

“The Effects of President Trump’s Protective Tariff on the American Economy”

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1. Introduction

In 2018, President Trump decided the high protection tariff on the imports goods. President Trump planned to develop the US industries by decreasing imports goods from foreign countries. But, his idea may suffer the US economy. That is, the policy of President Trump’s high protection tariff will might decrease the consumer’s surplus, the volume of production and the producers profit in America.

Form our analysis, we got the following conclusions to the American economy.

- (1) The protective tariff increases the price of goods in the domestic market.
- (2) The protective tariff decreases the consumer surplus.
- (3) The protective tariff decreases the social surplus.
- (4) The protective tariff increases the domestic amount of production.
- (5) The protective tariff increases the producer surplus.
- (6) The protective tariff gets the tariff revenue.
- (7) The protective tariff increases the marginal cost.
- (8) The increasing cost up by the protective tariff decreases the consumer surplus.
- (9) The increasing cost up by the protective tariff decreases the producer surplus.
- (10) The increasing cost up by the protective tariff decreases the social surplus.
- (11) The increasing cost up by the protective tariff increases the amount of import.
- (12) The increasing cost up by the protective tariff decreases the amount of domestic production, in the special case.
- (13) The increasing cost up by the protective tariff increases the tariff revenue.

2. Economic Model

In this paper, for the sake of simplicity, we assume that the demand and the supply functions are both linear.

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$$\text{Domestic demand function: } D: p = -ax + b. \quad (1)$$

$$\text{Domestic supply function: } S: p = ax. \quad (2)$$

Here, p , x are the price and the volume of demand (supply) of goods, and a , b , α , β are all positive parameters.

$$a > 0, \quad b > 0, \quad \alpha > 0.$$

3. Domestic Market

The demand function D and the supply function S are shown in Figure 1. The equilibrium point of this market is the point E . The coordinates of the point E are following.

$$OH = \frac{b}{a + \alpha}.$$

$$EH = \frac{b \cdot \alpha}{a + \alpha}.$$

The consumer surplus is $\triangle AEG$ and the producer surplus is $\triangle EGO$, and the social surplus is $\triangle AEO$.

The domestic equilibrium price is EH and the domestic amount of production and the amount of consumption are OH .

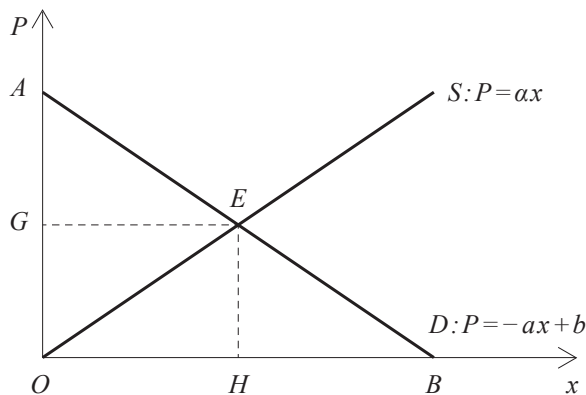


Figure 1

4. Open Market

After the international trade, the supply function from foreign countries is the horizontal line ℓ in Figure 2. The price of imported goods is $MM' = OK$, and this price is lower than the price of domestic equilibrium price EH . Then, consumers increase the quantity of consumption from OH to ON' . The domestic producer produces only OM' . This country imports the goods by $M'N'$. The amount of domestic production decreases by $M'H$.

The consumer surplus is $\triangle ANK$ and the producer surplus is $\triangle KMO$, and the social surplus is $\triangle ANK + \triangle KMO$. Therefore, by the international trade, the social surplus of this country increases by $\triangle EMN$.

That is, the international trade increases the social surplus, but decreases the domestic production.

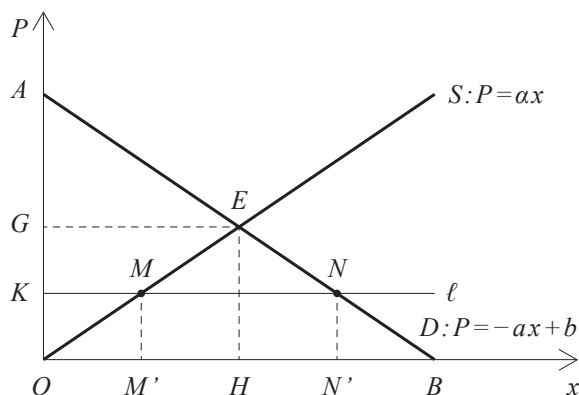


Figure 2

5. Protective tariff

President Trump decided the high protection tariff on the imports goods. President Trump planned to develop the US industries by decreasing imports goods from foreign countries.

We assume that the protective tariff rate is JK in Figure 3. After the protective tariff JK , the amount of domestic consumption decreases from ON' to OR' and the price of the goods increases form OK to OJ . The amount of production in this country increases OM' to OQ' , and the amount of import from foreign countries decreases from $M'N'$ to $R'Q'$. This is the main point that President Trump always wanted to advocate.

The consumer surplus decreases from $\triangle ANK$ to $\triangle ARJ$, and the producer surplus increases from $\triangle KMO$ to $\triangle JQO$. The social surplus decreases $\triangle ANK + \triangle KMO$ to $\triangle ARJ + \triangle JQO$. Therefore, by the protective tariff, the social surplus of this country decreases. The

tariff revenue is $\square QRR''Q''$. After the protective tariff, the social surplus decreases by $\triangle QQ''M + \triangle RR''N$, even including the tariff revenue.

That is, the price goes up, the amount of consumption decreases, the social surplus decreases by introducing the protective tariff.

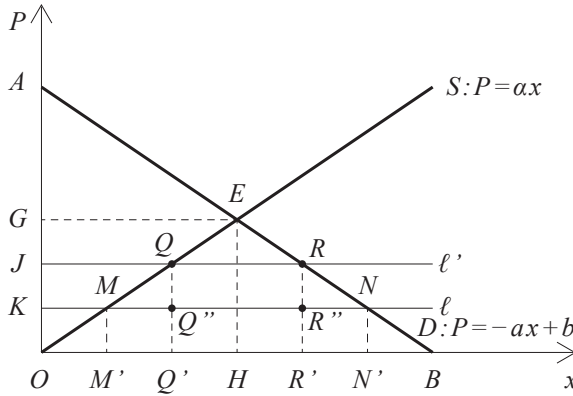


Figure 3

6. Cost up

The analysis of this section is the idea that President Trump did not forecast before an introducing the protective tariff.

The protective tariff will increase the prices of materials and intimidate products in the USA. Therefore, the marginal cost of final products in the USA will increase by introducing the protective tariff t . The marginal cost curve is the supply curve, then the supply curve rises up from S to S' by t in Figure 4. The import function is ℓ' .

The amount of consumption is OR' that is same before the cost up. The price of that goods is constant OJ . But, the amount of production in the USA decreases from OQ' to OT' . The amount of import increases from $R'Q'$ to $R'T'$. The consumer surplus is unchanged $\triangle ARJ$. The producer surplus decreases from $\triangle JQO$ to $\triangle JTZ$. The amount of tariff revenue increases $\square QRR''Q''$ to $\square RR''T''T$. The social surplus decrease form $\triangle ARJ + \triangle JQO$ to $\triangle ARJ + \triangle JTZ$.

By increasing marginal cost, the amount of domestic production, the producer surplus and the social surplus are all decrease. On the other hand, the amount of import increases. We suppose that President Trump did not forecast these conclusions.

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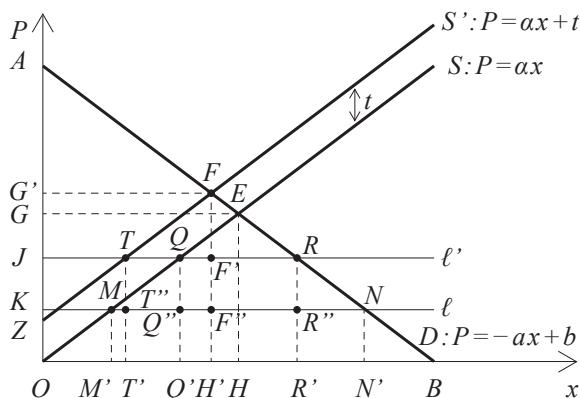


Figure 4

7. Special Case of Domestic Market

We will analyze the special case of the US domestic market. By the introducing of the protective tariff, there is some possibility of decreasing the domestic production than that before the protective tariff. That is, there is some possibility of reducing the domestic production by an introducing protective tariff. That special case is shown in Figure 5.

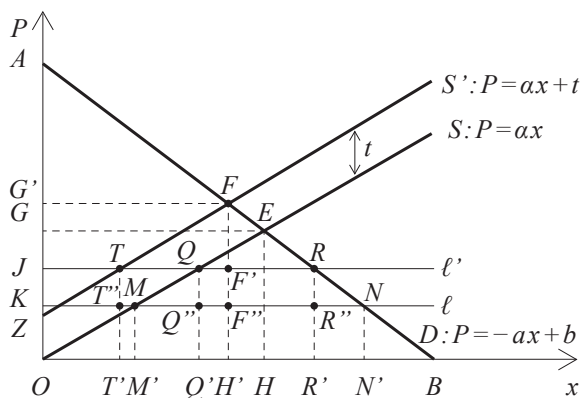


Figure 5

The Figure 5 shows the special case. President Trump did not forecast this case that an introduction of protective tariff created a decreasing the amount of domestic production than before. That is, President Trump planned to increase the amount of domestic production by an introducing the protective tariff, but on the contrary an introducing of protective tariff decreased the amount of domestic production. In this case, the introduction of

protective tariff decreases the amount of domestic production of USA., from OQ' form OT' . This is the special case, but we suppose that President Trump did not forecast this case.

8. Concluding Remarks

Our concluding remarks are followings.

Form our analysis, we got the following conclusions.

- (1) The protective tariff increases the price of goods in the domestic market.
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We indicate the Table 1 that shows the comparison of three cases, the case of before protective tariff, the case of after protective tariff and the special case.

Table 1 Comparison of 3 Cases

	Consumer surplus	Producer surplus	Volume of domestic consumption	Volume of domestic production	Volume of import
Before Protective tariff	$\triangle ANK$	$\triangle KMO$	ON'	OM'	$M'N'$
After Protective tariff	$\triangle ARJ$	$\triangle JQO$	OR'	OQ'	$Q'R'$
Special Case	$\triangle ARJ$	$\triangle JTZ$	OR'	OT'	$T'R'$

The Table 1 shows the following conclusions.

- (1) The protective tariff is sure to damage the American consumer surplus and the volume of consumption.
- (2) The protective tariff may increase the volume of domestic production, but there

is also the possibility of decreasing the volume of domestic production than before, in the special case. This is the case that President Trump did not forecast before introducing the protective tariff.

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