

Supply and Demand Analysis - An Introduction

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Who am I?

- Nicholas Papageorge.
- Broadus Mitchell Associate Professor of Economics.
- Undergrad at U. of Chicago; Ph.D. at Wash. U. in St. Louis.
- I was also Teach for America corps member.

What do I do?

- My research addresses questions in health, labor, pharmaceutical innovation, beliefs & risky behavior.
- Lately, I've been looking at: domestic violence, personality traits, self-employment, clinical trials participation, misbehavior in school, teacher expectations, teacher race, and genetic sources of inequality.
- My main tool is STRUCTURAL MICROECONOMETRICS.

- Congratulations on choosing Economics!
- Many of you will go off to be bankers or consultants.
- Awesome!
- Others will go on to be doctors, lawyers, teachers or scientists.
- Some of you may go into academia and earn a Ph.D.
- A few of you may want to become econ. profs.
- (If so, we should talk.)
- No matter what you choose, econ is a great thing to study.

Why Econ is awesome.

- The reason Econ is so popular is that it's powerful.
- Over the years, Econ has developed some very effective tools to help us to think about all sorts of human behavior.
- Some of these issues seem directly related to “The Economy”.
- E.g: employment, interest rates, trade, growth, banking, credit ratings, taxation, monetary policy & so on.
- Economics is also used to analyze many other issues.
- E.g: risky sex, drug use, personality traits, beliefs, prostitution, violence & advertising.
- The list goes on; in one of my courses, we discuss a paper that relates Brazilian soap operas to fertility.

Lack of Diversity in Economics.

- This class is somewhat more balanced; upper classes less so.
- There are so many reasons why; we're still figuring it out.
- If you decide you hate Econ, best wishes and good luck!
- If you don't hate it, but see a barrier, we should talk.
- Some barriers:
 - Lack of representation.
 - The view that you cannot study what you want to in Econ.
 - A hostile environment.
 - ...

Diversity in Econ is **so** important. Why?

- Diversity is a sign of a healthy institution.
- Diversity brings in new ideas, which compete with old ones.
- Diversity brings in new topics, which require context.

Moreover,

- Economics has a massive influence on policy.
- We live in a diverse world.
- We need representation: diverse people examining diverse topics from diverse sets of perspective with a seat at the policy-making table.

X marks the spot...

- Today, I'll introduce SUPPLY AND DEMAND ANALYSIS.
- It is a tool in economics that is deceptively simple.
- This tool can shed light on a lot of interesting market dynamics.

Outline:

- Demand curves.
- Supply curves.
- Equilibrium prices and quantities.
- An example.

Demand Curves

└ Supply and Demand Analysis

└ Demand Curves

- Demand curves relate prices to quantity consumed.
- They capture how consumer demand responds to prices.

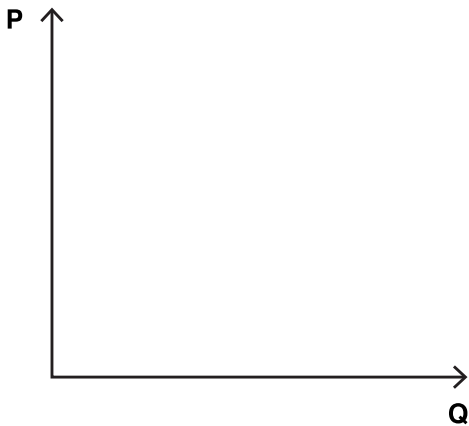
Key concepts.

- 1 Generally, lower prices lead to higher demand for goods.
- 2 New products or technologies can change the relationship.
- 3 Sometimes, higher prices lead to big shifts in demand.
- 4 Other times, higher prices lead to smaller demand shifts.

Let's take a look...

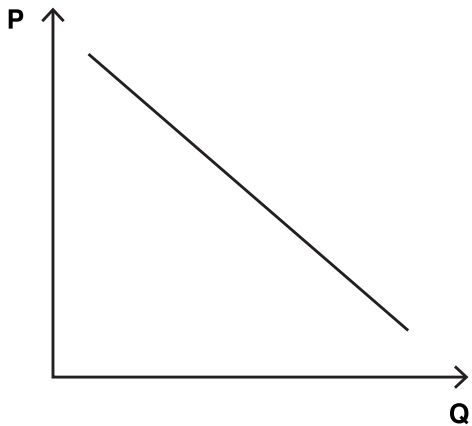
└ Supply and Demand Analysis

└ Demand Curves



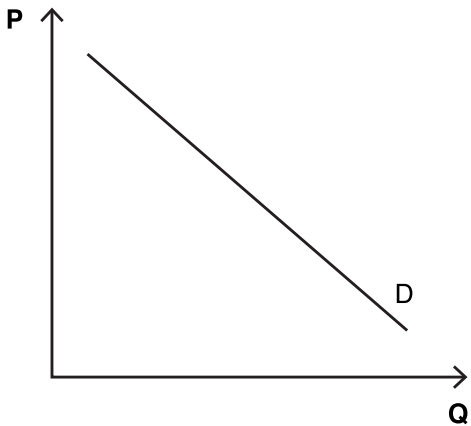
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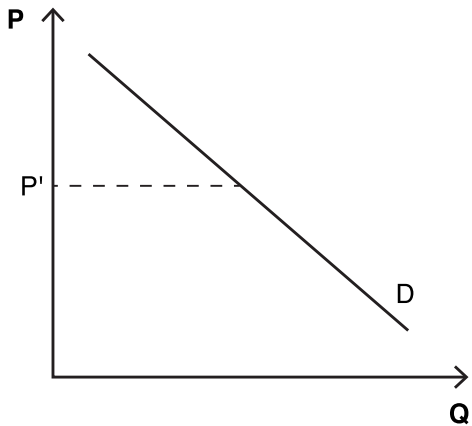
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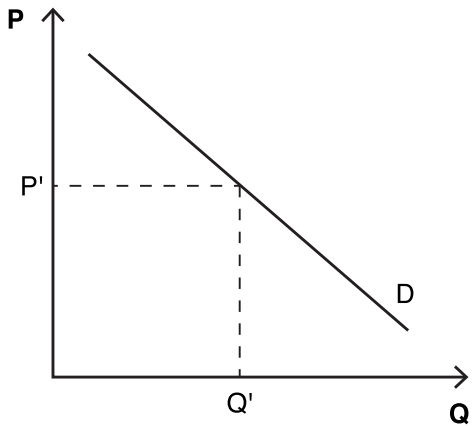
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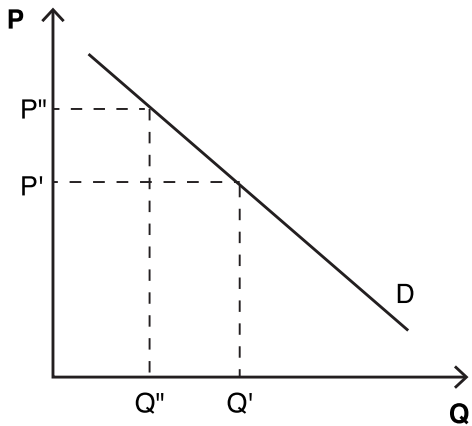
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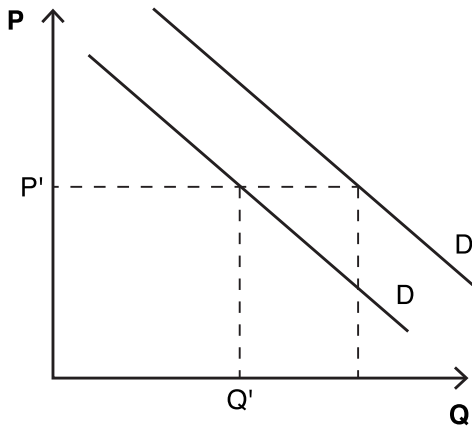
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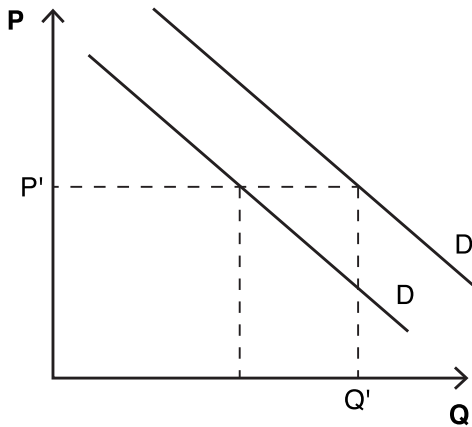
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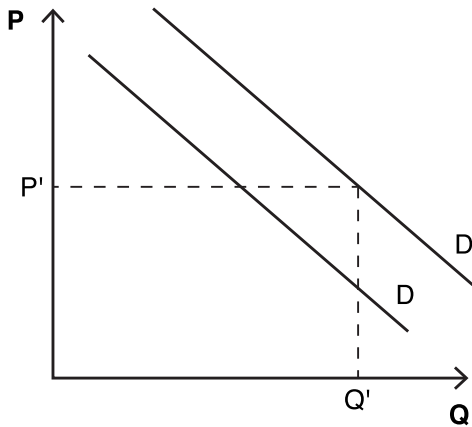
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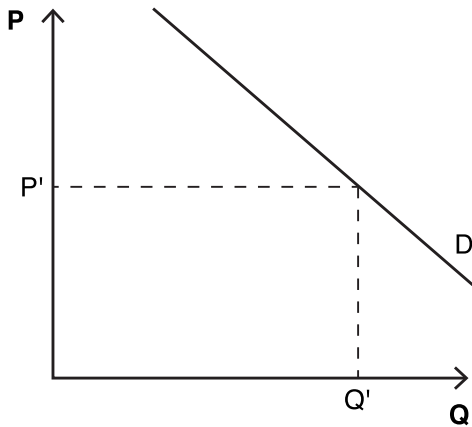
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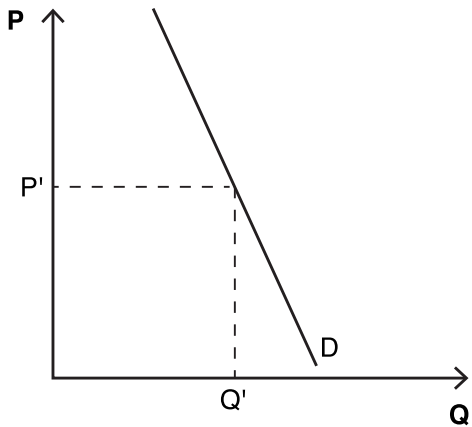
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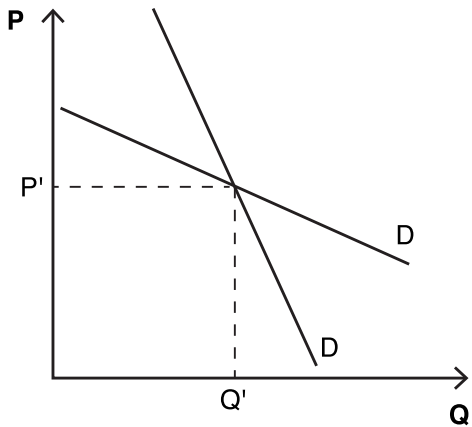
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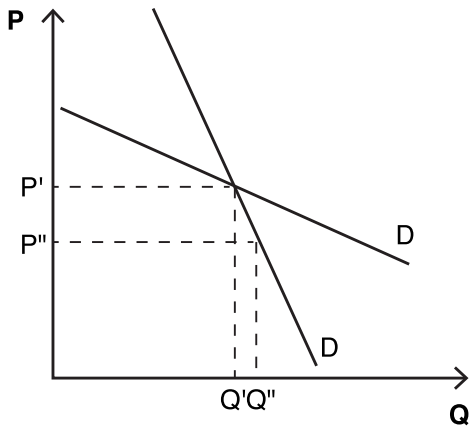
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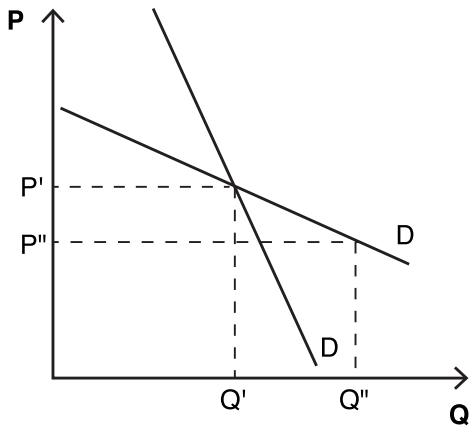
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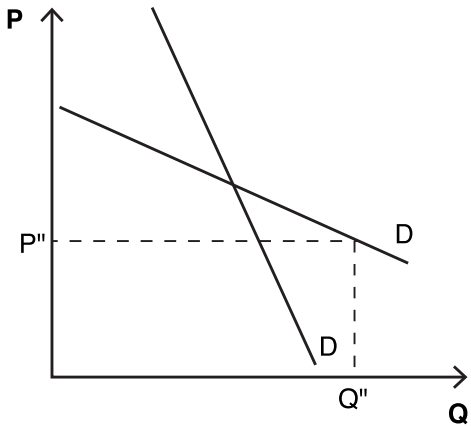
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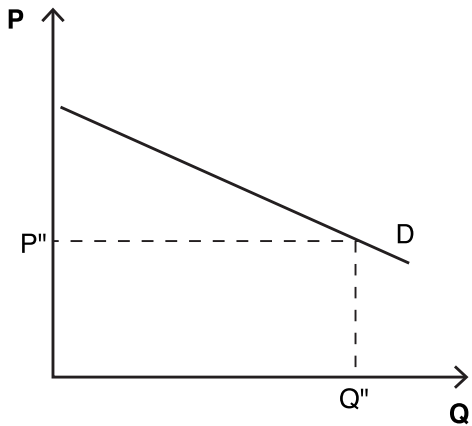
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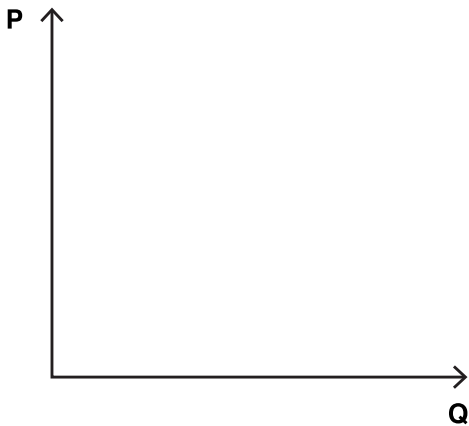
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Supply Curves

└ Supply and Demand Analysis

└ Supply Curves

- Supply curves relate prices to quantity supplied by firms.
- They capture how firms respond to prices.

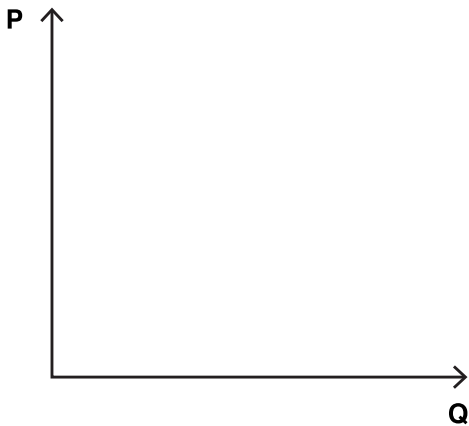
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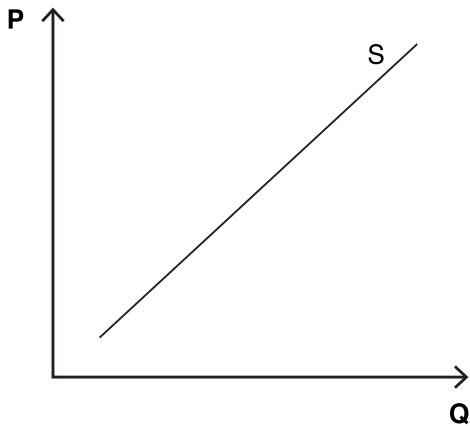
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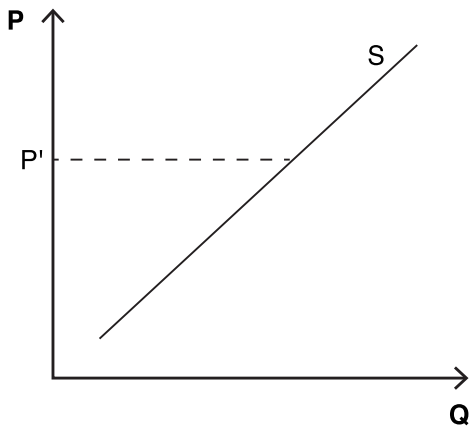
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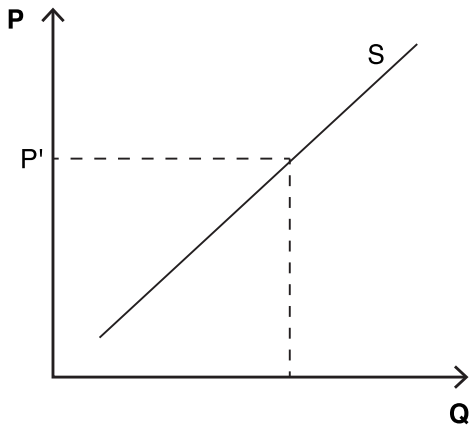
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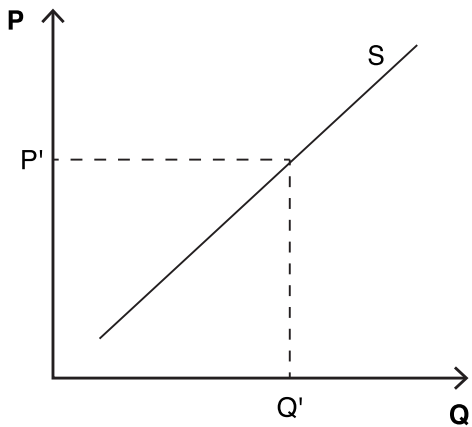
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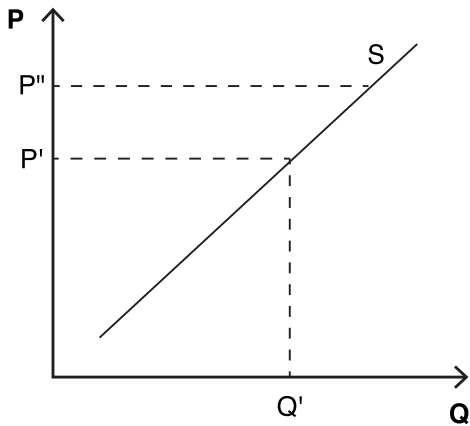
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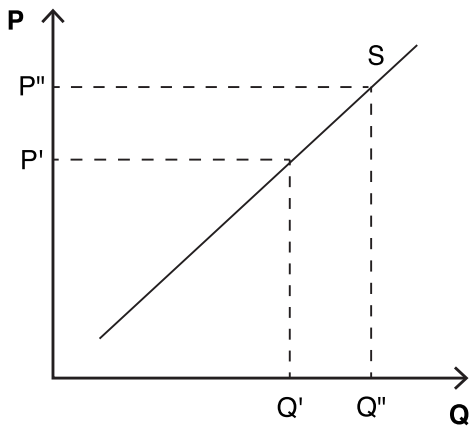
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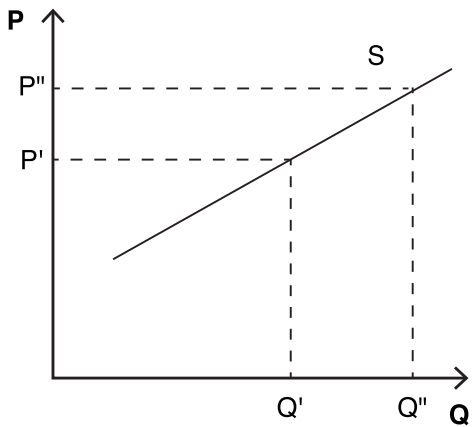
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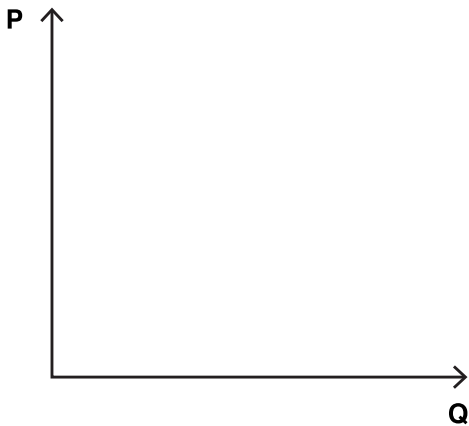
└ Supply and Demand Analysis

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Equilibrium

└ Supply and Demand Analysis

└ Equilibrium

- Equilibrium is where demand equals supply.
- Here, we say: **MARKETS CLEAR.**
- What happens when markets don't clear?

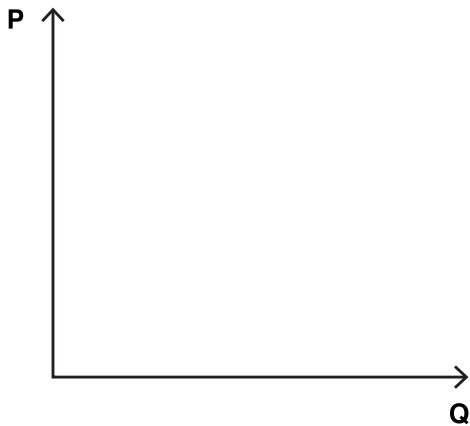
Key concepts.

- 1 At some prices, supply \neq demand.
- 2 Shifts in supply and demand have different effects.
- 3 These effects depend on the slope of the curves.

Let's take a look...

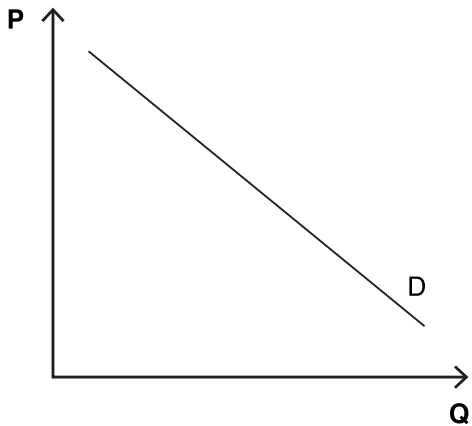
└ Supply and Demand Analysis

└ Equilibrium



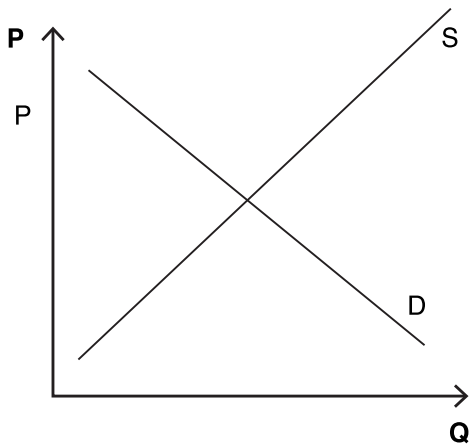
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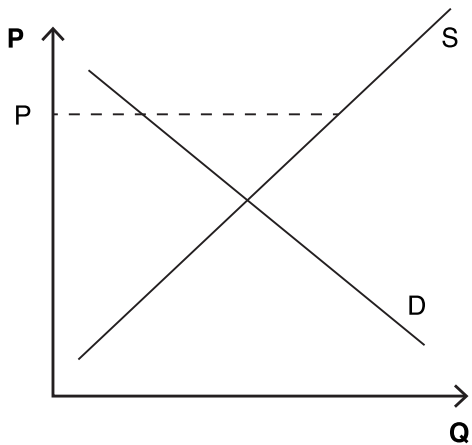
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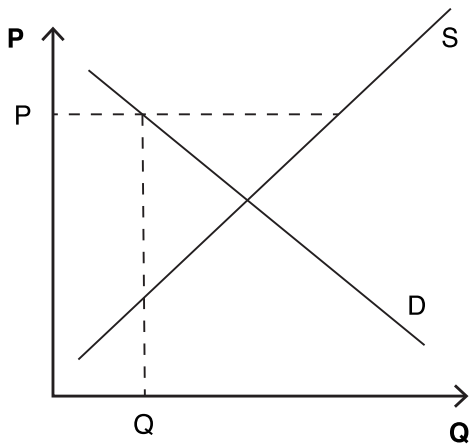
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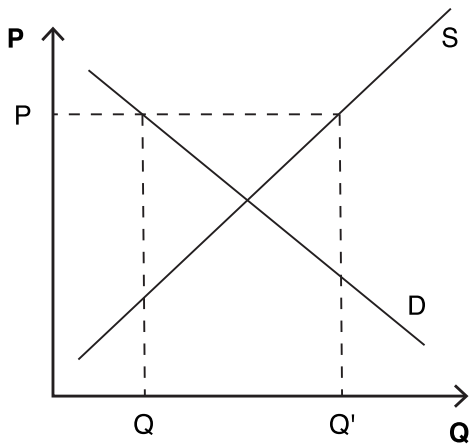
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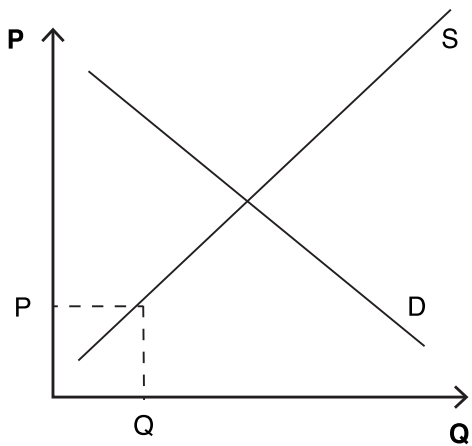
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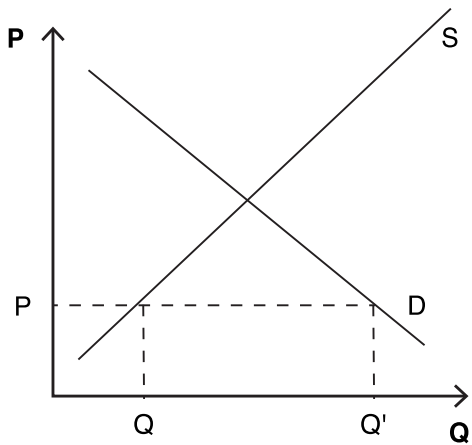
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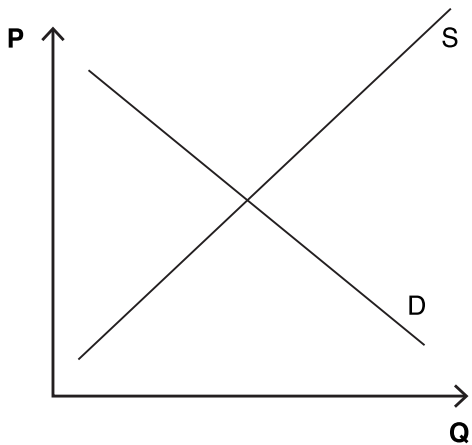
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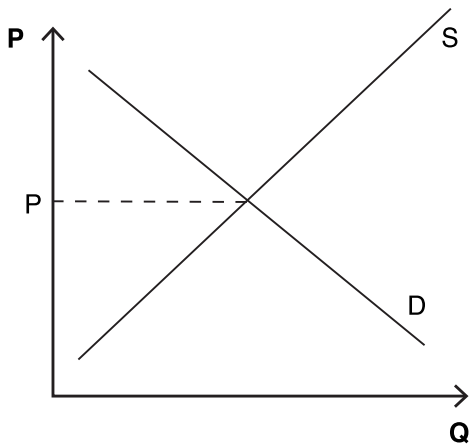
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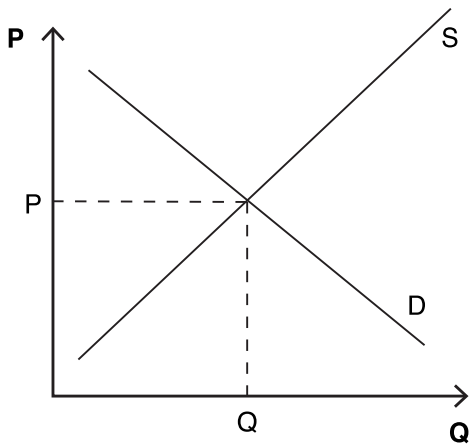
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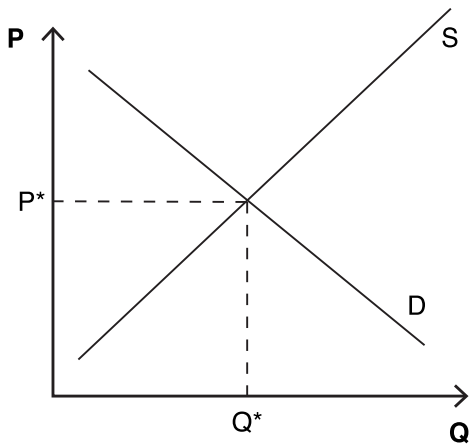
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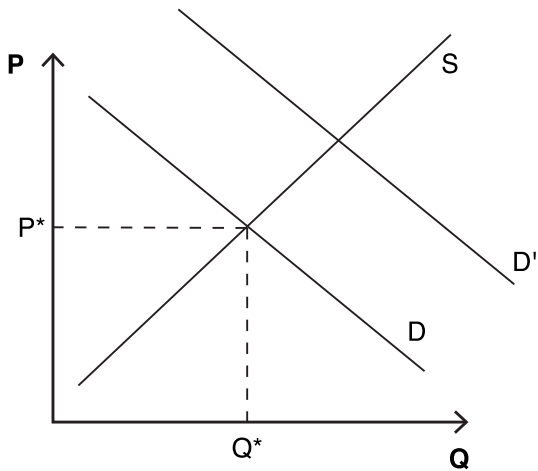
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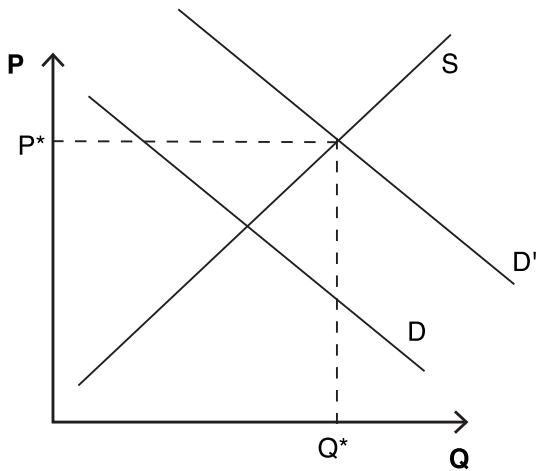
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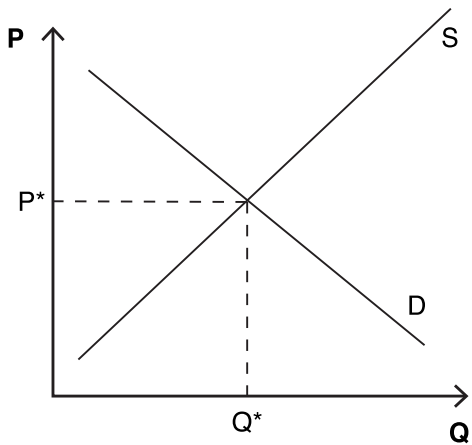
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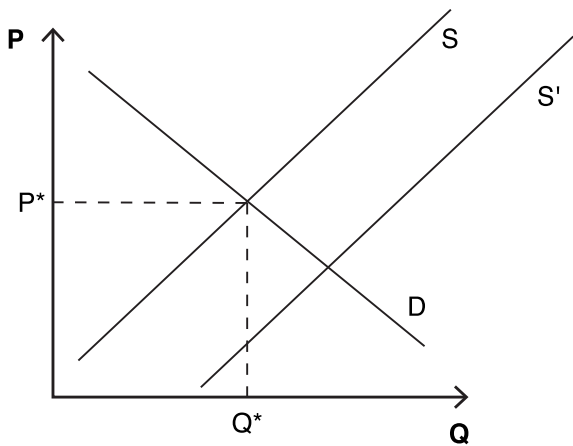
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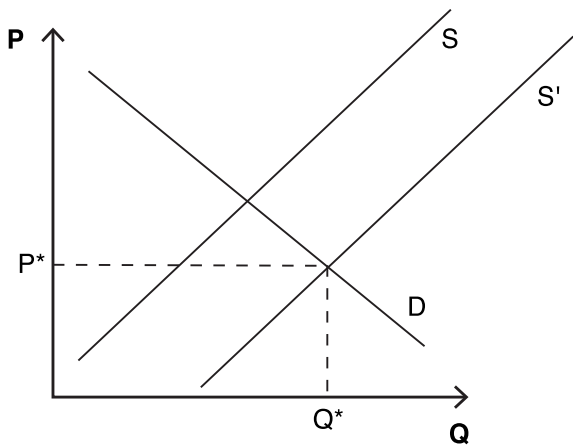
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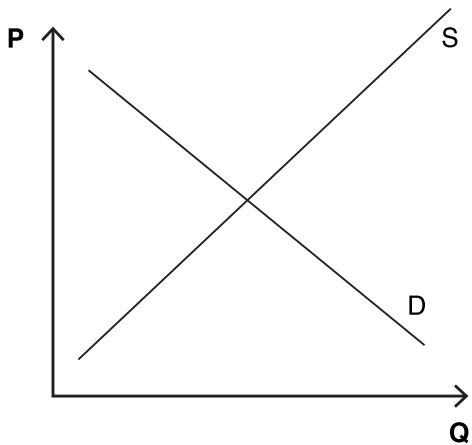
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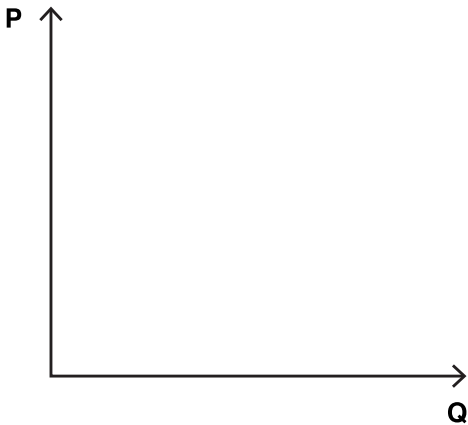
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→ Let's use supply and demand analysis in an example.

The U.S. Market for Cocaine



└ Supply and Demand Analysis

└ An Exercise: The U.S. Market for Cocaine

→ In the past decade or so, the price of cocaine has dropped.

→ Why?

What to think about.

→ Is the demand curve steep or flat?

→ In Economics,

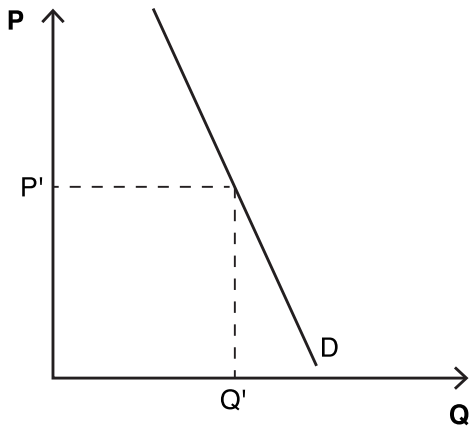
1 A flatter curve means demand is ELASTIC

2 A steeper curve means demand is INELASTIC

→ Why?

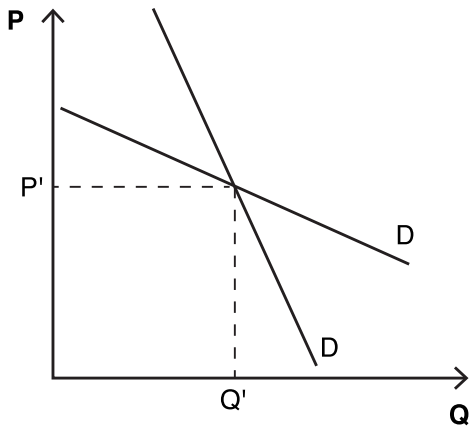
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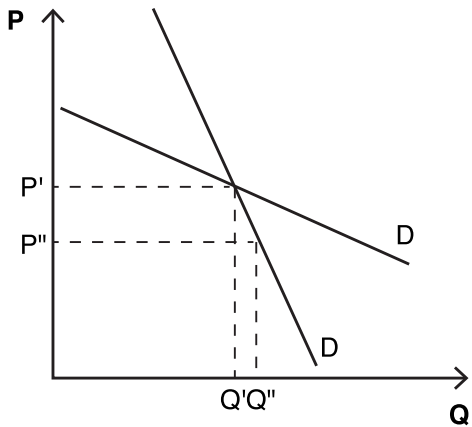
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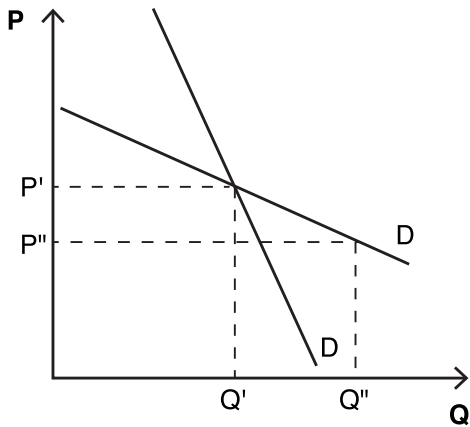
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Supply and Demand Analysis

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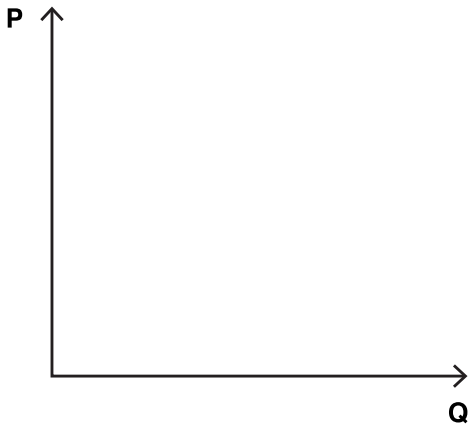


What to think about.

- Is the demand curve steep or flat?
- Is the supply curve steep or flat?
- What sorts of shifts could lead to lower prices?
- Try shifting curves on your own.
- Was it a demand shift? A supply shift?
- What are the competing stories?

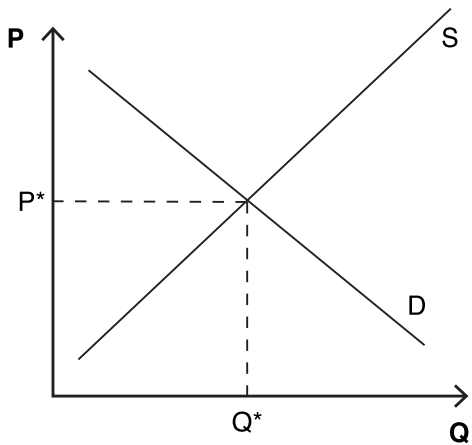
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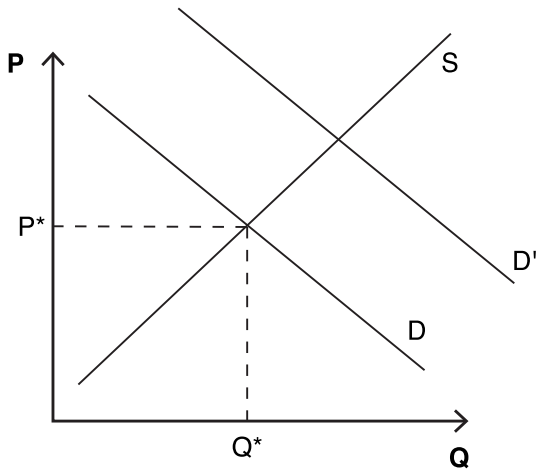
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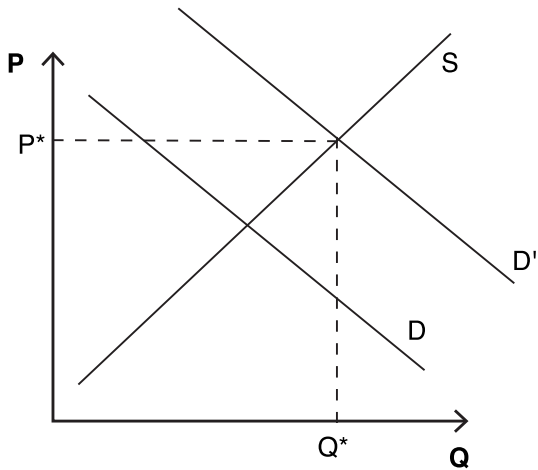
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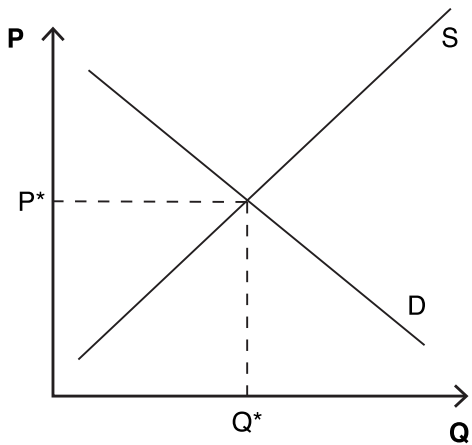
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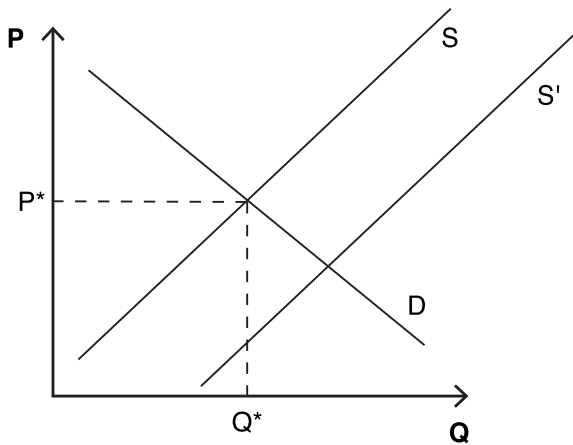
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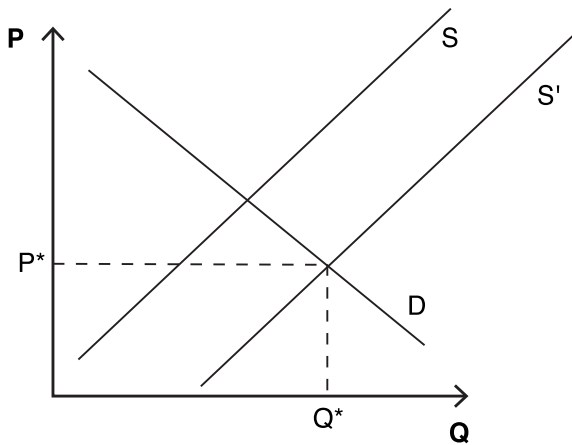
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What to think about.

- A downward shift in demand?
 - Lower P.
 - Lower Q.
- An upward shift in supply?
 - Lower P.
 - Higher Q.
- Which is it?
- What additional information do we need?

What to think about.

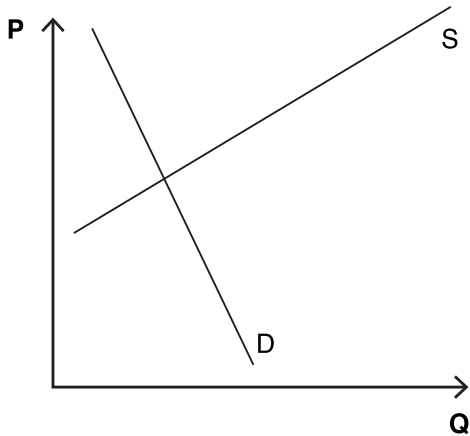
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 - **Lower Q.**
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 - Lower P.
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One additional piece of data...

- It turns out that use of cocaine has not gone down.
- Now do we know why prices declined?

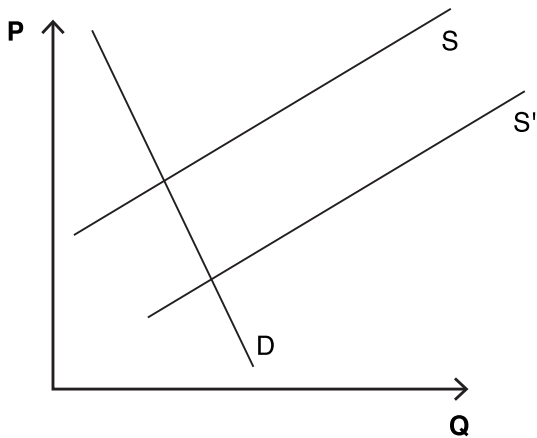
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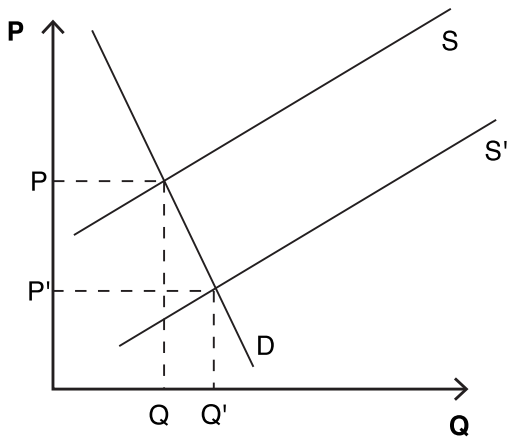
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From the Slate:

Economies of scale[...] cocaine was a small-time business, with coca leaves being processed in the basements of rickety houses in Colombian suburbs.

└ Supply and Demand Analysis

└ An Exercise: The U.S. Market for Cocaine

From the Slate:

With the surge in demand that began at the end of the 1970s, however, the kingpins built out their empires, modernizing processing, transport, and retail networks.

From the Slate:

According to figures compiled by Jonathan P. Caulkins of Carnegie Mellon University and Peter Reuter of the University of Maryland, around 33 percent of the price of cocaine went toward compensating smugglers and dealers for the risk of violence in 1990. Gun violence is way down since that time, so dealers likely aren't demanding the same risk premium.

How did we just do Economics?

- 1 There is a socially/economically relevant phenomenon we want to examine: a massive drop in the price of an addictive substance, the use of which carries a number of negative externalities.
- 2 We use economic theory, a very simple set of theories on supply and demand, to try to figure our conditions under which this phenomenon might occur.
- 3 The theory highlights that there are (at least) two competing stories, both of which are consistent with the observed phenomenon.
- 4 The theory also highlights what additional information (data) we need to rule out one of the stories in favor of the other.
- 5 We thus gather that additional information, which suggests that one of the two competing hypotheses is the right one.

A question you could think about: why does it matter to distinguish between the two competing hypotheses? Would it affect policy responses?

└ Supply and Demand Analysis

└ An Exercise: The U.S. Market for Cocaine

PS: now you can watch Narcos on Netflix and say you're doing economic research. You're welcome.