

DIMINISHING MARGINAL UTILITY

Can you get too much of something?

Why do people demand goods and services?

- Receive satisfaction or pleasure from consuming the good.
- Economists terms this satisfaction utility.

Introduction

- In economics, we are not try to explain why people get utility from certain goods. We take that as a given.
- Example:
 - Some people like jazz, others hate it.
 - Economists say *given* an individual's preferences about jazz, how many jazz music downloads might they purchase.

Total and Marginal Utility

- Total Utility (TU) - relates consumption of a good to the utility derived from consuming a good. (This could be many units of a good)
- Marginal Utility (MU) - the change in total utility when consumption of a good changes by one unit.
 - $MU = \Delta TU / \Delta Q$ consumed of a good

Law of Diminishing Marginal Utility

- Law of Diminishing Marginal Utility - eventually, a point is reached where the marginal utility obtained by consuming additional units of a good starts to decline, *ceteris paribus*.

Law of Diminishing Marginal Utility

- Example

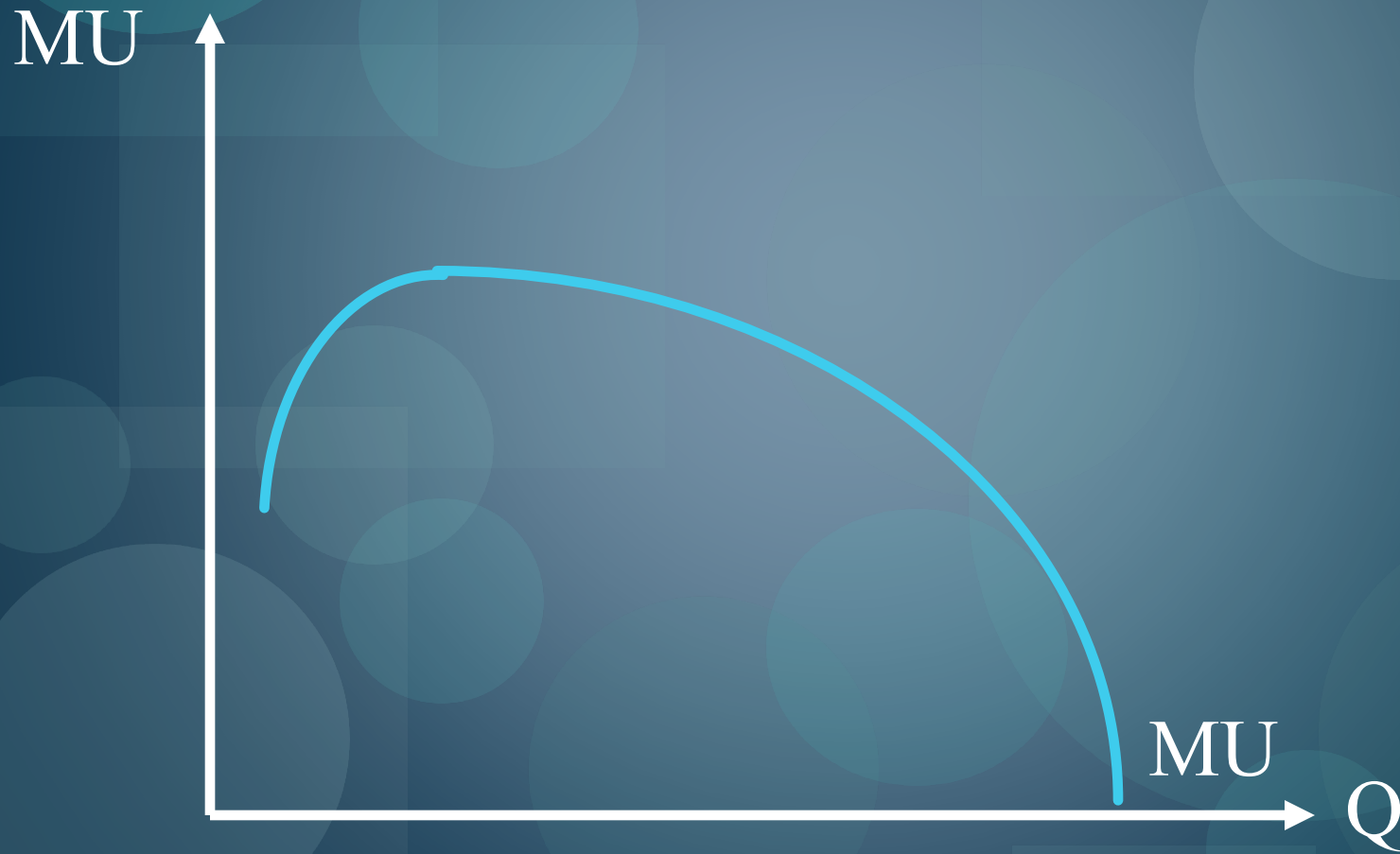
- If I'm really hungry, I get a lot of satisfaction from first slice of pizza.
- If I keep eating pizza, the satisfaction from the 8th slice would be much less than that of the first slice.

Law of Diminishing MU

Notes about the Law of Diminishing MU

- Time period must be specified for law.
- Law tells us that *eventually* the marginal utility curve will be downward sloping.
- Law tells us that eventually the total utility curve will become “flatter.”
 - Slope of the total utility curve is equal to marginal utility

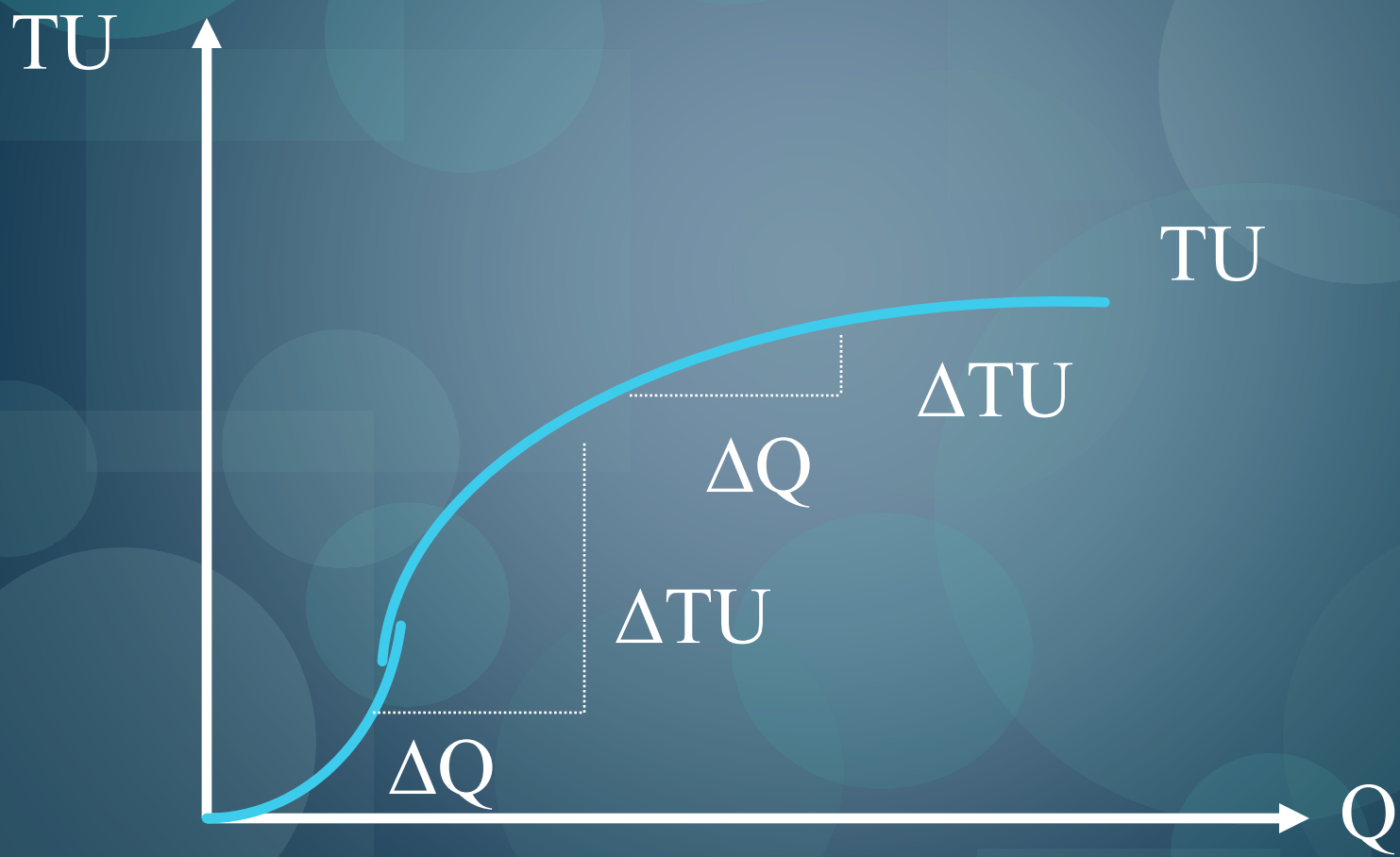
Marginal Utility



Shape of MU

- Eventually downward sloping
 - Law of diminishing marginal utility
- Positive always
 - Rational behavior
 - Consumer only purchases a good if they get some positive utility from it.

Total Utility



Shape of TU

- Positive slope
 - Consumer only purchases a good if gets some positive amount of utility (rational behavior)
- Slope gets flatter as Q increases
 - Law of diminishing marginal utility

Consumer Equilibrium

Now that we understand the concepts of utility theory - we will use them to explain how consumers make decisions about what to buy

Consumer Equilibrium

- For instance, I would much rather have a Jaguar instead of my Honda
- If I want to maximize my utility, why don't I buy a Jaguar?
 - Because it costs a lot more than the Honda
- So if I want to maximize my utility, I don't just pick the thing that gives me the most pleasure. I have to weigh the price of the good in my decision as well

Consumer Equilibrium

So how can I compare a Jaguar and a Honda? It's like comparing apples and oranges. Instead, I need to somehow make them both comparable.

Consumer Equilibrium

In order to do that I will need to convert utility to utility per dollar. This way, I can see that even though the Jag gives me more utility, I get more utility per dollar from the Honda. So if I want to spend my money wisely, I buy the thing that gives me more utility per dollar.

Consumer Equilibrium

- Let's say I walk down to the cafeteria for lunch and they have Pizza and Ice Cream.
- The pizza is \$1 a slice and the Ice Cream is \$2 a scoop. I have \$7 in my pocket What do I buy?

Consumer Equilibrium

- Remember, I want to choose the combination of pizza and Ice Cream that gives me the greatest possible utility for my \$7
- Consider the following table, which states the total utility I get from all possible quantities of Pizza and Ice Cream

Utility Table

Ice Cream

Pizza

Quantity

Total Util.

Marginal Util.

Total Util.

Marginal Util.

0	0	--	0	--
1	24		29	
2	44		46	
3	60		56	
4	70		58	
5	72		59	
6	72		59	

Utility Table

Ice Cream

Pizza

Quantity

Total Util.

Marginal Util.

Total Util.

Marginal Util.

0	0	--	0	--
1	24	24	29	29
2	44	20	46	17
3	60	16	56	10
4	70	10	58	2
5	72	2	59	1
6	72	0	59	0

Consumer Equilibrium

- We need to find the marginal utility per dollar for both goods.
- Consider the first scoop of ice cream - MU 12 per dollar. MU of the first slice of pizza 29 per dollar. So I want to buy the pizza. Now I have \$6.
- Now I have to compare my second slice of pizza (MU is 17 /\$) with the first scoop of ice cream (MU is 12 /\$). I will want to buy the second slice of pizza. I have \$5.

Consumer Equilibrium

- Now I have to compare the third slice of pizza (MU 10/\$) with the first scoop of ice cream (MU 12/\$). I will want to buy the ice cream. I have \$3.
- Now I have to compare the third slice of pizza (MU 10 /\$) with the second scoop of ice cream (MU 10 /\$). It doesn't matter which I pick, since they make me equally happy. I'll take the pizza. Now I have \$2

Consumer Equilibrium

- Now I have to compare the fourth slice of pizza (MU is 2/\$) to the second scoop of ice cream (MU is 10 /\$). I will want to buy the ice cream. I have no more money.
- I bought 3 slices of pizza which give a total utility of 56 and 2 scoops of ice cream which give a total utility of 44. My total utility from lunch is $56+44=100$. There is no other combination of pizza and ice cream that give a greater utility for \$7.

Consumer Equilibrium

- What if the price of the ice cream dropped to \$1 a scoop.
- Assignment: Convince yourself that I will buy 4 scoops of ice cream and 4 slices of pizza.
- Note that when the price went down, I bought more - THIS IS WHERE THE LAW OF DEMAND COMES FROM.

Consumer Equilibrium

- In summary, you need to convert marginal utility to marginal utility per dollar
- Then compare MU/P for the two goods and buy the one that gives the greatest MU/P
- Subtract the price from your budget
- Compare the next available units of both goods and repeat the process until you are out of money.