

Economics Workshop

Topic 4: Consumer Demand and Uncertainty

1. Suppose that the insurance company with an initial wealth of \$2 million is risk-averse and has a logarithmic utility function

$$U(w) = \ln(w - 1,000,000)$$

Will the company be happy to accept a premium of \$1,200 on a \$100,000 house, given that the risk of total loss is 0.01?

2. (a) Distinguish between total utility and marginal utility. Use the following table to calculate the marginal utility obtained by consuming Good X and comment on your answer.

Consumption of Good X	Total Utility (\$)	Marginal Utility (\$)
1	28	
2	53	
3	74	
4	90	
5	100	

(b) Suppose that the market price of Good X is \$20. How many units of Good X will be consumed by a rational consumer and what is the resulting total consumer surplus (TCS)?

3. A person who would gamble \$10 if they had a 10% chance of winning \$75 is termed:
- Risk free
 - Risk loving
 - Risk neutral
 - Risk averse
4. The price of an ice cream is \$2 and you buy three ice creams per week. If the price of an ice cream falls to \$1.50 and you still buy three ice creams per week, which of the following is true?
- This violates the law of demand because as price falls the quantity demanded must rise.
 - The marginal utility of the 4th ice cream per week must be less than \$1.50.
 - The marginal utility of the 4th ice cream per week is higher than \$1.50.
 - The total utility of the 4th ice cream per week must be less than \$1.50.
 - Both the total and marginal utility of the 4th ice cream per week must be less than \$1.50.

5. A consumer will buy more of a good if the value of the good's:
 - a. marginal utility is less than price.
 - b. marginal utility is greater than price.
 - c. total utility is less than price.
 - d. marginal utility is less than or equal to price.
 - e. total utility is greater than price

6. Rashid likes avocado dip. He goes to a party where this dip is on the table. After eating four crackers with the avocado dip, he switches to cheese and crackers. From this we conclude that:
 - a. Rashid is no longer maximising his utility.
 - b. the avocado dip now has a marginal utility of zero.
 - c. the avocado dip cannot have been that good.
 - d. at this point cheese and crackers have a higher marginal utility than avocado dip.

7. Define the following problems for insurance companies:
 - (a) A person is diagnosed as suffering from lung cancer caused by excessive smoking and therefore tries to take out a life assurance contract without telling the life insurance company about the cancer. Explain whether this is an example of moral hazard or of adverse selection.
 - (b) A person starts driving recklessly after taking a motor insurance. Explain whether this is an example of moral hazard or of adverse selection.
 - (c) Explain what an insurance company can do to reduce the problems of adverse selection and moral hazard.

8. Having been granted debt forgiveness from the World Bank, the government of a developing country incurs new debt, expecting to be bailed out again if necessary. This is an example of:
 - a. Adverse selection
 - b. Moral hazard
 - c. Diminishing marginal utility
 - d. Risk spreading

9. (a) Calculate the maximum premium that an individual would be prepared to pay to insure himself against the total loss of his house worth \$100,000 if his initial level of wealth was \$140,000. Comment on your results. You may assume that the individual utility function can be described as

$$U(w) = w^{1/2}$$

and the probability of a loss of \$100,000 is 0.01.

(b) Suppose that Insurance company has an initial wealth of \$100 million and a utility function of the form

$$U(w) = w$$

Find the minimum premium insurance company would require in order to offer insurance to the insured and comment on whether insurance is feasible in this.