Consumer Theory

More complicated for few reasons:—

- Need to impose "rationality" axioms on preferences
- Can't use optimization techniques on preferences.
  Need to construct a utility f^n
- Consumer problem has prices in the constraint
  income / substitution effects.

Widely used in economics:

1. Normatively useful
2. Positive predictions
3. Widely applicable
4. Simple / sparse model

Two approaches:—

1. Preferences $\longrightarrow$ Choices
2. Choices $\longrightarrow$ Preferences

Starting with 2 :-

Let X: (abstract) set of alternatives
elements $x \in X$ are mutually exclusive

A choice structure $(\mathcal{B}, C(\cdot))$ is :-
- $\mathcal{B}$ is a family of nonempty subsets of X
- $C(\cdot)$ is a choice rule s.t. $C(B) \subseteq B \; \forall$
$B \in \mathcal{B}$, $C(B) \neq \phi$

$X = \{x, y, z\}$
$\mathcal{B} = \{\{x, y\}, \{x, z\}\}$

$C(\{x, y\}) = \{x\}$, $C(\{x, y, z\}) = \{x, z\}$
acceptable alternatives

What are some "reasonable" restrictions on behaviour?

- Weak Axiom of Revealed Preference (WARP)
If for some $B \in \mathcal{B}$ with $x, y \in B$, we have $x \in C(B)$, then for any other $B' \in \mathcal{B}$ with

$x, y \in B'$, and $y \in C(B')$ we also have $x \in C(B')$.

$X = \{a, b, c\}$ $\quad$ $\mathcal{B} = \{\{a,b\}, \{a,b,c\}\}$

We observe $C(\{a,b,c\}) = \{b\}$

WARP implies that $C(\{a,b\}) = \{b\}$

Why? Assume $a \in C(\{a,b\})$, then since 4 was chosen when b was available, we must have $a \in C(\{a,b,c\})$. Contradiction.

$C(\{a,b\}) = \{b\}$

WARP implies $C(\{a,b,c\}) = \{b\}, \{c\}$ or $\{b,c\}$

(doesn't say anything about c).