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# AP MICROECONOMICS

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# The Ultimate Student's Guide to AP Microeconomics

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EVERYTHING YOU NEED TO GET STARTED

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# TABLE OF CONTENTS

7

Introduction

8

About Us

11

Is AP Microeconomics  
Hard?

19

How to Study for  
AP Microeconomics

32

Absolute vs. Comparative  
Advantage

39

Production-Possibilities  
Curve

# TABLE OF CONTENTS

47

Supply and Demand

55

Price Ceiling

63

Price Floor

73

Price Elasticity of  
Demand

82

Law of Diminishing  
Returns

89

Normal Profit

# TABLE OF CONTENTS

97

Perfect Competition

106

Monopoly

113

Deadweight Loss

121

Oligopoly

128

Game Theory

136

Monopsony

143

Derived Demand

# TABLE OF CONTENTS

149

Externalities

155

The Best  
AP Microeconomics  
Review Books of 2017

167

The Ultimate List  
of AP Microeconomics  
Tips

# Introduction

AP Microeconomics is no walk in the park. Last year, only 17.8% of students earned a 5 on the exam.

That's why we've created this comprehensive study tool. It's intended to be a helpful resource for any student planning to take the AP Microeconomics exam. By beginning here, you'll have a better understanding of the test, and receive essential tools to set yourself up for success.

This guide starts by introducing the exam format, curriculum, and scoring guidelines. Then it includes a series of detailed content guides and crash course reviews. The last section features study tips and strategies to help you score every possible point on test day. With this eBook, you'll be able to confidently take action in creating your study plan and framing your goals.

This book features information from the [Albert Blog](#), where new academic resources are published every day of the week. Be sure to regularly check the blog and subscribe to hear about our new posts. You can also find tips and study guides for your AP classes, and admissions advice for your dream school on our blog.

E-mail us at [hello@albert.io](mailto:hello@albert.io) if you have any questions, suggestions, or comments!

*Last Updated: March 2017.*

# About Us



## What is Albert?

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# Why Educators Love Us

We asked teachers how their students did after using Albert.

**Here is what they had to say:**



*My students had an 81.2% passing rate - the previous year was 76% (the highest rate in our county)! I am thrilled. I had 64 students total, with 6 receiving 5s, 19 scoring 4s, 27 receiving 3s, 10 scored 2s and 2 received 1s.*

Susan M., JP Taravella High

*70% of my students scored 3 or higher. This is up from last year, and is also well above the national average. Needless to say, I am very happy with my students' success. I used Albert more intentionally this year. In the beginning of the year, I wanted students simply to answer questions and practice. Once they had 150-200 questions answered, we looked for trends, strengths, and weaknesses and worked on addressing them. Students were tasked with increasing their answer accuracy no matter how many questions it took, then they set their own goals (some wanted to focus around tone; others needed practice with meaning as a whole).*



Bill S., Lapeer High School



*Last year 40% passed with 3s and 4s. This year 87% passed, most had 4s and 5s. We used the stimulus-based multiple choice questions throughout the year and as review for the exam. I think it helped tremendously.*

Alice P., First Baptist Christian Academy

# Why Students Love Us

We asked students how they did after using Albert.

**Here is what they had to say:**



*I scored very well this year – four 5s and one 4. Albert helped me get used to the types of questions asked on the exam and overall my scores were better this year.*

Robyn G., Chambersburg Area Senior High School

*Last year was my first year taking an AP test, and unfortunately I did not do as well as I had hoped. The subject had not been my best, and that was definitely displayed on my performance. However this year, I made a much higher score on my AP test. The previous year had been AP World History and I had made a 2. For this year it was AP English Language, and I scored a 4. There was a definite jump in my score, because Albert pushed me to focus on my weaknesses and form them into strengths.*



Charlotte R., Rome High



*I scored a 4 on AP Biology, much higher than expected. Albert was an effective resource to guide me through AP Biology. Keeping up with it consistently all year as I learned the lesson in class was crucial to reinforcing my understanding and long-term memorization of Biology. After class each day, Albert helped to sink in the ideas that I was taught in the morning.*

Lily O., Wake Forest High School

# Is AP Microeconomics Hard?



Microeconomics is a branch of economics that studies the behavior of individuals and firms in making decisions regarding the allocation of limited resources which is contrast to macroeconomics. In sense of taking it as AP course, many regard to microeconomics as more difficult than macro. In this article, we'll be going through the basic knowledge and skills you will need in order to successfully take the course and the best methods to acquire them. Also, I will be providing the structure of exam which will hopefully help you understand towards what you will be moving if you take the course.

## Is AP Microeconomics Hard? Cont.

Firstly, there are those who choose to take AP course classes and those who are encouraged to self-study. You will probably be advised to do the same for almost every course, so I do strongly advise you, to take the classes as many students found it really difficult without taking them. However, whatever way you choose to do it, there are some things you should acquire in order to successfully take the course.

Many recommend Barron's textbook as core literature for taking any AP course, thus it goes the same for this one (Barron's AP Microeconomics/[Macroeconomics](#)) published by Barron's Educational Series. For those made to self-study due to some other class schedule contradiction or any other reasons, you can check out some sites for online learning, because it allows you to do it from your home and lets you organize yourself more freely. One of those is Educator ([educator.com](#)). It lets you access all courses at a monthly fee so it could be a good choice.

### By the Numbers

When you will be finally making your choice on how to study, you'll probably want to know how past students scored. In 2015 17.9% of the students had a score of 5 which is a slight percentage increase from the year before. Credit for that increase is claimed by professors who say they were pushing students a bit more and working harder in classes. This is another reason to think through going to classes. The rest of the scores in 2015 were pretty good statistically as depicted below:

5	4	3	2	1
17.9%	28.7%	19%	14.4%	1%

# Is AP Microeconomics Hard? Cont.

## Exam Structure

The exam consists of two sections: multiple choice section and free response section. The time provided for those sections combined is 2 hours and 10 minutes.

Multiple choice sections lasts for 1 hour and 10 minutes and is worth 66% of the exam score. It consists of 60 questions which require the use of economics content knowledge and reasoning across the range of course topics, while some questions might require analysis of different hypothetical situations.

## Directions:

Each of the questions or incomplete statements below is followed by five suggested answers or completions. Select the one that is best in each case.

## Example Question:

*Scarcity is correctly described by which of the following statements?*

- I. Scarcity exists if there are more uses for resources than can be satisfied at one time.*
- II. Scarcity exists if decisions must be made about alternative uses for resources.*
- III. Scarcity would not exist in a society in which people wanted to help others instead of themselves.*

- (a) I only*
- (b) II only*
- (c) III only*
- (d) I and II only*
- (e) I, II, and III*

## Is AP Microeconomics Hard? Cont.

Free response section lasts for 1 hour straight and is worth 33% of the exam score. It consists of 3 questions where question 1 is a long essay question which is worth 50% of the total score, while the other two questions are short essay questions and are worth 25% of the total score each. Questions are designed so that they ask the student to analyze unique scenarios using different course concepts. Some of the questions may require graphical analysis.

### Directions:

You are advised to spend the first 10 minutes reading all of the questions and planning your answers. You will then have 50 minutes to answer the three questions. You may begin writing your responses before the reading period is over. It is suggested that you spend approximately half your time on the first question and divide the remaining time equally between the next two questions. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. Use a pen with black or dark blue ink.

### Example Question:

1. *The markets for bananas, muffins, and coffee are interrelated, and each market is perfectly competitive.*

*(a) In the market for bananas, the equilibrium price is \$1.00 per pound, and the equilibrium quantity is 1,000 pounds per week. Suppose the government imposes a price floor on bananas at \$1.20 per pound, causing the quantity supplied to increase to 1,500 pounds per week.*

*(i) Would the price floor result in a shortage, a surplus, or neither? Explain.*

*(ii) Calculate the price elasticity of supply if the price increases from \$1 to \$1.20. Show your work.*

*(iii) Between \$1 and \$1.20, is the supply elastic, unit elastic, or inelastic? Explain.*

## Is AP Microeconomics Hard? Cont.

*(b) Bananas are an input for muffins.*

- (i) Draw a correctly labeled graph of the market for muffins indicating the equilibrium price and quantity, labeled  $P_0$  and  $Q_0$ , respectively.*
- (ii) On the graph drawn in part (b) (i), show the impact of an increase in the price of bananas on the muffin market, labeling the new equilibrium price and quantity  $P_1$  and  $Q_1$ , respectively.*
- (iii) On the same graph, completely shade the area that represents the change in the consumer surplus caused by the increase in the price of bananas.*

*(c) In the market for coffee, the equilibrium price is \$3.00 per cup and the equilibrium quantity is 100 cups per week. The cross-price elasticity of coffee with respect to muffins is  $-2$ .*

- (i) Are coffee and muffins normal goods, inferior goods, complementary goods, or substitute goods?*
- (ii) Assume the supply of coffee is perfectly elastic. Using the equilibrium price and quantity given above, draw a correctly labeled graph for the coffee market, and show the impact of an increase in the price of muffins on the coffee market.*
- (iii) Given the original quantity of 100 cups of coffee per week, if the increase in the price of muffins is 10%, calculate the new equilibrium quantity in the coffee market. Show your work.*

### Content

There are four key areas that need to be covered for you to learn what you'll need in the exam. These four areas are:

1. Basic Economic Concepts.
2. The Nature and Function of Product Markets.
3. Factor Markets.
4. Market Failure and Role of the Government.

# Is AP Microeconomics Hard? Cont.

## 1. Basic Economic Concepts

Studying microeconomics will require you to understand that, in any economy, the existence of limited resources along with unlimited wants results due the need for making choices.

This is why AP course begins with introduction to the concepts of opportunity costs and trade-offs, and illustrates these concepts by using the [production possibilities curve](#) or other analytical examples. The course then proceeds to considering how different types of economies determine what goods and services should they produce, how to do it, and who to distribute them to. The course will try to enable you to grasp why and how specialization and exchange increase the total output of goods and services.

You will be required to differentiate between [absolute and comparative advantage](#), identify comparative advantage from differences in opportunity costs, and to apply the concept of comparative advantage, in order to determine the basis under that mutually advantageous trade can happen on the international level. I'd like to point out importance of property rights, the role of incentives in functioning of free markets, and principle of marginal analysis.

## 2. The Nature and Functions of Product Markets

The study of the nature and functions of product markets falls into four broad areas: [supply and demand](#) models, consumer choice, production and costs, and theory of the firm.

The first area requires an analysis of supply and demand determinants and ability to apply concepts of elasticity, including calculating. It will walk you through impact of government policies, the concepts of consumer surplus and producer surplus.

The second area covers production and cost analysis. You should be able to understand average and marginal products, the link between productivity and costs and the law of diminishing marginal returns as well as the concept of cost minimization and productive efficiency.



# Is AP Microeconomics Hard? Cont.

Finally, the fourth area covers behavior of firms in different types of market structures such as a [monopoly](#) or [oligopoly](#). Here you will encounter the definition of profits, and required to make distinction between different types using marginal analysis.

## 3. Factor Markets

In this part you will be applying the concepts of [supply and demand](#) to markets for various factors. You will also analyze the concept of [derived demand](#) and gain understanding of how the market determines the distribution of income.

## 4. Market Failure and Role of the Government

In this section you should try to understand the arguments for and against government intervention in an otherwise competitive market. Impact of government tax policies on the distribution of both income and allocative efficiency should be highlighted.

## Skills Required

Basically, the course gets you trained for what you will encounter in exam, but still you should be aware of that this course requires some advanced skills. You will need to be putting maximum effort developing your analytical skills. The analysis goes with graphs so you will need to fully understand and represent results of your analysis.

Also, you will be introduced to different economic concepts which may be unknown to you, so you have to be able to accept various new ideas which may be somewhat exotic and hard to grasp. You don't need to fully understand those ideas, but you will need to apply them to specific situation and context as well. Unlike basic knowledge you get in high school, this is not only about reproducing ideas or facts, but you get to solve specific problems, so being creative is definitely a plus.

Finally, if you are to succeed in anything you need to put effort, work hard and give it time and patience to develop yourself.

# Is AP Microeconomics Hard? Cont.

## Benefits

First of all, AP courses are simulation of the next level in your education. Their credit is recognized by universities. This is a huge plus, since it obviously trains you for something that the system didn't expect you could grasp at your age. However, the system provided the way for those who are ambitious. Also, you will learn new mechanisms of thinking through practice. That is the best you get. You improve yourself. After the course you will feel more confident about everything you do as it boosts the way you analyze and make decisions.

## Next Steps

If you get to study microeconomics in AP and successfully pass the test, you will have to achieve a recognizable credit. If you plan to study economics, this is perhaps one of the better choices you made considering your education. It allows you to skip certain steps and focus on what you like. Skipping in this manner is not losing what others get, because, remember: you already got it.

# How to Study for AP Microeconomics



*[Image Source: Wikimedia Commons](#)*

The AP microeconomics exam probably seems like one of the most difficult advanced placement exams simply because most high schools don't offer full courses on the subject. In addition, microeconomics entails a whole new introduction of themes and problems that were not covered in macroeconomics.

In reality, microeconomics is not much more difficult than macroeconomics, and they even have plenty of similarities that you already covered in your macroeconomics class. You actually have more in common with microeconomics than macroeconomics. Microeconomics is just the economics of everyday life rather than economics on a grand scale, which is why it is micro and not macro.

The College Board is aware of the fact that most students are doing self-study in order to pass the exam. This is consolation as the College Board has adapted the exam to accommodate this fact. With no further ado, let's get into looking at how to study for [AP microeconomics](#).

# How to Study for AP Microeconomics Cont.

## Exam Content

The first step to studying the subject is to look at the content of the exam. Being a self-study based exam, you need to know exactly what will be on the test in order to figure out a base from which to flesh out your AP microeconomics study plan. Luckily, the [College Board](#) offers a wealth of information on what should be included on a course and what the students will need to know when going into the exam.

The following is a full outline of the exam content as provided by the College Board, but with extra details on each of the subjects to help guide you through the exam.

## Exam Outline

### I. Basic Economic Concepts (8-14%)

It should be noted that this section is almost entirely the same as the basic economic concepts that are included in the AP macroeconomics exam. It wouldn't hurt to brush up on these subjects, but they probably won't be a priority in your studies.

#### A. Scarcity, choice, and opportunity cost

- The basics of why economics exist. The scarcity of goods and costs of production. This is very important for understanding microeconomics.

#### B. [Production Possibilities Curve](#)

- This is extremely important to know as you will be graphing the PPC on your exam.

#### C. Comparative advantage, absolute advantage, specialization, and trade

- These concepts are not as important in microeconomics as in Macro, but they can be used to compare the way companies interact with each other.

# How to Study for AP Microeconomics Cont.

## D. Economic systems

- You should know the basics of how economies are set up, such as knowing how capitalism works and the different types of economies. However, as in C this concept is more macro than micro.

## E. Property rights and the role of incentives

- This is a huge part of the study behind microeconomics and you should cover these in depth. It explains the importance of property and land use as well as incentives for the hierarchy in the economic system.

## F. Marginal analysis

- Another very important subject for learning microeconomics. It is the explanation of why certain goods have a value that is worth more than their utility, such as the reason water (which is important for living) costs less than diamonds (which are completely unnecessary for life).

## II. The Nature and Functions of Product Markets (55%-70%)

As you can tell by the sheer content that is included on the exam, this is the bulk of how microeconomics works.

### A. Supply and Demand (15-20%)

- You will study how supply and demand control pricing and how certain goods have prices that are more elastic (easier to change) based on these two factors. Additionally, the role of taxes and the surplus in the economy. You should note that [supply and demand](#) have different determinants within AP microeconomics and you should review it in the context of micro.

# How to Study for AP Microeconomics Cont.

## B. Theory of consumer choice (5-10%)

- Despite having the lowest content, this is probably the most important part of microeconomics. You will study the utility of goods and how that affects the choice of the consumer. Utility is the benefit one will get from purchasing goods that does not have to do with their intrinsic value (again, for example, diamonds versus water).

## C. Production and costs (10-15%)

- The basics of why goods are produced and the costs incurred in production in both the short run and the long run. You definitely have to look up economies of scale (an important AP micro concept) in addition to efficiency.

## D. Firm behavior and market structure (25-35%)

- This is based off the concepts you will learn in C and it is another extremely important concept in learning how microeconomics works.
- You need to learn about competition, monopolies, and oligopolies
- Additionally, how firms create profits and, specifically, the  $MR=MC$  rule in profit maximization.

## III. Factor Markets (10-18%)

This is the introduction of factors of production, which you might remember from macroeconomics. These are the goods that control the economy. Macroecon concentrates on their distribution whereas microeconomics concentrates on their value. You should concentrate on this for your studies as well.

### A. Derived factor demand

- How demand for a certain factor comes about. Be careful not to confuse this with the distinction from macroeconomics – the demand for factors in microeconomics arises from the needs to produce rather than the needs to export.

# How to Study for AP Microeconomics Cont.

## B. Marginal revenue product

- This is based on the formula  $MRP = MP \times MR$ . It means that total revenue is equal to productivity of workers times the revenue from sales of the total output of products.

## C. Hiring decisions in the markets for labor and capital

- How the markets decide who is in demand. For example, a specialized market might have demand for engineers or tailors. When it comes to labor and capital, some markets are labor intensive (such as agriculture) while others require capital investment (industry).

## D. Market distribution of income

- This is a relatively unimportant concept that describes different workers make different incomes, such as a manager making more than an employee.

## IV. Market Failure and the Role of Government (12-18%)

This is a very important part of how microeconomics works. National policies drive the national economies. Whereas macroeconomics looks at grand scale concepts such as unemployment and inflation, microeconomics concentrates on how the government has a role how the economy produces. All of these concepts are important for your studies in order to fully understand how microeconomics works.

### A. Externalities.

- How outside factors positively and negatively influence the economy and production. Additionally, how these externalities create a benefit or cost to society and remedies to these factors.

# How to Study for AP Microeconomics Cont.

## B. Public Goods

- These are goods that are available to everyone. You should know the difference between public and private goods. You also need to know how they are produced and distributed.

## C. Public policy to promote competition

- Look at how the government combats monopolies (antitrust laws) and regulates the economy to help promote growth. This includes the government creating incentives for specific sectors.

## D. Income distribution

- The fairness of economics (equity) especially regarding taxes and welfare programs. You will also need to measure income inequality and its causes or effects.

These concepts are your first steps to setting up your AP microeconomics study plan. You should take note that the percentages do not reflect the relative importance of the concepts, but rather the composition of the exam itself. We will cover the exam content in a second.

When taking the importance of the subjects into account, the [basic economic concepts](#) are probably the most important because they are the base of all other concepts in AP microeconomics. Other than the basics, the role of government is an important concept that you should study because microeconomics is the study of the effects of government policy on firms and the economy of a country.

Now, let's look at the content of the exam itself. It consists of two parts and lasts a total of two hours and ten minutes.



## How to Study for AP Microeconomics Cont.

The first part of the exam is 70 minutes long and consists of multiple choice questions. The content of the questions is based on the percentages listed above in the concepts. For example, 8-14% of all multiple choice questions will specifically have to do with basic economic concepts.

The first part is worth about 66% of the total exam grade. You can expect to spend about a minute on each question in order to finish all of them on time. Some questions will require reading graphs or using your note paper to draw graphs in order to understand the question.

The second section consists of the free response essay questions. The questions consist, generally, of a specific scenario that is presented to you. You will have to answer several questions based on that scenario. There are usually 3-5 parts per scenario, and 3 scenarios on the exam.

The proctor will give you 10 minutes to plan out your answers and then you will have 50 minutes to write down the answers themselves. The first question will take approximately half the allotted time whereas the second two will take up the rest of the time together. The second part of the exam is worth about 33% of the total grade.

An important thing to remember about the free response questions is that you will be required to create neat and legible graphs. The graphs will have to be labeled, including titles, axes, and curves. This is imperative because the graphs will be the absolute basis for your answers.

Now that we have seen the concepts the exam will cover and the content of the exam itself, you might be wondering how to study for AP microeconomics. Here are some points in looking into one or more [AP microeconomics study guides](#) and the strategies to utilize while you are studying.

# How to Study for AP Microeconomics Cont.

## Studying for the Exam

The AP micro exam is primarily focused on how products are bought, produced and sold; how factors of production are bought and sold; and the general role of the government in the *national* economy. It is important to emphasize on the national economy because macroeconomics deals with how government policy affects international commerce (trade, tariffs, etc.).

### Study Plan Step 1: Gauging Your Weaknesses

Your first step to these studies should be to take a practice exam to test your weak areas. You do not necessarily have to take an exam from the past because you will not be able to accurately gauge where you are weakest. A great resource is [albert.io's](https://albert.io) practice question. They are organized by subject and therefore provide the perfect starting point to organizing the rest of your study plan.

### Study Plan Step 2: Organizing Your Weaknesses

Following your initial tests, you then have to work on creating a study plan that reflects your weak spots. There are two things to consider while you are planning this part out. First, you should look at the weak points as well as their relative importance on the exam. That way you can prioritize according to the relevance of the concept as well as your weakness in that concept.

For example, if you did particularly poorly regarding profit, monopolies, and competition, then you should consider the importance of each concept. While monopolies and competition are important, you will not be able to understand that concept without first looking into improving your knowledge of how profits work. Following that, you have to understand how competition works in order to understand the effects of a [monopoly](#).

You will be able to infer the relative importance of these concepts just by looking through the list, given that it is easy to understand the relationship between the separate concepts. When in doubt, you should refer to the above outline written in this guide to gauge the importance of a concept with regards to the exam.

## How to Study for AP Microeconomics Cont.

Finally, when considering the importance of concepts, make sure you first master the basic concepts of economics. That section is important because how you learn everything else in microeconomics rests on your understanding of that first section.

### Study Plan Step 3: The Actual Study Plan

After figuring out what you need to study, you can now get to studying!

The first part of getting your study plan going involves purchasing study guides that you will use as references for the rest of your studies. [Barron's study guides](#) are a great example of a comprehensive study guide that is based on the College Board's structuring of microeconomics classes.

After getting your study guide of choice, you have to concentrate on studying your weak spots and mastering them. Note that during this time you should be concentrating on drawing graphs as well as studying the concepts. As previously stated, your ability to draw and understand the graphs in AP microeconomics will be imperative for correctly answering the FRQ.

Apart from using the study guides, you can also refer to study notes from other schools. This is a [great AP microeconomics tip](#) because you are most likely taking the exam without taking a class.

Most high school economics teachers still teach their students about microeconomics outside of class in order to prepare them specifically for this AP. Many of the teachers that do so publish their study guides online and provide invaluable information that you might not hear from other teachers. This is the product of teachers teaching the subject without having a formal curriculum to follow.

If you are ever in doubt regarding a specific concept or term that you see in your studies, then you should look into finding the definition of that concept to better understand what it means.

## How to Study for AP Microeconomics Cont.

Your first step to understanding microeconomics is to create the right vocabulary for yourself so you can understand the individual words that are relevant to the subject. This includes different acronyms that are used in graphs.

Overall, you should expect to study for at least 8 hours a week, or more than an hour every day. It is highly recommended that you study for even longer, considering that you are not supplementing your studies with a class that you are also taking in school. You should start studying for microeconomics after finishing macroeconomics or towards the end of your macroeconomics semester.

If your exam is directly after finishing macroeconomics, then you should start studying for microeconomics immediately after learning the basics of economics. This way, you give yourself plenty of time to understand the topics within economics.

You should note that many schools require a specific score in order to give credit for that exam. You can measure the amount you need to study in order to achieve *at least* the score you need. Given that microeconomics is a class without formal studies, most schools will be more strict in how you score on the exam. Some might even require a 5.

With the 8 hour a week suggestion, you can expect to get at least a 3 on the exam. That is the bare minimum for passing the exam and getting credit at some schools. For a 4 you should probably double that number for 16 hours a week. For a 5, you should consider studying for at least 24 hours a week, or a whole day a week, and concentrate a lot of your time for studying on the weekends.

The reasoning behind requiring so many hours to study comes from the fact that microeconomics is a separate topic that you will be studying without any prior experience. The studying will be intensive, but it will be worth it and it will be great when you are applying for schools.

# How to Study for AP Microeconomics Cont.

## Study Plan Step 4: Familiarize Yourself with the Exam

The College Board offers [plenty of resources](#) to familiarize you with the AP microeconomics exam. These include past exams as well as some other sample questions and answers to give you more details on how the exam works.

This is a step in itself because it will have a crucial role in how you study for the exam and practice answering. For example, looking at the selected past answers provided by the College Board can give insight into what the person correcting your exam is looking for.

This is especially true of the free response questions that require special care and formatting in order to answer correctly. There are several different sample free response question answers that give the reasoning behind the answer. They also help you learn the topics that they are covering.

The College Board not only provides a perfect answer, but they also provide an average and insufficient answer, along with commentary. The different answer levels will help you understand how to answer, as well as why a particular answer might be wrong. It will give you further insight into understanding what the people correcting the exams will be looking for from the start.

Finally, it will be worth it to look at the full practice exam to further familiarize yourself with the subject. The practice exam also has answers to different questions to further help you with your learning.

## Study Plan Step 5: Looking at Other Media

No matter how much you pore over your [AP microeconomics study guides](#) and practice tests, you eventually will have to refer to other forms of media in order to introduce some diversity. If all you do is read, you will eventually have difficulty paying attention to what you are trying to learn.

The first place you can go to for a wealth of information is YouTube. There are plenty of free videos that cover various subjects for the exam.

## How to Study for AP Microeconomics Cont.

By far the most comprehensive video series comes from the ACDC leadership [microeconomics playlist](#). The playlist is made up of 6 other playlists that are organized according to units. The units cover the different concepts and subjects as laid out by the College Board (what we covered in the outline above).

The series is great because it is taught by Mr. Clifford, who is an actual high school economics professor. He is famous on YouTube for helping people understand economics and practice for the advanced placement exams. The series is so comprehensive that there are over 100 videos that look at the different concepts that are related to microeconomics.

Other than the ACDC leadership playlist, YouTube provides a great database for other information. Let's say you don't understand a specific concept, such as marginal utility. You can search for marginal utility and immediately find plenty of different videos explaining that concept.

Searching for different concepts can give you personal explanations of those concepts that will clear up any doubts you might have. That makes videos a great supplement to reading because not only will you learn the concept, but it will be explained in such a way that you can understand it better than if you just read about the concept off a page.

Most videos come complete with examples (some of which might be interactive) as well as interactive uploaders. You can sometimes make a comment on the video asking a question and they will answer you within a few days if they are still active on the website.

### **Study Plan Step 5: PRACTICE!!**

The key to mastering your [AP microeconomics](#) exam is practice. You have to continually measure where you are in the class in order to make a dynamic study plan that changes with what you know and what you need to know. Let us explain what we mean.

## How to Study for AP Microeconomics Cont.

When you take a class in school, your teachers will give you tests and quizzes, as well as homework, throughout the semester to refine your knowledge of the material. You don't realize this because you are thinking about the overall grade of the class. When you are studying for the microeconomics exam you have to take the same approach yourself because you don't have the teacher to guide you. You should take tests and quizzes regarding the relevant topics you are studying at the time. That way you will be maintaining the knowledge you have learned through your studies.

### Conclusion

Looking at this study guide only, you might find AP Microeconomics discouraging. The truth of the matter is that AP microeconomics will be as easy as you make it. Being a course that you will be creating yourself, outside of school, you will have to give the adequate dedication and discipline into studying for the exam.

Luckily, there is a wealth of knowledge and resources on the internet that can guide you along into learning about microeconomics. With enough time dedicated to studying the subject, you will be able to work your way towards achieving a 5 and getting the college credit you need.

When you are looking into the AP microeconomics exam, you should go into it with an open mind. Your AP macroeconomics experience, if you've already taken the class, will already set up a basis to improve your knowledge on the subject. The great thing about the rest of the subject matter in AP microeconomics is the fact that it is all relevant and easy to understand. For some, it is actually easier than the overarching concepts of macroeconomics.

In conclusion, you should use discipline and dedication to focus on your studies. Make use of the resources provided by the College Board, as well as free resources from YouTube and other websites. Finally, you always have to test yourself to understand your weak spots and adjust your AP microeconomics study plan accordingly. That way, you will get a 5 and be able to brag about teaching yourself microeconomics.

# Absolute vs. Comparative Advantage

Amount produced in 12 hours

	Ketchup	Mustard
Bob	6 bottles	3 bottles
Tom	12 bottles	4 bottles

If you've started studying for the **AP Microeconomics or AP Macroeconomics exam**, then you'll need to know the essential concepts. One of the most important distinctions you'll come across in your studies is absolute vs. comparative advantage. So what's the difference between these two concepts? And why are they so important? That's what you'll learn in this post as we review absolute vs. comparative advantage!

First, let's jump straight into the definitions, and then we'll take a step back to break each concept down and build our intuition.



# Absolute vs. Comparative Advantage Cont.

## Definitions of Absolute vs. Comparative Advantage

**Absolute advantage** refers to the person or country who can produce a good or service for the least resource cost.

**Comparative advantage** refers to the person or country who can produce a good or service for the lowest opportunity cost.

## A Simple Example

All right, so there are costs associated with both of these, but what do we mean by costs? The cost associated with absolute advantage is the type of cost we're used to thinking about. For instance, say in one hour Bryan can chop 20 pieces of firewood, while Rick can chop 10. Casually, you'd think to yourself *Bryan's better at chopping firewood*. But in economic terms, you'd also think, *Bryan has the absolute advantage at chopping wood*.

So what's the difference between resource cost and producing a good or service at the lowest opportunity cost? The difference between opportunity and resource cost is what underpins the difference between absolute vs. comparative advantage. Rather than the resource cost for someone to produce a good or service, the opportunity cost is how much someone gives up to produce a good or service. That is, what was the person's next-best option?

To build on our intuitive example, let's extend our camping story a bit further than just chopping wood. Bryan and Rick will also need a tent to sleep in. Suppose that it would take each one of them one hour to pitch a tent alone. Who has the comparative advantage in pitching tents? To find that, we need to find who has the lower opportunity cost for pitching a tent.

In our example, what Bryan gives up, his next-best option, is that he could have chopped 20 pieces of firewood. For Rick, he could have chopped 10 pieces of firewood. If Rick spends his hour pitching a tent, he's giving up less than if Bryan were too. So Rick has the comparative advantage in pitching tents because he has the lowest opportunity cost, because he gives up the least.

# Absolute vs. Comparative Advantage Cont.

## The Importance of Absolute vs. Comparative Advantage

So, what exactly makes absolute vs. comparative advantage so important? Aside from their importance in your [AP Macro](#) or [AP Micro review](#), that is.

What we'll see is that these concepts set the stage for why people would trade in the first place. Why we wonder, would someone who is just *better* at producing everything ever want to trade instead of simply taking the time to produce it themselves? The answer, which we will see as we consider some free response questions, is comparative advantage.

In essence, what we're wondering about is the difference between absolute vs. comparative advantage. And this concept extends further than just why individuals would decide to trade, or how Bryan and Rick divvy up their tasks! By understanding absolute vs. comparative advantage, we'll be able to understand both why countries would trade with each other and the patterns of trade we can expect to see. Understanding comparative advantage will be key to seeing how trade can benefit both parties!

These concepts are not only crucial for acing your AP Micro or AP Macro exams, but also for setting a foundation from which to begin your AP Economics review!

## Unpacking a More Complicated Example

OK, so now you've got the intuition down, and you know why absolute vs. comparative advantage is such an important concept for your AP Economics review. But what you're here for is [AP Macro review](#) and [AP Micro review](#), and that means that you also want to know how absolute vs. comparative advantage is likely to show up on the test.

## Absolute vs. Comparative Advantage Cont.

First, you'll need to be able to answer questions about tables, like this, taken from the [2016 AP Macroeconomics exam](#):

The following table shows the number of donuts or cupcakes that John and Erica can each produce in one day.

	Donuts	Cupcakes
John	200	100
Erica	150	50

Let's work through this example step-by-step.

First, who has the absolute advantage in donuts and cupcakes? We see that John can produce more of both products in a day, meaning that John has the absolute advantage in donuts as well as in cupcakes. How about the comparative advantage? Who has the comparative advantage in producing donuts? For that, we first need to figure out the opportunity cost of producing a donut.

That is, what does each person give up to produce each donut? In a day, John can make 200 donuts or 100 cupcakes, which means that in the time it takes John to make one donut, he could have made  $\frac{1}{2}$  of a cupcake. We find this by taking the ratio of how many cupcakes he can make in a day (100) to how many donuts he could make in a day (200). And just like that, we have the opportunity cost. The opportunity cost to John of making a donut is  $\frac{1}{2}$  of a cupcake.

But for comparative advantage, we need to know who has the lowest opportunity cost. So we need to repeat this process for Erica: What is Erica's opportunity cost of producing a donut? Following the same steps we used for John, we see that for Erica to make one donut, she must give up  $\frac{1}{3}$  of a cupcake.

## Absolute vs. Comparative Advantage Cont.

Comparing the two individuals' opportunity costs, we see that while John is better at producing **both** donuts and cupcakes and, thereby, has an absolute advantage in both, Erica has the lowest opportunity cost of producing a donut ( vs. John), and therefore has the comparative advantage in making donuts.

But surely John has a comparative advantage in something? Indeed, if we ask who has the comparative advantage in cupcakes, we will find that it's John. For John to make one cupcake, he must give up 2 donuts. While in the time it takes Erica to make one cupcake, she could have made 3 donuts. So John has the comparative advantage in cupcakes.

This comparative advantage sets the stage for John and Erica to specialize and trade! Assume that each specializes in that person's own comparative advantage, so that John produces 100 cupcakes and Erica produces 150 donuts. Now to decide if trading is beneficial, we need to know how many donuts trade for how many cupcakes. Assume that one cupcake can be exchanged for four donuts.

If John always wants to eat 100 donuts, then without trading, he could have used his day to produce 100 donuts and 50 cupcakes. We find this from opportunity costs as well! We know that for every donut John makes, he is giving up making  $\frac{1}{2}$  a cupcake. If he makes 100 donuts, he gives up 50 cupcakes from the maximum number he could make in a day. But with trade, there's another possibility for John. He can specialize in cupcakes (since it's his comparative advantage) and make 100 of them. Then he can trade 25 cupcakes to Erica for 100 donuts. That means, with trade, John now has 100 donuts, as he did without trade, but 75 cupcakes! By trading, John can have 25 more donuts! So, for John, trade is surely beneficial!

But at one cupcake for four donuts, this won't be the case for Erica. A quicker way to see this is by comparing opportunity costs to the exchange rate. To make 1 cupcake, Erica gives up 3 donuts. But for Erica, we see trading does not offer a better option since 1 cupcake is traded for 4 donuts.

# Absolute vs. Comparative Advantage Cont.

## What can You Expect from a Free Response Question?

So we've seen how absolute vs. comparative advantage can tell us why people would specialize and trade, but what about countries? Let's use another example to apply what we've learned to countries. Consider another free response question, this one from the [2015 AP Macroeconomics exam](#):

Country X and Country Y are trading partners, and both produce furnaces and solar panels. The countries can produce the following amounts using equal amounts of resources.

*Country X: 6 furnaces or 8 solar panels*

*Country Y: 6 furnaces or 12 solar panels*

Applying what we did in the last question, we see that while neither country has an absolute advantage in furnaces, Country Y has an absolute advantage in solar panels. What about comparative advantage? We now know that the first step for deciding that is checking for opportunity costs!

The opportunity cost of one furnace for Country X is that they could have made one and  $\frac{1}{3}$  solar panels. For Country Y, in order to make one furnace, they have to give up the resources that could have made 2 solar panels.

So who has the comparative advantage in producing furnaces? Country X, precisely because the opportunity cost of producing a furnace is lower for Country X than it is for Country Y.

Finally, if two furnaces can be traded for 1 solar panel, should Country X produce the solar panels domestically, or import them from Country Y? As we did with John and Erica's trading, let's break this down in a way that compares to opportunity costs.

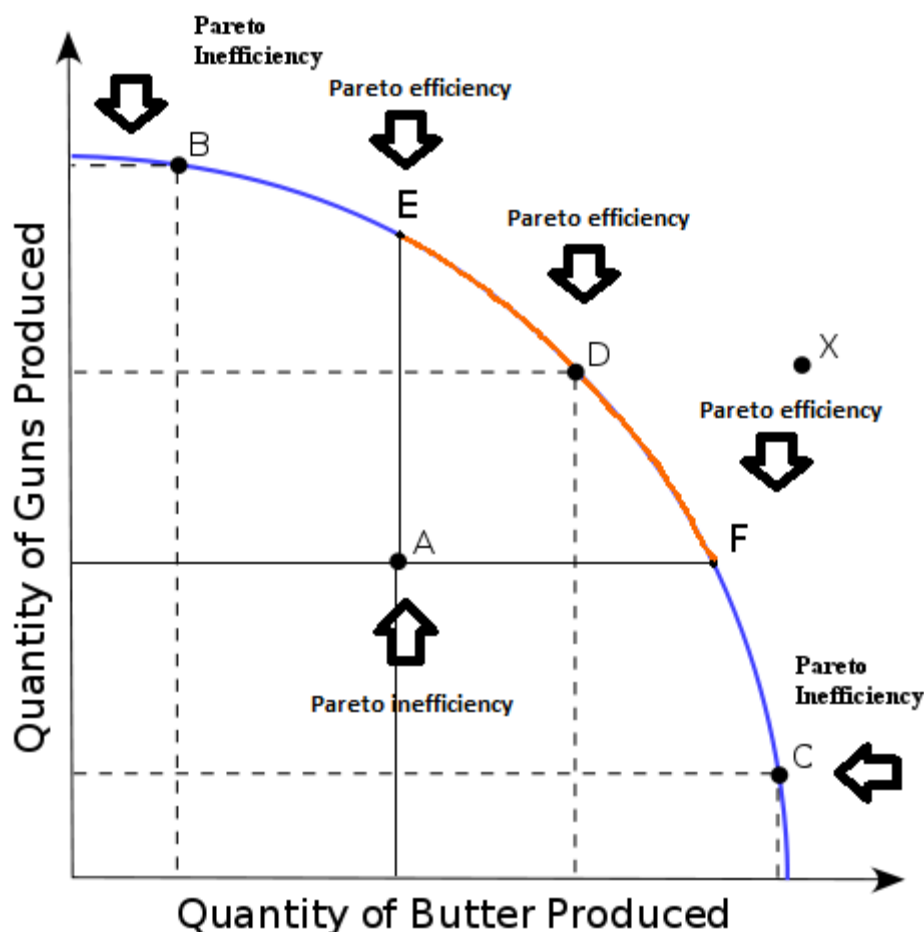
## Absolute vs. Comparative Advantage Cont.

At this exchange rate, Country X knows that it could trade one furnace for of a solar panel. But domestically, the opportunity cost of that furnace for Country X would be 1 solar panels. So Country X could make more solar panels by shifting resources domestically rather than trying to trade for them at this exchange rate with Country Y.

### Conclusion

The difference between absolute vs. comparative advantage is one of the most crucial concepts to understand in any AP Economics Review since it forms the building blocks you'll need for both [AP Macro review](#) and [AP Micro review](#). This post helped you understand absolute vs. comparative advantage, which gives you the tools that you need in order to understand trade between persons as well as trade between countries. You can now see both why it can be, and when it will be beneficial for countries or persons to engage in trade. So, how could it be beneficial for a country to trade with another country that is absolutely worse at producing everything?

# Production-Possibilities Curve



*Image Source: [Wikimedia Commons](#)*

So you've started studying for the AP Microeconomics and AP Macroeconomics exams, and you want to know what's essential for your AP Economics review. In that case, the production possibilities curve, sometimes called the production possibilities frontier, is a concept that you've got to know!

# Production-Possibilities Curve Cont.

## Introduction to Production Possibilities Curve

So what is the production possibilities curve? The PPC curve is a way to represent the different production opportunities for a person, country, or trading partners. The production possibilities curve is a crucial part of any AP Economics review for a couple of reasons. First and foremost, you'll definitely need to master this concept if you want to ace your [AP Microeconomics](#) or AP Macroeconomics exams, of course! Beyond that, the PPC curve gives you an opportunity to make sure you've got a handle on some important economics subjects, such as opportunity costs and efficiency. In this post, we'll build our understanding of the production possibilities curve from the ground up and work through some practice questions together; so let's get started!

### A Simple Example

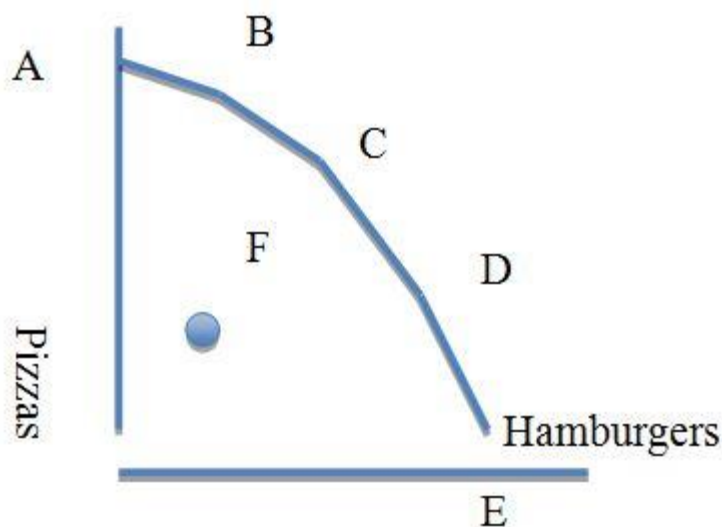
We'll start by working out what exactly a production possibilities curve is by thinking through a simple example. It's easiest to start by thinking about the production possibilities available to any person, like you or me. For example, during the day, I can make pizzas or hamburgers, and I only have so much time. This means I may have a set of production possibilities that looks like the following table:

	A	B	C	D	E
Pizzas	32	30	25	15	0
Hamburgers	0	5	8	10	11



## Production-Possibilities Curve Cont.

Now that we know exactly what my production possibilities are, we can create the PPC curve by graphing these points.



Hey! Where did point **F** come from? For now, ignore **F**, but we will come back to it when we discuss efficiency.

This outward bowed PPC should look roughly similar to the graph at the beginning of this post. We can see that the graph of the production possibilities curve in our simple example demonstrates visually the different production opportunities that are available to me, depending on the length of time I want to spend making either pizzas or hamburgers. Now that we've seen how to put together a simple example, let's find out what makes this concept so relevant to [studying for AP Macroeconomics](#) and AP Microeconomics!

## Production-Possibilities Curve Cont.

### What's so Important About the PPC?

Knowing the production possibilities curve is key to your AP Economics review because it brings together a number of economic concepts. In particular, the PPC curve demonstrates scarcity, trade-offs, opportunity costs, and economic efficiency. To illustrate, let's look at each of these concepts in the context of our simple example.

First, how does the PPC curve demonstrate scarcity? In this case, the scarce resource is the number of hours in a day available to me. I can spend my entire day making 32 pizzas, but this means that I will have no more time available to make a hamburger. Because there are only so many hours in a day, as I spend more time focusing on making pizzas, I simply cannot make as many hamburgers. That's scarcity!

Likewise, the production possibilities curve demonstrates the vital economic concept of trade-offs. Because time is a scarce resource, when choosing to make more hamburgers or more pizzas, I have to consider the inherent trade-off created. Let's say that I'm spending all of my time making hamburgers. The PPC curve shows us that if I spend my entire day making hamburgers, I can make 11 of them. If I'm willing to make 1 less hamburger though, the PPC shows that I could make 15 pizzas. So, we can see the trade-off that is inherent to the last hamburger I decide to make—namely, I give up the 15 pizzas that I could have made.

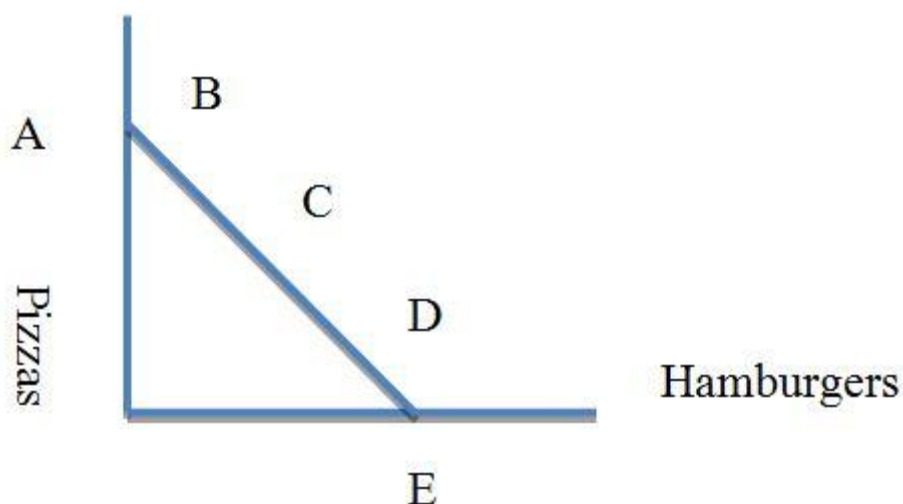
The combination of scarcity and trade-offs brings us to opportunity costs. Opportunity costs are key to understanding both AP Microeconomics and AP Macroeconomics, and the production possibilities curve lets us clearly visualize them. In this example, my opportunity costs are what I give up in order to produce more pizzas or more hamburgers. To highlight this, consider moving from **C** to **D** and then from **D** to **E**. To move from making 8 hamburgers to 10 hamburgers, I have to give up 10 pizzas. Then, moving one step further, from 10 hamburgers to 11 hamburgers means that I have to give up 15 pizzas. I'm giving up more pizzas to move from **D** to **E** than I did from moving from **C** to **D**, even though I'm making fewer hamburgers. Economically, my opportunity cost of making hamburgers is rising.

## Production-Possibilities Curve Cont.

Working through this example shows that the PPC curve can also tell us the difference between increasing opportunity costs and constant opportunity costs. As we just saw, reading our simple example's production possibilities curve allowed us to visualize increasing opportunity costs. However, suppose that my set of production possibilities instead looked like this:

	A	B	C	D	E
Pizzas	8	6	4	2	0
Hamburgers	0	1	2	3	4

Then we could again graph the production possibilities curve this creates:



## Production-Possibilities Curve Cont.

What's the difference between this PPC curve, and our initial PPC curve? This one graphs a straight line! This linearity that we are noticing is the difference between increasing opportunity costs and constant opportunity costs. In our initial example, if I wanted to continue to increase the number of hamburgers I was making, I had to give up more and more pizzas (i.e. increasing opportunity costs). In this example, every time I decide I'd like to make another hamburger, it means I have to give up making 2 pizzas. This means that my opportunity costs are constant since I am always giving up 2 pizzas to make another hamburger.

Finally, the production possibilities curve also demonstrates efficiency, in particular, productive efficiency. Productive efficiency means that we are producing each of the goods in the least costly way. How can we see that on our PPC curve? Let's go back to our very first example. Remember that point **F**? The point **F** allows us to highlight the difference between a productively efficient and productively inefficient allocation. If I'm producing at point **F**, I'm simply not making good use of my time. At point **F** I'm making 8 hamburgers and only 15 pizzas, but we know that if I was producing my goods in the least costly way, I could produce up to 25 pizzas. This is saying that point **F** is an inefficient allocation, while the points on our production possibilities curve are all efficient. By making only 8 hamburgers and 15 pizzas, I'm simply wasting some of my scarce resources, time. If I instead produce the good in the least costly way, by focusing and not wasting some of my time, I could be producing efficiently, and when I do so, I'll be making 25 pizzas to go along with my 8 hamburgers.

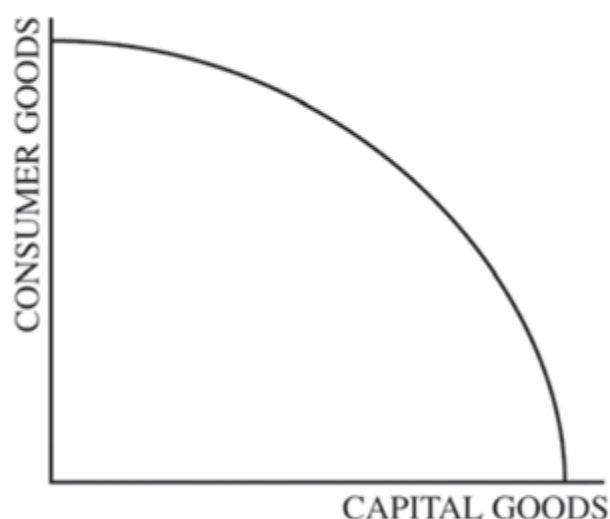
What if there was a point beyond our PPC curve, for instance, 8 hamburgers and 30 pizzas? Well, I simply can't make that many pizzas if I'm already producing 8 hamburgers, I just don't have the time! This point is unattainable.

## Production-Possibilities Curve Cont.

### OK, but what about the AP Macroeconomics or AP Microeconomics Exam?

We've built up a simple example of the production possibilities curve and have a good understanding of why it's so important, but what about the AP Macroeconomics and AP Microeconomics exams? For the last part of this AP Economics review, we'll work through a free response question. This practice will allow you to apply the concepts you've learned about the PPC curve, as well as illustrate how you could be tested on the PPC on an AP Macroeconomics or AP Microeconomics exam. The following question is taken from the [2013 AP Macroeconomics Free Response Questions](#):

*“Assume that the country of Fischerland produces only consumer goods and capital goods.”*



Given this production possibilities curve for Fischerland, we are first asked which goods exhibit increasing opportunity costs. Thinking back to our original simple example, we note that this graph exhibits the same bowed-outward shape. First, consider consumer goods. As we move closer to the consumer goods axis, notice that we have to give up more and more capital goods to get closer.

## Production-Possibilities Curve Cont.

Likewise, as we move closer to the capital goods axis, we see that it takes giving up more and more consumer goods to get there. This means that both consumer goods and capital goods exhibit increasing opportunity costs. In each case, as we produce more of one good, we have to give up increasing amounts of the other!

Next, we are asked to plot a point where the economy of Fischerland is fully employed and efficiently using its resources. Thinking back to the concepts inherent to the production possibilities frontier, where were the efficient allocations? They were those points that were exactly on our PPC curve! So like our first example, we would simply plot a point exactly on Fischerlands PPC curve!

Finally, what about if a recession occurs in Fischerland? This means that instead of the economy of Fischerland being efficient, it is now inefficient. Thinking back to what we've learned, that's any point where the economy isn't producing as much as it could. So like our simple example, we plot a point that is inside the production possibilities curve!

### Conclusion

The production possibilities curve is a vital economic concept for the AP Microeconomics and AP Macroeconomics exams. In this post, we've built our understanding of the PPC curve from the ground up and applied it to a [free response question](#). With knowledge of the production possibilities curve, you'll be able to visualize economic concepts ranging from scarcity and trade offs to opportunity costs and efficiency—all of which are critical concepts in any AP Economics review! Can you think of some interesting examples of production possibilities?

# Supply and Demand



*[Image Source: DeviantArt](#)*

Supply and demand is probably the most fundamental topic in economics. The entire AP Microeconomics test will be virtually impossible to understand if you don't have a firm grasp of supply and demand. This AP Microeconomics review guide will help you learn supply and demand as quickly and thoroughly as possible, and then help you apply your knowledge to real [AP Microeconomics FRQ \(free response questions\)](#) and AP Microeconomics multiple choice questions.

How often does supply and demand appear on the AP Micro test? Well, officially, the supply and demand will be anywhere from 15-20% of the test. However, many questions ask you to integrate another topic with supply and demand, as it is one of the foundations of economics. Read this AP Microeconomics study guide, and you'll be ready for any question related to supply and demand.

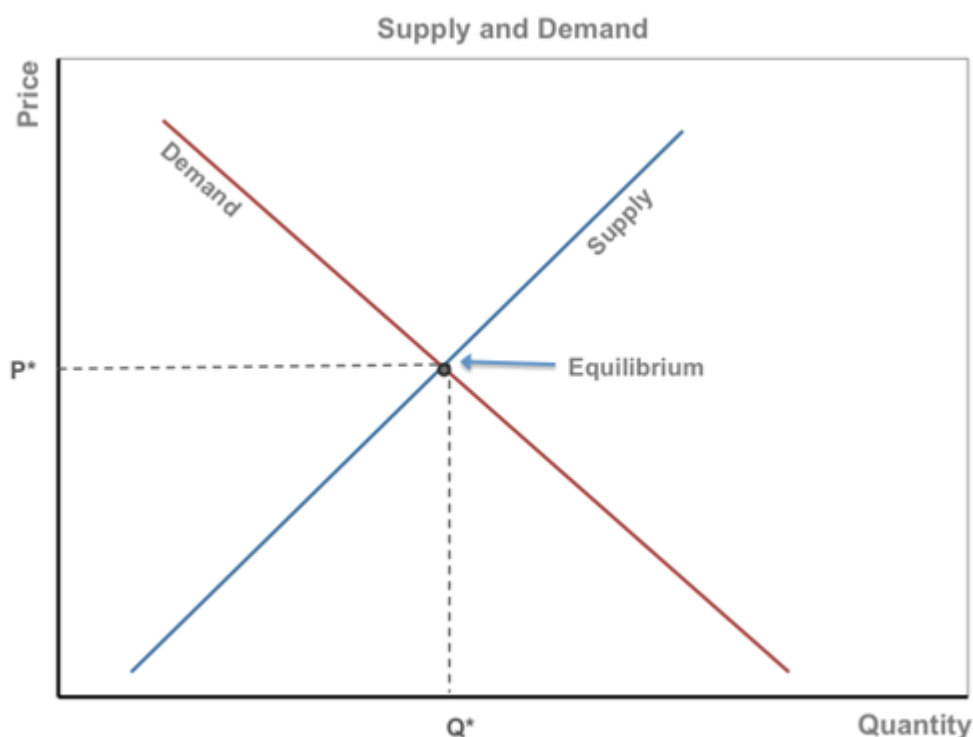
# Supply and Demand Cont.

## What is Supply and Demand?

Before understanding the idea of supply and demand, you'll have to know what supply is individually, and what demand is individually. Demand refers to how much of a product or service is desired by buyers. The quantity demanded is the amount of a product people are willing to buy at a certain price. This distinction is important! The quantity demanded is a point, while demand is a line. In other words, the quantity demanded is an amount, while demand is a relationship.

On the other hand, supply represents how much the market can offer. The quantity supplied refers to the amount of a certain good producers are willing to supply when receiving a certain price. Again, the distinction between these two concepts is important. Quantity supplied is an amount, while supply is a line.

The best way to describe supply and demand is through the iconic supply and demand graph. Here it is:





# Supply and Demand Cont.

## Supply Curve

As you can see, the supply curve, or the blue line, slopes upward. Why? Well, it is quite a simple concept. Companies want to make as much money as possible. And if the price for the product or service you are selling is high, you will make more money. Therefore, as the price of a product or service increases, companies become increasingly willing to supply more of that product or service. At lower prices, companies are less willing to supply their products and services, because they can't make as much money. You may be asking yourself, then why do companies keep their prices low? Wouldn't it be better for their bottom line to make their products or services super expensive? Well, once we factor in the demand curve, supply becomes a little more complicated.

## Demand Curve

You have probably already noticed that the demand curve slopes downward. Maybe you have also caught onto the reason for the slope of the demand curve. Simply, it is because people demand less of a product as the price for that product increases. If peaches are extremely expensive, you probably will not buy as many peaches as you usually would. On the other hand, if apples are very cheap, you will probably buy more apples than you normally would.

## Substitution Effect

But what happens when we combine these two scenarios? Let's say apples are cheap and peaches are expensive, and these are the only fruit at your market. Since you want fruit of some kind, you will buy apples instead of peaches. This is called the substitution effect, when one substitute good replaces another good. In this case, peaches are the original goods, and apples are the substitution goods. The substitution effect is one of the major causes of the downward-sloping demand curve. After all, when the price of a commodity increases, it becomes more expensive than its substitute good. When this happens, the users of the original good will shift their consumption to the substitute good. Therefore, the quantity demanded of the original good will decrease. Hopefully, you can see the principle at the core of this example: as price increases, demand decreases.

# Supply and Demand Cont.

## Law of Diminishing Returns

Another important concept that explains the downward-sloping demand curve is the [Law of Diminishing Marginal Returns](#). This sounds pretty intense, but it is actually very simple. I'll explain what it means with an example. If you do not have any coats, then having one more coat will improve your happiness a lot. In contrast, if you have a lot of coats, having one more coat will not improve your happiness very much. Every time you get a new coat, it will be less valuable to you than the last coat you bought. The word "marginal" in economics basically means "one more." Marginal return is the return from having one more of a product. Thus, as you collect more coats, you have diminishing marginal returns for each new coat you buy. For this reason, you don't want a new coat as much if you already have a lot of coats. You demand less of a product as you have more of that product. This is what you see on the graph – demand decreases as quantity increases along the bottom of the graph.

Now we can get back to why firms will not make their products as expensive as they possibly can. When a product is expensive, people do not buy as much of the product. Therefore, a firm's revenue decreases as their prices increase. Fewer people want the firm's product when the price is high, so the firm earns less money from purchases. But now we have a little bit of a paradox on our hands. We have found that revenue both increases and decreases when price increases. What solves this paradox is the idea of market equilibrium.

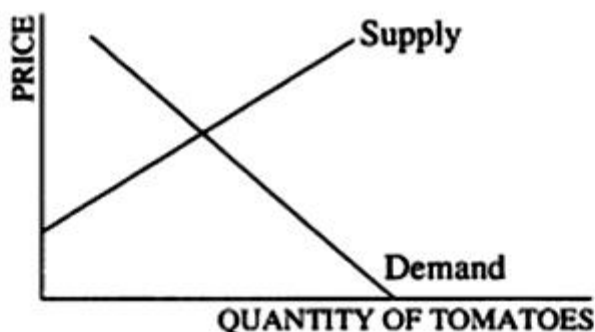
## Market Equilibrium

At the intersection of the supply and demand curves is the point of market equilibrium. At this point, the market is the most efficient, because the amount firms supply of a product is equal to the amount consumers demand of the product. No one gets more than they want, and no one gets less than they want. Not only is it great for consumers, but equilibrium is also ideal for firms. Equilibrium is where price is as high as it possibly can be without reducing revenue. Thus, at the equilibrium point, firms make the highest possible revenue. Now that you [understand the concept](#) of supply and demand, we can get into some supply and demand questions from the AP Microeconomics test.

## Supply and Demand Cont.

### How to Answer Supply and Demand Questions

First, let's answer a AP Microeconomics multiple choice question on supply and demand. This particular AP Microeconomics multiple choice question is from the 1995 AP Microeconomics exam.



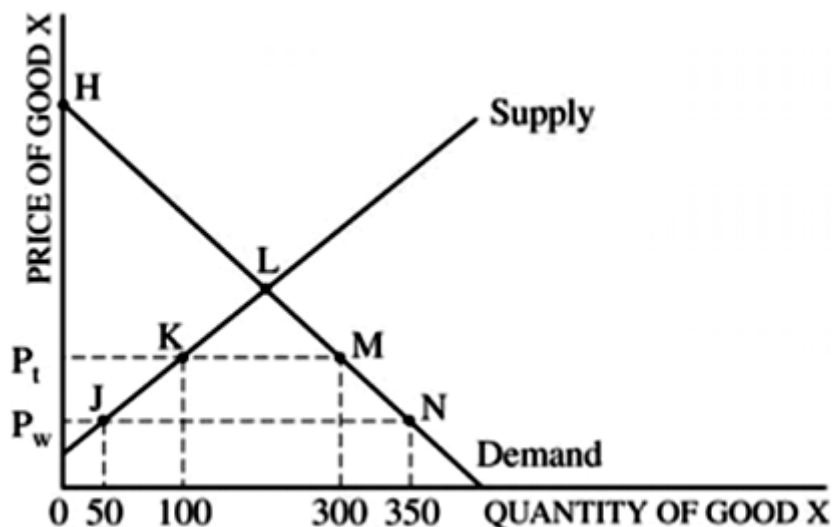
4. On the basis of the graph above, which of the following statements concerning changes in the demand for and supply of tomatoes is correct?
- (A) If both the demand and supply increase, the price of tomatoes will definitely increase.
  - (B) If both the demand and supply decrease, the quantity of tomatoes sold will definitely increase.
  - (C) If the demand decreases while the supply increases, the price of tomatoes will definitely increase.
  - (D) If the demand decreases while the supply increases, the quantity of tomatoes sold will definitely decrease.
  - (E) If the demand increases while the supply decreases, the price of tomatoes will definitely increase.

## Supply and Demand Cont.

Let's go through this question step by step. In this case, it is easiest to look at the answers by themselves, rather than trying to use the graph to predict the answer. First, we know (A) isn't correct, because if both demand and supply increase, price could stay the same. If there is a lot of a product, we are not as willing to pay high prices for that product. Second, (B) can't be right, because when demand and supply decrease, fewer tomatoes are sold. In the same way, (C) is wrong, because if demand decreases *and* there are more tomatoes, the price will probably decrease.

Now, (D) is a little more difficult. It is possible that the quantity of tomatoes sold would decrease, but it could also increase. If the supply of tomatoes increases, even if demand decreases, more tomatoes could be sold. In the end, (E) is correct, because we know for sure that when supply decreases and demand increases, price will increase. To understand this, think of rare items like diamonds. Why is their price so high? It's because the supply of demands is very low, but a lot of people want diamonds.

Now, let's apply supply and demand to an AP Microeconomics FRQ.



3. The diagram above shows the domestic supply and demand for good X in the country of Placonia. If the current world price of good X is  $P_w$ , does Placonia export or import good X? Explain.

## Supply and Demand Cont.

At face value, this doesn't seem like a question about supply and demand. Most AP Microeconomics FRQ's won't directly ask about supply and demand, however. In this case, we will have to apply our understanding of supply and demand to the imports and exports of a certain country. The price is at  $P_w$ . You can trace the line at point  $P_w$  across the graph, and you'll see it intersects the supply curve at point J and the demand curve at point N. At point J, supply is 50. At point N, demand is 350. Therefore, demand is *much* higher than supply. This is called a shortage, when a country has insufficient supply of a product. When a country is in shortage, it needs to import more goods to fill the demand for the product. Thus, the answer to (a) is that Placonia needs to import good X at price  $P_w$  because there is more demand than supply for good X at this price.

Do you feel prepared now that you have reviewed this [AP Microeconomics study guide](#) to answer a question on Supply and Demand? Let us know!



# Ready to Score Higher?

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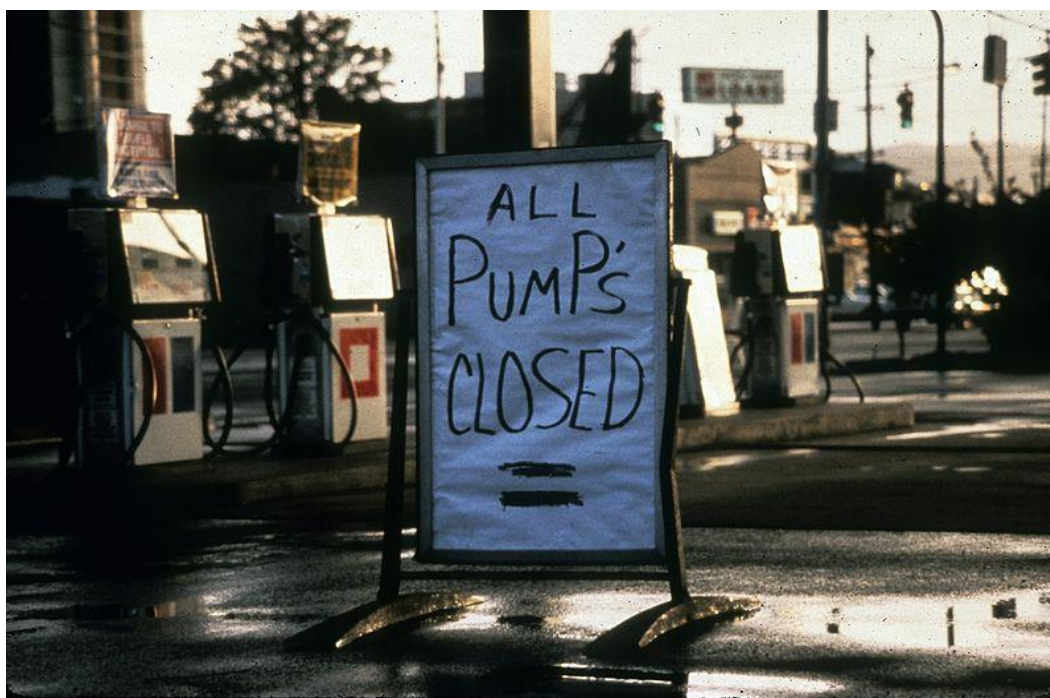
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# Price Ceiling



*[Image Source: Wikimedia Commons](#)*

There's nothing more dreadful than a long cold winter, especially with skyrocketing gasoline prices. That happened in the winters of the year 2002 to 2008 when gas prices soared from \$1.75 per gallon to more than \$4 per gallon. The cost of heating has been steadily rising due to the recent hikes in oil prices; you don't need the weatherman to tell you that coming winters will be longer and colder. You might be wondering, can't the government do anything about the rising oil prices?

Many people would like the government to set price ceilings on gas just as it was during the Nixon administration in 1971. However, economists argue that taking this step would be a horrible idea, detrimental to the overall economy.

By reading this article, you will appreciate an economists' perspective on what is price ceiling, check out some examples of how it is practiced and understand the impacts it has on the economy. This article will also help you prepare for the AP econ exam regardless of which AP course you take, AP Micro vs. Macroeconomics.

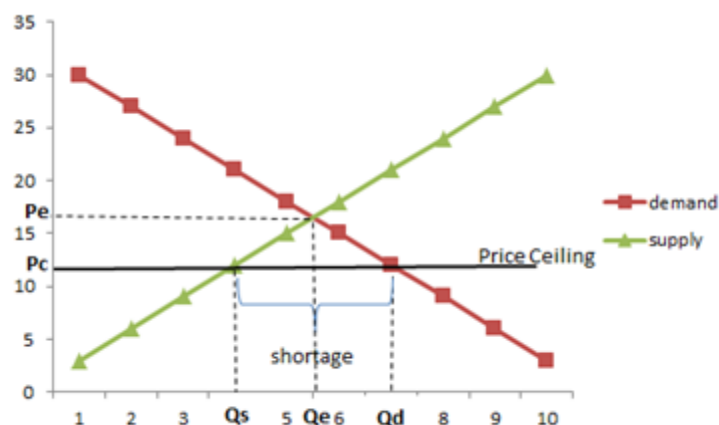
## Price Ceiling Cont.

### What is Price Ceiling?

Price ceiling occurs when the price of a commodity is held below the market equilibrium price due to regulatory influence. In other words, when the government imposes rules which specify the maximum price sellers are allowed to charge for a commodity.

### A Binding Price Ceiling

For a price ceiling to have an impact on the market, the set price has to be below the market equilibrium. If it is higher than the equilibrium, it will not be effective as producers are not looking to sell at a price higher than the equilibrium price.



Graph 1: A binding price ceiling

You don't have to dig too deep to find instances where price ceilings are applied. Here are some examples:

- Rent controls (e.g., In the Cities of New York and San Francisco).
- Salary caps in professional sports like in the NBA or for Wall Street CEOs.
- Controls on the price of natural gas included in the Natural Gas Act of 1938 (U.S.).
- Gasoline price controls during the Nixon Administration in 1971.

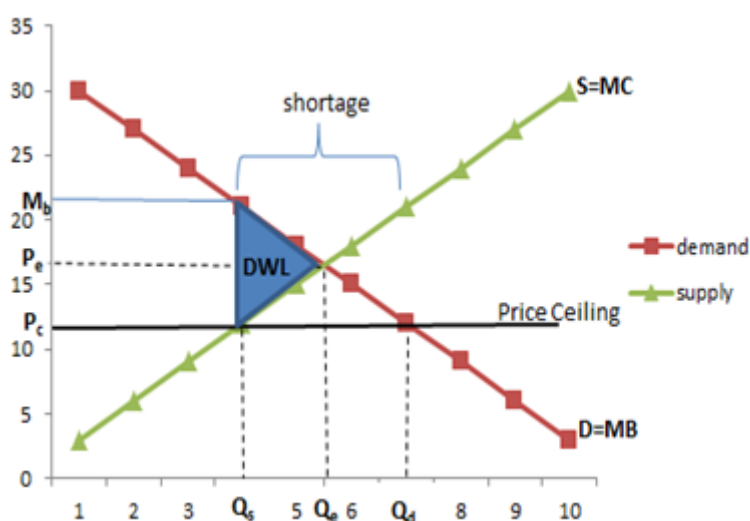


## Price Ceiling Cont.

From the examples, you can see that the call for price ceilings often originates from a right perspective. However, economists argue that in many cases, price caps have led to chaos in the economy rather than the intended solution.

To explain how price ceilings are detrimental, let's take a look at the impacts.

### Impacts of Price Ceilings



Graph 2: Impacts of price ceilings

### On Supply and Demand

The first impact a price ceiling has on the market is on the [supply and demand](#) for a commodity.

A price ceiling creates a shortage of a product since consumers demand more than what the producers are willing to supply at the regulator's price. This translates to shortages which we often see manifesting as long lines in market outlets and out of stock signs.

Artificial shortages result in resources not being allocated optimally by producers. Also, consumers spend extra resources either looking for or waiting in line for the unavailable product. This translates to deadweight losses.

# Price Ceiling Cont.

## Deadweight Loss

For producers, the regulator price represents a point where resources are not optimally utilized. Inefficiency occurs because the marginal benefit for the quantity supplied at the price ceiling exceeds the marginal cost. This inefficiency is also referred to as the deadweight loss.

Graph 2 (above) shows a price ceiling  $P_c$  set by the regulator.  $P_e$  and  $Q_e$  show the equilibrium price.  $M_b$  depicts a price that the marginal consumer will pay at quantity  $Q_s$  which is the amount that the industry is willing to supply.

At the regulator price ( $P_c$ ) the quantity demanded exceeds the quantity supplied resulting in the shortage.

Since  $M_b$  is greater than  $P_c$  (MC), a deadweight loss results. Other inefficiencies also arise, including:

- 1. Wasted Resources:** With price ceilings, producers limit their output thereby they do not utilize resources efficiently. The underutilized resources are wasted.
- 2. Leads to Production Inefficiencies and Low-Quality Products:** Price ceilings leave little room for producers to maximize their profits. Suppliers lack the incentive to improve the production process or advance the product quality. To maximize profits, many manufacturers often opt to cut their costs by providing a lower quality product.

Market inefficiencies and commodity shortages often breed corruption and a host of several other illegal practices which include:

## Mushrooming of Black and Grey Markets

The shortages created by price ceilings often encourage individuals to exchange commodities away from lawful markets to bypass legal restrictions. For example, it is common to meet scalpers selling tickets to the NBA playoffs on street corners.

## Price Ceiling Cont.

In the black markets, the sellers often and illegally raise the price and get away with it.

Other sellers cleverly create “gray markets” as a way of circumventing the price ceiling without indulging in illegality. A common form of gray market is when sellers charge for goods or services that were previously provided for free.

For instance, during the Nixon regime, due to the price caps on oil products, several gasoline stations charged for services such as cleaning the windscreens and checking tire pressure.

In more recent times, it is common to find some landlords charging tenants for using the parking space and the elevator due to price ceilings on rent.

Price caps are often set to protect the consumers from unscrupulous traders. However, they create more demand than producers are willing to supply which negates the efforts protecting the consumers.

Let’s have a look at what transpired after price ceilings were set in the oil sector during President Nixon’s era.

### **Case Study on Price Ceilings: 1973 Energy Crisis in the U.S.**

Price caps in the U.S. energy sector were instituted in the early 1970’s by the government to tame soaring inflation. The controls were applied to commodities such as natural gas, and the distribution was heavily regulated to ensure equitable supply.

As a consequence of reduced incentive to supply the product, the number of producers fell from 18,000 in 1956 to less than 5,000 in 1971 further straining its availability.

Due to the perennial shortages, consumers opted for alternative forms of energy such as fuel oil, which had no price caps and supply was not strained despite being more costly.

## Price Ceiling Cont.

The energy sector was in for more turbulence that would rock the entire economy in the 1970's.

In 1973, the Organization of Oil Producing and Exporting Countries (OPEC) imposed an [oil embargo](#) on the United States. Many people believed that the blockade was responsible for the long lines and the rampant dry-outs at gasoline stations.

However, OPEC's oil which was being redirected from other countries found its way to the U.S. market and the price caps prevented suppliers from passing on the full cost to the consumers.

The shortages were as a result of the price ceilings set by the Nixon administration in 1971.

There were early indicators of the effects of the price ceilings. At about five months before the embargo, it was reported that about 1,000 stations had been closed due to lack of product and many others had significantly scaled down production.

The oil embargo provided a good political scapegoat for the policy makers, and as demand rose, supply dwindled, and inflation soared.

Oil products are essential in running several other economic activities. The shortages resulted in a general slowdown of the entire economy and many people attribute the crash of the stock market in 1974 to these shortages.

The high inflation and slower economic growth due to slackened production were the cause of what was arguably one of the worst stagflation periods in the U.S.

From the case study, you can see that although price ceilings are meant for good, they can snowball into something more catastrophic for the economy.

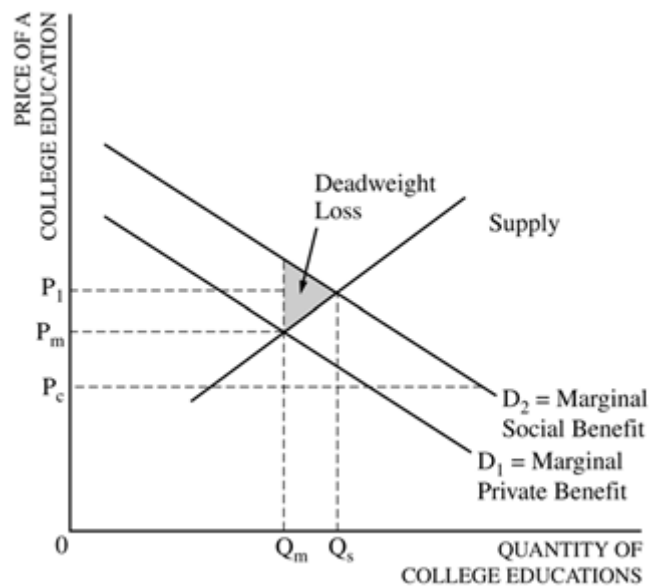
Now, let's look at a more relevant example and see how you can prepare for questions on price ceilings in the AP micro exam.

## Price Ceiling Cont.

Here's a Sample FRQ from the 2011 Paper.

Assume you are the resident economist for the education department of your state. Previous research shows that college-educated individuals tend to become more responsible citizens and are less likely to commit a crime.

- (a) Draw a graph depicting the college education market and indicate the following parameters:
- (i) The Private market equilibrium price and quantity. Label these as  $P_m$  and  $Q_m$  respectively
  - (ii) Socially optimal capacity of education, labeled  $Q_s$
  - (iii) The deadweight loss at market equilibrium as a shaded section of the graph.



A correctly labeled market chart, showing the equilibrium price  $P_m$  and quantity  $Q_m$  earns you one mark. By drawing a Marginal Social Benefit (MSB) curve above the Marginal Private Benefit (MPB) curve and the intersection of MSB and Supply as the socially optimal quantity,  $Q_s$ , earns you one mark. One more score is earned for correctly shading the area representative of the deadweight loss.

## Price Ceiling Cont.

- (b) Suppose the government enforces a binding price ceiling on college education tuition fees.
- (i) Draw and correctly label the price ceiling ( $P_c$ ). An effective or binding price ceiling has to be below the equilibrium price  $P_m$  as shown in the figure above. You will earn you one point.
  - (ii) Describe the impact of this price ceiling on the deadweight loss in this industry. Does it increase, decrease, or have zero effect? Price ceilings cause shortages; in this case, the price cap will escalate the deadweight loss, because providers will reduce the quantity of education offered. (One mark)
- c) Assume that the government extends, to each qualified student, a subsidy for each unit of college education purchased instead of the ceiling.
- (i) Explain if the equilibrium quantity of college education units will be greater than, less than or equal to or equal to  $Q_m$  from part (a)? The government subsidy will cause a right shift of the demand curve, from  $D_1$  to  $D_2$  thus the new equilibrium quantity will be greater than  $Q_m$

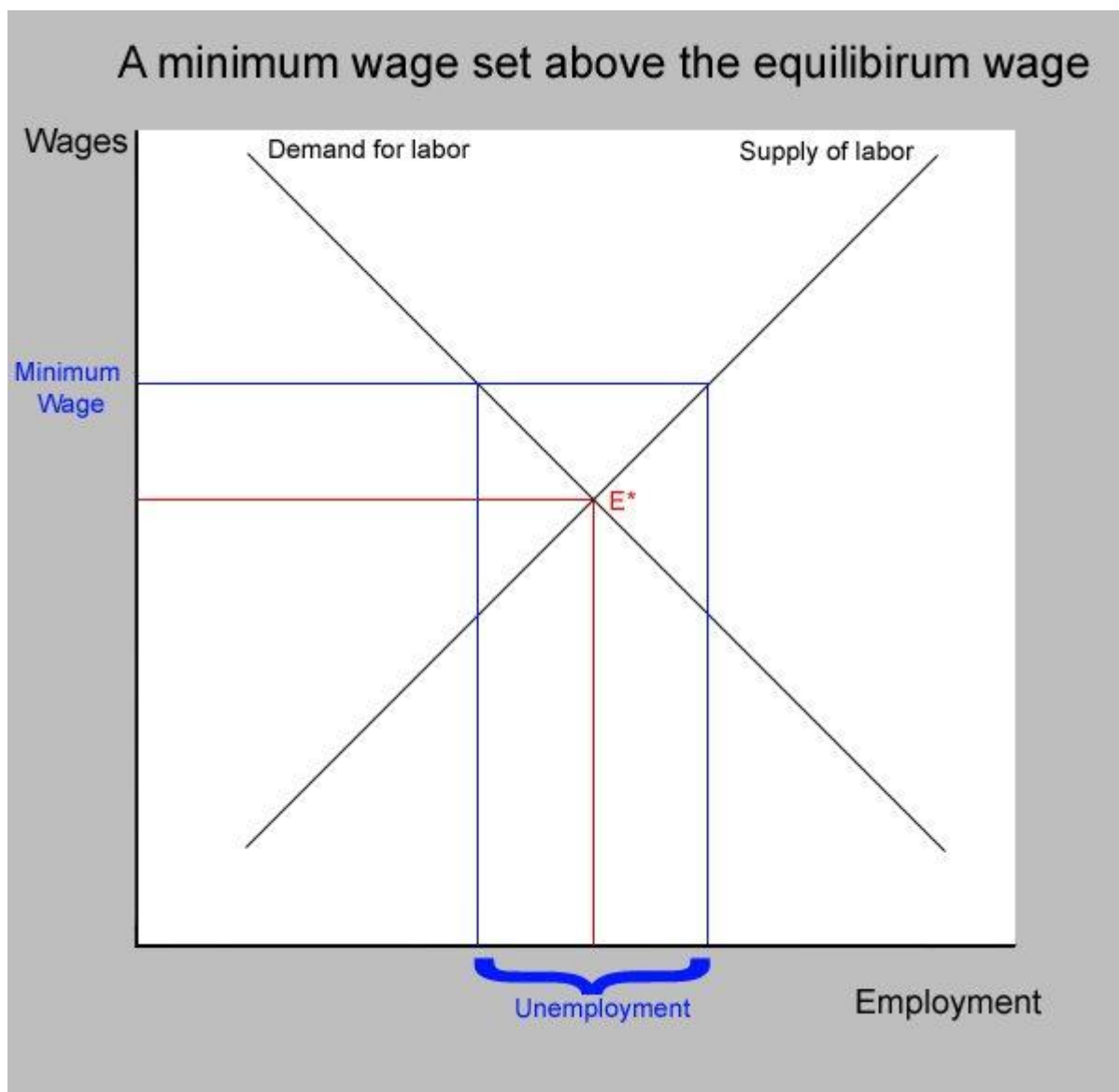
### To Conclude

The sample FRQ shows that examiners often test if you can identify, draw and correctly label a binding price ceiling graph that is below the equilibrium. Examiners also regularly check if you can derive the impacts of a price ceiling on the market.

Remember that price ceiling occur when a regulator imposes an artificial maximum price for a product that is below the market equilibrium. Price caps are frequently tested in the AP econ exam and also commonly practiced in different markets.

The motive behind price ceilings is often good. However, price caps are in many cases a bad idea and many economists are of the opinion that market forces should determine prices.

# Price Floor



*[Image Source: Wikimedia Commons](#)*

Across America, many people support laws that uphold minimum wages. In fact, there is an [ongoing call to raise the minimum wage](#) to \$12 per hour by the year 2020. But, is such a policy wholly beneficial to the economy? For most people, it sounds like great idea. However, let's keep in mind that all that glitters is not gold.

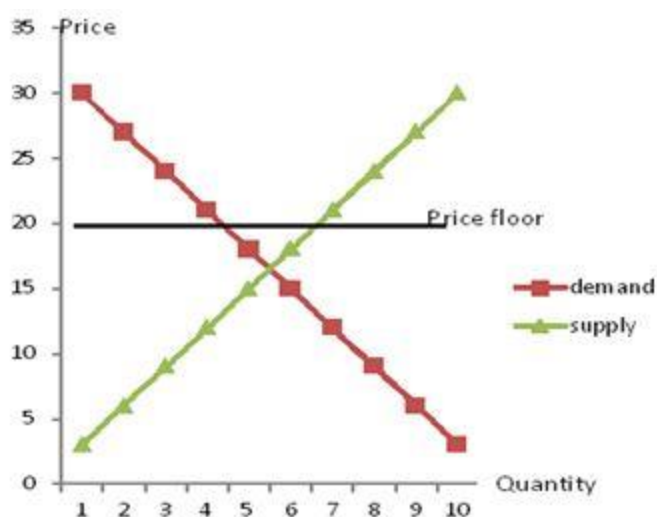
## Price Floor Cont.

This article will help you understand why price floor policies, such as the minimum wage, and price support programs can fuel chaos in the economy. You'll get to understand the impacts of price floors and evaluate their effectiveness by sampling where they have been applied extensively without success. But before we go deeper into the concept, let's understand what a price floor is? A price floor occurs when the market adopts a price that is higher than the [equilibrium](#). The market takes a minimum price to sell goods, and buyers are not allowed to purchase the commodity at a lower price due to regulatory influence.

For instance, to protect the welfare of the farmers, the government sets the minimum price to purchase a unit quantity of a particular farm produce such as wheat.

### An Effective Price Floor

For a price floor to have an impact on the market, it must be set above the equilibrium price. For example, if the equilibrium price for a bushel of wheat is \$16, an effective price floor has to be above this price, say at about \$20 as depicted in the chart below.



If the price floor is not above equilibrium, it will not make any sense for the markets to sell below equilibrium rendering the price floor irrelevant.



# Price Floor Cont.

## The Impact of Price Floors to the Economy

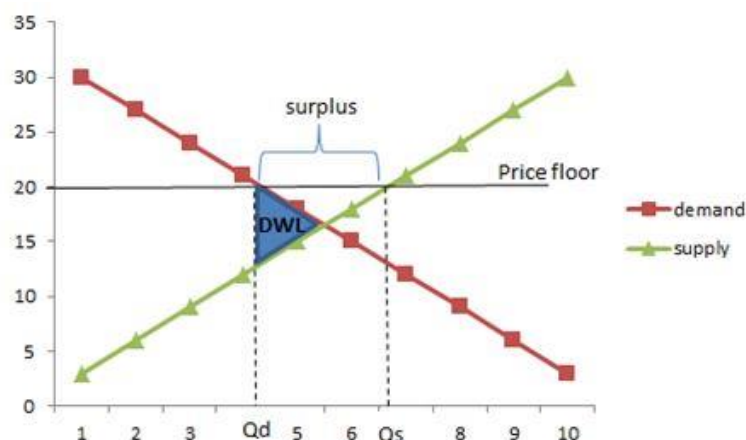
As mentioned earlier, price floors might seem like excellent ideas especially to the untrained eye. However, taking a course in AP Microeconomics will help you understand why this is not the case. Here are some of the impacts of such policies.

### On Supply and Demand

Price floor raises the price higher than the equilibrium. This will cause the suppliers (producers) to supply more than the equilibrium quantity. That is, by utilizing [marginal analysis](#), firms will optimize production where the marginal cost is equal to the price floor. In turn, the higher prices will cause a sunken demand. The demanders (consumers) will not buy as much quantity but only purchase the amount that corresponds to the price floor level. This will create surpluses which are often absorbed by the government at the expense of the taxpayer.

### Creates Deadweight Loss

Any regulation that moves the market balance away from equilibrium causes losses of beneficial transactions that would have occurred but can no longer take place. This is also known as the [Deadweight loss](#). In this case, the deadweight loss caused by a price floor is represented by the triangle left of the equilibrium point in the graph. The area covered by the deadweight loss triangle represents the amount of money lost by the economy.



## Price Floor Cont.

### **Growth of Black Markets**

Due to constraints experienced in the market prices, and surpluses created therein, commodities find their ways to illegal markets (Black markets).

Trading in the black markets causes the government to lose tax revenues and creates risk exposures to both consumers and producers due to a prevalence of illegal practices.

A good example of this is the illegal labor markets which bypass labor laws.

### **Inefficient Allocation of Resources Among Producers**

In a free market, resources are most efficiently allocated by producers who can produce at the lowest cost. These producers go ahead to underprice those with higher expenses thereby getting the market advantage.

However, price floors inhibit this from happening and hurt creativity and innovation in the market. It also leads to wastage of resources as firms are encouraged to compete by inefficiently increasing the quality of good.

For example, price flooring in the [Indonesian airline industry](#) under the guise of promoting safety standards was detrimental to competition. It also provided grounds for the inefficient increase in the quality of service.

Price floors in the U.S. are most common in agriculture; let's have a look at the price support programs and their effects to have a good feel of the real life scenario.

## Price Floor Cont.

### **The Inefficiencies of Price Support Programs in the U.S.**

Since the early years of the 20<sup>th</sup> Century, technological advancement in agriculture enabled farmers to increase production tremendously, especially in the last couple of decades. However, the demand for agricultural produce has not increased by the same proportion.

In the U.S., this resulted in the falling of prices for agricultural produce, thus, diminishing the farmers' profits.

The farmers had committed no "sin" or made bad business decisions. They suffered lower profits due to their increased efficiency and productivity. From an economic perspective, the market was sending signals to farmers to put their available resources to alternative use.

However, agriculture was considered as essential to the growth of the economy since it employed over half of the workforce<sup>[1]</sup>. There was also mounting political pressure from farmers' groups which culminated in the development of price support programs that began in the mid-1930's and have continued to date.

For over 60 years, the U.S. Government has gone into the market, bought surplus produce from farmers, stored it and managed its' disposal.

Whereas some of the surpluses were sold to other countries, in most cases the produce was sold at a loss. In other situations, the government came up with creative means to dispose of the surpluses by creating a demand.

For example, in 2016 the [Wall Street Journal](#) reported about a proposal that would require refineries to add 18.8 billion gallons of corn-based ethanol into gasoline by 2017. This would increase the demand for corn immensely.

As much as price support programs are well intended, good intentions don't always give good results. The programs have proved to be harmful to the taxpayer, consumer, and farmers. They have encouraged overproduction, and also led to the exacerbation of environmentally unsustainable practices.

## Price Floor Cont.

By the mid-1980's price support programs in agriculture had become unbearably expensive to the government. In 1983, the [New York Times](#) reported that the total cost of price support programs in the agricultural sector stood at a staggering \$28 billion annually. That was \$3 billion more than the total income from farming.

Price flooring had not succeeded in providing a lasting solution to the financial woes of the farmers.

In 1996 the [Federal Agricultural Improvement and Reform \(FAIR\) Act](#) was enacted. This act sought to lower the price floors and eventually eliminate them by 2002. However, a drop in market prices caused the government to respond by increasing subsidies by over \$6 billion in 1998.

To date, price support programs and subsidies continue to be practiced in by the U.S. government.

Price floors in agriculture have created additional inefficiencies as enumerated below.

- The government continues to incur regular costs in storage and preservation of the surplus commodity.
- Disposal through selling is often at a loss, and the alternative of destroying the surplus would translate to outright wastage of resources.
- Food items purchased by the government as a consequence of price floors are often used to supplement food program. However, menus can be skewed in ways that are not necessarily healthy.
- The programs blocked farmers from accessing most subsidies.

Here's the real deal. Price floors often call for the government to be deeply intertwined in production decisions which should be a preserve of the market players. Taxpayers also incur double losses in the cost of purchasing highly-priced commodities and financing the purchase of the surplus.

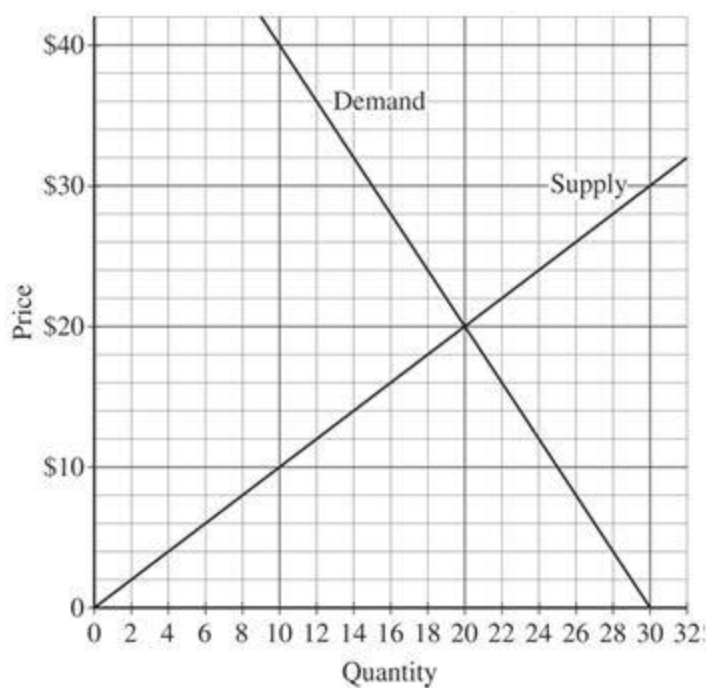
## Price Floor Cont.

Now that you have seen the impact of price floors when applied in the economy let's have a go at what you are interested in; tackling questions in the AP micro exam.

Price floors are frequently tested in AP micro. However, they are often intertwined with other questions. FRQ # 3 of the 2015 AP Microeconomics exam is a typical price limit problem.

*The government is considering intervening in the market for widgets represented by the chart below.*

[1] [https://www.ers.usda.gov/webdocs/publications/eib3/13566\\_eib3\\_1\\_.pdf](https://www.ers.usda.gov/webdocs/publications/eib3/13566_eib3_1_.pdf)



*a.) Compute the total supplier surplus at the market equilibrium quantity and price.*

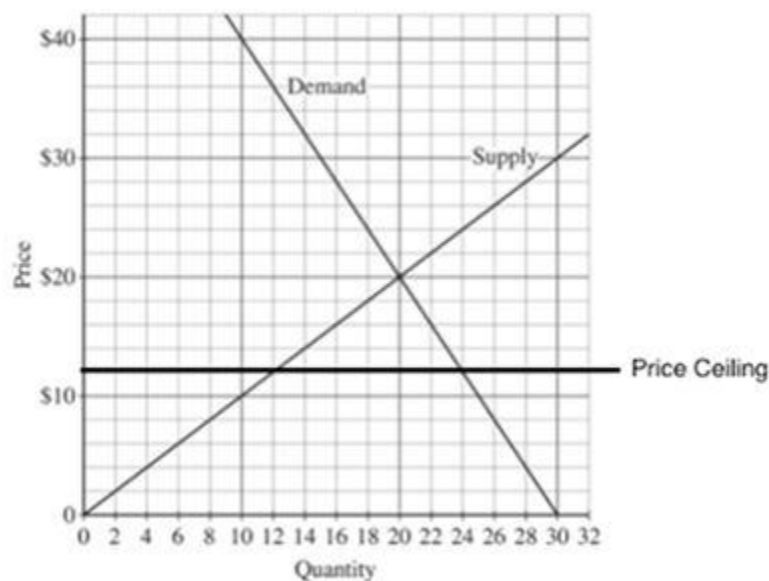
## Price Floor Cont.

b) Suppose the government opts to set a price floor of \$16. What will be the effect on the market, a shortage, an excess or neither; explain.

You will earn one mark for stating that a price floor of \$16 would be ineffective since it is set lower than the equilibrium price and producers aren't looking to sell below this level.

c) If the government opts for a price ceiling of \$12, explain what happens. Will it create a shortage, a surplus or will it have no effect?

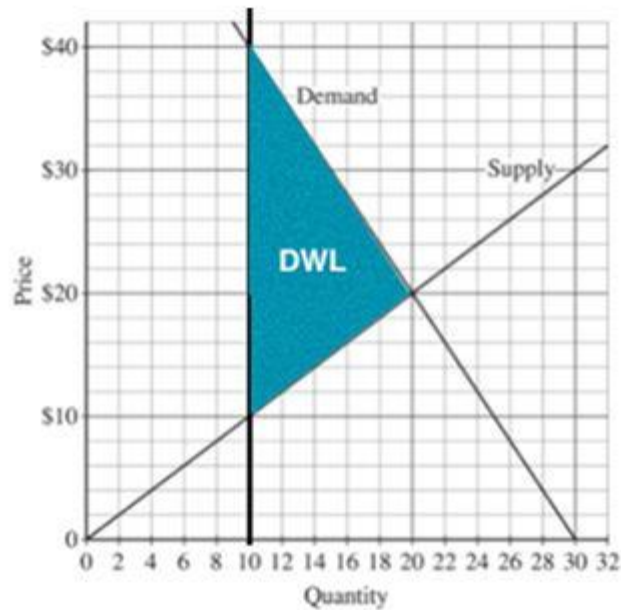
You will earn one mark for stating that a price ceiling of \$12 would have an effect on the market as it is below equilibrium and thus binding. It will create a shortage since at that price; the demand stands at 24 units while producers are only willing to supply 12 units of quantity.



d) If the government limits output to 10 units, compute the deadweight loss.

## Price Floor Cont.

Dead weight loss is calculated by getting the area of the triangle left of the equilibrium (as shown below) earning you one mark:



e) Suppose price falls from \$20 to \$12:

- Calculate the Price Elasticity of Demand (PED) (show your workings)

One mark is earned for calculating the price elasticity of demand as -0.5 and showing the workings as below.

$$PED = \frac{\text{Change in quantity demanded}}{\text{Change in price}}$$

$$PED = \left\{ \frac{24-20}{20} \div \frac{12-20}{20} \right\} = -0.5$$

- In this price range, describe the demand elasticity.

One mark is earned for stating that at this price range, the demand is relatively inelastic.

## Price Floor Cont.

As you can see from the sample question, price floors are often applied to agricultural produce and a price floor would only be effective if set above the equilibrium price. Concepts such as deadweight loss and excesses and shortages are also frequently examined.

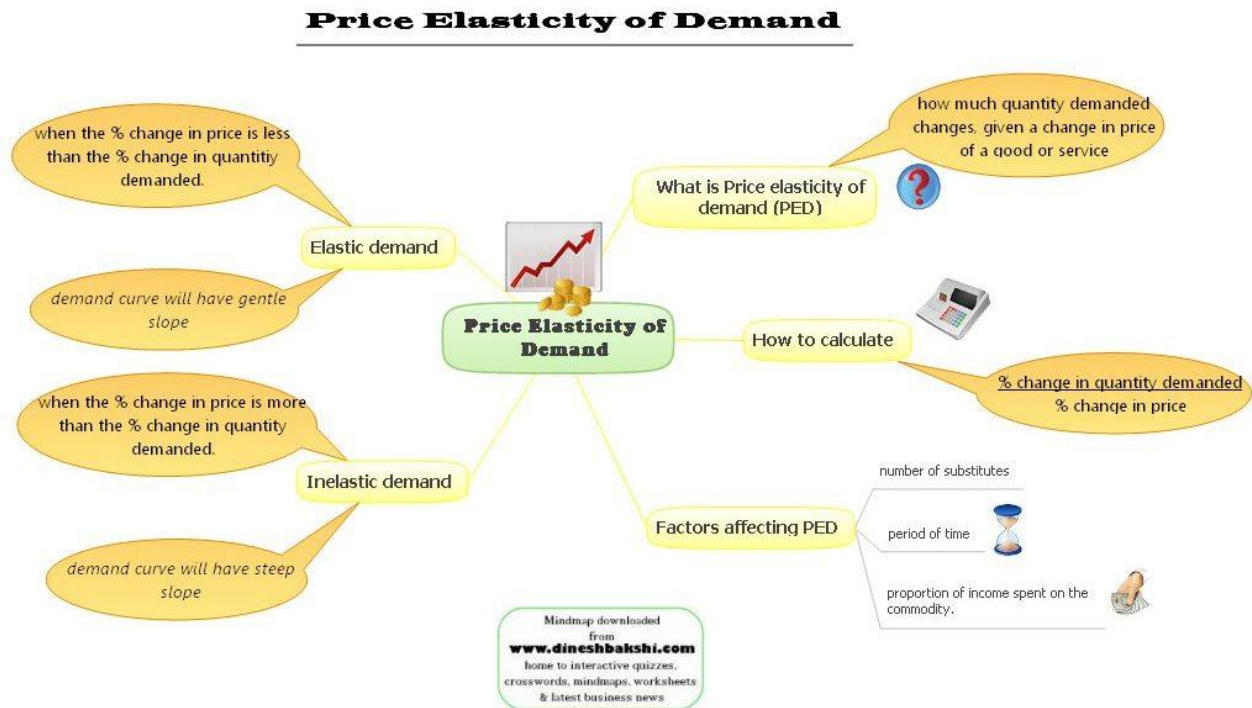
In conclusion, remember that price floors occur when a market adopts a minimum price to sell goods at that is artificial, and buyers are not allowed to purchase the commodity at a lower price due to regulator influence.

An effective price floor only occurs if the limit is set above the equilibrium price. One of the effects of a price floor is that it creates surpluses which regulators often grapple with the challenge of managing the excesses resulting in further losses.

Although they are intended for good, price floors are, in most cases, more detrimental to the economy. This may not be so obvious to the layman. However, you know better now and depending on which AP course you take, AP micro or macroeconomics; you'll discover more about what lies behind the push for price floors.



# Price Elasticity of Demand



*Image Source: DineshBakshi*

Have you ever wondered why the price of oil (and other commodities) moves up and down so much whereas the price of chocolate or soda hardly ever changes? Let me give you some numbers (all figures are approximate and in US Dollars).

## Price Elasticity of Demand Cont.

*Table 1: Approximate prices of copper and oil (in US Dollars)*

Primary commodity	July 2008	December 2008	July 2013	August 2016
<b>Oil - West Texas Intermediate (per barrel)</b>	<b>140</b>	<b>35</b>	<b>105</b>	<b>40</b>
<b>Copper (per tonne)</b>	<b>8,900</b>	<b>2,800</b>	<b>7,000</b>	<b>4,800</b>

On the other hand, even when the cost of ingredients increases, companies such as Coke and Pepsi usually reduce the size of their product but hardly ever explicitly raise the price. The answer to this lies in the economic concept of elasticities. Let us first deal with the theoretical aspects and then we will get to these questions.

So what is elasticity? In simple terms, elasticity measures the responsiveness of demand to changes in variables such as:

- price of the product
- price of related products (complements or substitutes)
- income of the consumers

In this blog post, we will deal with the first type of elasticity – the **Price Elasticity of Demand**.

## Price Elasticity of Demand Cont.

Price elasticity of demand refers to the sensitivity of quantity demanded to a change in price of the product. In simple words, what it attempts to measure is whether there will be a substantial or a negligible change in quantity demanded if the firm changed the price of its product.

Price elasticity of demand (PED) = % change in quantity demanded / % change in price

When % change in quantity demanded is greater than % change in price, or when  $PED > 1$  (in absolute terms), PED is said to be **elastic**

When % change in quantity demanded is less than % change in price, or when  $PED < 1$  (in absolute terms), PED is said to be **inelastic**

For example, let's say that the price of one liter of milk doubles from \$1 to \$2. According to the Law of Demand, price and quantity demanded always move in opposite directions. As price increases, quantity demanded falls, and vice versa. So, as a result of the price increase, let us say that the demand for milk comes down from 50 million liters to 45 million liters a day.

$$\text{Percentage change in quantity demanded} = (45 - 50) / 50 * 100 = -10\%$$

$$\text{Percentage change in price} = (2 - 1) / 1 * 100 = +100\%$$

Applying the formula for PED, we get

$$\text{Price Elasticity of Demand} = -10\% / +100\% = -0.1$$

The value of  $PED = -0.1$  implies that milk is inelastic in nature (more on this later).

## Price Elasticity of Demand Cont.

Note that due to the inverse relation between price and quantity demanded, Price Elasticity of Demand will always be a negative number. Therefore, many textbooks simply show the absolute value of PED. More so, what we are concerned with is the absolute size of the PED, so as to know the extent to which demand will change on a given change in price. Therefore, in Table 2 below, only the absolute value of the PED has been shown.

Theoretically, price elasticity of demand could range from infinity to zero. This range is shown below in Table 2 with 5 specific cases of price elasticity of demand.

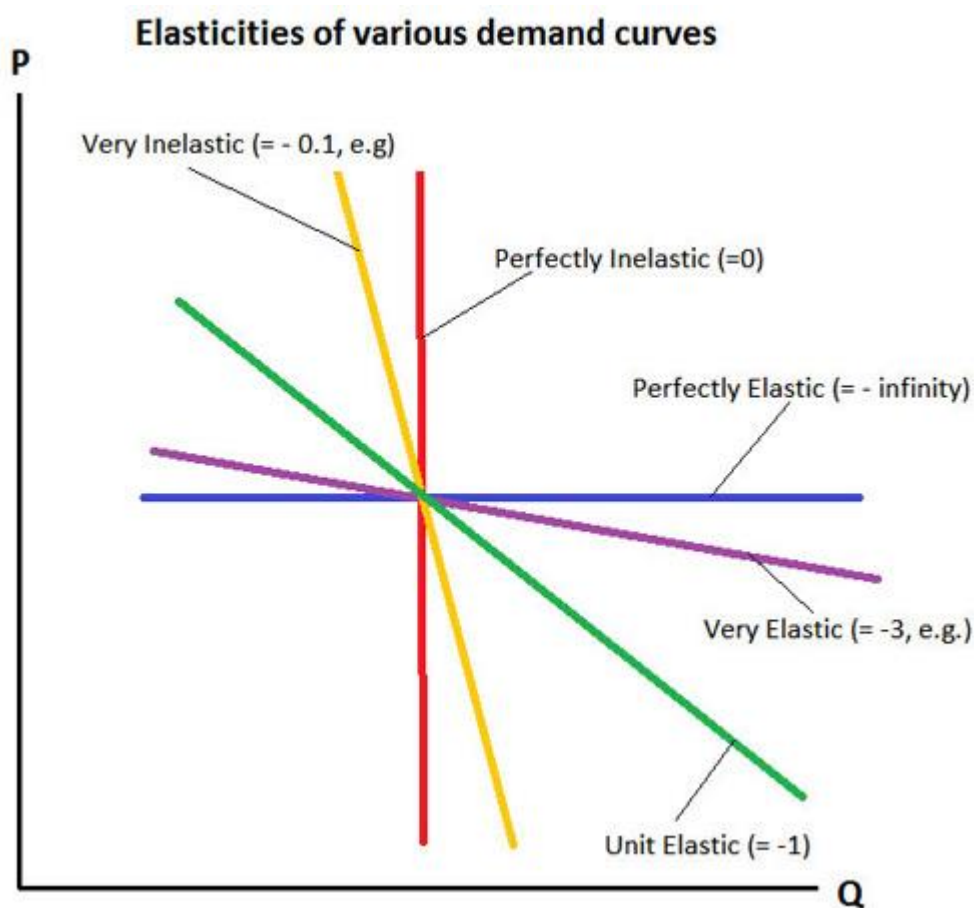
*Table 2: Range of Price elasticity of Demand and its implications for firms*

Case of price elasticity	Meaning	Value of elasticity	Example	Implications for firms
<b>Perfectly price elastic</b>	<b>Any change in price will see complete demand destruction.(Unlikely to exist in the real world.)</b>	<b>PED = ∞</b>	<b>Commodities; Unbranded products that are difficult to differentiate; open air vegetables market; stock brokers</b>	<b>Producers have no pricing power, producer is the price taker; consumer is the queen.Due to this, producers should avoid such a market. It is for this reason that firms spend billions of dollars on branding and advertising.</b>
<b>Price elastic</b>	<b>For any change in price, (Percentage) change in quantity demanded will be more than (percentage) change in price.</b>	<b>PED &gt; 1</b>	<b>Luxury white goods (AC, washing machine), Low cost carriers.</b>	<b>Limited pricing power.Should reduce price to increase <a href="#">revenue</a>.</b>
<b>Unitary price elastic</b>	<b>For any change in price, (Percentage) change in quantity demanded will be the same as (percentage) change in price.</b>	<b>PED = 1</b>	<b>Cars</b>	<b>Revenues cannot be altered with a change in price.Non-price competition becomes much more important.</b>
<b>Price inelastic</b>	<b>For any change in price, (Percentage) change in quantity demanded will be less than (percentage) change in price.</b>	<b>PED &lt; 1</b>	<b>Necessities (life saving drugs) Addictive goods (cigarettes) Status goods (iPhone) Items that constitute a small part of income (matchbox)</b>	<b>Producers have pricing power.Should increase price to maximize revenues.However, owing to their nature, pricing could be regulated by the Government.</b>
<b>Perfectly price inelastic</b>	<b>Any change in price will see no change in demand. (Unlikely to exist in the real world.)</b>	<b>PED = 0</b>	<b>Necessities (salt)</b>	<b>Producers have absolute pricing power.Should increase price to maximize revenues.However, owing to their nature, usually the pricing is regulated by the Government.</b>

# Price Elasticity of Demand Cont.

## Shape of the demand curve

The shape of the demand curve would vary depending on the value of the price elasticity of demand. Goods that have an inelastic demand will have a steep demand curve while those that are elastic will have a relatively flat demand curve. Demand curves associated with the 5 cases mentioned above in Table 2 are shown below in figure below.

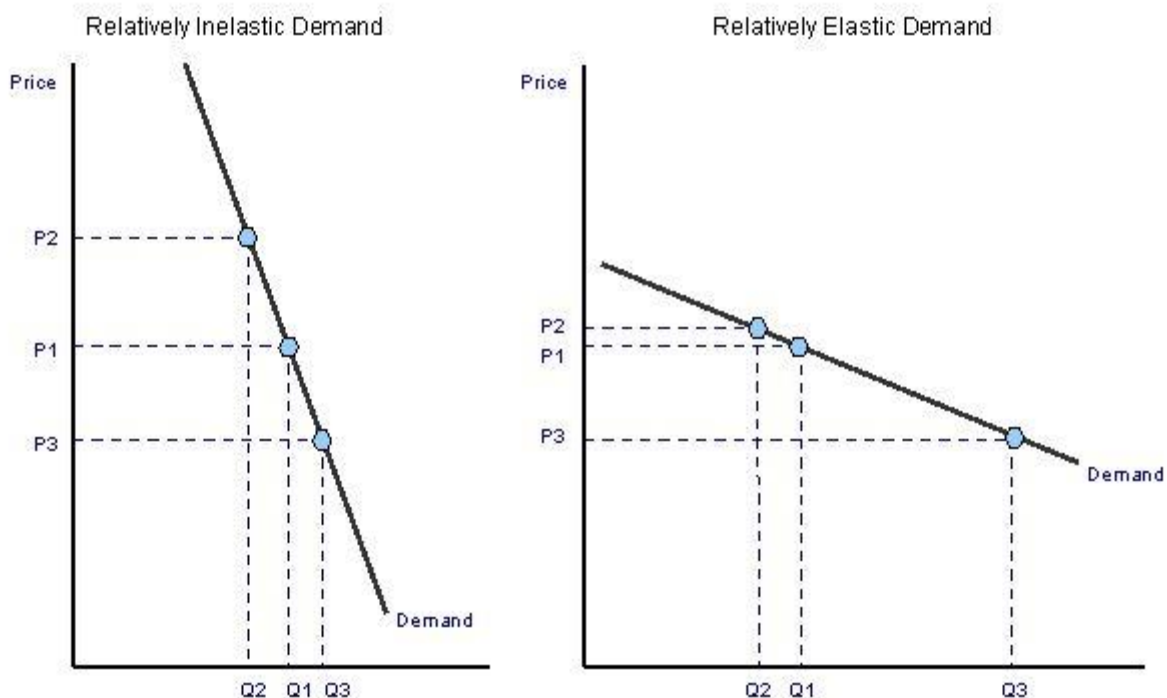


*Image Source: PENNSTATE*

## Price Elasticity of Demand Cont.

So what is the reason for this, ie, why does a product having inelastic demand have a steep curve and vice versa? The answer to this could be obtained with a glance at figure below.

Elasticity of demand measures the responsiveness of demand to changes in price  
 Where the % change in demand is greater than % change in price – demand is elastic  
 Where the % change in demand is less than % change in price – demand is inelastic



*Image Source: eStudyPK*

As can be seen from Figure above (first panel), for a large drop in price from P2 to P1, the increase in quantity demanded is relatively less, from Q2 to Q1. On the contrary, as can be seen from the second panel, for a relatively small drop in price from P1 to P3, the increase in quantity demanded is far greater, from Q1 to Q3. Thus, inelastic goods will have steep curves while those goods elastic demand will have relatively flat curves.

# Price Elasticity of Demand Cont.

Having learned all this, one may wonder what really does impact price elasticity of demand for a good? That brings us back to the question that we posed right at the beginning – why is it that commodities see large price swings while soda, chocolates hardly ever see any price action. Listed below are the factors that impact price elasticity of demand:

## 1. Availability of substitutes

It is pretty much common sense that if there are substitutes available in the market, consumers would react rather ‘ferociously’ to a change in price. It is for this reason that Coke and Pepsi and other companies in the processed foods market rarely ever go in for a price hike. Since there are so many substitutes available, these companies are not in a position to increase prices, lest consumers move over to the substitute. On the other hand, products such as oil and agricultural commodities hardly have any substitutes and therefore tend to be inelastic in nature.

## 2. Proportion of income spent on the good

In the late 1980s, a scam was unearthed in India where matchstick makers were packing only 90 matchsticks in boxes labelled a shaving 100 matches. The consumers of course did not care to notice since the price of the matchbox was about 1 cent. However, the scamsters at the macro level made millions. The point is that if a good accounts for a small proportion of your income, you would not care about any price increase of such a product. Now imagine that the price of the matchbox moved up from 1 cent to 2 cents (a 100% increase). With median income in the US over \$50,000, would you even care about an increase as little as 1 cent in, even though it is a 100% increase?

## 3. Durability of goods

Demand for durable goods tends to be elastic. On the other hand, non-durable / perishable goods tend to have inelastic demand. Think of it. What if price of milk soared? Can you postpone consumption? Perishable goods must be consumed right away no matter what the price is. On the other hand, consumption of durable goods can be postponed if there is an increase in price.

# Price Elasticity of Demand Cont.

## 4. Habit forming goods

“A friend in need is a friend indeed.” By that yardstick, cigarettes are best friends of tax collectors. Way back in 2009, in the wake of the financial crisis and with funds drying up, it is this friend that many states, most notably New York, had called upon. Look at it this way. The total amount of tax that can be collected on a good is the tax per unit times the number of units consumed. With cigarettes being addictive, people are forced to consume them even when taxes are increased significantly. Thus, government officials know that with an increase in tax and price, consumption will not go down. Therefore, they continue to raise taxes on cigarettes year after year, to the extent that taxes comprise of about 75% of the market price of cigarettes.

## 5. Luxury vs necessities

All necessities tend to have an inelastic demand. Let me go back to the milk example. Would you reduce milk consumption simply if its price went up? If you considered milk to be necessary for healthy living, you would not. In the reverse scenario, would you increase milk consumption if its price came down? That effectively is asking if you will eat more food if food prices came down. Sounds absurd! Of course, there may be some increase in consumption for the very poor but largely there would not be any increase in quantity demanded.

What about luxuries? What do you think? Luxury goods generally tend to have elastic demand. White goods (refrigerators, televisions, etc) are elastic in nature due to large number of substitutes. However, there is an exception to this general rule of luxuries being elastic in nature. Think of an iPhone. Despite the dramatic increase in price of every new model, there is hardly any fall in demand for Apple phones. Status goods or those products which define our personality or are an extension of our personality tend to have inelastic demand.



# Price Elasticity of Demand Cont.

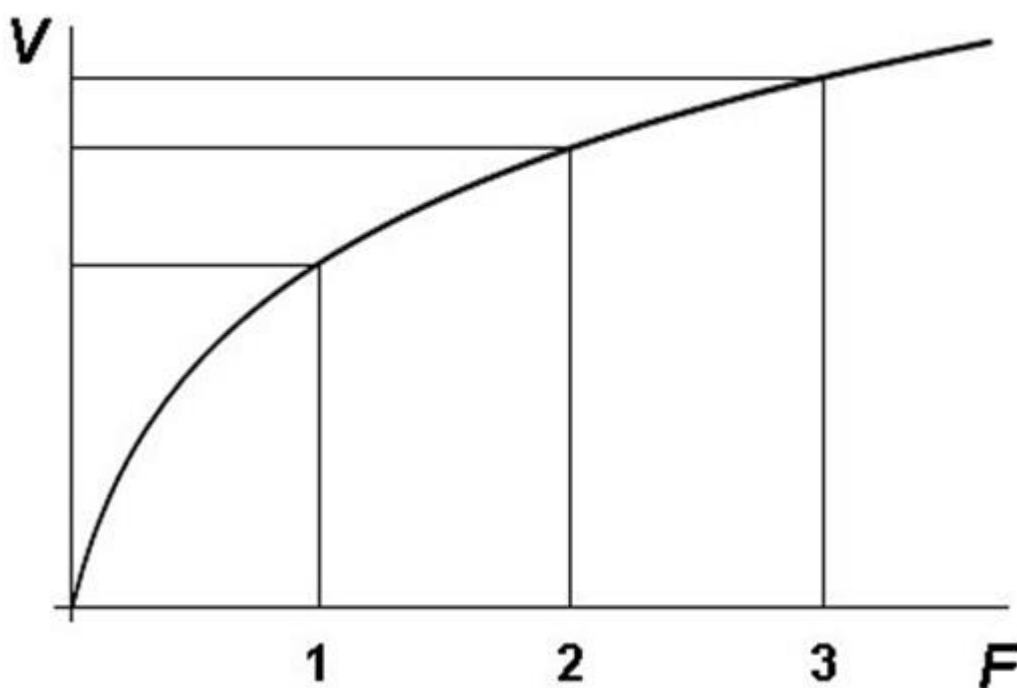
## 6. Time period

In the short term, goods are relatively inelastic. However, in the longer term, they tend to be more elastic. Consider to the 70s. This was the period of very high oil prices. There were two oil shocks in this decade, when prices and lines at gas stations rose exponentially. The US resorted to rationing oil. In the short term, we had no choice but to continue to buy oil. However, in the longer term, high oil prices were a very good incentive to design small cars, wind, solar, etc. In fact, thanks to this, the Japanese with their smaller fuel efficient cars were able to capture the American car market in the 80s. A similar story is playing out now. High oil prices were a great incentive for the shale revolution in the US. Thanks to this, from an all time high of \$147.27 a barrel reached on July 27, 2008, oil prices had crashed to less than \$30 at the beginning of 2016.

I hope that you now have a [good understanding of the concept](#) of price elasticity of demand. I am sure that you can now for yourself answer the introductory question.

As a recap, here is a snapshot of the concept of price elasticity of demand.

# Law of Diminishing Returns



As you study for the **AP Microeconomics** or **AP Macroeconomics exams**, you'll need to know the law of diminishing returns! In this post, you'll learn what the law of diminishing is, why it is important, and you'll get to work through a couple of practice questions – all of which is vital for your **AP Economics Review!**

## Law of Diminishing Returns Cont.

### What is the Law of Diminishing Returns?

The law of diminishing returns, which you'll also see called the law of diminishing marginal returns, says that – holding everything else constant – as a firm adds more factors of production, eventually each unit added won't add as much to the production process as the unit before it did.

Let's break this definition down. By [factors of production](#), we're referring to something like capital (think adding machines or computers) or more labor (hiring additional workers). So this definition is saying that if you hold everything else fixed, and you keep adding more and more workers, eventually you just aren't going to get very much more production out of those workers.

Let's build an intuitive example. Let's say that you own a factory where you produce shirts. In this example, you can think of the starting point for the law of diminishing returns – holding everything else fixed – as a fixed amount of shirt producing machines in your factory. The first worker you hire may be able to produce three shirts with your available machines. And so may the next one. But eventually, you're going to run out of machines, and the employees are likely just to get in each other's way! Eventually, that next new worker may only add two shirts to your production. And further down the line, another worker may only produce one more shirt for you. In fact, it's possible that you could have hired so many workers, that the next worker you hire just gets in everyone's way. Even though you've hired another worker, you won't produce *any* more shirts than before!

## Law of Diminishing Returns Cont.

Building on this example, let's think about what this would look like in a table. This will give us some definitive numbers to work with!

Workers	Total Shirts Produced	Marginal Shirts
1	3	3
2	6	3
3	8	2
4	9	1
5	9	0

The last column, marginal shirts, refers to how many shirts the most recently hired worker produced. Since your first worker produced 3 shirts, there were 3 marginal shirts produced. After you hire the next worker, you'll produce a total of 6 shirts, which means that the marginal shirts produced by the second worker were also 3.

So how can we read the law of diminishing returns on this chart? We can read it right off the marginal shirts column! The law of diminishing returns tells us is that, eventually, as you hire more workers and keep the number of machines in your factory fixed, the next worker just isn't going to produce as much as the last worker! In our table, we see this start to happen when we hire the third worker. The second worker produced 3 more shirts for your company, just as the first worker did. However, when you hired the third worker, your factory was starting to get a little too full! The third worker only produced 2 more shirts for your company, compared to the 3 shirts that the second worker produced. That, in a nutshell, is the law of diminishing returns!

# Law of Diminishing Returns Cont.

## What's so Important About the Law of Diminishing Returns?

As one of the most important concepts underpinning economics, it's crucial that in your AP economics review you study the law of diminishing returns. It is particularly useful for [AP Microeconomics](#) because of how it relates to firms.

The law of diminishing returns will be vital to understanding how much a firm can produce, and why a firm chooses to produce as much as it does. In your AP Economics review, you'll eventually come across firms and their cost functions. Understanding the law of diminishing returns will be vital to understanding a firm's cost functions and, hence, acing your AP Econ exam!

The law of diminishing returns is also important because it is a basic economic concept that will put you in the right frame of mind as you continue your AP Economics review. Since it works simply through firms, the law of diminishing marginal returns will be a concrete and helpful example as you encounter other [important economic concepts](#) such as diminishing marginal utility.

## How Would the Law of Diminishing Returns be Tested?

To see how you could be tested on the law of diminishing returns, let's work through a previous free response question. This example is taken from free response questions on the 2001 AP Microeconomics exam. You'll notice that the question looks a lot like the intuitive example we built for ourselves earlier in the post:

## Law of Diminishing Returns Cont.

Sparkle Car Wash is a profit-maximizing firm with the following production information. With which worker is the marginal product maximized?

Number of Workers	Number of Cars Washed per Day
0	0
1	15
2	35
3	60
4	75
5	85
6	80

To approach a problem like this, you should first think about the intuitive and simple example that we built for the law of diminishing returns. Thinking back to our simple example, what's missing here? The marginal cars washed by the next worker! So the first step for this free response question should be to build a table for the marginal cars washed.

Number of Workers	Marginal Cars Washed
0	0
1	15
2	20
3	25
4	15
5	10
6	-5

## Law of Diminishing Returns Cont.

To fill this in, note that the first worker washed 15 cars. Once the second worker is added, 35 cars are washed in total. To find the marginal cars washed by the second worker, you'll subtract 15, the total before you added the second worker, from 35, the new total. This will reveal 20 as the marginal cars washed by the second worker. Then, you simply need to do this over and over again until you've run out of workers.

Here you can see the law of diminishing returns in action! Since you know about the law of diminishing returns, you know that in order to find the maximum marginal product, you would need to set up a table like the one we made before. After doing so, you see that the marginal product is maximized at 25 when you've added the third worker.

Next, the [free response question](#) asks you to identify and define the economic principle that explains why marginal production eventually decreases. But you already know the answer to that, the law of diminishing returns! Let's repeat the definition here again, because there's something important to keep in mind. The definition of the law of diminishing returns is that as more units of a variable input (labor in this example) are employed with a fixed input, the output will eventually increase at a decreasing rate.

So, what's important to keep in mind here? When defining the law of diminishing returns, you should always remember that all else is held equal. One of your inputs, such as the machines in our example before or water hoses in this example, is held fixed, and you are only varying the other input – in this case, workers.

Further, the law of diminishing returns has also helped you figure out why the 6<sup>th</sup> worker could never be hired. Namely, returns have fallen so much that adding the 6<sup>th</sup> worker means that Sparkle Car Wash is actually washing *fewer* cars! Thinking back to our intuitive example, Sparkle Car Wash has added so many workers, that they're just getting in each other's way, making it so that fewer cars get washed than if Sparkle Car Wash had only hired five workers!

## Law of Diminishing Returns Cont.

### Conclusion

For the AP Microeconomics and AP Macroeconomics exams, it's crucial that you know the law of diminishing returns. It's an intuitive idea, but it will underpin all of your AP Economics studies, particularly around firms. Understanding it will help you answer the questions it relates to, such as firms, but also because it gives you concrete examples where you can build your economic intuition. Economic intuition will be very important as you move onto less concrete diminishing properties, such as diminishing marginal utility. Try this [page](#) to get started. Can you think of some examples in your experiences where the law of diminishing returns seems to apply?



# Normal Profit



*[Image Source: Flickr](#)*

Normal profit is one of the most interesting parts of microeconomics. Did you know that in the long-term, all companies make no economic profit? It's surprising, but according to microeconomic theory, it's true. However, normal profit can be difficult to understand unless you're familiar with the background. This [AP Microeconomics review](#) will make sure you're ready for any normal profit question the AP test throws at you.

# Normal Profit Cont.

## Normal Profit on the AP Microeconomics Test

The concept of normal profit is part of the Firm Behavior and Market Structure subsection of the AP Microeconomics course outline. This section is 25-35% of the AP test, according to the [AP Economics Course Description](#). This means that normal profit will almost certainly appear at least once on the test. Not only will you probably run into a question that requires you to use normal profit directly, but you will also be asked many questions that involve a more indirect application of the concept of normal profit. For example, most questions about firm behavior on the AP Microeconomics test will assume that the firm is operating at normal profit. So, normal profit is essential to answering questions about firms correctly. This AP Microeconomics review of normal profit will help you make sure you're ready for test day.

However, you should note that 2009 was the only time in the last decade that a [free response question on the AP Microeconomics](#) test referenced normal profit directly. Usually, normal profit will be asked about in the multiple choice section. Sometimes, you have to know what normal profit is to understand a free response question, but the test won't usually ask you directly about normal profit.

## What is Normal Profit?

Here's a simple definition: normal profit is the amount of money a firm has to earn to stay competitive. Doesn't seem too hard, does it? Well, it's not. But there are some nuances to normal profit. You'll have to apply these complexities of normal profit if you want to get the best score you can get.

So, here's a more complex definition: Normal profit is the condition when the difference between a firm's [total revenue](#) and total cost is equal to zero, or in other words, when the firm's economic profit is equal to zero. The term "economic profit" is important. Once you get economic profit, understanding normal profit is no problem.

## Normal Profit Cont.

There are two types of profit you have to know in AP Microeconomics: economic profit and accounting profit. Accounting profit is what people usually mean when they say profit. It's simply a company's total earnings. To calculate accounting profit, firms add up all their sources of money and then subtract all their costs. For example, let's say you spend \$100 to build a fancy lemonade stand, and you earn \$160 by selling lemonade. Your accounting profit would just be your costs, \$100, subtracted from your revenue, \$160. Thus, your accounting profit is \$60. However, this type of profit doesn't include the hidden costs of running a business: opportunity costs. Opportunity costs are the difference between economic profit and accounting profit.

Here's the [Investopedia](#) definition of economic profit: "The difference between the revenue received from the sale of an output and the opportunity cost of the inputs used." Economic profit is a little harder to calculate, since you do not always know which opportunities you are missing, and some opportunities do not have an obvious monetary value. But for the sake of education, let's calculate the economic profit for our lemonade stand. Our accounting profit was \$60. However, instead of spending 3 hours running the lemonade stand, we could have been earning \$10 an hour at our job in the local fast food restaurant. So, in those four hours we spent at the lemonade stand, we could have earned \$40 at our job. Once we add in this opportunity cost, our profit isn't very impressive: \$160 in revenue – \$100 in costs – \$40 in opportunity cost = \$20 in economic profit.

As you can tell, accounting profit is always higher than economic profit. This is because economic profit subtracts all of the same costs as accounting profit, but it also subtracts opportunity costs. Why would you ever calculate economic profit? Well, if you want to know what your best economic option is among many different choices, economic profit can help you out in your decision. For example, by starting our lemonade stand, we could earn \$20 in economic profit. On the other hand, we could calculate the "economic profit" of our job at a fast food place: \$30 in revenue – \$0 in cost – \$50 in the opportunity cost, the money we could have earned by working three hours at the lemonade stand. That results in a negative profit, or in other words, a loss. Therefore, working at our lemonade stand would be more profitable than working at our usual job.

## Normal Profit Cont.

If you don't fully grasp the difference between these two types of profit, or if you want to know more, there is a great [Khan Academy video on accounting profit vs. economic profit](#). Once you're sure you understand both of these concepts, we can move on to the crucial idea of normal profit.

Again, normal profit is when economic profit is equal to zero. To understand this idea, let's switch up our lemonade stand example a little. Let's say we have a better job at the movie theater that pays \$15 an hour. Thus, in four hours, we could make \$60 an hour working at the theater. Using this new opportunity cost, we can calculate the economic profit of our lemonade stand: \$160 in revenue – \$100 in cost – \$60 in opportunity cost = \$0 in profit. Thus, in this situation, our lemonade stand is making normal profit. This normal profit is the line between economic profit, when we're making money, and economic loss, when we're losing money.

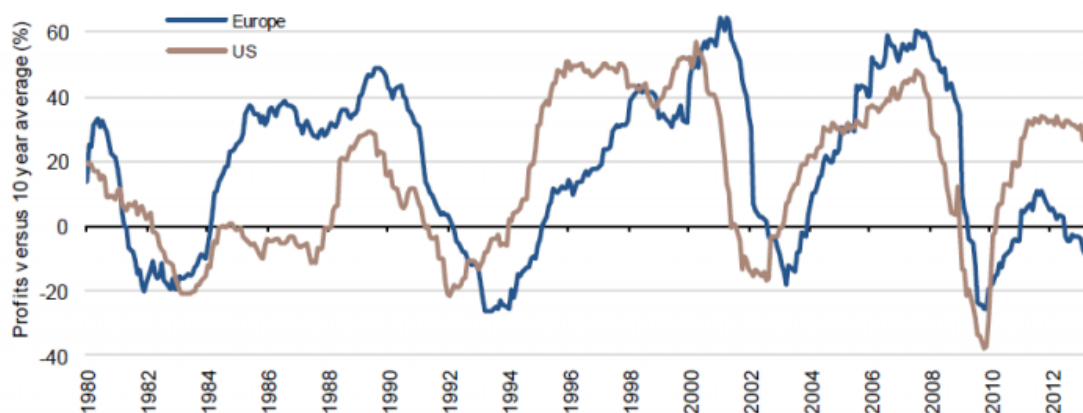
We can carry the lemonade stand example even further to understand economic profit and normal profit fully. Suppose we have an idea to start a cold soft drink stand that will make \$30 of profit an hour. If we started this cold soft drink stand, we could earn \$120 in four hours. Given this new fact, we can re-calculate the economic profit of the lemonade stand: \$160 in profit – \$100 in costs – \$120 in the opportunity cost of not starting a cold soft drink stand = -\$60. Now we know that our lemonade stand is not in a state of normal profit – it's in a state of economic loss. Thus, we stop selling lemonade and start selling cold soft drinks.

If you look at it from a long-term perspective, most firms are in a state of normal profit. This is because all firms will try to make as much profit as possible. If they see an opportunity to make economic profit in a certain market, they will take advantage of that opportunity. The increase of firms in that market will lower prices because more firms are competing to sell products. Thus, as prices decrease, profits will decrease. Eventually, the market will reach a point where all of the firms are making normal profit. On the other hand, the prices may become so low that some firms are in a state of economic loss. If this happens, those firms will either leave the market or go completely bankrupt. As a result, prices will increase, because fewer firms are competing in the market.

## Normal Profit Cont.

This concept can be hard to grasp, so here's a [graph](#) of the oscillation of profit over the long term. As you can see, economic profit varies temporarily, but it always stays around normal profit.

Profits always mean-revert: US and Europe profits versus their 10 year moving average (%)



Source: SG Cross Asset Research/Equity Quant, MSCI

[Image Source: Pragmatic Capitalism](#)

So, yes, firms can make economic profit or economic loss in the short-term. However, in the long-term, the natural forces of the marketplace will correct their profits or losses, and the firms will make zero *economic* profit in the long term. Remember that firms will still make accounting profit – after all, lots of companies make a ton of profit. However, once you subtract opportunity cost, you'll see that in the long term, these companies are actually in a state of normal profit, or at least that they are close to normal profit.

Now that you understand the concept of normal profit, we can apply it to some AP questions.

## Normal Profit Cont.

### How to Answer Normal Profit Questions

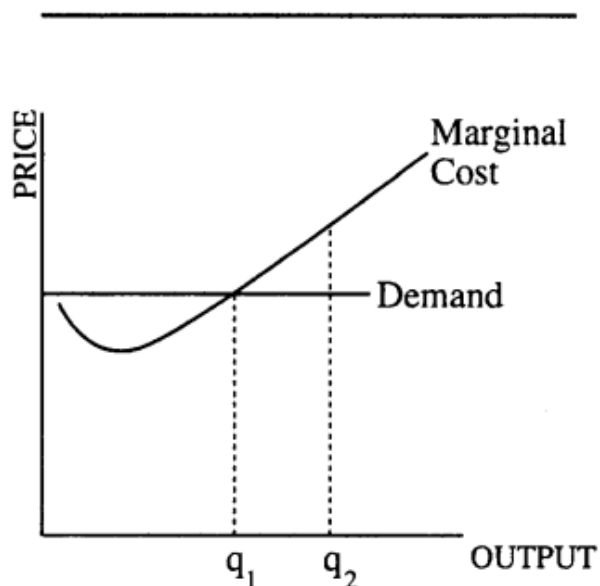
First, let's answer the only free response question in the last decade that has directly asked about normal profit. Just read the introduction and then skip to question (c).

1. Mary & Company, operating in a monopolistically competitive industry, produces a cleaning product called BriteKlean. The company currently produces the profit-maximizing quantity of BriteKlean but is operating at a loss.
  - (a) Draw a correctly labeled graph for Mary & Company and show each of the following.
    - (i) The profit-maximizing output and price, labeled as  $Q_M$  and  $P_M$ , respectively
    - (ii) The area of loss, shaded completely
  - (b) What must be true in the short run for the company to continue to produce at a loss?
  - (c) Assume now that the demand for cleaning products increases and that the company is now earning short-run economic profits. Relative to this short-run situation, how does each of the following change in the long run?
    - (i) The number of firms
    - (ii) The company's profit
  - (d) In the long run, if the company continues to produce, will it produce the allocatively efficient level of output? Explain.
  - (e) In the long run, will the company be operating in a region where economies of scale exist? Explain.

Now let's move onto the question. In (c)(i), we know that the number of firms will increase. In simple terms, more firms will be attracted to the marketplace of cleaning products because they see that there is more demand for cleaning products. Firms know they can earn profits selling cleaning products, so they start selling cleaning products. While it's true that in the long run, the number of firms will probably decrease somewhat as prices decrease, the question asks you to evaluate how the number of firms will change "relative to this short-run situation." Thus, compared to the number of cleaning product firms there are now, the number of cleaning product firms will increase. In (c)(ii), the company's economic profit will decrease to zero, or reach normal profit, in the long-term. This is simply a fact of the marketplace. All firms make normal profit in the long-term.

## Normal Profit Cont.

Now let's answer a more common case: a multiple choice question about normal profit.



26. Given the cost and demand schedules depicted above, if the firm increased output from  $q_1$  to  $q_2$ , it would
- (A) earn a normal profit
  - (B) experience an increase in profits
  - (C) experience a decline in profits
  - (D) increase revenues but not costs
  - (E) increase costs but not revenues

What do you think? Write down your answer now. Now, let's figure it out. By moving from  $q_1$  to  $q_2$ , the firm will increase its costs while demand remains constant. If demand remains constant, nothing the firm does can change how much product people buy. They'll demand the same amount no matter what. Thus, in other words, the firm will lose more money without making more money. Therefore, the firm will experience a decline in profits. The answer is C. While E is also a correct answer, C is a better answer since it states what constant revenues and increased costs mean: decreased profits.



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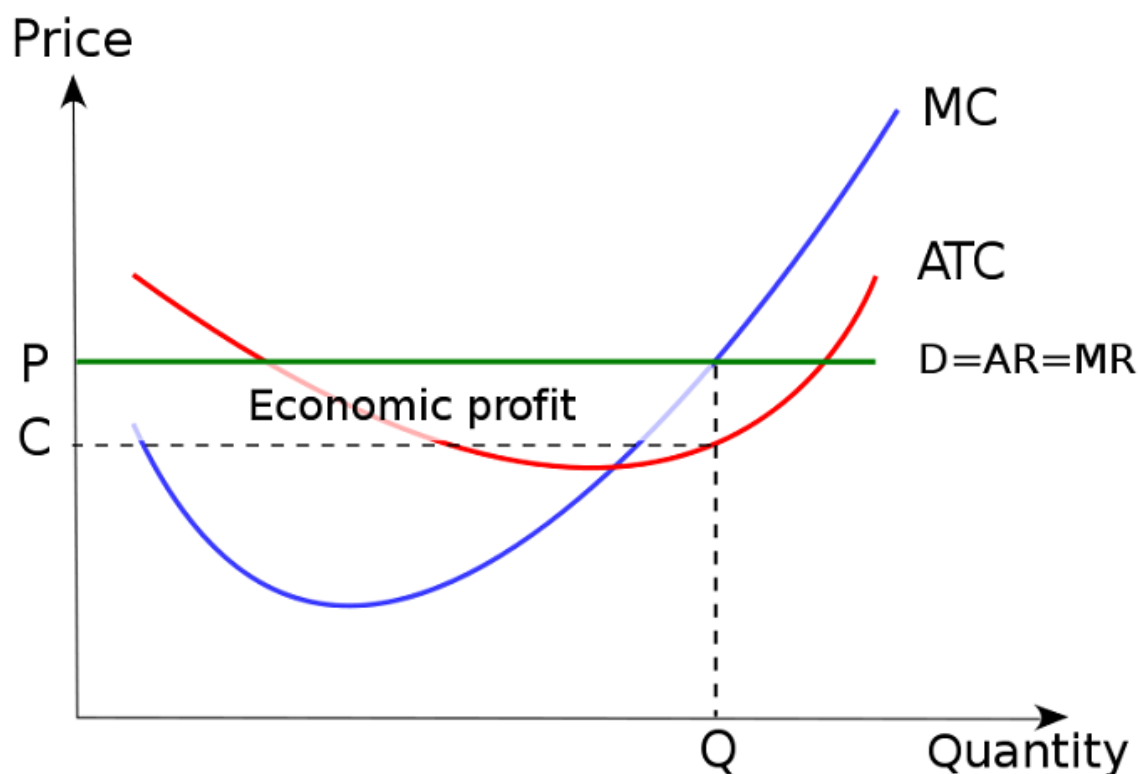
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# Perfect Competition



*[Image Source: Wikimedia Commons](#)*

One of the most crucial pillars for a society to thrive is fair competition. The recently concluded Summer Olympics games proved this without a doubt. Predictably, the U.S. team was ranked in first place after scooping almost double the number of medals the second placed team had. Competition in America is a way of life. A run through the U.S. economy shows that it is not only the largest in the world but also arguably the most competitive. In the land of the free and home of the brave, there's liberty for consumers and courageous entrepreneurs to venture into any market for profit.

## Perfect Competition Cont.

Many markets in the U.S. economy display characteristics of perfect competition, and it is important to have a good understanding of this type of market structure for the AP Microeconomics exam.

This article will help you get a good grasp and complement your [AP Microeconomics study guide](#) by defining perfect competition; elaborating on the characteristics of a perfectly competitive market, and explain terminologies such as price taker. We will also give you the reason why although perfect competition is considered theoretical, it is important. We will wind up by helping you prepare by going through typical [AP Microeconomics FRQ](#) and multiple choice questions.

### What is Perfect Competition?

A perfectly competitive market is a hypothetical structure which exemplifies competition. In this type of market structure, there are many buyers and sellers, and prices reveal [supply and demand](#) dynamics. The consumers also have a variety of substitutes, allowing for absolute freedom of choice. Neoclassical economists advance the argument that a perfectly competitive market would create the ideal results for the consumers and the society.

Perfect competition exists in a market that exhibits the following characteristics:

- Many competitors who offer nearly identical products.
- Entry or exit from the market is without barriers.
- Producers and consumers have perfect knowledge of prevailing market conditions at all times.
- There are no government regulations to manipulate production or the pricing of products.
- Existing firms do not have any advantage over new businesses.
- A single firm cannot influence the market price. Thus a single firm is a price taker.

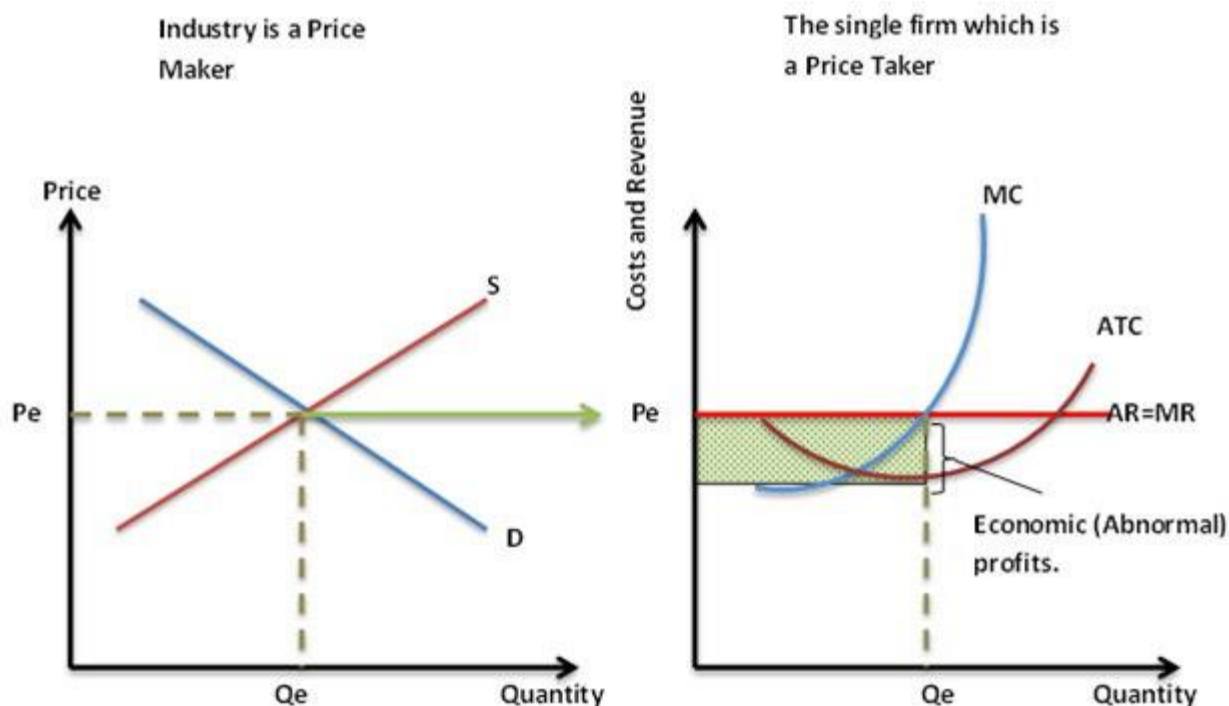
## Perfect Competition Cont.

### What do we mean when we say that a single firm is a price Taker?

In perfect competition, consumers have freedom of choice, knowledge of the prices and a variety of perfect substitutes. A company that charges prices that are higher than the market rate would lose customers since they can quickly shift to alternative sellers. Firms have no option but to adopt industry prices. Thus they are referred to as price takers and the industry, in general, is the price maker.

The chart below describes the firms' position as price takers.

$P_e$  and  $Q_e$  are the equilibrium price and quantity respectively. Curves S and D represent the market supply and demand graphs while MC and ATC are the marginal costs and average total costs experienced by the firm. AR is the Average Revenue curve and MR is the Marginal Revenue curve for the firm.



# Perfect Competition Cont.

## Equilibrium Under Perfect Competition

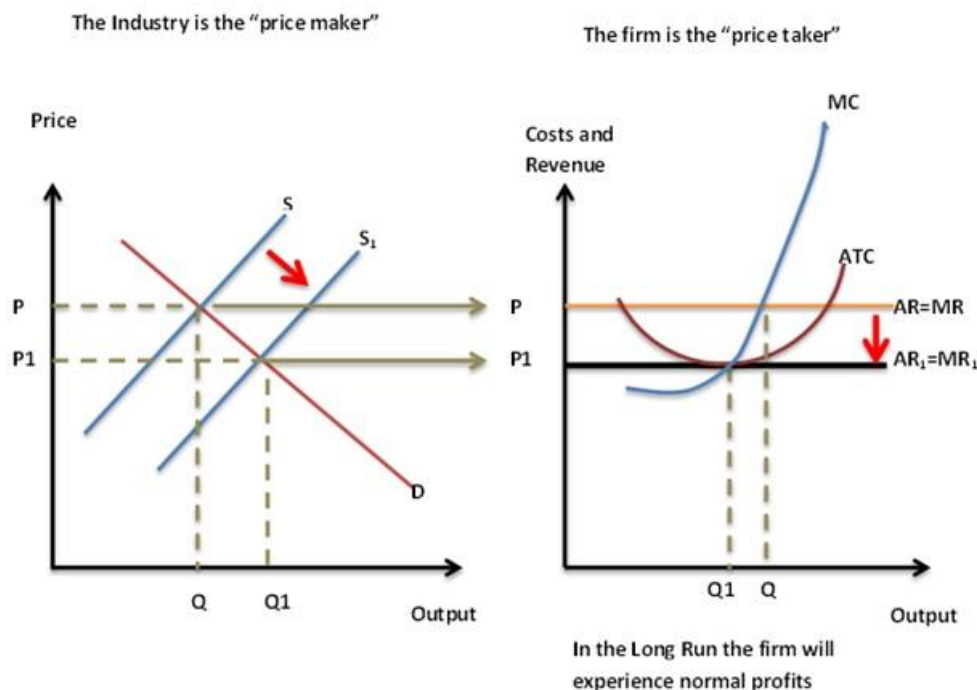
Firms operating under perfect competition experience both short run and long run equilibrium. Here's an explanation of how this happens.

### Short-run Equilibrium

In the short run, companies in perfect competition can either experience super-normal profits or losses. This is because there isn't sufficient time for new firms to join the market and drive prices down consequently reducing the profits or, in the case of a loss scenario, existing firms cannot close shop and leave the industry.

### Long Run Equilibrium

In the long run, there are no barriers to entering or leaving the industry; therefore producers will continue to join the market thereby driving prices and eventually profits down until the businesses stabilize at the normal price.



## Perfect Competition Cont.

In the long run, it is easy for new firms to enter the market and create additional supply increasing the competition to existing businesses. In this case, the supply curves shifts to the right and causes a subsequent reduction in earnings to the point of [normal profits](#).

On the other hand, if businesses are making losses, in the long run, some firms will leave the market because there are no barriers to exit. As the suppliers reduce in number, the industry supply curve shifts to the left, which causes a rise in price and enables the remaining firms to get normal profits.

In the U.S., two industries which exhibit several features of a perfectly competitive market are the agriculture, and the airline industries. In both markets, products are nearly identical, and customers are relatively well informed about market dynamics. Although the model is theoretical, it is useful to explain competition in such industries and it's also used by regulators and economists to benchmark levels of competition in real markets like manufacturing and service sectors.

Now that you are familiar with perfect competition, its features, and how to express both short run and long run equilibrium let us go through an AP Microeconomics review on this subject.

The AP Microeconomics exam is divided into two sections, multiple choice questions section, and the free response questions. The multiple choice questions section has 60 questions to be answered in 70 minutes and carries two-thirds of the weight of the exam score.

In this section, your speed, memory, and grasp of microeconomics concepts are tested. Be cautious not to make uninformed choices since wrong guesses could land you negative points. You are better off if you read and understood each question in the AP Microeconomics multiple choice questions section and made an informed decision from the given options.

## Perfect Competition Cont.

Here's a sample of an AP Microeconomics multiple choice question adopted from the exam of [1995](#).

*Which of the below statements is accurate about a firm that operates in a perfectly competitive market?*

- (A) The demand for its output is a downward sloping curve.*
- (B) The firm will earn zero economic profits in the long run equilibrium.*
- (C) Advertising is a valuable tool for the firm.*
- (D) The firm will grow its aggregate economic profits if it prices at a rate that is lower than the market price.*
- (E) The marginal revenue gained from an extra unit of a product sold will differ from the price at which the firm sells that unit.*

The correct answer is (B). 71% of the respondents got this question right, did you?

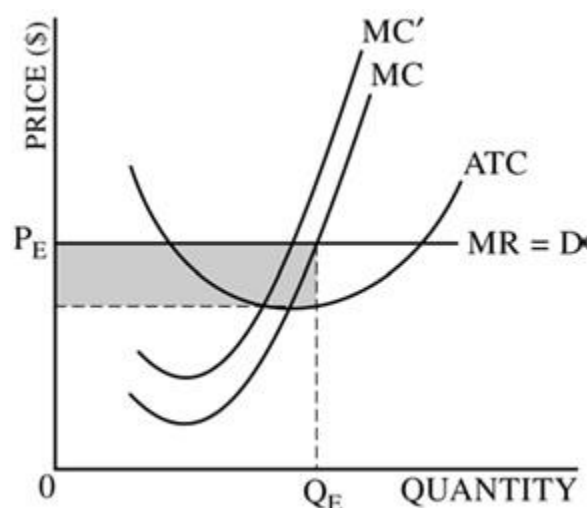
The second part is the AP Microeconomics FRQ which tests your knowledge of different concepts in microeconomics and ability to apply the knowledge in hypothetical and real life scenarios. Here's a sample FRQ adopted from the 2011 exam and the responses suggested by the [CollegeBoard](#).

Assume that the avocado market is perfectly competitive and a representative firm is earning profits in the short run.

(a) 3 points:

## Perfect Competition Cont.

Draw and correctly label the representative firm's chart indicating the short-run equilibrium identifying the equilibrium market price and output as  $P_E$  and  $Q_E$  respectively.



- You will earn one mark for drawing and correctly labeling the chart showing a horizontal demand curve at the equilibrium price,  $P_E$
- You will receive one mark for showing  $Q_E$  (equilibrium quantity) is where  $M_C = M_R$ .
- The last point in this part is received for indicating that ATC is below demand or MR at  $Q$ .

(b) 1 Point.

If the market wage rate for labor (a variable input) increases, indicate on your graph (above) the effect, on the short run marginal cost curve, of the wage rise.

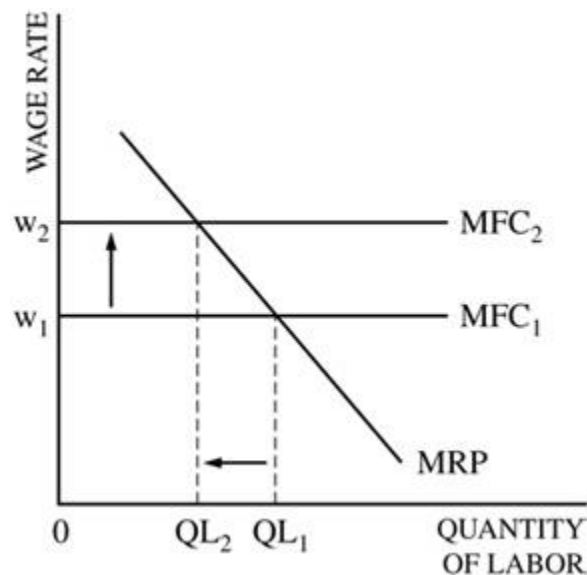
- You will earn one point for showing that the MC curve will shift left to  $MC'$ .

(c) 1 Point.

## Perfect Competition Cont.

Assuming there is perfect competition in the labor market for production of avocados. Draw the supply (MFC) and demand (MRP) chart for a representative firm.

- A correctly drawn and labeled chart showing a Horizontal  $MFC_1$  curve at wage rate  $W_1$  and a Downward-sloping MRP curve indicating labor quantity at  $QL_1$  at the intersection of  $MFC_1$  and MRP will gain you one point.



Suppose there was an increase in the market wage rate from  $W_1$  to  $W_2$ . What will be the impact of such a rise in the quantity of labor hired? Show this effect on the chart; identify the initial quantity of labor employed as  $QL_1$  and the subsequent quantity of labor engaged as  $QL_2$ .

- You will earn one point for shifting the MFC curve upwards from the initial  $MFC_1$  to the new  $MFC_2$  curve at  $W_2$  and identifying  $QL_2$  as the new equilibrium for the quantity of labor employed which is less than the initial quantity employed ( $QL_1$ ).



## Perfect Competition Cont.

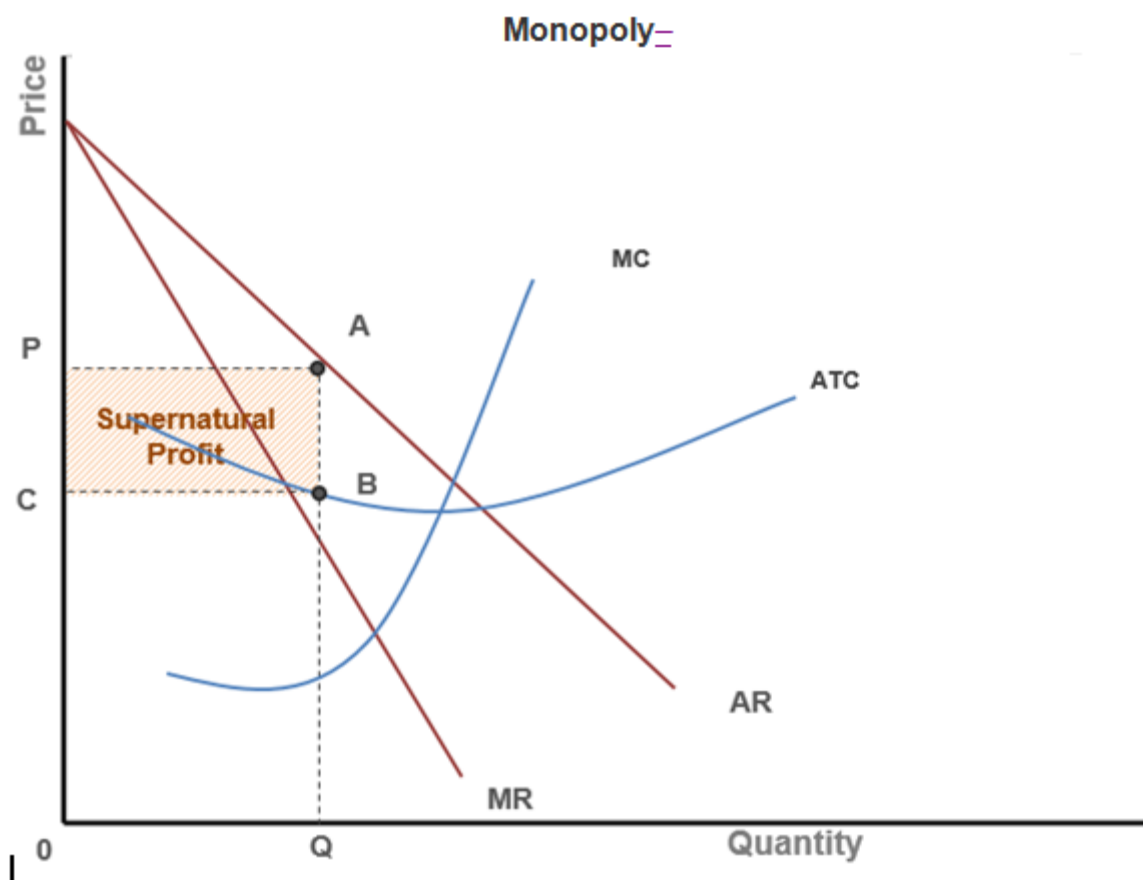
In conclusion, perfect competition is a hypothetical market model where competition is at the highest conceivable level. Perfectly competitive markets have six fundamental characteristics, and the firm is a price taker while the industry is the price maker.

Equilibrium in a perfect competition varies between the short run and the long run. In the short run, businesses can incur super normal profits or losses depending on the supply of products and price in the market.

In the long run, there is sufficient time for new firms to join the industry (in case existing firms are experiencing super normal profits) or exit the industry (when firms are undergoing losses), thereby affecting the supply and consequently the prices. In the long run, remaining firms stabilize at normal profits.

Perfect competition is a useful model that helps in analyzing markets for commodities which exhibit characteristics of perfect competition such as agricultural produce. It is also used to benchmark competition levels in other industries. The featured past exam questions will help you better prepare for the AP Microeconomics exam.

# Monopoly



Are you preparing for your AP Microeconomics exam and need to reinforce your understanding of the different market structures? In this AP Microeconomics monopoly crash course review, you will learn about the monopoly market structure with examples, and [practice the graph](#) to better understand the industry.

# Monopoly Cont.

## What is a Monopoly?

A monopoly is a market structure where one company or seller has complete control over the market, and has very limited to no competition, often resulting in high prices and low quality products.

Pure monopolistic companies rarely exist. In legal terms, a monopoly power exists when a single firm controls about 25% or more of the market.

Monopolies form for various reasons. When a firm has exclusive ownership of a certain resource, it has monopoly power over that resource and therefore it is the only firm that can exploit that resource.

Sometimes the government grants a firm a monopoly status in specific areas such as the post office, or the government grants a patent to one specific company, granting monopoly power to companies such as Microsoft or other digital media, design, characters or images.

A natural monopoly is when there is extreme high fixed cost of distribution, or when large-scale infrastructure is required to ensure supply such as cables for electricity supply. This eliminates competition because it makes it almost impossible for new firms to enter the market. To decrease the potential to exploit this monopoly power, governments tend to either nationalize or regulate natural monopolies.

Monopolies can also be created by merging two or more companies. Merging companies reduces competition, and if the merger creates a market share of 25% or more of the total market, a monopoly is formed. A monopoly can violate antitrust laws when it destroys the competition or the ability of other companies to enter the market.

A monopoly is different from a perfectly competitive market, given that it has very low to no competition. Another difference is that the competition between monopolies is in product differentiation rather than in price competition. It is the opposite of an [oligopoly](#), which is a market structure in which one buyer has many sellers.

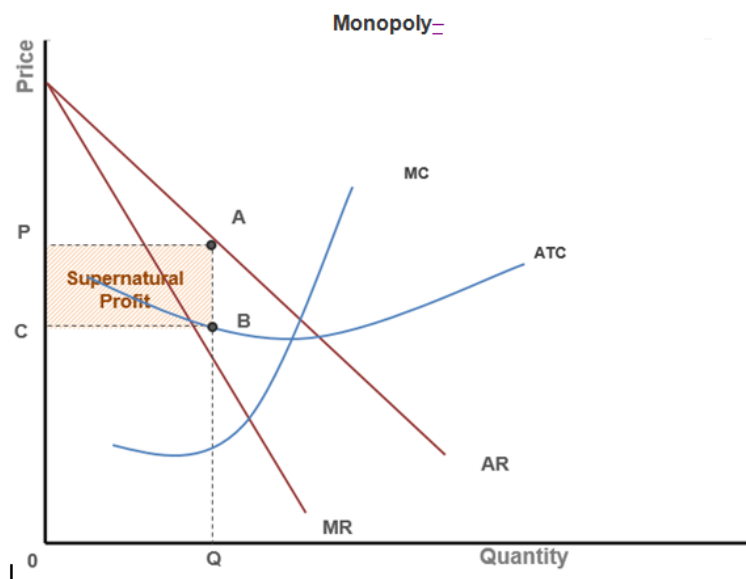
## Monopoly Cont.

To recognize a monopolistic market structure, it is important to know the characteristics. Here are the most common characteristics of a monopoly.

### What are the Characteristics of a Monopoly?

- Profit maximizer – by raising cost and producing less than social optimum output
- Super-normal profits in the long run.
- Price maker – they set the price for lack of competition
- High barriers to entry – normally requires high startup cost
- Single seller – one seller with many buyers
- Price discrimination – can charge different prices to different clients
- Product differentiation – distinguishes its products or services from the competition

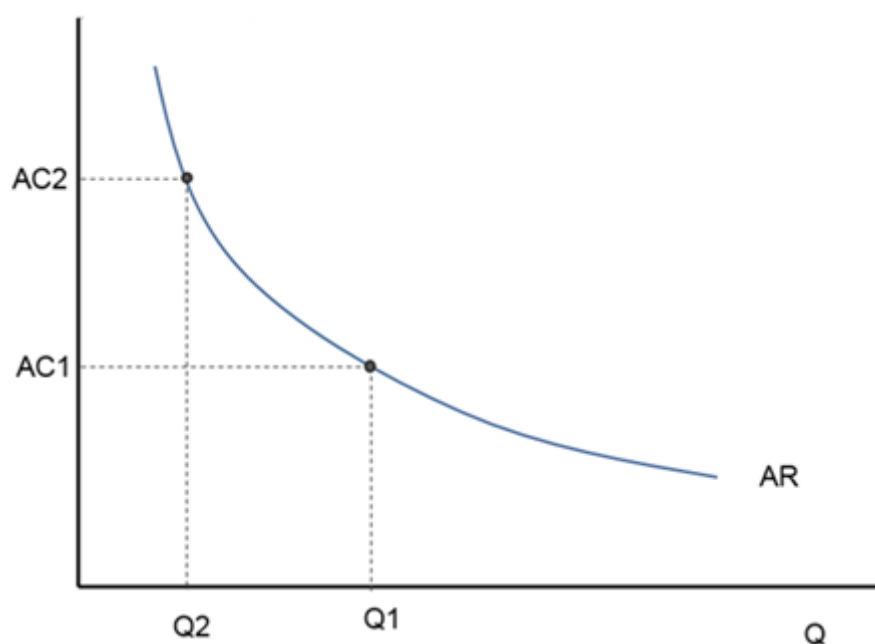
A monopoly is a profit maximizer because it equalizes its marginal revenue with marginal cost. In other words, the output will be where  $MC = MR$ , given that price is above ATC at  $Q$ , a long run super-normal profit is possible.



The economic of scale in a monopoly (AR in the graph) is where the output increases and the long run average cost falls.

## Monopoly Cont.

To put this better in context let's look at an example. Apple built a factory at a high fixed capital cost to build its products. The more products they produce in that factory, the lower their average cost per unit will be. As seen in the graph, if the firm increases output to  $Q_1$ , it will have lower average cost. Smaller firms with a lower output have a higher average cost, and are unlikely to survive in the industry.



*Economies of Scale*

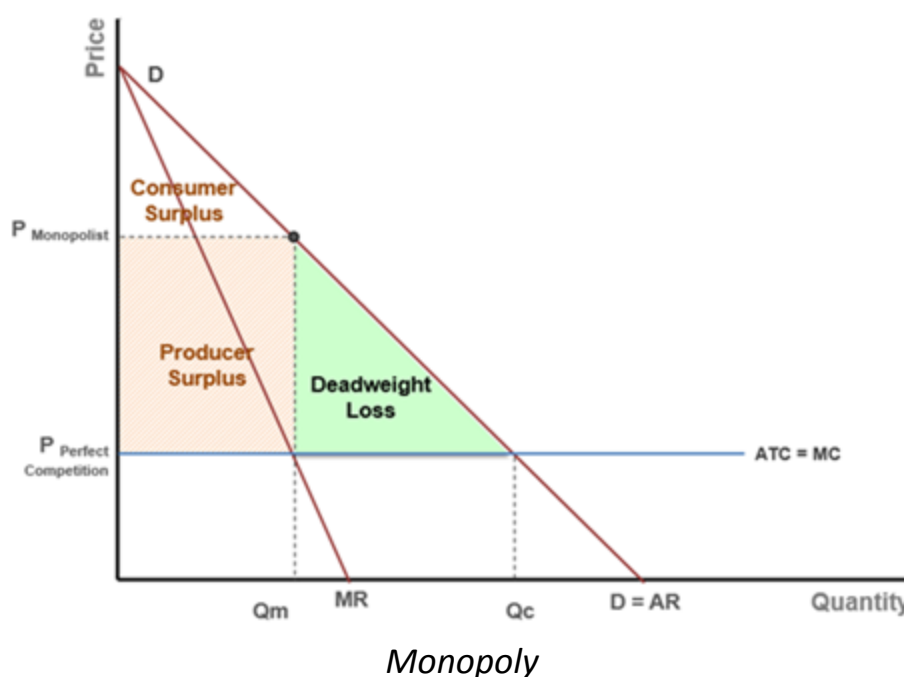
Monopolies are less efficient than perfectly competitive markets and are productively inefficient. A monopoly market maximizes production to where their MC equals MR. This results in a less quantity produced than a perfectly competitive market would produce, and the producers supply their goods below their manufacturing capacity.

Since the price of the product in a monopoly is higher than the marginal cost, the market becomes allocative inefficient.

## Monopoly Cont.

As a price setter, a monopoly gets to charge whatever they want without market influence. To maximize profit, the price is set where production level falls on the demand curve. When the price is exceeding the firms marginal cost, the consumer pays a higher price than in a perfectly competitive market.

Producers sell less units at a higher price than a competitive market, creating deadweight loss, consumer and producer surplus.



Price discrimination in a monopoly occurs when the firm charges a different price to different consumers. In a monopoly with price discrimination, the firm produces an output that is allocative efficient, charging different prices to different clients, thereby eliminating consumer surplus and maximizing profit.

The difference between monopolistic competition and perfect competition is in the way they compete with each other. In a perfect competition, firms compete with the same product and different prices. In a monopoly, the competition is a non-price competition, based solely on product differentiation. Product differentiations is the process where one firm distinguishes its product or service from the competition in order to attract more customers.

## Monopoly Cont.

Sometimes the government will impose a tax to a monopolistic firm to reduce production, and at other times it subsidizes to increase production to a socially optimal output. When the government imposes a tax per unit produced, the MC curve moves to the left, decreasing quantity and raising price. By raising the price, the tax is actually paid for by the consumers. When government wants to increase the output quantity, it subsidizes the monopoly, bringing the MC curve to the right, and price down and increasing quantity to the socially optimum level.

### How does this relate to the AP Microeconomics Exam?

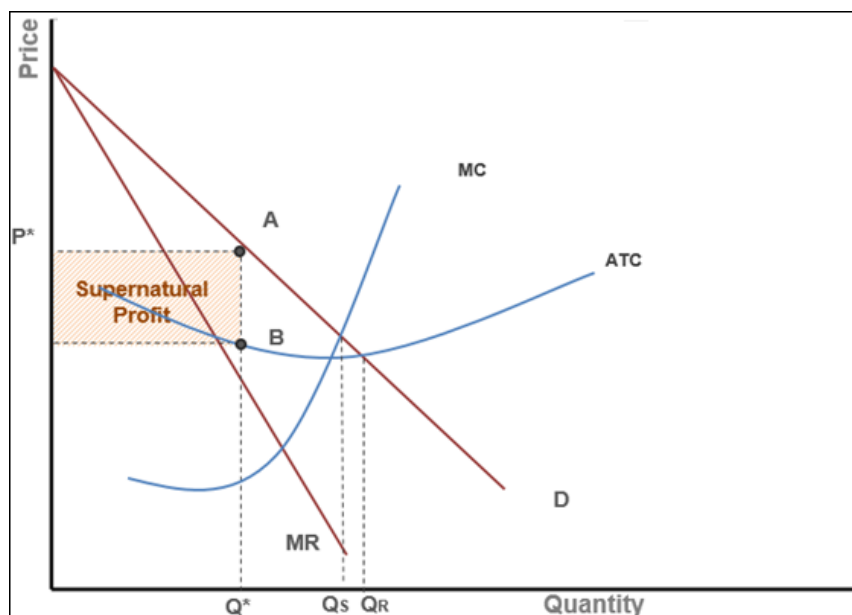
Monopoly market power always comes up in the exam, either in the multiple choice section of the exam or in the FRQ section. In fact, almost every year there is one question about a monopolist market in the FRQ section. Here is an example from the exam in in 2009.

1. CableNow is the only supplier of cable TV services offering a wide range of TV channels. CableNow is an unregulated firm and is currently earning an economic profit. Assume that CableNow does not practice price discrimination.
  - (a) Draw a correctly labeled graph for CableNow and show each of the following. Make sure your graph is large enough to be legible.
    - (i) The profit-maximizing quantity of cable services, labeled as  $Q^*$
    - (ii) The profit-maximizing price, labeled as  $P^*$
    - (iii) The area of economic profit, completely shaded
    - (iv) The socially optimal level of cable services, assuming no externalities, labeled as  $Q_S$
  - (b) Assume that the government grants CableNow a lump-sum subsidy of \$1 million. Will this policy change CableNow's profit-maximizing quantity of cable services? Explain.
  - (c) Instead of granting a subsidy, assume now that the government chooses to require CableNow to produce the quantity at which CableNow earns zero economic profit. On the graph you drew in part (a), label this quantity  $Q_R$ .
  - (d) At  $Q_R$ , is the firm's accounting profit positive, negative, or zero? Explain.
  - (e) Assume that a new study reveals there are external benefits associated with watching TV. Will the socially optimal quantity of cable services now be larger than, smaller than, or equal to the  $Q_S$  you identified in part (a)(iv) ?

In the first paragraph we see that CableNow is the only supplier of cable TV services, unregulated, making economic profit, and does not practice price discrimination. This tells us that CableNow is a monopolistic firm with no competition.

## Monopoly Cont.

The graph that we need to draw looks like this:



- The profit maximizing quantity is at  $Q^*$ , the difference between MC and ATC is the profit earned marked with  $P^*$ . Socially optimal level is at  $Q_s$  where the MC curve intersects the demand curve.
- the lump sum subsidy will have no impact on the quantity of services produces, and will not affect MC.
- $Q_R$  is where the ATC curve and demand curve intersect, and identifies the quantity of cable services.
- Accounting profit is possible and excludes implicit costs.
- the socially optimal quantity will be larger than  $Q_s$

After reading this crash course and practicing the graphs a few times, you should be good to go for the exam. Here is a [link](#) to a practice test which is aligned with the College Board, where you can test your readiness for the exam.



# Deadweight Loss



*[Image Source: Pixabay](#)*

Some of the questions on the AP Microeconomics test will go right over your head if you don't understand deadweight loss. Sometimes, the nuances of deadweight loss are difficult to grasp. Not to worry, though! This AP Microeconomics review will help you learn deadweight loss as quickly and thoroughly as possible, and then help you apply your knowledge to real free response questions.

How often does deadweight loss appear on the AP Micro test? Well, deadweight loss is in the supply and demand section, and this section will be anywhere from 15-20% of the test. That's enough that you're practically guaranteed to hit an AP Microeconomics FRQ or multiple choice question on deadweight loss. Don't have much time? No problem. Read this AP Microeconomics study guide, and you'll be ready for the deadweight loss question when it comes.

## Deadweight Loss Cont.

### What are Deadweight Losses?

Here's a simple definition of deadweight loss, from Investopedia: "Deadweight losses are costs to society created by market inefficiency." Leaky pipes are an example of this. When the pipes are delivering drinking water to your house, some of the water leaks out from the pipes, and that water is simply gone – it's not worth anything to the economy anymore. Another example of deadweight loss is an unwanted gift.

Let's say your aunt Tina gave you an 850-page textbook on how to design lamps. To be polite, you might make a halfhearted attempt to read the book. At some point, though, you have to admit that the amount your aunt spent to buy the book is less than the value you get from receiving the book. Maybe Tina spent \$90 on buying and mailing the book, but you thought the book was only worth \$10. The difference between those two amounts is called the deadweight loss. In this case, the deadweight loss is \$80.

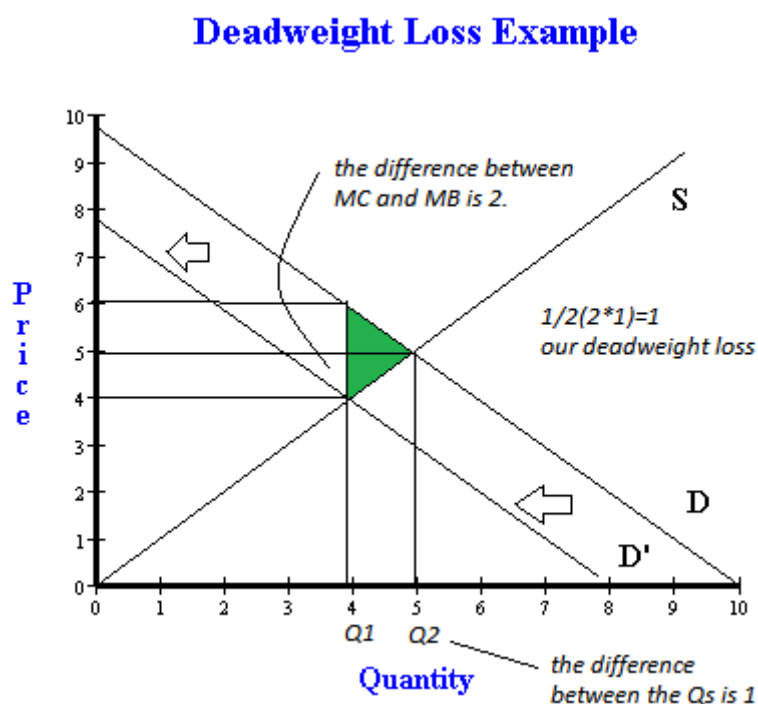
It's inefficient for Tina to buy the book because you didn't receive much value from it. Or, you can think about it in this way: the purpose of an economy is to create value, and Tina buying the book didn't create any value – it caused a loss of value.

Deadweight losses can be a huge drain on an economy. On the topic of unwanted gifts, economists at Yale published a study called "The Deadweight Loss of Christmas." The study just asked a sample how much they paid for a gift, and then asked those who received gifts how much they'd be willing to pay for the gift. The study calculated that up to 30% of the price of an average gift is a deadweight loss. In other words, if you paid \$100 for a gift, it would only be worth about \$70 to the recipient. Overall, the economists calculated that because of deadweight losses, \$4 billion is wasted each Christmas.

# Deadweight Loss Cont.

## How to Interpret Deadweight Loss Graphs

Deadweight loss happens whenever marginal cost is greater than marginal benefit. In other words, deadweight loss occurs when supply and demand are not in equilibrium. Here's a graph to explain the concept:



*Image Source: [FreeEconHelp](#)*

In this figure, MC and MB stand for marginal cost and marginal benefit. As you can see, at quantity 5, supply equals demand, and marginal cost equals marginal benefit. Here, the economy is at equilibrium. That's the point where the supply (S) and demand (D) lines intersect.

What if the government creates a tax of \$1 per item sold? Well, then, the sellers will have to decrease the amount they produce by 1. They can no longer afford to make five things, so they have to move down to making 4 things. Then, the quantity produced moves down to the point Q1.

## Deadweight Loss Cont.

That's not all, though! If you follow the line from point Q1 up to the demand line (D), you'll see that the price buyers have to pay increases from \$5 to \$7. Then, if you follow the line from point Q1 to the supply line (S), you'll see that the price producers receive decreases from 5 to 4. So the price consumers must pay goes up, and the amount producers receive decreases. It hurts everyone. Except, of course, the government, which earns considerable revenue that it can apply to other areas.

You probably noticed the green triangle. The area of that green triangle is the deadweight loss. That amount of money goes completely down the drain. Before, five units were being sold. Now, only four units are being sold – one less than before. As a result, sellers get less revenue from selling those units, and buyers get less benefit from buying those units. After the tax, these trades simply don't happen.

Now, you can calculate the area of the triangle with simple algebra. The triangle's base is two units, and the triangle's height is 1 dollar. The area of a triangle is the base multiplied by the height divided by two, so this triangle is two multiplied by two divided by two, or just one. That means the total deadweight loss will be the area of the triangle – \$1.

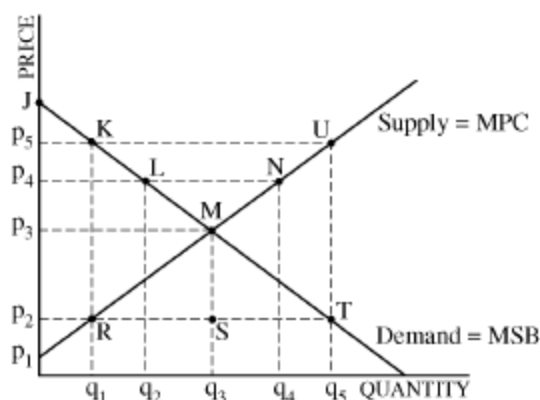
Don't understand the graph? Neither did I when I first took economics. It's a little hard to learn to interpret deadweight loss charts by reading about them. So here's a [great video from the Marginal Revolution University](#) that explains the concept.

## Deadweight Loss Cont.

### Answering Deadweight Loss Questions Correctly

Do you think you get it? Well, let's look at a free response question from a real AP test to make sure. Here's a problem from the 2010 AP Microeconomics test:

#### 2010 AP<sup>®</sup> MICROECONOMICS FREE-RESPONSE QUESTIONS



3. The graph above shows the perfectly competitive market for hard candies in Country Alpha. In the graph the letters correspond to points, not areas. MPC denotes marginal private cost and MSB denotes marginal social benefit.
- Using the labeling on the graph, identify the area representing each of the following at the market equilibrium.
    - The consumer surplus
    - The producer surplus
  - Assume that the production of each unit of candy creates a negative externality equal to  $(p_5 - p_2)$ . Using the labeling on the graph, identify the socially optimal quantity.
  - Assume that the government imposes a per-unit tax of  $(p_5 - p_2)$  to correct for the negative externality. Using the labeling on the graph, identify the area representing each of the following.
    - The consumer surplus
    - The deadweight loss

Don't worry about it if you don't understand some of the problem. Most of it doesn't have to do with deadweight loss. But check out problem (ii) in question C.

## Deadweight Loss Cont.

Here's the simplest strategy to answering most AP Microeconomics deadweight loss free response questions:

- 1. Draw the line of the tax on the graph.** Here, you would draw the line of the tax between points K and R, because the question said the tax is on the line between  $P_5$  and  $P_2$ .
- 2. Then, look for the triangle.** Here, you can see that a line between K and R makes a triangle between points K, R, and M.
- 3. The area of the triangle is the deadweight loss.** For this question, you could say the deadweight loss is equal to the area of triangle KRM.

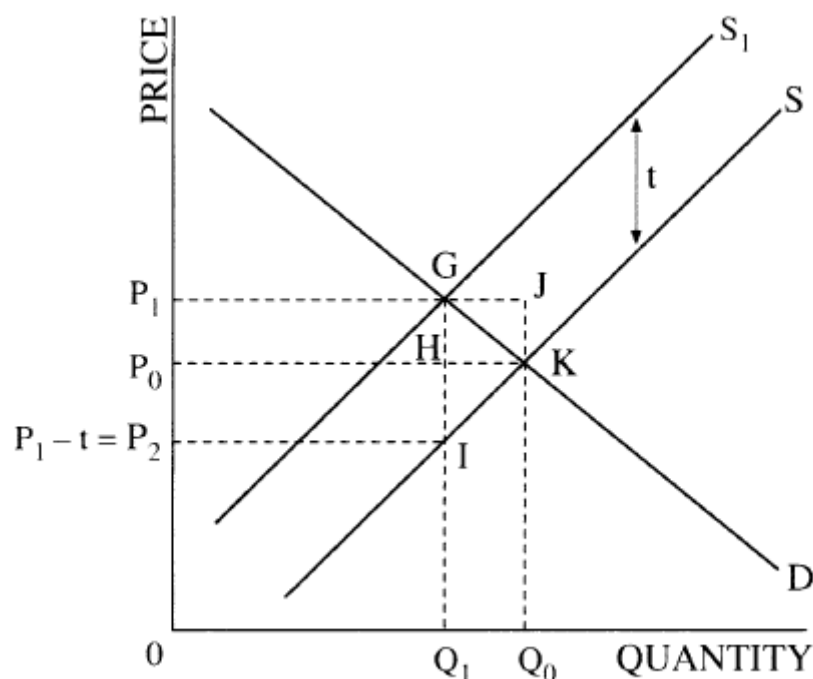
But wait! This is a trick question. Note the reason for the tax – it was to correct for a negative externality. A negative externality is an economic inefficiency. So if a tax fixes this negative externality, then economic efficiency will be increased.

How much will economic efficiency be increased? Just look at question B to find out. It says that the negative externality is equal to  $P_5 - P_2$ . If you draw a line between  $P_5$  and  $P_2$ , it makes the same triangle as the tax does – triangle KRM. The area of triangle KRM is the total loss to the economy due to the externality. Since the tax corrects for the externality, you can say that the economy becomes more efficient by the area of triangle KRM. So, in the end, the increased deadweight loss is canceled out by the removal of the negative externality. That means that your final answer will be “there is no deadweight loss.”

A lot of the time, questions about deadweight loss will require you to understand other concepts as well. In this question, you had to know what economic externalities are, as well as what deadweight loss is, to answer correctly. The best way to become familiar with this type of problem is through lots of practice. One of the best resources for practice is the [Albert.io AP Microeconomics course](#). It gives you questions modeled on real AP tests, and provides constant feedback so you can quickly improve.

## Deadweight Loss Cont.

Now you know how to crush free response questions on deadweight loss, let's check out a multiple-choice question. Here's the problem:



Let's make sure we understand the problem before we move onto the question. Just use the same sequence we used for the free response question! First, draw the line of the tax. Second, look for the triangle. Third, know that the area of this triangle is the deadweight loss.

The original supply curve was line S. The original equilibrium was point K, where the supply curve S and demand curve D intersect. Finally, before the tax, the point I was on the supply curve. After the tax, the point I moved up to point G on line S<sub>1</sub>. As you can see, if you trace the line of the tax between point G and point I, that forms a triangle with point K, the original equilibrium. This triangle is between the points G, K, and I, and so the triangle's name is GKI.

## Deadweight Loss Cont.

Okay, so now that we've got the problem down and have found the deadweight loss triangle, here are the answer choices:

16. The deadweight loss created by the tax is equal to

- (A)  $P_1GHP_0$
- (B)  $P_1GKP_0$
- (C) GHK
- (D) GKI
- (E) zero

As you can see, our favorite triangle is one of the answer choices. The area of the triangle GKI will be equal to the deadweight loss, and so D is the correct answer.

You should now have a solid understanding of deadweight loss. On most of these questions, the most important thing to remember is drawing a triangle, and then finding the area of that triangle to get the deadweight loss. But make sure to double check that the problem isn't a trick question.



# Oligopoly

When preparing for your AP Microeconomics Exam, you may become overwhelmed with the different market structures and what they stand for. In this AP Microeconomics oligopoly crash course review, we will talk about the oligopoly market structure and look at a few examples to understand better the industry. We will also touch [the basics of the exam](#) and what you should prepare for.

## What is an Oligopoly?

Oligopoly is a market structure where a few large firms share a highly concentrated market share. It is in the middle of a [monopoly](#) and the perfect competition, where a few large firms control the market offering similar products. They are interdependent on each other, meaning that if one company makes a drastic decision, all companies will be affected by that decision, either good or bad.

Oligopoly firms normally are large in profit, size, and client term. Those firms are constantly competing against each other, and those competitions tend to be fierce, since the firms usually offer similar products at a similar price, and mostly their only way to differentiate themselves from the competition is through extensive marketing campaigns.

In order to avoid price wars, oligopoly firms may collude to agree on their price range and protect their sales volume. An official agreement on set prices is called a cartel and is illegal in most countries. You may recall watching movies such as “City of God” and “End of Watch”, both featuring drug cartels. The organization of petroleum exporting countries (OPEC) is another perfect example, an organization formed by twelve oil exporting countries that control the global oil market. The reason why international cartels exist is because it’s beyond the control of an individual country.

## Oligopoly Cont.

Oligopoly firms are highly interdependent. To solve the mystery of marginal revenue in an oligopoly, the interdependence of the firms is examined using the game theory, which consist in analyzing strategies that competing firm's may use, or their dominant strategy before making a move. The game theory is often explained as the "prisoner's dilemma" illustrating the choices oligopolies face.

The prisoner's dilemma is a scenario where two suspects are arrested for a crime with not enough evidence of their guilt. They are then placed in different rooms without any kind of communication with each other, and interrogated and offered a play-off if they confess to the crime. If they choose not to confess they will get 3 years of jail time, and if the deny and are found guilty they could face from 1 to 10 years in prison.

		Tom	
		Confess	Deny
Robin	Confess	3 yr 3 yr	1 yr 10 yr
	Deny	10 yr 1 yr	2 y 2 y

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[Image Source: Economics Online](http://www.economicsonline.co.uk)

## Oligopoly Cont.

### So how does this game work?

In this game theory, the outcome completely depends on the behavior of the other prisoner. To avoid the worst, the prisoners could confess and get 3 years, and if they could collude and both deny, they would get only 2 years. With the incentive that if one confesses and the other denies, the one confessing will get only one year if the other denies. So the safest outcome is to deny and both get 2 years, but without communication between them, they have to look for the dominant strategy of the other player.

To find out the dominant strategy, you have to look for the best of the worst payoff. The worst payoff for Robin here in confessing would be to get 3 years, or deny and get 10 years if Tom confesses. So his best of the worst is to confess because he does not trust Tom enough to know he will deny.

### How is this Relevant to an Oligopolistic Market?

Firms are unlikely to trust each other, even if they come to an agreement for example to raise their prices together. So if you cannot trust the other firm to abide by their colluding agreement, it is safer to go with the dominant strategy.

**Dominant strategy:** is the firm's best outcome without consideration of the other player.

**Nash equilibrium point:** is the best strategy for both firms and neither player can make a move to get a better result. In the Prisoners case, it would be to confess.

### Kinked-Demand Curve

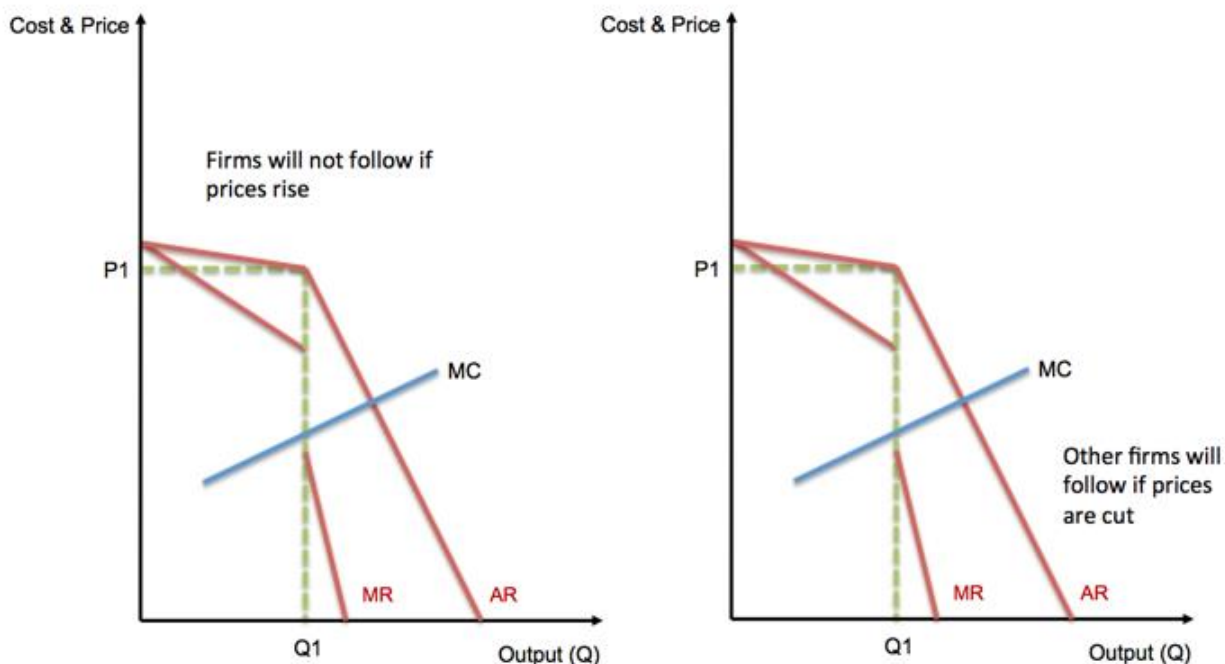
The demand curve for an oligopoly is known as the Kinked-Demand curve theory and is made of two segments of two separate demand curves, the upper highly elastic and the lower inelastic. It explains the likely reaction of other firms when one firm changes its price or other variables.

## Oligopoly Cont.

If one firm raises their price, it is expected that the demand will be relatively elastic, and the firm will lose market share and a decrease in their total revenue. If a business reduces its price, the relative price change is smaller and the demand would be inelastic. This has little to no effect on the market share.

To better understand the kinked demand curve, let's look at this graph.

### Analysis Diagram: The Kinked Demand Curve Model



*Image Source: Tutor2u*

- It predicts price stability, reinforcing their market position and increasing profit
- Short-term price wars between rival firms can happen while firms are looking for short term advantages and win extra market share.

## Oligopoly Cont.

Now to put this into practice, let's look at a few examples. One example would be computer operating systems. Microsoft Windows, Apple Mac

OS X, and Linux are capturing close to 100% of the market share, and all other software providers have to make their programs compatible with these systems in order to survive, further enforcing the market power of the major players.

Another example is cellphone carriers, where approximately 90% of the national market is held by four companies, Sprint-Nextel, T-Mobile, Verizon, and AT&T. Although there are other smaller companies who fill up the other 10% of the market, they have little influence to no voice in the market and have to adjust to the leading companies to survive.

Are oligopolies good for Consumers? Consumers can easily compare prices among the few existing firms, which forces the companies to set competitive prices, and the stable prices help consumers to plan their spending and it also stabilizes the trade market.

The negative effect oligopolies have on consumers is that prices are high, qualities may not be as good as they could be due to lack of incentives for quality improvement, high barriers to enter the market, and the realization of many creative ideas can only be made possible when a major player adopts the ideas for use.

This may look like a lot to remember for the exam, but don't worry, by the time you finish reading this crash course, you should have a good understanding of the concepts of oligopoly and what you need to know for your AP Microeconomics exam.

## Oligopoly Cont.

To get a better grasp on the terms involved, let's look at the [Important terms to remember](#)

### Important Economics Terms to Remember

- **Collusion:** oligopoly firms are likely to have tactical agreements between them, which involves increasing prices so all firms can have higher profits. This hurts consumers because their prices are higher than the normally would be in a perfect competition and are illegal.
- **Non-price competition:** they are usually involved in non-price competitions, where they compete by appearance or quality, or product differentiation.
- **High concentration ratio:** they have a high concentration ratio, which is the market share they control.
- **X-inefficient:** meaning that their products are not as efficient as they could be due to the lack of competitive incentives to cut cost and increase efficiency.
- **High entry barriers:** barriers to entry are high due to brand loyalty and high financial recourse needed to enter and compete with the leading firms.
- **Low contestability:** which refers to the difficult level of competition.
- **Price Setter:** meaning they are able to set their own prices rather than following the market price.

### So Why is it Important for Me to Know What an Oligopoly is for AP Microeconomics?

If you are preparing for the AP Microeconomics exam, it is important that you understand the concept of oligopoly and know how to analyze a holistic situation of an oligopoly market. The question inevitable appears in the exam, either in the multiple choice section or in the [FRQ section](#).

## Oligopoly Cont.

### **Is Oligopoly Part of My AP Microeconomic Exam?**

Yes, as a student of AP Microeconomics, it is important to have a clear understanding of the oligopoly market structure, the key terms, and you should be able to analyze a holistic situation and formulate a graphic explanation in your answer.

To get a better understanding how to prepare yourself, Hopefully this crash course will help you to understand the concept and identifying an oligopoly market structure, and give you that little extra you were looking for to outperformed your classmates.

# Game Theory



*[Image Source: Wikimedia Commons](#)*

Game Theory — What do the movies Star Wars, Jurassic World, Avatar and The Dark Knight have in common? Other than breaking records at the box office, they were produced by the top 5 companies that control about 76% of the U.S. movies' industry. When a few firms operate in a market that is neither perfectly competitive nor dominated by one company, the structure is referred to as an [oligopoly](#).



## Game Theory Cont.

Oligopolistic markets stand out in the way they strategize and respond to the actions of their competitors. Unlike in [perfect competition](#) where the actions of one company have little effect on their competitors', in an oligopoly there are fewer businesses and the actions of one firm have considerable implications on its competitors. This occurs when the "clique" of companies doesn't collude to maximize their opportunities at the expense of the consumers' choice. For the record, collusion by firms in an oligopoly is illegal in the U.S.

One of the strategies used by businesses in an oligopoly when making decisions is employing a mathematical model known as the game theory. In this article, we will define the game theory and check out its application in a duopoly. We will also sample an AP Microeconomics FRQ to complement your study guide and shed some light on what is tested in the AP Microeconomics multiple choice questions section. We will close by looking at the importance of the game theory and how you can use it to build a career beyond microeconomics.

### Game Theory Definition

While playing a game of poker, I couldn't help but pull parallels with the game theory. In the poker game, each player made different but well-calculated moves to optimize their position. The players based their moves on the predictable behavior of other players while being conscious of what is at stake and the most likely alternatives that the other players would take.

Game theory is described in pretty much the same way. Firms in a non-collusive oligopoly make economic decisions based on the likely responses from their competitors. Each company understands and makes a decision based on the implications of their choices to their firm as well as the impact these choices would have on their competitors. In other words, game theory is a science of strategy, which focuses on optimal decision-making by independent and competing players in a strategic setting.

In an [oligopoly](#), decisions such as whether to advertise or not, or to increase prices or not are analyzed using the game theory matrix. This enables competing businesses to make rational decisions and optimize their payoffs.

## Game Theory Cont.

Below is an example of a game theory model between two competing bakeries in a small town, Fresh Bakes (FB), and Timeless Wheat (TW). FB wishes to launch its brand of sugar-free bread, and TW wants to present its line of whole meal bread.

As you may have noticed, in most oligopolies, there is little differentiation between the products offered. This is because the different firms seek to satisfy the needs of the same consumer. Therefore they frequently come up with goods that are often perfect substitutes. Take for example the Cola soft drink market in the U.S.; there is little difference between Coca Cola® and Pepsi Cola®, the two products which dominate the market.

Getting back to our example, the figure below shows different profit scenarios by Fresh Bakes (FB) in red and Timeless Wheat (TW) in green. We assume that each firm is aware of the impact different combinations of decisions would have on its profitability.

		Fresh Bakes	
		Not to Launch	Launch
Timeless Wheat	Not to Launch	A - \$ 1,500, \$ 1,700	B - \$ 1,200, \$ 2,000
	Launch	C - \$ 1,600, \$ 1,600	D - \$ 1,600, \$ 1,800

If both businesses stay without launching the new products, they will maintain profits at \$1,500 and \$ 1,700 as represented by quadrant A. However, at this point each firm knows that it has an incentive to launch and on the other hand, it will lose market share if the competitor launches and they don't. This unstable market scenario is also frequently referred to as the prisoner's dilemma.

If one firm chooses to launch while the other does not, the business that launches will get a larger market share and increase its profits while the one that doesn't, its revenues drop. This is represented by quadrants B and C.

## Game Theory Cont.

If both firms decide to launch, TW will make a profit of \$ 1,600 while FB will make \$ 1800. In a state where neither party has an incentive to change its strategy, it is known as the Nash Equilibrium. In this case, the bakeries will earn less profit if they do not launch and both firms will increase profits if they launch. Besides, FB has more incentive to launch regardless of the actions of TW since it will be more profitable. This position by FB is also known as the dominant strategy.

Here's the real deal, game theory matrix is a useful tool for firms in an [oligopoly](#) to counter moves by competition and make strategic decisions. In reality, however, oligopolies often consist of more than two businesses and companies have to grapple with a myriad of decisions. Therefore, to make informed choices, firms require more sophisticated analysis.

The exercise above will help you understand the basics of reading the game theory matrix and figuring out if a firm has a dominant strategy as well as the Nash equilibrium. These three are critical for your AP microeconomics exam. Let's have a look at a sample FRQ from the AP Microeconomics exam of 2015.

Two competing sandwich shops operate in a small town, Foodbasket, and Tastylunch. Each shop has the liberty to set its prices for sandwiches and the payoff matrix below shows how the different combination of prices would result concerning the stores' daily profits.

The green entry shows Foodbasket's profits, and the Red entry shows Tastylunch's profits.

		Tastylunch	
		High Price	Low Price
Foodbasket	High Price	\$ 105, \$ 110	\$ 40, \$ 130
	Low Price	\$ 120, \$ 80	\$ 75, \$ 70

## Game Theory Cont.

Assuming that the owners of both shops are aware of the information displayed in the matrix, answer the following questions:

1. Describe if each shop has a dominant strategy to set a high price or a dominant strategy to set a low price, or if neither shop has a dominant strategy?

*Foodbasket has a dominant strategy of setting a low price while Tastylunch has no dominant strategy. (One mark)*

2. If the two shops collude to set the prices, how much profit will each shop make?

*Foodbasket \$ 120 and Tastylunch \$ 80 (keep in mind Food basket has a dominant strategy to maintain prices low) (one mark)*

3. Assume the local township government resolves to offer a subsidy of \$20 to every shop that sets a low price on its' food items. With the new state support in mind, reconstruct the payoff matrix.

		Tastylunch	
		High Price	Low Price
Foodbasket	High Price	\$ 105, \$ 110	\$ 40, \$ 150
	Low Price	\$ 140, \$ 80	\$ 95, \$ 90

*(One mark)*

From the new payoff matrix, respond to the questions below.

- a) Would Tastylunch choose to set a high price or a low price? Explain.

*Tastylunch will choose a low price strategy because; with the subsidy Tastylunch's profits increase by \$10 at a lower price i.e. \$ 90. This is compared to lower earnings of \$ 80 if it charges a higher price. (One mark)*

## Game Theory Cont.

b) How will Foodbasket's profits respond to the government subsidy? Explain with a comparison to the answer in 3 a) above.

*Foodbasket's profits will fall from \$120 to \$95 (one mark)*

From the sample FRQ, it is clear that emphasis must be put on reading the chart and identifying if either firm has a dominant strategy.

AP Microeconomics multiple choice questions, on the other hand, will test how well you understand the concept of [oligopoly](#), and how fast you can reason. Occasionally, some queries in this category will require quick and sharp analysis of different hypothetical situations.

This subject is not only important for your AP Microeconomics study, but you can also use it to analyze different scenarios in the economy. You can also make a livelihood with a good background in game theory. For instance, if you pursue a career in stocks trading, you can use the game theory matrix to model different players in a market and enlighten dealers about the incentives of other parties in trade. The concept is also applied when negotiating deals such as mergers, contracts and also during arbitration.

In conclusion, game theory will help you think more analytically and be more strategic during interactions. It is a science of strategy, where analysis of independent and competing players who are focused on making optimal decisions in a strategic setting is carried out. In micro econ, game theory is best displayed in oligopolistic markets where there's no collusion between firms.

A scenario where players are aware of the benefits of making certain decisions but hold out creates instability in the market, also known as the prisoner's dilemma. On the other hand, a situation when one firm gains the upper hand (regarding profit) by making a particular choice, regardless of what the competition does, such a company is said to have a dominant strategy position. When the competing firms are operating at optimum profitability having played out their strategies and have no incentive to change plan, the status is known as the Nash Equilibrium.



## Game Theory Cont.

Remember, reading the game theory matrix and scrutinizing different scenarios is crucial. This knowledge will help you respond to AP microeconomics FRQ and multiple choice questions more confidently. A good understanding of game theory will also help you analyze real life market situations and understand the resultant strategies which can help you build a career in econometrics or beyond.



# Ready to Score Higher?

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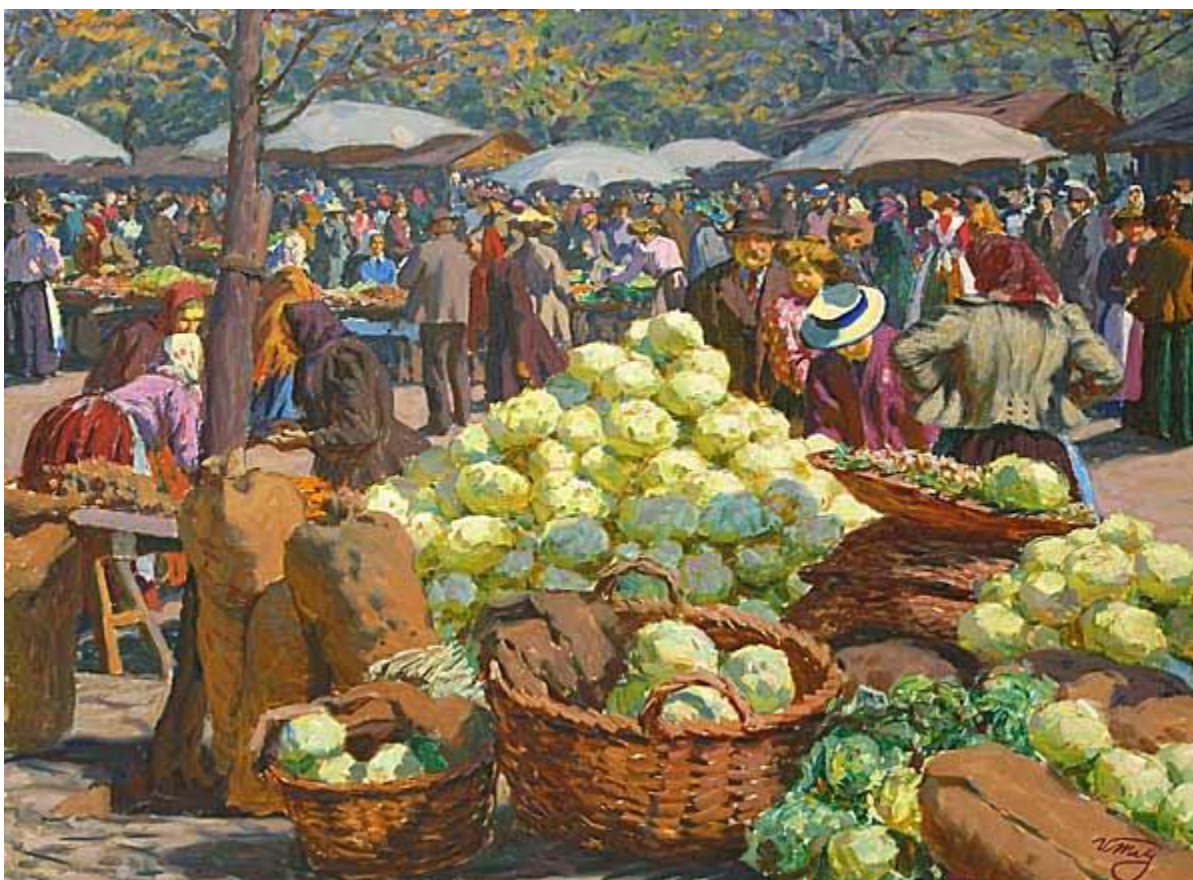
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# Monopsony



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Are you studying for your AP Microeconomics Exam and not sure what monopsony is? Well, you should know, and here in this crash course review we will break it down for you.

When studying Microeconomics, you will learn about the monopsony market structure. Not sure what that means? In this article, we will go over the details of a monopolistic market structure, learn how to read the graph, and learn the unique characteristics and traits of a monopsony. By the time you finish reading this course, you should feel confident that you are prepared for this question in your AP Microeconomic Exam.



## Monopsony Cont.

### So, What Is A Monopsony?

A monopsony is when there is one large buyer with many sellers, and the buyer has the market power to control production and wages. To drive prices down, a monopsony controls the wages of workers, which often results in exploitation of labor.

Be careful not to confuse the term “monopsony” with “[monopoly](#)”. Although the sound similar, these are two different market structures.

To make the difference between them clear for you here is a table setting the most noticeable differences between a monopoly and a monopsony.

Market Structure	Sellers	Buyers	Market Power
<b>Monopoly</b>	One	Many	Drives price up
<b>Monopsony</b>	Many	One	Drives price down controls wages

You will sometimes see business employing both market structures like Walmart for example. It acts as a monopoly in the sense that it is taking over the local business with its power to set their price lower than perfect competition. It is also known as a monopsony, forcing producers to lower their price if they want to continue selling their products to them, which in turn controls the wages paid for the labor at the producer’s end.

A monopsony is an imperfect competition where sellers differentiate themselves by branding or quality. It realizes a profit when they pay the wage of a worker lower than the value of the marginal product.

Monopolistically competitive markets are less efficient than a perfect competition, and equally effective as a monopoly since both behave in a similar manner, where profit maximizing occurs when their marginal revenues are equal to their marginal cost.

## Monopsony Cont.

Due to its imperfect competitive nature, monopolistic markets create a decrease in consumer surplus, and since producers sell less of their goods than they would in perfect competition, this can result in producer surplus. The result is a guaranteed dead-weight loss to the producer.

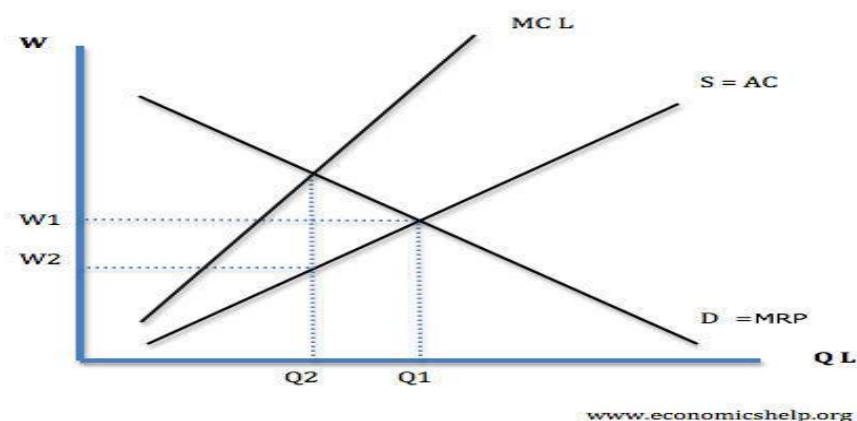
### So What Do You Need To Know For Your AP Microeconomic Exam About Monopsony?

- It has one single buyer with many sellers,
- It has the power to control wages and production
- Hard to enter due to high startup cost, government license, patent, and copyright
- Imperfect competition
- Guarantees deadweight loss
- Equally inefficient as a monopoly in the long run

Now let's look at how the market structure of a monopsony works to help you understand the demand curve and [draw a graph](#) of supply and cost.

Due to the single buyer status, a monopsony has a positively-sloped supply curve facing the market supply curve for the product.

When looking at the graph, you will see the downward sloping labor demand coming from the marginal revenue product of labor, which is the value of the worker to the firm.



## Monopsony Cont.

Labor supply slopes up, and as the wages go up, more labor is supplied. MCL stands for the marginal expenditure on labor, which is the cost of the worker to the firm. S stands for labor supply.

A monopsony company will choose to use the quantity of labor where MCL is equal to MRP, called Q2 in the graph. The wage will be according to labor supply, so where labor supply and QL intersect is where the wages will be. If the firm would use Q1, the value of the worker would exceed the value of the product.

In an imperfect competition, the monopolistic firm uses an output below the minimum efficient scale, crating dead-weight loss for the sellers and sometimes resulting in labor exploitation.

In the long run, if new firms enter the marked and labor supply will shift, eventually it will be the same as a perfect competition. When that happens, the firm's economic profits are zero, and it will [earn normal profit](#) just like a perfectly competitive firm.

### **So Let's Look At An Example Of Monopsony**

Amazon is one example of a monopsony with its buying power in the retail book market. It gets a significant competitive advantage over other booksellers due to its unique market power, which in return gives them the power to control the price.

Another example is the Apple company. Apple paid for the construction of a company to manufacture their components technologies, and in return obtains the exclusive rights to the output of the production of the factory for a set period. This gives them access to new component technology for an extended period of its rivals and lower prices than its rival afterward.

# Monopsony Cont.

## Characteristics And Features Of Monopsony

- The firm hires large portions of the total employment in a particular type of labor
- The type of labor is limited either geographically or by skills offered
- It faces imperfect competition in the labor market
- Workers are mostly non-unionized
- A monopsony is similar to a monopoly because both charge a price higher than their  $MR = MC$

## How Is A Monopsony Good For The Market?

With the positive slope supply curve, a monopsony is a wage searcher rather than a wage taker, and if they increase the wage of one worker, they have to raise all salaries. The table below sets a numerical example, where the first two columns show data on the market supply of labor, the third column reports the total cost of hiring each worker, and the fourth column reports the marginal cost of labor.

A Monopolist's Marginal Cost of Labor

Number of Workers	Hourly Wage	Total cost of Labor	Marginal cost of Labor
1	\$10	\$10	\$10
2	\$15	\$30	\$20
3	\$20	\$60	\$30
4	\$25	\$100	\$40
5	\$30	\$150	\$50

## Monopsony Cont.

In this scenario, if the monopolistic firm wants to hire new workers, in order to attract new workers they have to raise their wages. Since they cannot discriminate among worker salaries, they have to raise the wages of their current workers to match it with the newly hired worker, and as a result, the marginal cost exceeds the new market wage because they had to increase the wage of their current workers.

### Will Monopsony Be Part Of My AP Microeconomic Exam?

Monopsony does come up in the exam, and can be either in the multiple choice section or the context of the [FRQ](#). Here you can see the question that was in the exam in 2007.

1. Assume that the cellular telephone industry is monopolistically competitive.
  - (a) Assume that cellular telephone manufacturers are earning short-run economic profits. Draw a correctly labeled graph for a typical firm in the industry and show each of the following.
    - (i) The profit-maximizing output and price
    - (ii) The area representing economic profit
  - (b) At the profit-maximizing price you identified in part (a), would the typical firm's demand curve be price inelastic? Explain.
  - (c) Given the information in part (a), what happens to the demand curve for the typical firm in the long run? Explain.
  - (d) Using a new correctly labeled graph, show the profit-maximizing output and price for the typical firm in the long run.
  - (e) Does the typical firm produce an output level that minimizes its average total cost in the long run?
  - (f) In long-run equilibrium, does the typical firm produce the allocatively efficient level of output? Explain.

In this scenario the company is a cellphone manufacturer. The students are asked to draw the graph twice, and to answer six questions on a monopolistically competitive firm.

When drawing the graph, remember that the firm will pay wages according to labor supply, and wages will be lower than in a perfect competition. The difference in MLC to S is the economic profit, and the difference from Q2 to Q1 is the profit maximization output and price. There is a guaranteed dead-weight loss to the seller, and the demand curve will be perfectly elastic depending on the labor supply.

## Monopsony Cont.

The output is below the efficient scale, creating economist profit for the company and dead-weight loss to the seller or worker. In the long run when new firms enter the market, the level of output will change to one that is similar to a perfectly competitive market.

Click [here](#) to see an example of monopsony in the FRQ section one in 2007. After reading this crash course review, you should know all you need to know about monopsony to get that perfect score you want to get in your AP Microeconomics exam!

Keep in mind that you may be asked to draw a monopsony graph, so it's a good idea to practice it a few times. You can also test your practical knowledge [here](#) by taking a practice test. Those questions are all in alignment with the college board exam, and will help you to feel prepared for the exam may be a little harder than the real test it to prepare you well. It will help you and in reinforcing the concepts you are still not sure about.

# Derived Demand



*[Image Source: Flickr](#)*

Do you know how demand for cars affects demand for iron ore? Can you explain why hiring rates of software engineers have increased as the Internet has expanded? Derived demand is the key to answering these questions and many more. Derived demand isn't too complicated, but understanding it is vital to solving some of the free response and multiple choice questions on the AP Microeconomics test. If you can't comprehend the explanations by your book or your teacher, you have come to the right place. This is a simple, straightforward AP Microeconomics review of derived demand.

# Derived Demand Cont.

## Derived Demand on the AP Microeconomics Test

The concept of derived demand is part of the Factor Markets section on the AP Microeconomics course outline. This section is 10-18% of the AP test, according to the [AP Economics Course Description](#). This means that derived demand will appear at least once on the test. Usually, there's at least one AP Microeconomics multiple choice question that asks which of a list of cases is an example of derived demand. There could also be a question that merely asks what the definition of derived demand is. However, if derived demand comes up on the AP Microeconomics free response question section, it will be much more difficult to apply. This crash course will prepare you for all these types of questions and more.

## What is Derived Demand?

Derived demand is a term used to describe the demand placed on one good or service due to changes in the price for another related good or services. For example, during the California gold rush, thousands of prospectors traveled west to search for gold. They needed tools, like pickaxes and shovels, to find this gold. Thus, because prospectors wanted gold, they also wanted pickaxes and shovels. In economic terms, prospectors had demand for gold, which led the prospectors to have derived demand for pickaxes and shovels.

However, derived demand doesn't just happen for goods. It can also happen for services. For example, the demand for writers of economic articles depends on the number of people who want to read articles. If people didn't want to read articles about economics, there would be no demand for the services of economics writers. Thus, you can say that the demand for article writers is derived from the demand for articles.

Don't miss the last case of derived demand, though. This last case is when demand for a good leads to demand for a service, or demand for a service causes demand for a good. For example, demand for computers, a good, leads to demand for computer engineers and programmers, who offer services.



## Derived Demand Cont.

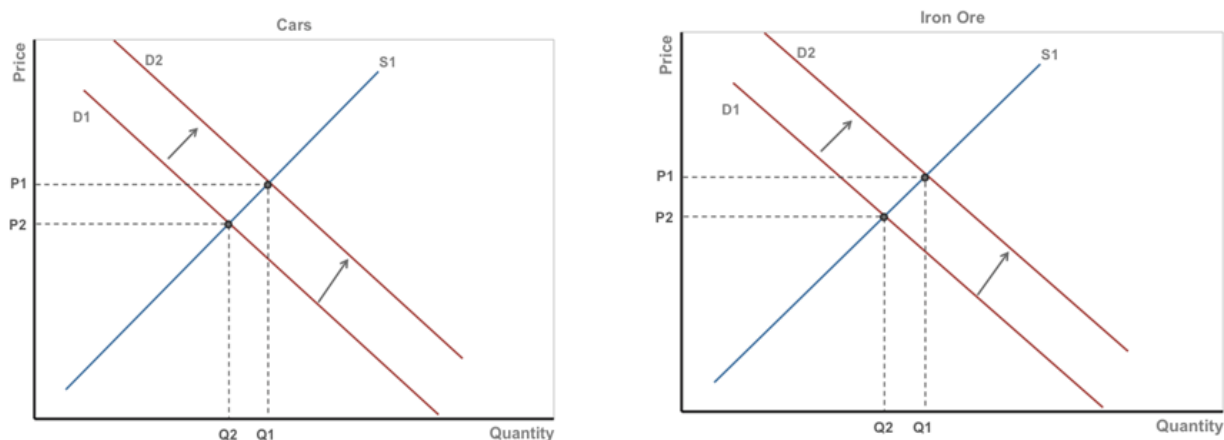
Therefore, demand for computer-related services is derived from demand for computers. On the other hand, demand for farm laborers, who provide services, leads to demand for farm equipment like tractors, shovels, and pitchforks. If some farm manager needs farm laborers, he will have to buy the tools those farm laborers need. Thus, demand for farm tools is somewhat derived from demand for farm labor.

You should remember that there are different degrees of derived demand. One of our examples, the case of writers for economic articles, demonstrates directly derived demand. Demand for economics articles almost completely determines the demand for writers of economics articles. However, there are other cases where the derived demand is less complete. The situation of farm laborers and farm equipment is one of these cases. In this example, farm equipment is still needed, even if you're not going to hire farm laborers. Thus, the demand for agricultural equipment isn't fully derived from the demand for laborers.

On the AP test, you won't usually be directly asked about all of these types of situations. They're just useful to know for identifying derived demand when it comes up on multiple choice questions when you have to choose the example of derived demand between many different cases. However, the CollegeBoard only really asks about derived demand in these terms: *"The demand for a resource is derived from the demand for the product produced by the resource."* That's a lot of demands. However, just think about it this way: if you want to make something, you have to get the resources to make that thing. Thus, your demand for resources is derived from your demand for the product produced by those resources.

## Derived Demand Cont.

Let's apply this idea to an example. Iron ore is a resource that is used to produce cars. So, if there is a demand to produce cars, there must also be a demand to mine iron ore. Otherwise, we couldn't make cars. When you translate this into economic language, you can say that the demand for iron ore is derived from the demand for cars. The graphs below illustrate this concept.



As this graphs show, when the demand curve for cars shifts up from  $D_1$  to  $D_2$ , the demand curve for iron ore also shifts up from  $D_1$  to  $D_2$ . This is an example of direct demand, where the demand for iron ore is completely derived from the demand for cars. In reality, the demand for iron ore is determined by lots of different factors, including the demand for ships, buildings, bicycles, paper clips, and thousands of other items.

If you're asked to interpret a graph about derived demand on the AP test, remember the graph above, and figure out which good or service causes the other good or service to be demanded. However, you might also have to apply this concept: changes in the demand curve in the labor market are derived from changes in the demand curve in the product market. In other words, if we want a product, we will also want laborers to produce that product. For example, whether a firm hires more software developers or not is determined by the changes in the demand for software.

## Derived Demand Cont.

You should understand that in the real world, derived demand often occurs in a chain. One example of a derived demand chain is the retail industry. First, customers demand goods from stores. Then, stores need to stock their shelves with these goods, so they demand goods from suppliers. The suppliers have to obtain these goods from processors. The processors have to get the primary resources for the goods from producers. If you put this all together, you can see that the demand for producers is derived from the demand for processors, which is derived from the demand for suppliers, which is derived from the demand for food stores. At the source of this whole chain are consumers like you who demand basic goods. Everything that happens in the retail industry is derived from the primary demand of consumers.

### How to Answer Derived Demand Questions

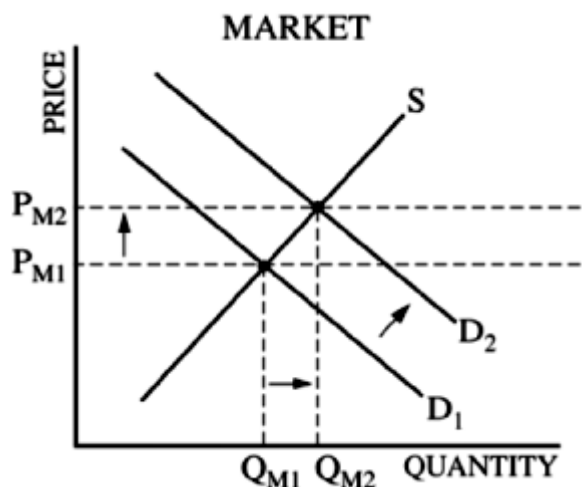
Now we understand the concept of derived demand, we can apply it to a few AP questions. Let's look at a free response question from the 2010 AP Microeconomics exam.

1. Assume that corn is produced in a perfectly competitive market. Farmer Roy is a typical producer of corn.
  - (a) Assume that Farmer Roy is making zero economic profit in the short run. Draw a correctly labeled side-by-side graph for the corn market and for Farmer Roy and show each of the following.
    - (i) The equilibrium price and quantity for the corn market, labeled as  $P_{M1}$  and  $Q_{M1}$ , respectively
    - (ii) The equilibrium quantity for Farmer Roy, labeled as  $Q_{F1}$
  - (b) For Farmer Roy's corn, is the demand perfectly elastic, perfectly inelastic, relatively elastic, relatively inelastic, or unit elastic? Explain.
  - (c) Corn can be used as an input in the production of ethanol. The demand for ethanol has significantly increased.
    - (i) Show on your graph in part (a) the effect of the increase in demand for ethanol on the market price and quantity of corn in the short run, labeling the new equilibrium price and quantity as  $P_{M2}$  and  $Q_{M2}$ , respectively.

Don't worry about parts (a) or (b). Essentially, we have a case of a farmer who produces corn. We know that corn is an input in the production of ethanol. Using this information, we can answer question (i) in part (c). Okay, so, if we want more ethanol, we're going to need more corn.

## Derived Demand Cont.

That means that the demand curve for corn will shift upward. This is what the graph will look like:



The original demand curve for corn was  $D_1$ . All you had to do was draw the new demand curve for corn. You just move the demand curve up, putting it where  $D_2$  is. However, the AP Microeconomics test requires good labeling. Make sure to label the equilibrium quantities and prices, as this graph does.

Now that the free response question is out of the way let's look at a multiple choice question. The CollegeBoard doesn't release multiple choice tests. However, we provide tons of multiple choice practice at Albert. Here's an example question:

# Externalities

Are you studying for your AP Microeconomics Exam and need to understand better what externalities are? Well, look no further! In this crash course review, you will learn all you need to know about externalities for the exam.

## What are Externalities?

In the world of economics, externalities or spillovers are the consequences of an economic activity incurred by third parties. It can also be defined as the result of an industrial or commercial activity that affects third parties without this being reflected in the cost of the good or service.

Externalities are one of the main reasons governments intervene in the economic field, because they create market failure, and the government steps in to correct or internalize those failures. Externalities are divided in [production](#) or consumption, and can be either positive or negative, depending on the environmental impact they cause.

## Negative Externalities

Negative externalities happen when productions or consumptions create an external cost to third parties outside of the market, and no compensation is paid.

There are many examples of negative externalities as the result of production, where the social benefit is less than total output, creating a market failure. To correct those market failures, the government intervenes by way of [taxation](#). One example of negative externalities in production is the destruction of the Amazon rainforest, where trees are cut for the manufacture of furniture or paper, creating an imbalance in the environment.

An example of negative externalities in consumption is environmental pollution. In the case of [air pollution](#), the polluter does not consider the social factor of the cost that results from the polluted air, but rather in the cost of production. The indirect social cost of air pollution is a lower quality of life and associated health problems in the proximate society, which requires governmental intervention.

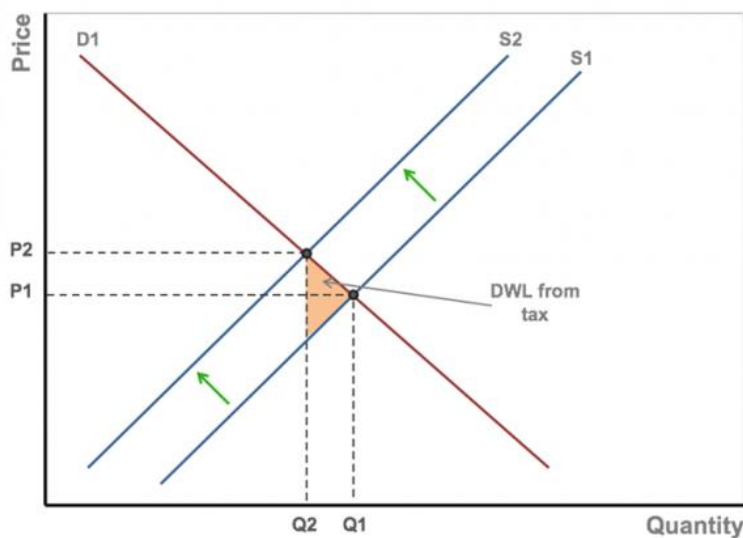
## Externalities Cont.

### Externalities Market failure

Negative externalities cause market failure, which happens when the cost to society is greater than the benefit of the good, as the air pollution example. The health care cost related to living in a polluted environment exceeds the benefit of the good produced while causing the contamination, which creates a deadweight welfare cost in the market.

Let's look at it in a graph. In this graph, P stands for the price, and Q stands for total production. There is a downward sloping demand curve. S1 represents private cost only, and S2 represents the private and social cost.

Q1 is where demand and supply meet, and social value is greater than social demand, which is Q2.



In a free market, external cost of others is ignored, and therefore, Q1 will be used.

This is socially inefficient because the social cost is greater than the social benefit. This is considered a market failure.

Social efficiency or optimum equilibrium is at Q2 where social cost and social benefit meet.

## Externalities Cont.

To correct the market failure, the government intervenes with taxing the producer of negative externalities. By taxing the producer, prices go up, and quantities go down, and the market failure is corrected or internalized.

Negative externalities can also be described as a property rights problem. Since the owner of a property normally is the one paying for its benefit, the question is; Who is the owner of the air that was polluted? Does the property owner have the ownership right over the air or the society living in the surrounding area?

To solve this problem, the government will step in and tax the producer for the social cost, driving down the output and increasing the cost.

### **Positive Externalities**

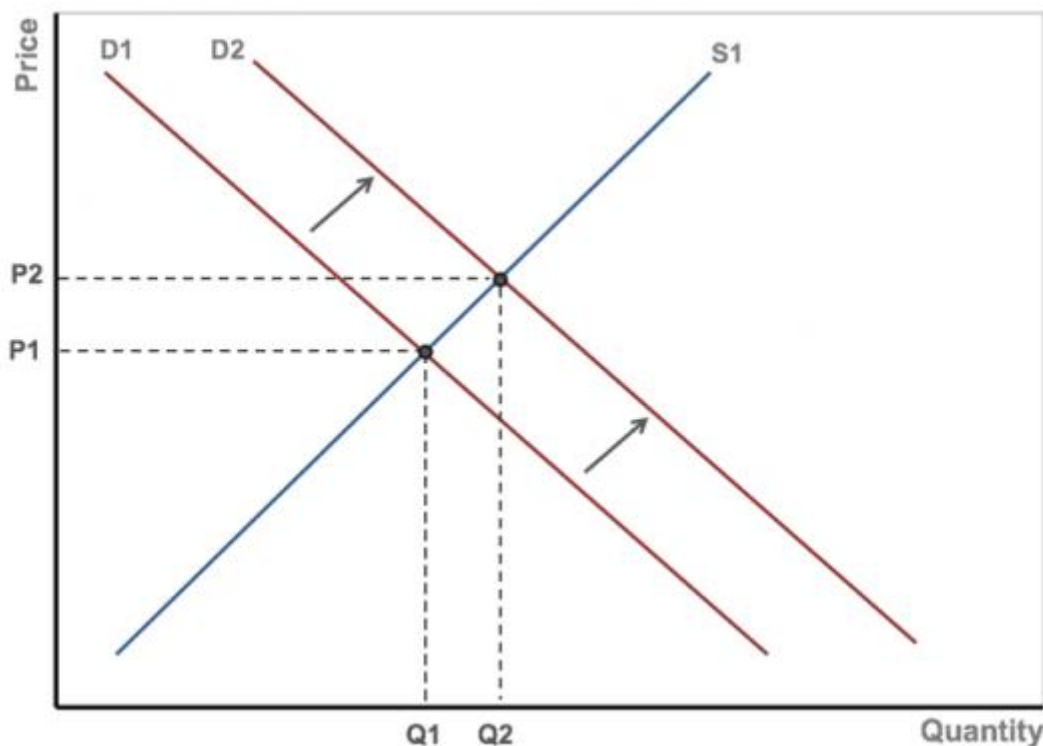
Positive externalities are the opposite situation, where the benefit to society (third-parties) is greater than the core benefit to the producer from an economic transaction. Third-parties include any individual, organization, property owner, or resource that is indirectly affected. It is when third parties benefit from the consequences of a firm or an individual's action.

For example, if a farmer plants an apple tree, bees from a nearby beekeeper would benefit from the nectar without causing any additional cost to the farmer. So if the government wants to encourage the business of beekeeping, they will also subsidize the farmers to plant more apple trees to provide the necessary nectar.

Research and development are another positive examples of externalities, where the research benefits the greater society far beyond the funding company.

## Externalities Cont.

In the positive Externality graph, we face two demand curves, D1 for the private benefit only, and D2 for the public and social benefit.



In this case, the positive externality is produced at Q1 at private benefit only, creating a market failure in the sense that it is below the optimum social benefit. To correct this type of market failure, the government subsidizes the producer to increase production to Q2, where the optimum social equilibrium is.

### Deadweight Lost

The deadweight loss that is created in an externality is also called the welfare cost.

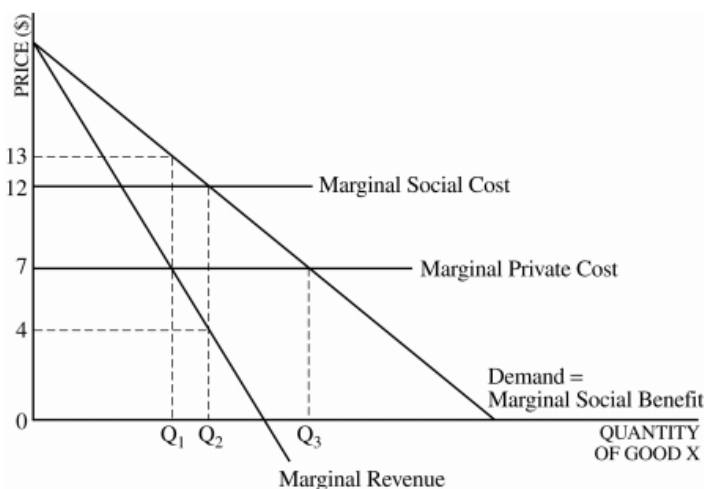
By correcting the market failure either in a positive or negative externality, the amount of deadweight loss is reduced by reaching an optimum social equilibrium.



## Externalities Cont.

### How does this relate to your AP Microeconomic Exam?

The question of externalities will come up in your AP Microeconomic exam, and has been in the multiple choice section in previous years as well as in the [free response question](#). Here is an example of an FRQ in 2004.



1. The production of good X creates an externality. The following questions are based on the graph above, which shows the marginal revenue, marginal social benefit, marginal private cost, and marginal social cost associated with the production of good X.
  - (a) Is the externality positive or negative? Explain.
  - (b) Using labeling from the graph above, identify the socially optimum output. Explain how you determined your answer.
  - (c) Suppose that good X is produced by a profit-maximizing monopoly. Answer each of the following.
    - (i) Using labeling from the graph above, identify the unregulated firm's output. Explain how you determined your answer.
    - (ii) To produce the socially optimum output, indicate whether the government should tax or subsidize the firm.
    - (iii) Calculate the dollar value of the needed per-unit tax or subsidy.

In this example, the externality is negative because the marginal private cost is greater than the social benefit. The social optimum equilibrium is at  $Q_2$  where marginal social benefit and marginal social cost meet and internalizes the market failure.

## Externalities Cont.

To answer question C in the example, in a profit-maximizing monopoly, the output margin would be at  $Q_3$ . This is where marginal private cost meets market demand. The government should tax the firm to reduce the output quantity and increase the cost, to correct the market failure.

The dollar value per unit to be taxed is the difference between  $Q_3$  and  $Q_2$ .

Keep in mind that you may be asked to draw a graph explaining externalities and how they impact the environment, differentiating between negative and positive social benefits. It is a good idea to practice the graph a few times before the exam so you will be confident that you have mastered the skills of externalities. If you feel you need some extra practice, [here](#) is a practice test that will help you to reinforce the concepts you are unsure about.

# The Best AP Microeconomics Review Books of 2017



AP Microeconomics covers all of the economic principles that apply to individuals who function within the economy, like producers and consumers. You'll learn the "economic way of thinking" or cost-benefit analysis, and you'll study the role of the government in the economy. You'll use graphs, charts, and data to understand, analyze, and explain different economic concepts.

If you're interested in understanding the smaller players that affect the economy, then AP Microeconomics is for you! But it's a tough course and you don't want to go into the exam unprepared. Here are some review books that could substantially raise your final score. This is a great course for people who are eager to discuss real-life current events that affect the world around them.

# The Best AP Microeconomics Review Books of 2017 Cont.

## Preparing for the Exam

The AP Microeconomics exam lasts for two hours and 10 minutes—relatively short compared to other AP exams! Don't let the short exam time fool you into thinking it will be easy. It's not an easy exam! You'll need to prepare thorough so you can confidently earn the highest score possible and get some college credit.

The AP Microeconomics exam is divided into two sections. The first section accounts for 66% of your final score. It consists of 60 multiple choice questions and lasts for one hour and 10 minutes. You will be asked questions that rely on economic content knowledge and other questions about hypothetical scenarios. The free-response section is 33% of your final score and last for one hour, plus a ten minute reading period. You'll have to write one long response and two short-answer essays. Your free-response questions might be based on hypothetical scenarios or graph analysis.

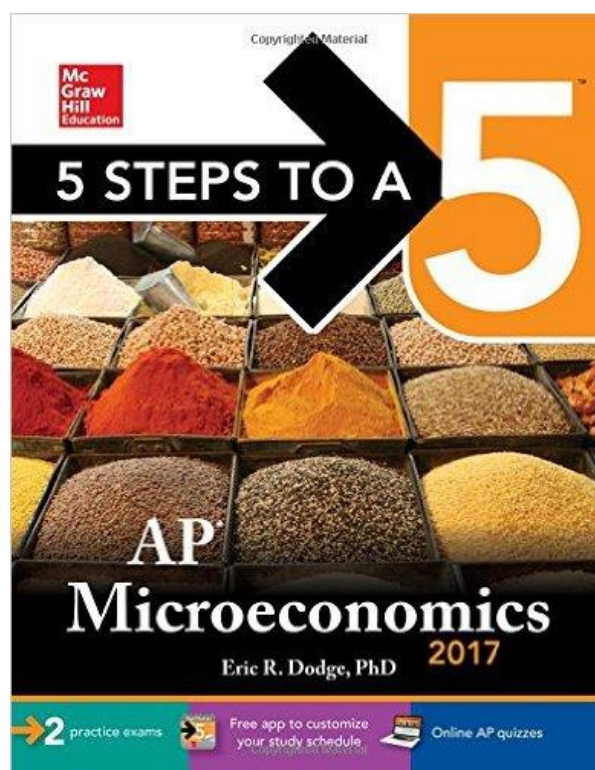
If you want to be really prepared for this exam, you will need quality AP Microeconomics books with solid study tips and course content review. It is also important to have a current edition of a review book because the exams tend to shift and change with time, so a current review book will prepare you for the most current version of the AP exam.

A high-quality review book will do everything it can to make this easy for you. It should include study guides, thorough explanations of the different question types, and plenty of practice questions. A good AP Microeconomics study guide will come with copies of actual tests from previous years. AP Microeconomics is a tough and interesting class. If you're interested and ready to do the work, this course could really pay off in the long run.

Set aside a lot of time, get a timer, and make your practice conditions as close to the real testing conditions as you can. This is the best way to mentally prepare for the big day. Know what kind of a student you are and be honest about how much studying you're willing to do. This will help you make the best choice of study material!

## The Best AP Microeconomics Review Books of 2017 Cont.

### [5 Steps to a 5: AP Microeconomics 2017](#)



*5 Steps to a 5* gives a logical study plan that will help you optimize your chance at earning that perfect 5. There are two full-length practice exams included and, best of all, when you buy this review guide, you get access to their interactive smartphone App. The App has daily reminders, practice multiple-choice questions, and different customizable study plans. The App also allows you to create a highly personalized and strategic study plan that meets your individual needs.

## The Best AP Microeconomics Review Books of 2017 Cont.

The five steps of their study guide are:

- Set up your study program
- Determine your test readiness
- Develop strategies for success
- Develop the knowledge you need to score high
- Build your test-taking confidence

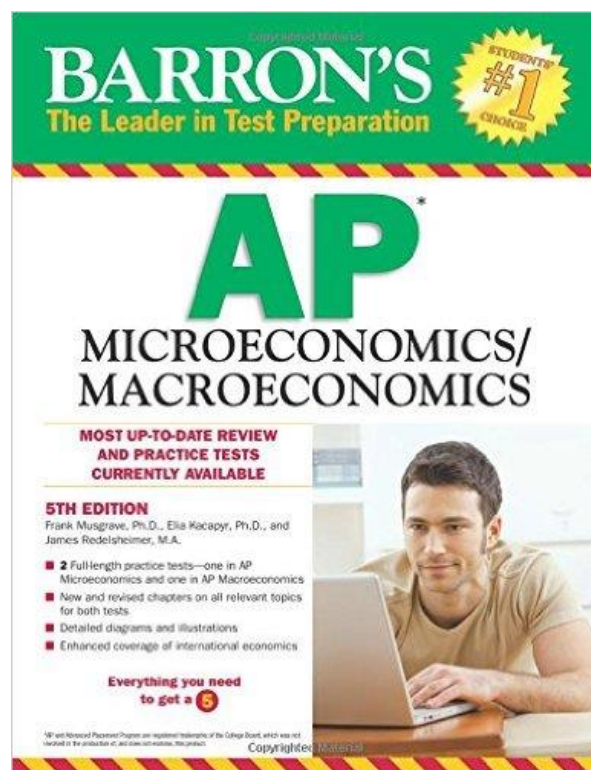
If you're a tech savvy student and you're prepared to make exam prep a part of your daily life early in the year, then this book is the perfect choice for you. The detailed study guides, interactive App, and super intensive content explanations will hone your skills and help you achieve that 5 you deserve. Engaging the App on a daily basis could seriously improve your skills and subsequently your score.

### Things to Consider

Some people expected more out of the App and found the study plans to be unrealistic. If you're hoping more for simple and concise bullet points to jog your memory, then don't go this route. This guide requires some digging and some commitment. Completing all five steps of their suggested plan takes a fair amount of time and discipline, but if you can make it through, it could really pay off.

# The Best AP Microeconomics Review Books of 2017 Cont.

## [Barron's AP Microeconomics/Macroeconomics, 5th Edition](#)



This AP Microeconomics/macroeconomics review book has two full-length practice tests—one in microeconomics and one in macroeconomics. There is a comprehensive introduction to economics in general and a thorough breakdown of supply and demand philosophy. It's true that half the book is dedicated to macroeconomics, but that doesn't mean that the microeconomics section isn't thorough! The course content coverage of this book is extremely good.

## The Best AP Microeconomics Review Books of 2017 Cont.

This book is perfect for students who learn well through reading and absorbing written explanations of complex concepts. If you're looking for content review, this book has you covered. With up-to-date information and a plethora of examples to illustrate each concept, this book will help you internalize all the concepts you need to score well on the AP Microeconomics Exam.

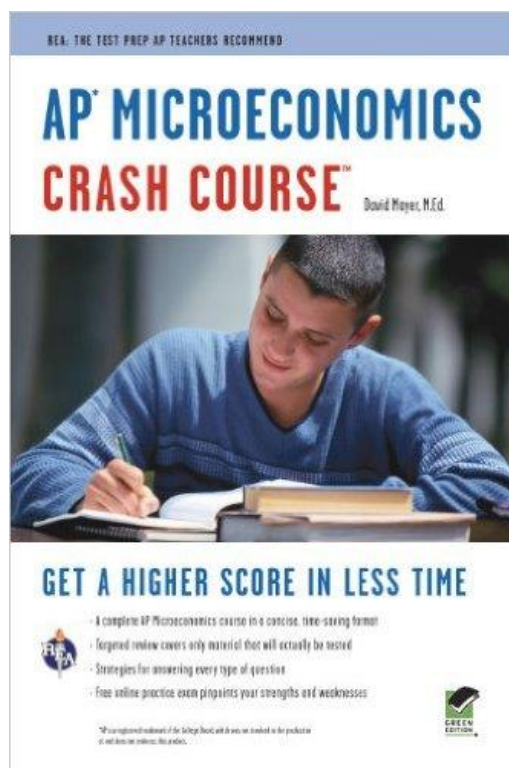
### **Things to Consider**

The biggest negative for this review book is its limited opportunities for practice. With only one full-length AP Microeconomics practice exam, you won't get the practice that you need. Taking more practice tests will increase your understanding of the test and importantly increase your test-taking confidence! If you're looking for more test-taking tips and practice questions then I would suggest looking elsewhere.



# The Best AP Microeconomics Review Books of 2017 Cont.

## [AP® Microeconomics Crash Course Book + Online](#)



This book was specifically designed with the last-minute studier in mind. With targeted and specific review sections this book covers the most tested subjects, and leave out the rest, so you don't waste your time studying topics that you won't be tested on. There are detailed question-level strategies to help you make smart choices and approach each question with the tools you need to answer correctly. There is also one free practice exam available online with automatic scoring and answer explanations.

## The Best AP Microeconomics Review Books of 2017 Cont.

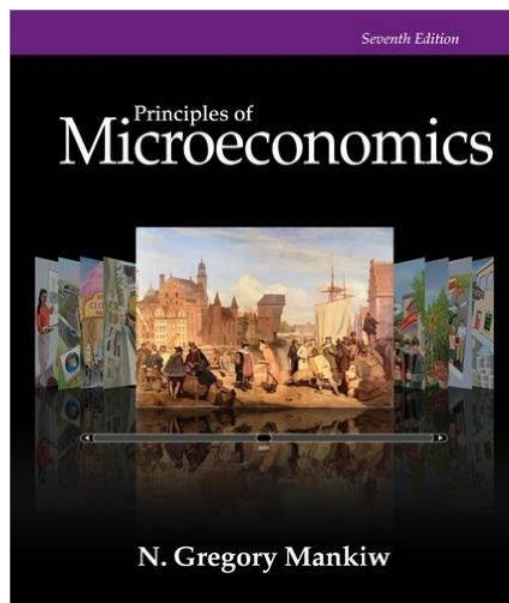
If you're in need of a last-minute study guide, or you're just looking for a refresher of microeconomic basics then this book is perfect for you. Inside, you'll find bullet-point review and easy-to-read explanations of every foundational microeconomic concept. Not every student has the time or energy to take five full-length practice tests—and you might not need to! If you think one practice test is enough for you, then don't waste your time doing more.

### Things to Consider

This book really is only a cursory review of the basics. If you need more in-depth explanations or you were hoping for more complex information then get a different book. The *AP Microeconomics Crash Course* is designed for those who won't put in more than basic exam prep. Its lack of practice exams and practice questions make this book less optimal for some. If you really only have time for a quick review of the topics, then this will meet your needs. But if you're looking for top marks on the AP Microeconomics Exam you're probably going to need a more serious review book.

## The Best AP Microeconomics Review Books of 2017 Cont.

### [Principles of Microeconomics, 7th Edition \(Mankiw's Principles of Economics\)](#)



This book isn't specifically designed as AP exam prep, but it is so good that it made the list. *Principles of Microeconomics* is the most widely used textbook in economics classrooms around the world. The explanations provided are so well written that teachers return to this text over and over again. You won't get bogged down in useless details, and the author, N. Gregory Mankiw, does a fantastic job of making economic concepts memorable and relevant.

## The Best AP Microeconomics Review Books of 2017 Cont.

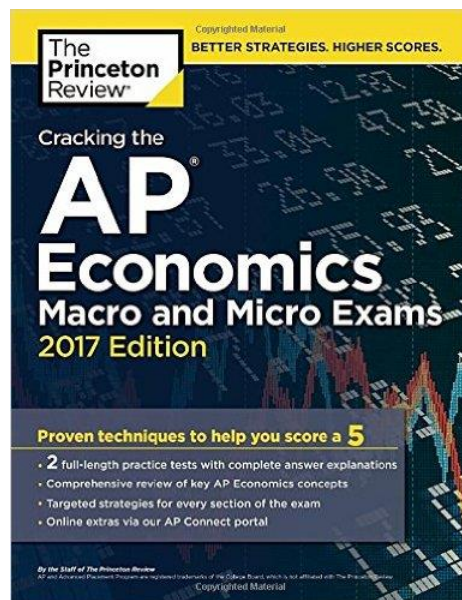
These books do a great job of stripping down the complex subject matter and making it accessible. It might seem odd to study for the AP Microeconomics Exam with a textbook, but honestly the foundation for exam success is to thoroughly understand the course material. If you buy this book early in the course and use it to aid your general classroom learning, you will be leaps and bounds ahead of the other students. Many teachers choose this book as their main classroom text for a reason. It's clear, engaging, and does a magnificent job making economics accessible to everyone.

### **Things to Consider**

The obvious major downside of this book is its lack of exam specific information. If you are looking for tips and tricks for the actual exam, then this book is not for you. There aren't any practice questions or full-length exams that come with this book. This book is solely dedicated to content review, which might be just what you need. If you do buy this book, I would recommend also buying a separate book dedicated just to practice questions and practice tests.

# The Best AP Microeconomics Review Books of 2017 Cont.

## [Cracking the AP Economics Macro & Micro Exams, 2017 Edition: Proven Techniques to Help You Score a 5](#)



The Princeton Review offers the most popular review books on the market. These books have helped many students do well on their AP exams, and the publishers at Princeton Review really know what they're doing. The Princeton Review study book covers both Micro and Macroeconomics, which might help students develop a deeper and more holistic understanding of some complex economic concepts. With this book, you gain access to the AP Connect online portal and two full-length practice tests. Understanding micro and macroeconomics might help contextualize some of the grander topics.

## The Best AP Microeconomics Review Books of 2017 Cont.

With *The Princeton Review*, you'll learn how to “work smarter, not harder”. There are plenty of test-taking tips, but there is also up-to-date coverage of test information. There are activities to help you critically assess your ability so you know how to study. If you want to focus on better test-taking tactics, then go with *The Princeton Review: Cracking the AP Economics Macro and Micro Exam*. If you want to “beat the test,” this test review guide will certainly help.

### Things to Consider

While some people loved the time management tips, others thought there wasn't enough intense content focused information. And furthermore, the test-taking tips only sink in and really affect your ability if you practice — and they only provide two practice tests! If this AP Economics review book had more practice exams, it would almost be perfect. If you are interested more in pure content review and more practice exams, then this book probably isn't the best choice for you.

### Final Verdict

After reviewing all of the various prep books, I think the best choice for most students is *5 Steps to a 5: AP Microeconomics*. This is one of the few review books that doesn't combine Micro and Macroeconomics, so you get a targeted review. If you're willing and able to put in the work and progress through all five steps of the review book, your exam score will soar. The immediate and convenient access to the Smartphone App could make a huge difference in your study routine. Waiting in line for a coffee? Do a few practice questions? Bored in study hall but forgot your book? No problem! If you buy any one of these books and commit to studying, then you're bound to raise your score and increase your odds at earning college credit. AP Microeconomics is a tough course. It will challenge you in many ways but if you commit to preparing for the exam you can positively affect your future in many ways. Any of these books will enrich your understanding of the tested concepts, and taking at least two practice tests is sure to do wonders for your score. If you're still deciding whether or not AP Microeconomics is for you, check out this [article](#) and let us know what you decide!

# The Ultimate List of AP Microeconomics Tips



If concepts like “national income” or “price-level determination” feel overwhelming, dull, or hard to digest, this ultimate list of AP Microeconomics tips is here to rescue you from the drudgery! Knowing what to focus on is often the hardest part of preparing for an AP exam, and AP Micro is no exception. You must have a full and deep understanding of important economic concepts, but you must also know *how* to take the exam and *what* to expect on exam day.

# The Ultimate List of AP Microeconomics Tips Cont.

The AP Microeconomics exam places great emphasis on product markets, economic performance measures, the financial sector, economic growth, and international economics, as well as the analysis of charts, graphs, and data to explain these concepts. All AP exams are supposed to be challenging, AP Micro not excluded, so let's take a look at the 2015 score distributions for the AP Microeconomics exam to get a better picture of the overall difficulty of the exam:

- 17.9% of test-takers earned the best possible score of 5
- 28.7% of students received a score of 4
- 19.9% of test-takers got a score of 3
- 14.4% of students received a score of 2
- 19.1% of students got a score of 1

*(Fun fact: Only 49 AP Micro test-takers nationwide got a perfect score of 90/90 on the exam!)*

As you can see, it is very possible to receive a passing score of 3 and above on the exam; over 66% of test-takers passed! This means that only around 33% did not pass. It's interesting to note that 28.7% earned a score of 4, which is a very high percentage, especially when compared to other AP exams. This means that if you put time and effort into studying and preparing for the exam, and use some of the strategies outlined below, you should be all set to get your best possible score on the AP Micro exam!



# The Ultimate List of AP Microeconomics Tips Cont.

## AP Microeconomics General Exam Tips

**1. Know the format of the AP Microeconomics exam.** You will have 2 hours and 10 minutes to answer 60 multiple-choice questions and 3 free-response questions. The 70-minute multiple-choice section is worth 66% of your total exam score, while the 60-minute free-response section is worth 33% of your total exam score.

**2. Be aware of the common mistakes.** Over the history of the AP Microeconomics exam, there have been some commonly missed questions, common misunderstandings, and overall common test-taker mistakes. Learn from the errors or lack of knowledge of others and be sure to focus on the following concepts:

- Difference between a change in demand versus a change in quantity demanded
- Understanding diminishing returns
- Finding the profit maximizing quantity (price)
- Finding the perfectly competitive firm's supply curve
- How an increase or decrease in demand changes long-run equilibrium for firms and industries
- Price and marginal revenue for a monopoly
- Knowing how to correctly shade the area of economic profit and economic losses
- Monopoly vs. competition
- Understanding how to graph a natural monopoly and the socially-optimal output and fair-return output levels
- Single price monopoly vs. price discrimination
- Wage determination
- Tax incidence and efficiency loss

# The Ultimate List of AP Microeconomics Tips Cont.

**3. Make your own Microeconomics flashcards!** Using flashcards to remember key concepts is a common and very effective study technique, especially for the AP Micro exam. The best way to use flashcards is to make your own. The simple act of hand-writing out terms and definitions in your own words is key to making the information stick. To find a list of the microeconomics terms and concepts you should know, check out [Alternatively](#), you can find virtual flashcards that function like real flashcards at [The Economics Classroom](#). There are over 115 virtual flashcards covering key microeconomics concepts, which you can shuffle through, click to view definitions, and follow links to learn how certain concepts connect. Try to go over your hand-written flashcards, or the virtual flashcards, for at least 15 minutes each day. Incorporating economics into each day leading up to the exam (starting as soon as possible!) is essential to learning and remembering key terms, without having to cram at the last minute.

**4. Watch Microeconomics review videos.** AP Microeconomics students and teachers cannot recommend Mr. Clifford's [ACDC Leadership AP Microeconomics](#) videos enough! Mr. Clifford is a real-life AP teacher who injects humor and fun into his videos. He has 6 units of microeconomics videos covering basic concepts; supply, demand, and consumer choice; costs of production and perfect competition; imperfect competition; resource market; and market failures. If you're ever feeling pulled into the dark abyss of textbooks and readings, take a break by watching these videos. Take notes to make sure you're *actively* watching the videos, not just mindlessly trying to avoid homework. Videos are great for reinforcing concepts you've already learned, understanding ideas you struggled with before, or showing you a new way to look at a concept. When you've watched all of Mr. Clifford's videos, try [Khan Academy's Microeconomics](#) videos, which has dozens of videos on key microeconomics concepts.

# The Ultimate List of AP Microeconomics Tips Cont.

**5. Review all of the important graphs.** A large part of the AP Micro exam involves interpreting economic graphs and diagrams. You will need to know several key graphs for both the multiple-choice section and the free-response section, which means you have to know how to analyze graphs, but also how to correctly draw, label, and manipulate them. Make sure you know the following graphs:

- Production Possibilities Curve
- Market Equilibrium
- Price Floor and Price Ceiling
- Tax with Perfectly Elastic/Inelastic Demand
- Demand Curve on Top of Total Revenue Curve
- Positive & Negative Externalities
- Typical Cost Curves
- Perfectly Competitive Market with Firm in Long-Run Equilibrium (side-by-side)
- Perfectly Competitive with Short-Run Profit (side-by-side)
- Perfectly Competitive with Short-Run Loss (side-by-side)
- Monopoly with Profit
- Monopoly Competition in Long-Run Equilibrium
- Labor Market and Typical Firm (side-by-side)
- Monopsony

Check out the [Essential Graphs for AP Microeconomics](#) to see great descriptions and explanations of the above graphs.

**6. Buy an AP Microeconomics review book!** It's important to start preparing with review books at the very start of your AP course. These books are usually written by AP teachers and professionals with years of experience. They know which concepts to cover and focus on. Most of them include diagnostic tests, practice questions, practice exams, study strategies, and succinct explanations of the key terms you need to know, organized by topic. Use review books to supplement your textbook readings. Check out [5 Steps to a 5](#), [Barron's](#), [Princeton Review](#), or [REA's Crash Course](#). Don't underestimate the importance of review books!

# The Ultimate List of AP Microeconomics Tips Cont.

**7. Follow Microeconomics blogs and social media accounts.** How much time do you spend using social media each day? Odds are, quite a lot! Use this to your advantage. Follow microeconomics-themed social media accounts. That way, when you're scrolling through Facebook or Twitter, you'll come across microeconomics material. It's essential that you try and incorporate economics into your daily life, so what better way to do this than through social media? Whatever platform you prefer, you can find economic study material: search [AP Microeconomics](#) on Pinterest, "like" [Economy Watch](#) on Facebook, go through the #microeconomics tag on Twitter, and follow blogs like [The Young Economist](#) or [Econ Point of View](#).

**8. Use comprehensive online study guides.** Thank goodness for the Internet! Over the years, AP Micro teachers and students have created and posted online comprehensive study guides, covering everything you need to know. Print one or two of these study guides out and highlight, underline, and annotate them to make them your own. Keep them in your binder for easy access. Try Jason Welker's [AP Microeconomics: Exam Study Guide](#). If you're struggling with a particular unit, search for study guides covering just one particular topic/unit. You can find study sheets and power point presentations for almost anything. Take advantage of your online resources!

**9. Review all of the essential AP Microeconomics formulas.** To answer certain multiple-choice and free-response questions, you will need to know specific formulas, ranging from marginal cost, to supply elasticity, and from average variable cost, to marginal revenue product. You will need to not only memorize these formulas, but also know how to apply them to complex word problems. Check out this [Formula Chart](#) for AP Microeconomics to explore the formulas you'll need to know for the exam.

# The Ultimate List of AP Microeconomics Tips Cont.

**10. Answer the AP Microeconomics question of the day.** If you sign up to [com](#) (it's free!) you can have an [AP Micro question of the day](#) sent to your email. Each daily question is formatted based on the AP test, and comes with explanations along with the ability to track your progress over time. If you want more than just one question per day, checkout [Albert.io](#)! There are dozens and dozens of microeconomics questions based on the AP Micro exam, complete with video explanations, answer percentages, and questions ranging from easy to difficult. It is crucial that you practice answering AP Micro questions on a *daily* basis – even if it's just one each day!

**[Start your AP Microeconomics Prep today](#)**

# The Ultimate List of AP Microeconomics Tips Cont.

## AP Microeconomics Multiple-Choice Tips

### 1. Familiarize yourself with the format of the AP Micro multiple-choice section.

There are 60 total multiple-choice questions on the exam that you will have to answer in a 70-minute time period. Keep in mind that the multiple-choice section counts for 66% of your total overall exam score, so it is an essential part of the exam. You will be tested on your knowledge of economic concepts and graphs, your economic critical thinking skills, and your analysis abilities.

**2. Know the concepts covered on the exam.** On the College Board website, you will find a useful topic outline designed for the course, called the [AP Microeconomics Course Description](#). There, you will find example multiple-choice problems and a detailed bulleted list of the key concepts you need to know. The table below is a general outline of the more detailed table you can find on the website. Keep in mind the [percentages of each concept area](#):

**3. Budget your time effectively.** The multiple-choice section is a very important part of the test, so it's imperative that you answer each and every question. Because of this, you need to make sure you budget your time wisely. You don't want to be left with only a few minutes to answer 10 questions. Since you have to answer 60 multiple-choice questions in 70 minutes, you have just over a minute to spend on each question. On the AP Micro exam, it's safe to say that there will be around 10-20 "easier" questions. Make sure you can identify them and answer them quickly so that you have more time to answer the "harder" questions.

**4. Pretend the question is a fill-in-the-blank.** Cover up the answer choices as you're reading the question. Before you look at the potential answers, come up with an answer as if the question were a fill-in-the-blank. This prevents bias when you see an answer choice that you absolutely know must be the right answer, even though you haven't finished reading the entire question.

# The Ultimate List of AP Microeconomics Tips Cont.

**5. Keep in mind standard multiple-choice strategies.** You're probably aware of the more general multiple-choice test-taking strategies, such as educated guessing and the process of elimination, but it's still useful to review them. Keep the following standard tips in mind when taking the multiple-choice section of the AP Microeconomics exam:

- Answer EVERY single question. No points will be deducted for wrong answers like in previous years. Therefore, you have absolutely nothing to lose and everything to gain by answering ALL of the questions.
- Beware of "EXCEPT" and "NOT" questions. These are usually designed to trip you up, especially since the multiple-choice section is fast-paced and many students tend to skim.
- Underline, circle, cross out, or draw graphs in the test booklet if it helps.
- If you're stuck on a particular question, try reading other multiple-choice questions and answers. Seeing a certain economics vocab word could potentially trigger something in your memory and help you answer the question.
- Since you're under time constraints, pick your favorite letter out of a, b, c, d, or e. If you have absolutely no idea what the answer is to a question, or if you're running out of time quick, always pick that letter as your answer.

**[Start your AP Microeconomics Prep today](#)**

# The Ultimate List of AP Microeconomics Tips Cont.

## AP Macroeconomics Free Response Portion Tips

**1. Know the format of the free-response section.** On the AP Micro FRQ section, you will have to answer three questions in a total of 60 minutes. The first 10-minutes of this time period is a mandatory reading/planning period. These questions will ask you to analyze scenarios using different course concepts, and could require you to include graphical analysis. You will have to answer one long essay that makes up 50% of your free-response score, and two shorter essays, which each count for 25% of your FRQ score. Keep in mind that the free-response section counts for 33% of your entire AP Microeconomics exam score.

**2. Use the 10-minute reading period to plan your answer.** The 10-minute reading period at the start of the FRQ section is *mandatory*. You should not begin writing your essay answers during this time, but you should still use this time wisely. Read and re-read the questions, think about possible solutions, and jot down a few notes. It's not necessary to plan out every detail of your answer, but have a general idea of what you want to discuss before the 50-minute writing period begins. It's important that you read all three questions during the planning period.

**3. Budget your time.** The long FRQ essay is worth 50% of your free-response section score, so you should spend 50% (25 minutes) of your time answering it. Divide your remaining time equally between the two shorter questions, so spend roughly 12 minutes answering these.

**4. Emphasize *how* you came to your answer.** You can't just list the results of your analysis or make simple assertions. Don't say things like "the price increased" and leave it there. You must *explain* why the price increased and how you arrived at your answer.



# The Ultimate List of AP Microeconomics Tips Cont.

**5. Don't forget to label your graphs!** Labeling is *very* important on the AP Microeconomics exam. Even if your graph or diagram is correct, you will lose points for not clearly, fully, and correctly labeling it. Label all axes, curves, and directional changes with black or dark blue ink. Keep in mind that even if you label everything, you could still lose points if the labels you've chosen are not clear to the AP grader.

**6. Use the correct economic terminology.** Your job on the AP Micro exam is to convince the graders that you know your stuff. In order to do this, you must use the correct economic terminology to explain your answers. For example, do not refer to the market demand curve for a product as the aggregate demand curve, since this is a *macroeconomic* concept that relates aggregate expenditures at different price levels. Keep these other terminology tips in mind:

- Write “increased” instead of “went up”
- Write “decreased” instead of “went down”
- Write that curves “shift” left or right, instead of “move” up or down
- Use “money” correctly:
  - “Money” should only be used when discussing Money Creation and Money Supply.
  - Do not write “money” when you mean “income.”
  - Do not write “money” when you mean “currency.”

Incorrect Lingo	Correct Lingo
“People bought more things with their money.”	“Consumer spending increased.”
“People made more money.”	“Households earned increased income.”
“The federal reserve made more money.”	“The Federal Reserve increased the money supply.”
“The government spent more money to help the economy.”	“The federal government pursued expansionary fiscal policy by increasing government spending in response to a recession.”

# The Ultimate List of AP Microeconomics Tips Cont.

**7. Do not restate the question.** You should get straight to the point with your answers as soon as possible. Don't try to add unnecessary fluff by restating the question. Remember that AP graders look at the content of your answers, not the length. In fact, most of the best answers are very short and succinct.

**8. Keep your answers organized by using outlines and letters.** Organizing your answers is essential to making sure you receive full credit. To keep things in order and to stop you from accidentally leaving out something, label your answers using the same outline or letters as the question prompt. Most of the AP Micro FRQs will be multi-step and multi-part. If the question prompt uses (a), (b), and (c), you should use (a), (b), and (c) in your response. Similarly, the question prompt may use (i), (ii), and (iii). For example, on the [2015 AP Microeconomics exam](#), this question was included:

For questions like this, you would need to provide answers for each part. Even if you don't know how to answer part (i), you should still attempt part (ii). Partial credit is better than no credit!

**9. Graphs are your best friend.** You should become very familiar with graphs since you will be required to draw and interpret them on the exam. If the question asks you to *draw* a graph, you should *draw* a graph, not just offer an explanation. Even if the question does *not* mention graphs, you may want to draw one anyway. In some cases, if you use the wrong economic lingo in your explanation but clearly show that you understand what is happening with your supplementary graph, you could still receive full or partial credit. That being said, you should not rely on graphs too heavily; they are not a magical solution to getting a high score.

# The Ultimate List of AP Microeconomics Tips Cont.

**10. Practice, practice, practice.** Practice makes perfect. For the AP Micro exam, this is especially true. You cannot just read textbooks and study and expect to get a good score on the exam. Even if you have all of the knowledge in the world on microeconomics, the exam could throw you for a loop. That's because you have to understand the format of the exam, how the AP readers will grade your responses, and *how* to take the exam in order to maximize your score. The only way to fully understand this is to take practice exams. The [CollegeBoard website](#) offers past AP Micro free-response essay questions, complete with sample student responses, grading rubrics, and score distributions from 2003 to 2015. Read the sample questions and student answers. Discover for yourself why certain responses got a high score and why some got low scores. Compare your responses with other students. How could you have improved? Did you oversimplify or over-complicate your answer? Check out [Albert.io](#) for more practice FRQs with sample answers.

# The Ultimate List of AP Microeconomics Tips Cont.

## Tips From AP Microeconomics Teachers

- 1. Read *The Economics Anti-Textbook: A Critical Thinker's Guide to Microeconomics*.** You can find a free copy of this book [here](#). Thanks to Mr. K. from Eastview High School for the tip!
- 2. Remember: JTFJ.** Just The Facts, Jack. Your AP Micro FRQ response should *not* be full or literary prose or historical narratives. Be economical with your words and only include the facts. Thanks to Mr. T. from Spartanburg High School for the tip!
- 3. Apply concepts from your textbook to the national news and personal decisions.** Try keeping a journal of current events and how they relate to the AP Micro concepts you're learning. Thanks to Mr. R. from Austin E. Lathrop High School for the tip!
- 4. The first FRQ question will require you to make connections between concepts and units.** The two shorter questions will just cover one particular topic. Thanks to Ms. T. from Grapevine High School for the tip!
- 5. Assert your answers!** Even if you aren't sure your free-response analysis is correct, make sure you give a definite and confident answer. You could receive partial credit for asserting a correct conclusion, even if your analysis is wrong.
- 6. Make sure you know how to draw these graphs:** production possibilities curve, supply and demand, perfect competition, monopoly and factor markets. Thanks to Mr. N. from Klein Oak High School for the tips!
- 7. Use abbreviations.** Save valuable time on the FRQ section by using the commonly accepted abbreviations for economic terms and graphical curves. For example, you can use "MRP" instead of having to write out "Marginal Revenue Product." Thanks to Mr. P. from Elkins High School for the tip!

# The Ultimate List of AP Microeconomics Tips Cont.

**8. Watch [Welker's Wikinomics videos](#).** This is a very thorough video series. The website also includes very helpful microeconomics flashcards. [MJM Foodie](#) on YouTube is also a useful source of microeconomics videos. Thanks to Mr. M. from Gwendolyn Brooks College Preparatory Academy for the tip!

**9. Read high-quality news sources as part of your weekly readings.** In addition to your textbook, you should read *The New York Times*, *The Washington Post*, or *The Wall Street Journal*. It's important to apply economic analysis to current events for the AP Microeconomics exam. Thanks to Ms. P. from Walter Payton College Prep for the tip!

Are you a teacher? Do you have an awesome tip? [Let us know!](#)

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# The Ultimate List of AP Microeconomics Tips Cont.

## Tips From Past AP Microeconomics Students

- 1. Use a combination of review books and online resources.** I first read the *AP Microeconomics 5 steps to a 5* review book and then moved on to the *Princeton Review*, which is more condensed but harder. In April, I started taking practice tests and reviewed with microeconomics courses in [Coursera](#). I got a 5 on the AP Microeconomics exam.
- 2. Watch [Khan Academy videos](#).** These videos do a great job of explaining the fundamentals. They don't necessarily follow the AP curriculum or go into too much depth, but they are a great way to learn or review the basics.
- 3. Know the lowest-cost equation ( $MU_x/P_x = MU_y/P_y$ ).** This equations shows up a lot on the practice tests I've taken, so it's fair to say there's a good chance of it showing up on the exam.
- 4. Triple check game theory charts when determining dominant strategies.** It can be easy to misread them, and therefore give a wrong answer.
- 5. Review with [AdvancedEcon videos](#).** All of his videos are based on the test and offer a streamlined review of important concepts.
- 6. Think economically.** Just memorizing graphs and diagrams is not enough to get a good score on the exam. You have to know how to observe and hypothesize economically. Remember that economics is about problem solving, not memorizing.
- 7. Know the graphs and curves.** I had to invest a lot of time in not just memorizing, but understanding, all of the graphs and curves unique to Microeconomics (for example, why inelastic supply curves usually means higher "demand" for a product.) I think having a really good understanding of the graphs and curves is the key to getting a 5 on the exam.

**Are you a student? Do you have an awesome tip? [Let us know!](#)**



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