

LEARNING OUTCOME

3 - CONSUMER BEHAVIOR

Consumer behavior

Consumer choice theory

- It explains to us why consumers prefer some goods and services more and some less.
- To explain consumer behavior, the economics relies on the assumption that rational consumers with limited resources choose the goods and services they value most.
- Consumers buy $UTILITY = SATISFACTION$
- People maximize their utility, ie they buy the goods and services they prefer the most

What is utility?

- Utility is derived from the fact that the good / service has some qualitative properties that allow to meet the needs of consumers
- Utility is subjective pleasure or usefulness that a person derives from consuming a good
- Utility is not permanent - it is subject to change
- The utility is not the same for all consumers
- Different consumers buy the same products from different motives and sometimes different uses

What would give you greater satisfaction/utility?



Fancy watch, when we think of basic human needs, does not have any basic utility (you can't drink it if you are thirsty, or eat it if you are hungry) However, this kind of watch gives us pleasure, it represents a status symbol

Example



Consumer behavior model

OBJECTIVE:
maximization of
utility, ie
satisfaction

Satisfaction arises from the quantity of goods and services consumed: the greater the quantity, the greater the degree of satisfaction of needs,

LIMITATIONS:
Disposable income and
Prices of goods and services

HOW TO ACHIEVE THAT

Utility

Subjective theories of value / utility

Name of theory and assumption	Key terms	Explanation / example
CARDINAL THEORY: utility intensity can be measured and represented by a number	<ul style="list-style-type: none">• Marginal utility• The law of diminishing marginal utility• The equimarginal principle	How much will the total utility (total satisfaction) increase if... I buy another pair of shoes / drink another juice / go on a trip to the USA again (

Cardinal theory: Types of utility

- We express utility in units that we call "util" (from the word utility - usefulness). We distinguish two important concepts:
 - Marginal utility (MU)
 - Total utility (TU)

Total and marginal utility- e.g. consumption of 0.5l bottles of water

Quantity of good - 0.5 liter water bottles	Total utility	Marginal utility
0	0	-
1	100	100
2	180	80
3	230	50
4	250	20
5	250	0
6	220	-30

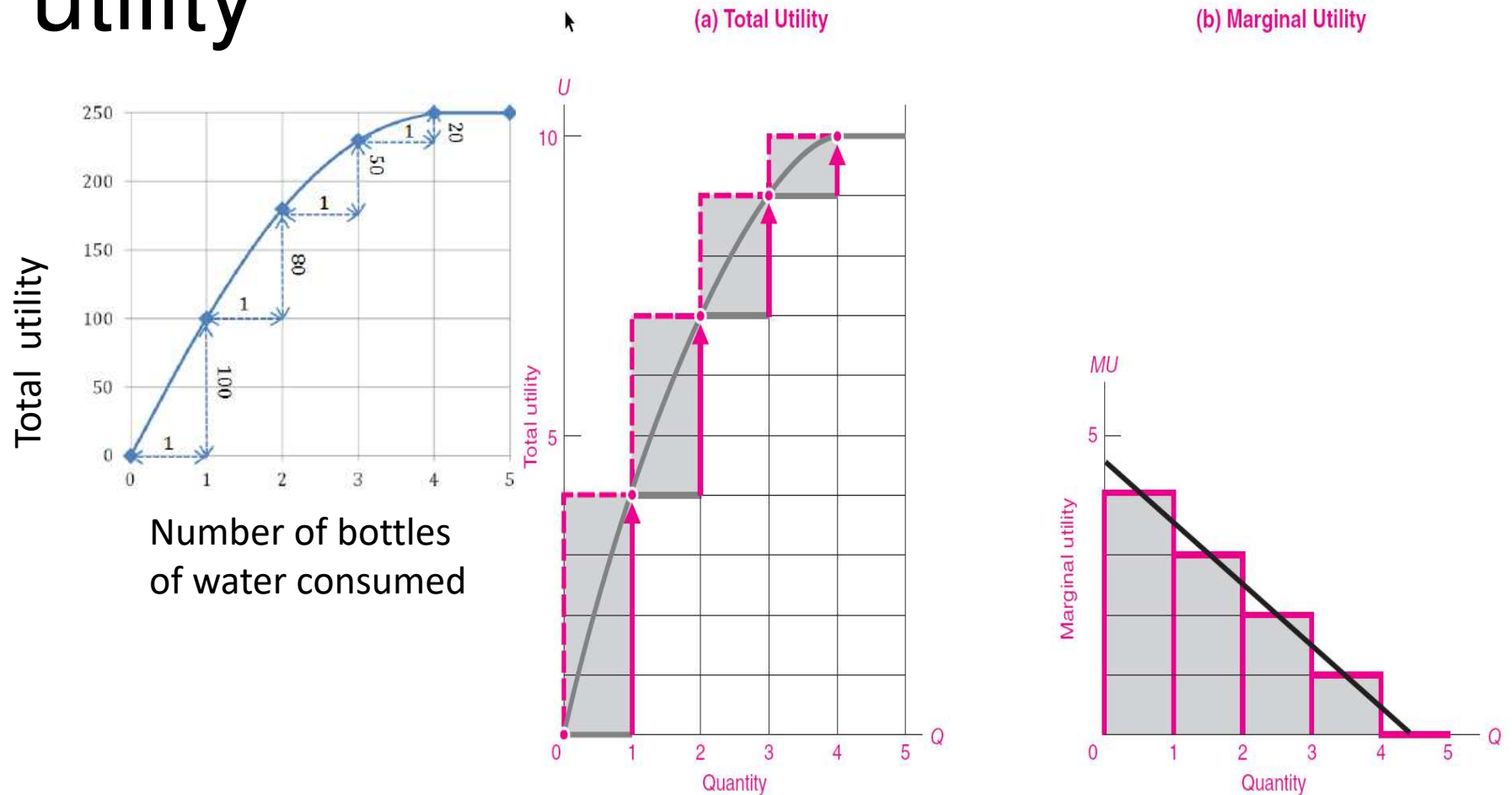
- If the consumer gets the first bottle of water in the day, it will give him/her the greatest satisfaction (we are thirsty, it is important for us to keep us alive)
- According to the table, that satisfaction is 100 units of utility
- The second bottle of water - very useful, because it will allow us not to suffer from serious diseases due to disorders of metabolic processes. However, it is a little less useful than the first bottle, to which the observed person owes his/her life – utility 80
- The third bottle - does not save lives but ensures a minimum level of functioning of the organism - utility 50
- Fourth bottle - a total of two liters per day (optimal amount of water per day) - utility 20
- The fifth bottle - neither harms nor benefits - the utility is 0
- Sixth bottles - negative utility - can cause stomach pain or worse
- trend occurs up to 5 units - this is the point of maximum total utility (saturation point)
- At higher levels the overall utility increases, but at a slower pace all the way to the saturation point, which means that each additional bottle of water does not provide equal satisfaction

Total and marginal utility – contd.

Quantity good - 0.5 liter water bottles	Total utility	Marginal utility
0	0	-
1	100	100
2	180	80
3	230	50
4	250	20
5	250	0
6	260	-20

- At higher levels the total utility grows, but at a slower pace all the way to the saturation point, which means that each bottle of water does not provide equal satisfaction
- Each additional bottle of water brings the consumer a smaller and smaller additional utility - marginal utility
- At the saturation point, the marginal utility is 0, which means that the consumer has reached the point of maximum utility
- After that point, the marginal utility begins to have negative values, which reduces the overall utility
- This phenomenon is described by the **law of diminishing marginal utility**

Graph of total and marginal utility



Total utility

- Total utility is the utility of the entire quantity of a good or service.
- It is obtained by summing up the marginal utilities of each unit consumed.
- The total utility curve has a positive slope and shows that as consumption increases, overall utility increases but at an ever lower rate.
- The total utility curve reaches its maximum when the marginal utility is equal to 0.
- In all cases where the marginal utility is negative the total utility will decrease and its curve in that segment will have a negative slope.

Marginal utility

- Marginal utility is the utility of an additional unit of some good.
 - **The term “marginal” is a key economic term and always means “additional” or “extra”**
- It shows by how much the total utility will increase if the amount of good increases by one unit.
- Marginal utility denotes the additional utility obtained by using an additional unit of some commodity.
- It is calculated as the ratio between the change in total utility and the change in quantity:

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

Marginal utility

- Marginal = extra, additional
- Marginal utility = additional utility obtained from the use of an additional unit of a good
 - It is calculated as the ratio between the change in total utility and the change in quantity
- Law of diminishing marginal utility = when the quantity of a consumed good increases, the marginal utility of that good tends to decrease - every extra unit brings lesser satisfaction

Equimarginal principle: equality of marginal utility per dollar/kuna/euro for every good

- The consumer wants to achieve maximum satisfaction, but he / she is limited by the disposable income (income that remains for consumption and savings when you have paid all taxes) and the prices of goods. In our case we say that the consumer spends all his income (saves nothing).
- How then to get to the point where the consumer achieves maximum satisfaction/utility?
- Answer: the equimarginal principle !

The equimarginal principle

- We organize spending so that the last dollar / kuna / euro spent on each good brings equal marginal utility
- In such a situation, maximum satisfaction or utility of the purchase is achieved!

The basic condition of maximum satisfaction or utility is the equimarginal principle .

It says that a fixed-income consumer faced with given market prices will achieve maximum satisfaction or utility *when the marginal utility of the last dollar / kuna / euro spent on each good is equal to the marginal utility of the last dollar / kuna / euro spent on any other good . .*

Marginal utility of income

- The consumer achieves maximum satisfaction or utility by buying different quantities of different goods so that their marginal utility in relation to their prices is equal, while the entire consumer's income is spent on the purchase of these goods
- Higher prices of good lead to decrease of consumer's desire for consumption (decrease of demand)

$$\begin{aligned} \text{I} \quad \frac{MU_{\text{good 1}}}{P_1} &= \frac{MU_{\text{good 2}}}{P_2} \\ &= \frac{MU_{\text{good 3}}}{P_3} = \dots \\ &= MU \text{ per \$ of income} \end{aligned}$$

Example: the equimarginal principle

Introduction

- Every consumer wants to maximize his / her own utility (satisfaction), but he / she is constrained with the available budget (the amount of money we have for purchasing) and with the prices of goods and services
- The combination of budget constraints data (which combinations of goods he can *afford*) plus the consumer preferences (marginal utility curve) - we get the rule which maximizes utility with a given budget .

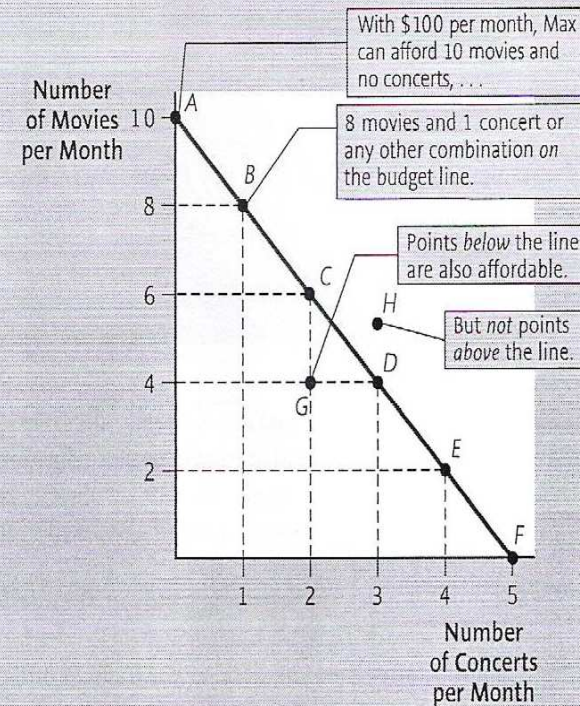
Example : student Max

- Consider Max, a devoted fan of both movies and the local music scene, who has a total entertainment budget of \$ 100 each month.
- The price of a movie is \$ 10, while hearing a rock concert at his favorite local club costs him \$ 20 .
- Max 's budget constraint curve will show us all the combinations of concerts and going to movies he can afford with a limited budget, at given prices of these events.

The Budget constraint table and diagram for Max

- Max can spend all of his money on 10 movies (A) or on 5 concerts (F)
- He can go to one concert leaving him \$ 80 for movies (B)
- Each combination below the curve is affordable (eg . point G - \$ 40 for concerts and 40 \$ for movies).
- Points above the curve are unattainable - point H - \$ 60 for concerts and \$ 50 for movies = \$ 110 which Max does n't have .
- For 1 concert more Max has to give up two movies (opportunity cost of 1 additional concert)

FIGURE 1 The Budget Constraint



Max's Consumption Possibilities with Income of \$100

	Concerts at \$20 each		Movies at \$10 each	
	Quantity	Total Expenditure on Concerts	Quantity	Total Expenditure on Movies
A	0	\$ 0	10	\$100
B	1	\$ 20	8	\$ 80
C	2	\$ 40	6	\$ 60
D	3	\$ 60	4	\$ 40
E	4	\$ 80	2	\$ 20
F	5	\$100	0	\$ 0

What is the combination of concerts and movies which would bring maximum utility to Max , taking into account the budget he has ?

- The marginal utility curve will tell us about the utility he gets from consuming more of a good ie his *preferences* .
- His budget constraint, by contrast, tells us only which combinations of goods he can *afford* .
- If we combine information about preferences (marginal utility values) with information about what is affordable (the budget constraint), we can develop a useful rule to guide us to an individual's utility maximizing choice .

Max 's total and marginal utility curve

- Max 's total utility of going to concerts and movies rises with each concert and movie , however , his marginal utility (utility of each additional event) diminishes
- Eg . second concert gives Max utility of 800 utils but third concert gives him only 600 utils of utility .
- Law of diminishing marginal utility
- As consumption of a good or service increases, marginal utility decreases .

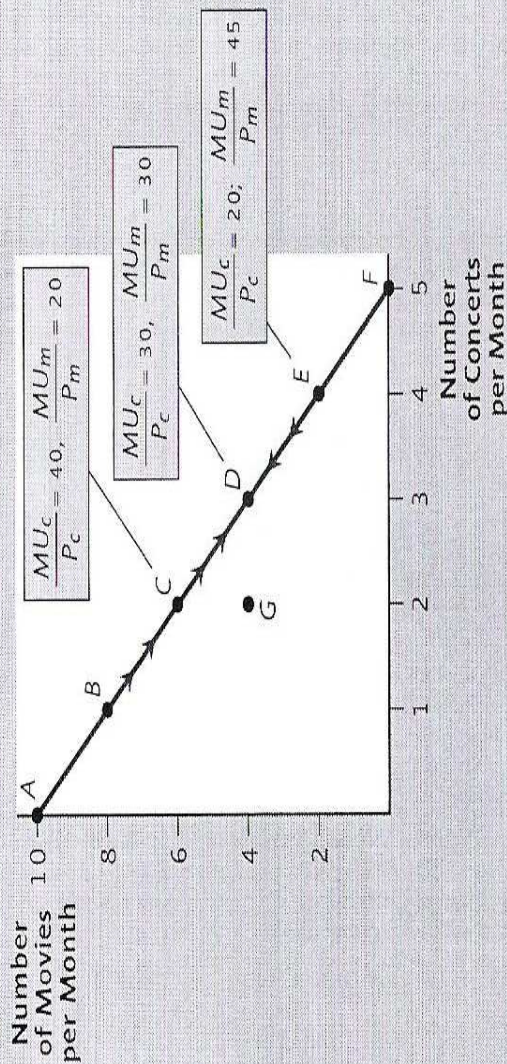
TABLE I

Total and Marginal Utility
of Concerts and Movies

Number of Concerts per Month	Total Utility	Marginal Utility	Number of Movies per Month	Total Utility	Marginal Utility
0	0		0	0	
1	1,000	1,000	1	600	600
2	1,800	800	2	1,050	450
3	2,400	600	3	1,400	350
4	2,800	400	4	1,700	300
5	3,050	250	5	1,950	250
6	3,250	200	6	2,150	200
			7	2,300	150
			8	2,400	100
			9	2,475	75
			10	2,535	60

- Since we now know that Max 's marginal utility drops with each additional movie or concert , how can we find a point where he, taking into consideration the budget he has and the prices of the events - gains maximum utility ie . satisfaction .
- *A utility-maximizing consumer will choose the point on the budget line where marginal utility per dollar/euro/kuna is the same for all goods ($MU_x / P_x = MU_y / P_y = MU_z / P_z \dots$). At that point, there is no further gain from reallocating expenditures in either direction .*

FIGURE 4 Consumer Decision Making



Budget = \$100 per month

CONCERTS at \$20 each			MOVIES at \$10 each		
(1) Point on Budget Line	(2) Number of Concerts per Month	(3) Marginal Utility from Last Concert (MU_c)	(4) Marginal Utility Spent on Last Concert ($\frac{MU_c}{P_c}$)	(5) Number of Movies per Month	(6) Marginal Utility from Last Movie (MU_m)
A	0			10	60
B	1	1000	50	9	75
C	2	800	40	8	100
D	3	600	30	7	150
E	4	400	20	6	200
F	5	250	12.5	5	250
				4	300
				3	350
				2	450
				1	600
				0	
					7.5
					10
					15
					20
					25
					30
					35
					45
					60

The budget line shows the maximum number of movies Max could attend for each number of concerts he attends. He would never choose an interior point like G because there are affordable points on the line—that make him better off. Max will choose the point on the budget line at which the marginal utilities per dollar spent on movies and concerts are equal. From the table, this occurs at point D.

Interpretation of the table

- In column (1), the rows labeled A, B, C, etc. correspond to possible combinations on Max's budget line. For example, the row labeled C corresponds to point C on the budget constraint line: 2 concerts and 6 movies per month .
- columns (2) and (5). Notice that the number of concerts runs from 0 to 5 as we travel down the rows. But the number of movies runs in the other direction , from 10 to 0. That's because — as we move along the budget constraint line — attending more concerts means seeing fewer movies .
- columns (3) and (6), which show the marginal utility from the “Last” concert or movie. For example, in the row labeled C, the “last” concert Max sees is the second one, with marginal utility of 800 utils . In that same row, Max sees 6 movies, and the marginal utility from the last (sixth) movie is 200.

Interpretation - cont 'd

- column (4), shows something new: the marginal utility *per dollar* spent on concerts. To get these numbers, we divide the marginal utility of the last concert (MU_c) by the price of a concert, giving us MU_c / P_c .
- This tells us the gain in utility Max gets *for each dollar he spends* on the last concert. For example, at point C, Max gains 800 utils from his second concert during the month, so his marginal utility *per dollar* spent on that concert is 800 utils / \$ 20 = 40 utils per dollar.
- Marginal utility per dollar, like marginal utility itself, declines as Max attends more concerts .
- Same thing happens in column (8) with going to movies .
- What is then the point where Max 's utility with going to concerts and movies is maximum - this is the D point where marginal utilities per dollar spent are equal . $MU_c / P_c = MU_m / P_m$

Interpretation - cont 'd

- imagine that Max is searching along his budget constraint line for the utility maximizing point , and he's currently considering point *B*, which represents 1 concert and 8 movies.
- Is he maximizing his utility? Max's marginal utility per dollar spent on concerts is 50 utils , while his marginal utility per dollar spent on movies is only 10 utils . Since he gains more additional utility from each dollar spent on concerts than from each dollar spent on movies, he will have a net gain in utility if he shifts some of his dollars from movies to concerts. To do this, he must travel farther down his budget line .
- Point D - $MU_c / P_c = MU_m / P_m = 30$ utils - no additional utility by shifting his consumption either to movies or to concerts . He used all the possibilities to maximize his monthly utility , ie . satisfaction - this is maximum