptions

A. Two economic agents: households and firms

[1] A statement about causal relationships between two economic variables that may be true or not

B. Two markets: product market and factor market

ii. One of the most basic models that shows the flow of money, goods and services, and inputs

iii. In the product market, households spend money to buy goods and services that firms obtain revenue by making and selling

iv. In the factor market, households earn income (wage, rent, and profit) by providing inputs that firms pay for (cost) to produce goods and services

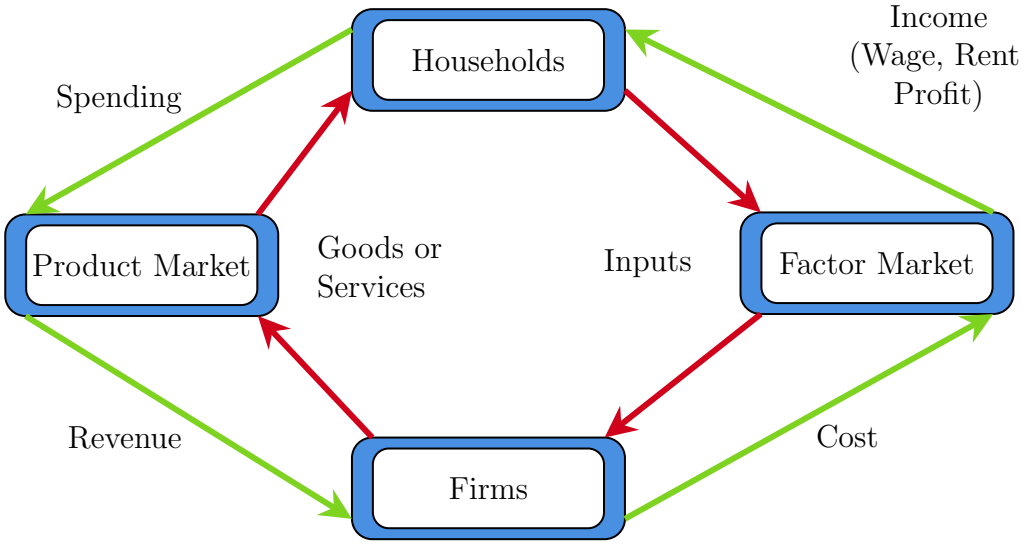

Figure 1: Example Basic Circular Flow Model

i. Missing Components

A. Missing economic agents: Governments

B. Missing markets: financial and international market

C. A modified circular flow model includes these components