

## What's Behind the Supply Schedule

Midterm Examination Announcement

Review

Debriefing of the market simulation experiment from Week 3 recitations.

Why is the supply schedule upward sloping?  
Suppliers have alternative uses for their resources.

Producer surplus is the difference between the market price and the supplier's reservation price.

What have we learned?

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## Midterm Examination

Exam date is Tuesday, September 29, in class.

Bring Blue "Scantron" sheet.

We strictly enforce the Honor Code.

The exam is closed books and notes.

Bring your UNC ID.

Once you receive the exam, you may not leave the room until you have finished.

Late students will be barred from exam.

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## Midterm Examination

Exam comprises 30-40 multiple choice questions.

It covers classes 1-9 and recitations 1-5.

It will test concepts emphasized in the course.

Practice questions have been posted on the web.

Recitations next week are devoted to helping you prepare for the exam.

Get ready by reviewing practice multiple choice questions and by working chapter problems.

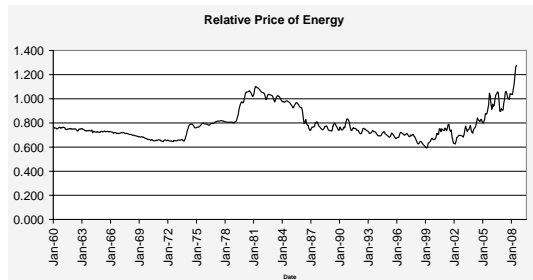
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## Review

Because there are almost always substitutes for the goods and services we demand, economists believe it is more accurate to say that people want things than that they need things.

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Why did consumers buy small engine vehicles in the 1970's and large engine vehicles in the 1980's?



Use Your Clickers To Answer  
The Following  
Graded Question

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Over the next several years, it is reasonable to predict that the ratio of larger to smaller vehicles made in the U.S. will...

- A. Rise as the market price of larger cars falls.
- B. Rise as a result of the increased cost of gasoline.
- C. Fall as the market price of larger cars falls.
- D. Fall as a result of the increased cost of gasoline.

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Why is it reasonable to predict that the ratio of larger to smaller cars sold in the U.S. in the next few years will fall?

Small cars are substitutes for large cars.

Smaller cars are more fuel efficient.

The recent increase in the price of gasoline increases the operating cost of large cars more than of small cars.

Some consumers will decide the benefit of a SUV is now smaller than the cost and will switch to a smaller vehicle.

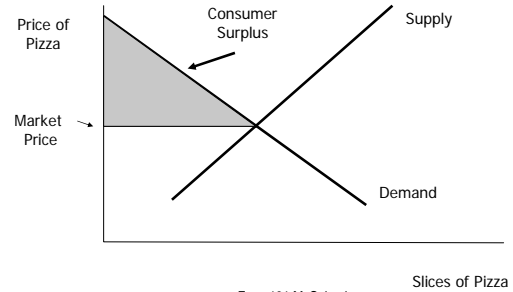
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Consumer surplus is the difference between our reservation price and what we pay.

If all consumers pay the same price, as occurs in market equilibrium, Then, for straight line demand schedules,... Consumer surplus is the area of the triangular shape formed by the price axis (height), a horizontal line at the equilibrium price (base) and the demand schedule itself (hypotenuse).

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Consumer surplus is the difference between our reservation price and what we pay.



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The following Table gives reservation prices for five potential consumers for a ticket to hear Doc Watson. If the market price of the ticket is \$10.00, how much is the group's consumer surplus?

Potential Consumers	Reservation Price
Jean	\$50.00
Jerry	\$25.00
Pat	\$15.00
Ari	\$10.00
Sam	\$5.00

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If the market price of the ticket is \$10.00, how much is the groups consumer surplus?

Potential Customers	Reservation Price	Surplus
Jean	\$50.00	\$40.00
Jerry	\$25.00	\$15.00
Pat	\$15.00	\$5.00
Ari	\$10.00	\$0.00
Sam	\$5.00	NA
Total Surplus		\$60.00

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## Debriefing the Trading Simulation

Lottery	Price	Winner
Buyers	\$20.00	Michael Hornsby 801
Sellers	\$20.00	Calvin Lewis 817
Helpers	\$10.00	Scott Plybon 806

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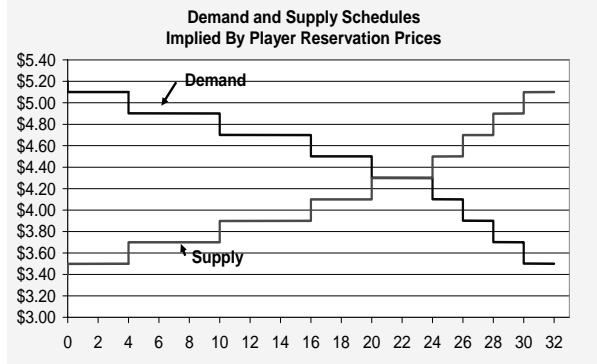
## Debriefing the Trading Simulation

In the simulation, buyers and sellers bought and sold boxes of computer chips.

What price does economic theory predict to be the equilibrium price of a box of computer chips?

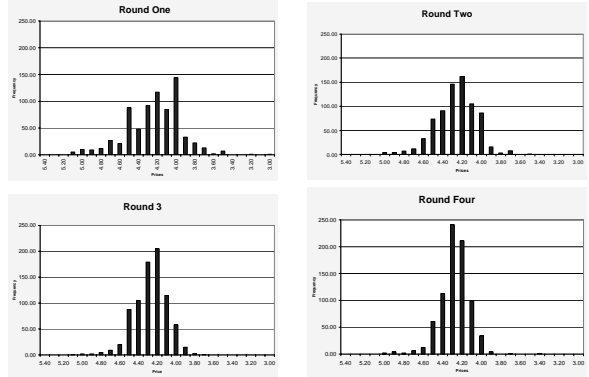
Did the simulation confirm or contradict economic theory?

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## Price Data from Simulations



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## Why is the supply schedule upward sloping?

As market price of a good rises...

It rises above the reservation price for some suppliers and they enter the market.

Suppliers find it optimal to commit resources to production that have higher opportunity costs than resources used previously.

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The supply schedule is upward sloping because an increase in price induces suppliers to commit more resources to production of the product in question.

Harry can supply two kinds of services.

He can provide dishwashing services for \$6.00 per hour.

He can also operate his own beverage can recycling service for which he receives \$0.02 per can.

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The following table shows Harry's output as a can recycler. How many hours per day should Harry commit to recycling?

Search time (hours/day)	Total number of containers found	Additional number of containers found
0	0	600
1	600	400
2	1,000	300
3	1,300	200
4	1,500	100
5	1,600	

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Use Your Clickers To Answer  
The Following  
Non-Graded Question

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If Harry can wash dishes for \$6.00 per hour or earn \$0.02 per recycled can, how many hours per day should Harry devote to recycling?

Up to:	Search time (hours/day)	Total number of containers found
	0	0
A. One hour	1	600
B. Two hours	2	1,000
C. Three hours	3	1,300
D. Four hours	4	1,500
	5	1,600

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Harry should commit up to 3 hours to recycling and the rest to dishwashing. Why?

The marginal (opportunity) cost of Harry's time as a recycler is \$6.00 per hour.

The marginal benefit of can recycling is:

\$12.00 (600 x .02) for hour one.

\$ 8.00 (400 x .02) for hour two.

\$ 6.00 (300 x .02) for hour three.

\$ 4.00 (200 x .02) for hour four.

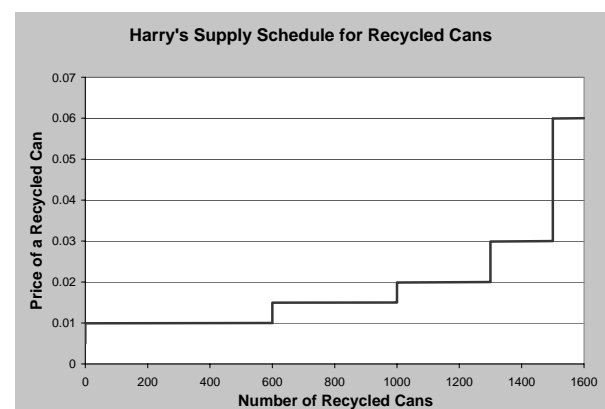
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We can use these data to show that Harry's supply of can recycling services is upward sloping.

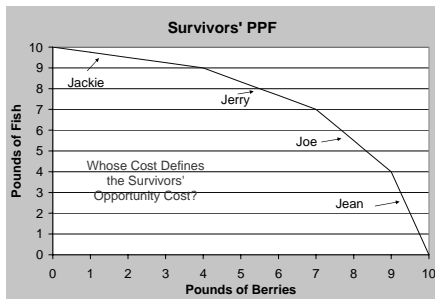
What price for recycled cans would lead Harry to commit additional hours to recycling?

Hours	MC	MB	Harry's Reservation Price (RP)
1	\$6	600xRP	\$0.01
2	\$6	400xRP	\$0.015
3	\$6	300xRP	\$0.02
4	\$6	200xRP	\$0.03
5	\$6	100xRP	\$0.06

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The supply schedule is upward sloping because a price increase induces suppliers to commit higher-cost resources to production.



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Use Your Clickers To Answer  
The Following  
Graded Question

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A supply schedule is upward sloping because at higher prices

- A. Customers are willing to pay more for the good.
- B. Firms perceive that the marginal cost of producing the good has increased.
- C. Firms perceive that the marginal benefit of producing the good has increased.
- D. Customers switch to substitute goods.

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Rational Resource Employment

The level of output chosen by the supplier should be that where the marginal cost of production just equals the marginal benefit.

Spending should be allocated across productive resources so that the marginal cost of producing a bit more output is the same no matter what input is used to achieve the increase.

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What does “perfect” competition mean to an economist?

A perfectly competitive market is one where:

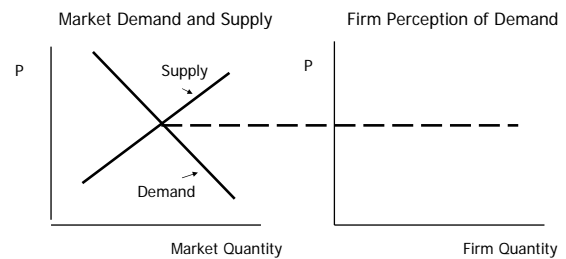
No individual seller has significant influence on market price.

No individual buyer has significant influence on market price.

Buyers and sellers take the marginal price as given. They are “price takers”.

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The relationship between a price taking firm and the market:



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Use Your Clickers To Answer  
The Following  
Graded Question

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The firm in a competitive industry perceives its demand schedule to be horizontal because it...

- A. Has a substantial control over its price.
- B. Can sell only a certain amount of the good as if there were a quota.
- C. Can sell as much as it wants at the market price.
- D. Has a constant marginal cost of production.

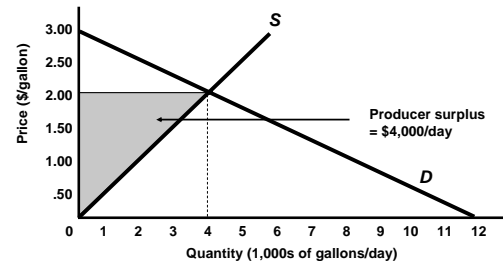
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Producer surplus is the difference between the market price and the supplier's reservation price.

If all producers receive the same price, as occurs in perfect competition  
Then, for a straight line supply schedule, ...  
Producer surplus is the area of the triangular shape formed by the price axis (height), the equilibrium price (base) and the supply schedule (hypotenuse).

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Suppose the demand and supply schedules for milk are as pictured. Producer Surplus is the colored area.



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## What Have We Learned?

The Midterm Exam is Tuesday, September 29.  
The market simulation price of a box of computer chips tended toward the value predicted by demand and supply theory.  
The supply schedule is upward sloping because suppliers have alternative uses for their resources.  
Producer surplus is the difference between the market price and the supplier's reservation price.

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