Preferences

ECON 370: Microeconomic Theory

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Choices

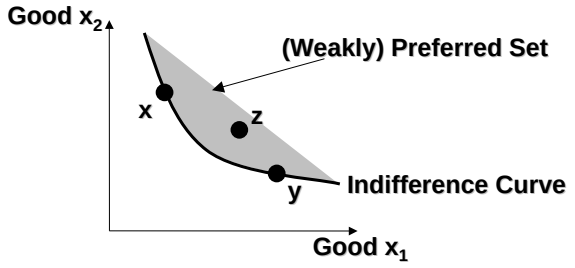
- The theory of consumer preferences is based fundamentally on choices
  - The steak dinner or the salad bar
  - Major in Economics or Engineering
  - Save money for retirement or take that vacation to Maui
- We say a consumer *Prefers* bundle *A* to bundle *B* if:
  - Assuming both are *feasible*
  - And all else being equal (*¡cēterīs paribus!*)
  - She would choose bundle *A* instead of bundle *B*

Preference Relations

- Consumers can compare two different consumption bundles, x and y:
  - strict preference: $x \succ y$
    - "x is strictly preferred to y"
  - weak preference: $x \succsim y$
    - "x is at least as good as y"
  - indifference: $x \sim y$
- These are *ordinal* (not *cardinal*) relations
  - Only order alternative bundles
  - Do not specify magnitude of preference differences

Indifference Curves

- An indifference curve (level set)
  - Take a reference bundle x´
  - Indifference curve: set of all bundles $y \sim x'$



Assumptions about Preferences

We *usually* assume preferences meet the following assumptions:

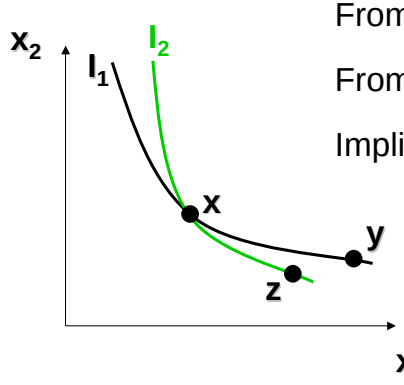
A1 *Completeness*: All bundles can be ranked.

A2 *Transitivity*: If $x \succsim y$ and $y \succsim z$, then $x \succsim z$.

A3 *Non-Satiation*: More is always better.

A4 *Convexity*: The "better-than" set is convex.

Indifference Curves Cannot Intersect

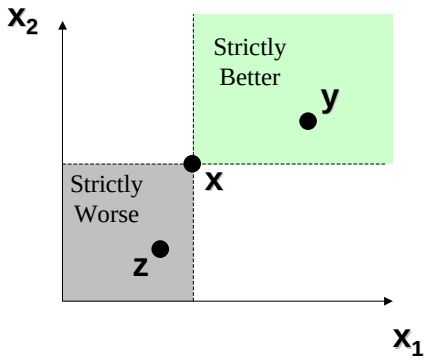


From I_1, $x \sim y$

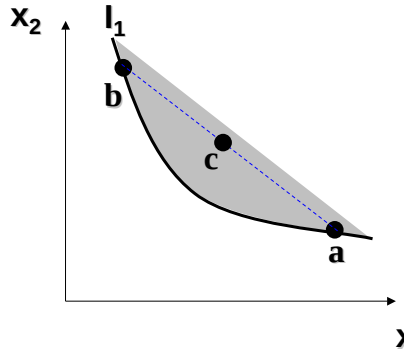
From I_2, $x \sim z$

Implies: $y \sim z$, but $y \succ z$

Non-Satiation



Convexity



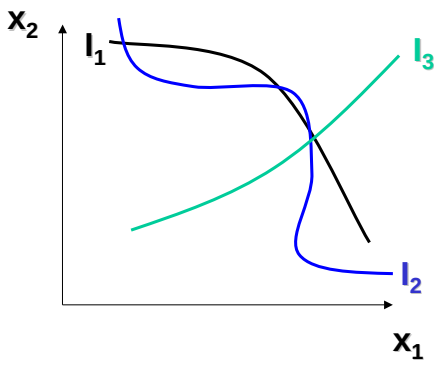
Two points on the same indifference curve

Draw a line drawn between the two points

Any point on that line will be at least as good

Mathematically:
$\alpha a + (1 - \alpha)b \succsim a \sim b$

Non-Convex Examples



Comments about Assumptions

- Assumptions A1 & A2 are essential to our concept of rationality
- Preferences that also meet Assumptions A3 & A4 are called *Well Behaved*.
  - Non-Satiation
    - This clearly does not apply in the real world
    - We can usually get away with it because people will generally choose a consumption bundle in the region where more is still better (Why?).
    - Important exception: 'Bads'
  - Convexity
    - There is no fundamental reason why preferences should meet this
    - Again, it is mathematically convenient
    - It also turns out not to matter much if it is not met

Examples of Preferences

- Examples that meet our assumptions:
  - Perfect Substitutes
  - Perfect Complements
- Examples that do not meet our assumptions
  - 'Bads'
    - (But, we can turn a bad into a good…)
  - Satiation

Perfect Substitutes

- Tastes:
  - If consumer always regards commodities 1 and 2 as equivalent,
  - then commodities are *Perfect Substitutes*.
  - Only total amount of two commodities in bundles determines their preference rank-order.
- Indifference Curves:
  - Straight Lines
- Example
  - Brand-Name v. Generic Flour

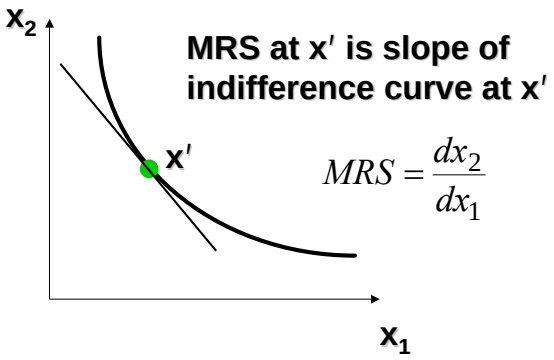
Perfect Complements

- Tastes:
  - If consumer always consumes commodities 1 and 2 in fixed proportions,
  - Then, commodities are *Perfect Complements*.
  - Only number of pairs of two commodities determines preference rank-order of bundles.
- Indifference Curves:
  - "L-Shaped" Indifference curves
- Example
  - Coffee and sugar

Discrete Goods

- A commodity is *infinitely divisible* if it can be acquired in any quantity (water, cheese).
- A commodity is *discrete* if it comes in indivisible (cars, refrigerators).
- Indifference curves for discrete goods
  - Suppose commodity 1 is infinitely divisible (gas)
  - Suppose commodity 2 is discrete (cars)

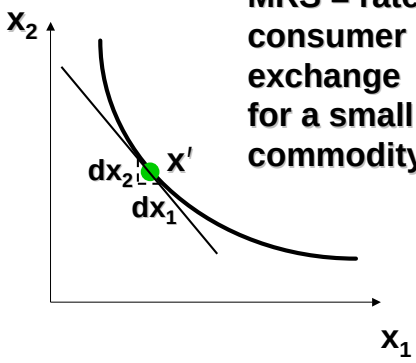
Marginal Rate of Substitution (MRS)



MRS at x′ is slope of indifference curve at x′

$$MRS = \frac{dx_2}{dx_1}$$

Marginal Rate of Substitution



MRS = rate at which the consumer is willing to exchange commodity 2 for a small amount of commodity 1.

MRS and Indifference Curves

- Two goods: IC has negative slope
  - I.e., MRS < 0
- If (and only if) prefs. are strictly convex:
  - MRS always increases with x_1 (becomes less negative)
- MRS decreases (becomes more negative) as x_1 increases ⇒ nonconvex preferences