

Economics 326: Preferences and Utility

Ethan Kaplan

September 5, 2012

1 Preferences

1.0.1 Properties of Preferences

- Start with choices. Choices reveal preference.
- A preference relation \succ is a relation between two bundles of goods and services
- For example, take the choice set {Health Insurance, Car Insurance, Food}. For each pair of commodities, one is preferred to the other
 - Food \succ Health Insurance
 - Health Insurance \succ Car Insurance
 - Food \succ Car Insurance

- Note that \succ is not the same as the greater than sign. The greater than sign is a relation between two numbers not two commodities.
- Some preferences can be obtained from choices
 - If two bundles (X and Y) are both affordable and X is picked then:
 - * $X \succeq Y$ or $Y \not\succeq X$.
 - This is called revealed preference.
 - Most preferences are not revealed from choices. Think about two items which were both affordable but neither was chosen or any two unaffordable bundles.
 - We can also ask people what they prefer. This can be hard because people may not make the same decision when asked as when they are out shopping.

- Preferences can be over anything: actions, politicians, commodities, services.

1.1 Construction of Utility

- Preferences are difficult to work with mathematically. Instead we construct utility to represent preferences.
- **Def.** Utility function u represents preferences \succ if, for all x and y in X , $x \succ y$ if and only if $u(x) > u(y)$.
 - $u(x) > u(y)$ mean: I prefer x to y .
- In order to do that, we make 3 assumptions on preferences.

- We assume a complete, anti-reflexive, transitive set of preferences.
 - Complete (technical): Everything in the choice set can be compared to everything else.
 - * Counterexample?
 - Anti-reflexive (technical): Something is never preferred to itself: $x \not\succeq x$.
 - Transitive: $x \succ y$ and $y \succ z \implies x \succ z$.

- A complete anti-reflexive and transitive set of preferences is called a rational set of preferences.

- **Theorem.** If preference relation \succeq is rational, there exists a utility function $u : X \rightarrow R$ that represents it (R is the real numbers).

- Example: what happens if preferences aren't complete?
 - Suppose I prefer Gore to Obama and Obama to Clinton but I don't have preferences between Gore and Clinton?
 - Lets construct a utility function:
 - * $u(Gore) = 5, u(Obama) = 4, u(Clinton) = 3$
 - * Does this represent the above preferences? We have to check three comparisons.
 - * $5 > 4 \implies Gore$ is preferred to *Obama*
 - * $4 > 3 \implies Obama$ is preferred to *Clinton*
 - * ***BUT*** $5 > 3 \implies Gore$ is preferred to *Clinton*
 - This utility function doesn't represent these preferences!

1.2 Normative Aspects of Utility

- Positive Utility: Utility framework is very general. Poses very few restrictions. Also, therefore not predictive. Most applied uses in economics of utility theory make specific assumptions about what utility looks like.
- Normative Utility, Revealed Preference, and Efficiency: revealed preference states that if I chose A over B , then I must have preferred A over B and thus I am better off with A than with B . However, am I always better off with what I choose?
 - Sigmund Freud would say no. Often self destructive decisions are made due to traumatic experiences in the past.
 - Burgeoning field of behavioral economics.

- Is a 2 year old child putting their hands in the fire better off from doing so because he chose to do it?
- Most people will save much more if asked if they want to put money into a high interest savings account than they would have put money into before they were asked. Are they better off not saving if they are not asked and saving if they are asked?
- Is someone who tries a high dosage of Heroin better off since they have decided to make that choice?
- Normative view of utility is critical for welfare evaluations: efficiency. How do we evaluate whether people are better off in one way of organizing society versus another:
 - United States

- Sweden
- USSR (Soviet Union)
- Usually two reasons for expanded government involvement.
 - Distributive justice: view that market allocations are not fair.
 - Efficiency
 - * Individuals make rational decisions but markets have irrational outcomes (externalities)
 - * Individuals don't make rational decisions: this latter view is based upon a position on normative utility
 - Paternalist state: tradeoff between democracy and utility