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## Influence of Property Right Redistribution on Company Economic Efficiency

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*The article investigates the mechanism of influence of changes in property rights distribution structure on a company performance. The model, taking into account the influence caused by changes in property rights distribution structure on the performance efficiency, has been designed. The concept of company institutional efficiency within the framework of the presented model has been offered. It reflects the ratio of profit to expenses, which occur during economic subject interaction inside a company through an institutional function. An index of institutional efficiency changes has been introduced as an evaluation criterion of influence of changes in property rights redistribution on the efficiency.*

*Keywords: company, economic efficiency, property rights redistribution, modeling, institutional efficiency, transaction costs.*

### Introduction

The reforms in Russian economy have given a stimulus to emerging a new class of proprietors. Now the activity of economic agents is determined by the goals set by a resource proprietor. On the one hand, any company is a plenipotentiary player in market interactions, and company managers are conditionally free to make decisions on resource distribution. On the other hand, managers act in the limits of the goals set by proprietors. The structure of a company ownership is not permanent in general. The change of an owner will, first of all, lead to changes in the goals set for managers. The orientation of a company on achieving new goals will lead to the correspondent changes in all company performance or in the performance of

specific departments. The nature of these changes and their influence on a company performance more and more often interest future proprietors even before they purchase a company share. The research in the influence of property rights redistribution on company performance results should, in our opinion, take into consideration a quality assessment of the current in-company processes. Carrying out a full and thorough analysis of in-company situation before and after property rights redistribution can take much time while a continuous monitoring can require too much different company resources. As a rule, in order to economize resources, required for the analysis of the influence results, the assessment is only carried out in case of substantial changes in property rights structure, thus not allowing

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to have a complete picture of the current in-company situation. The method, based on the model considering the influence of property rights redistribution on an in-company economic efficiency can simplify a company performance assessment. Therefore, the research in property rights redistribution on a company performance can be considered topical.

### The Problem Statement

According to the institutional approach, organizations are defined as institutes with people exploiting the potential of these institutes<sup>1</sup>. In this case any group of individuals will strive to achieve certain general goals and objectives, following the rules the institutes under consideration are based on. The property-based relations of economic entities are also regulated by certain institutes.

Institution theory of property rights consider a company to be a coalition of proprietors cooperating factors of production on the base of contracts structured in a complex way.<sup>2</sup>. A long-term contract aimed at proprietor-to-proprietor relations concerning interspecific (interdependent) resources are in the heart of this coalition. Interspecific nature means interdependence, inter-unique nature of resources in relation to each other. If the coalition breaks up neither of the parties will be able to find an equivalent substitute for its current partner. Such a coalition ensures each partner a quazirenta, which can be shared with each other. Therefore, economic parties are interested in each other and in continuous cooperation. But, in the considered context it is worth focusing on a coalition of resource proprietors.

A company exploits limited resources (welfare) having legal and physical characteristics. The institutional approach makes it possible to describe a company not as a solid and indivisible entity, producing some products and consuming some resources but as hierarchal structure where economic entities interact following certain rules of resources (limited welfare) distribution. Thus, we can consider the influence of a proprietor or a group of proprietors can have on a company performance, which, in its turn, can influence on company efficiency. The ratio of shares of different stockholders or participants determines the correlation of different levels of management and functional areas. In their turn, they depend on planning, organization, motivation and control over development and achievement of the set goals<sup>3</sup>. In other words, the property rights structure predetermines a company organizational and operational structure, thus determining a company efficiency<sup>4</sup>.

The possibility of strengthening the influence of a proprietor on a company operation and consequently, more strict control over a company performance and the set goals execution are the causes of the struggle between economic entities for the in-company influence via getting a larger share in a company property. A larger property share gives a proprietor a certain advantage. Large shareholders not only get the right to be in the know of current in-company situation<sup>5</sup>, but have more votes in making decisions on key problems of a company performance, including

<sup>1</sup> Eirik Furubotn and Rudolf Richter, *Institutions and Economic Theory: the Contribution of the New Institutional Economics*, translation from English ed. by V.S. Katkalo, N.P. Drozdova (St. Petersburg: Publishing House of St. Petersburg State University, 2005), 10, in Russian.

<sup>2</sup> R. I. Kapelushnikov, *Economic Theory of Property Right (Methodology, Main Concepts, Current Issues)*, www.libertarium.ru., in Russian.

<sup>3</sup> Michael H. Mescon, M. Albert, F. Khedouri, *Management* (Moscow: Delo, 2000), 38, 694, 689, ISBN 5-7749-0126-2, translation from English, in Russian.

<sup>4</sup> O.S. Sukharev, *Institutional Economics and Economic Policy: about a New Theory of Transmission Mechanism in Macroeconomics* (Moscow: Ekonomika Publishing House, Russian Academy of Science, Institute of Economics, 2007), 454, ISBN 978-5-282-02681-8, in Russian.

<sup>5</sup> This enables them with promptly getting necessary information. This is specially important in case of the shareholder being insider and has no labor relation with a company under consideration.

top managers election. Thus, a proprietor holding a certain share in a company property irrespective of its legal and propriety status (cooperative, partnership) receives a right to participate in the process of in-company resource distribution and control over the distribution within the framework of the current rules. And the larger the share, the stronger influence can the proprietor have on a company performance results.

The processes of transforming company resources into its welfare can be interpreted via two functions: transformation and transaction. Transformation function describes changes and reproduction of physical properties and total value of the resources, based on this function realization, makes the volume of transformation costs. Transaction function describes the changes in characteristics in the process of transactions related to propriety rights (changes in authority, property rights disposition and appropriation). The resources, their use stipulating the changes in legal status, make up a transaction component of overall production costs. In this case the change in institutional character take place and an economic agent will deal with transaction costs<sup>1</sup>.

As a company proprietor or proprietors set certain company goals, a qualitative assessment of these goals achievement defines the efficiency of a company performance. Traditional neoclassic efficiency analysis means assessing a company performance basing on the ratio of performance results to the costs to achieve these results. According to this approach the main goal of a company is receiving a maximum profit<sup>2</sup>, a

company operation is described with a production function:

$$Q = f(K, L), \quad (1)$$

where  $Q$  is a volume of production;  $f$  is a function describing a production technology;  $K$ ,  $L$  are volumes of expended resources per capital and labour accordingly.

To describe the mechanism of influence of change in property rights structure on the company performance efficiency it is necessary to create a model, considering the character and direction of both quantitative and qualitative in-company changes. Institutional analysis makes it possible to assess the volume of transaction costs and thus, take into consideration the influence caused by the changes in property rights structure on its efficiency.

### The Model Description

To create a model of redistribution property rights influence on economic efficiency of a company performance it is, first of all, necessary to determine the efficiency function, taking into account not only technological company characteristics but also its institutional structure.

Let us consider a company property as an ownership of a certain company share or some company stocks or securities depending on a company legal and organizational status. Let us take an index of company efficiency changes before and after property rights redistribution as a criterion for the model quality assessment.

It is important for us to build a model taking into consideration not only the profit as the main company goal, but also the costs, caused by the specific internal structure. It means that we should consider not only qualitative performance results but also the costs necessary to achieve these results. It is well known that the efficiency analysis is the assessment of the ratio

<sup>1</sup> A. E. Shastitko, *Institutional Economics: Theory and Methodology*, Doctor of Economics dissertation (Moscow, MSU, 1999), 130.

<sup>2</sup> Eirik Furubotn and Rudolf Richter, *Institutions and Economic Theory: The Contribution of the New Institutional Economics*, translation from English ed. by V.S. Katkalo, N.P. Drozdova (St. Petersburg: Publishing House of St. Petersburg State University, 2005, 404, in Russian.

of expended resources to the received results both of the object on the whole and its certain parts (production processes, management, and technological processes). On the example of a certain company the efficiency analysis should be presented as the ration of a financial result to the costs required to achieve this results. Depending on the set goals and the object under analysis status it is possible to calculate the efficiency of certain parts or processes of the whole object.

It is known that in general case, from neoclassical point of view efficiency can be presented in the following way:

$$E = \frac{\pi}{C}, \quad (2)$$

where  $E$  is efficiency;  $\pi$  is profit;  $C$  is costs.

It is also known that profit expressed in money terms equals the difference between total revenue and total costs:

$$\pi = TR - TC, \quad (3)$$

where  $\pi$  is profit;  $TR$  is total return;  $TC$  is total costs.

Total return and total costs, in their turn, equal:

$$TR = Q \cdot P, \quad (4)$$

$$TC = K \cdot r + L \cdot w, \quad (5)$$

where  $Q$  is production volume;  $P$  – price of goods (services) of the considered company. It depends on demand;  $r$  is value of a unit of capital as a resource;  $w$  is a value of a unit of labor as a resource;  $K$ ,  $L$  are volumes of the expedient resources (in this case of capital and labor accordingly).

If we put known dependencies in the formula of profit definition, we get a traditional profit function:

$$\pi = Q \cdot P - K \cdot r - L \cdot w. \quad (6)$$

Note that in economic practice there is a concept of accounting profit which is essentially influenced by some external rules like tax regulations, accounting standards. This indicator is widely used for making decisions on potential actions concerning a company. Accounting profit indicators are considered to be used in a more correct way for calculating company performance efficiency. In this case the calculation of profit function is simplified and will depend on receiving necessary data from corporate reports.

The presented approach takes into consideration total company costs, presenting the volume of expenses on purchasing and transforming resources into welfare.

According to institutional theory, there are two types of total company costs: transaction and transformation. To take into consideration in-company structure, let us put institutional function into the model. It will show us the volume of transaction in-company costs in the process of making profit under certain volume of production.

Thus, institutional company efficiency can be presented as the ratio of profit to costs, resulting from the process of in-company economic subject interaction via institutional function:

$$Ei = \frac{\pi}{If} = \frac{Q \cdot P - K \cdot r - L \cdot w}{If}, \quad (7)$$

where  $If$  is company institutional function.

The institutional function shows the volume of in-company transaction costs, resulting from a company performance. Transaction cost in the main variable determining the level of in-company costs. If we name the quantity of transactions as  $q$ , and the cost of  $j$ -transaction as  $g_j$ , we get the following formula of company institutional function:

$$If = \sum_{j=1}^q g_j. \quad (8)$$

If a known value of one transaction mean cost is  $g$ :

$$\Delta Ei = \frac{Ei_t}{Ei_{t-1}}. \quad (9)$$

There are different approaches to transaction costs classification and volume. P. Milgrom and G. Roberts differentiated transaction costs into two types: coordination costs and motivation costs. Coordination costs refer to expenditures on providing correspondence of all transaction participants in space and time. Motivation costs are the results of incomplete and imperfect information, opportunism of interaction participants. Expenditures on inspection, monitoring, and collecting information on the partners' following mutual duties fixed in the contract can refer to motivation costs<sup>1</sup>. It is hard to estimate costs in a particular deal under the Milgrom and Roberts approach.

A more adaptive variant of transaction costs calculation for a deal is offered North and Eggerson classification<sup>2</sup>. All transaction costs are classified into six categories: information search costs, negotiation costs, costs on concluding a contract, monitoring costs, costs on contract enforcement, costs on protection from the third party.

We consider the North and Wallas method adapted to transaction costs estimate in case of a particular company as the most adequate for real estimation of transaction costs volume<sup>3</sup>.

North and Wallas consider labor cost, capitals cost, land cost and cost of entrepreneur abilities expended on transaction as transaction

costs. All transaction costs are divided into three categories:

1 category – seller-buyer costs.

2 category – in-company costs, arising from relations with intermediaries.

3 category – costs, arising from propriety rights protection.

The first category includes costs on both sides. «Buyer transaction costs are the ones on purchasing goods and services (time spent on goods inspection, searching information on prices, the seller, alternative variants, etc.). They do not influence the seller profit. Seller transaction costs are the ones продавца which he would have in case his buying the goods or services himself, say, advertising costs»<sup>4</sup>.

The second category includes the salary of those employees whose are involved in the activity leading to transaction costs, as well as the cost of the capital they use. These employees can deal with resource purchase, product distribution, coordination and monitoring of in-company transformation function.

Transaction costs of the third category comprise costs on police and judicial system keeping and pay, on national defense, etc.

To apply the method on a company level one should make changes in transaction costs categorizing. Thus, we consider company external costs on property transfer instead of buyer-seller relation costs; replace in-company costs arising from relations with intermediaries by internal costs on property rights transfer; and the costs arising from propriety rights protection are transformed into internal and external costs on propriety rights protection.

The first costs type will include the costs arising in the process of goods or services purchase (time spent on goods inspection, searching information on prices, the seller,

<sup>1</sup> Paul Milgrom, John Roberts, *Economics, Organization and Management* (St. Petersburg: Economicheskaya shkola, 1999), in Russian.

<sup>2</sup> T. Eggerson, *Economic Behavior and Institutions* (Moscow: Delo, 2001), in Russian.

<sup>3</sup> Ya. I. Kuzminov, *Course in Institutional Economics: Institutes, Networks, Transaction Costs, Contracts* (Moscow: Publishing House of State Institution of Higher School of Economics, 2006). 256, in Russian

<sup>4</sup> *Ibid.*, 256.

alternative variants, etc.). They do not influence the seller profit.

The second costs type will include the salary of those employees whose are involved in the activity leading to transaction costs. These employees deal with in-company contract quality and term control and facilitate the main production performance. They also provide interaction of the main company departments.

Transaction costs of the third type are those arising from propriety rights protection. These costs comprise costs on keeping and salary of company departments and the employees responsible for providing propriety rights protection on the company as the whole and the company resources in particular, including intellectual property.

As a resulting assessment criterion of property rights redistribution influence on efficiency, let us introduce an index of institutional efficiency change –  $\Delta Ei$ . Let us mark the moment in time corresponding to the period after property rights redistribution as  $t$ , and the period before property rights redistribution as  $t-1$ . Then:

$$\Delta Ei = \frac{Ei_t}{Ei_{t-1}}. \quad (10)$$

And in general case:

$$\Delta Ei = \frac{Q_t \cdot P_t - K_t \cdot r_t - L_t \cdot w_t}{\sum_{j=1}^q g_j} \Bigg/ \frac{Q_{t-n} \cdot P_{t-n} - K_{t-n} \cdot r_{t-n} - L_{t-n} \cdot w_{t-n}}{\sum_{j=1}^q g_j} \quad (11)$$

Consequently, the influence of property rights redistribution on company performance

can be determined via the derived index of institutional efficiency change.

### Conclusion

Accelerated and more complicated in-company interaction, company size growth and a more complex structure can lead to the insufficiency of the traditionally used indices. Managers need tools for quality change assessment, with quantity indices taking into consideration the peculiarities of in-company structure. The presented model provides a researcher with an instrument to measure the influence of propriety rights redistribution on company performance through several values of the resulting criterion of institutional efficiency. The information of the kind can be interesting to company proprietors and managers making decisions on the issues under consideration. Both top management and company proprietors need prompt and precise information on in-company exchange situation.

The institutional efficiency model can provide the opportunity to assess the degree and direction of property rights redistribution influence on company performance efficiency. Profit indices application and availability of assessment method for in-company transaction costs can simplify and easify the procedure of collecting initial data necessary for company performance analysis. This method can be used for continuous monitoring of company efficiency changes taking into account in-company structure peculiarities, not considered in former methods of company efficiency assessment. As for calculation of intermediary indices, they can provide researchers with additional information on the situation with in-company property rights exchange.

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## **Влияние перераспределения прав собственности на экономическую эффективность фирмы**

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*В статье исследован механизм влияния изменения структуры прав собственности на эффективность деятельности фирмы. Сформирована модель, учитывающая влияние, вызванное изменением структуры прав собственности на эффективность. В рамках модели предложено понятие институциональной эффективности фирмы, отражающее отношение прибыли к издержкам, возникающим в процессе взаимодействия экономических субъектов внутри фирмы через институциональную функцию. В качестве критерия оценки влияния перераспределения прав собственности на эффективность введен показатель изменения институциональной эффективности.*

*Ключевые слова: фирма, экономическая эффективность, перераспределение прав собственности, моделирование, институциональная эффективность, транзакционные издержки.*

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