Research on the Economic Attribute of Road Transport Station Based on the Analysis of the External Effect

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Abstract. The economic attribute of road transport station determines the investment main body of the station。This paper considered road transport station is an article of “ positive external effect”. There are two ways to provide the corresponding supply on its. One is supplied directly by the government; another is supplied by the market through government subsidy. From the economic efficiency, the latter has more advantages.

Keywords: Road transport station, economic attribute, positive external effect

1. Introduction

In the era of the planned economy, the government plays the role of organizers and operators in fixed asset investment. This performance in theory of government intervention on economic is that people did not pay more attention to the definition of investment body, but pay more attention to the financing problem. It is very important to define economic attribute of transportation station to solve the government functions of the dislocation, offside problem.

2. The economic attribute partition under the condition of market economy

Finance theory to adapt to market economy system is the public finance theory. In the theory of public finance framework, definition of investment by the economic attribute of social product to determine. Social products in general can be divided into private goods, public goods, mixed goods. The direct or indirect supply is largely determined by the characteristics of public goods. Therefore we first characteristic in the public goods and private goods to compare to grasp the characteristics of public goods.

Economists think, compared with private goods, public goods has two completely different characteristics:

The first is non-divisibility. That is to say， the public goods is to the whole society to jointly offer, its utility is shared by members of the whole society, it cannot be split into several parts, respectively belong to some companies or individuals enjoy. For any one of the consumers, the number of public goods for consumption and real disposable

（x_i）is the public goods volume (x), i.e.

$$X=X_i$$

The second is non-excludability. That is to say, in no technical way will refuse to pay personal benefit in the range of public goods from outside. Or, after technical treatment can be exclusive, but the cost is too high and lead to not economically feasible. In the private goods, this won't happen. Private goods in the benefit is must have excludability, because only the exclusive benefit of the goods or services, people are willing to pay， the producer will be provided by the market.

If an item is non-competitive, but technically capable of exclusion, you can further analyze the exclusive cost. If the cost is low, the kind of goods or services are “positive external effect items” , such as cinemas, toll roads and bridges, parks, hospitals and schools etc. This kind of goods or services can be provided by the market, and government subsidies; or the government to provide low-cost. Road transport station also belongs to this class of goods.

3. Definition of investment body to “positive external effect articles”

On the one hand, the benefit of “ positive externalities articles" can be exclusive, namely ,who spend who benefit; on the other hand, the utility is provided to the whole society. This reflects the goods with positive externalities.

For the supply measures of “positive external effect articles ”, can be placed in the competitive market perspective. We can use figure 1, figure 2 analysis. The horizontal axis represents the supply and demand in the graphs, the vertical axis represents the price. Curve $DD_1=D_1$ (P) represents the demand curve without government intervention. Curve $DD_2=D_2$ (P) represents the social marginal cost curve, the vertical distance T between them indicates the marginal external benefit. Curve $SS_1=S_1$ (P) represents the private supply curve without government intervention.

Obviously, in the absence of government involvement in the condition of market mechanism, people decide the balance point of the goods supply and demand for the E_1, the equilibrium price is P_1, the equilibrium yield is Q_1. From the social point of view,

the equilibrium output should be Q_2. That is to say， the equilibrium output determined by the equilibrium point E_2 should intersect curves of DD_2 and SS_1. Obviously, the supply of Q_1 is not the most efficient; resulting in loss of efficiency, cause distortions in the allocation of resources. The loss of efficiency value △ AE_1E_2 area, i.e.

$$\mathbf{S=}\left(\int_{Q1}^{Q2} D2(p) - \int_{Q1}^{Q2} S1(p)\right)$$

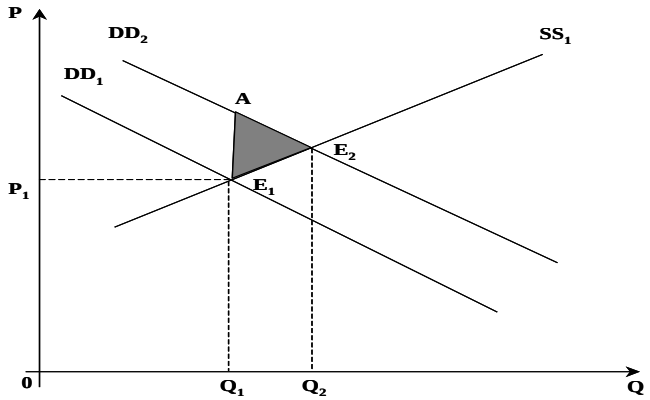

Figure 1 The efficiency loss due to positive external effect

Then how to correct positive external effect caused by the loss of efficiency?

One way is supply by private. We can illustrate by figure 2. Because the goal of private firms supply is to maximize profits, according to the supply curve SS1, private firms asked the price for P2 in the Q_2 output, or private is not willing to supply. We know from the demand curve in Q_2 production under the consumer is willing to pay the price for the P3, the difference between the value for

$$\mathbf{T=P_2—P_3}$$

This difference is the marginal external benefit. At this time ,in order to make private firms to supply Q_2 production, the government should also provide subsidies to private firms

$$\mathbf{B=T\times Q_2}$$

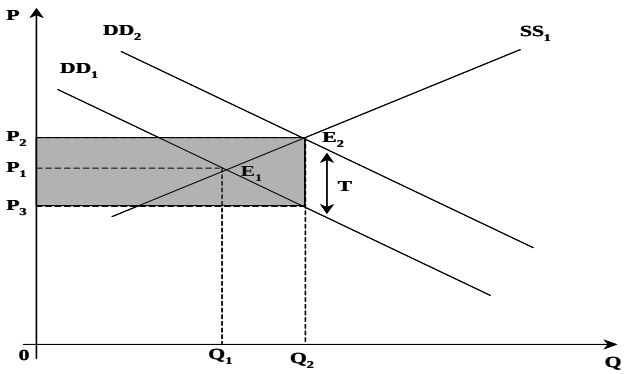

Figure 2 Private firms charge and government subsidies combination

In practice, the construction of such as toll roads, bridges and other public facilities, usually by the public sector management and charged to the users use fee to supply. Therefore, " positive externalities articles "can be provided directly by the government or by the market through government subsidies.

In practice, the choice of the government to supply or market supply depends on the size of the marginal external benefit. If the positive externalities is obvious, generally provided by the government; if the positive external effect is not obvious, generally provided by the private. Because the drawbacks of low efficiency by direct government management, so in twentieth Century after 70 years in western countries, there will be the trend of public utilities privatization.

4. Conclusion

For the road transport station, it is " positive externalities articles ". In general, its benefits can be internalized and personal. Through collecting fees to stop vehicles, it easily can be excluded without pay. Moreover, the station of a good location to passenger flow, cargo flow still can obtain more profit. On the other hand, it has external effect. The station set up rational evacuation undoubtedly for the social logistics, people play a great benefit. The station plays a great benefit for the social traffic. For universal service considered frontier is even more so. At the same time, from the perspective of adaptation to the market economy principle, should give priority to the market through the subsidy way. In general, this way from the economic efficiency is efficient.

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