GIFFEN GOODS AND BACKWARD BENDING SUPPLY CURVES OF LABOR

Abstract

Research background:

The Giffen Good (GG), and the Backward Bending Supply Curve of Labor (BBSCL) are a snare and a delusion, despite their undoubted popularity amongst economists. This applies to them not only as theoretical constructs but also with any real-world applicability.

Purpose of the article:

This article will show that both violate the ceteris paribus assumption that, presumably, all members of this profession would admit underlies both supply and demand curves. Yet, when push comes to shove, this crucial assumption is jettisoned. The result is a fallacious acceptance of the GG and the BBSCL.

Methodology/methods:

We use praxeological reasoning, supply and demand curves to analyze the absurd implications of the Giffen Goods and the BBSCL.

Findings & Value added:

We find that the Giffen Goods and the BBSCL imply possibility of demand and supply oscillating between infinity to negative infinity. Because of this, GGs and the BBSCL cannot exist in the real world.

Key words:

Backward bending supply curve of labor, Giffen goods, supply and demand

JEL category:

D40

GIFFEN GOODS AND BACKWARD BENDING SUPPLY CURVES OF LABOR

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I. Introduction

In the view of Barzel and McDonald (1973): "The backward bending supply curve of labor (BBSCL) is now accepted as a matter of course by most economists." They are undoubtedly correct in this claim of theirs.[1]

Something of the same degree of consensus amongst dismal scientists exists with regard to the Giffen Good (GG). In their view, this concept too, is a valid one, at least theoretically, putting to the side the issue of whether or not there are any real-world examples of this phenomenon.[2]

The present paper rejects both the BBSCL and the GG. We do so on two grounds. Supply and demand irrationality (section II) and internal inconsistency; of the former (section III) and the latter (section IV). In section V we reconcile the individual BBSCL with the market supply of labor, which is upward sloping. We consider a complication in section VI and conclude in section VII.

II. Research Methodology

III. Supply and demand

The implications of the consensus view on these two concepts are irrational. For if true, the BBSCL implies a downward sloping supply curve, and that of the GG leads inexorably to an upward sloping demand curve. But this is highly problematic. For, assume such a state of affairs. When supply is greater than demand, as it would be when prices are below the "equilibrium" point,[3] then they would go down, down, down (figure 1). Indeed, there is no reason to rule out the possibility that they would fall to minus infinity, whatever that would mean. Similarly, when prices are above "equilibrium" in the BBSCL and GG world (figure 1), they would shoot up, up, up, all the way,

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The author thanks Nathan Fryzek, whose inquiries led him to write the present paper. All responsibilities for errors of course rest with the present author.

[1] Those in this profession who have published refereed journal articles which exemplify that assessment of theirs include: Barzel and McDonald, 1973; Dessing, 2002; Gronau, 1973; Hanoch, 1965; Huang, 1976; Lin, 2003; Miracle and Fetter, 1970

[2] Economists who agree with this viewpoint and have done so in print in the periodicals of this profession, include: Battalio, Kagel and Kogut, 1991; Dougan, 1982; Dwyer and Lindsay, 1984; Lancaster, 1966; Lipsey and Rosenbluth, 1971; van Marrewijk and van Bergeijk. 1990; Nachbar, 1998; Sørensen, 2007; Spiegel, 1994; Weber, 1997.

[3] Scare quotes around the word "equilibrium" are placed there to indicate the point where the two curves cross is a disequilibrium point, not one of equilibrium.

presumably, to infinity, again, whatever that would mean. In contrast, with normally sloped curves (figure 2), when price is below equilibrium, demand is greater than supply, and prices rise, toward equilibrium. Of course, with the traditional upward sloping supply and downward sloping demand curves (figure 2), prices above the point where supply and demand meet would tend to fall, not to zero or minus infinity, but to equilibrium.

So, he who supports the GG serves as a partial backing for this economic irrationality. Ditto for those who aid and abet the BBSCL. An economist who trucks in both[4] is in effect a full time espouser of the theoretical coherence and perhaps empirical existence[5] of swings from positive to negative infinity, and back again.

IV. BBSCL

How can we obviate this threat to all that is good and true, and realistic, in economics? The usual reason for supporting the existence of backward bending supply curves of labor is the case of a person given a raise, and at the higher wage preferring to work less than before, not more, since he desires additional leisure, a good he sees as complimentary to his now additional funds. That is, at some point (see point A in figure 3) leisure becomes a normal good. How, then, can we turn this individual BBSCL into a forward looking one, so that the variations between positively and negatively infinite wages can be avoided? The answer emanating from the neoclassicals is that while each individual supply curve will be backward bending, the sum total of them will not be. For, as wages rise, new entrants will enter the market, combining individual BBSCLs with an upward sloping market one (figure 4).

This critique of the backward bending supply curve is that as one worker reduces the number of hours offered to employers at that higher wage, another person will enter the market, so that the individual BBSCLs would not translate into one for the entire economy. But what if the wages of *all* workers rise? Is not it true that people overall might well work less if all wage rates rose, say, to $1,000,000 an hour?[6] It is exceedingly difficult to avoid this conclusion. Thus, this obviation of the BBSCL, based on the distinction between individual and market supply curves, cannot be judged to be an entire success.

How, then, are we to undermine this BBSCL for the entire market which implies at least at some range, a downward sloping supply curve? And, also, we must obviate the Giffen good, lest we become enmeshed in the upward sloping demand curve. Let us consider the latter first.

V. GG

In order to see this, let us now examine how we can challenge the Giffen Good, a concept equally "guilty" of fomenting an unstable supply and demand relationship (figure 5).[7]

[4] Presumably, virtually every economist

[5] This is less likely.

[6] I owe this point to Nathan Fryzek

[7] For the Austrian critique of indifference, and indifference curves see Barnett, 2003; Block, 1980, 1999, 2003, 2007, 2009A, 2009B, Block and Barnett, 2010; Hoppe, 2005, 2009; Hulsmann, 1999; Machaj, 2007; O'Neill, 2010. For a critique of the Austrian position, see Caplan, undated, 1999, 2001, 2003, 2008; Nozick, 1977

What is the GG? In figure 5, budget line II indicates a lower price of X than budget line I (since if all money is spent on X, more can be purchased where II intersects the X axis than where I hits it). The substitution effect is from A to B, necessarily in the direction of more expenditure on X, as long as the indifference curve is convex to the origin. The income effect is from B (on budget line III, parallel to II) to C. Here, the income effect is stronger than the substitution effect, the unique requirement of the GG. Thus, the consumer spends *less* on X at II (point C) with a lower price, than at II (point A) at a higher price, indicating an upward sloping demand curve. This is the precise definition of the GG.

What is the Austrian[8] rejection of the Giffen Good's creation of an upward sloping demand curve? Both demand and supply curves are supposed to be drawn on the assumption that only two things change as a movement along them occurs: price and quantity. The problem with the Giffen good, which yields an upward sloping demand curve, is that *something else* changes as we move along it: namely, income. In contrast, the Austrian demand curve, where neither income, nor anything else, changes as one moves along it, is not vulnerable to this Giffen good - upward sloping demand curve. No, (Austrian) demand curves slope downward, period, and this is a praxeological necessity.[9]

VI. BBSCL

A similar analysis can now be applied to the supply curve. If one person's income changes, as a practical matter we can pretty much ignore this when drawing up a supply curve of labor for the entire economy; at least that is what the neoclassicals do. But when we posit that everyone's income does this, then, certainly, we cannot ignore this, even as a practical matter. So, we now borrow a leaf from the Austrian analysis of demand curves and apply it to our scenario of vastly increasing wages: The Austrian supply curve, like its demand curve, abstracts from everything else except prices (wages in this case) and quantity. For the demand curve, if incomes rise, it *shifts*, to the right for normal goods, to the left for inferior goods. Similarly, if incomes rise, and people want more leisure, then the supply curve *shifts* to the left. There is no backward bending part of it, which is equivalent to a downward sloping supply curve, forsooth.

VII. A complication

In figure 1 we demonstrated that Giffen Goods create an absurd situation in which prices other than precisely at equilibrium can make them shoot up to infinity, or down to negative infinity. However, if the income effect is strong enough that the positively sloped demand curve is steeper than the supply curve (see figure 6), a real equilibrium once again becomes possible.[10] At point A demand is greater than supply, driving prices, as well as demanded and supplied quantity up towards equilibrium. Similarly, at point C supply is greater than demand leading to a reduction in price causing both supply and demand to fall to the equilibrium level. Point B, then, in figure 6 is a stable equilibrium point, even with an upward sloping (GG type) demand curve.

[8] The Austrian school of economics is based on the works of Menger (1871), Bohm-Bawerk (1909), Mises (1949), Hayek (1935) and Rothbard (1962). It has as little to do with the economics of the country, Austria, as does the Chicago school of economics with that city.

[9] For a reservation regarding this sentence, see Barnett and Block, 2010.

[10] Even with the Giffen good, as depicted here with that positive slope.

What if supply is steeper than demand? In Figure 7 we depict the demand curve for a good, which has Giffen characteristics (upward sloping) up until point N. then, as price moves higher, the demand curve becomes normal (downward sloping). After this certain price and quantity, N, all the consumer's income will be allocated to the Giffen Good, and further increases in price will necessarily lead to a reduction in demanded quantity (points N to P). This means consumers would have upward sloping (for lower prices) and then backward bending (for higher price) demand curves, or USBBDCs for short.

At point K the price is lower than the disequilibrium point (L), and demand is less than supply. Therefore, price will fall, again to minus infinity. This is not plausible because both supply and demand would fall to minus infinity, whatever that means. If we land and point L, and nothing else changes, no shift in supply or demand, then the market will stay there; but this is problematic, because supply and demand curves are always and ever shifting.

At point M (as any other point between L and N), demand is upward sloping and greater than supply, leading to increases in price, supply, and demand. At point N and above the individual allocates all of his income in this specific good (yet another unrealistic scenario), and the demand curve starts to resemble the traditional format (downward sloping).As price continues to rise between N and O quantity demanded will diminish, quantity supply will increase, until equilibrium is reached at point O. Notice that any point between L and O will lead to the equilibrium point O. At point P the USBBDC behaves like a traditional supply and demand model, and greater supply than demand will cause prices to fall. This will go on until equilibrium is once again reached at O.

VIII. Conclusion

Making a distinction between the individual versus the market backward bending supply curve is a good start. Brought to us by the neo-classical economists, it is an attempt to show that market supply curves of labor effort can be upward sloping, even in the context of the BBSCL on the part of the individual. But, it founders in the face of the scenario where *everyone's* income goes through the roof.[11] Then, if this were all there were to the matter, market supply curves would also be backward bending.

However, the greater depth of the Austrian analysis applies not only to the individual supply curve but to that for the market as well. It says that here too that the only variables that may be altered are price (wages are the price of labor) and quantity. But both the market and the individual BBSCL allow a third observation to vary other than legitimate price (wage) and quantity of labor: also, income. When we abstract from that occurrence, we arrive at curve shifts, not movements along weirdly and irrationally shaped supply and demand curves.

[11] Robots, computers and high technology may one day make this more realistic than it sounds at the time of the present writing.

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Figure 1.

Supply and demand for Giffen goods

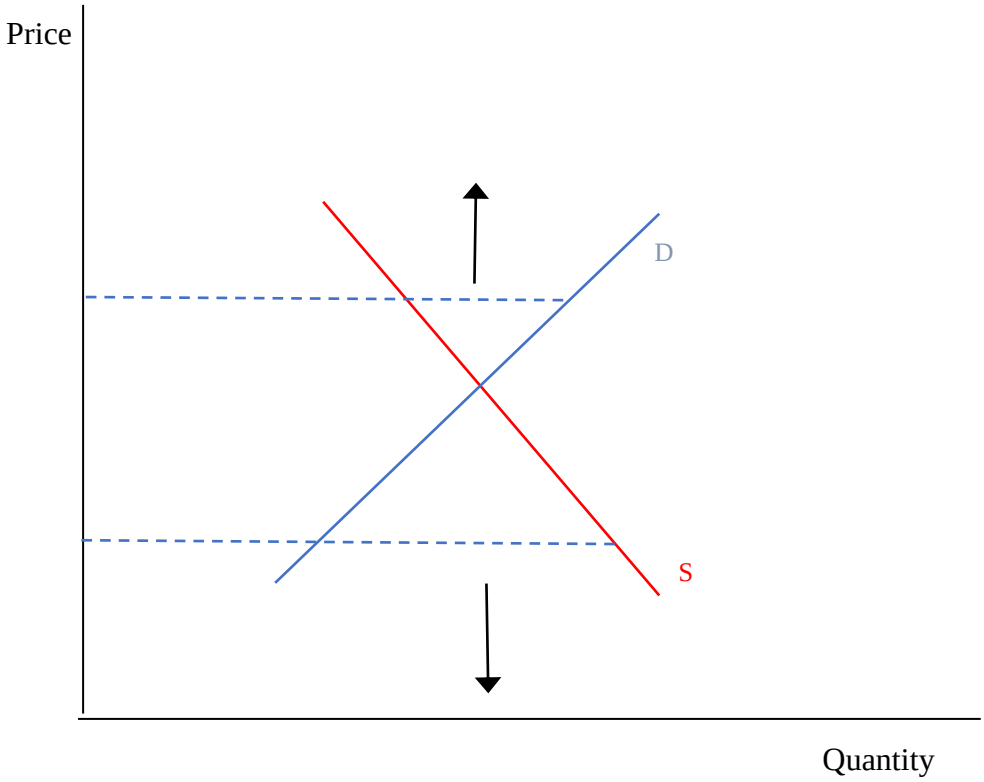


Figure 2.

Traditional supply and demand curves

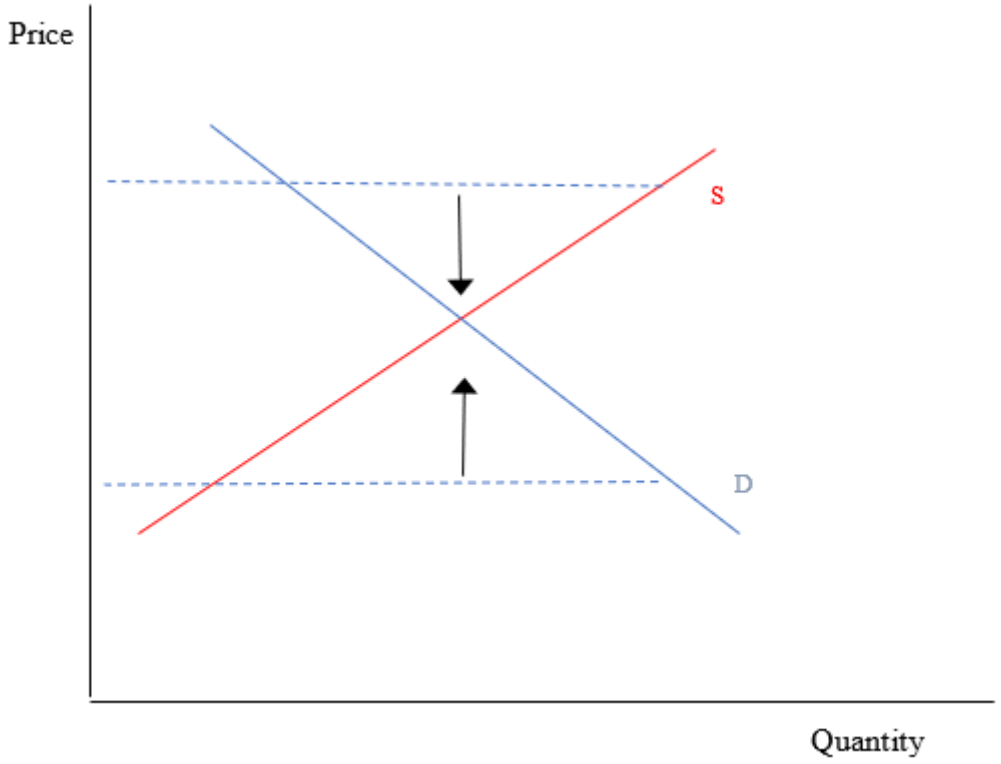


Figure 3.

The backward vending supply of labor curve

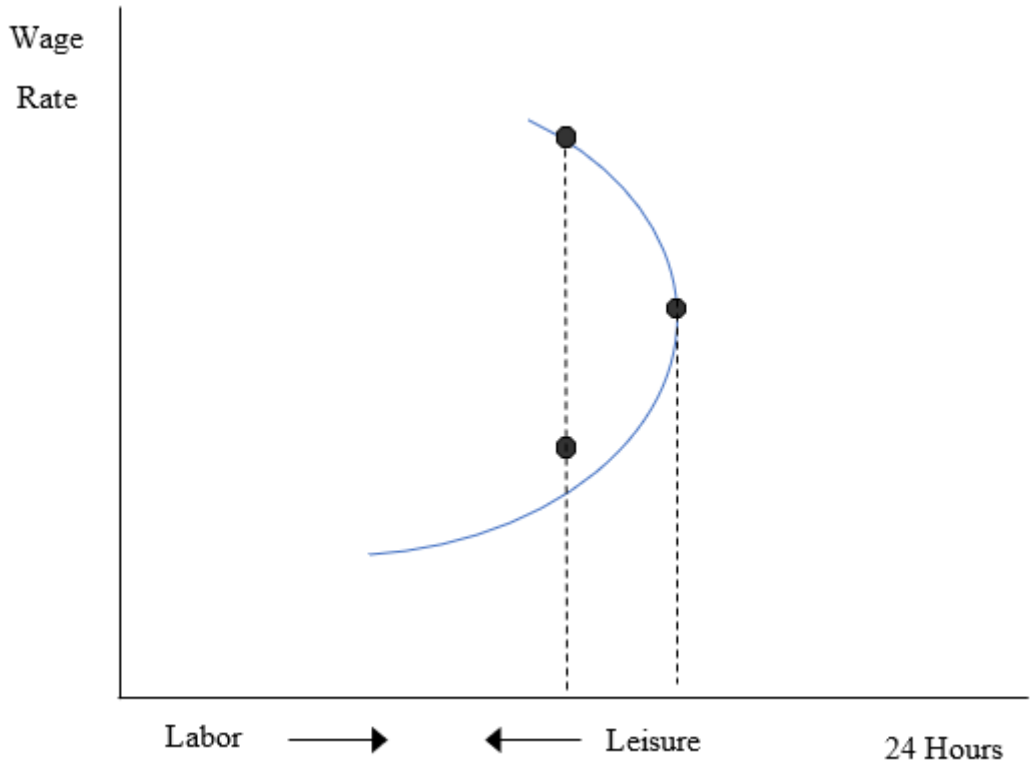


Figure 4.

Multiple individuals´ BBSLs combine into one supply curve

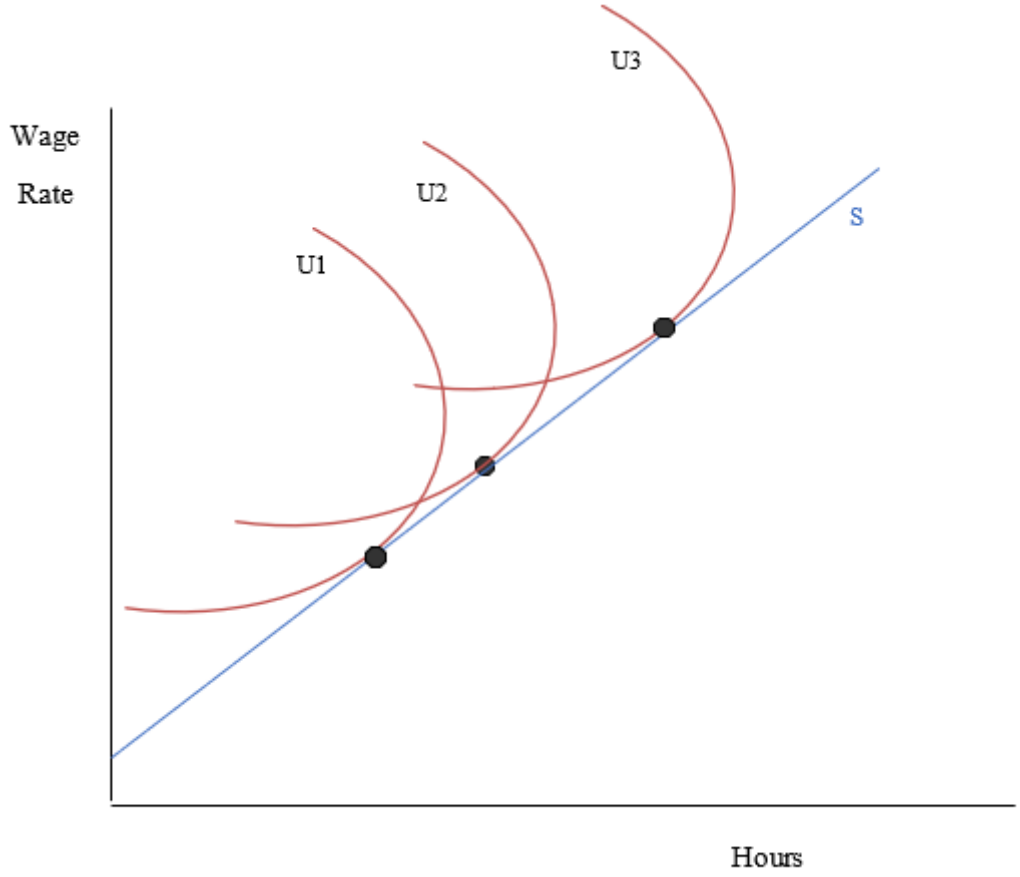


Figure 5.

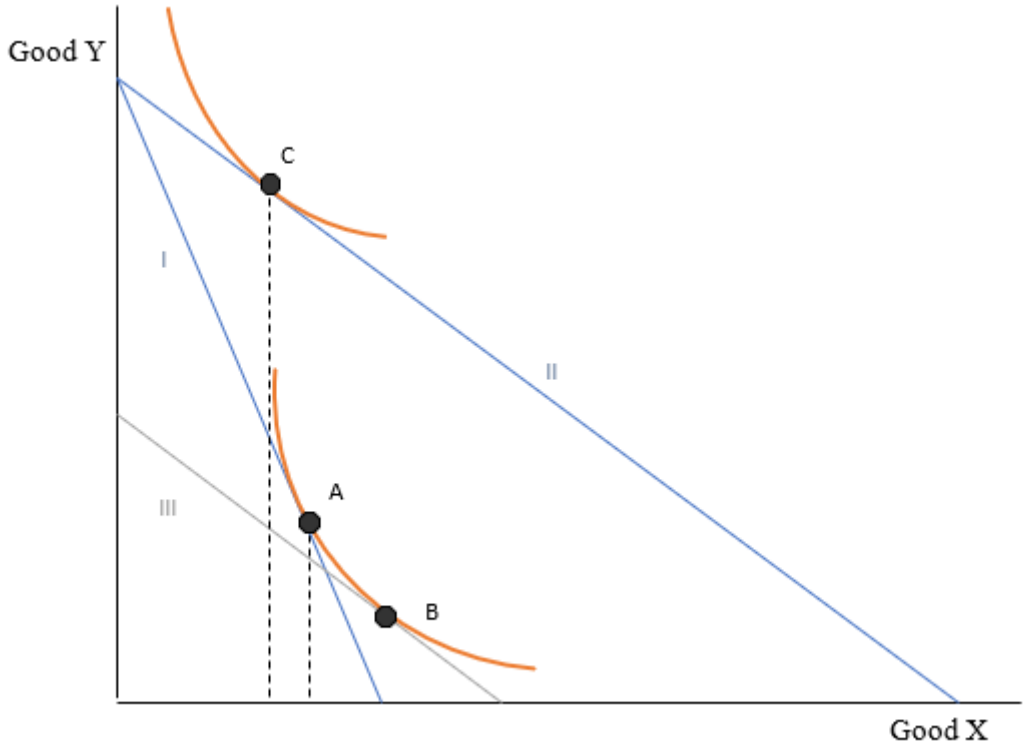
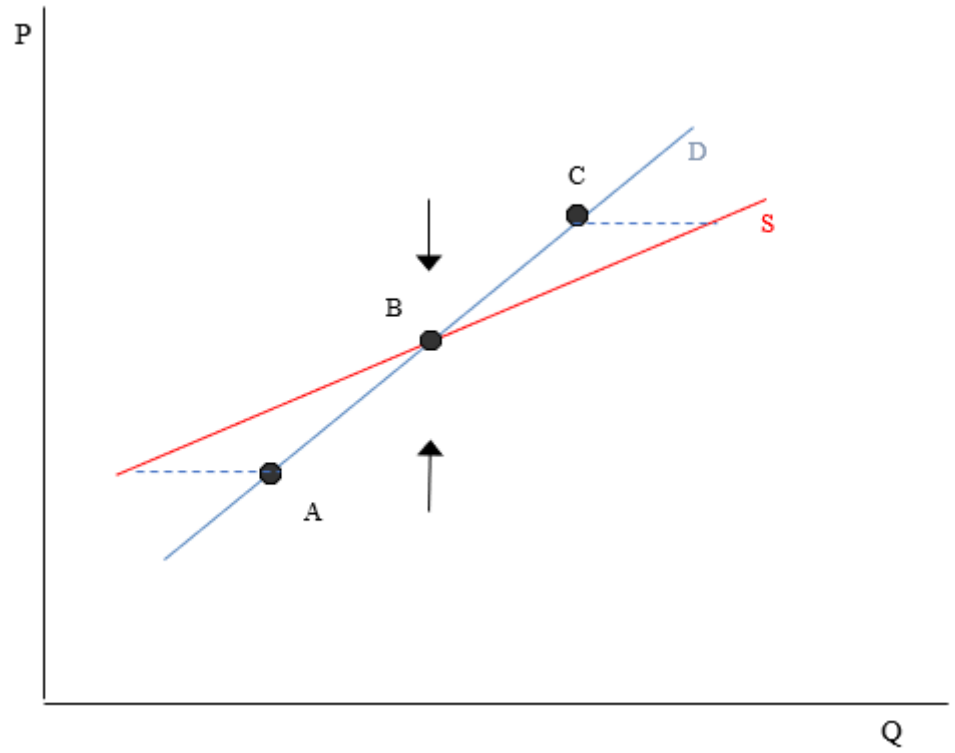


Figure 6.



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