

# Micro-Economics

## Utility Analysis

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## UTILITY ANALYSIS

1. Law of diminishing marginal utility
2. Concept of consumer's surplus
3. Concept of consumer's equilibrium

# LAW OF DIMINISHING M.U



1. MEANING OF UTILITY
2. MEANING OF MARGINAL UTILITY
3. STATEMENT OF THE LAW
4. ASSUMPTIONS OF THE LAW
5. DIAGRAMATIC PRESENTATION
6. RELATIONSHIP BETWEEN TU AND MU
7. EXCEPTIONS TO THE LAW
8. LIMITATIONS OF THE UTILTIY ANALYSIS

- Utility is want satisfying power
- Marginal Utility is the change in total utility due to consumption of additional utility

| Units | TU | MU |
|-------|----|----|
| 1     | 10 | 10 |
| 2     | 18 | 8  |
| 3     | 24 | 6  |
| 4     | 28 | 4  |
| 5     | 28 | 0  |
| 6     | 26 | -2 |



As the consumption increases, MU falls



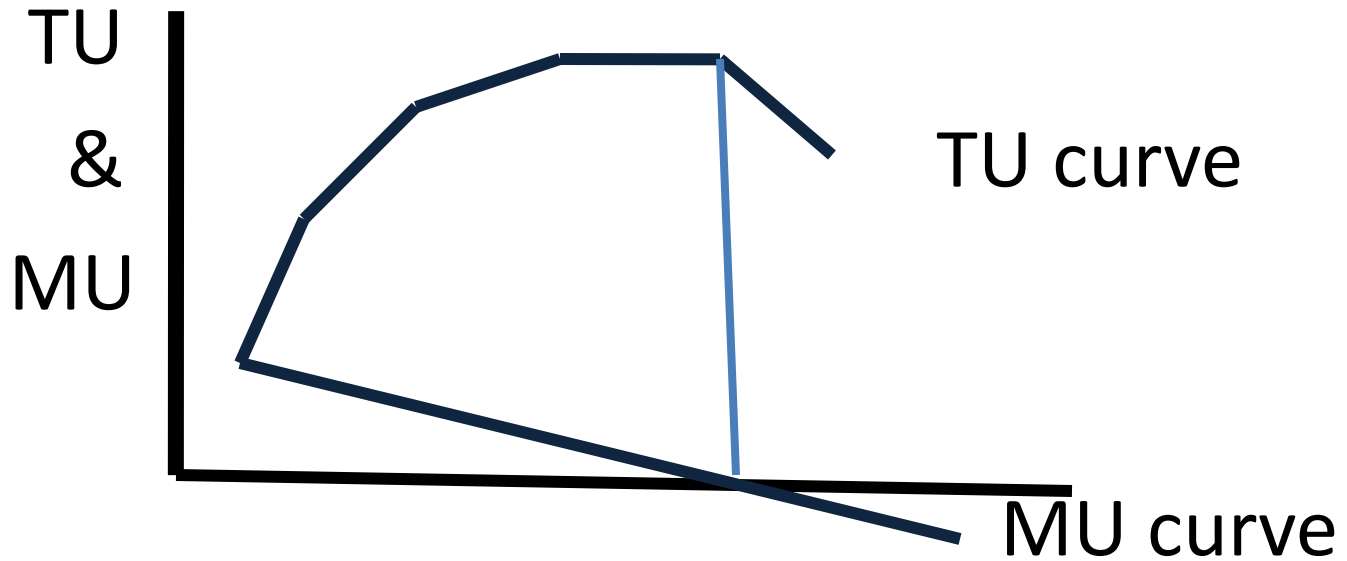
- **Assumptions of the Law**

1. Homogeneity
2. Continuous Consumption
3. Size of the unit
4. Unchanged Tastes, preferences, habits and fashion
5. Rationality
6. Cardinal Utility
7. Constant MU m

# Diagrammatic Presentati



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# Relationship between TU and MU



- 1. When the TU increases at a diminishing rate, MU diminishes but is positive
- 2. When the TU is Constant (maximum),  $MU=0$
- 3. When TU decreases, MU becomes negative



# Limitations of the Utility Analysis



- 1. The utility cannot be cardinally measured
- 2. The marginal utility of money does not remain constant. At higher level of income, even the MUM decreases.

# Concept of Consumer's Surplus



1. Meaning
2. Formula
3. Derivation of CS through law of DMU
4. Diagrammatic presentation

# Meaning

The excess of the amount which the consumer is willing to pay for the product over and above the actual price he pays for it.



# Formula



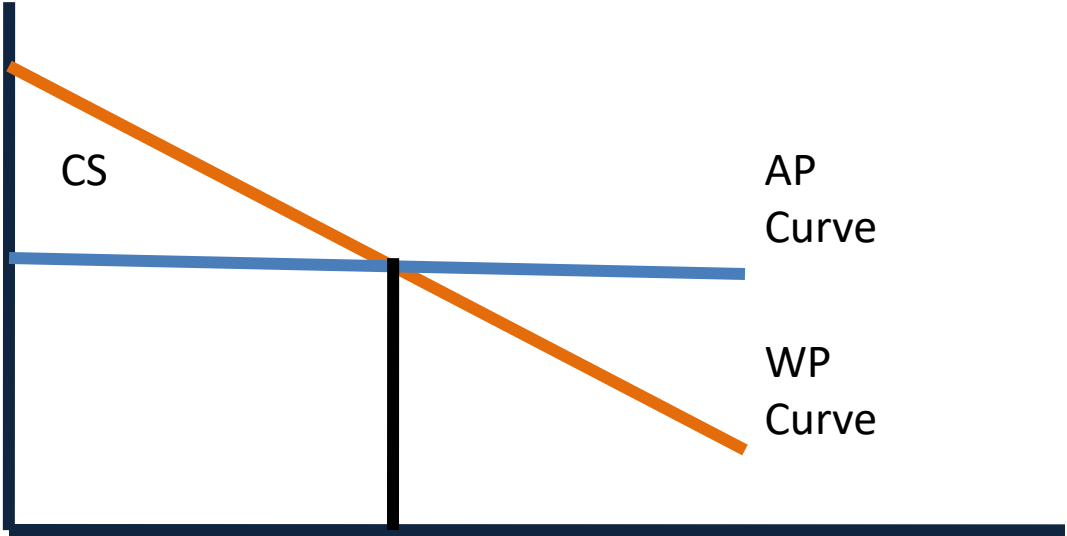
- C.S. = Willingness to pay- Actual payment

# Derivation of CS through Law DMU



| Units | MU | WP | AP | CS  |
|-------|----|----|----|---|
| 1     | 10 | 10 | 4  | 6   |
| 2     | 8  | 8  | 4  | 4   |
| 3     | 6  | 6  | 4  | 2   |
| 4     | 4  | 4  | 4  | 0   |
|       |    |    |    | <b><math>\Sigma</math>CS =<br/>RS. 12</b> |

# Diagrammatic Presentation



# Limitations



- 1. Utility cannot be cardinally measured
- 2. C.S. for the BN is immeasurable

# Consumer's equilibrium



1. Meaning: Maximum Satisfaction: Position of no change



# Conditions

- $MU_x = P_x$



# Conditions



- $MU_x / P_x = MU_y / P_y$

Law of substitution, law of Equi-marginal utility,  
Gossen's Second law