

# UTILITY

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## UTILITY THEORY'S ECONOMIC APPLICATIONS

### 1. BACKGROUND

Utility theory, in its present form was founded by William Stanley Jevons (I 835-1882). He elaborated on the existing utility theory (Dupuit, 1804-1866) by using a psychological approach and expressing his results in a mathematical form.

### 2. UTILITY THEORY,

*"Utility denotes the satisfaction, subjective pleasure or usefulness that a peryon derives from community goods or services"(Samuelson Nordhaus, 1995).*

Jevons thought that economics relies on the fundamental premise that people tend to choose those goods and services they value most highly. In other words, people consume those goods that provide them with the greatest utility. Jevons admitted that the calculus of pleasure and pain (utility theory), was subjective but he was convinced that **the** effects of utility theory might somehow been ascertained.

*A unit of pleasure or of pain is difficult to even to conceive; but it is the amount of these feelings which is continually prompting us into buying or selling, borrowing of lending, laboring and resting, producing and consuming; and it is from the quantitative effects of the feelings **that** we must estimate their comparative amounts. We **can** no more know nor measure gravity in its **own** nature than **we** can*

*measure a feeling; but just as we can measure gravity by its effects in the motion of a pendulum, so **may** we estimate the equality or in equality of feelings by the decisions of the human mind* (Theory of Political Economy p. 11)

Thus the economic application of utility theory is evaluating the effects (in terms of pleasure and pain) that excess consumption of goods brings.

### **3. GRAPHICAL ANALYSIS OF UTILITY THEORY**

#### **0 TOTAL UTILITY**

Jevons thought of utility as a function, which can be expressed as  $U=f(x)$ . This means that the "utility of the commodity X (food) is a function of the **quantity** that the individual holds." Therefore as an individual may eat and enjoy food until he is full, after which point eating more food becomes uncomfortable. Thus the utility of eating food rises up to point XO and decreases after that as eating more food provides less pain than pleasure.

#### **0 MARGINAL UTILITY**

Marginal utility denotes the *additional utility* arising from the consumption of an additional unit of the commodity. Thus as the extra amounts of a good consumed increases, the marginal utility of that good tends to diminish.

## **UTILITY THEORY**

### **PSYCHOLOGICAL AND PHILOSOPHICAL PERSPECTIVES**

#### **DEFINITION OF UTILITY:**

Utility is the principle of greatest happiness. Man is affected by "two sovereign masters" - pleasure **and** pain. Maximizing pleasure and minimizing pain are the goals towards which ethics guides us. "Thus utility is that which promotes the greatest pleasure and the least amount of pain for the greatest number of people possible"

### CALCULATING UTILITY:

Philosopher Jeremy Bentham (1748-1832), developed a method for evaluating utility called hedonic calculus. This system is a kind of moral mathematical calculation of pleasures and pains and by using it is possible to tell which was a right or wrong action.

### HOW TO CALCULATE

1. Identify courses of action
2. Determine all foreseeable benefits and harms that would result from each course of action for everyone affected by that action
3. Choose the course of action that provides the greatest benefits after the costs have been taken into **account**.

### UTILITARIAN APPROACH TO ETHICS:

Bentham claimed that by using hedonic calculus one could ascertain what was morally right and justifiable. The morally right action is thus, that which promotes the greatest utility. So as long as a course of action produced maximum benefits for everyone, utilitarianism does not care whether these benefits are produced by lies, manipulation or coercion. In short, Bentham called **the** concept of 'natural rights' and property rights, "nonsense on stilts", because rights are only 'moral' if they enable man to achieve the greatest utility.

### PROBLEMS WITH CALCULATING UTILITY:

1. It is impossible to measure the values or costs of some items i.e. art or life
1. How can we compare the costs of items such as money with the value of time or human dignity?
2. It is doubtful if we can ever predict with absolute certainty, what the outcome or value of our actions will be.
3. Utility fails to take the principle of justice into consideration.

### DISPROVING UTILITY THEORY:

Psychologists Tversky and Kahneman show that there are two major flaws in making decisions using the utility theory

1. Their studies demonstrate that decision making depends on the framing of the problem. In the instance that a frame refers to the 'decision maker's'

“ perception of the acts, outcomes or contingencies associated with a decision.” Their work indicates that on the whole people try to avoid taking risks when the problem is stated in terms of gains.

However when the problem is stated in terms of loss, most people are more likely to take risks.

2. When seeking to gain, people avoid risk. However they usually choose risks when faced with sure losses.

→ Thus we cannot assume decisions based on judgments (as in utility theory) are correct,

"because judgments themselves may be flawed." (Kahnemen)