

Impact of Price on Quantity Supplied/Demanded

by Sophia Tutorial



WHAT'S COVERED

This tutorial will cover the impact of price on the quantity supplied or demanded, reviewing how a change in price causes movement along a demand or supply curve.

Our discussion breaks down as follows:

1. Law of Demand: A Review
2. Law of Supply: A Review
3. Finding Equilibrium

1. Law of Demand: A Review

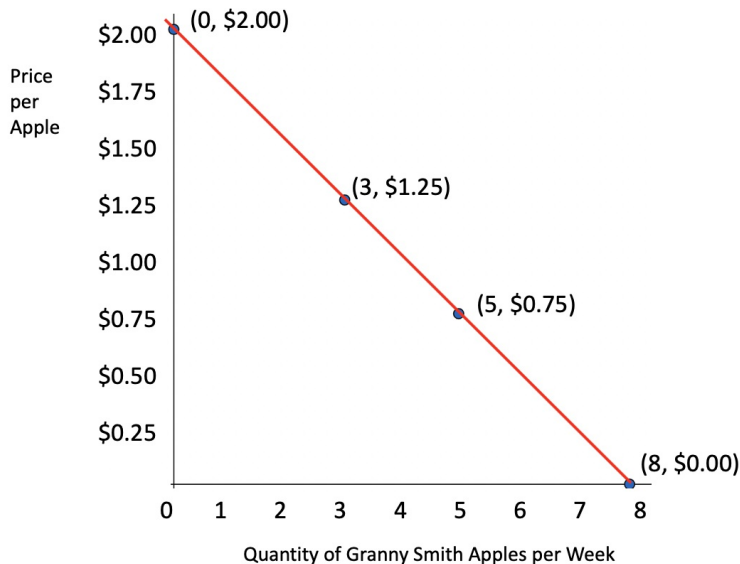
The **law of demand** is the inverse correlation between price and quantity with all other variables fixed.

For example, here is a demand schedule for Granny Smith apples, outlining how many apples a consumer would purchase per week at various prices. At high prices, consumers do not want to purchase as many, while as the price falls, they want to purchase more.

Price of Granny Smith Apples	Quantity of Granny Smith Apples Each Week
\$2.00	0
\$1.75	1
\$1.50	2
\$1.25	3
\$1.00	4
\$0.75	5

\$0.50	6
\$0.25	7
\$0.00	8

When we plot the points on a graph, we can see the inverse relationship between price and quantity, illustrated by a downward sloping demand curve.



As the price of apples goes down, we buy more. As the price of apples goes up, we move along the curve to buy fewer apples.

Therefore, there is a negative relationship between price and quantity with demand.

HINT

It is important to remember, though, that the idea of *ceteris paribus*, which means everything else held constant, applies in this situation. This assumes that *only* the price of Granny Smith apples has changed. Nothing else has changed, like the price of Gala apples or the price of oranges and bananas, or even a consumer's income, because those things could certainly impact how many Granny Smith apples are purchased. We are only talking about buying more or less because the price of Granny Smith apples went up or down.

We refer to this as a movement along the curve as the price changes. As mentioned, as the price of Granny Smith apples drops, we buy more. This is only involving a relationship between the two axes that comprise the graph—the price of Granny Smith apples and the quantity that is being purchased.

Therefore, we do not need a new demand curve. We simply move from one point to the next to show as the price goes up or down, which is why it is called movement along the demand curve.

HINT

It is important to differentiate between a change in quantity demanded versus a change in demand itself. Often people will make the mistake of inferring that since the price went up, demand went down. For demand to go down, this requires that the whole curve has a new relationship, or that people would buy less at *every single price*, which is not the case here. Therefore, we say that as price changes, it represents a change in

quantity demanded.



TERM TO KNOW

Law of Demand

The inverse correlation between price and quantity with all other variables fixed

2. Law of Supply: A Review

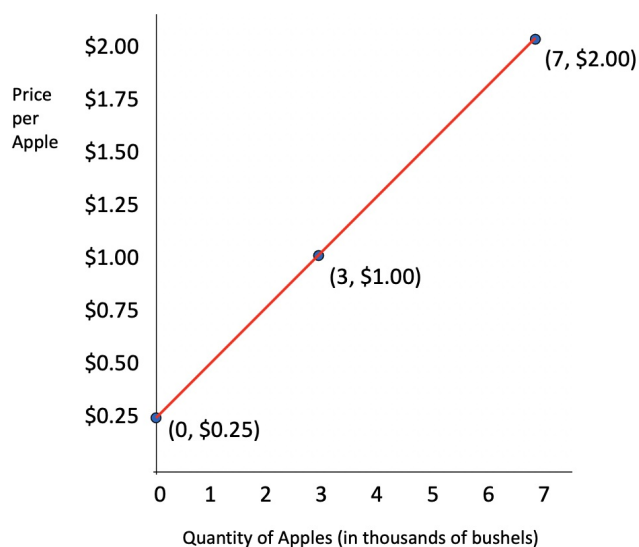
The **law of supply** states that if the price of a good decreases, the quantity supplied decreases. The opposite would also be the case, meaning as the prices go up, the quantity supplied would also increase.

Again, using the same prices of apples, now you can see a different relationship between price and quantity.

Price of Granny Smith Apples	Quantity of Granny Smith Apples Each Week
\$2.00	7
\$1.75	6
\$1.50	5
\$1.25	4
\$1.00	3
\$0.75	2
\$0.50	1
\$0.25	0

As the price goes down, the quantity these farmers are willing to produce falls, because, at very low prices, the farmer likely cannot even cover his costs. As the price goes up, he has more of an incentive, ability, and willingness to supply, so the quantity supplied rises.

This represents a positive relationship between price and quantity for supply.



HINT

Again, the concept of *ceteris paribus* applies here. As the price of apples falls, we can expect that farmers will produce fewer apples. Some of them may not want to produce apples anymore, because they cannot cover their costs. With *ceteris paribus*, we are holding everything else constant, assuming that *only* the price of apples has changed. We are not changing the price of their resources or inputs, such as land, labor, or capital. We are not changing their technology, which impacts how easy or difficult it is for them to produce. We are only changing the market price of apples.

Again, a change in price will cause movements along the supply curve. As the price of Granny Smith apples increases, farmers want to supply more. This is only involving a relationship between price and quantity, so we do not need a new curve. We simply move along the curve to see the new price and quantity combination.

HINT

As the price goes up, the quantity supplied goes up, and as price goes down, the quantity supplied goes down. We do not, however, say that the supply itself has changed.

TERM TO KNOW

Law of Supply

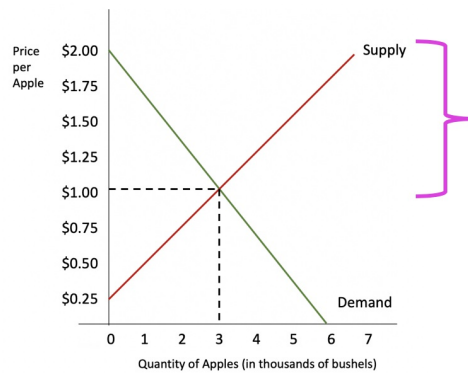
If the price of a good decreases, the quantity supplied decreases

3. Finding Equilibrium

At prices above \$1.00: $Q_s > Q_d$

Now, if we are looking at these movements along the curve, you can see that at prices above \$1 where these two curves converge, the quantity supplied exceeds the quantity demanded.

Price of Apple	Quantity of Apples Supplied	Quantity of Apples Demanded
\$2.00	7,000	0
\$1.75	6,000	1,000
\$1.50	5,000	1,500
\$1.25	4,000	2,000
\$1.00	3,000	3,000
\$0.75	2,000	4,000
\$0.50	1,000	5,000
\$0.25	0	6,000



At prices above \$1.00: $Q_s > Q_d$

As price goes down:
Quantity supplied falls
Quantity demanded rises

When that occurs, there is an incentive or a gap between the supply and demand curves.

In this case, there will be an incentive for grocers to lower the price. You may recall that as we lower the price, we simply move along the curve. We do not need a new curve.

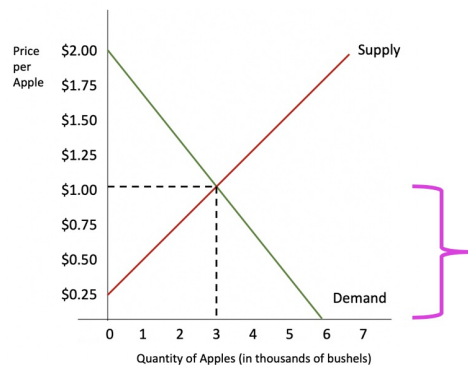
So, as we lower price, the quantity supplied would fall, the quantity demanded would rise, and they would meet in the middle.

If the price was too low, then there is a gap, but it is now where the quantity demanded exceeds the quantity supplied, meaning there are a lot of people buying but not a lot of people producing.

At prices below \$1.00: $Q_d > Q_s$

At prices below \$1 where these two curves converge, the quantity demanded exceeds the quantity supplied.

Price of Apple	Quantity of Apples Supplied	Quantity of Apples Demanded
\$2.00	7,000	0
\$1.75	6,000	1,000
\$1.50	5,000	1,500
\$1.25	4,000	2,000
\$1.00	3,000	3,000
\$0.75	2,000	4,000
\$0.50	1,000	5,000
\$0.25	0	6,000



At prices below \$1.00: $Q_d > Q_s$

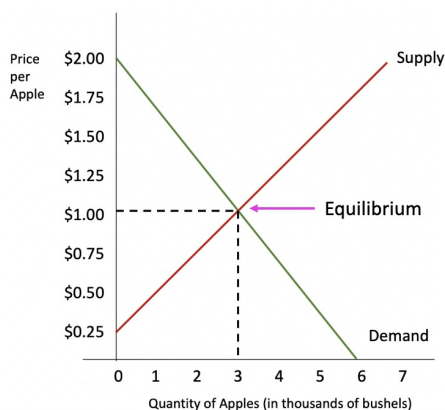
As price goes up:
Quantity supplied rises
Quantity demanded falls

As grocers raise the price, we see the quantity demanded fall, and at the same time, we see the quantity supplied rise--according to the laws of supply and demand--until we meet in the middle at equilibrium.

At the price of \$1.00: $Q_s = Q_d$

The equilibrium price is the only price where there is no tendency for change, and it is the only price that clears the market, where the quantity supplied equals exactly the quantity demanded.

Price of Apple	Quantity of Apples Supplied	Quantity of Apples Demanded
\$2.00	7,000	0
\$1.75	6,000	1,000
\$1.50	5,000	1,500
\$1.25	4,000	2,000
\$1.00	3,000	3,000
\$0.75	2,000	4,000
\$0.50	1,000	5,000
\$0.25	0	6,000



\$1.00 is the equilibrium price.

At prices at \$1.00: $Q_s = Q_d$

Therefore, **equilibrium** is defined as the price and quantity pair at which supply and demand intersect or the price and quantity at which the market clears.

TERM TO KNOW

Equilibrium

The price and quantity pair at which supply and demand intersect; price and quantity at which the market clears

SUMMARY

In this tutorial, we **reviewed the laws of supply and demand**, focusing on the relationship between price and quantity. Remember, a change in price will only cause movement along the demand or supply curve, known as a change in quantity demanded or quantity supplied. We also discussed **finding equilibrium**, which is the point at which supply and demand intersect, or the price and quantity at which the market clears.

Source: Adapted from Sophia instructor Kate Eskra.

TERMS TO KNOW

Equilibrium

The price and quantity pair at which supply and demand intersect; price and quantity at which the market clears.

Law of Demand

The inverse correlation between price and quantity with all other variables fixed.

Law of Supply

If the price of a good decreases, the quantity supplied decreases.