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ECONOMIC ASPECTS OF TRANSPORTATION ACTIVITIES

ABSTRACT

The function of transport is to bridge the distance between the producer and the consumer at the lowest possible price. Any way in which transport costs can be reduced has to be welcomed, either through introduction of a means which corresponds closely to the needs of transport service users (more convenient, safer, more reliable, faster transport), or a means which is less expensive to provide, and its function regarding economic aspect can also be efficient and reliable.

KEY WORDS

transportation activities, economic interdependence, efficiency, reliability, costs

1. INTRODUCTION

In the developed commodity-monetary relations and market economy, the place of production of the majority of products does not coincide with the place of their consumption. The social value of use can be realised only after the product has been moved from the manufacturer to the consumer. Therefore, the process of production is completed only when the goods-services reach the end user.

The transportation of goods and transfer of services occur as an indispensable segment in the process of reproduction. The transportation of goods and transfer of services results in the costs of materialised and live labour.

The economic aspects of transporting people and things includes questions that are at the same level with other problems of economic science.

The first and foremost function of the economic analysis is the discovery of a common principle or several of them, for a number of defined circumstances. This is the basis for collection of explanations regarding considerations of transport from the economic viewpoint.

Therefore, the first step is to determine the purpose of transport, i.e. what we want to achieve by transport? We have to answer this question before we

start to consider relative advantages and disadvantages of various forms of transport. Later, we shall estimate the wide variety of the means which enable people and things to move. First of all, we have to establish a certain criterion, which will serve as the basis.

If the economic analysis suggests that certain policy would lead to certain results, and if in the real flow of events this policy really leads to the relevant results, then this analysis is realistic. It is realistic in its conclusions, although not in its assumptions. Regarding conclusions and implications, the notion "realistic" must be used in economic analysis of transportation.

2. DIVISION OF LABOUR IN TRANSPORTATION

Economic activity of any community can follow one or two conflicting principles. One principle is the one of self-sufficiency, the other one of specialisation. If every small community – household, village, town or region follows the principle of self-sufficiency, it will tend to satisfy all of its demands for food, clothes, and entertainment from its own means. If it follows the principle of division of labour, then every little community will specialise in a certain form of economic activity and will rely on the means of exchange, in order to get goods and services which it does not produce on its own.

Two important consequences result from accepting one or the other of these two principles. If a community, regardless of its size, is self-sufficient by producing a wide range of goods, it is independent of others. On the other hand, if it specialises for a narrow range of production activities, it depends to a great extent on the other societies for the goods produced by others. This is the first consequence.

The second consequence is that the community founding its own economic activity on the principle of division of labour will be much richer, in wealth and economic wellbeing than the one that accepts the principle of self-sufficiency.

In other words, the greater the level of division of labour in any community, the better off it will be regarding wealth and economic wellbeing. However, the level of economic interdependence among small communities making up this society is greater. Furthermore, the greater the level of self-sufficiency in any society, the poorer it will be regarding wealth and economic wellbeing, but every little community will be economically independent of other communities in the society.

Nations, continents, the world – they can all be considered in the same manner. Therefore, in whatever way we look, the more a society relies on the principle of division of labour, the better it will be off economically, and the greater the level of dependence among the small communities constituting such a society.

2.1. Scope of the Transportation Market

Historically speaking, there is a limit beyond which the principle of division of labour cannot be pushed. The most important claim and principle of science of economy is that the division of labour is limited by the scope of the market, regardless of the fact that it does not necessarily reach this limit. Should we ask ourselves why this high level of division of labour is not practised in primitive communities, the answer lies in the scope of the market which does not allow for it. Small community, which lives of its own means, requires a wide scope of various goods, but a small volume of each kind. Therefore, the population of such a community has to produce a wide range of items. In such communities, versatility tops the list and specialised machines and workers trained for a certain job are below cost. In the developed economy the situation is different. The range of various needs (goods) will be different than in a primitive community, but big amounts of goods (of every kind) will be needed. Therefore, manufacturing of every kind of goods will be organised in the same way that will enable greater division of labour between means included in their manufacture. The scope of the market (for certain goods) implies the volume of consumers' demand for these goods. There must be a distinction between the term of demand for goods in general and the need for certain types of goods.

There is a distinction between the quality aspect of demand for goods and also, real quantities of every type of goods demanded, that is, the quantity aspect of demand. Quality aspect will determine the number of types of production activities necessary in any community, that is the number of different production lines will depend on the range of various consumer goods contained in the demand sample of the community inhabitants. Production resources – work and natural resources – will have to be dedicated to each of the

production lines. Regarding the aspect of range up to which specialisation is possible, it is the volume or quantity of every kind of consumer goods that is demanded. The quantity aspect of demand, scope of the market for certain goods, will determine the volume of production resources, whether big or small, that will determine the way in which they are organised. The bigger the volume of resources engaged in a production line, the greater the level of specialisation that will be possible in their organisation, but also the greater their production.

2.2. Size of Production Units in Transportation

In previous considerations we dealt with the organisation of production regarding the level of specialisation that may be achieved through resources included in every production line. This aspect of production structure is relevant for considering the economic functions of transport.

Production resources that form a production line can be compared to links in a chain, where every link represents one specialised production process. Whether these are successive links in the production chain controlled by a great number of different companies, each one controlling several links or there is a small number of companies where each controls a great number of users, is not what affects the principle of our argument that the level of vertical specialisation in any production line depends on the volume of demand for the goods produced by that production line. On the other hand, however, this affects the size of the companies that control different mentioned processes.

The manner in which the successive production processes are grouped regarding control units or companies is the result of great many factors. *Techniques of factors in some production unions can turn a big company into a more economic control unit than a small company.* A big company can be organised in such a manner as to employ big machines and versatile equipment, or it can integrate various production processes in a way which could not be used in a small company from the aspect of technology. Big companies can sell their products cheaper and can secure funds at lower conditions than smaller companies.

In order to avoid administrative difficulties or inefficiency, as we shall later call them, it might be economically more convenient to meet the demand for a product with the help of numerous minor companies, where each one would carry out the same or similar production process. Big companies are not established overnight. They are the result of slow development over a number of years. Therefore, at every time there will be companies in various phases of development, some developing, some disappearing, but each

engaged in certain production processes in the same production line. For many goods the transportation limitations, as well as geographic dispersion of demand, will limit the level up to which a certain company can economically grow.

Where a company is creating a product for which the demand is increasing, the level of specialisation in organising production resources will be expanded and accepted, but under its own control.

In the production system there is the co-operative process, as e.g. in automotive industry. Major (big) companies that render their name to the production of automobiles, only assemble many different parts that make up a car. These companies are the "assembly" companies that rely on other companies to produce auxiliary smaller parts necessary to complete the finished product. The increase in demand for cars has lengthened the chain of production processes and co-operation. Figuratively speaking, the chain is growing by inserting additional links or processes. Higher level of specialisation is achieved, as well as greater profitability, resulting then in higher living standard.

3. FUNCTION OF TRANSPORT

The scope of the market for a certain (necessary) product, which plays a crucial role in determining the level of specialisation among production resources constituting the product, are related to the availability of transportation means.

The effects of specialisation lie in the fact that every producer has a relative surplus product of his own but also a relative shortage of another goods which he requires as a consumer.

For example, a baker has a surplus of bread and a shortage of corn. The consumers lack a wide range of goods and services, therefore, as producers, every one of us has a surplus of goods or service that we produce.¹

The essence of economic activity lies in the exchange of what is surplus to one person (and deficit for other people) for the deficit to this person (and surplus for other people). Therefore, the need to exchange relative surpluses for relative deficits makes the individual producers so dependent on each other in meeting the consumers' requirements. The economic consideration is

not interested in the fact that these exchanges of relative surpluses develop (are organised) under monetary conditions. As producers we accept the money and in return we provide certain services and as consumers we spend money on goods and services that we lack.

The scope of market or volume of demand for a certain product (possibility of exchanging relative surpluses depends on the size of the gap between the producer and the consumer, and on the available modes of transport to bridge the gap. If the consumer population of any region, county, etc. is widely distributed, the gap between any two producers in that county, region and the consumers who insure the potential market, will be a wide one.

If the consumer population is more concentrated, the market will be more accessible to producers and the gap between the producer and the consumer will be smaller. In both circumstances, the ability of the producer to reach their consumers will depend on the means of transport that are available for the transport of the producer's goods over certain distances, but the transportation requirements will also be greater than in the latter case.

In this context, there are three variables that are interconnected in such a way that the smaller the gap between the producer and the consumer and the greater the efficiency of the transportation means that bridge this gap, and the greater the scope of the market (there will be a greater level of specialisation among producers, but also a higher living standard of a certain community).

In other words, widening of the gap between producers and consumers may leave the scope of the market unchanged, if it is accompanied by modernisation of the means of transport. Diffusion of urban population to suburban and wider region can widen the gap between the producer and the consumer, but if modernisation of transport sets off the economic effects of great distances which divide then the consumers from the producers, the scope of market may remain the same.

Or, reduction of the means of transport may reduce the scope of the market if there is no change in the gap between the producer and the consumer. However, if this gap is narrower, the scope of market can remain the same.²

1 The term "producer" and "consumer" are used in a wider sense. "Producer" is any person or organisation that creates the goods or performs the service demanded by the consumer. This word includes the accountant, teacher, priest, but also a craftsman, transport worker or a farmer. "Consumer" (the end consumer) is the one who demands the goods or services for usage such as this goods or services provide, or indirect consumer who needs the goods and service in order to produce other goods or services. These arguments are equally applied to both types of consumers. They both consume a relatively small amount of goods of a narrow range.

2 Since transportation means are rarely reduced, it is not easy to find an example for such a sequence of events. However, the effect of war on transport can be used. One of the main hindrances in post-war revival of the war-destroyed countries is the bad condition of transportation communications. The producers consider the scope of market for their goods and services smaller than before the war. Their market can be restored to its previous state either by restoring the transportation connections or by greater concentration of population.

By applying these variables to the real flow of economic development in the developed countries, such as Great Britain and the USA, progressive widening of the market occurring there has been partly a result of narrowing the gap between the producer and the consumer, but partly as well a result of modernising the means of transport.³

The relative importance of these two factors is rather difficult to estimate precisely. It is obvious that a highly upgraded level of specialisation achieved is enabled by the fact that their population is concentrated in numerous dense (urban) groups. In other words, if, as is the case in the USA, the same level of specialisation achieved there should be achieved under the condition of evenly distributed population across the whole country, the transportation requirements necessary to operate with a certain wide range of goods and services would need to have astronomic dimensions, in fact, far beyond the limits of technical and economic possibilities.

The exchange of goods and services is easier if the gap between the producer and the consumer is narrower. Regarding geographic terms, with concentration of population in cities – in conurbation, the scope of demand for products of local industries,⁴ causes increase, enabling greater specialisation within and among these industries. One might sympathise with those critics who condemn city life, but the truth is that only with the help of the majority of inhabitants who live in rather dense groups, the present standard of living in the developed countries of the world is possible. Urbanisation and higher standard of living go hand in hand with one another.

Estimating the size of the gap between the producer and the consumer, and the means that could be used to bridge this gap, it would be useful to differentiate between the goods and the services. The gap between the producer and the consumer can be bridged either by carrying the product from former to the latter, or by directing the consumer to the producer. In case of personal services, the user is the one who has to move. When considering services, then we notice that by their nature they cease to exist the moment they are performed.

Exchange of service requires the presence, at the same time and at the same place of both the producer and the consumer. For example, in order to cut the consumer's hair, he has to visit the barber's. Haircutting itself cannot be transported. The same happens if the consumer wants to enjoy a cinema or a

theatre performance; he has to move.⁵ At places where the gap between the producer and the consumer has to be bridged by movement of the consumer, the gap has to be small if the producer wants to have a wide scope of market for his services.

Marx' definition of traffic service says that it is precisely what transport industry offers the user as result of its work, and that is the change of place. The first characteristic of the work process is that transportation process consists in mastering the physical space. Accordingly, the physical activity, has theoretically no boundaries. In practice, however, this indicates the integral characteristic of the process of work on a wider area, regardless of branch-organised forms and regional organisational forms.

Another thing realised from the definition of traffic service is that the useful effect, as result of work is inseparably linked with the process of its production. This means in fact that in the traffic activity the process of production and the process of service demand represent a single process.

The fact is that service, as result of the operation of the "transport industry" does not exist as material product, as a thing in its physical shape which exists outside and after the production process has been completed.

Therefore, there is no storage of services. Unlike industrial production, where production factors are located at a certain place, in traffic they are on the move. The scope of operation of traffic companies is regarding territory much wider than industrial companies. What makes this system a big and complex technological system is precisely the crossing and interweaving of all the transportation processes in a heterogeneous traffic network.

In case of material goods, the consumer does not have to move towards the producer's location, instead, the goods can be transported. It should be noted that between transactions that include goods and transactions that include service there is a clear cut. The sales of goods by the producer to the consumer can include the element of service. For instance, there is a strong element of service in retail, although the essence of the producer-consumer transaction lies in the transfer of material goods.

The distinction that we make between production and exchange of goods and production and exchange of services is based on greater mobility of natural resources compared to mobility of humans. Physical goods consist of raw materials that have to be obtained

3 There is the third determinant – population growth. This factor can be included under the title narrowing the gap between the producers and the consumers.

4 Industries are defined as "local" based on the localised nature of demand for their products. It includes the building of a baker's, distribution activities of traffic (diverse infrastructure).

5 Here, the arguments can be applied equally to consumers' services, services required by end users, and to producer's services, services required by indirect consumers.

from the earth, or more generally, from natural resources. Services, on the other hand, are obtained as result of work. Either there is no or very little element of raw material in the production of services.

The function of transport is to bridge the time and space gap that divides the producer and the consumer either by movement of goods by the producer (cargo transport) or by movement of producer or consumer (passenger transport). The significance of the gap, the level up to which it represents a hindrance between the source of goods or services supply and the demand for those goods – services, depends on the availability and efficiency of transportation services. Whatever the distribution of population, the greater the efficiency of transportation services, the greater the volume of demand within the producer's reach. The market will expand and thus provide a higher level of specialisation between production resources.

We are not worried about the priority in time, whether market expansion comes first and greater specialisation follows, or there is primarily greater specialisation resulting in the search for a market that will consume the greater production of the goods. What we do want to emphasise is that the level of specialisation is limited by the scope of the market and that the transport means represent a way of expanding the market.

4. ECONOMIC ASPECTS OF TRANSPORTATION ACTIVITIES

Economic significance of the producer–consumer distinction does not lie in the physical distance between the consumer and the producer and measured in miles and minutes, but rather in “economic” distance, measured by transportation costs. The cost of work and main resources necessary for the supply of transportation means through a mountainous country is far greater than the cost of resources necessary to transport cargo and passengers across flatland. Physical distance in miles may be the same between points A and B and between points X and Y. However, if the A – B route passes through mountains and the passage from the point X to Y is level, the “economic” distances measured by transportation costs will differ considerably in these two cases. Therefore, the distance between the producer and the consumer has to be considered in economic terms. A distance of 100 miles can have the same economic connotation as the one of 10 miles, if e.g. the latter covers a more difficult terrain. It would be interesting to see what the world

map would look like if its scale consisted of “economic” miles instead of the status miles. Since it is easier to transport goods by sea than across land, the world oceans would seem much smaller than they really are, and the land mass of the world would increase.⁶

The distance between London and New York could be represented as shorter than the distance between New York and San Francisco. The Earth configuration would change. The northern part of England would expand and would show higher insurance costs through mountainous region of the Pennines.

One may note in fact that the magnitude of the resulting differences is a matter of “economic” distance expressed in the terms of transportation costs. The efficiency of transport in bridging the distances is also a matter of transportation costs. The more efficient the means of transportation, the lower the transportation costs. Transportation costs are a measure of the gap and a way of its bridging. In other words, when we consider the distance between the producer and the consumer, in this way, these two factors merge into one. Transport is not so much a way of overcoming distances, but rather of their shortening.

Similarly, transport modernisation is not, economically speaking, represented by any physical exchange or addition of available transport means, but by the fall in transportation costs.⁷

The economic significance of opening railway communications between two population centres (previously serviced by pack-horses) is not a substitution of train for the pack-horse, but rather an introduction of a more efficient mode of transport in the sense of economic significance of efficiency, that the costs of the new form of transport are lower for the transport users than those for the old mode of transport.

The volume of produced goods that a certain producer can sell, depends on his production costs, which will include, as one of their components, the costs for transporting the goods to the consumer. We can assume that the producer will locate the company, and organise the production resources, work and machines in such a way that, respecting these resources, the costs will be minimal. At this level of costs, the production result will be steady due to the consumer's demand for these products.

In other words, the producer would do anything in his power to improve the organisation of his production resources with relation to his production results, that he could sell to his consumers. Any further expansion of business must wait for some external factor

6 Cf. Boulding: “Economic Analysis” (revised edition), Hamish Hamilton, London, 1949, p. 353.

7 This term understands the relative fall in transportation prices. During inflation pressures, all the costs may rise. In such conditions, transportation modernisation will be represented by a smaller increase in transportation costs than in case there was no modernisation. Relatively, compared to other things, transportation costs will fall.

that would contribute to a safe and better success, i.e. either increase the demand for his products or reduce his costs. Reduction of production costs per product unit can be feasible, if the work results are increased. On the other hand, any increase requires expansion of the market for a certain product. Thus, there may be potential demand for his products, but his production costs, including transportation of the products to consumers can be such as to put the product beyond the scale of price of potential buyers.

Modernisation of transport, of transport means, by reducing the costs, and at the same time by reducing the gap between the producer and the consumer can bring the product within the scale of price of potential buyers.

The result of the consumer will then increase, and this can enable him to change the organisation of his production resources regarding their specific characteristics. Gains of increased profitability, either distributive in the form of a lower selling price for consumers or in the form of higher earnings for the production resources, will contribute to higher living standards. Therefore, greater modernisation of transport, enabling the market to expand, allows a greater level of specialisation and thus of profitability as well.

The considered economic development can reflect itself in the introduction of new consumers' goods, in opening of a new market for the goods, in discovering a new supply source of raw materials or semi-finished products, and in the application of new technical methods of production. The availability of efficient transport means is a significant factor, one might say the initial sample, of various manifestations of the economic development.

Economic progress includes constant reorganisation of production resources that require the production to develop in such a way that work and machines are combined into production processes.

Progressive rise of the living standard depends on the growing efficiency of the production resources, achieved by greater specialisation.

Function of transport, in this context, has to be considered taking into account the long-lasting process of economic development.

Another essential element refers to the point mentioned earlier, the high level of dependence on different parts of economy, based on the division of labour. The effect of interdependence is the creation of economy, not only complex in its nature, but sensitive in its operation. In considering transport, as non-economic image, we see it as a process in production of goods and services. Precisely this is the most important function, but not the only one. In the freight and passenger transport system the other two functions of transport can be distinguished as well.

Transport is not only a way of production, it is implicitly also the object of consumption. Travel is undertaken not only with the aim of reaching the destination, but also for the pleasure it offers. As a means, transport is part of production costs of the national dividend of goods and services, and therefore our aim is to reduce these costs to a minimum. Any economic development that reduces the need for transportation, not influencing the production of goods and other assets has to be sincerely supported as well as all the production resources. Means of transport have to be "used economically"! They are a necessary "lever" without which the economic or any other system could not function. This idea is contained in the sentence "transport is the servant of industry". As consumer service, as source of pleasure, it belongs to another category. The aim of economic system is to reduce the production costs, on the other hand, increase of the results of consumers' goods and services. The greater the scope within which the consumers' ideas of travelling can be satisfied, the greater the quantum of economic well being.

5. CONCLUSION

The economic activity of any society can follow one or two conflicting principles. One is about the self-sufficiency, and the other about division of labour or specialisation. If every young community – household, village, town or region follow the principle of self-sufficiency, then they will tend to satisfy all their own needs for food, clothing, entertainment, etc. from its own resources. If, however, they follow the principles of division of labour, then each small community will specialise in a certain form of economic activity and rely on the means of exchange in order to get those goods and services it does not produce on its own. The more the society relies on the principle of division of labour, the better it will be off economically and the greater the level of dependence between small communities that make up the society.

The effect of specialisation is that every producer has a relative surplus of its own products and a relative lack of other goods that it needs for its consumers. A baker, for instance, has an excess of bread and a lack of grain. We as consumers lack a wide range of goods and services. Therefore, as producers, each one of us has a surplus of goods or services that we produce. The essence of economic activity lies in the exchange of what is surplus to one person (and deficit for other people) for the deficit to this person (and surplus for other people). Precisely this need to exchange relative surpluses for relative deficits is what makes the individual producers so dependent on each other in meeting the consumers' requirements.

The function of transport lies precisely in bridging the time gap between the producers and the consumers, or by moving the goods from the producer (goods transport) or by moving producers or consumers (passenger transport). The importance of the gap – level up to which it is a hindrance between the source of supply or service and the demand for this product or service – depends on the availability and efficiency of transportation means. Whatever the distribution of population; the greater the efficiency of transportation services, the greater the volume of demand within the scope of the producers. The market will expand and greater level of specialisation among production resources will be possible. We do not worry about the issue of priority in time, whether market expansion is first and then increases the specialisation, or we have first increase in specialisation resulting in the search for a market to accept our increased production of goods. What we want to emphasise is the level of specialisation limited by the scope of market and the fact that transportation means are the way of expanding the market.

SAŽETAK

Funkcija transporta je premošćivanje razlike između proizvođača i potrošača po najnižoj mogućoj cijeni. Bilo koji način kojim se mogu sniziti transportni troškovi mora se pozdraviti, bilo da to podrazumijeva uvođenje nekog sredstva koje se usko poklapa (slaže) s potrebama korisnika transportnih usluga (pogodniji, sigurniji, pouzdaniji, brži), npr. ili sredstva koje je jeftinije osigurati, a funkcija mu može biti, glede ekonomskog motrišta isto učinkovita i pouzdana.

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