E-MODULE

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Paper: Business Economics

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CARDINAL UTILITY ANALYSIS

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1. Introduction to Utility Analysis

a) Meaning of Utility

b) Cardinal Utility analysis and Ordinal Utility Analysis

c) Total Utility and Marginal Utility

I. Introduction to Utility Analysis

Meaning of Utility

- **Utility means -** The power of a commodity that satisfy the wants of consumer - ***want satisfying power***

- Introduced by **Jermy Benth**am
- Measurement **'Utils**'
- **Subjectiv**e entity

Cardinal Utility analysis and Ordinal Utility Analysis

Utility Analysis

Cardinal Utility analysis

- **Alfred Marshal**
- can be measured
- 'Utils'
- Law of Diminishing Marginal Utility
- Quantitative

. Subjective entity or Personal

- Law of Equi-marginal Utility
- Mashellian Analysis

Ordinal Utility Analysis

- **J.R. Hicks & R.G.D. Allen**
- Cannot be measured but compared as rank
- **Indifference Curve** analysis

Total Utility(TU) and Marginal Utility(MU)

- **Total Utility** is the sum utility derived from the consumption of bundle of commodity

- **Marginal Utility** is the rate of change of TU from one more unit of extra consumption

$$MU_n = TU_n - TU_{n-1}$$

$$MU = \Delta TU / \Delta Q$$

Unit of Mango	Total Utility	Marginal Utility
1	10	
2	20	
3	29	
4	37	
5	43	
6	48	
7	51	
8	52	
9	52	
10	50	

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8	52	1
9	52	0
10	50	-2

I. **Introduction to Utility Analysis**

a) Meaning of Utility

b) Cardinal Utility analysis and Ordinal Utility Analysis

c) Total Utility and Marginal Utility

II. Cardinal Utility

a) Assumptions of Cardinal Utility analysis

b) Law of Diminishing Marginal Utility

c) Law of Equal-Marginal Utility

III. Critical evaluation of Cardinal Utility analysis

IV. Conclusion

2. Cardinal Utility Analysis

a) Assumptions of Cardinal Utility analysis

b) Law of Diminishing Marginal Utility

c) Law of Equal-Marginal Utility

Assumptions of Cardinal Utility analysis

1. Rationality of consumer
2. Cardinal measurability of utility
3. Marginal Utility of Money is constant
4. Diminishing Marginal Utility
5. Utility is Additive – $TU = Ux + Uy + Uz + \ldots\ldots + Un$
6. The hypothesis of Independent Utility
7. Introspective method

Law of Diminishing Marginal Utility

- **Gossen first law**
- According to Alfred Marshall '***the additional utility which a person derive from the consumption a commodity diminishes, that is Total Utility increase at an diminishing rate '***

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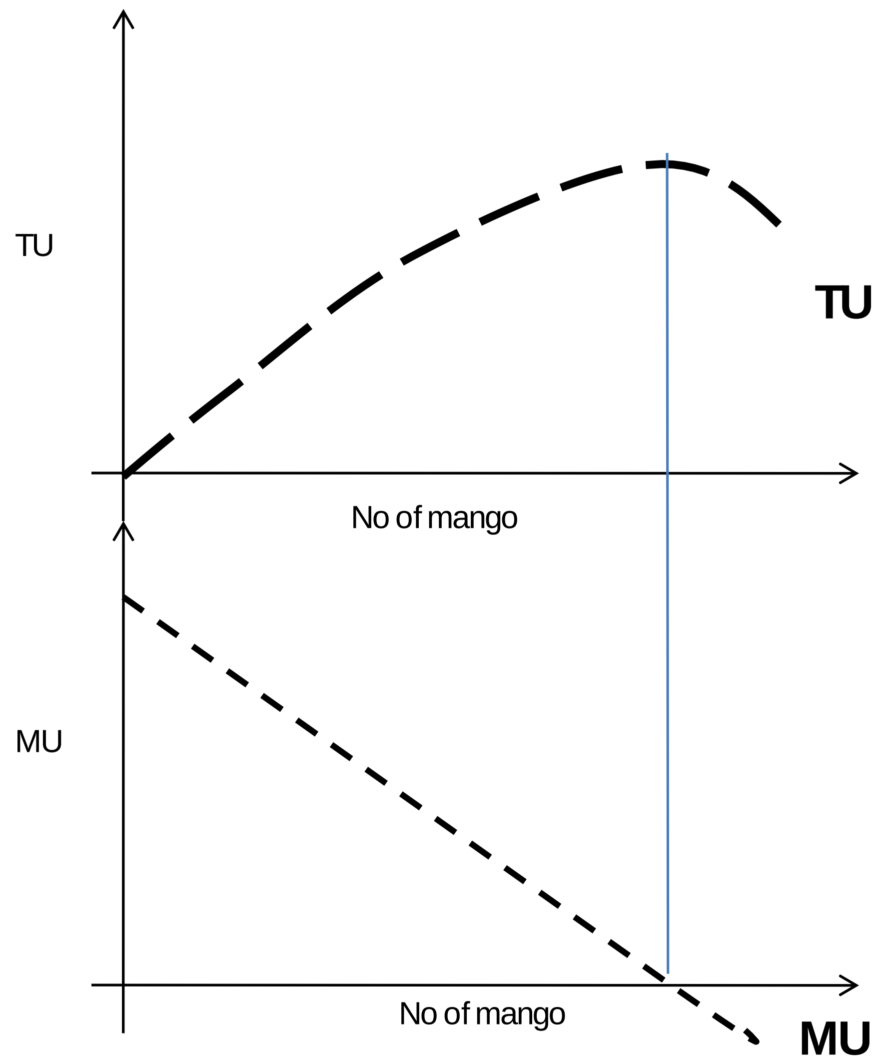
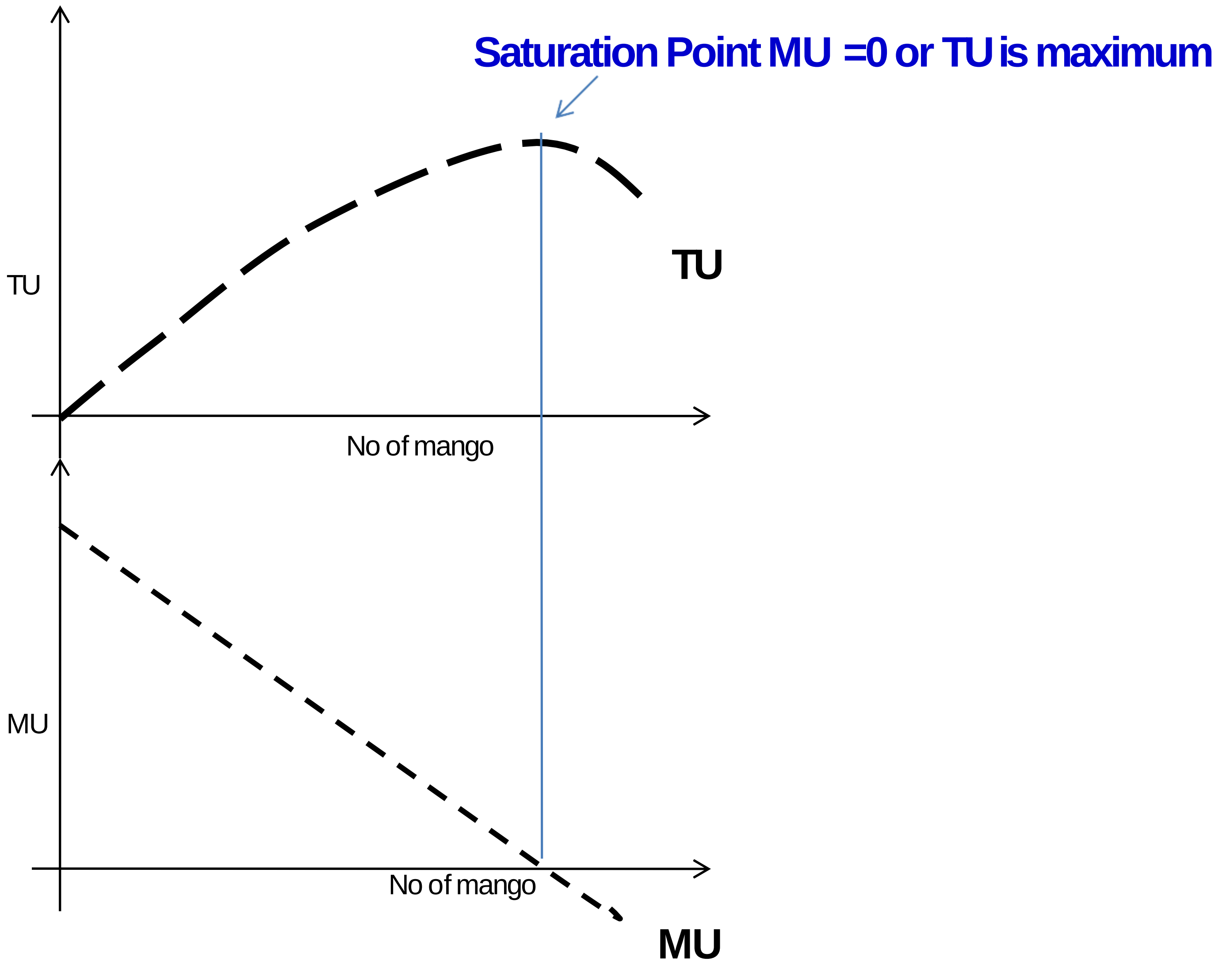


Law of Diminishing Marginal Utility



Application of Law of Diminishing Marginal Utility

1. Bases of law of demand- why demand curve slops downward
2. Law of equi- marginal utility is derived
3. Consumer surplus derived
4. Progressive Tax can be justified
5. Water-diamond paradox resolve

Law of Equal-Marginal Utility
Consumer's Equilibrium under Marshellian analysis

- Gossen Second Law
- Explain how consumer is maximize his satisfaction by allocating his income with different commodity at various prices.

- Condition for consumer equilibrium two commodity

$$^{MUx}/_{Px} = {}^{MUy}/_{Py} = MU\ m$$

- Condition for consumer equilibrium more commodity

$$^{MUx}/_{Px} = {}^{MUy}/_{Py} = \ldots\ldots\ldots\ldots\ldots\ldots {}^{MUn}/_{P\ n} = MU\ m$$

Law of Equal-Marginal Utility
Consumer's Equilibrium under Marshellian analysis

Condition for consumer equilibrium

$$MUx/_{Px} = MUy/_{Py} = MUm$$

Apple (A)	MU_A	MU/P_A	Banana (B)	MU_B	MU/P_B
1	60	20	1	60	12
2	48	16	2	55	11
3	42	14	3	50	10
4	36	12	4	45	9
5	30	10	5	40	8
6	24	8	6	35	7
7	18	6	7	20	4
Price of A=3			Price of B=5		
	MU of Money = 10				
	Expenditure = 5x Price of A + 3 XPrice B = 5 x 3 + 3 X5 = Rs.30				

Apple – 5 Rate 15 Rupees
Banana – 3 Rate 15 Rupees

Law of Equal-Marginal Utility
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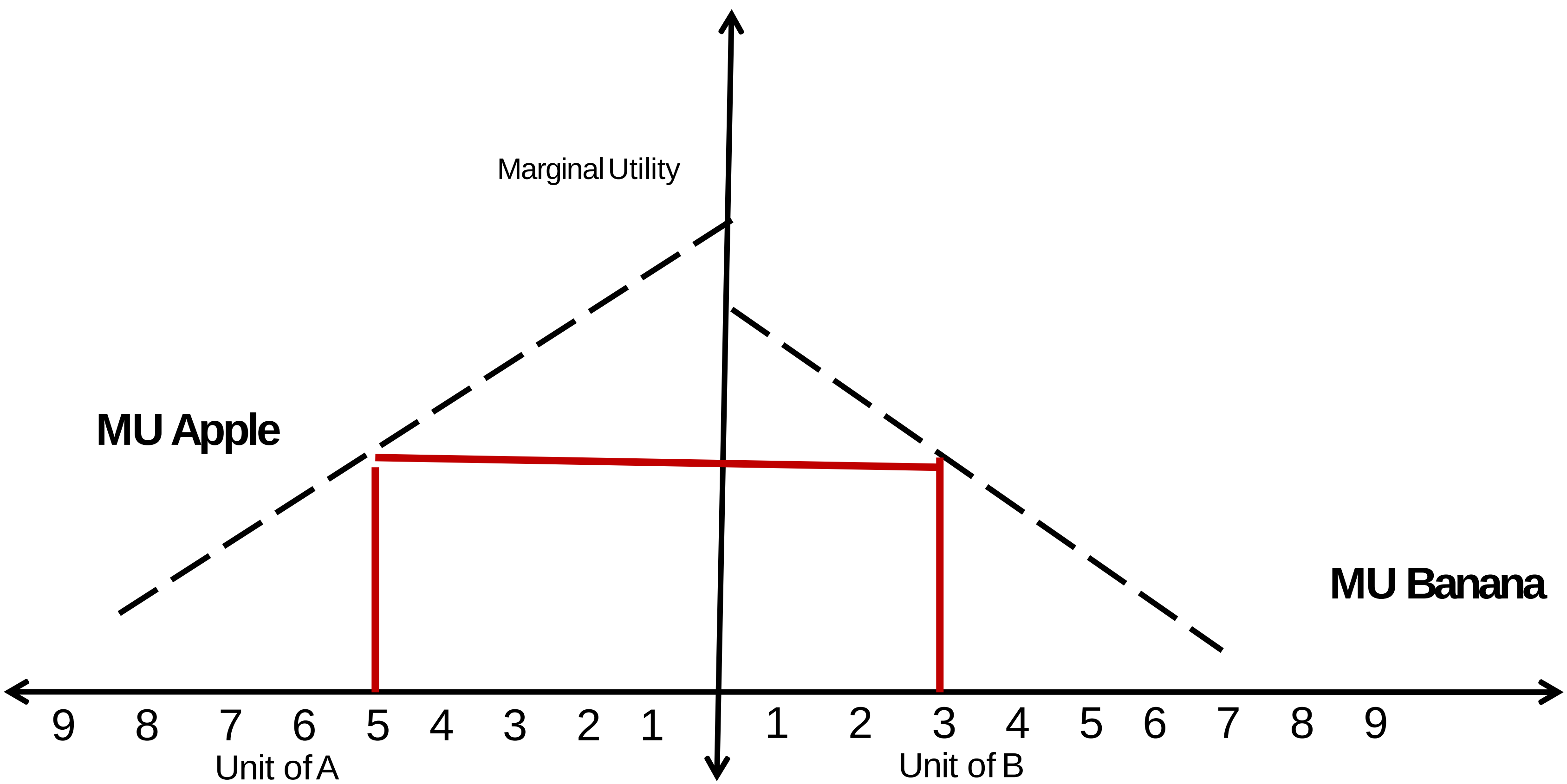

Critical evaluation of Cardinal Utility analysis

- Utility is not Cardinally measurable
- Marginal Utility of money is not constant
- Inadequacy of methods of introspection
- Utilities are n interdependence
- Failure to explain ***Giffen Paradox***
- Failure to distinguish income effect and substitution effect

Thank you