

Chapters 7 and 8: Optimal Consumer Behavior

Econ 102: Introduction to Microeconomics

Goals of this class

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- Learn how consumers optimally make their decisions to consume.
- Learn how optimal decisions depend on relative prices.
- Learn how optimal decisions depend on income.

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Reading

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- Consumer utility: Chapter 7, pages 154 - 164.
- Budgets: Chapter 8, pages 172 - 174.

Utility

- **Utility:** measure of the total satisfaction that people get from consuming stuff.
 - Largely a theoretical measure.
 - Can be short: utility gained from eating a sandwich.
 - Can be sustained: utility gained from owning a car.
- **Marginal Utility:** the *additional utility* gained from consuming *one additional unit* of a good.
- **Law of Diminishing Marginal Utility:** as you consume more of a good, the total utility may increase, but the marginal utility decreases.

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Example

Suppose someone obtains utility from consuming MP3s and Pizza.

Most Bang for your Buck

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- Nonessential assumption - consumers spend all of their income on these two goods.
- Suppose you are spending all your money and $MU_{Pizza}/P_{Pizza} > MU_{MP3}/P_{MP3}$. Should you...
 - stick with this consumption choice?
 - instead consume fewer MP3s and more pizza?
 - instead consume less pizza and more MP3s?
- What is the effect of this choice on $MU_{Pizza}/P_{Pizza} - MU_{MP3}/P_{MP3}$.
- Utility maximization rule:

$$\frac{MU_1}{P_1} = \frac{MU_2}{P_2}$$

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Example Continued

- Suppose MP3s are \$2.50 and Pizza is \$1. Compute MU/P for each consumption possibility.
- List all possible utility maximizing solutions.
- What is the utility maximizing choice when income is \$12?
- What is the utility maximizing choice when income is \$16?
- What is the utility maximizing choice if income is \$16 and the price of pizza increases to \$2.
 - What was the impact on the optimal quantity of pizza?
 - What does this say about the demand curve for pizza?

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Paradox of Value

- Water, which is essential to live, and essential to grow the things we eat and live off of, costs very little.
- Diamonds, utterly useless except for their pretty shiny properties, cost a lot.

$$\frac{MU_{\text{Water}}}{P_{\text{Water}}} = \frac{MU_{\text{Diamonds}}}{P_{\text{Diamonds}}}$$

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Budget Constraints

- A **budget constraint**, aka **budget line**: equation and graphical display of what quantities of two goods are affordable.
- Assume divisible goods, or large quantities of goods.
- Budget constraint for two goods:

$$P_1Q_1 + P_2Q_2 = I$$

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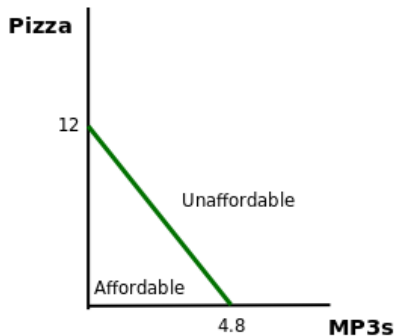
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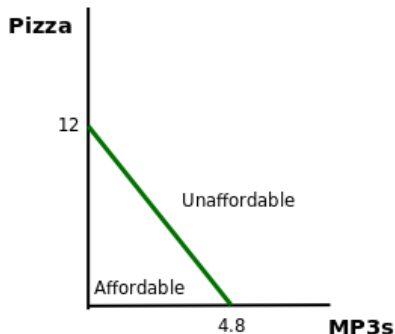
- Price pizza = \$1.00
- Price MP3s = \$2.50
- Income = \$12.00

$$Q_{\text{Pizza}} = 12 - 2.50Q_{\text{MP3}}$$



Graphing Budget Constraint

- Each intercept: quantity of the good purchased if all income was used for that good.
- Slope = P_{x-axis} / P_{y-axis} .
- Slope is the quantity of Y that one needs to give up to purchase one additional unit of X .



Changes in Income

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- Suppose income increases to \$16.
- Shifts out both intercepts, slope remains same.



Changes in Price

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- Suppose income remains at \$16.
- Suppose price of pizza increases to \$2.
- Shifts the pizza intercept inward.



What We Have Learned

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- A theoretic construct, **utility**, for predicting how optimal consumer behavior reacts to changes in prices and incomes.
- Graphical technique for illustrating the consumption possibilities for an individual's income.