An analysis of the capital concentration of a corporate organization as a guarantee of successful business development

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Abstract. The article is devoted to the development of the methodology for analyzing the authorized capital of a corporate organization in order to establish the degree of participation of each shareholder in the activities of the corresponding identified business component. In addition, the article examines the legal aspects of the authorized capital of a joint stock company. Given the complex structure of share capital, the authors come to the conclusion that its analysis should be supplemented: a ranking of shareholders, modified capital concentration factors, and a quadratic form, allowing to establish the dominance of owners. These owners have a significant impact on the management, ignoring the requests and opinions of other members of the business components included in the consolidation perimeter.

Keywords: development, company, joint-stock company, authorized capital, corporate organization

1. Introduction
In the current economic conditions of our region, business companies are the most convenient corporate form of doing business: a joint-stock company and a limited liability company. Joint stock companies have a number of advantages that distinguish them from among other forms of business. The following can be attributed to them: limiting the risks of investors to the value of their shares; the possibility of attracting additional capital through the issuance of additional shares and bonds; retaining a legal identity when changing the composition of participants; transferring shares to other persons without any permitting procedures on the part of the joint stock company and other shareholders; the lack of shareholders' responsibility for the company's obligations. These characteristics make joint-stock companies an attractive legal form of large business by various corporate organizations, including their associations: holdings, financial and industrial groups, transnational, cross-border corporations and others wishing to consolidate their capital. Issues of formation and analysis of the authorized (share) capital are of particular relevance in this regard.

2. Materials and Methods
In the process of creating a joint stock company, as well as any economic company, the formation of its authorized capital takes place by combining the property contributions of participants. The concentration of capital and its attachment to the legal entity itself occurs in a similar way. The joint-stock form of doing business allows disparate owners to pool funds for joint business activities. And

thus, the joint-stock form has the possibility of a high concentration of capital in order to expand the scale of production, increase competitiveness and obtain greater profits. The share of (authorized) capital (AC) can be formed at the expense of any investors, each of whom pursues his own goals, participating in the activities of the joint stock company, and intends to receive certain economic benefits.

To determine the level of influence of shareholders and investors on the management of the company, we will perform the ranking of all shareholders. The owner, who has the largest share in the authorized capital (AC), we will assign the highest value of the rank (R_j), shareholders owning an equal number of shares must have equal ranks.

Let rm_j be the rank multiplier value corresponding to the j-th shareholder, investor (Formula 1):

$$rm_j = R_j : (\sum_j R_j) \tag{1}$$

The value of the rank multiplier ($0 < rm_j < 1$) will determine the level of influence in accordance with Table 1.

Table 1. The scale of the ranking multiplier.

The value of the rank multiplier	The nature of the level of influence
$rm_j<0.1$	Weak level of influence
$0.1 <rm_j<0.3$	Moderate level of influence
$0.3 <rm_j<0.5$	Medium level of influence
$0.5 <rm_j<0.7$	Strong level of influence
$0.7 <rm_j<1$	Very strong level of influence

According to the authors, the indicator of concentration of capital is subject to mandatory monitoring. This indicator determines the degree of participation of each shareholder in the activities of a corporate organization. The concentration of share capital (*CK*) is the sum of the shareholders' shares of each component of the business entering the consolidation perimeter (Formula 2):

$$CK = \sum_k CK_k + \sum_l CK_l + \sum_m CK_m + \sum_n CK_n + \sum_i CK_i \tag{2}$$

$\sum_k CK_k$, $\sum_l CK_l$, $\sum_m CK_m$, $\sum_n CK_n$, $\sum_i CK_i$ is the amount of shares of the authorized capital represented by foreign organizations respectively; individuals, non-residents of the Russian Federation; state organizations of the Russian Federation; legal entities and individuals resident of the Russian Federation.

The highest values of shares determine the degree of influence on management decision making. These decisions can be stimulated by a certain amount of state support, promotion of the products of this component of the business in the domestic or foreign market. Commercial structures having a share in the authorized capital may participate in resolving crisis situations at the global level and level negative sectoral phenomena [4].

Using the coefficient of concentration of capital and rank multipliers, we can estimate the influence of the rank of each shareholder (owner) on the respective shares of the authorized (share) capital of a corporate organization (Formula 3).

$$CK_{rm} = \sum_k rm_{jk} CK_k + \sum_l rm_{jl} CK_l + \sum_m rm_{jm} CK_m + \sum_n rm_{jn} CK_n + \sum_i rm_{ji} CK_i \tag{3}$$

Thus, according to the authors, the assessment of the authorized (share) capital using the rank multiplier should be part of the financial analysis of the company as a whole and the identified components of the business.

3. Results

The correction of the corporate capital equity analysis methodology was carried out on the basis of methods of economic and mathematical modeling.

Using the data of the consolidated financial statements presented on the website of the transnational corporation PJSC "Group", we will assess the level of influence of shareholders, investors, shareholders on the company's management.

The main shareholders of PJSC "Group", their share in the authorized capital, rank multiplier are presented in table 2.

Table 2. The level of influence of the main shareholders of PJSC "Group."

Shareholders of the company	Shareholder information	Share in authorized capital	Rank (R_j)	Rank multiplier (rm_j)	Level of influence
ZIV	Individual, RF	37.7%	5	0.33	Average level
LLC "MKh"	Legal entity, RF	32.72%	4	0.27	Moderate level
SZIV	Individual, RF	12.4	3	0.20	Moderate level
SB Lmt	Legal entity, Cyprus	10%	2	0.13	Moderate level
KOV	Individual, RF	4.2%	1	0.07	Weak level
Прочие		2.98%			
		Σ=100%	Σ=15	Σ=1	

The highest rank and average level of influence on the management of the company has a resident of the Russian Federation, provisionally designated "ZIV". Its share in the authorized capital is 5% higher than the share of the closest shareholder (LLC "MKh"). But these 5% determine for the "ZIV"-shareholder the next level of influence. The range of moderate influence is quite wide, almost 23 percentage points (from 10% to 32.72% of the share capital).

The concentration of capital for 5 major shareholders is: $CK(5)=97,02$

The share of the two main participants ("ZIV" and LLC "MKh") occupies a significant part (70.42%) in this indicator. If we sum up their rank multipliers, then the level of joint influence will be characterized as strong (Table 1).

We consider the capital concentration indicator adjusted for the values of the rank multipliers corresponding to each owner.

$$CK_{rm}=0,33\times 37,7+0,27\times 32,72+0,20\times 12,4+0,13\times 10+0,07\times 4,2=25,3494$$

About half (49.1%) of the adjusted capital concentration indicator is the first term, which corresponds to the first shareholder in the list of "ZIV." This causes an increased but "hidden" influence of the "ZIV" owner on the company's management in addressing interested issues. On the other hand, the influence of shareholders with a share of less than 13% of the share capital is reduced by adjusting for the rank multiplier, ensuring the growth of the level of influence of the first owner.

Thus, the analysis of the concentration of capital, which does not take into account the rank multipliers, can act as a tool for the influence of owners in making decisions on the management of a corporate organization.

4. Discussion

Methods of systems analysis and comparative law allow you to proceed to a discussion of theoretical concepts of the concept of share capital and its value terms.

According to the Clause 1 of Article 25 of the Law on Joint-Stock Companies [1], the authorized capital of a joint-stock company is composed of the nominal value of its shares acquired by the shareholders. This concept is conditional, it is the monetary expression of the value of the property, which should be created as a joint-stock company and below the level of which should not decrease the value of its net assets.

Knowing the share (number of shares) of each participant in the authorized capital, we can identify its influence at the general meeting and the number of votes belonging to him, as well as the amount of income due to him from the company's profits.

The concept of the authorized capital of a joint stock company as a legal category is enshrined in the legislation of many countries in continental Europe and is closely related to the categories of nominal value of shares and the number of shares placed. The procedure for the formation and change of the share capital is also determined by law. Its value is fixed in the company's charter and cannot be lower than the minimum value prescribed by law. The Russian legislation on joint stock companies relating to the continental legal system establishes strict requirements for its minimum size. It is 100 thousand rubles for a public company, and 10 thousand rubles for a non-public one (Article 26 of the Law on Joint-Stock Companies).

In the United States corporate law, by contrast, a concept identical to the authorized capital of a Russian joint stock company is absent. The share capital of an entrepreneurial corporation is the closest concept, corresponding to the concept of authorized capital. In the middle of the 20th century, the American Bar Association introduced this term into practice in connection with the introduction of changes to the Revised Model Business Corporation Act of 1946 in 1980, which was published in 1984 (RMBCA). As amended in 1984, the model law eliminated such traditional notions for joint stock law as the share capital (in the Russian law terminology, it is an authorized capital) and the nominal value of shares. The official commentary explains this novel by the fact that the "scientists and practitioners have long concluded that the legal norms related to the concepts of the "nominal value of shares" and the "share capital" are very complicated and confusing. Also, these rules cannot fulfill the original purpose of protecting creditors and shareholders owning the preferred shares. The compilers of the new edition of the Model Law came to the conclusion that the norms that operate with the concepts of share capital and various types of profits turned out to be ineffective and led in practice to the possibility of distributing practically all the property of the corporation to the shareholders. Therefore, the Model Law abolished the requirement of legislation, providing for the mandatory maintenance of the share capital. Instead, more stringent restrictions on the "distribution" of shareholders were introduced, the most important of which is the payment of dividends. Thus, in the United States, the main task of a corporation's capital is not to protect the interests of creditors, but to limit the distribution of a corporation's property among its members by preserving it for insolvency. The interests of creditors are protected by the security of the corporation's contractual obligations to them, which are independently processed by specific lenders [3].

The continental legal tradition is based on the clear understanding that the one who does not contribute a minimal capital to the corporation essentially establishes it at the expense of creditors. And the one who does not want to deposit money in its capital, establishes it at least dangerous for creditors. For the continental European law, the idea is inherent in that the limited liability has its price in the form of mandatory requirements for contributions to the property of a corporation, maintaining it at a certain level, complying with mandatory regulations for the protection of creditors and small depositors, publicity of business [2]. Practically, in the countries of the Romano-Germanic legal family, the requirement for a solid share capital is an important means of protecting creditors, minority shareholders, as well as management and majority shareholders. As in the case of a bankruptcy of a corporation, their additional liability to creditors with their own property is excluded. As can be seen, the presence in the laws of the countries of the Roman-German law of the requirement for a minimum amount of authorized capital, consistent with the insolvency law, accounting and auditing, and others, ensures the performance of functions aimed at conducting fair and reasonable business activities. Therefore, the proposal to abolish the minimum size of the authorized capital of a corporation has been criticized in the German legal literature.

The corporate law in Russia still shares the traditions of civil law in relation to share capital. Moreover, in the course of reforming civil legislation, proposals to increase its size were not supported.

5. Conclusion

Thus, when choosing a legal form and a size of the authorized capital of a cross-border company, the method of analyzing the concentration of capital, adjusted for rank multipliers, can be used.

The main characteristics of the methodology for analyzing the concentration of capital with regard to rank multipliers should be highlighted:

- Evaluation is based on data from consolidated financial statements that are public.;
- Assessment of the concentration of capital corresponds to the objectives of management analysis, as it characterizes the level of influence of owners on the management of the company;
- The ranking of shareholders is carried out in space, that is, in comparison with other owners, and in time, that is, in a certain period.

In addition to the concentration ratios corresponding to each participant of the share capital, we can use a quadratic form or degree of concentration (KCK), the range of values of which is much wider (Formula 4).

$$KCK = \sum_k (CK_k)^2 + \sum_l (CK_l)^2 + \sum_m (CK_m)^2 + \sum_n (CK_n)^2 + \sum_i (CK_i)^2 \quad (4)$$

If the share capital is represented as a percentage, the degree of concentration of capital has certain limitations as $0<KCK\leq 10000$. This range is divided into three periods:

1. If $2000<KCK<10000$, then the concentration of capital is very high, the number of dominant shareholders varies from 1 to 5, which accounts for a very high degree of influence of these participants on the organization's management.
2. If $1000<KCK<2000$, then the concentration of capital is characterized by an average level, the number of shareholders is from 5 to 10. The degree of influence on management decisions is significantly reduced, which increases the responsibility of managers.
3. If $KCK<1000$, then the concentration of capital is very low, the number of shareholders is more than 10. The influence of the owners is insignificant, which leads to a high degree of responsibility of the management staff in matters of management effectiveness.

Thus, the modification of the models makes it possible to analyze the changes of each term participating in the algorithm for calculating the coefficient of the quadratic form of concentration, as well as their influence on the management efficiency of a corporate organization.

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