

# Producer Surplus

by Sophia Tutorial



## WHAT'S COVERED

This tutorial will cover the topic of producer surplus, focusing on its definition and representation on a supply graph.

Our discussion breaks down as follows:

1. Supply As Willingness to Produce
2. Producer Surplus

## 1. Supply As Willingness to Produce

You may recall that supply refers to producers' ability to produce something and their willingness to supply it at a given price.

From this viewpoint, how much a firm is going to be willing to supply at any given price will depend on its costs. There are two different types of costs that businesses or firms face:

- Fixed costs, which stay the same every single month, whether they produce nothing or produce a lot. These include things like rent and property taxes.
- Variable costs, which are costs that vary. The more they produce, their variable costs increase, while the less they produce, the lower their variable costs. These include things like wages to workers and raw materials.

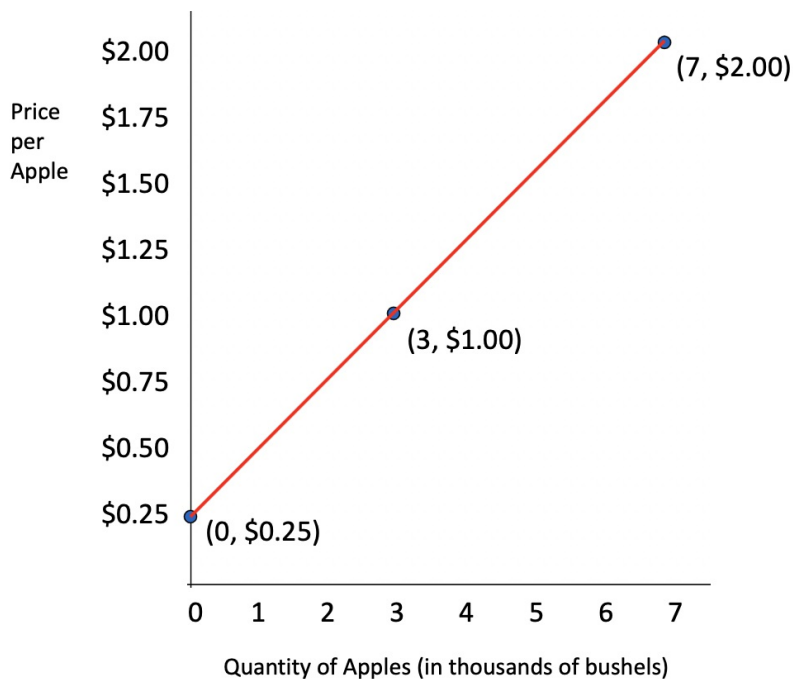
If we look at a single farmer's willingness to supply apples, notice that at high prices, he is willing to supply more apples, and at low prices, it is not profitable enough, so he is willing to supply fewer apples.

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

Now, if we looked at it in terms of overall market supply, at low prices very few farmers would be able to be profitable--or be able to produce at all.

Therefore, there is a positive relationship between price and quantity with supply, as you can see when we plot the points. The supply curve is upward sloping.



Each of these price and quantity combinations represents a producer's willingness to produce. However, what if a farmer could charge a higher price than what he is actually willing to accept? This is the idea of producer surplus.

## 2. Producer Surplus

**Producer surplus** is the difference between the actual market price for a good and the least amount a producer would have agreed to receive for the good.

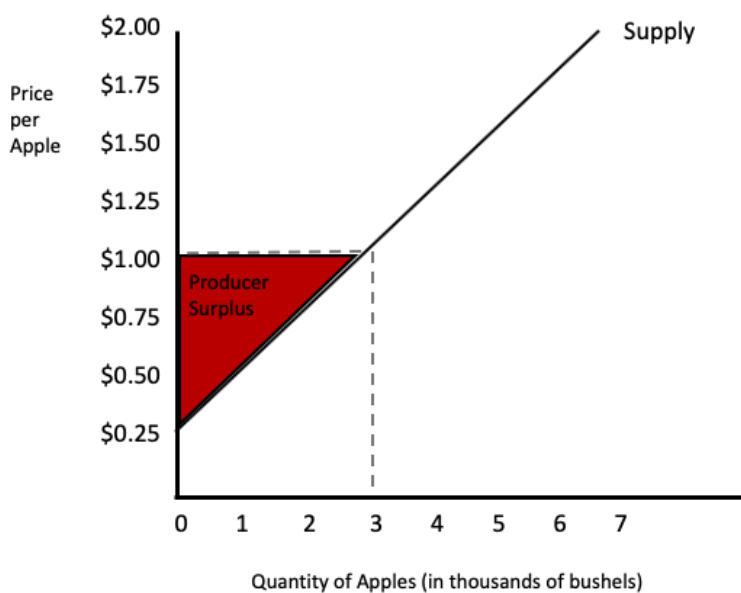
🔗 **EXAMPLE** Suppose you are selling baseball cards on eBay and you decide that you would be willing to accept as little as \$25 for a particular card. Then, someone offers you \$40 for it. In this situation, you would have enjoyed a producer surplus of \$15--the difference between what you were willing to accept for the card, and what you actually received.

So, referring back to our supply curve with apples, let's say the market price for apples is \$1. You can see that

at the price of \$1, 3,000 bushels of apples will be produced.

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

The shaded area in red represents the total amount of producer surplus.



All of the people on the supply curve below the \$1 market price were actually willing to produce for less than \$1. However, the current market price is \$1, so they are receiving \$1.

The person willing to produce for \$0.25 enjoys the largest producer surplus, and as we get closer and closer to the actual market price, the producer surplus is smaller, but it still exists.

All of the people above the \$1 market price on the supply curve would not be producing at all, because they were only willing and able to supply at higher prices than the current market price.



Basically, the area of producer surplus is showing the total benefit received by producers who are receiving a higher price than what they were willing to accept. Sometimes we refer to the lowest price they are willing to

accept as the reservation price.

Now, many people confuse producer surplus with profit, but this is actually not the case. Very often firms--at least in the short run--can be losing money in this situation.

## IN CONTEXT

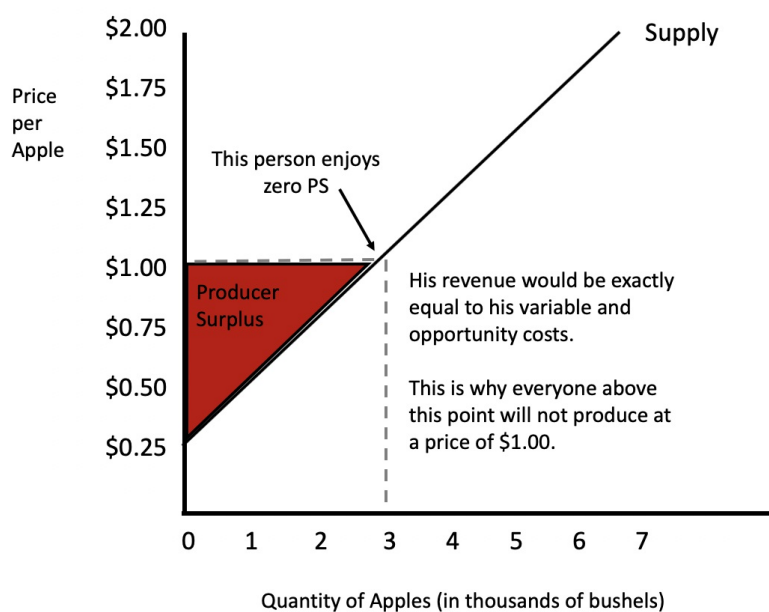
A classic example of this situation is an ice cream store operating in the middle of the winter where it is quite cold. Often, this type of business might stay open in the winter.

Keep in mind that they have to pay their rent and taxes every month, or those fixed costs. Therefore, if they can at least cover their variable costs, meaning the cost of their workers and their materials, it will actually benefit them to stay open.

They are not necessarily making a profit in those winter months, but they will be better off staying open versus having to shut down and pay their fixed costs.

In this case, they are enjoying producer surplus, but they are not necessarily profiting. Also, note that in the summer they will earn plenty to make up for the fact that they are losing some money in the winter.

Again, looking at our supply curve, the person at the exact point of the market price on the curve technically enjoys zero producer surplus. This person's revenue would be exactly equal to those variable and opportunity costs. If he were to produce, it would cover exactly what it costs him to bring the workers in, etc.



This explains why the people above that point along the supply curve choose *not* to supply.



## TERM TO KNOW

### Producer Surplus

The difference between actual payment for a good and the least amount a producer would have willingly

agreed to receive for the good



## SUMMARY

We started today's lesson by discussing the concept of **supply as willingness to produce**. We learned how **producer surplus** is the difference between the minimum price at which producers will sell--their reservation price--and the market price. We also noted that the area of producer surplus on a graph is everything above the supply curve up to the market price.

Source: Adapted from Sophia instructor Kate Eskra.



## TERMS TO KNOW

### **Producer Surplus**

The difference between actual payment for a good and the least amount a producer would have willingly agreed to receive for the good.