

The determination theory of supply and demand

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Introduction:

Whether the supply creates its own demand or the demand determines the supply has been a debate in economy science for one hundred years. In this paper, I will write my own perspective. I will analyze how the demand and supply interact with each other.

1. Background

In 19th century, a French economist Say had a claim, he thought that the supply would create its own demand, so there would never be short of demand.

In the book *general theory of employment, interest and money*, Keynes disagreed with Say's conclusion and put forward another point of view, that was demand determined the supply[1]. Whether supply determines the demand or demand determines the supply has been quarreled for nearly a century. I will write down my own thoughts here in this paper.

2. The relationship between demand and supply

Demand can create supply

It is obvious that demand can create supply, when there is demand, when there is profit for suppliers, suppliers will produce more this kind of product. We can find many cases here, like people have demand for light, the light bulb is produced and sold. The more light bulb people want, the more light bulbs are produced. Then the demand creates the supply.

Supply can determine demand

We could also find that the supply can determine the demand, like in the Apple inc, when Steven designed the iPhone 4s, after which was published, it became popular all over the world. That could be the best example for the supplying creating the demand.

So how the relationship between the supply and demand should be? We all know that when a transaction happens, the transaction volume is the result of interaction between both the supply quantity and demand quantity. So we can refer that the demand and supply can determine each other.

From my point of view, I think that the supply and demand can determine each other, lacking of demand, the commodities that are produced could not be sold, then there won't be any transaction volume. Lacking of the supply, the demand could not be filled, then there won't be any transaction volume. So it should be like this:

if the supply volume is smaller than the demand volume, the supply will determine the demand; if the demand volume is smaller than the supply volume, the demand will determine the supply.

3. Graph toward the relationship between supply and demand

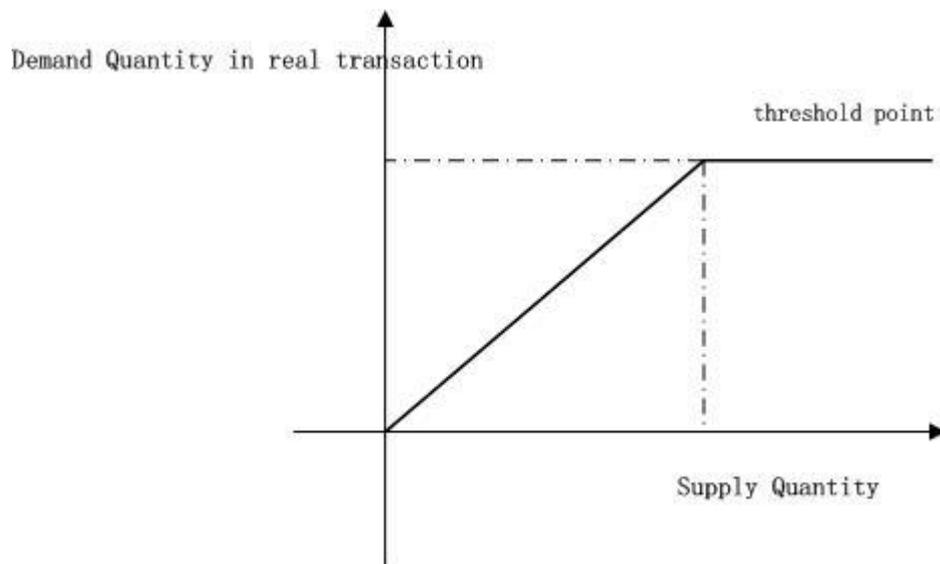
We all know there are three relationship between supply and demand:

Supply is above demand, supply is equal to demand, supply is below demand.

In my following discussion, we assume that no other factors will influence the potential maximum demand quantity d , so it will remain the same during my discussion. Or we can say, any other factors in the market won't cause the change of the demand. Let people change their supply quantity starting from zero.

Given a potential maximum demand quantity d ($d > 0$), we can have the following graph:

Figure 1. Supply demand graph



Supply is below demand:

When there is potential maximum demand d , we increase the supply quantity starting from zero. As the supply volume is the lower value, it will determine the transaction volume. The supply increases, transaction quantity will also increase.

Supply is equal to demand:

The turning point of the line, where the demand quantity is equals to the supply quantity.

Supply is above demand:

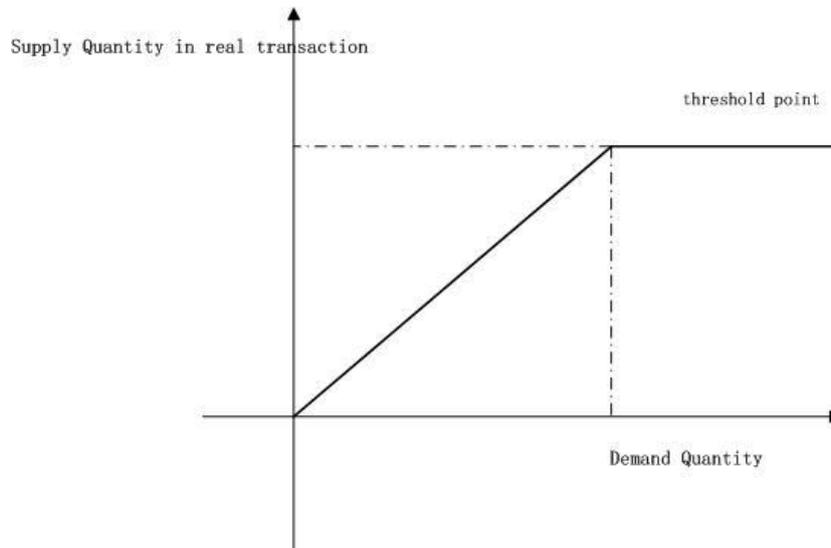
After the supply quantity surpasses the value d , the demand will become the lower value, it will determine the transaction volume. So the transaction volume will remain to be d even if the supply quantity continues increasing.

Here part 1, before the supply quantity reaches the d , the supply will determine the demand. After the supply quantity exceeds d , the demand will determine the supply.

In my following discussion, we assume that no other factor will influence the supply quantity s . People change their demand starting from zero.

Given a supply quantity s ($s > 0$), we can have the following graph:

Figure 2. Demand supply graph



Supply is above demand:

When there is supply s , we increase the demand quantity starting from zero. As the demand volume is the lower value, it will determine the transaction volume. The demand increases, the transaction quantity will also increase.

Supply is equal to demand:

The turning point of the line, where the supply quantity is equal to the demand quantity.

Supply is below demand:

After the demand quantity surpasses the value s , the supply will become the lower value, it will determine the transaction volume. So the transaction volume will remain to be s even if the demand quantity continues increasing.

Here part 1, before the demand quantity reaches the s , the demand will determine the supply. After the demand quantity exceeds d , the supply will determine the demand.

Then we have the formation:

$$\text{Transaction volume} = \text{Min}(\text{supply quantity}, \text{demand quantity});$$

$$TV = \text{Min}(S, D)$$

That means the real transaction volume is the smaller value of the supply and demand, the smaller one will determine the larger one.

4. Conclusion

Between supply and demand, they are depended on each other, they affect each other, which one is smaller, it will determine the other one.

Then we can understand why Say and Keynes would have totally different conclusion, it is because at the period of Say's life, the supply is the lower value, so then supply determine the demand, or the supply creates its own demand; but at Keynes's lifetime, production ability has been improved a lot then the demand became the lower value, then the demand will determine the supply.

[1] The general theory of employment, interest and money Keynes