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A STUDY ON THE PROBLEMS OF THE STRUCTURE OF TRANSACTION COSTS

Abstract

The estimation of transaction costs is a well-known methodological problem, the solution of which determines the possibility, among other things, to estimate the conditions for business operations. The growing complexity of the social and economic interaction emphasizes the special role of transaction costs in regulation of the stability condition. The article analyzes approaches to the determination of the essential characteristics of transaction costs. The scientific evidence of dividing of transaction costs into normal and recertative is provided. Their differentiation is connected to the impact of uncertainty and also the principal unavoidability of transaction costs regardless the efficiency of the economic mechanism and other factors. An important factor here is friction force – flexibility of the economic space. The growth of transaction costs that is observed with the increased uncertainty emphasizes only the revealed features in the friction force of the economic environment. All this led to the conclusion on the availability of a generalizing factor that estimates the conditions of exchange transactions. For this, the notion of transaction capacity was introduced; it expresses the cumulative impact of the external and internal conditions, which, this way or another, are understood by the specialists making the managerial decisions. The existence of some value of transaction costs when transaction is declined presupposes an important assumption that the transaction capacity has the same limits of dynamics. The obtained results allow us to build a function of transaction capacity, which shall be considered as a tool for risk-profile analysis.

Keywords

transaction costs, flexibility of economic environment,
transaction capacity, normal transaction costs,
recertative transaction costs, vistributivity

JEL Classification D23

INTRODUCTION

The determination of the economic essence of transaction costs is a problem for their study and measurement. The significant part of transaction costs is intangible and invisible (Malakhov, 1996). The uncertainty is a main assumption in the theory of transaction costs (Slater & Spencer, 2000). Nevertheless, the intention of most researchers to estimate transaction costs is a fact.

Let us imagine the most competent research approaches. Thus, when estimating the transaction costs, Wallis and North (1986) use the method of distinguishing a share of transaction economy in the structure of the gross domestic product. When determining transaction costs, V. V. Radaev, in his calculations, took into account the “expenses related to the entrance into the market and exit from the market, access to the resources, transfer, specification and protection of property rights, establishments and maintaining of business relations” (Radaev, 1999).

In his research, Islamutdinov (2009) reveals the dual role of taxes in the transaction turnover. When determining some costs as transaction costs, we reveal that the content of these costs of the particular good is heteroge-

neous; the cost includes the transformation (manufacturing) costs and transaction costs in regard to the seller. Depending upon the object of exchange or deal, the buyer can completely take these costs as transaction costs. Kuzminov and Yudkevich (2002) reasonably confirm that “we receive the transaction goods from the state in exchange for the tax payment”. Auzan (2006) substantiates the tax nature of a part of transaction costs when he speaks about taxes coming to the state as a necessity allowing to solve the problems of specification and protection of property rights.

The basis of the conditions and factors determining the dynamics and the nature of changes of transaction costs is the second important problem of neoclassical theories. The author’s view of the estimation of transaction costs proceeds from the fact that if a company exists (functions as a full unit of the economic activity coordination), the level of its transaction costs is determined by the conditions of any exchange operations. At the same time, the limitations are connected objectively with the nature of deals and the scale of activity: firstly, due to the hidden character of most exchange operations (including those performed in the shadow market), secondly, and this is the most important, the wider the scale of economic activity of the company is, the more undetermined the border is, which separates the transformation costs from transaction costs.

To substantiate the author’s point of view on the estimation of transaction costs, we shall introduce the notion of the total measure that characterizes the conditions of the performed exchange operations – transaction capacity. The following theses specify the economic sense of this notion.

1. TRANSACTION CAPACITY AND FLEXIBILITY OF ECONOMIC ENVIRONMENT

The analysis of transaction costs at the macro- and meso-levels is performed by regions and types of economic activity. Thus, the offer to calculate the territorial and branch transaction capacity as independent characteristics of the environment will be completely reasonable. The economic sense of the index of transaction capacity is to characterize the volume of costs per value of transformation (manufacturing) costs. The conceptual essence of transaction capacity can be briefly specified by the term “flexibility of environment” (economic space). Initially, the term “flexibility of environment” was introduced by Shevyakov and Kleiner (1993) to describe the comparative conditions of manufacturing and industrial management. In their work, the flexibility of environment is connected directly to the uncertainty and risks to which an economic agent will be subjected: “the higher the flexibility is, the more difficult it is to concentrate the resources in the right direction in the right time to withstand the unlucky course of events and the higher is the degree of risks as fixed factor of environment” (Kleiner, 1994).

In the later works, G. Kleiner focuses his attention on such characteristic of the flexibility of envi-

ronment, which is designated as additional “significant, sometimes unreasonable efforts” (Kleiner et al., 1997), in terms of resources transition for industrial management. But the most important notice considers how this flexibility of environment is stipulated and to what extent it influences the functioning of enterprises and organizations of the real sector of economy. In his research, G. Kleiner mentions that the “flexibility of economic environment creates the prerequisites for non-uniformity in the conditions of functioning of not only various branches and regions, but also the independent enterprises of the same branch located in close proximity” (Kleiner et al., 1997, p. 26).

Taking into account that at the moment, there are no basic indexes for the characteristics of the “flexibility of environment”, in our opinion, the territorial and branch transaction capacity can become the proper indicator of the “friction force” when performing transactions. The introduced notion of “transaction capacity” expresses the aggregate impact of external and internal conditions that is accepted some way or another by the persons making the managerial decisions.

The first step to estimation of the transaction capacity is to specify the method for calculation the transaction costs. Based on the abovementioned thoughts, one shall rely upon the following uni-

versal approach that may be not without critical comments, but still it covers the most part of the interrelations of maintaining of the economic system alive (Arrow, 1993) and conclusion of contracts (Matthews, 1986):

$$TC_i = CC_i + MC_i + [Tp_i + Tr_i], \quad (1)$$

where TC_i is the transaction costs of the i -th enterprise; CC_i is the commercial costs of the i -th enterprise; MC_i is the managerial costs of the i -th enterprise; Tp_i is the profit tax of the i -th enterprise; Tr_i is other taxes of the i -th enterprise.

In the offered formula (1), a company is considered as an independent business unit. But if for some enterprises the obtaining of the particular good is an operational need, for others (for example, those that acquire the goods for its further resale), it is the main type of activity. Therefore, the correctness of estimation of transaction costs can be solved only at the level of a particular entity. Then, if many entities reselling the goods are taken into consideration, we can note the occurrence of the effect of intermediate consumption of transaction costs.

The abovementioned scheme of transaction costs gives the ground for determination of the index of transaction capacity. The optimal form of calculation of transaction capacity is the following equation:

$$TCE_i = \frac{TC_i}{PC_i} \text{ or } TCE_i\% = \frac{TC_i}{PC_i} \cdot 100, \quad (2)$$

where TCE_i is the transaction capacity of the i -th enterprise; PC_i is the production cost; $TCE_i\%$ is the relative transaction capacity of the i -th enterprise.

Based upon the equation (1), we can estimate the transaction capacity of the branch/regional economy using the formula:

$$TCE = \frac{TC}{\sum_{i=1}^m PC - IC} \text{ or } TCE = \frac{\sum_{i=1}^m TC_i - IC}{\sum_{i=1}^m PC - IC}, \quad (3)$$

where TCE is the transaction capacity in absolute terms; PC is a consolidated value of production cost; IC is a value of intermediate consumption of transaction costs.

Then, the calculation of transaction capacity in relative terms can be presented as

$$TCE\% = \frac{\sum_{i=1}^m TC_i - IC}{\sum_{i=1}^m PC - IC} \cdot 100, \quad (4)$$

where $TCE\%$ is a relative transaction capacity.

Obviously, the transaction capacity index can hardly be considered the only measure that indicates the presence or absence of the acceptable level of operational risks. But it allows to characterize all the conditions of business operations. For example, it is done by matching the transaction capacity with the number of economic agents functioning in a separate territory. Conditionally, this index can be shown as density of transaction costs. The prototype of density of transaction costs is a value of "cost of acquired goods per one transaction agent" offered in the work of Popov (2011).

The obtained results allow to build the function of transaction capacity that shall be considered as a tool for risk-profile analysis. The author's view of the dynamic change of transaction capacity and risk is shown in Figure 1.

The basis of the use of transaction capacity is in the economic essence of efficiency of a company's activity. The dynamics of riskiness is shown in Figure 1 by coloured areas: from minimal riskiness – in the situation when transaction capacity reaches its lowest value to the maximal one – at its peak. The exceeding of transaction capacity value of the single unit demonstrates the inefficient work of the economic agent. As we see, the existence of some value of transaction costs when the transaction is declined means an important assumption that transaction capacity also has the similar limits of dynamics. The formation and development of the abilities to costs absorption can be in line with institutional transformations (Barbakov & Kuzmin, 2015), as well as in the direction of improvement of the transformation function.

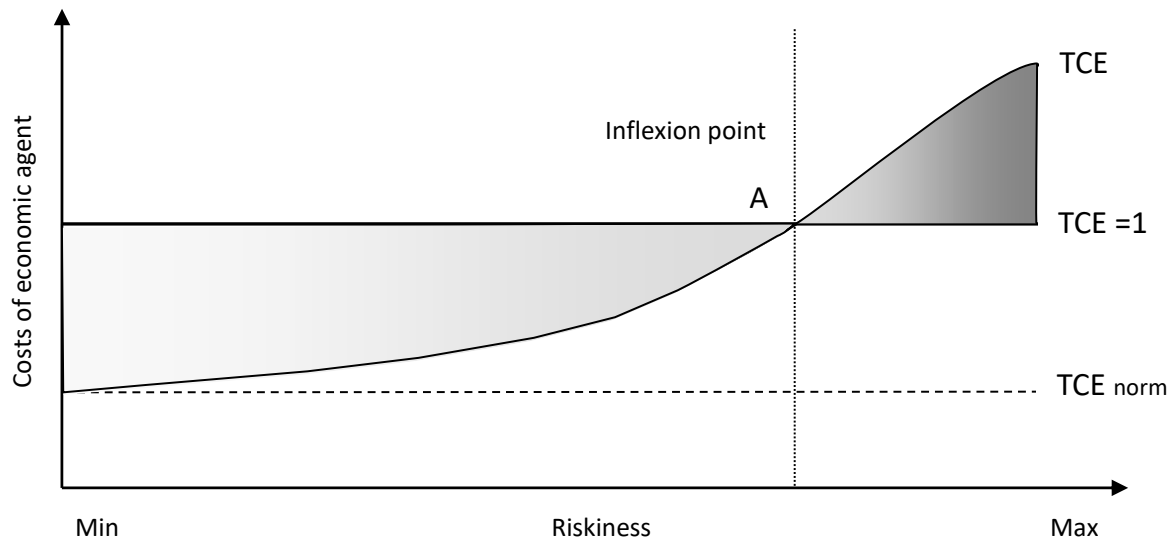


Figure 1. Function of transaction capacity

The growth of transaction costs which is observed together with the growth of uncertainty emphasizes the revealed peculiarities in the friction force of the economic environment. The attention shall be paid to the fact that the friction force in the economy expressed by means of correlation of transaction costs of various orders does not possess the conceptual interpretation established in scientific discourse. For this, we offer to use the term *vistributivity*. Etymologically this term is originated from the categories of “force” on the analogy with the Latin word *vis* and “friction” – *tritus*. At the same time, to simplify the reflection of the friction force in the economic field (in other words, *vistributivity*) we also offer to use the unified conventional unit of measurement – *vistribute* (*vst.*), which allows to include the separate method into the generalized methodology of transaction costs. The notion *vistributivity* characterizes the friction force of the environment and reflects the capacity of the participants of the economic exchange to conduct their activity within the framework of the formed constitutional field and mechanisms of the normal behavior. The deviation from the formed norm creates various aspects of uncertainty and forces to preventive actions of entropy significance decrease and its control. Targeted impact on uncertainty when concluding the deals obviously affects the size of transaction costs. As a result, the level of flexibility or sliding in the environment is changing.

The chaotic wandering of the economic agents without the proper institutional structure gener-

ates the additional entropy of behavior of entities within the limits of the organizational system, and it influences also the changes of the normal transaction costs used for calculation of the *vistributive* environment. As a result, the friction force in the economy is a dynamic value and the measure of *vistributivity* in different states of uncertainty may vary significantly. The friction force in the economy is a dynamic value and the measure of *vistributivity* in the different states of uncertainty can differ significantly. It seems that the growth of entropy bears a message of gap reduction between the normal values of transaction costs (see section 3) simultaneously that as a whole leads to the exponential change of the *vistributive* environment.

The special saving of transaction costs in the form of non-uniformity clusters of the economic space – in the diversity of contracts, formal and informal relations – is opposed to the absorption property that has the particular similarities with the projection of economic mechanism. In our opinion, the absorption is realized due to the coverage and size of the economic agent, its specific dynamic capacities to transaction costs saturation.

In addition, it should be mentioned that studies of similar nature were performed by Masters et al. (2004), where they reasonably proved the hypotheses of building closer interrelations with contractors depending upon the specific character of assets and their corresponding impact on the

reliability, probability of deal repetition, change of uncertainty and risk. Other studies perceive risk through the transaction costs in the context of the management hierarchy, risk appetite of the management strategy and the level of the specific nature of assets. An example of such research is the work of Chiles and McMackin (1996).

It should be mentioned that the index of transaction capacity is not the only measure indicating the risk and uncertainty. The density of transaction costs can be another index. The size of transaction costs that is average for every participant can give the characteristics of the market harmony.

The research of the economy transaction capacity of regions and branches led to the study of transaction costs from the point of view of their division into costs of reversible and irreversible nature. In our opinion, the transaction costs of irreversible nature include the costs that can be designated as normal. They arise due to the existence of the economic mechanism itself.

2. NORMAL TRANSACTION COSTS

The unavoidability of transaction costs indicates the necessity of their standardization. The stating point of this problem solving is a proven existence of some normal value of transaction costs that can be designated as a background or natural level.

The review and study of the scientific literature regarding the problem of normalization of costs has not revealed a single approach to their determination. There are many different examples of use of the normal costs in the scientific literature. With regard to transaction costs, it is shown in the work of Davidson (2002) ("normal transaction costs") and Harris (2003), where he connects the price difference of supply and demand with transaction costs that are used for compensation of the normal costs for business operations, etc. The costs that can be designated as normal are the costs at the maximally allowable efficiency of the resources use. Therefore, the normal costs include two components: firstly, the internal efficiency of resources use; secondly, the impact of factors and conditions of environment.

The arguments of the position of normal transaction costs shall take into account that various branches and regions possess different background (natural) level of transaction capacity. The differentiation of transaction costs according to various types of products is observed in the work of Ya. I. Kuzminov, K. A. Bendukidze and M. M. Yudkevich. They reasonably specify that a "share of transaction costs in the total cost of production of various products can be very much different" (Kuzminov et al., 2006). Indirectly, this phenomenon is also mentioned in the work of Maher (1997); she pays attention to the fact that the degree of transaction costs is different in various branches and among the companies inside the same branch as well.

Therefore, objectively, there are branches and regions where a high share of transaction costs is or can be normal to a certain extent. One and the same branch in different regions can possess a different background level of costs. At the same time, when considering the regions the same tendency will be observed due to the existing factors and conditions, when, with the identical production structure, the background level of transaction costs is significantly different.

Taking into account the differentiation of the normal transaction costs, any critical value of costs is a normal value of distinct order where the normal value of transaction costs of the first order is a minimal size of such costs in the aggregate of the existing factors and conditions. For the second order, the optimal value of balance of the functions of demand and supply; or for the third one, a critical value when the deal cancellation will take place.

2.1. Normal transaction costs of the first order

We offer the hypothesis to determine the normal value of transaction costs of the first order – the minimal value of costs can be achieved in the conditions when the ideal planning of production activity of the company (transformation function) is reached. The essential characteristic of conditions of the ideal planning that is connected to the sale of products (finished products) is its turnover period. The value of time used for search and conclusion of deal determines to a large extent the size of

transaction costs. The peculiarities of the production process of every branch make impact on the turnover term of the finished products:

$$C_t = \frac{CV_g}{PM_i} \cdot T, \quad (5)$$

where C_t – the turnover term of the finished products for a period; CV_g – the average overplus of finished products in the monetary calculation for a period; PM_i – the market revenue of the i -th enterprise; T – the time interval of calculation.

In this context, we proceed from the fact that the determination of the ratio limit of the turnover terms of finished products in the actual and ideal conditions is possible in two ways: first, it presupposes that the revenue is unchangeable; second, it is based upon the idea that an average overplus of the finished products is fixed. We rest upon the second way of determination of the potential revenue size when the turnover term of the finished products tends to zero. Considering the approximate variant of calculation, we use the value of ratio limits of terms of finished products turnover:

$$\lim_{C_t^{ideal} \rightarrow 0} \frac{C_t^{fact}}{C_t^{ideal}} = U, \quad (6)$$

$$\text{at } C_t^{ideal} < \min \{C_t^{fact}\},$$

where U is a coefficient of revenue change of the enterprise in the ideal conditions of planning.

The obtained coefficient reflects the degree of revenue change and, correspondingly, the degree of change of commercial, managerial expenses and taxes. Based on the equation of the calculation of transaction costs for the i -th enterprise or organization, the determination of the normal value of transaction costs of the first order in the approximate calculation, in the author's opinion, is possible by means of the following mathematical equation:

$$TC_i^{norm-1} = \frac{CC_i + MC_i}{U} + P_i \cdot T + [(CC_i + MM_i) - \frac{CC_i + MC_i}{U}] \cdot T + Tr_i, \quad (7)$$

where TC_i^{norm-1} is a normal value of transaction costs of the first order; P_i is the revenue before taxation of the i -th enterprise; T is a taxation rate on revenue.

It should be mentioned that as the transaction costs are in the linear dependence with the factors, such calculation of the normal value of costs is rather reliable. More accurate calculations presuppose finding the coefficient of revenue change by building the dynamics function of transaction costs and finished products turnover term that gets a non-linear form. The approximate calculation according to the formula (7) reflects the possible state of business system in the conditions of the ideal planning and is rather conditional. However, to determine the level of riskiness, such calculations can be sufficient.

2.2. Normal transaction costs of the second and third order

To determine the risk zones using the estimations of transaction costs, it is necessary to find a normal value of the second and third order. Their calculation will allow to establish the boundaries of the risk zones and consequently to form correctly the response managerial actions.

The value of transaction costs of the second order is rather difficult to calculate, because the optimal level of costs (expenses of the second order) is connected to the notion of the normal profit, the understanding of which is ambiguous. But the formalized formula of finding of this value is as follows:

$$TC_i^{norm-2} = PM_i - PC_i, \quad (8)$$

at $PC_i + TC_i + P_i = PM_i$ and ($P_i > 0$), and also

$$\tilde{P}_{gm} < \tilde{P}_s \text{ (at the same utility)}$$

$$Q(P_{gm}) \cdot (P_{gm} + K \cdot P_k) < B,$$

where TC_i^{norm-3} is a normal value of transaction costs of the third order; PC_i is a production cost of product; $\tilde{P}_{gm}$ is a weighted market price of products; $\tilde{P}_s$ is a weighted market price of eco-

conomic good-substitute; K is a factor of change of the number of economic goods-complements; P_k is a price of economic goods-complements; B is a costs budget for the complex of economic goods.

The normal value of transaction costs of the third order presupposes that when it is reached, the operations or deals performance between the economic entities is economically unreasonable. The only condition when the economic reasonability of the operations is lost is a situation of exceeding of the sum of transformation and transaction costs above the profit of operation. At the same time, there is a breach of efficiency inequality of the economic agent.

Thus, the equation of the normal value of transaction costs of the third order can be presented as the following equation:

$$TC_i^{norm-3} = PM_i - PC_i, \quad (9)$$

at $PC_i + TC_i = PM_i$ and $P_i = 0$ ($P_i \leq 0$), and also $\tilde{P}_{gm} > \tilde{P}_s$ (at the same utility)

$$Q(P_{gm}) \cdot (P_{gm} + K \cdot P_k) \geq B.$$

The riskiness of the operation performance increases when the actual values of transaction costs approach to their upper critical value. The reverse situation occurs when approaching of the actual observed transaction costs to the normal value of the first order – risk is decreased in such case up to its minimal value.

3. DISCUSSION

The implementation of the notion of normal transaction costs into the scientific discourse leads to the necessity of their additional decomposition according to the components. The principal unavailability of transaction costs leads to the conclusion that apart from normal costs, there are also costs that are determined by the inefficiency of the economic mechanism, occurrence of the uncertainty and risk of transactions, incomplete use of resources and other factors.

It should be mentioned that many scientists do not make any distinctions in the types of transaction costs that are determined by the appearing of uncertainty in those costs that are necessary minimum when following the institutional protocol in the conditions of the ideal planning. Thus, Tatarkin (2004) fairly notices that “transaction costs grow together with uncertainty”, but this growth shall be differentiated according to its sources. Kokorev (1998) directly points this out confirming our idea and concludes that “efficient and real transaction costs are distinguished”.

Similar to the assumption of A. I Tatarkin, the idea was expressed by Stroeve et al. (1995) who see differently the reasons of transaction costs changes, declaring that the growth of these costs takes place together with the growth of complexity. As far as it is known, the complexity is one of the attribute sources of uncertainty, which is expressed in the quantitative increase in the number of the system elements and the qualitative growth of connection procedures between them.

$$TC_i^{norm-1} + TC_i^{rc} = TC_i$$



Risk free part Risk component

Note: TC_i^{rc} is recertative transaction costs.

Figure 2. Scheme of component ratio of normal and recertative transaction costs

On the one hand, it is indirect normal costs of the first order as the inevitable costs that arise due to the existence of the economic mechanism itself and they reflect the costs at the conditionally ideal planning. On the other hand, they are transaction costs in the form of difference between the actual and normal costs. In our opinion, these costs can be called recertative transaction costs, the essence and estimation of which will be described later. The ratio of components is shown in Figure 2.

The etymology of the term of recertative transaction costs is connected to the notion “recerte” that is used by the authors to name the unit of change of uncertainty in the organizational and economic systems (Kuzmin, 2012). Recertative costs are determined by the inefficiency of the economic mechanism, rise of uncertainty and risk of the transaction, incomplete use of resources and other factors that influence the agents in the form of the additional wasteful expenditures. At the same time, the risk in this context is identified with the “success” of the company’s work when the high level of transaction capacity decreases the chances of the company to exchange and trade. The uncertainty stipulates only a part of transaction costs that got the name of recertative that is connected to the inefficiency of the institutional structure.

In our opinion, the internal and external efficiency of the economic mechanism and institutes are something undivided, despite they possess the distinct criteria of determination. Vistibutivity unites them into a universal degree of friction force in which on one side there is a formed uncertainty and on the other side there is a degree

of impact of entropy on the creation process, risk generation. Together they lead to the formation of parts of transaction costs that are used to eliminate the uncertainty and risks in the activity of the economic agents – recertative transaction costs.

According to the concept of the author’s approach, the normal costs reflected the immediacy of the transaction commitment when there are no other costs of information search, negotiations and even the conclusion of a contract. The costs in such cases are standardized by the typical contract in the conditions of uncertainty. The real unpredictability and uncertainty of the economic landscape add the recertative component to them. The distinguishing of normal and recertative components in the transactional costs approaches the solving of the problem of optimization within normal limits. Scientific argument of conclusion about the possibility to use the index of transaction capacity when estimating the flexibility of economic environment is in the essence of transaction costs, i.e. in that part that reflects the component of the general economic risk – recertative transaction costs. The growth of uncertainty and risks leads to the growth of recertative transaction costs; at the same time, the normal costs change insignificantly.

Recertative transaction costs are rather flexible, dynamic and variable. Actually, they are the result of uncertainty that means the constantly changing conditions of the activity, ambiguity of the managerial decisions and consequences of these decisions and also the situation of change of “game rules”.

CONCLUSION

Summarizing all which was said above, we can say that transaction costs in the economic relations are the basic index using which we can estimate the value of risk and uncertainty. The unavoidability of transaction costs points out the necessity of their standardization. The initial point of solving of this problem is the proven existence of the normal value of transaction costs that can be designated as the background (or natural) level. All this led to the division into costs of reversible and irreversible nature. In our opinion, the transaction costs of irreversible nature include those costs that can be designated as normal. They arise due to the existence of the economic mechanism itself.

The notion of transaction capacity is introduced to characterize the conditions of improvement of the operation performance. The economic sense of the index is to characterize the volume of costs per the value of transformation (production) costs. The conceptual essence of the transaction capacity can be

simply designated by the term of flexibility of environment (economic space). The growth of transaction costs that is observed together with the increase in uncertainty emphasizes the revealed peculiarities in the friction force of the economic environment (property of distributivity).

According to the results of the research, we can make some conclusions regarding the peculiarities that were revealed during the analysis of the ratio of normal and actual transaction costs. Firstly, the minimal value of costs can be reached in the conditions when the ideal planning of the production activity of the company is achieved (transformation function). Secondly, in addition to normal costs there are also the costs (recertative transaction costs) that are determined by the inefficiency of the economic mechanism, occurrence of uncertainty and risk of transaction, incomplete use of resources and other factors that cannot be explained due to the natural factor and characterizes the uncertainty, imperfection of the institutional environment and flexibility of the economic environment.

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