

**UC Berkeley
Haas School of Business
Economic Analysis for Business Decisions
(EWMBA 201A)**

**The economic agent (PR 3.1-3.4)
Standard economics vs. behavioral economics**

**Lectures 1-2
Aug. 15, 2009**

Prologue

Many students think that economists view people as being super-rational and find the material to be highly theoretical and not very “realistic.”

... theories do not have to be realistic to be useful... – Milton Friedman,
Nobel Laureate in Economics –

Even though the assumptions are pretty unrealistic, the theory predicts behavior well and is quite useful.

Consumer behavior

The “standard” theory of the consumer is best understood as follows:



Behavioral economics incorporate more realistic assumptions about rationality and decision making based on findings in psychology and related fields.

Consumer preferences (PR 3.1)

Let X be some set of alternatives (consumption set). Formally, we represent the consumer's preferences by a binary relation \succsim defined on the consumption set X .

For any pair of baskets (or bundles) x and y , if the consumer says that x is at least as good as y , we write $x \succsim y$ and say that x is *weakly preferred* to y .

Bear in mind: economic theory often seeks to convince you with simple examples and then gets you to extrapolate. This simple construction works in wider (and wilder circumstances).

From the weak preference relation \succsim we derive two other relations on the consumption set X :

- Strict performance relation

$$x \succ y \text{ if and only if } x \succsim y \text{ and not } y \succsim x.$$

The phrase $x \succ y$ is read x is *strictly preferred* to y .

- Indifference relation

$$x \sim y \text{ if and only if } x \succsim y \text{ and } y \succsim x.$$

The phrase $x \sim y$ is read x is *indifferent* to y .

The basic assumptions about preferences

The theory begins with two (not three!) assumptions about preferences

[1] Completeness

$$x \succsim y \text{ or } y \succsim x$$

for any pair of bundles x and y .

[2] Transitivity

$$\text{if } x \succsim y \text{ and } y \succsim z \text{ then } x \succsim z$$

or any three bundles x , y and z .

Together, completeness and transitivity constitute the formal definition of *rationality* as the term is used in economics.

Rational economic agents are ones who [1] have the ability to make choices, and [2] whose choices display a logical consistency.

The preferences of a rational agent can be represented, or summarized, by a *utility function* (more later).

Indifference curves

We next represent a consumer's preferences graphically with the use of *indifference curves*.

The consumer is indifferent among all consumption bundles represented by the points graphed on the curve.

The set of indifference curves for *all* consumption bundles is called the *indifference map*.

– PR Figures 3.1-3.4 here –

The marginal rate of substitution (MRS)

The maximum amount of a good that a consumer is willing to give up in order to obtain one additional unit of another good.

The *MRS* at any point is equal to the *slope* of the indifference curve.

If indifference curves are “convex” (bowed inwards), then the *MRS* falls as we move down the indifference curve, that is it diminishes along the curve.

– PR Figures 3.5-3.6 here –

Utility

A numerical score representing the satisfaction (or happiness?) that a consumer has from a given consumption bundle.

An ordinal utility function replicates the consumer's ranking of consumption bundles – from most to least preferred.

The Cobb-Douglas utility function is widely used to represent preferences

$$u(x) = x_1^\alpha \cdot x_2^\beta$$

where $\alpha, \beta > 0$. (Can you draw the Cobb-Douglas indifference curves?)

Budget sets (PR 3.2)

The *budget set* includes all consumption bundles on which the total amount of money spent given the market prices p_1 and p_2 is less or equal to income I

$$p_1x_1 + p_2x_2 \leq I.$$

Rearranging,

$$x_2 \leq \frac{I}{p_2} - \frac{p_1}{p_2}x_1.$$

The slope of the budget line $-p_1/p_2$ is the negative of the ratio of the two prices. (Note that the budget line can be “kinked”).

– PR Figures 3.10-3.12 here –

Consumer choice (PR 3.3)

The *optimal* consumption bundle is at the point where an indifference curve is *tangent* to the budget line, that is

$$MRS = \frac{p_1}{p_2}.$$

But maximization is sometimes achieved at a so-called corner solution in which the equality above does not hold.

This is an important result that helps us understand and predict (using econometric tools) consumers' purchasing decisions.

– PR Figures 3.13 and 3.15 here –

Revealed preferences (PR 3.4)

Economists test for consistency with maximization using *revealed preference* axioms.

Revealed preference techniques can be used to “recover” the underlying preferences and to forecast behavior in new situations.

The Revealed preference barouche was first suggested by Paul Samuelson in his remarkable *Foundations of Economic Analysis* (1947).

– PR Figures 3.17-3.18 here –

Takeaways

- Economists approach behavior very differently than, say, psychologists.
- Economists assume that consumers are rational, while psychologists explore alternative explanations for behavior.
- We explained what economists mean by rationality, because that term is often misunderstood.

- The techniques of economic analysis may be brought to bear on modeling and predicting behavior in many situations:
 - Production
 - Labor supply
 - Uncertainty

- Consumer theory can help managers to think *systematically* through their product decisions.

Problem set

PR review questions 1-7 (pages 106-7) and exercises 1-14 (pages 107-8).
The problems are short!

Recall that the problem sets are meant to be learning tools and thus will be not counted for the course grade (but will be graded).

All questions in the problem sets are a required material. Answer keys will be distributed (and available for downloading?).