Chapter 2: Transaction Utility and Consumer Pricing

General Questions

1. Which of the following is not one of the anomalies that fall under the concept of transaction utility discussed in Chapter 2?
    a. Reference dependent preferences.
    b. The sunk cost fallacy.
    c. The flat-rate bias.
    d. Risk aversion.

   Answer: d
   Level: Easy.

2. Transaction Utility is a concept used to describe observed behavior. (True or False?)
   Answer: True. Transaction utility is not a prediction of how people should behave, it is a concept used to describe behavior that is observed.
   Level: Moderate.

3. Which of the following best describes the concept of Transaction Utility?
    a. The idea that individuals respond to the pricing of goods in non-standard ways.
    b. The idea that individuals make mistakes when deciding the quantity of goods to consume.
    c. The idea that prices are relative.
    d. The idea that individuals just want to get a good deal.

   Answer: a
   Level: Moderate.

4. Transaction Utility describes the scenario in which a consumer spends too much on a good. (True or False)?
   Answer: False.
   Level: Easy.

Rational Choice with Fixed and Marginal Costs

5. A firm must consider its fixed cost and its marginal cost when deciding how much to produce. (True or False?)
   Answer: False. A firm only considers its marginal cost when deciding how much to produce. However, the firms fixed cost will matter when determining its profit.
   Level: Easy.

6. Firm A and Firm B produce a good called x and both firms have a production function given by $(x)=\sqrt{x}$. It costs each firm \$0.25 to produce each unit of x and both firms sell a unit of x for \$2. However, to purchase the equipment needed to produce x, Firm A spent \$2500 and Firm B spent \$1500. The equipment each firm purchased is identical. How many units of x should each firm produce?

   Answer: Both firms should produce 16 units of x. Each firm solves its maximization problem: Firm A solves $\max_x 2*\sqrt{x}-0.25*x-2500$ and Firm B solves $\max_x 2*\sqrt{x}-0.25*x-1500$. Both maximization problems result in $x^*=16$.

   Level: Difficult.

7. A consumer has a budget constraint given by $p_0\hat{x}_1+p_1x_1+p_2x_2\le y$ where $p_0>0$ and $\hat{x}_1=1$ if positive amounts of x_1 are purchased and 0 otherwise. If the consumer has a utility function given by $U(x_1,x_2)=x_1+x_2$ and $p_1=p_2$ then he will not purchase x_1. (True or False?)

   Answer: True. With this utility function, the two goods are perfect substitutes (the consumer gets the same utility from consuming a bundle of any composition of x_1 and x_2) and they are the same price. This means he will choose only to buy x_2 and avoid paying p_0.

   Level: Moderate.

8. A consumer has a budget constraint given by $p_0\hat{x}_1+p_1x_1+p_2x_2\le y$ where $p_0=5,\quad p_1=0,\quad y=20,\quad p_2=1.\quad \hat{x}_1=1$ if positive amounts of x_1 are purchased and 0 otherwise. If the consumer has a utility function given by $U(x_1,x_2)=(x_1-13)^2+x_2$, then how much of x_1 does the consumer purchase?

   Answer: 13. This utility function has a bliss point at 13. If the consumer consumes more or less than 13 he loses utility.

   Level: Moderate.

9. A consumer has a budget constraint given by $p_0\hat{x}_1+p_1x_1+p_2x_2\le y$ where $p_0=5,\quad p_1=0,\quad y=20,\quad p_2=1.\quad \hat{x}_1=1$ if positive amounts of x_1 are purchased and 0 otherwise. If the consumer has a utility function given by $U(x_1,x_2)=x_1+x_2$, then how much of x_1 does the consumer want to purchase?

   Answer: He wants to be an unlimited amount. He has no bliss point and his marginal utility for x_1 is always increasing.

   Level: Moderate.

10. Two-Part Tariffs affect the consumer's utility function. (True or False)?

    Answer: False. The two-part tariff affects the consumer's budget constraint.

    Level: Easy.

11. A consumer has preferences over two goods, $U(x_1, x_2)$, where $p_0 \widehat{x_1} + p_1 x_1 + p_2 x_2 \leq y$ where $p_0 > 0$ and $\widehat{x_1} = 1$ if positive amounts of x_1 are purchased and 0 otherwise. If both x_1 and x_2 are normal goods and $x_1 > 0$ and $x_2 > 0$, then a decrease in p_0 has the following effect.
    a. Changes the relative price of the two goods: changes the slope of the budget line.
    b. Has a negative income effect: shifts the budget line towards the origin.
    c. Has a positive income effect: shifts the budget line away from the origin.
    d. No effect.
    Answer: c.
    Level: Moderate.

THE SUNK COST FALLACY

12. Example 1: Theater Tickets and Pricing Programs described an experiment to test for the sunk cost fallacy. If the following experiment would have been run, the results would be comparable to those described in the example. Two economists team up with the local baseball team to manipulate the pricing of season tickets. The first 100 fans that signed up for season tickets paid full price, the next 100 fans got a 10% discount and the next 100 fans received a 20% discount. They then compared the attendance across the different categories of discounts to see whether those who paid full price were more likely to attend the games.
    Answer: False. The experiment described in the example randomly assigned theater-goers to the different discount categories, but the experiment described above did not. It could be that the first 100 fans to sign up for season tickets get more utility from attending games than the last 100 since they were the FIRST to go to the box office to buy season tickets. This means that an increased rate in attendance among the full price group cannot necessarily be attributed to the sunk cost fallacy.
    Level: Difficult.

13. The sunk cost fallacy occurs when:
    a. Losses hurt more than gains.
    b. Gains or losses are compared to some reference point.
    c. My utility function contains a bliss point.
    d. I attempt to recover past costs by continuing an activity when there is a negative return.
    Answer: d.
    Level: Easy.

THEORY AND REACTIONS TO SUNK COST

14. Acquisition utility refers to the utility I receive from consuming a good and transaction utility is the utility I derive from feeling like I got a good deal. (True or False?)

Answer: True.
Level: Easy.

15. Which of the following utility functions represents prospect theory?
    a. $u_g(x)+u_l(c)=x^{.5}+\ln(c)$
    b. $u_g(x)+u_l(c)=x^{.5}+\frac{1}{c}$
    c. $u_g(x)+u_l(c)=x+2c$
    d. $u_g(x)+u_l(c)=x^2+c^2$

    Answer: b.
    Level: Difficult.

16. Suppose a family is considering going to a hockey game, but the roads are covered in ice. The tickets were a gift and the family gets a value of x from attending the game together, but incurs a cost of c for driving on the hazardous roads. The family's utility function is given by $u_g(x)+u_l(c)=\ln(x-3)-\ln(2-c)$. The family determines that the cost of driving on the icy roads is 1 unit (c=1). What is the minimum value they must obtain from the attending the game in order for them to decide to go (what must be the value of x)? (Hint: if they do not go to the game, they receive 0 and pay no costs).

    Answer: The value of x must be at least 4. If x=4, then the family is indifferent between going to the game and staying home.
    Level: Difficult.

17. A software firm has invested $2 million into the development of a new computer program. The firm is well aware that their ability to attract future investors heavily depends on the completion of this project. The firm has calculated that completing the project will result in a loss of $1 million, but continue anyways. The only explanation for the firm's behavior is the sunk cost fallacy. (True or False?)

    Answer: False. The firm's behavior can also be explained by their concern for their reputation. In continuing with the project, the firm makes a trade-off between current profit (the loss of $1 million on the project) and future profit (the ability to attract future investors).
    Level: Moderate.

18. The transaction cost explanation and prospect theory are two ways to describe the behavior of a consumer who considers a sunk cost when making consumption decisions. (True or False?)

    Answer: True.
    Level: Easy.

TRANSACTION UTILITY AND FLAT-RATE BIAS

19. The local phone company offers the following plan: $3 for the first call of the day plus $0.02 for each minute OR $21 per week for unlimited calls. I only make phone calls on Sunday, Thursday and Friday and talk for the same number of minutes on each day. My only concern is saving money. How many minutes must I spend on the phone each week in order for the flat rate to be the optimal choice?
    Answer: At least 200 minutes each week. If I spend 200 minutes each week I am indifferent between the 2 plans.
    Difficulty: Moderate.

20. A consumer knows with certainty that he will go to the gym 10 times every month for 12 months. He is offered two types of memberships. The first membership is a flat monthly rate of $55 for unlimited use and the second membership plan is a $10 one-time fee and $5 per visit. The consumer should buy the first membership plan (True or False?).
    Answer: False. In a year, the consumer would spend $660 if he chooses the first plan and $10+$50 +11*($50) = $610 on the second plan.
    Level: Easy.

Procedural Explanations for Flat-Rate Bias

21. Which of the following is not a procedural explanation for the flat rate bias?
    a. Loss aversion.
    b. Payment Decoupling.
    c. Self-Control.
    d. Cognitive Costs.
    Answer: a.
    Level: Easy.

22. Payment decoupling is best described as:
    a. The idea that losses hurt more than gains.
    b. The idea that people suffer from the cognitive costs of choosing which bundle to purchase.
    c. The idea that I take sunk costs into account when making consumption decisions.
    d. The idea that the payment and consumption are separated by time and do not seem as closely linked.
    Answer: d.
    Level: Easy.

23. What is one possible way a non-economist would describe preferences that display distaste for linear pricing?
    a. A preference for convenience.
    b. A preference for self-control.
    c. A preference for getting a good deal.
    d. A preference for unlimited consumption.

Answer: a.
Level: Moderate.

Rational Explanations for Flat-Rate Bias

24. An individual who is risk-neutral is willing to pay a flat-rate to avoid the uncertainty of a linear-pricing plan. (True or False?)
    Answer: False. In order for an individual to be willing to pay to avoid risk, he must be risk-averse.
    Level: Moderate to Hard.

25. One explanation for a flat-rate bias is that it is just transitory. It takes consumers time to learn how much of a good they want to consume. Over time, they adjust their behavior and the flat-rate bias disappears. (True or False?)
    Answer: True.
    Level: Easy.

Transaction Utility and Consumer Preferences in Reference

26. "When an individual uses a comparison to aid in making a decision, we often call this a:
    a. Sunk cost.
    b. Fixed cost.
    c. Reference point.
    d. Decoupling.
    Answer: c.
    Level: Easy.

27. Consider the following utility function, where x is the consumer good and p is the price of x. $U(x, p) = \sqrt{x} + (p - 10)$ is an example of utility function for an individual who exhibits which type of transaction utility?
    a. Sunk cost fallacy.
    b. Flat-rate bias.
    c. Reference-Dependent Preferences.
    Answer: c
    Difficulty: Moderate.

28. A man's car breaks down and he must walk 10 miles to the nearest service station. It's a hot day and he is incredibly thirsty. When he arrives at the service station he pays $4 for a bottle of water. A few days later, his car is fixed and he stops at the store to pick up some groceries before heading home. He noticed that a bottle of water cost $3.50 and decided not to buy it because it was too expensive. The only explanation for this man's behavior is that he has reference-dependent preferences. (True or False?)

Answer: False. The man's marginal utility from the bottle of water is different in the two scenarios.
Difficulty: Moderate.

29. My daughter has saved her money all year to buy new rollerblades. The best way to describe her preferences are reference dependent – she will be sad if the price is more than $35 because she will not be able to afford them, but she will also be sad if the price is less than $35 because she missed out on buying them last month and cannot use the money for anything else. Her utility function can be written as $U(x, p, \varepsilon) = x + z(p, \varepsilon)$, where x=1 if she buys the rollerblades and 0 otherwise, p is the price of the rollerblades and ε is her reference point. Which of the following functions for $z(p, \varepsilon)$ best describes the scenario above?
    a. $z(p, \varepsilon) = (35 - p)$.
    b. $z(p, \varepsilon) = |p - 35|$.
    c. $z(p, e) = |x - p|$.
    d. $z(p, e) = (x - p)^2$.
    Answer: b.
    Level: Moderate.

30. I have been saving my money to buy a new car. I know that I want to buy a Prius and that it will cost about $22,000. My refrigerator has been malfunctioning too, so any left over money will go towards repairs. My utility function can be written as $U(x, p, \varepsilon) = x + z(p, \varepsilon)$, where x=1 if I buy the Prius and 0 otherwise, p is the price of the Prius and ε is my reference point. Which of the following functions for $z(p, \varepsilon)$ best describes the scenario above?
    a. $z(p, \varepsilon) = (22{,}000 - p)$.
    b. $z(p, \varepsilon) = |p - 22{,}000|$.
    c. $z(p, e) = |x - p|$.
    d. $z(p, e) = (x - p)^2$.
    Answer: a.
    Level: Moderate.

31. There are two local bars and I always buy the same beer at both bars. At the first bar, the music is bad and the bartender is rude. At the second bar, the music is wonderful, there are lots of friendly people, and I always enjoy myself more than when I go to the first bar. An example of context adding value to a good is:
    a. I pay a dollar more for the beer at the second bar than I pay at the first bar.
    b. I pay $10 for a beer at the second bar.
    c. I never go to the first bar.
    d. I stop talking to the bartender at the first bar.
    Answer: a.
    Level: Easy.