

Economics 1: Introduction to Economics

[https://bcourses.berkeley.edu/courses/1411451/
assignments/syllabus](https://bcourses.berkeley.edu/courses/1411451/assignments/syllabus)

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Administrivia

<https://bcourses.berkeley.edu/courses/1411451/assignments/syllabus>

J. Bradford DeLong

February 3, 2016 8-9 AM
Wheeler Auditorium, U.C. Berkeley

i>Clickers!

- Do you have an i>Clicker?
 - A. Yes, I have used it before
 - B. Yes, and it's newly registered!
 - C. Yes, but it's not yet registered
 - D. What's an i>Clicker?
 - E. No



i>Clicker: Problem Set 1 Was...

- A. Too easy, and too short
- B. Too easy, and too long
- C. Too hard, and too short
- D. Too hard, and too long
- E. What is Problem Set 1?

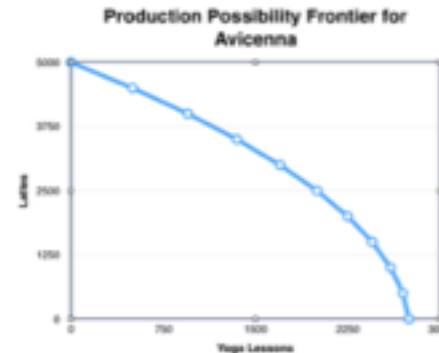
Econ 1: Spring 2016: U.C. Berkeley

Problem Set 1

1) The economy of the university town of Avicenna (if you wish, cf.: Peter Beagle (1986): *The Folk of the Air* <http://amzn.to/1RxRFQJ> (New York: Del Rey: 0345337824)) produces two and only two commodities: yoga lessons, and lattes. The ten workers in the economy are able to produce the following amounts of lattes and teach the following amounts of yoga lessons each day:

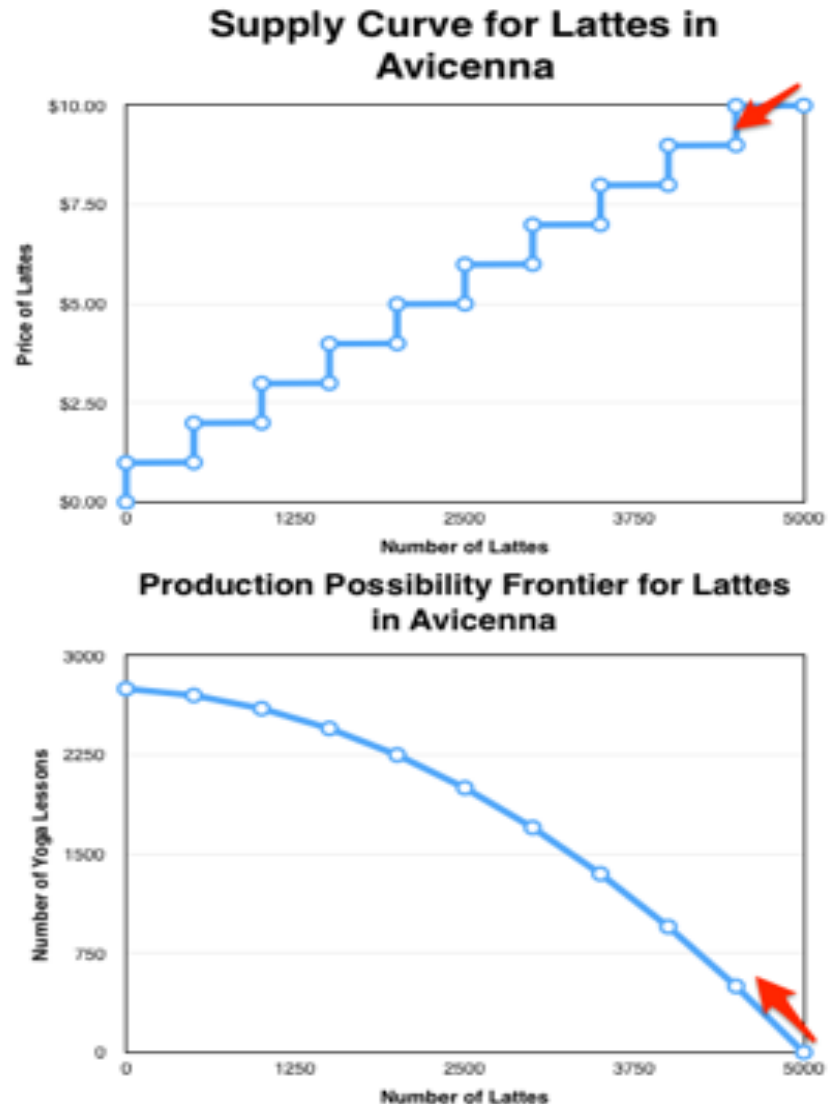
Worker	Yoga Lessons	Lattes
Alfred	50	500
Beatrice	100	500
Ciel	150	500
Dante	200	500
Ezerodil	250	500
Farahir	300	500
Galus	350	500
Hrothgar	400	500
Indira	450	500
Jenghiz	500	500

a) On a graph, draw the Production Possibility Frontier of Avicenna



Problem Set 1: Problem 2b

- Was a disaster...
- Thought you would think back to problem 1, and reason that a similar supply curve would produce a similar PPF
- Did not...
- Will curve up answers...



Tutors

- Want to do learn more than how to parrot back sentences from the lecture and the textbook?
- Tutoring!
- Student Learning Center
 - 1-4 PM M-Th, Cesar Chavez
- Econ Dept Tutoring
 - 12-1:30 M, 8-9:30 & 11-12 Tu, 12-1 & 3-4:30 W, 8-9:30 & 11-12 Th, 8-10 & 2-4 F, Evans
- We have lots of outside resources to help you learn stuff



The Student Learning Center

SLC ECONOMICS PROGRAM

Mastery through Collaborative Learning

What We Do

Peer-led support for Econ 1, 100 A&B, 136, 140, & equivalents



Formats of Service

- ✓ Drop-in Tutoring
- ✓ Pod Tutoring
- ✓ Exam Review



Hours of Operation

1-5 PM M-Th Cesar Chavez Student Center

Go to tinyurl.com/slcecon for Exam Review and Pod Schedules

Econ Department Tutoring

Undergraduate Program

TUTORING

Department of Economics

The Department of Economics offers tutoring services to undergraduates taking core courses: Econ 1, Econ 2, Econ 100A/B, Econ 101A/B, Econ 140, and Econ 141. The department does not offer tutoring support for elective courses. Tutors are available starting the third week of instruction through the end of RRR week. Spring 2016 office hours can be found below and on the bulletin board outside of the Main Office (530 Evans).

About Economics Tutoring:

Tutoring services are geared towards helping students who are seeking additional support outside of lecture, section, and office hours. If you do not regularly attend lecture or section, tutoring services will be less effective. Our tutors aim to help students with specific questions on course concepts and problem sets by facilitating the learning process; they don't just give out answers to assignments. Please bring all relevant course materials to the tutoring session.

When should I use tutoring?

You should seek tutoring when you are struggling with a course concept or problem set and have specific questions to work through.

How can I get the most out of tutoring?

- Come prepared with your course notes and relevant course materials.
- Come prepared with specific questions early on.
- If a tutoring session looks too busy in a room at a given time find an alternate session to attend. If the room is overcrowded it's more likely that your questions won't get answered. A list of tutoring sessions can be found online or on the bulletin board outside of 530 Evans Hall.

What can I expect from the tutors?

- They are on time and available for the duration of their stated office hours
- They do their best to work through questions and refer to resources when necessary
- To not always have ALL of the answers.

Spring 2016 Tutoring Hours

*Hours below are subject to change. Follow us on Twitter, @CalEconTutoring, for the latest office hour updates.

Using the Marshallian Toolkit

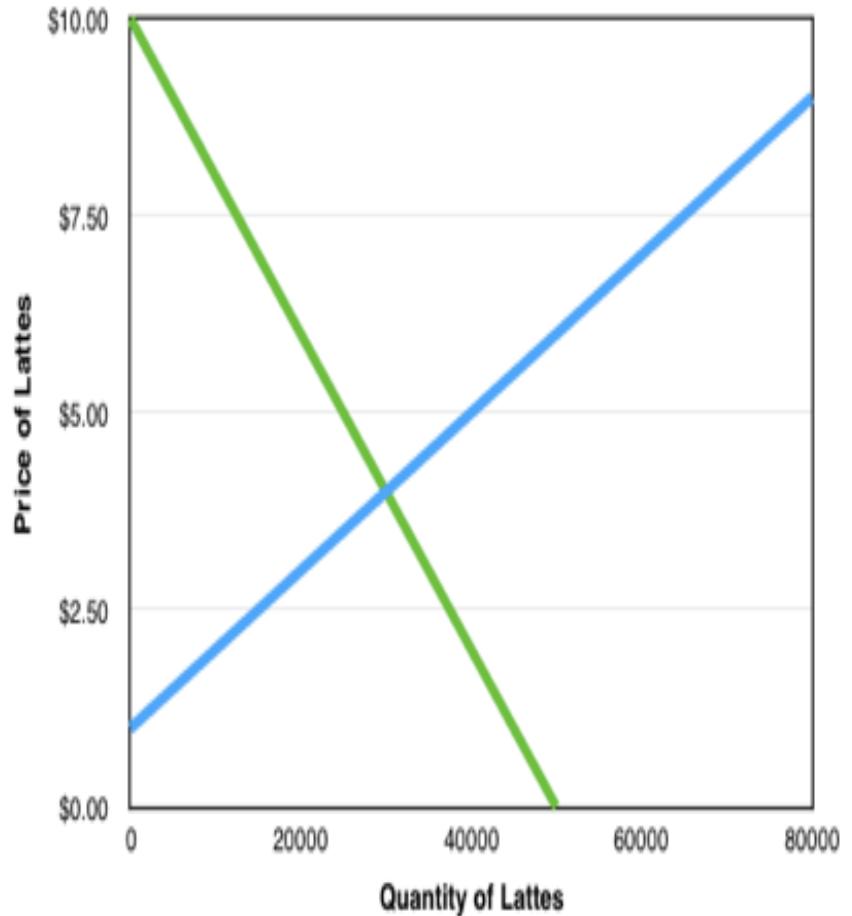
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The Marshallian Toolkit

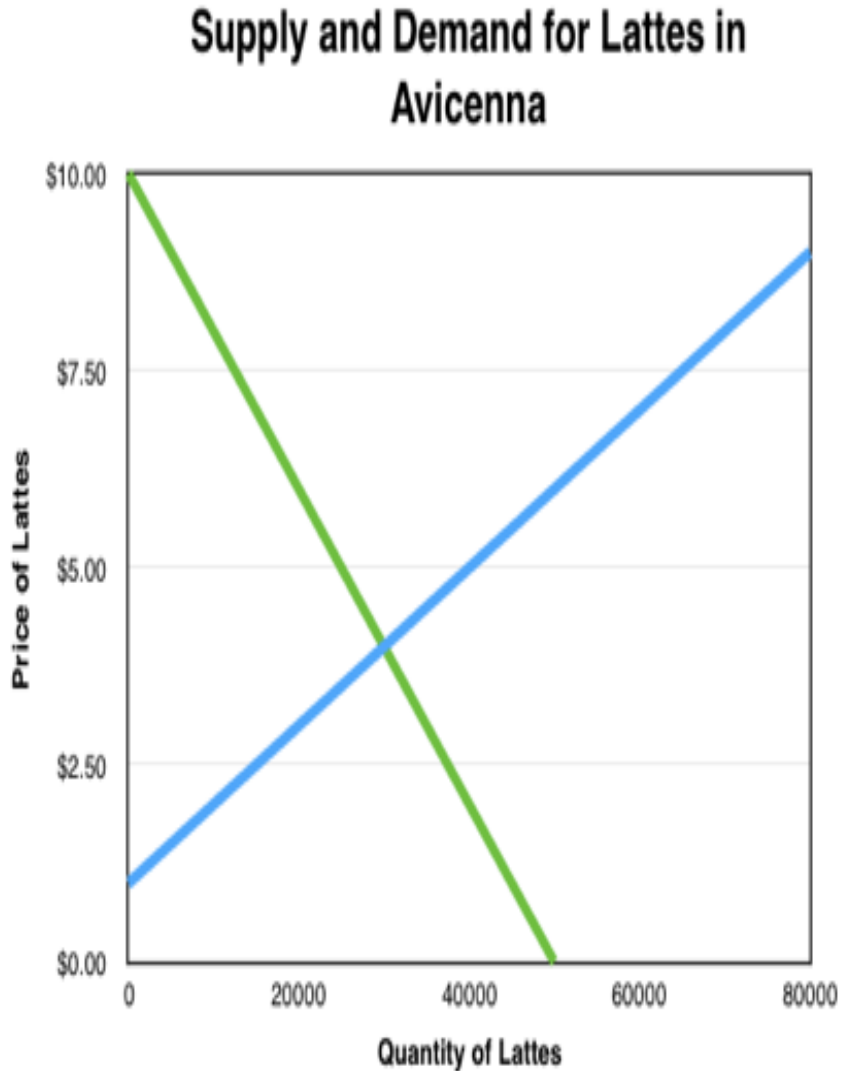
- Started working on this in the 1720s
- Took 150 years to get it (largely) right: Alfred (and Mary Paley) Marshall
- Start with property, exchange, individuals' capabilities and preferences
- Derive opportunity cost and willingness-to-pay
- Calculate supply and demand curves
- And then calculate equilibrium and its consequences

Supply and Demand for Lattes in Avicenna



The Marshallian Toolkit II

- At the supply-and-demand level, need four things:
 - Need and desire for the product—the maximum willingness-to-pay, the y-axis demand intercept
 - Extent of demand—the slope, how quantity demanded grows as price falls
 - Resources needed to start producing—the minimum opportunity cost, the y-axis supply intercept
 - Supply responsiveness—the slope, how quantity supplied grows as the price rises
- With just these four, you can calculate what the market will do



What Goes Right with the Market?

- A utilitarian pursuing the greatest-good-of-the-greatest-number says it:
 1. Allocates production to those who have the least cost, the lowest *opportunity cost*.
 2. Produces at the scale that gets all win-win exchanges
 3. Allocates to those with greatest *willingness-to-pay*—who by the money standard most need and want it
 4. Is the best societal resource-use and product-allocating mechanism that can be devised
 5. Is very responsive to changing circumstances

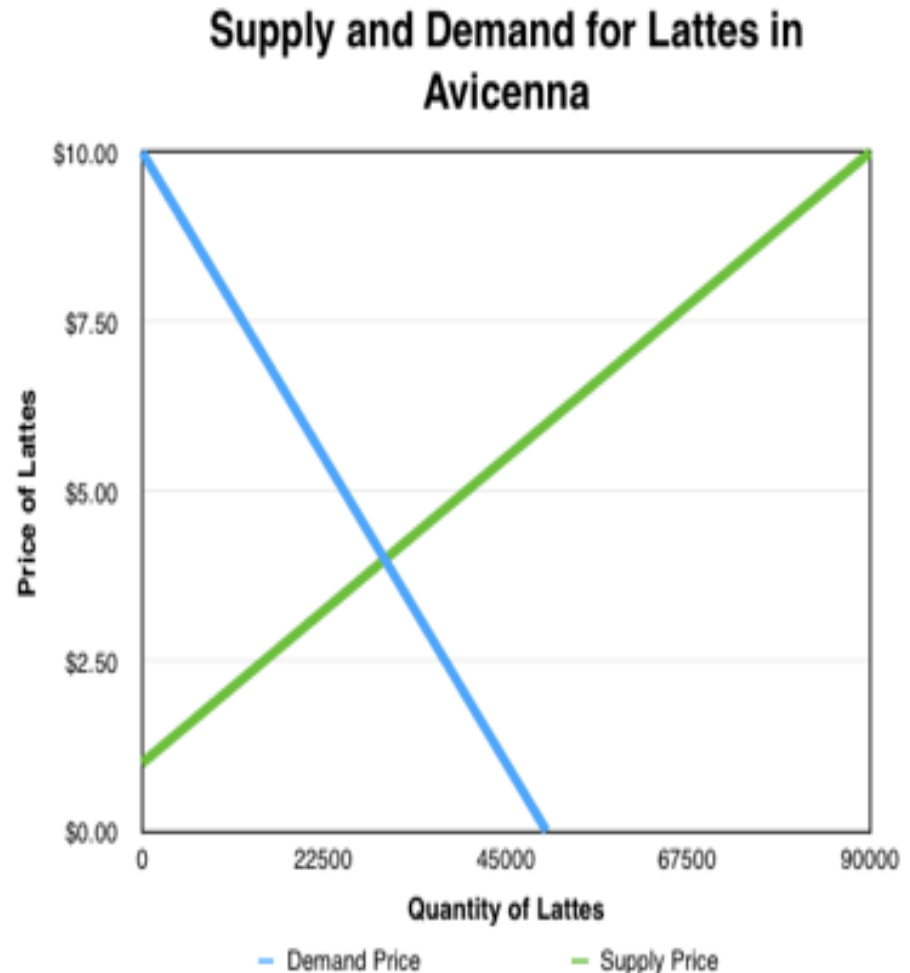
Comparative Statics

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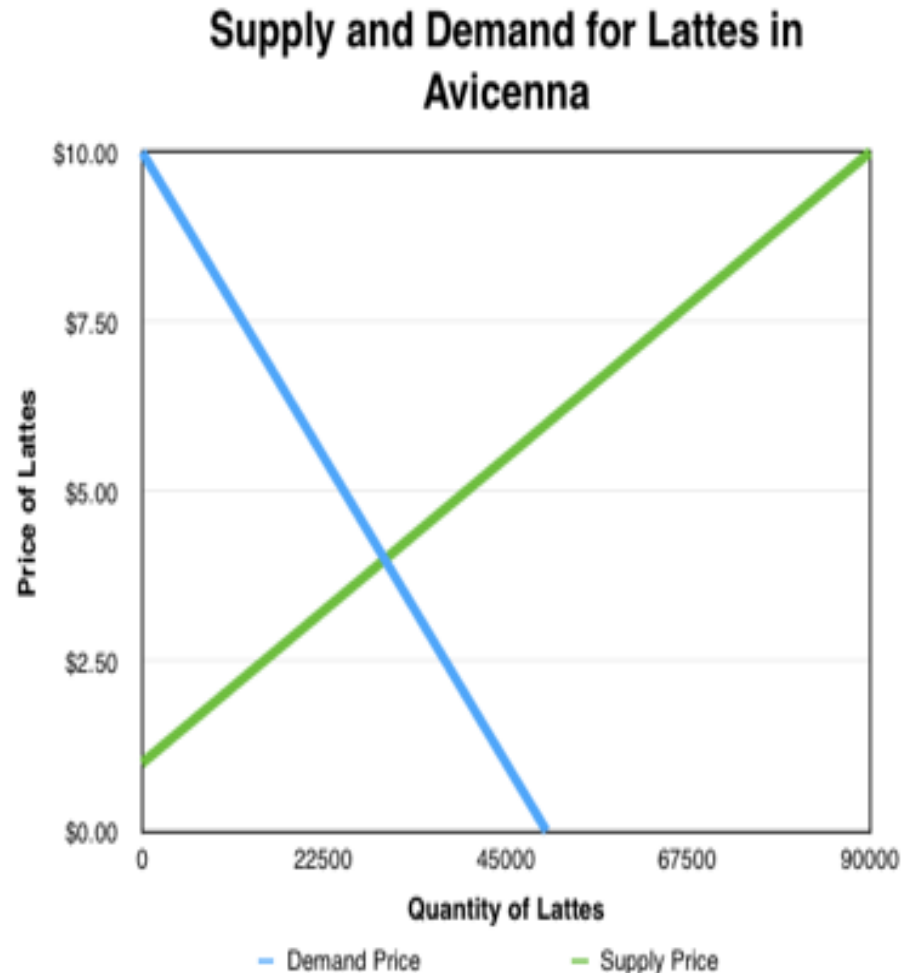
Comparative Statics

- Start from an equilibrium
- Do something to shift supply (or demand)
- Calculate what the equilibrium shifts to
- Say this is what would happen if the thing that shifted supply (or demand) were to take place



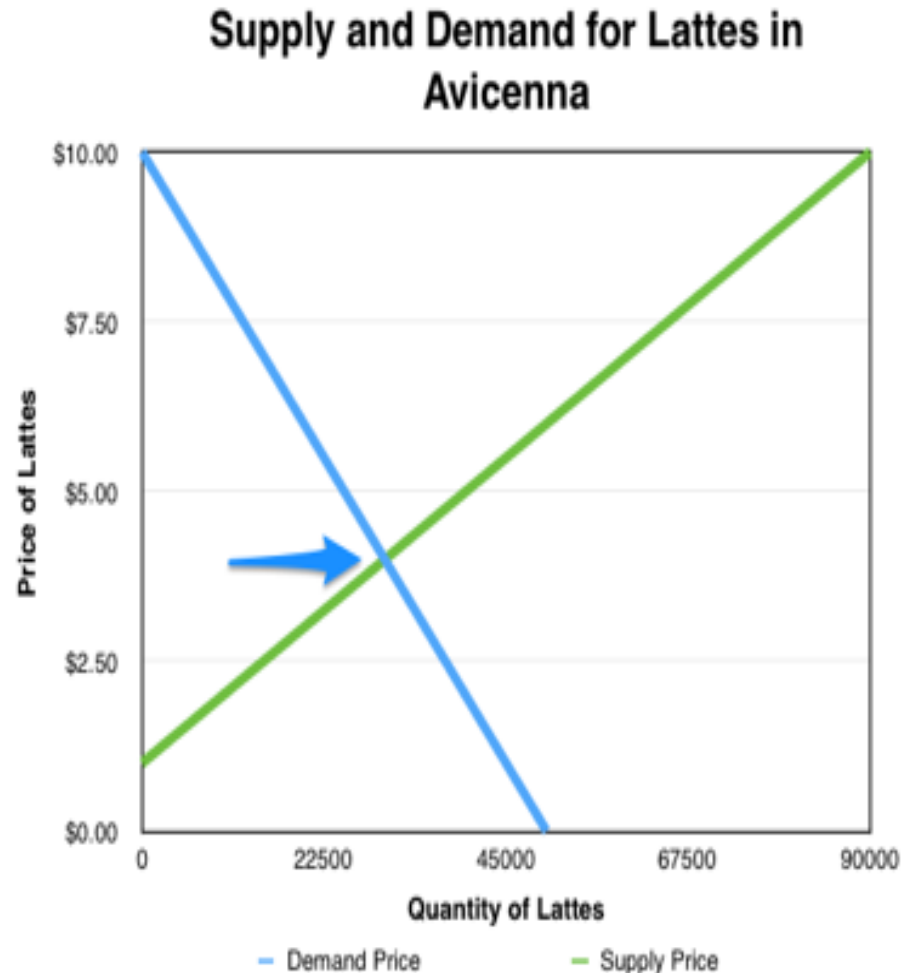
Our Standard Example: Supply and Demand for Lattes in Avicenna

- Demand: $P = P_{d0} - dQ$
 - Demand: $P = \$10 - 0.0002Q$
 - Supply: $P = P_{s0} + sQ$
 - Supply: $P = \$1 + 0.0001Q$
-
- To your i>Clickers: What is the equilibrium price?
 - A. \$4/latte
 - B. \$1/latte
 - C. \$6/latte
 - D. \$8/latte
 - E. \$10/latte



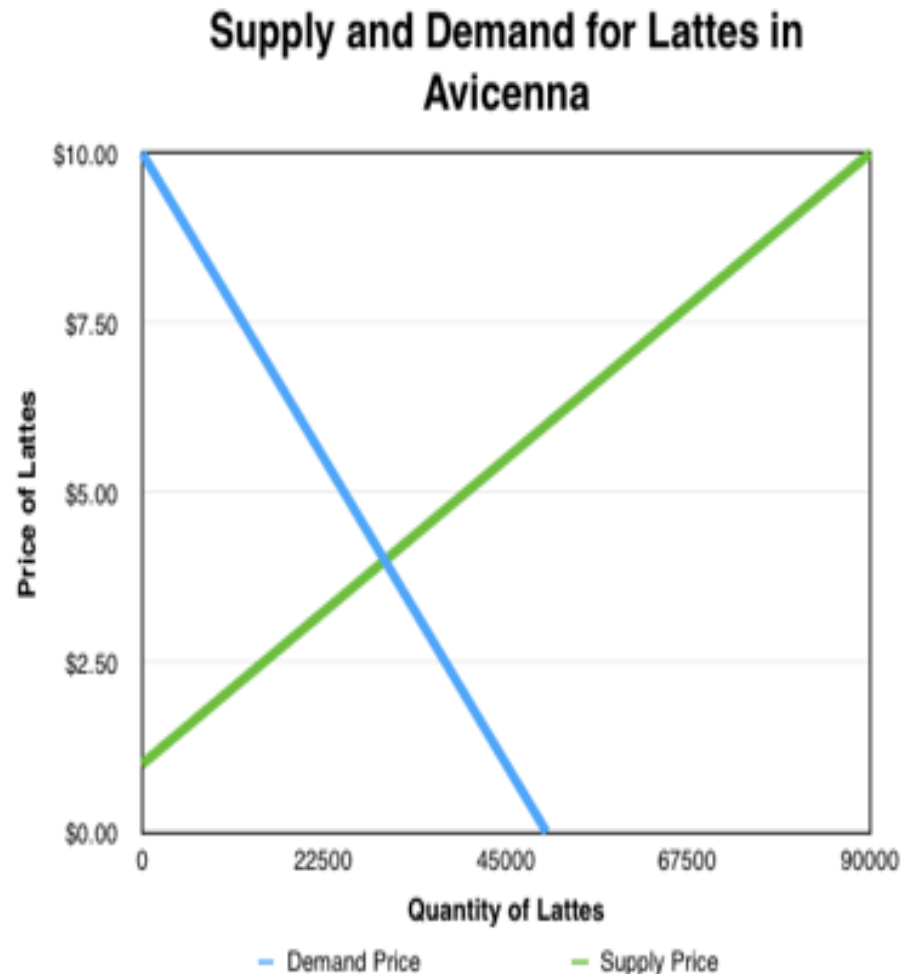
Our Standard Example: Supply and Demand for Lattes in Avicenna II

- Demand: $P = P_{d0} - dQ$
 - Demand: $P = \$10 - 0.0002Q$
 - Supply: $P = P_{s0} + sQ$
 - Supply: $P = \$1 + 0.0001Q$
-
- To your i>Clickers: What is the equilibrium price?
 - A. \$4/latte**
 - B. \$1/latte
 - C. \$6/latte
 - D. \$8/latte
 - E. \$10/latte



Our Standard Example: Supply and Demand for Lattes in Avicenna III

- Demand: $P = \$10 - 0.0002Q$
 - Supply: $P = \$1 + 0.0001Q$
-
- To your i>Clickers: What is the equilibrium quantity?
 - A. 10000 lattes
 - B. 20000 lattes
 - C. 30000 lattes
 - D. 40000 lattes
 - E. 50000 lattes

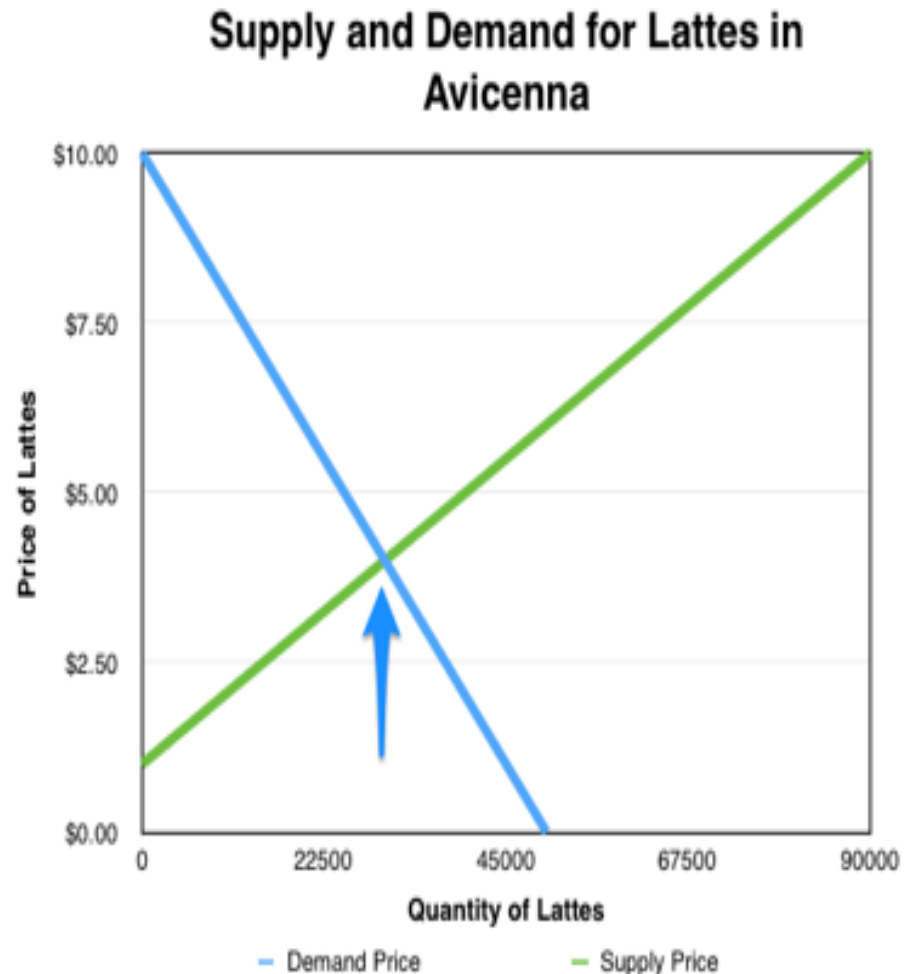


Our Standard Example: Supply and Demand for Lattes in Avicenna IV

- Demand: $P = \$10 - 0.0002Q$
- Supply: $P = \$1 + 0.0001Q$

- To your i>Clickers: What is the equilibrium quantity?
 - A. 10000 lattes
 - B. 20000 lattes
 - C. 30000 lattes**
 - D. 40000 lattes
 - E. 50000 lattes

- $Q^* = (P_{d0} - P_{s0}) / (s + d)$



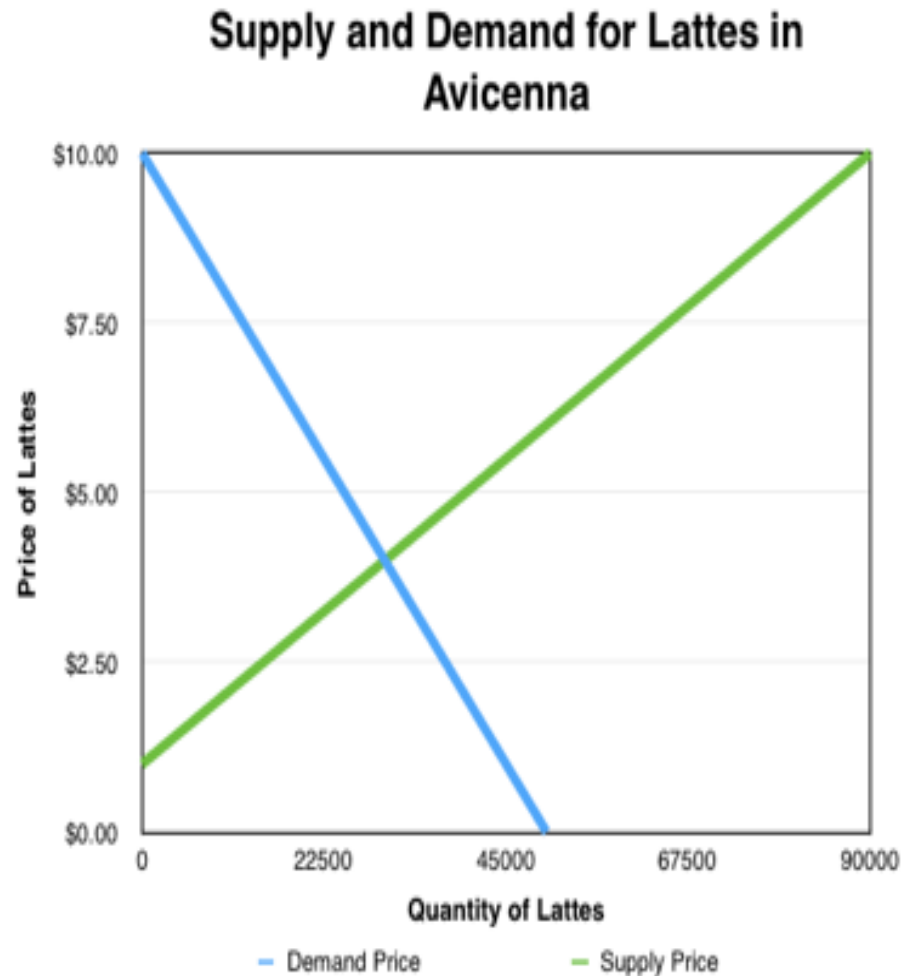
What Happens When the Supply Curve Shifts Up or Down?

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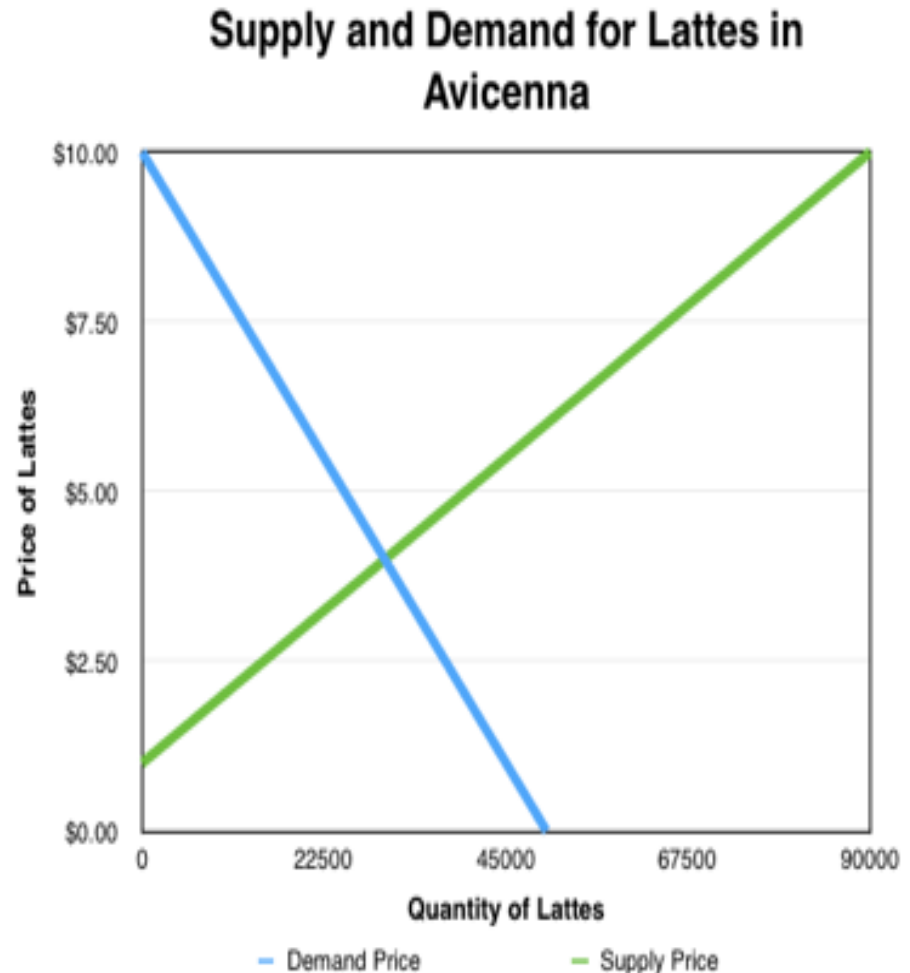
Shifting the Supply Curve

- Demand: $P = \$10 - 0.0002Q$
- Supply: $P = \$1 + 0.0001Q$
- Yes, equilibrium is:
 - $P^* = \$4$, $Q = 30000$
- Global warming in the tropics harms coffee harvest, raises the minimum opportunity cost from \$1/latte to \$4/latte?



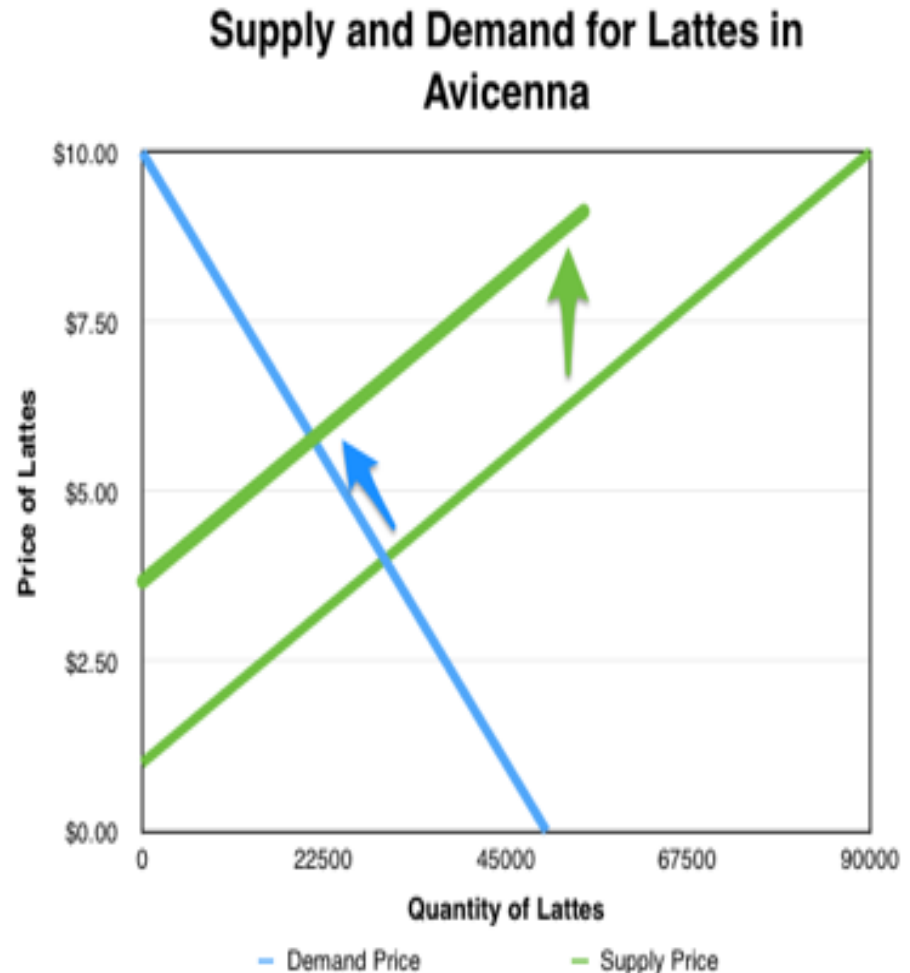
Tilting the Supply Curve II

- Demand: $P = \$10 - 0.0002Q$
 - Old Supply: $P = \$1 + 0.0001Q$
 - New Supply: $P = \$4 + 0.0001Q$
-
- To your i>Clickers: What happens to the equilibrium price?
 - A. Increases from \$1 to \$4/latte
 - B. Increases from \$4 to \$6/latte
 - C. Increases from \$4 to \$7/latte
 - D. Decreases from \$4 to \$2/latte
 - E. Decreases from \$4 to \$1/latte



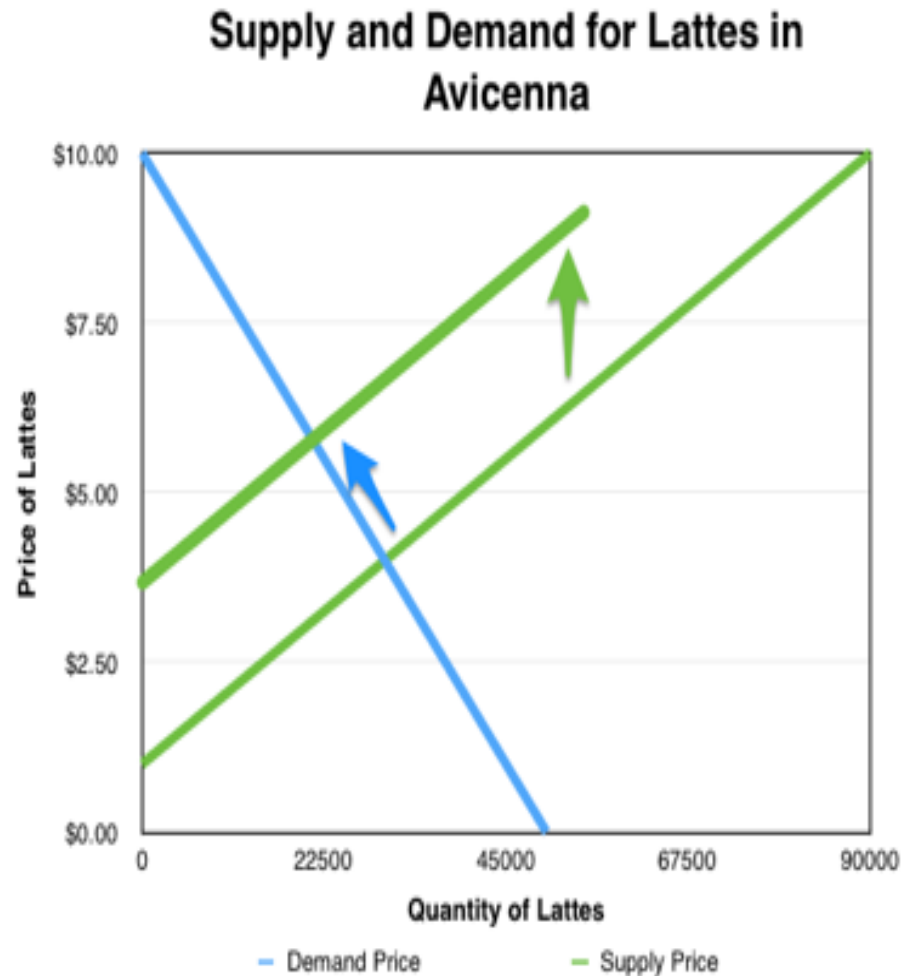
Shifting the Supply Curve III

- Demand: $P = \$10 - 0.0002Q$
 - Old Supply: $P = \$1 + 0.0001Q$
 - New Supply: $P = \$4 + 0.0001Q$
-
- To your i>Clickers: What happens to the equilibrium price?
 - A. It increases from \$1/latte to \$4/latte
 - B. It increases from \$4/latte to \$6/latte
 - C. It increases from \$4/latte to \$7/latte
 - D. It decreases from \$4/latte to \$2/latte
 - E. It decreases from \$4/latte to \$1/latte



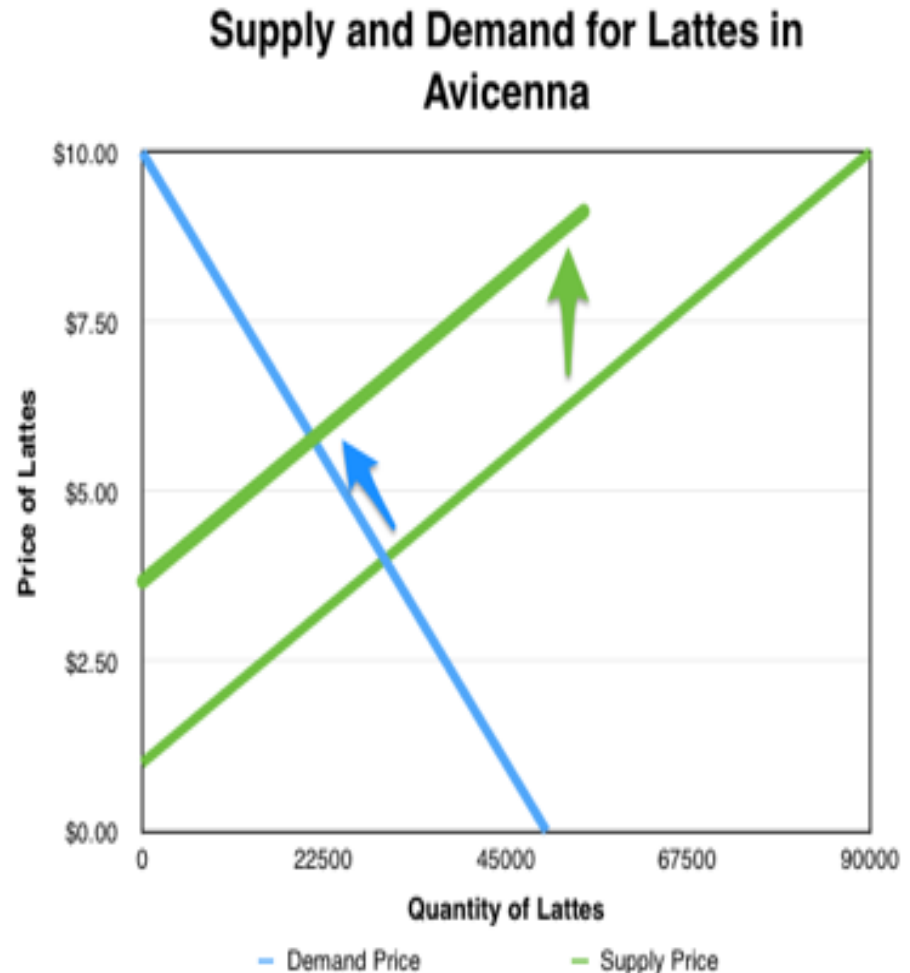
Ways of Understanding This Shift...

- ...of the supply intercept from:
 - $P_{s0} = \$1$
 - to:
 - $P_{s0} = \$4$
 - And the consequent shift of the price from $P^* = \$4$ to $P^* = \$6$ /latte
 - And the consequent shift of the quantity from $Q^* = 30000$ to $Q^* = 20000$ /day
-
- Graphically...
 - Algebraically...
 - Narratively...



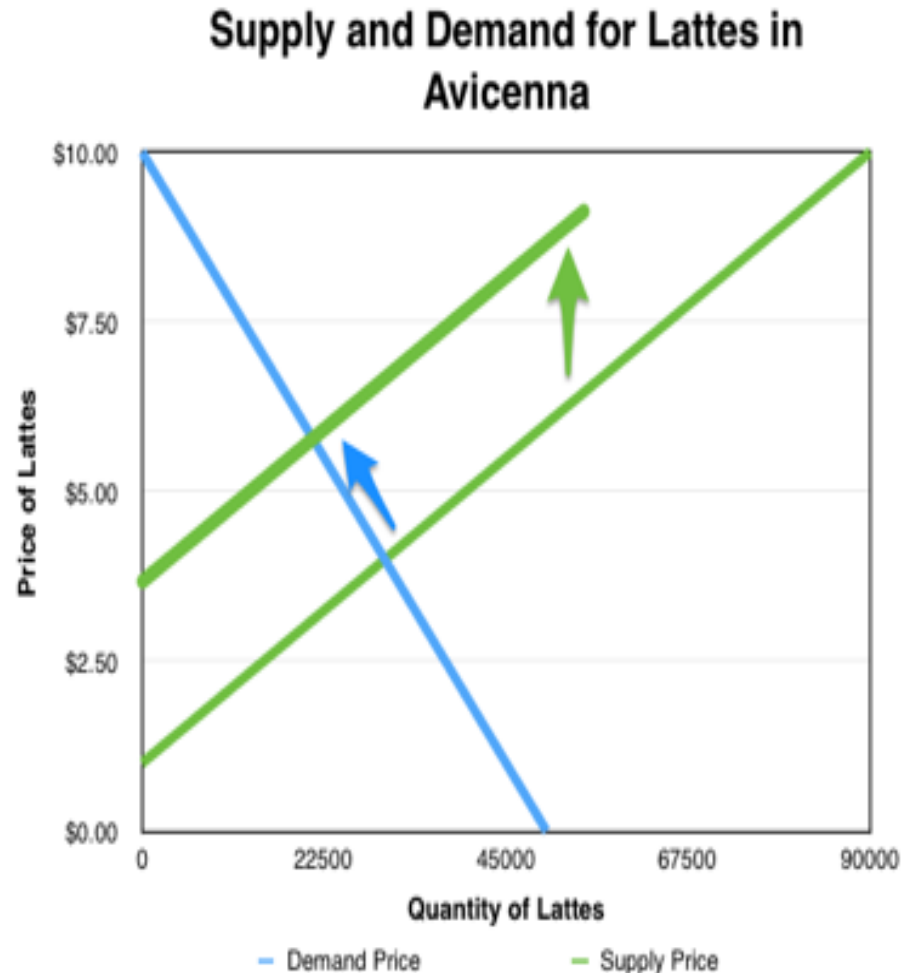
Understanding This Shift: Graphically

- P_{s0} : \$1/latte \rightarrow \$4/latte
- P^* : \$4/latte \rightarrow \$6/latte
- Q^* : 30000/day \rightarrow 20000/day
- Graphically: the green-line thingee moves up by \$3/latte...
- Because the blue-line thingee is half as responsive as the green-line thingee...
- The equilibrium point moves up by $2/3$ as much as the green-line thingee—by \$2/latte
- And it moves to the left according to the slope of the blue-line thingee to keep it on the line—by -10000/day



Understanding This Shift: Algebraically

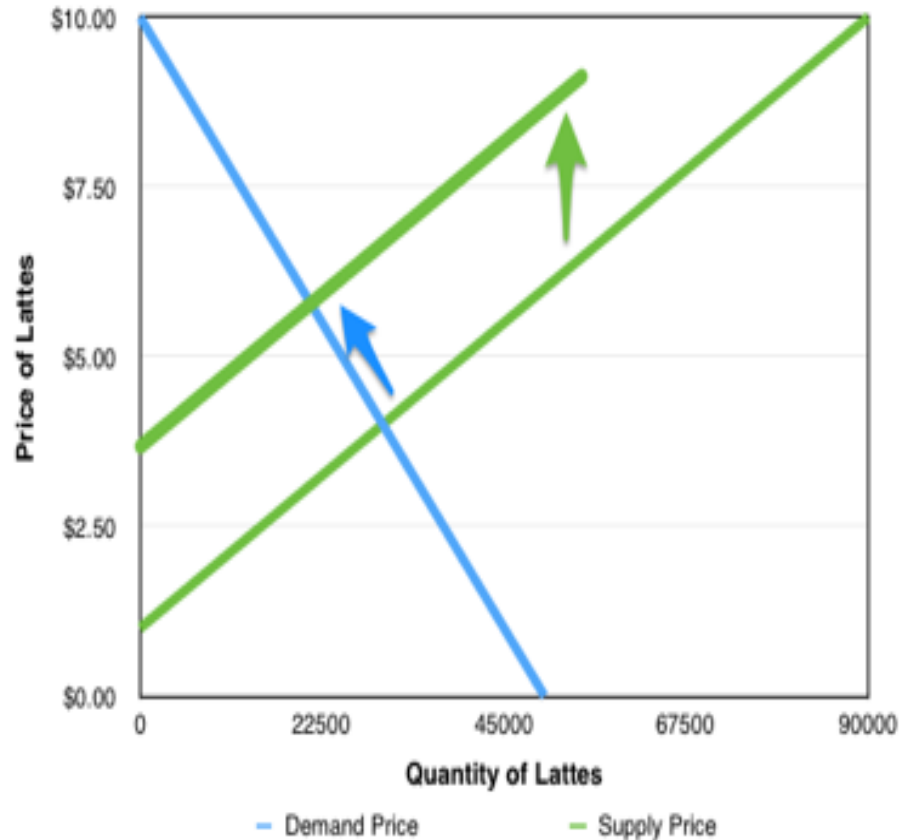
- P_{s0} : \$1/latte \rightarrow \$4/latte
- P^* : \$4/latte \rightarrow \$6/latte
- Q^* : 30000/day \rightarrow 20000/day
- Algebraically: we know that:
- $P^* = (d/(d+s))P_{s0} + (s/(d+s))P_{d0}$
- $Q^* = (P_{d0} - P_{s0}) / (s + d)$



Understanding This Shift: Algebraically

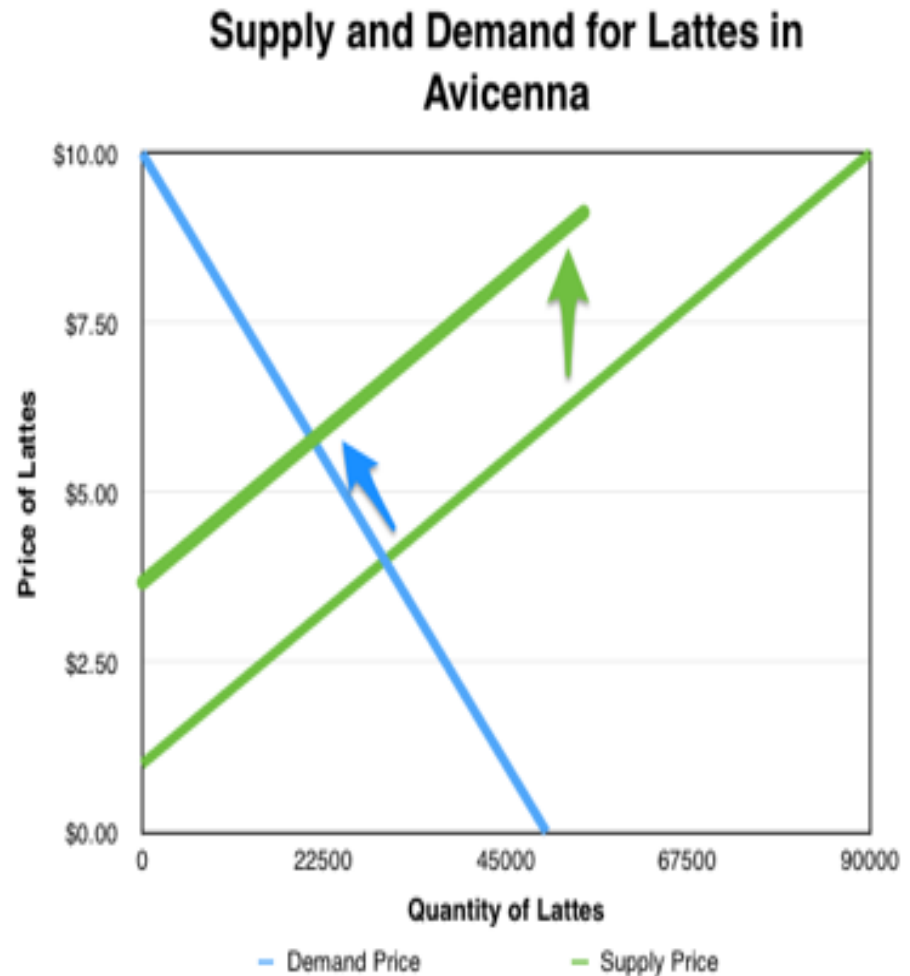
- P_{s0} : \$1/latte \rightarrow \$4/latte
- P^* : \$4/latte \rightarrow \$6/latte
- Q^* : 30000/day \rightarrow 20000/day
- Algebraically: we know that:
- $P^* = (d/(d+s))P_{s0} + (s/(d+s))P_{d0}$
- $Q^* = (P_{d0} - P_{s0}) / (s+d)$
- Raising the minimum opportunity cost, the P_{s0} raises the equilibrium price, the P^* , by $(d/(d+s))$ as much.
- Since the supply parameter s shows supply twice as responsive as demand d , $2/3$ of the increase in the MOC shows up as an increase in price
- And raising the MOC, the P_{s0} by \$3 reduces the quantity of lattes produced by $1/(s+d)$ as much—by 10000/day

Supply and Demand for Lattes in Avicenna



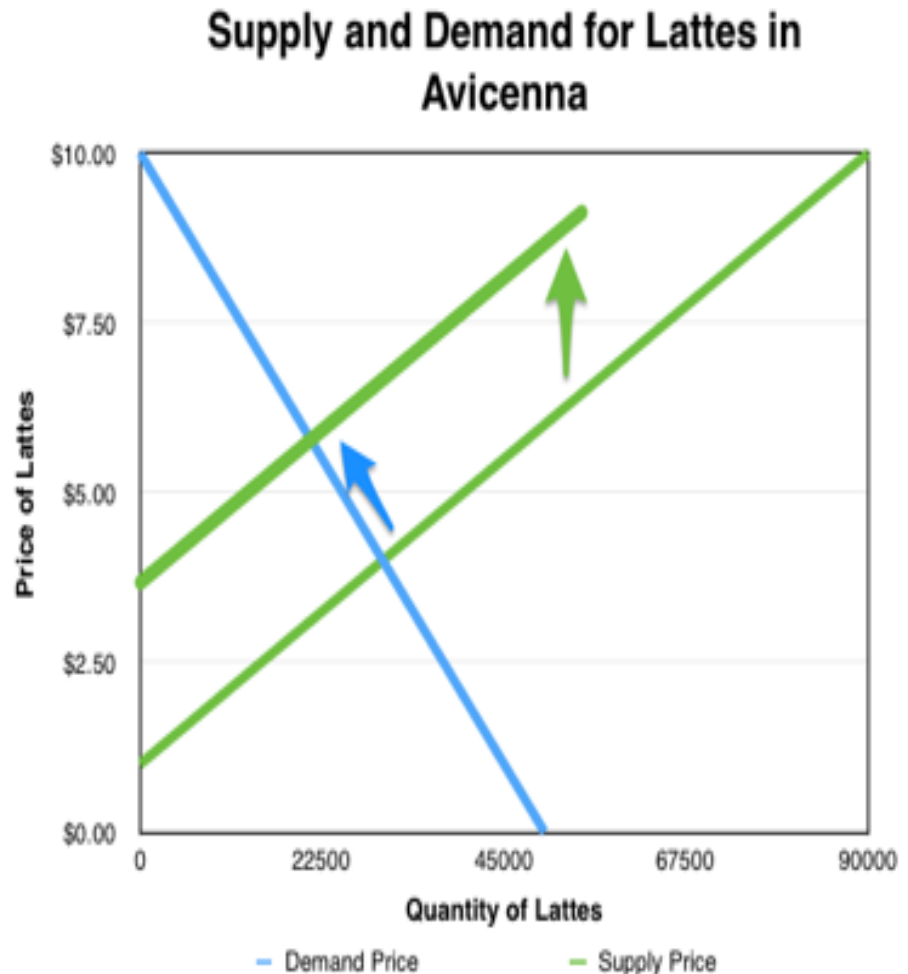
Understanding This Shift: Narratively

- Global warming harmed the productivity of tropical coffee-growing regions, and made coffee more expensive to start producing.
- This greater resource cost of making lattes means that an economy trying to satisfy people's needs will shift resources into sectors where resource costs have not increased, or have fallen.



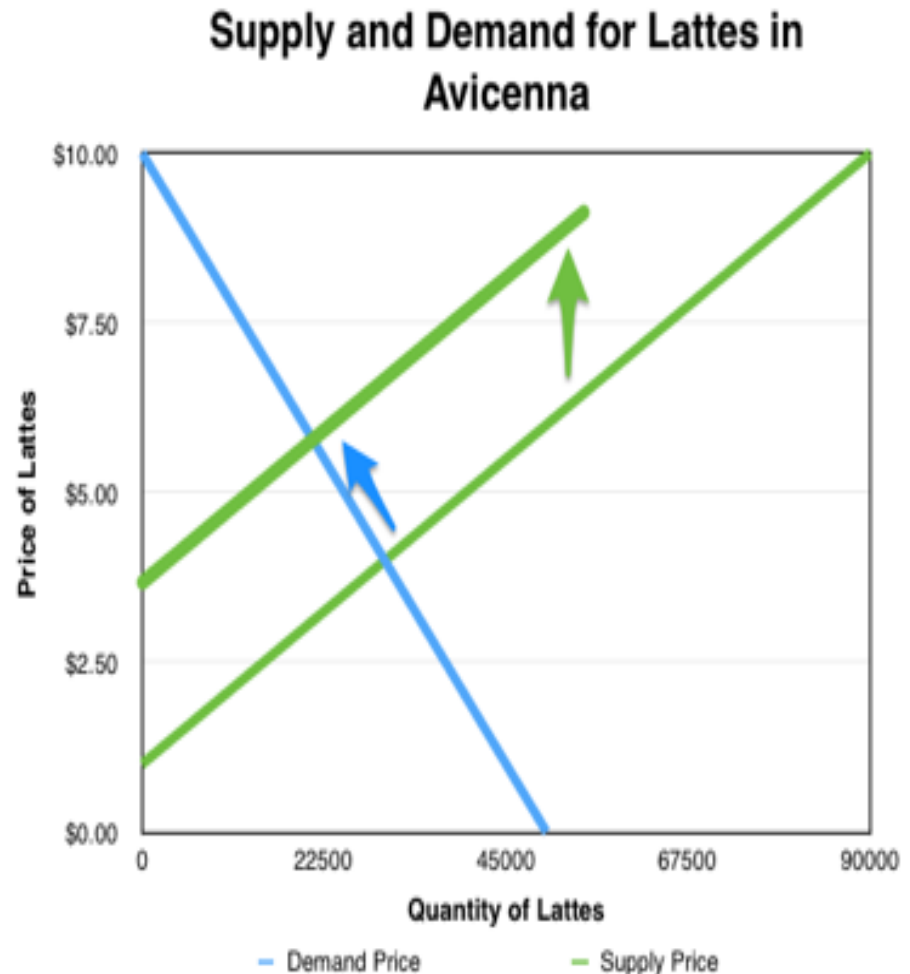
Understanding This Shift: Narratively

- Global warming harmed the productivity of tropical coffee-growing regions, and made coffee more expensive to start producing.
- This greater resource cost of making lattes means that an economy trying to satisfy people's needs will shift resources into sectors where resource costs have not increased, or have fallen.
- The rising market price of lattes is a signal to the economy to move resources out of making lattes and into teaching yoga.
- As the price of lattes rose, the number of lattes purchased fell as people's willingness-to-pay no longer exceeded the market price.
- And so the price rose and the quantity fell until supply and demand were once again in balance



Ways of Understanding This Shift...

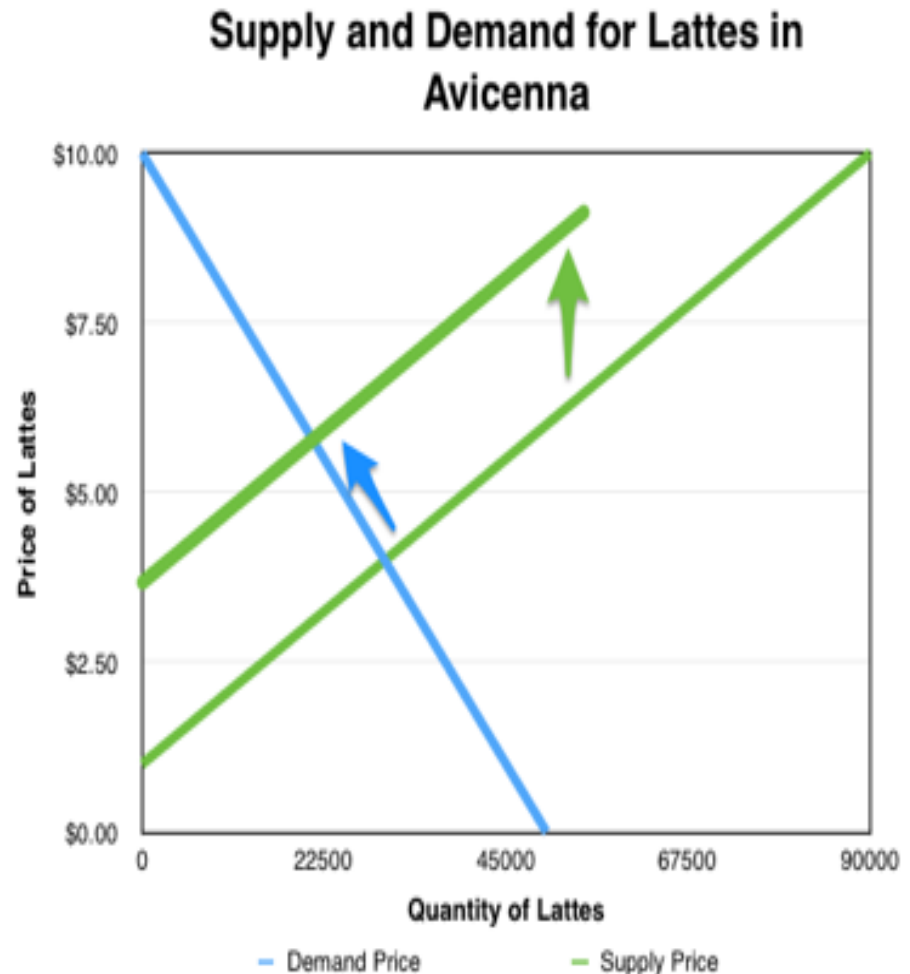
- P_{s0} : \$1/latte \rightarrow \$4/latte
- P^* : \$4/latte \rightarrow \$6/latte
- Q^* : 30000/day \rightarrow 20000/day
- Narratively, algebraically, graphically—all three are consistent, all three are coherent views of understanding the same economic process



Ways of Understanding This Shift...

- P_{s0} : \$1/latte \rightarrow \$4/latte
- P^* : \$4/latte \rightarrow \$6/latte
- Q^* : 30000/day \rightarrow 20000/day

- Narratively, algebraically, graphically —all three are consistent, all three are coherent views of understanding the same economic process
- What is that economic process?
- It is the market economy reacting to a change in circumstances by shifting resources around to keep production efficient and arrange production to satisfy consumer demands as fully as possible



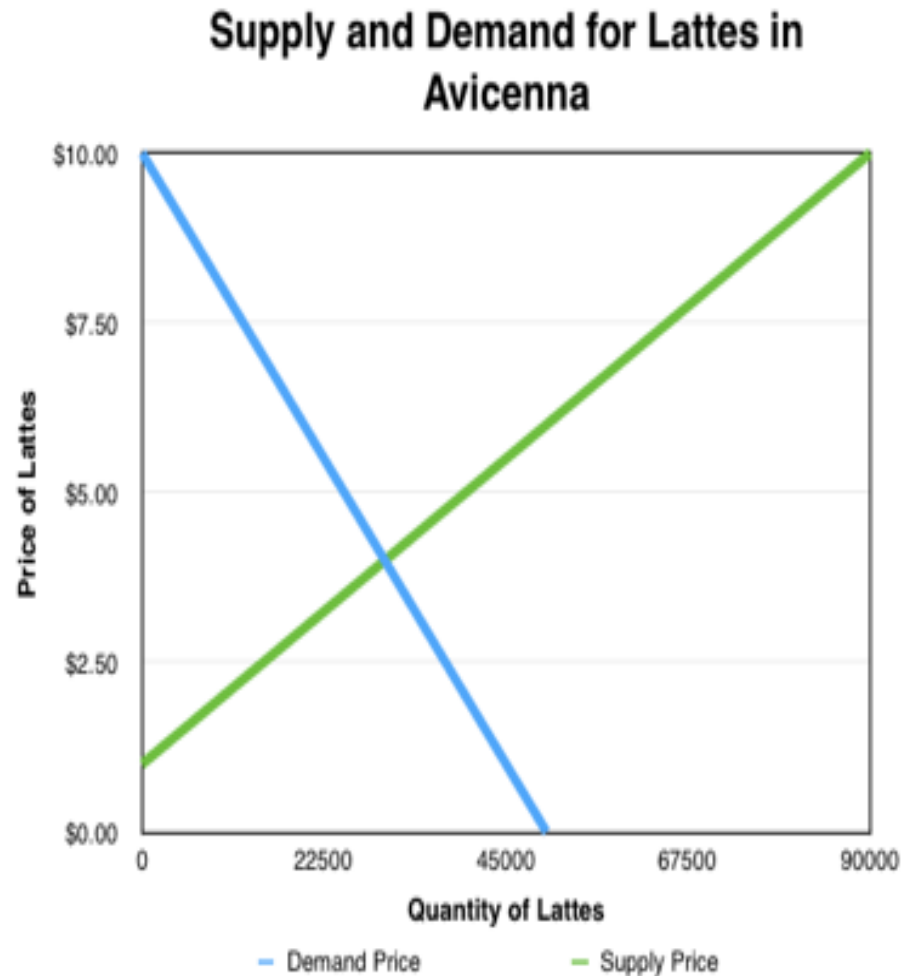
What Happens When the Supply Curve Tilts?

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Tilting the Supply Curve

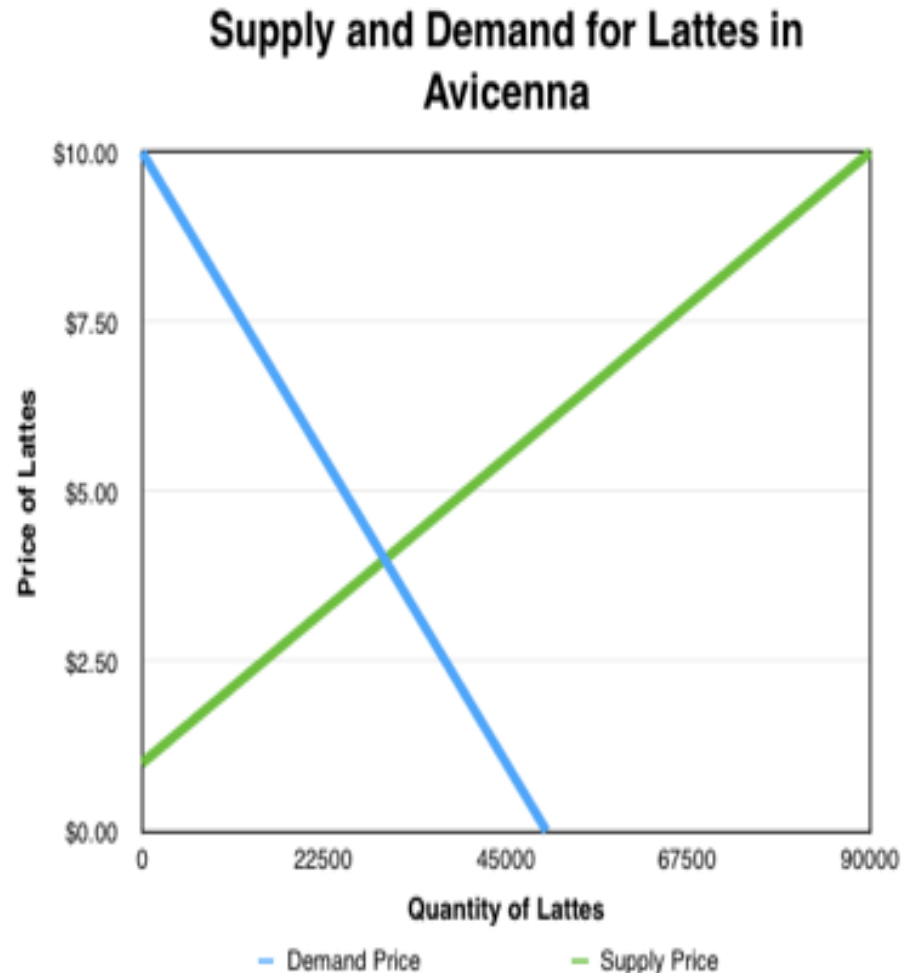
- Demand: $P = \$10 - 0.0002Q$
- Supply: $P = \$1 + 0.0001Q$
- Yes, equilibrium is:
 - $P^* = \$4, Q = 30000$
- What happens if improvements in training new baristas change the responsiveness of supply from $s = 0.0001$ to $s = 0.0$?



Tilting the Supply Curve II

- Demand: $P = \$10 - 0.0002Q$
- Old Supply: $P = \$1 + 0.0001Q$
- New Supply: $P = \$1 + 0Q$

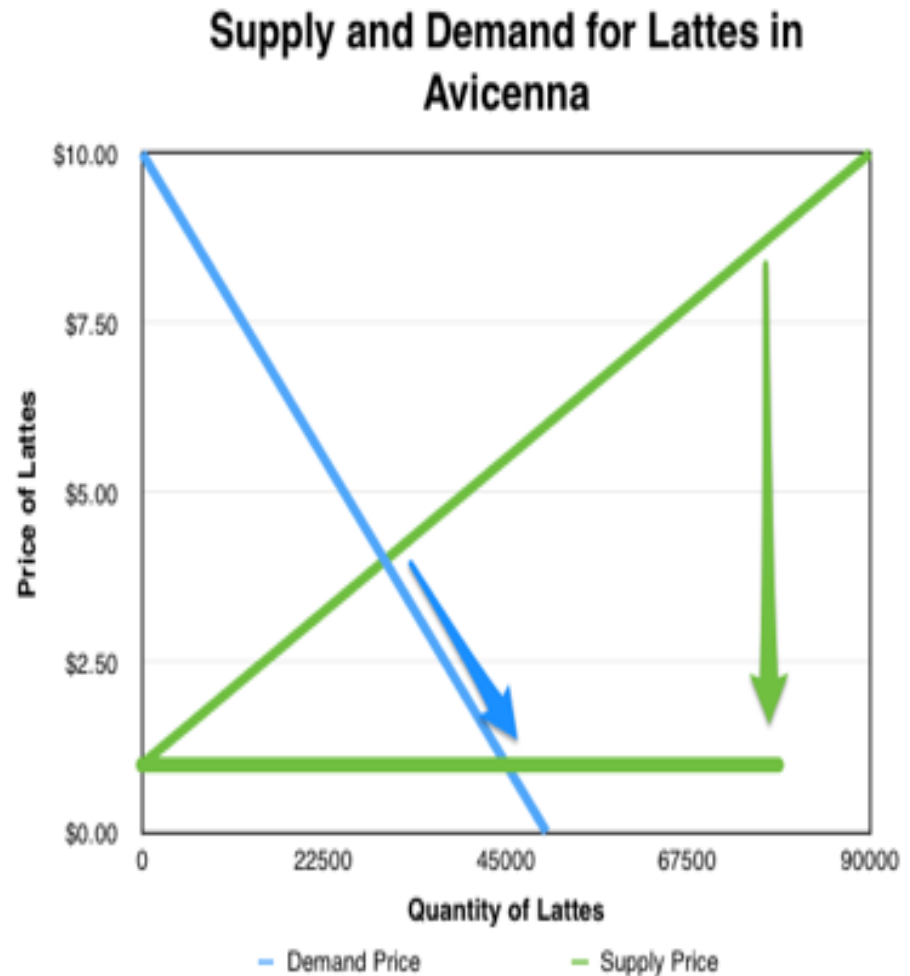
- To your i>Clickers: What happens to the equilibrium price?
 - A. It increases from \$1/latte to \$4/latte
 - B. It decreases from \$4/latte to \$1/latte
 - C. It increases from \$4/latte to \$7/latte
 - D. It decreases from \$4/latte to \$3/latte
 - E. It increases from \$4/latte to \$5/latte



Tilting the Supply Curve III

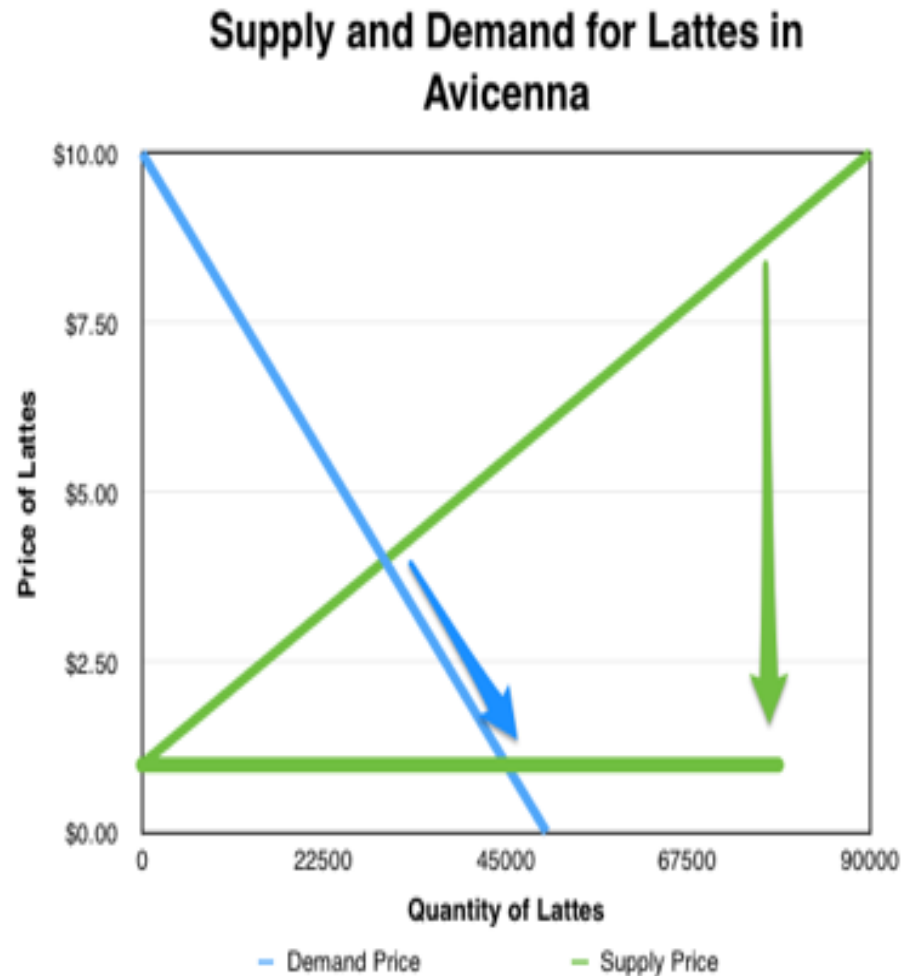
- Demand: $P = \$10 - 0.0002Q$
- Old Supply: $P = \$1 + 0.0001Q$
- New Supply: $P = \$1 + 0Q$

- To your i>Clickers: What happens to the equilibrium price?
 - A. It increases from \$1/latte to \$4/latte
 - B. It decreases from \$4/latte to \$1/latte**
 - C. It increases from \$4/latte to \$7/latte
 - D. It decreases from \$4/latte to \$3/latte
 - E. It increases from \$4/latte to \$5/latte



Ways of Understanding This Shift...

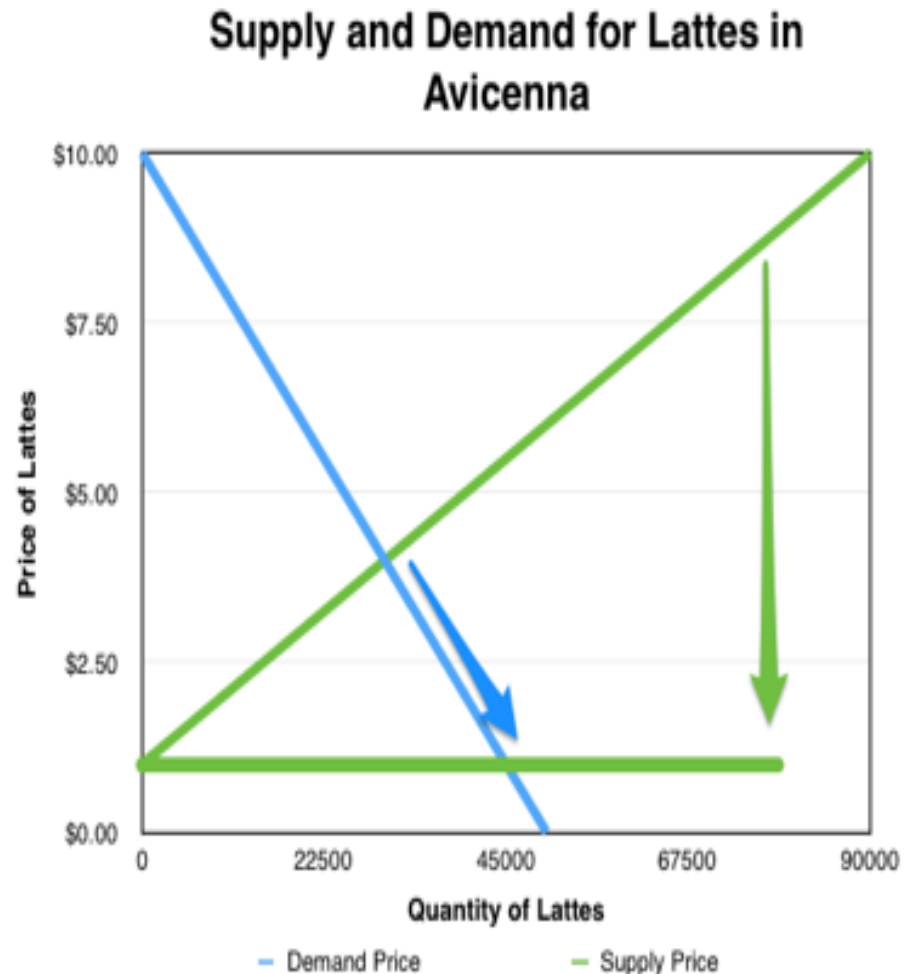
- ...of the supply slope from:
 - $s = 0.0001$
- to:
 - $s = 0.0000$
- And the shift of the equilibrium price P^* : \$4 \rightarrow \$1/latte
- And the shift of the quantity Q^* : 30000 \rightarrow 45000/day
- Graphically...
- Algebraically...
- Narratively...



Understanding This Shift: Graphically

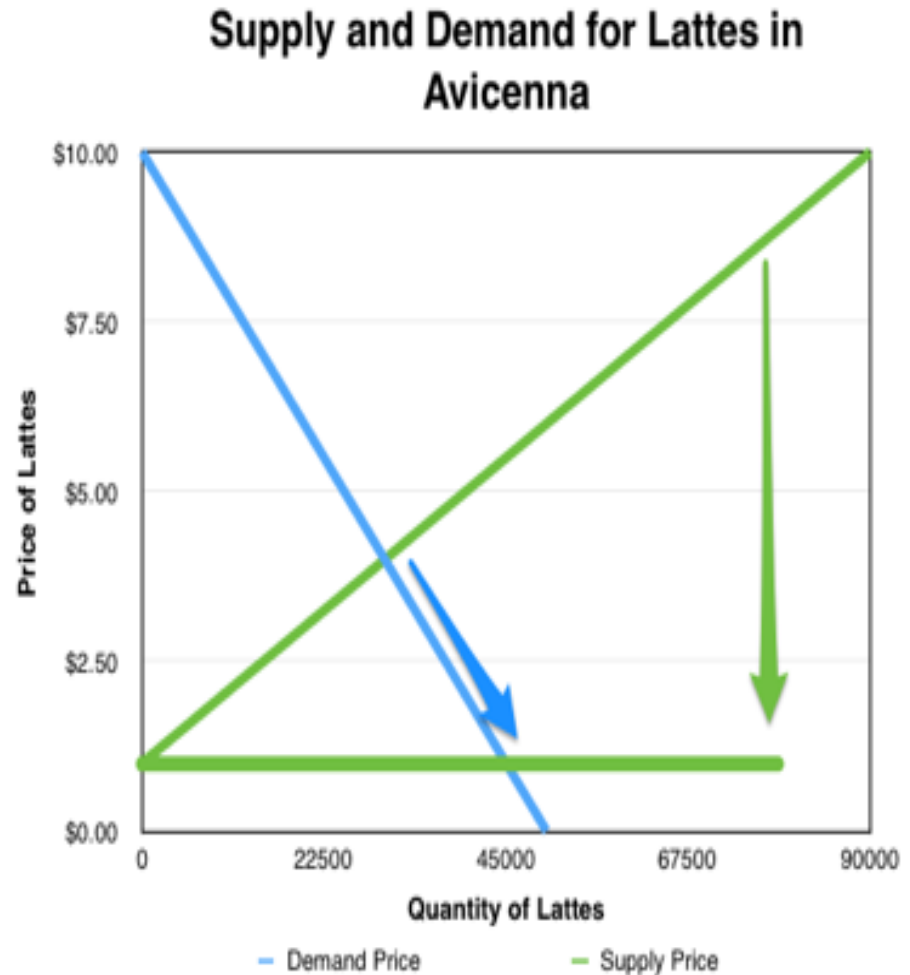
- $s: 0.0001 \rightarrow 0.0000$
- $P^*: \$4/\text{latte} \rightarrow \$1/\text{latte}$
- $Q^*: 30000/\text{day} \rightarrow 45000/\text{day}$

- Graphically: the green-line thingee flattens completely...
- The equilibrium point moves down to the minimum opportunity cost—by $\$3/\text{latte}$
- And it moves to the right according to the slope of the blue-line thingee to keep it on the line—by $+15000/\text{day}$



Understanding This Shift: Algebraically

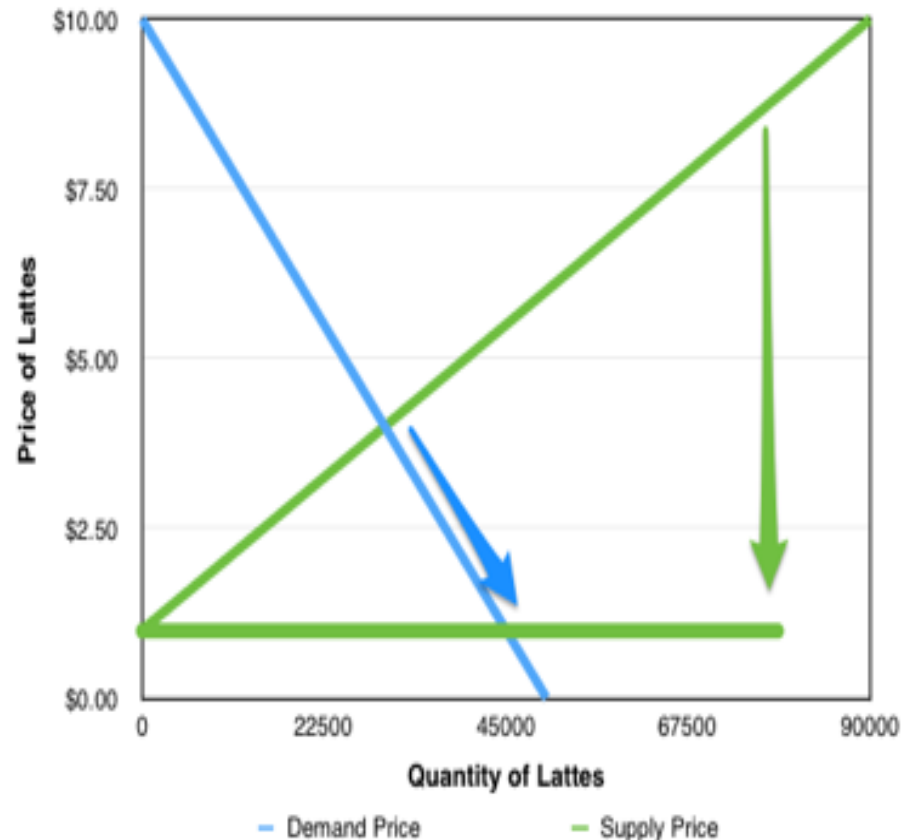
- s : 0.0001 \rightarrow 0.0000
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- Q^* : 30000/day \rightarrow 45000/day
- Algebraically: we know that:
- $P^* = (d/(d+s))P_{s0} + (s/(d+s))P_{d0}$
- $Q^* = (P_{d0} - P_{s0}) / (s + d)$



Understanding This Shift: Algebraically

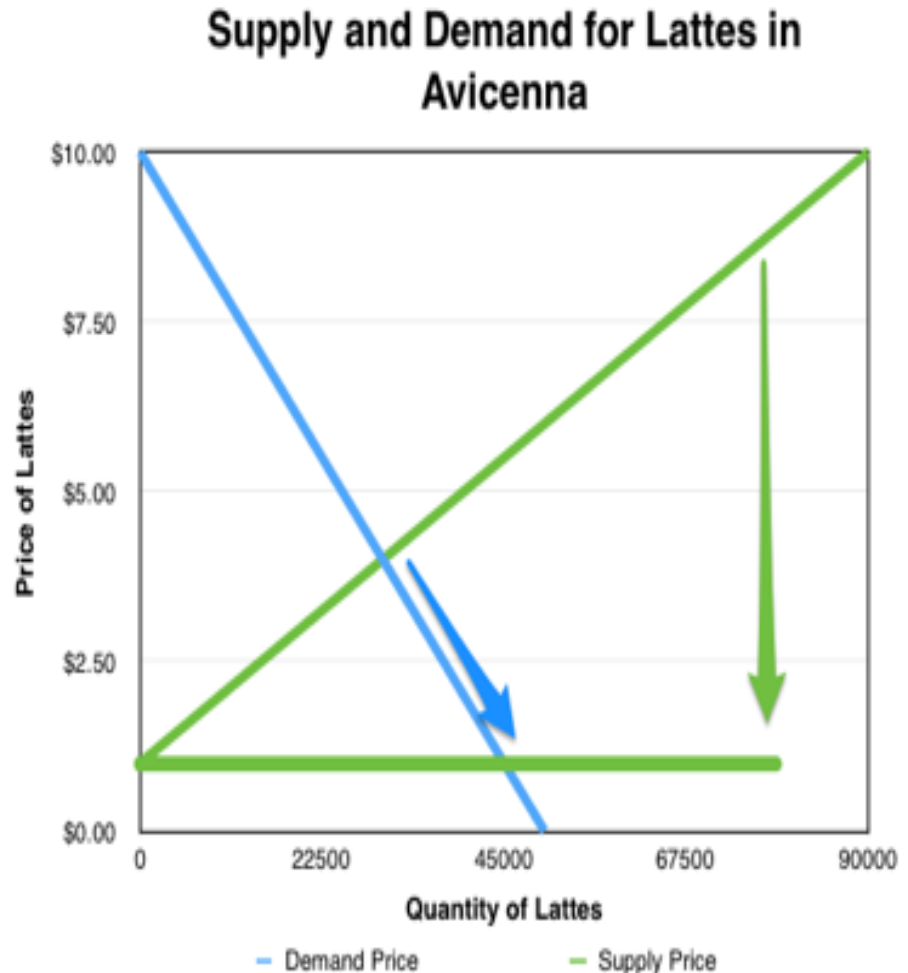
- s : 0.0001 \rightarrow 0.0000
- P^* : \$4/latte \rightarrow \$1/latte
- Q^* : 30000/day \rightarrow 45000/day
- Algebraically: we know that:
 - $P^* = (d/(d+s))P_{s0} + (s/(d+s))P_{d0}$
 - $Q^* = (P_{d0} - P_{s0}) / (s+d)$
- Flattening the responsiveness of supply changes the weight of the maximum willingness-to-pay, the P_{d0} , in the weighted average calculation of P^* from 1/3 to 0. P^* thus falls to the minimum opportunity cost, the P_{s0} .
- Flattening the supply curve reduces the sum of the slope parameters by 1/3, and so increases the quantity produced and consumed by 1/2.

Supply and Demand for Lattes in Avicenna



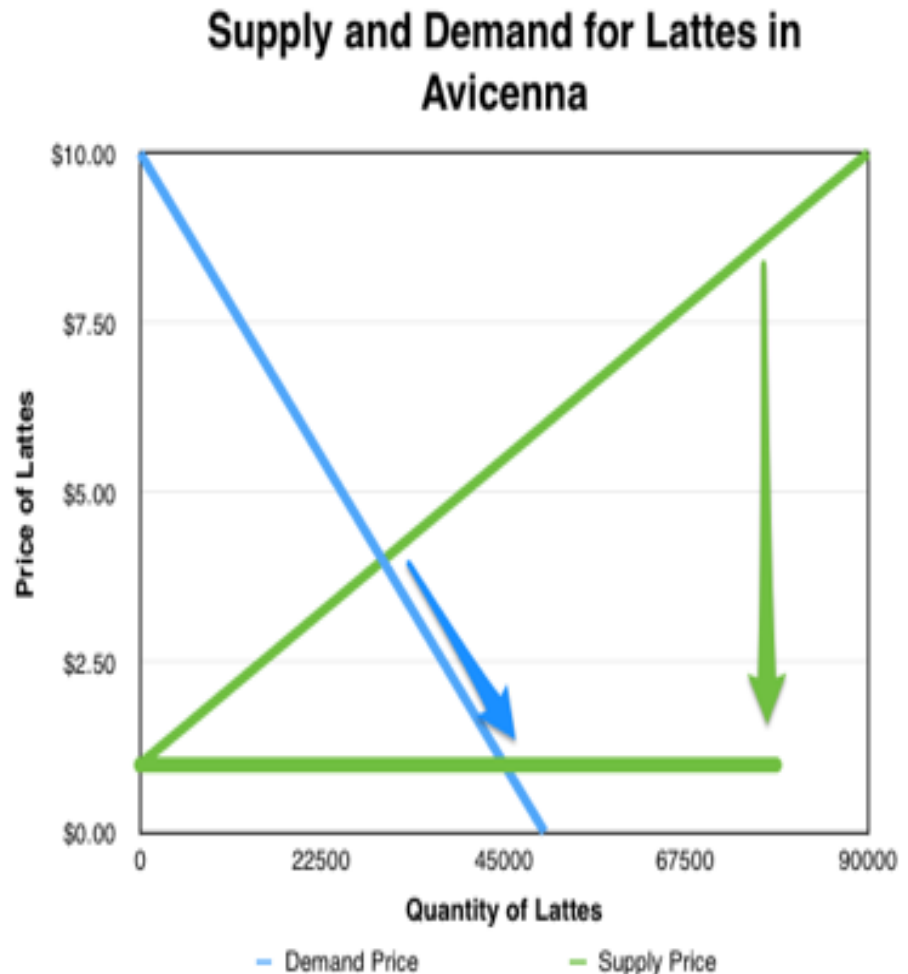
Understanding This Shift: Narratively

- Improving the training of baristas made the responsiveness of supply much much greater—in fact, made supply perfectly responsive.
- This lesser resource cost of making large numbers of lattes means that an economy trying to satisfy people's needs will shift resources into the latte sector, and away from sectors where resource costs have not fallen.



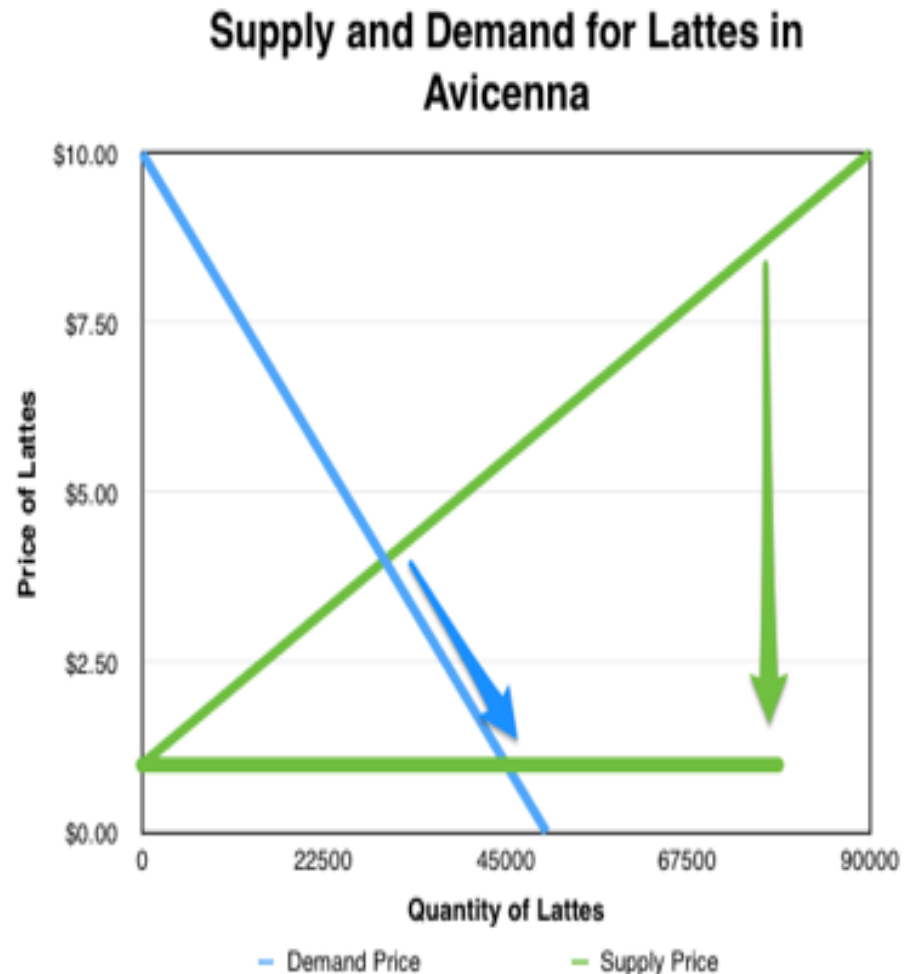
Understanding This Shift: Narratively

- Improving the training of baristas made the responsiveness of supply much much greater—in fact, made supply perfectly responsive.
- This lesser resource cost of making large numbers lattes means that an economy trying to satisfy people's needs will shift resources into the latte sector, and away from sectors where resource costs have not fallen.
- The falling market price of lattes is a signal to the economy to move resources into making lattes and out of teaching yoga.
- As the price of lattes fell, the number of lattes purchased fell as more people's willingness-to-pay exceeded the market price.
- And so the price fell and the quantity rose until supply and demand were once again in balance



Ways of Understanding This Shift...

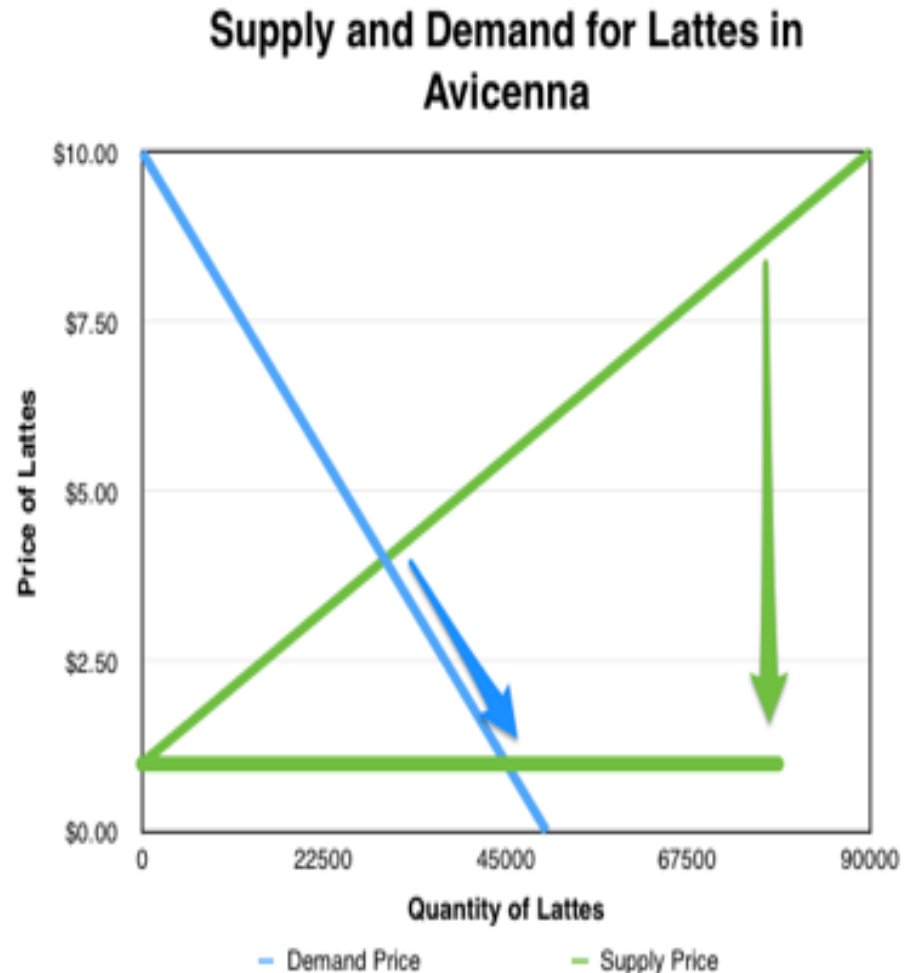
- s : 0.0001 \rightarrow 0.0000
- P^* : \$4/latte \rightarrow \$1/latte
- Q^* : 30000/day \rightarrow 45000/day
- Narratively, algebraically, graphically—all three are consistent, all three are coherent views of understanding the same economic process
- What is that economic process?



Ways of Understanding This Shift...

- s : 0.0001 \rightarrow 0.0000
- P^* : \$4/latte \rightarrow \$1/latte
- Q^* : 30000/day \rightarrow 45000/day

- Narratively, algebraically, graphically —all three are consistent, all three are coherent views of understanding the same economic process
- What is that economic process?
- It is the market economy reacting to a change in circumstances by shifting resources around to keep production efficient and arrange production to satisfy consumer demands as fully as possible



What Happens When the Demand Curve Shifts or Tilts?

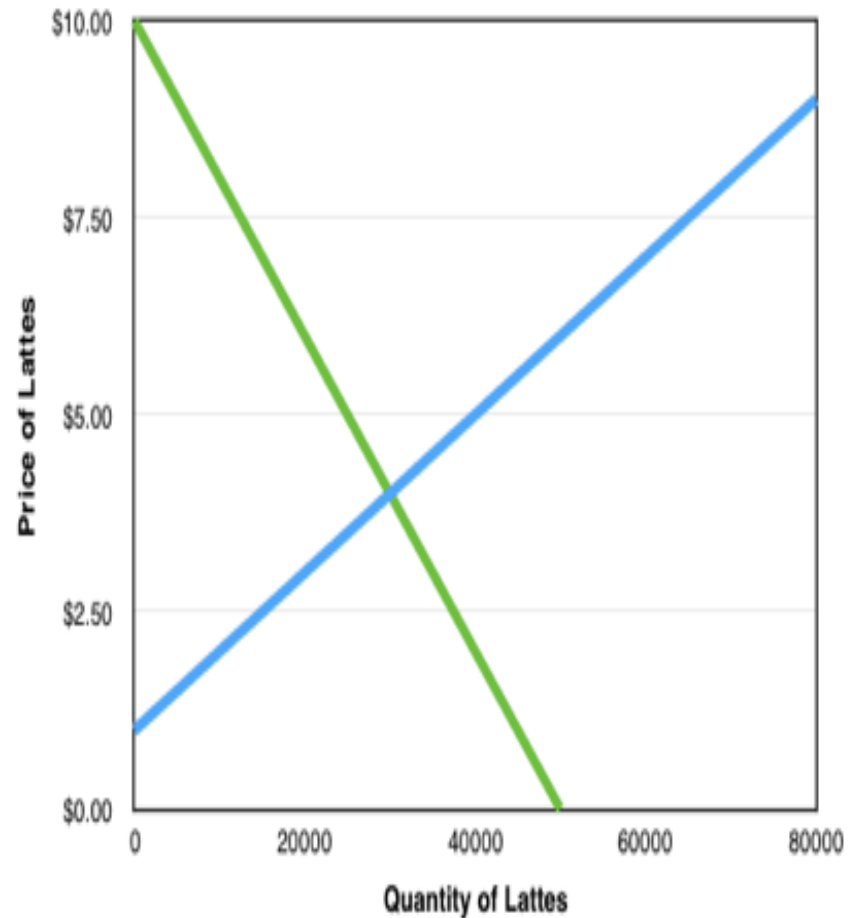
J. Bradford DeLong

February 3, 2016 8-9 AM
Wheeler Auditorium, U.C. Berkeley

Shifting and Tilting the Demand Curve

- We could do a similar example for shifting the y-axis intercept of the demand curve—the maximum willingness-to-pay, the P_{d0} coefficient, the intensity of greatest need or desire for the commodity.
- We could do a similar example for shifting the slope of the demand curve—the responsiveness of consumer tastes to falling prices, the d coefficient, the potential extent of demand.

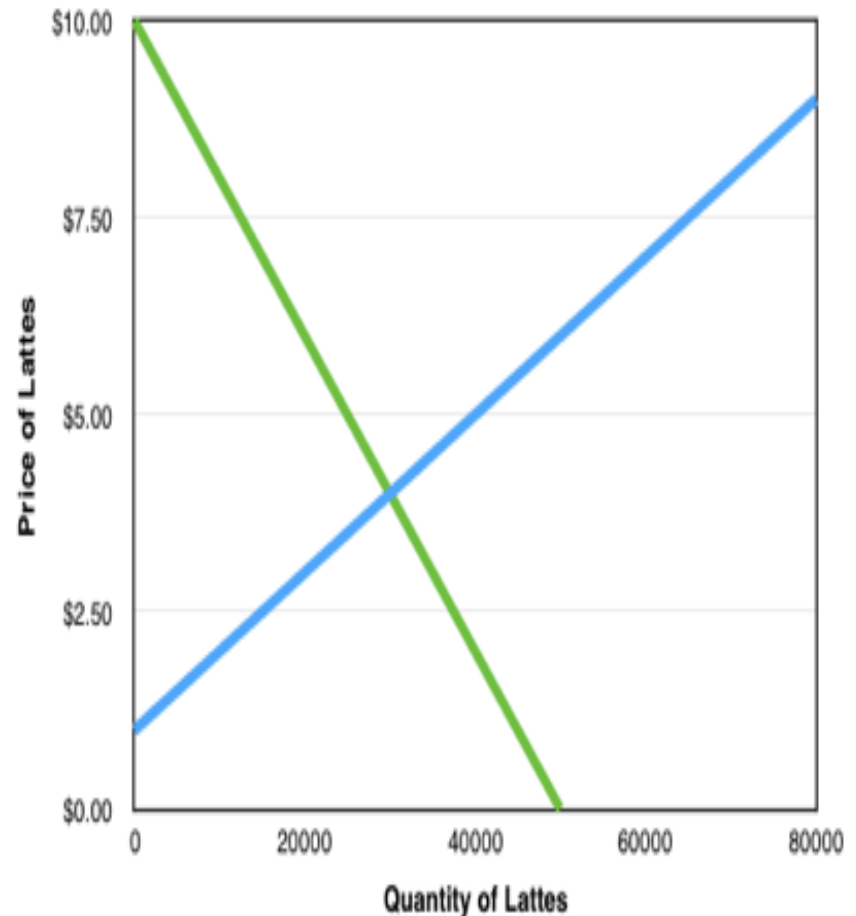
Supply and Demand for Lattes in Avicenna



Shifting and Tilting the Demand Curve

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- We could do a similar example for shifting the slope of the demand curve—the responsiveness of consumer tastes to falling prices, the d coefficient, the potential extent of demand.
- The stories would be the same—except that instead of being driven by changes in the technology of production, they would be driven by changes in the preferences or the wealth of potential consumers.

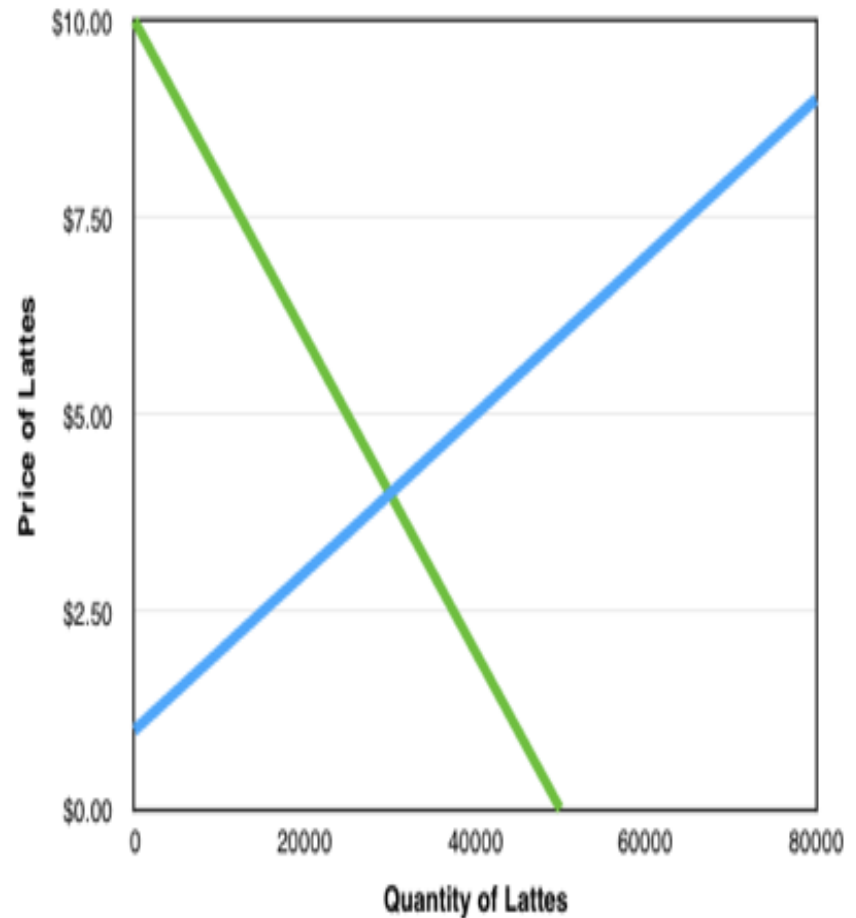
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Shifting and Tilting the Demand Curve II

- The stories would be the same— except that instead of being driven by changes in the technology of production, they would be driven by changes in the preferences or the wealth of potential consumers.
- People would change their behavior in response to the different signals about resource availability and ultimate consumer need and desire sent by the price system
- And the economy would strive to:
 - A. Keep production efficient
 - B. Satisfy as much consumer need and desire as possible given shifting preferences and wealth

Supply and Demand for Lattes in Avicenna



The Market System: Balance Sheet

J. Bradford DeLong

February 3, 2016 8-9 AM
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What Goes Right with the Market?

- The competitive market
- In equilibrium
- With secure property rights
- And secure contract rights
- From the perspective of a utilitarian greatest-good-of-the-greatest-number:
 1. *Allocates* the roles of producers and sellers to those who can make and sell in a way least costly to society's resources, those with the lowest *opportunity cost*.
 2. *Produces* at a scale that exhausts all possible *win-win exchanges*
 3. *Rations* the goods produced to those with the greatest *willingness-to-pay*—those who, by the money standard, need and want it the most
 4. *Responds* to changing resources and technologies and to changing consumer preferences and wealth by adjusting what is made, how is made, and for whom it is made in order to keep production efficient and satisfy as much of consumer need and desire as is attainable.

What Can Go Wrong with the Market?

- It can be out of equilibrium
- It can be messed up by a government that imposes quotas
 - (Then the price adjusts to make the best of a bad situation)
- It can be messed up by a government that fixes prices
 - (Then people respond to the wrong price signals)
- That is as far as we have gotten so far
- And now we are roughly to the end of chapter 7. On to chapter 8!

Next Time We Add to: What Can Go Wrong with the Market?

- It can be out of equilibrium
- It can be messed up by a government that imposes quotas
 - (Then the price adjusts to make the best of a bad situation)
- It can be messed up by a government that fixes prices
 - (Then people respond to the wrong price signals)
- **In addition: it can fail to be competitive**

CHAPTER 8

Monopoly, Oligopoly, and Monopolistic Competition

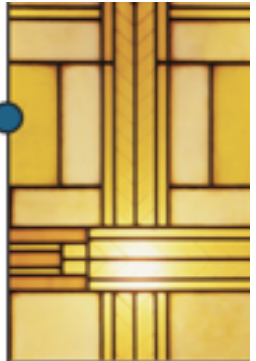


MONOPOLY SELLERS ALMOST ALWAYS OFFER DISCOUNT PRICES TO BUYERS WHO ARE WILLING TO MAIL IN A REBATE COUPON OR ENDURE SOME OTHER TYPE OF INCONVENIENCE

Some years ago, schoolchildren around the country became obsessed with the game of Magic: The Gathering. To play, you need a deck of Magic Cards, available only from the creators of the game. But unlike ordinary playing cards, which can be bought in most stores for only a dollar or two, a deck of Magic Cards sells for upward of \$10. And since Magic Cards cost no more to manufacture than ordinary playing cards, their producer earns an enormous economic profit.

In a perfectly competitive market, entrepreneurs would see this economic profit as cash on the table. It would entice them to offer Magic Cards at slightly lower prices, so that eventually the cards would sell for roughly their cost of production, just as ordinary playing cards do. But Magic Cards have been on the market for years now, and that hasn't happened. The reason is that the cards are copyrighted, which means the government has granted the creators of the game an exclusive license to sell them.

The holder of a copyright is an example of an imperfectly competitive firm, or price taker—that is, a firm with at least some latitude to set its own price. The competitive firm, by contrast, is a price taker, a firm with no influence over the price of its product.



LEARNING OBJECTIVES

After reading this chapter, you should be able to:

- LO1 Distinguish among three types of imperfectly competitive industries (monopoly, oligopoly, and monopolistic competition) and describe how imperfect competition differs from perfect competition.
- LO2 Identify the five sources of market power and describe why economies of scale are the most enduring of the various sources of monopoly power.
- LO3 Apply the concepts of marginal cost and marginal revenue to find the output level and price that maximize a monopolist's profit.
- LO4 Explain why the profit-maximizing output level for a monopolist is too small from society's perspective.
- LO5 Discuss why firms often offer discounts to buyers who are willing to jump some form of hurdle.
- LO6 Discuss public policies that are often applied to natural monopolies.