Supply Lecture
Supply Schedule and Supply Curve

Supply schedule:
- A tabular depiction of the numerical relationship between the quantity supplied and its own price.

Supply curve:
- A graphical representation of the relationship between the quantity supplied and its own price.
### Supply schedule for hamburgers:

<table>
<thead>
<tr>
<th>Price/lb.</th>
<th>Quantity supplied</th>
</tr>
</thead>
<tbody>
<tr>
<td>$ .50</td>
<td>100 lbs.</td>
</tr>
<tr>
<td>1.00</td>
<td>200 lbs.</td>
</tr>
<tr>
<td>1.50</td>
<td>300 lbs.</td>
</tr>
<tr>
<td>2.00</td>
<td>400 lbs.</td>
</tr>
<tr>
<td>2.50</td>
<td>500 lbs.</td>
</tr>
</tbody>
</table>
Relationship Between Supply and Quantity Supplied $Q_s$

As the price of hamburger increases, ceteris paribus, the quantity supplied increases.
The Supply Curve for Hamburger:

Price

Supply Curve

Quantity Supplied per unit time
**The Supply Curve:**

1. One point on the supply curve represents a single price/quantity relationship.

2. The upward slope of the supply curve indicates that the quantity supplied increases with price.
3. A change in the commodity's own price results in movement along the supply curve.

As price goes from $P_0$ to $P_1$, quantity supplied goes from $Q_0$ to $Q_1$. 
Increase in Supply:

Is characterized by a shift of the supply curve to the RIGHT.

At every price, quantity supplied is greater!
A Decrease in Supply:

Is characterized by a shift of the supply curve to the LEFT.

At every price, quantity supplied is less!
Supply Defined:

Supply:

Relationship showing the various amounts of a commodity that producers would be *willing and able* to sell at possible alternative prices during a given time period, ceteris paribus.
Quantity Supplied Defined:

Quantity Supplied:

Total amount of a commodity that all firms are *willing and able to sell*, at a given price, during a given time period.
The Determinants of Supply

Commodity's own price:
1. $P \uparrow \Rightarrow Qs \uparrow$, c.p. (Law of Supply)

2. What type of relationship is characterized by supply? **DIRECT**

3. Slopes up and to the right.
Number of Firms in the Industry

If the number of business firms producing a product increases,

ceteris paribus,

the supply curve shifts to the right.
Increased Business Firms

At every price, quantity supplied is greater!
State of Technology

Technological improvements allow a greater yield from a given set of factors.

Therefore, we see an ↑PE

This shifts the supply curve to the right.
Improved Technology:

At every price, quantity supplied is greater!
Improved Technology:

The price of a 12.5 inch color T.V. in 1954 was $1,000.

What was the real price in 1954 using the CPI (1982-84 =100) of 26.9?

$3,717.47
**Improved Technology:**

What would the price of this 12.5 inch color T.V. be in 1996 dollars?

The average CPI for 1996 is 156.7

$5825.28
Weather

If the weather is bad, the supply of agricultural commodities decreases.

If the weather is good, the supply of agricultural commodities increases.
At every price, quantity supplied is greater!
Bad Weather

At every price, quantity supplied is less!
Changes in the Cost of Production

This implies that the prices of the factors of production have increased, or decreased.

Changes in technology may affect the quantity of the factors of production required, or the output derived from production factors, thus reducing cost as well.
Increased Production Costs

Supply curve shifts up vertically by the amount of the increased production cost.

At every price, quantity supplied is less!
Did market price increase by as much as the increase in cost of production?

Are ALL the increased costs passed on to the consumer?
What Occurs when COP Decreases?

Supply curve shifts Down vertically by the amount of the decreased production cost.

At every price, quantity supplied is more!
Did market price decrease by as much as the decrease in cost of production?

Are ALL the decreased costs passed on to the consumer?
Price of other commodities that use the same or similar set (bundle) of inputs:

1. Assume that a farmer has 100 acres of land on which he can grow corn or soybeans.

2. Assume the farmer will plant the one crop that yields the greatest expected profit.
Price of other commodities that use the same or similar set (bundle) of inputs:

3. Assume that on March 1, the E(profit) from corn is a greater than the E(profit) from soybeans.

What would you expect our farmer to do?
What would the market expect our farmer to do?
Expect Supply of Corn to....?

Expect supply of corn to increase in response to greater expected profits
Expect Price of Corn to......?

We would expect corn prices to decrease in response to increased production, c.p.
Let Us Add a WRINKLE.

4. A crop failure in Brazil due to extended drought is announced on April 1, that doubles the price of soybeans.

How would you expect many farmers to respond to this news?
Domestic Supply of Corn?
Domestic Price of Corn?

Shift resources out of corn production in response to a decrease in expected relative profits.
Domestic Supply of Beans?
Domestic Price of Beans?

Shift resources into bean production in response to an increase in expected relative profits.
Do You See Other Strategies?

1. Stay with corn in anticipation of higher prices at harvest due to reduced corn acreage (decreased supply)

2. Go with beans, but hedge in the futures market to protect yourself from lower harvest prices due to increased soybean acreage (increased supply)
What Has Happened to the Supply of Farm Labor Over Time

Farm Labor Mkt.  Non-Farm Labor Mkt.

\[ P_0 \quad S_0 \quad D_0 \quad P_0 \quad S_0 \quad D_0 \]
Farm Labor Mkt.

Non-Farm Labor Mkt.
Producer Expectations

If producers expect the price of a commodity he is able to produce to increase, supply of that commodity may increase.
Supply increases based on the producer's expectation of a price increase.

BUT, prices in fact decrease due to increased supplies.
Producer Expectations

If producers expect the price of a commodity he is able to produce to decrease, supply of that commodity may decrease.
Supply decreases based on the producer’s expectation of a price decrease

BUT, prices in fact increase due to decreased supplies
Price Cycles Due to Expectations
Length of Time Available for Producer Response to Price Changes

Affects the slope of the supply curve

Price

Supply very short run

Not very responsive to price changes if at all (Perfectly inelastic)

Q/u.t.
Example:

It is August 1st and corn price increases 50%. What supply response do farmers have at this point in the growing season?
Length of Time Available for Producer Response to Price Changes

Supply [short run]

As the amount of time producers have to respond to price changes, the more elastic supply becomes

Price

\( P_1 \)

\( P_0 \)

\( Q_0 \)

\( Q_1 \)

\( Q/\text{u.t.} \)
Length of Time Available for Producer Response to Price Changes

Supply \text{ Long run}

\begin{align*}
\text{Price} \\
\begin{array}{c}
P_1 \\
P_0
\end{array} \\
\begin{array}{c}
Q_0 \\
Q_1
\end{array} \\
Q/\text{u.t.}
\end{align*}
Production Taxes and Subsidies

Production taxes are also referred to as *indirect business taxes*:
- Excise and Sales taxes
- Property taxes,
- License fees, and Customs duties

and *payroll taxes*:
- Social Security and Medicare taxes
- Unemployment taxes (FUTA)
- Clinton’s prev. proposed health care tax
An Increase in Production Taxes

Results in a decrease in supply.

What happens to prices to consumers?
A Decrease in Production Taxes

Results in an increase in supply.

What happens to prices to consumers?
Many Politicians....... 

are supported by voters when they declare that businesses do not pay their fair share of taxes, so let’s increase business taxes.

Who may pay a significant portion of this tax increase?
Traditional view: a firm currently charging the profit-maximizing price and producing the profit-maximizing output will have no reason to change price or output when a corporate income tax is imposed. The price and output combination yielding the greatest profit before the tax will still be the most profitable after government takes a fixed percentage of the firm’s profits in the form of income taxes.

Current Corporate Tax Rates:

- $10 million and less: 34 percent tax rate
- over $10 million: 35 percent tax rate

The company’s stockholders bear the incidence of the tax in the form of lower dividends.

Other view: Higher corporate taxes reduce retained earnings that the corp. could use to increase capital and expand production. R&D efforts may be diminished. If a corp. is not currently operating at the profit-max. position, (fear of govt. pressure, adverse public opinion), will use higher corporate taxes as “excuse” or rationale for price increases with less fear of public criticism.
Production Taxes and Subsidies

Subsidies can be thought of as production taxes in reverse:
- so called “corporate welfare”
- the state subsidy provided to UNC system universities
- FSA shared payments for conservation measures on agricultural lands, and previous farm program subsidies.
Increase Subsidies (or tax breaks)

Results in an increase in supply.

What happens to prices to consumers?
Corporate Welfare?

O.K., let’s cut all this so-called corporate welfare and make those big corporations pay their fair share of taxes.

They get all these special interest tax breaks, it is ridiculous. Right!
Decrease Subsidies (or tax breaks)

Results in a decrease in supply.

What happens to prices to consumers?
Remember:

Supply shifters have no affect on the Demand Curve !!!!