What Is the Production Possibilities Curve in Economics?

Production Possibilities Curve Explained in Less than 5 Minutes

By **Kimberly Amadeo** Updated on June 16, 2022
Reviewed by **Thomas J. Catalano**

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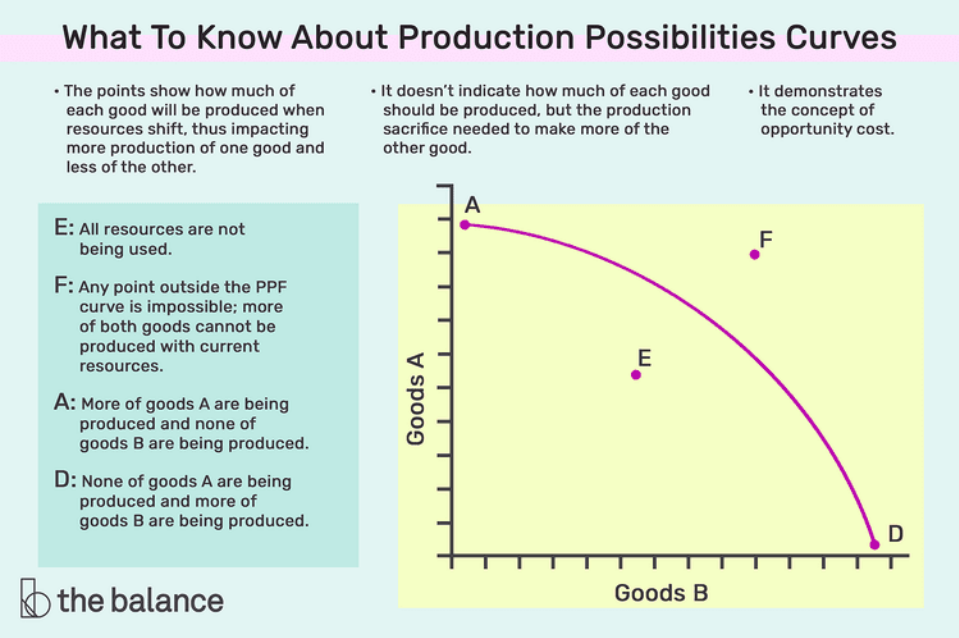

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DEFINITION

A **production possibilities curve** in economics measures the maximum output of two goods using a fixed amount of input. The input is any combination of the four factors of production: natural resources (including land), labor, capital goods, and entrepreneurship.

Definition and Examples of the Production Possibilities Curve

In economics, the production possibilities curve is a visualization that demonstrates the most efficient production of a pair of goods. Each point on the curve shows how much of

each good will be produced when resources shift to making more of one good and less of another.[1]

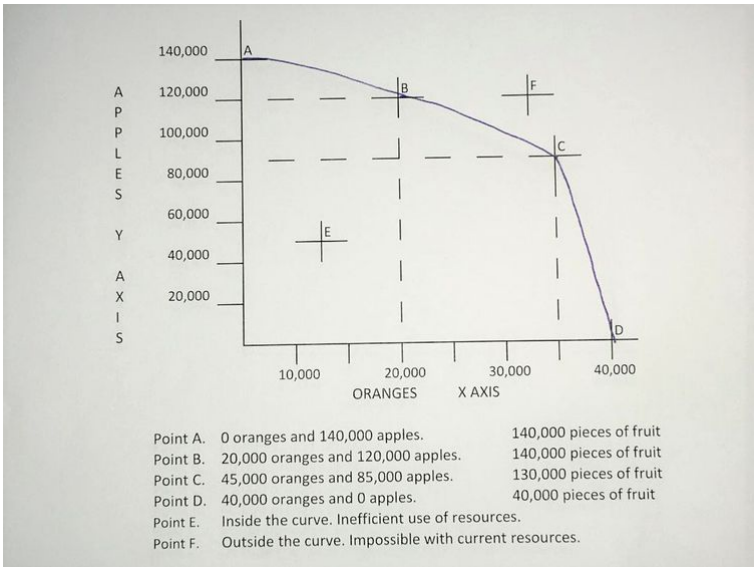
Note

The production possibilities curve measures the trade-off between producing one good versus another.

- **Alternate name**: Transformation curve
- **Acronym**: PPC

For example, say an economy produces 20,000 oranges and 120,000 apples. On the chart, that's point B. If it wants to produce more oranges, it must produce fewer apples. On the chart, Point C shows that if it produces 45,000 oranges, it can only produce 85,000 apples.

By describing this trade-off, the curve demonstrates the concept of opportunity cost. Making more of one good will cost society the opportunity of making more of the other good.



How the Production Possibilities Curve Works

The production possibility curve portrays the cost of society's choice between two different goods. An economy that operates at the production possibility frontier, or the very edge of this curve, has the highest standard of living it can achieve, as it is producing as much as it can using its resources. If the amount produced is inside the curve, then all of the resources are not being used. On the chart above, that is point E.

One possible reason for such an inefficiency could be a recession or depression. If that occurs, there is not enough demand for either good. Layoffs may occur as well, resulting in lower levels of labor being used and therefore lowered production.

Other reasons for an inefficient production can be a bit more complicated. An economy will fall within the curve when it ignores its comparative advantage. For example, Florida has the ideal environment to grow oranges, and Oregon's climate is best for apples. Florida has a comparative advantage in orange production, and Oregon has one in apple production. If Florida ignored its advantage in oranges and tried to grow apples, it would create an inefficient use of resources. The U.S. economy would be operating within the curve, leading to a decrease in standard of living.

At the same time, any point outside the production possibilities curve is impossible. More of both goods cannot be produced with the limited resources. On the chart above, that is point F.

The Shape of the Production Possibilities Curve

The production possibility curve bows outward. The highest point on the curve is when you only produce one good, on the y-axis, and zero of the other, on the x-axis. On the chart, that is Point A, where the economy produces 140,000 apples and zero oranges.

The widest point is when you produce none of the good on the y-axis, producing as much as possible of the good on the x-axis. On the chart, that is point D: The society produces zero apples and 40,000 oranges.

All the points in between are a trade-off of some combination of the two goods. An economy operates more efficiently by producing that mix. The reason is that every resource is better suited to producing one good over another. Some land is better suited for apples, while other land is best for oranges. Society does best when it directs the production of each resource toward its specialty. The more specialized the resources, the more bowed-out the production possibility curve.

How the Production Possibilities Curve Affects the Economy

The curve does not tell decision-makers how much of each good the economy should produce; it only tells them how much of each good they must give up if they are to produce more of the other good.2 It is up to them to decide where the sweet spot is.

In a market economy, the law of demand determines how much of each good to produce. In a command economy, planners decide the most efficient point on the curve. They are likely to consider how best to use labor so there is full employment.

Note

An economy's leaders always want to move the production possibilities curve outward and to the right, and they can only do so with growth.
The leaders must create more demand for either or both products. Only after that occurs can more resources be used to produce greater output.

Supply-side economists believe the curve can be shifted to the right by simply adding more resources. However, without demand, they will only succeed in creating underutilized resources. There can be a benefit in increasing the labor force, though. Once the unemployed are working, they will increase demand and shift the curve to the right. For it to work, they must be paid enough to create the demand that shifts the curve outward. There must also be enough unemployed to make a difference. An economy in full employment can't add more workers, no matter how much corporate taxes are cut.

A decrease in resources can limit growth. If there is a shortage of one input, then more goods will not be produced, no matter how high the demand. In those situations, prices rise until demand falls to meet supply. It creates cost-push inflation.

Key Takeaways

- The production possibilities curve shows the possible combinations of production volume for two goods using fixed resources.
- The assumption is that production of one commodity decreases if that of the other one increases.
- Production points inside the curve show that an economy is not producing at its comparative advantage, and production outside the curve is not possible.
- The production possibilities curve displays the right proportional mix of goods to be produced.