Lecture 2(ii)

Announcements

Aplia experiments this week.

Times for large lectures:

001AL Fri 9:05-9:30 am

001MZ Fri 9:30-9:55 am

022AL Fri 10:10-10:35 am

022MZ Fri 10:35-11:00 am

Times for small lectures announced in class.

Note: just go to Aplia.com at the scheduled time. You can log on from anywhere on campus.

Lecture

1. Excess Demand and Supply Again

2. Shifting Supply and Demand Curves

(In equilibrium to start. But then S or D shifts, or both.

What happens?)

Case of Excess Supply



Qe

Pe

P

Q

S

D

Suppose P=$3:

Excess Supply = \_\_\_\_\_\_\_\_\_\_\_\_\_

Case of Excess Demand



Qe

Pe

P

Q

S

D

Suppose P=$1:

Excess Demand = \_\_\_\_\_\_\_\_\_\_\_\_

From now on assume the market is in equilibrium.

Look for how the market price and quantity change when the market fundamentals change.

Learn about shifting

Determinants of Demand

1. Price

* A movement **along** a demand curve (not a shift!!)
* P ↓ implies QD ↑ (**law of demand)**

2. Prices of other goods

3. Income

4 Number of Buyers

5. Consumer tastes

Look at 2: Price of other goods

Back to Demand For Corn

|  |  |  |
| --- | --- | --- |
| Price of corn | QD  (Oil $40) | QD  (Oil $80) |
| 0 | 8 | 12 |
| .50 | 7 | 11 |
| 1.00 | 6 |  |
| 1.50 | 5 |  |
| 2.00 | 4 |  |
| 2.50 | 3 |  |
| 3.00 | 2 |  |
| 3.50 | 1 |  |
| 4.00 | 0 |  |

Corn and Oil are Substitutes

(POil ↑ implies QD ↑)



Go back to initial equilibrium in market for corn

(With Supply Curve from earlier in class)

Equilibrium when Oil Price = $40

Equilibrium when Oil Price = $80

Effect of increase in Oil Price?

Facts: Avg Prices in June by Year

|  |  |  |
| --- | --- | --- |
| Year | [$ Price Barrel of Oil (WTI](http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=RWTC&f=D)) | [$ Price](http://www.ers.usda.gov/data-products/feed-grains-database/)  [Bushel Corn](http://www.ers.usda.gov/data-products/feed-grains-database/) |
| 2004 | 38 | 2.79 |
| 2005 | 56 | 2.03 |
| 2006 | 71 | 2.14 |
| 2007 | 67 | 3.53 |
| 2008 | 134 | 5.47 |
| 2009 | 70 | 4.01 |
| 2010 | 75 | 3.41 |
| 2011 | 96 | 6.38 |
| 2012 | 82 | 6.37 |
| 2013 | 96 | 6.97 |
| 2014 | 106 | 4.50 |
| 2015 | 60 | 3.58 |
| 2016 | 49 | 3.82 |
| 2017 | 45 | 3.43 |
| 2018 | 68 | 3.67 |

2013

2004

2009

2014

2017

2008

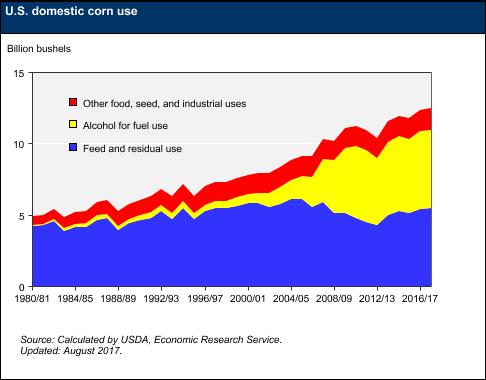
Compare 2004 and 2008

Then the crisis 2009

Then 2013

Then 2017

Then 2018.



Yellow is portion of corn crop going to ethanol

Of course the price of corn depends upon many things besides the price of a substitute good (oil).

Like supply!

* 2014 had great corn weather, so no surprizing corn price below regression line

Like income!

* In June 2008 income growth of developing countries (particularly China) was driving up commodity prices like oil and corn.

What happens when decrease the price of substitute?

Other Substitutes For Corn?

Back to List

of Determinants of Demand

1. **Own** **Price** (A movement **along** a demand curve )

Shifters:

2. **Prices of other goods**

* PSubstitute ↑ implies QD ↑
* PComplement ↑ implies QD ↓

Substitute: Use in place of.

Complement: Use together with.

Complements for Corn?

---Butter

---More interesting (and more important): Cars that use ethanol.

3. Income

Normal Good

Inferior Good

Note: Goods can be normal for some ranges of income and inferior for other ranges.

4 Number of Buyers

5. Consumer tastes

Supply: Depends upon

**Own Price** (Movement along the Supply Curve)

Shifters:

**Prices of the everything used to produce the good** (the inputs)

---Labor, Materials,Equipment

Example: If immigration cuts price of farm labor→ QS ↑

**Number of sellers**

Example: Wheat farmers switching to corn→ QS ↑

**Technology** (Example: New seeds or fertilizer invented → QS ↑)

When 2 things shift

The Market for Corn

Suppose price of oil goes up.

i) Oil and Corn are substitutes,

so:

Demand shifts up and to the right.

ii) Oil is an input into the production of corn (farmers need it for tractors)

so:

Supply shifts up and to the left

If Just Demand Shifts...

Q

$

Q1

P1

D1

S1

Put this all together:

If Just Demand Shifts...

Q

$

Q1

P1

D1

S1

Q

$

Q1

P1

D1

S1

D2

Q2

P2

Just Supply Shifts...

Q

$

Q1

P1

D1

S1

Just Supply Shifts...

Q

$

Q1

P1

D1

S1

Q

$

Q1

P1

D1

S1

S2

Q2

P2

If Just Demand Shifts...

Both Demand and Supply Shift

Q

$

Q1

P1

D1

S1

Q

$

Q1

P1

D1

S1

D2

S2

Q2

P2

If Just Demand Shifts...

Another Possibility with 2 shifts...

Q

$

Q1

P1

D1

S1

Q

$

Q1

P1

D1

S1

D2

S2

|  |  |  |  |
| --- | --- | --- | --- |
|  | Shifts | ΔPcorn | ΔQcorn |
| Price of  Substitute ↑ | QD |  |  |
| Price of Input ↑ | QS |  |  |
| Combined: | QD,  QS |  |  |