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CHAPTER 5

Consumer Preferences

What a consumer wants, preferences, utility, indifference curves, and the rate at which she trades one good for another.

What this chapter covers



5.2–5.3 The basics

- Ranking bundles
- Total & marginal utility
- Indifference curves



5.4–5.5 Trading goods

- The MRS and why it falls
- Link to marginal utility
- Substitutes & complements



5.6–5.8 Evidence

- Case: razors & printer ink
- Empirical: too much choice
- Behavioral: fairness

THE BIG IDEA

Preferences, the likes and dislikes that guide every purchase, are the most basic ingredient of microeconomics. We keep to words, rankings, and simple numbers throughout.

5.1

Introduction

- Why a second cup brings less satisfaction
- What a consumer wants vs. can afford
- No algebra, only which bundle she likes best

5.1 INTRODUCTION

Four puzzles that preferences will solve



The second cup

Why does a second cup of coffee bring less extra satisfaction than the first?



The same aisle

Why do supermarkets place hot dogs and buns together?



Costly ink

Why does a \$60 printer use ink pricier, ounce for ounce, than fine champagne?



Less is more

Why did shoppers buy more jam when offered fewer flavors?

THE PLAN

This chapter describes what a consumer wants; Chapter 6 adds what she can afford, and puts the two together to explain what she actually buys.

5.2

Preferences and the Ranking of Bundles

- What a bundle is
- Three rules for ranking
- Utility as a ranking number

A bundle, and three reasonable rules

■ Bundle

A list of how much of each good a person consumes, for example, 2 coffees and 3 donuts. We assume a consumer can look at any two bundles and rank them.

1

1. Completeness

Faced with any two bundles, she can say which she prefers, or that she likes them equally. She is never unable to compare.

2

2. Transitivity

If she prefers A to B, and B to C, then she prefers A to C. Her rankings do not run in circles.

3

3. More is better

Other things equal, more of a good is preferred to less.

5.2 RANKING BUNDLES

Utility is a ranking, not an amount

■ Utility

A number attached to each bundle, where a higher number marks a more preferred bundle. It measures order, not amount.

Why the Number Is Only Ordinal

If one bundle has utility 10 and another 5, the first is preferred, but it is not “twice as good.” Utility is like the finishing places in a race: they tell us who came first and second, but not by how many seconds.

5.2.1 TOTAL & MARGINAL UTILITY

Total vs. marginal utility

■ Total utility

The overall satisfaction a good provides.

■ Marginal utility

The extra satisfaction from one more unit.

LOOKING CLOSER

It helps to look closely at how utility grows as a person consumes more of a single good. Table 5.1 shows both measures for cups of coffee over a day.

5.2.1 TOTAL & MARGINAL UTILITY

Total and marginal utility from coffee

Cups	Total utility	Marginal utility
0	0	
1	10	10
2	18	8
3	24	6
4	28	4
5	30	2
6	30	0

Table 5.1 Total and marginal utility from cups of coffee.

READING THE TABLE

Total utility rises, but by ever smaller amounts: the first cup adds 10, the second only 8, the third 6. At cup 6 marginal utility hits zero, the point of satiation, where an extra cup adds nothing.

The law of diminishing marginal utility

THE LAW

As a person consumes more of a good, the extra satisfaction from each additional unit tends to fall.

- One of the most dependable regularities in economics, the first slice of pizza is a delight, the fifth a chore.
- It underlies the downward-sloping demand curves of Chapter 2: a buyer pays less for a unit that brings less extra satisfaction.
- It also bows the indifference curves we meet next.

5.2.1 TOTAL & MARGINAL UTILITY

Self-check: the third slice of pizza

SELF-CHECK

Q. After two slices of pizza, you find each delicious and consider a third. If the extra utility of the third slice is smaller than that of the second, what pattern of preferences does this describe?

A. Diminishing marginal utility: the extra satisfaction from each additional unit falls as consumption rises. It does not mean total utility falls, you may still enjoy the third slice, but that the additional enjoyment from each new slice is smaller than the last.

5.3

Indifference Curves

- Bundles that are equally liked
- The indifference map
- Three properties of the curves

5.3 INDIFFERENCE CURVES

Equally-liked bundles trace a curve

■ Indifference curve

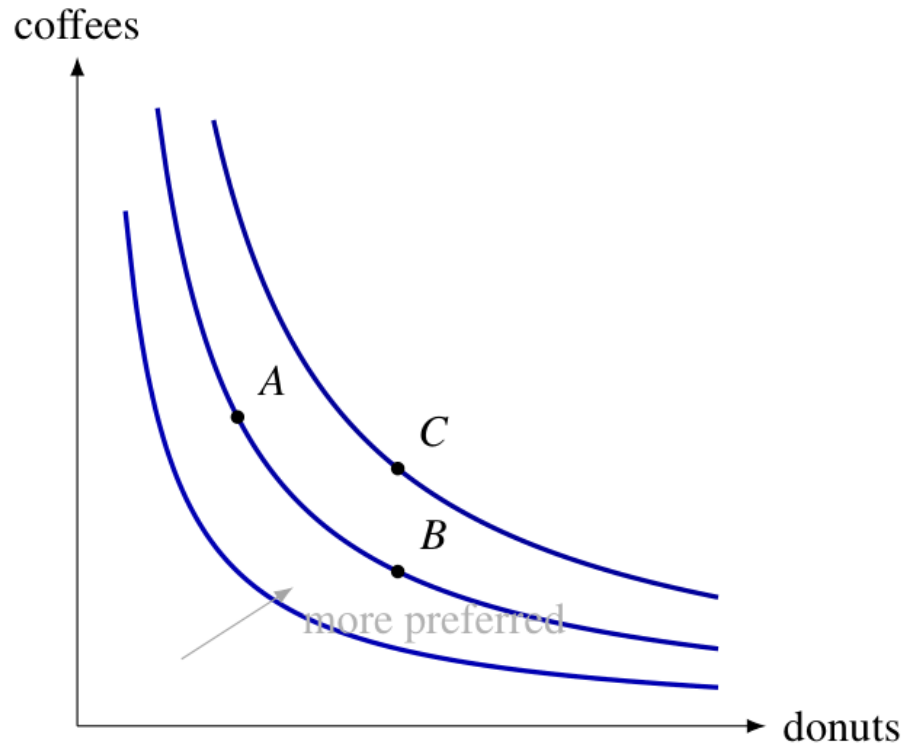
A curve connecting bundles that give a consumer exactly equal satisfaction, she is indifferent among them. One good on each axis.

HIGHER IS BETTER

Every bundle on a single curve is equally preferred. Bundles on a higher curve (farther from the origin) are preferred to those on a lower one, because they contain more.

5.3 INDIFFERENCE CURVES

An indifference map



A and B. On the same curve, equally preferred.

C. On a higher curve, preferred to both, because it contains more.

Figure 5.1 An indifference map. Bundles A and B are equally preferred; C, on a higher curve, is preferred to both.

Three properties of indifference curves



Slope downward

To stay equally satisfied while giving up some coffee, a person must receive more donuts.



Never cross

If they did, transitivity would be violated.



Bowed to the origin

For the reason we take up next: the diminishing MRS.

5.4

The Marginal Rate of Substitution

- The slope of an indifference curve
- A worked schedule (Table 5.2)
- Diminishing MRS bows the curve

5.4 THE MRS

The slope has a name

■ Marginal rate of substitution (MRS)

The number of units of one good a consumer will give up to gain one more unit of the other, while staying equally satisfied. It measures her willingness to trade.

A WORKED SCHEDULE

Table 5.2 lists four equally-preferred bundles for a consumer choosing between donuts and cups of coffee, all on the same indifference curve.

5.4 THE MRS

The MRS falls as donuts grow plentiful

Bundle	Donuts	Coffees	Coffees given up for one more donut
A	1	10	
B	2	7	3
C	3	5	2
D	4	4	1

Table 5.2 The MRS falls as donuts become more plentiful.

READING THE TABLE

From A to B she gives up 3 coffees for her second donut; from B to C only 2; from C to D only 1. Her willingness to trade, her MRS, falls as she gets more donuts.

The principle of diminishing MRS

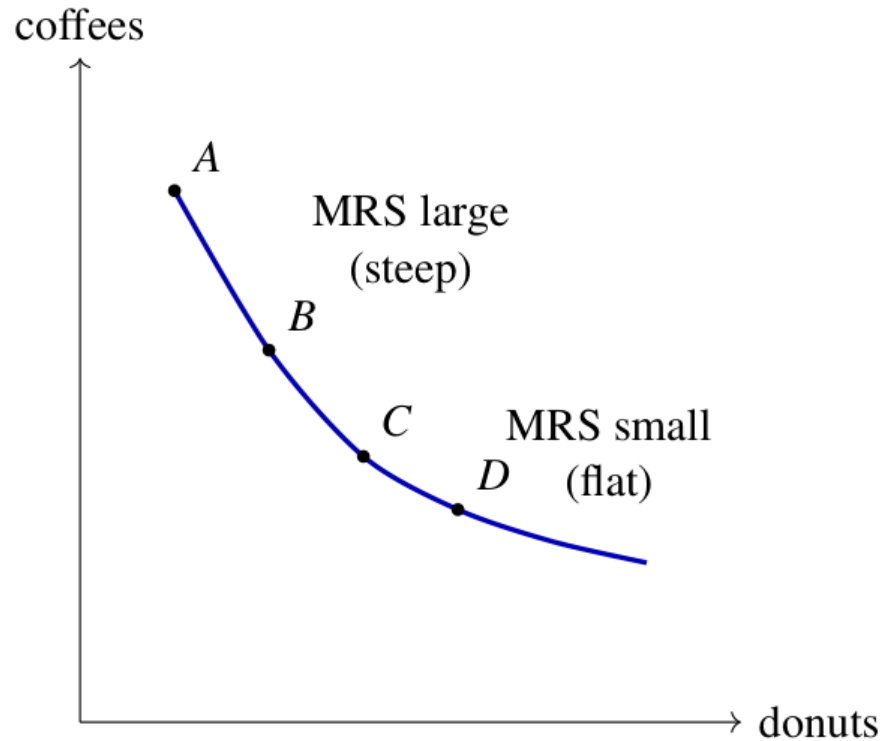
DIMINISHING MRS

The more a person already has of a good, the less of the other good she will sacrifice for still more of it.

- When donuts are scarce and coffee plentiful, an extra donut is worth a lot of coffee.
- Once donuts are abundant, an extra one is worth little.
- Diminishing MRS is exactly what makes indifference curves bow toward the origin.

5.4 THE MRS

A bowed indifference curve



Steep where coffee is plentiful and donuts scarce, a large MRS.

Flat where donuts are plentiful, a small MRS.

Figure 5.2 A bowed indifference curve: the MRS is large where donuts are scarce, small where they are plentiful.

5.4.1 WHY THE MRS DIMINISHES

MRS and marginal utility: one story, twice

THE LINK

The MRS at any bundle is the ratio of the two goods' marginal utilities. So diminishing marginal utility for each good produces the diminishing MRS that bows the indifference curve toward the origin.

- Many donuts, little coffee: the marginal utility of a donut is low and of coffee high, she parts with little coffee for another donut, a small MRS.
- Donuts scarce, coffee plentiful: the reverse holds, and the MRS is large.
- The graphical story of 5.4 and the numerical story of 5.2.1 are the same story told twice.

5.5

Two Special Cases: Substitutes and Complements

- Perfect substitutes: straight lines
- Perfect complements: L-shapes
- The goods in between

5.5 SPECIAL CASES

Two extremes worth knowing

■ Perfect substitutes

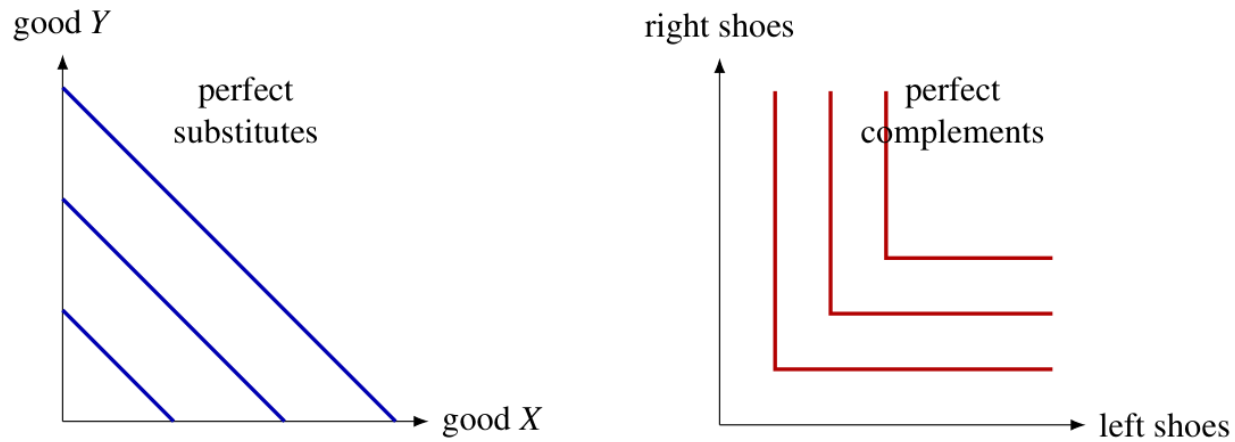
Goods a consumer trades at a fixed rate, no matter how many she has, a one-dollar coin and two fifty-cent coins, or two brands of bottled water she considers identical. Indifference curves are straight lines: the MRS never changes.

■ Perfect complements

Goods a consumer wants in a fixed proportion, left and right shoes, or consoles and the controllers they require. Indifference curves are L-shaped: a seventh left shoe is worthless without a seventh right shoe.

5.5 SPECIAL CASES

Straight lines and L-shapes



Substitutes. Straight lines, a constant MRS.

Complements. Right angles, extra of one good alone is worthless.

Figure 5.3 Perfect substitutes (left) have straight-line curves; perfect complements (right) have L-shaped ones.

5.5.1 THE GOODS IN BETWEEN

Most goods lie between the extremes

THE BOWED MIDDLE

A consumer choosing between two similar coffee brands, or between pizza and tacos, has some willingness to substitute, but at a rate that changes as the mix changes. These “well-behaved” preferences give the smoothly bowed curves of Section 5.4.

- Neither the straight lines of perfect substitutes nor the sharp corners of perfect complements.
- Placing a pair of goods on this spectrum is often the first step in predicting how a consumer responds when a price changes, the subject of Chapter 6.

5.6

Case Study: Razors, Blades, and the Price of Printer Ink

Complements explain one of the most common pricing strategies in business.

5.6 CASE STUDY

Sell the device cheap, charge for the supplies

THE RAZOR MODEL

The classic example is the safety razor. Selling razors and blades is profitable precisely because they are complements, a razor is useless without blades, so a customer who buys a cheap razor is locked into buying the maker's blades for years.

- The strategy works only when the seller can tie the two goods together.
- When refill makers or generic cartridges break the link, the high markup on supplies erodes.

5.6 CASE STUDY

Printers and ink: the same logic, made vivid

< \$60

what an inkjet printer can retail for, at or below cost

\$1,000s

per liter for branded ink, more, ounce for ounce, than fine champagne

WHY IT WORKS

Consumers tolerate this because, having bought the printer, they treat it and its ink as perfect complements. The manufacturer expects to profit from replacement cartridges. We return to this kind of pricing in Chapter 12, on price discrimination and bundling.

5.7

Empirical Evidence: Can There Be Too Much Choice?

“More is better” applies to quantities, but does it apply to options?

5.7 EMPIRICAL EVIDENCE

The Iyengar & Lepper (2000) jam experiment

- A tasting booth in an upscale grocery store displayed, at different times, either 6 or 24 varieties of jam.
- The larger display drew more interest, but the purchases ran the other way.

Display	Stopped	Bought
6 jams	40%	30%
24 jams	60%	3%

Of those who stopped at the 6-jam table, ten times as many bought.

THE NUMBERS

60% stopped at the 24 jams vs. 40% at the 6, yet only 3% of the first group bought, against 30% of the second.

Choice overload

■ Choice overload

A vast menu is attractive but can leave shoppers unable to decide and less satisfied with whatever they pick.

WHAT IT MEANS

The result does not overturn the theory of preferences, but it qualifies how people use it. Retailers have absorbed the lesson: many deliberately offer a limited selection rather than overwhelm customers with options.

5.8

A Look into Behavioral Economics: Fairness and Social Preferences

The standard model assumes a consumer cares only about her own bundle.

The ultimatum game

■ Ultimatum game

One player is given a sum, say \$10, and proposes how to split it with a second player, who can accept (both are paid as proposed) or reject (both get nothing).

THE PUZZLE

A purely self-interested responder should accept any positive offer. Yet low offers are routinely rejected: proposers most often offer close to half, and offers below about 20–30% are turned down roughly half the time, both players walking away empty-handed.

Inequity aversion and social preferences

■ Inequity aversion, Fehr & Schmidt (1999)

People dislike unequal outcomes, both when the inequality favors others and, to a lesser degree, when it favors themselves.

WHY IT MATTERS

Such social preferences explain behavior the narrow model misses, why people tip in restaurants they will never revisit, contribute to public broadcasting, and punish firms they regard as having priced unfairly, as with price gouging in Chapter 2.

The endowment effect

THE MUG EXPERIMENT

Kahneman, Knetsch & Thaler (1990) gave half a group of students a coffee mug, then opened a market. Standard theory predicts brisk trading; instead, far fewer trades occurred, owners demanded about twice as much to give up their mug as non-owners would pay for one.

■ Endowment effect

Valuing a thing more simply because you own it, a form of loss aversion (Chapter 7). Giving up the mug feels like a loss, which looms larger than the equivalent gain. It helps explain why people hold onto possessions, stocks, and even opinions longer than the cold logic of preferences would suggest.

Key takeaways

1

Ranking bundles

Completeness, transitivity, and more-is-better; utility is a ranking, not an amount.

2

Marginal utility

Extra satisfaction from one more unit falls, the law of diminishing marginal utility.

3

Indifference curves

Equally-liked bundles; downward-sloping, never crossing, bowed to the origin.

4

The MRS

Willingness to trade; it diminishes because it equals the ratio of marginal utilities.

5

Special cases

Perfect substitutes (straight lines), perfect complements (L-shapes), and the bowed middle.

6

Evidence

Razors & ink, choice overload (jam), the ultimatum game, and the endowment effect.