The Theory of Consumer Behavior

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The principle assumption upon which the theory of consumer behavior and demand is built is: **a consumer attempts to allocate his/her limited money income among available goods and services so as to maximize his/her utility (satisfaction).**

Theory of Consumer Behavior

- **Useful for understanding the demand side of the market.**
- ***Utility* - amount of satisfaction derived from the consumption of a commodity ….measurement units ⇒ utils**

Theories of Consumer Choice

- Utility Concepts:
  - The Cardinal Utility Theory (TUC)
    - Utility is measurable in a cardinal sense
    - ***cardinal utility* - assumes that we can assign values for utility, (Jevons, Walras, and Marshall). E.g., derive 100 utils from eating a slice of pizza**
  - The Ordinal Utility Theory (TUO)
    - Utility is measurable in an ordinal sense
    - ***ordinal utility approach* - does not assign values, instead works with a ranking of preferences. (Pareto, Hicks, Slutsky)**

The Cardinal Approach

Nineteenth century economists, such as Jevons, Menger and Walras, assumed that utility was measurable in a cardinal sense, which means that the difference between two measurement is itself numerically significant.

$$U_X = f(X),\ U_Y = f(Y),\ \ldots..$$

Utility is maximized when:

$$MU_X / MU_Y = P_X / P_Y$$

The Cardinal Approach

- ***Total utility* (TU) - the overall level of satisfaction derived from consuming a good or service**
- ***Marginal utility* (MU) *additional satisfaction* that an individual derives from consuming an *additional unit* of a good or service.**
  - Formula :

$$MU = \frac{\text{Change in total utility}}{\text{Change in quantity}}$$

$$= \frac{\Delta TU}{\Delta Q}$$

The Cardinal Approach

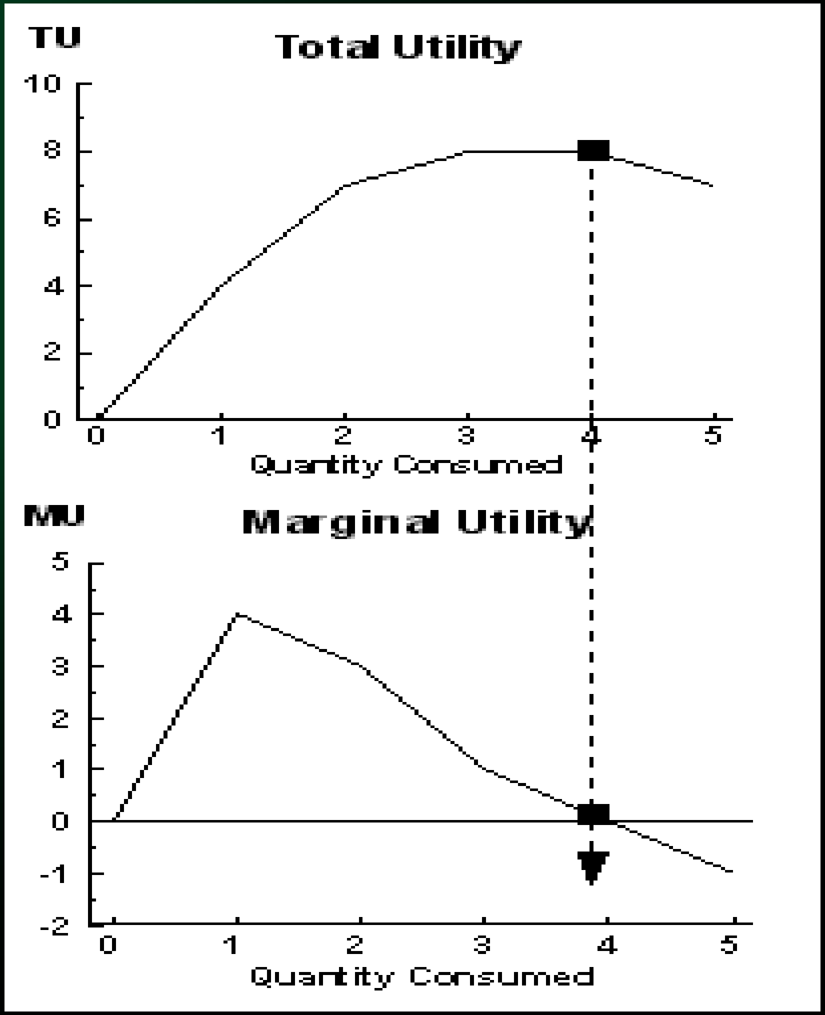
- Law of Diminishing Marginal Utility (Return) = **As more and more of a good are consumed, the process of consumption will (at some point) yield smaller and smaller additions to utility**

- When the total utility maximum, marginal utility = 0

- When the total utility begins to decrease, the marginal utility = negative (-ve)

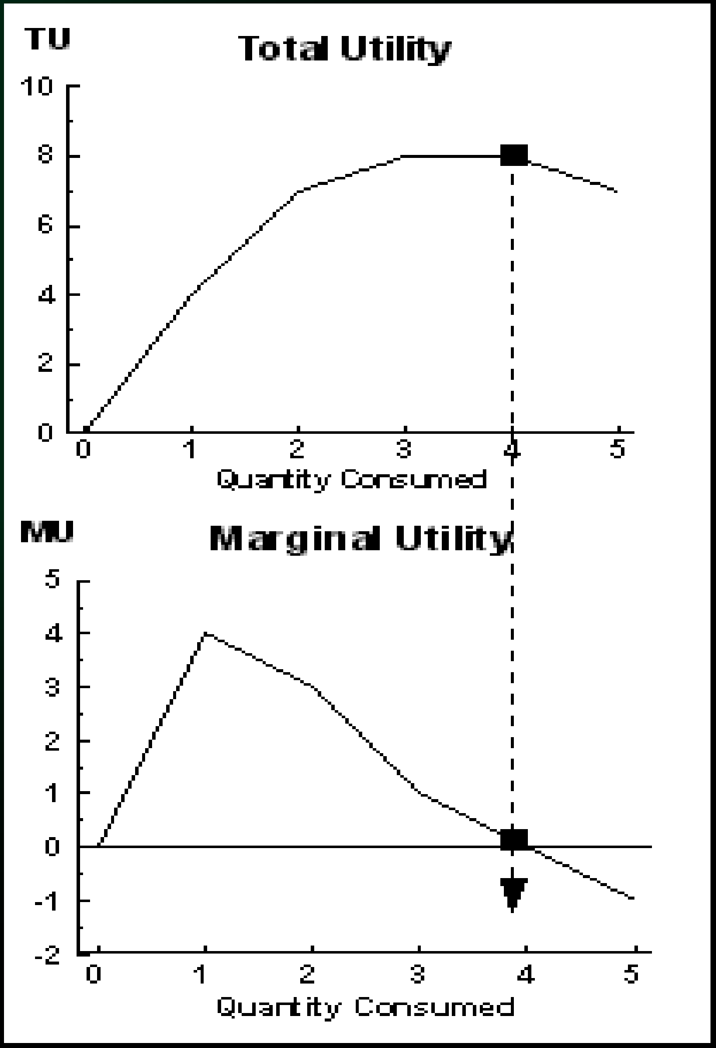
EXAMPLE

Number Purchased	Total Utility	Marginal Utility
0	0	0
1	4	4
2	7	3
3	8	1
4	8	0
5	7	-1



The Cardinal Approach

- TU, in general, increases with Q
- At some point, TU can start falling with Q (see Q = 5)
- If TU is increasing, MU > 0
- From Q = 1 onwards, MU is declining ⇒ principle of diminishing marginal utility ⇒ As more and more of a good are consumed, the process of consumption will (at some point) yield smaller and smaller additions to utility



Consumer Equilibrium

- So far, we have assumed that any amount of goods and services are always available for consumption
- In reality, consumers face constraints (income and prices):
  - Limited consumers income or budget
  - Goods can be obtained at a price

Some simplifying assumptions

- **Consumer's objective: to maximize his/her utility subject to income constraint**
- **2 goods (X, Y)**
- **Prices Px, Py are fixed**
- **Consumer's income (I) is given**

Consumer Equilibrium

- ***Marginal utility per price*** ⇒ **additional utility derived from spending the next price (RM) on the good**
  - **MU per RM = $\frac{MU}{P}$**

Consumer Equilibrium

- **Optimizing condition:** $$\frac{MU_X}{P_X} = \frac{MU_Y}{P_Y}$$

- **If** $$\frac{MU_X}{P_X} > \frac{MU_Y}{P_Y}$$

$\Rightarrow$ spend more on good X and less of Y

Numerical Illustration

Q_X	TU_X	MU_X	$\frac{MUx}{Px}$	Q_Y	TU_Y	MU_Y	$\frac{MUy}{Py}$
1	30	30	15	1	50	50	5
2	39	9	4.5	2	105	55	5.5
3	45	6	3	3	148	43	4.3
4	50	5	2.5	4	178	30	3
5	54	4	2	5	198	20	2
6	56	2	1	6	213	15	1.5

Simple Illustration

- Suppose: X = fishball
  Y = fishcake

- Assume: $P_X = 2$
  $P_Y = 10$

Cont.

- **2 potential optimum positions**
- **Combination A: → X = 3 and Y = 4**
  - $TU = TU_X + TU_Y = 45 + 178 = 223$
- **Combination B: → X = 5 and Y = 5**
  - $TU = TU_X + TU_Y = 54 + 198 = 252$

Cont.

- **Presence of 2 potential equilibrium positions suggests that we need to consider income. To do so let us examine how much each consumer spends for each combination.**
- **Expenditure per combination**
  - **Total expenditure = $P_X X + P_Y Y$**
  - **Combination A: 3(2) + 4(10) = 46**
  - **Combination B: 5(2) + 5(10) = 60**

Cont.

- **Scenarios:**
  - **If consumer's income = 46, then the optimum is given by combination A. ….Combination B is not affordable**
  - **If the consumer's income = 60, then the optimum is given by Combination B….Combination A is affordable but it yields a lower level of utility**

Thank You