

**Chapter 21: The Theory of Consumer Choice**  
**Principles of Economics, 6<sup>th</sup> Edition**  
**N. Gregory Mankiw**  
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1. Introduction

- a. *This is an important chapter as it explains how we make decisions by comparing the psychological benefits of alternatives to their costs choosing those that increase our welfare.*
- b. *Regrettably, we will not have the time to cover it in class.*
- c. This method is important for all decisions not only those affecting consumers.
  - i. Have you ever turned down a higher paying job because of the nature or location of the job?
- d. This illustrates one of the central principles of economics: people attempt to maximize their welfare subject to their constraints.
  - i. In this case, we talk about utility instead of welfare and the constraint is income.
- e. Mankiw applies the framework developed in this chapter to three household decisions:
  - i. Do all demand curves slope downward?
  - ii. How do wages affect labor supply?
  - iii. How do interest rates affect household saving?

2. The Budget Constraint: What the Consumer Can Afford

- a. **Figure 1: The Consumer's Budget Constraint. P. 441**
- b. Def: Budget constraint is the limit on the consumption bundles that a consumer can afford. P. 440
- c. *Since  $I = P_x * Q_x + P_y * Q_y$ , then*
  - (1) the budget line can be defined as  $Q_y = I/P_y - (P_x/P_y) * Q_x$ .
    - (a)  $I/P_y$  is the intercept shifting up as income increases and
      - (i) If income (I) increases, the intercept increases and the budget line shifts up--and out to the right.
    - (b)  $P_x/P_y$  is the slope.  
If the price of x ( $P_x$ ) increases the slope of the budget line increases pivoting around the intercept on the horizontal axis.

1. Preferences: What the Consumer Wants

- a. Representing preferences with indifference curves
  - i. Def: Indifference curve is a curve that shows consumption bundles that give the consumer the same level of satisfaction. P. 442
  - ii. Def: Marginal rate of substitution is the rate at which a consumer is willing to trade one good for another ( $Q_y/Q_x$ ). P. 442
  - iii. **Figure 2: The Consumer's Preferences. P. 442**
    - (1) *The change in total utility between two very close bundles of goods is  $\Delta TU = MU_x * \Delta Q_x + MU_y * \Delta Q_y$ .*  
MU is the marginal utility, which is the rate of change of total utility with respect to changes in the quantities of the goods.
      - (1) Along an indifference curve,  $\Delta TU = 0$ , so this equation becomes  $\Delta Q_y/\Delta Q_x = - MU_x/MU_y$ .

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(2) So the slope along the indifference curve,  $\Delta Q_y / \Delta Q_x$ , is equal to the negative of the ratio of the marginal utilities of the two goods,  $-MU_x / MU_y$ .

b. Four Properties Of Indifference Curves

- i. Higher indifference curves are preferred to lower ones.
- ii. Indifference curves are downward sloping.
- iii. Indifference curves do not cross.

(1) **Figure 3: The Impossibility of Intersecting Indifference Curves. 443**

- iv. Indifference curves are bowed inward (convex to the origin).

(1) **Figure 4: Bowed Indifference Curves. P. 444**

c. Two extreme examples of indifference curves

- i. Perfect substitutes are two goods with straight line indifference curves. P. 445

(1) **Figure 5: Perfect Substitutes and Perfect Complements. P. 445**

- ii. Perfect complements are two goods with right angle indifference curves. P. 445

2. Optimization: What the consumer chooses

a. The consumer's optimal choices

b. **Figure 6: The Consumer's Optimum. P. 446**

c. **FYI: Utility: An Alternative Way to Represent a Consumer's Preferences, P. 447**

- i. Along an IC, the total utility is constant.
- ii. Maximizing utility and getting to the highest indifference curve as the same thing.

iii.  $MRS = P_x / P_y$

iv.  $MU_x / MU_y = P_x / P_y$

v.  $MU_x / P_x = MU_y / P_y$

- vi. The consumer chooses consumption of the two goods so that the MRS equals the ratio of the prices.

(1) This will be when  $-MU_x / MU_y = -P_x / P_y$  or  $MU_x / P_x = MU_y / P_y$ .

(2) So if  $MU_x / P_x > MU_y / P_y$ , the consumer has an incentive to shift purchases away from y and toward x.

(3) So if  $MU_x / P_x < MU_y / P_y$ , the consumer has an incentive to shift purchases away from x and toward y.

(4) As a result they will move toward the combination of x and y that maximizes their welfare.

d. How Changes in Income Affect the Consumer's Choices

i. **Figure 7: An Increase in Income. P. 448**

- ii. Def: Normal good is a good for which an increase in income raises the quantity demanded. P. 448

- iii. Def: Inferior good is a good for which an increase in income reduces the quantity demanded. P. 448

iv. **Figure 8: An Inferior Good. P. 449**

e. How Changes in Prices Affect the Consumer's Choices

i. **Figure 9: A Change in Price. P. 450**

f. Income and Substitution Effects

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- i. Def: Income effect is the change in consumption that results when a price change moves the consumer to a higher or lower indifference curve. P. 450
  - ii. Def: Substitution effect is the change in consumption that results when a price change moves the consumer along a given indifference curve to a point with a new marginal rate of substitution. p. 450
  - iii. **Table 1: Income and Substitution Effects When the Price of Pepsi Falls. P. 451**
  - iv. **Figure 10: Income and Substitution Effects. P. 451**
  - g. Deriving the Demand Curve
    - i. **Figure 11: Deriving the Demand Curve. P. 452**
3. Three Applications
- a. Do All Demand Curves Slope Downward?
    - i. Def: Giffen good is a good for which an increase in the price raises the quantity demanded. P. 453.
      - (1)**Figure 12: A Giffen Good. P. 454**
      - (2)It is rare, if it occurs at all.
      - (3)**Case Study: The Search for Giffen Goods, P. 454**
  - b. How Do Wages Affect Labor Supply?
    - i. An increase in wages has two effects:
    - ii. A substitution effect as the cost of leisure has increased encouraging people to work more and
    - iii. An income effect that increases the demand for all normal goods, including leisure, thereby, encouraging people to work less.
    - iv. *The supply of labor can be backward bending, if the substitution effect initially dominates the income effect, but at higher wages levels their effects are reversed.*
      - i. **Figure 13: The Work Leisure Decision. P. 455**
      - ii. **Case Study: Income Effects on Labor Supply: Historical Trends, Lottery Winners, and the Carnegie Conjecture, P. 457**
      - iii. **Figure 14: An Increase in the Wage, P. 456**
      - iv. **In the News: Backward sloping Labor Supply in Kiribati, P. 458**
  - c. How Do Interest Rates Affect Household Saving?
    - i. The substitution effect of an increase in the interest rate reduces now the cost of future goods, thereby, increasing the demand for future goods: increase their saving.
    - ii. However, there can also be an income effect for people with wealth: they can buy more of current and future goods, so they might elect to consumer more current goods: reduce their saving.
    - iii. The outcome depends on their combined impact, but the substitution effect usually dominates.
    - iv. The relevant interest rate is the real interest rate, which is the nominal interest adjusted for inflation, and it does not change by very much.
    - v. **Figure 15: The Consumption Saving Decision. P. 459**
    - vi. **Figure 16: An Increase in the Interest Rate. P. 460**

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4. Conclusion: Do People Really Think this Way?
  - i. The test of a theory is in its applications, which are provided here.
5. Summary