Econ 301 - Microeconomic Theory 2 **Winter 2018**

Lecture 3: January 10, 2018

Lecturer: Jean Guillaume Forand *Notes By: Harsh Mistry*

3.1 Consumer Choice Continued

- Given a preference relation $\succeq$ on $\mathbb{R}^2_*$,
  - The strict preference relation $\succ$ on $\mathbb{R}^2_*$ is defined such that $x > y$ if an only if $x \succeq y$ but not $y \succeq x$
  - The indifference relation $\sim$ on $\mathbb{R}^2_*$ is defined such that $x \sim y$ iff $x \succeq y$ and $y \succeq x$
  - Having as primitives the weak preference relation is equivalent to having as primitives the strict preference and indifference relations
- An arbitrary preference relation need not correspond to preferences we find interesting or reasonable

  Example 3.1 *Fix pref. rel. $\succeq$ on $\mathbb{R}^2_*$*

  1. *Say $\succeq$ such that not $x \succeq y$ for all $x, y \in \mathbb{R}^2_*$*
     - *Consumer is **not** indifferent between all bundles, but incapable of stating preferences*
  2. *Say $\succeq$ is such that there exists $x, y, z \in \mathbb{R}^2_*$ with $x \succ y \succ z$ and $z \succ x$*
     - *Ranking of bundles x and z are inconsistent when,*
       * *compared through y, x is best*
       * *compared directly, z is best*

Definition 3.2 *The preference relation $\succeq$ on $\mathbb{R}^2_*$ is*

1. *Complete if, for all $x, y \in \mathbb{R}^2_*$, either $x \succeq y$ or $y \succ x$ (or both)*
2. *Transitive if, for all $x, y, z \in \mathbb{R}^2_*$ such that $x \succeq y \succeq z$, we have $x \succeq z$*

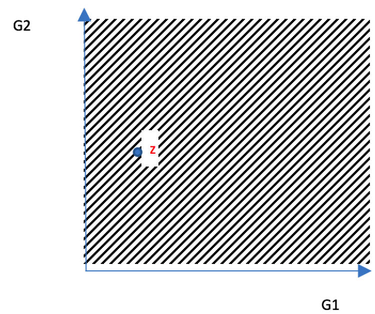
- These are rationality assumptions
- Completeness assumes that DM has capacity to reflect on his preferences
- Transitivity
  - is critical theoretically (without it, optimal choices need not exists)
  - is problematic empirically
    * Say good 1 is beer, good 2 is cigarettes

$$x = (2, 0) \quad y = (0, 0), \quad z = (2, 1)$$

Definition 3.3 *Given a preference relation succeq on $\mathbb{R}^2_*$ and a bundle z, the indifference curve of z is the set of $\{x \in \mathbb{R}^2_* \,; x \sim z\}$*

- Indifference curves need not be line segments

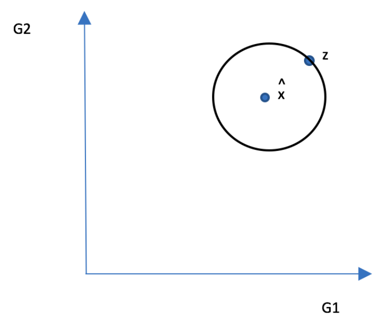
Example 3.4 *Say $\succeq$ on $\mathbb{R}^2_*$ such that $x \succeq y$ for all $x, y \in \mathbb{R}^2_*$*



- Indifference curves need not be downward sloping.

Example 3.5 *Say $\succeq$ on $\mathbb{R}^2_*$ such that there exists bundle $\hat{x}$ such that $x \succeq y$ iff x is lower to $\hat{x}$ than y is*

  - *$\hat{x}$ is the "bliss point"*



- Indifference curves need not be smooth or differentiable

Example 3.6 *Perfect complements, i.e $\succeq$ on $\mathbb{R}^2_*$ such that $x \succeq y$ iff $min\{x_1, x_2\} \geq min\{y_1, y_2\}$*