

Connection of vertical integration of companies with competitiveness of the national economy

Conexión de integración vertical de empresas con competitividad de la economía nacional

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ABSTRACT:

The Article is devoted to studying the essence of integration as a complex phenomenon and identifying the influence of one of them, namely vertical integration, on competitiveness of the national economy, depending on the stage of the country's development. The methods of empirical and theoretical studies, in particular methods of the content-analysis, abstract logic, comparison, logical generalization and synthesis, were applied for ordering the conceptional and categorical device of research, and the methods of the analytical grouping and correlation analysis were applied for checking the hypotheses put forward by the author towards the evidence of connection between the features being investigated. The analytical grouping of countries was built on the following grounds: the share of product sales volumes of the vertically integrated structures in the total volume, and the global competitiveness index.

Keywords: competitiveness of the country, integration, vertical integration, business combination

RESUMEN:

El artículo está dedicado a estudiar la esencia de la integración como un fenómeno complejo e identificar la influencia de uno de ellos, a saber, la integración vertical, en la competitividad de la economía nacional, según la etapa de desarrollo del país. Los métodos de estudios empíricos y teóricos, en particular los métodos de análisis de contenido, lógica abstracta, comparación, generalización lógica y síntesis, se aplicaron para ordenar el dispositivo conceptual y categórico de la investigación, y los métodos de agrupación analítica y análisis de correlación fueron solicitados para verificar las hipótesis presentadas por el autor hacia la evidencia de la conexión entre las características que se investigan. La agrupación analítica de países se basó en los siguientes motivos: la proporción de volúmenes de ventas de productos de las estructuras integradas verticalmente en el volumen total y el índice de competitividad global.

Palabras clave: competitividad del país, integración, integración vertical, combinación de negocios.

1. Introduction

In the conditions of openness of the economies and activation of the globalization processes, one of the most important tasks of countries across the world is to improve their

competitiveness, which depends on the efficiency of functioning of its separate branches and inter-branch complexes. Studies by many scientists (Oladinrin, Ogunsemi, & Aje, 2012; Rameezdeen, & Ramachandra, 2008) found that the branches of industry are a peculiar locomotive ensuring the economic growth and creation of conditions for the accelerated development, which certainly has a positive impact on competitiveness of countries.

The characteristic features of the modern economy are the deep institutional changes associated with the dominance of transformational processes in the economy, formation of a new market infrastructure, and growing influence of the turbulent environment on companies' activities and their results. At the same time, the separate functioning of industrial enterprises as independent production units is not always highly effective and economically feasible. All this, along with the presence of certain disparities in the development of supply and demand on the domestic market of many countries creates conditions, in which integration for companies becomes one of the most pressing phenomena of modern times. In fact, more and more companies are grouped into different associations (associative, cooperative, corporate), which can certainly be considered as promising forms for realization of interests of such associations' participants.

The research and systematization of existing approaches to determining the essence of integration and integration links of companies, identification of the impact of their functioning results on competitiveness of the national economies and development of a methodological approach to establishing the mutual relationship between the degree of the development of integration links and the level of competitiveness of the country, become highly relevant, which is the main purpose of this work.

2. Theoretical basis and methodology

The theoretical and methodic basis of the research was the fundamental works of foreign and domestic scientists concerned with actual problems of companies' functioning in terms of integration links between them.

The analysis of the scientific literature and observation over business activities of companies allowed to make the conclusion that they can develop in two directions: firstly, the independent development, in which companies persistently organize the independent specialized production in quantity, quality and assortment determined by the market; secondly, the integration-based development.

In order to achieve the target goal, the following tasks were fulfilled:

- There were revealed approaches to understand the essence of integration and multidimensionality of this concept; and
- There was established the mutual relationship between vertical integration of companies and the level of the country's competitiveness.

In order to systematize the views of researchers, who investigated integration, the content-analysis methods were used, which, combined with the methods of empirical and theoretical studies, such as the abstract logic, comparison, logical generalization and synthesis methods, allowed to determine the basic approaches to understanding this complicated multiplex concept, and to form the author's approach to its interpretation, and to highlight the main characteristics of companies' integration and its methods.

The application of the analytical grouping method allowed to establish the link between the results of activities of vertically integrated companies and the level of the country's competitiveness, taking into account the stage of the economy development.

3. Results

Numerous works of both overseas and domestic academic economists are devoted to studying the essence of integration, and attempts to highlight its essential features. The presence of different interpretations towards integration in the economic literature makes it, on the one hand, necessary to systematize them and, on the other hand, relevant to identify its place in the economy. In addition, the question arises as to how integration of companies can affect competitiveness of separate countries.

The problems of interest for us are connected with the economic aspect of studying integration and is within the economic plane. It should be noted that the term "integration" in the system of economic relations was initially used to determine the form of internationalization of the national economies on the basis of pursuing the concerted economic policy.

The different sources highlight one or other aspects and features of companies' integration. The elements that are most often used when determining the definition "integration" include: "association", "cooperation", "merger", "process of convergence", "process", and "mechanism". In their researches, some scientists found that integration is associated with expansion of production and technological links, creation of favorable conditions for the joint use of resources and is explained by the presence of a system of incentives. Integration can also be considered both as an association of economic entities and expansion of links between them, and as creation of mutually beneficial conditions for economic activities, or as deepening interaction for the fuller use of exclusive competitive advantages. Integration can also be considered as an industrial cooperation. At the same time, integration is considered as relations between companies based on long-term common interests (Hlushchenko and Ratushniak, 2015).

The study and consideration of integration in the economic, organizational and managerial aspects (Shaposhnykov, 2012) enabled to logically treat it as a system of combining different sides of the single socio-economic organism, which ensures the creation of certain values, and reproduces new industrial relations. In this context, integration is a process of organizing the manufacture and management of economic interests of individual territories of branches, productions and enterprises with a single approach to management, in order to solve certain economic and social tasks at a higher scientific level. At the same time, the basis for integration links is the whole system of productive forces and industrial relations.

Other scientists also stand in full solidarity with this view, and one of them proved that integration, gaining the widespread use in recent years, manifest itself both at the level of the national economy, and between business entities. The character of its manifestation lies in expansion and deepening of production and technological links, joint use of resources, pooling of capital, etc. In this connection, at the level of individual business entities, integration should be considered as a coalition of activities of companies' some functions while their maintaining the legal independence and, in part, economic one (Parubok, 2014).

As for researches of foreign scientists, it should be noted that the ample attention is paid to studying the role of integration processes in the business sector. The theoretical and empirical analyses conducted by scientists in regard to the mutual relationship between the technical efficiency of a firm and the vertical organization of production in the field of industrial competition (Pieri, & Zaninotto, 2013) allowed to construct a model. The main conclusion of which is that the most effective firms choose integrated structures, and those less effective ones – disintegrative structures.

The different types of integration continue to be of interest by researchers. The study of the integration types (Rozen-Bakher, 2018) made it possible to conclude that they differ in efficiency for different sectors of the economy (industrial sector and that of services), which can be considered as typical, taking into account their specific features.

In the works of other scientists, it was identified that at the level of individual business units, integration can have a positive impact on the turnover of inventories, production in progress and finished products, and thus, helps to reduce expenses for auxiliary processes, which leads to the improved return on sales (Andreou, Louca, & Panayides, 2016).

In addition, it was proved that in a volatile environment, the integrated companies in some branches demonstrate less variability in their earnings due to a more diversified asset base (Misund, & McMillan, 2016).

At the same time, despite a number of advantages, from the social point of view, the expediency of integration in certain branches is a rather controversial issue. For example, the studies conducted in the field of communication technologies have shown that subject to vertical integration, service providers lose incentives to improve their activities according to

the social security requirements (Guo, Bandyopadhyay, Cheng, & Yang, 2010).

The study of using vertical integration to strengthen relations with customers in the printing industry allowed to illustrate competitive effects with vertical integration to customers, who included the generation of a potentially competitive situation with related sub-sectors (Mejtoft, 2010).

In addition, the factors acting as determinants for integration are the product differentiation, transaction costs and opportunities at the level of firms, which are the aspects that should be taken into account when substantiating decisions on the establishment of integration links (Fernández-Olmos, Dejo-Oricain, & Rosell-Martínez, 2016).

Some scientists (Cao, Huo, Li, & Zhao, 2015) have proven that the special role in strengthening integration links is played by the formation of organizational culture, which is similar (common) for enterprises entering into the interaction. As a result of common culture, firms gain a sense of unity, feel a common interest and are able to interact more effectively on the basis of available codes of conduct, carrying out the joint operational, economic or social activities. It is precisely this behavior that facilitates the establishment of contacts based on loyalty and trust, necessary to achieve a higher degree of integration.

It was established that in branches of the primary sector, the influence on the activation of integration processes was exercised by the industrial restructuring, connected with changes in technological processes and labor relations, which caused considerable employees' redundancies, rethinking the labor process, strengthening the stability of associations, growth of the labor productivity and decrease in production costs. Exactly due to the consolidation of assets and enhancement of vertical integration, such changes have become possible (OhUallachain, & A. Matthews, 1996).

Modern researches have proven that one of the major incentives for strengthening integration is hard prices, especially in branches that are distinguished by the high capital cost (Wadson, 2017). It should be noted that these are precisely those industries that are part of the construction complex.

At the same time, like any complicated concept, integration of companies has certain negative aspects, which are most often deemed to be the possible over-saturation of the market with goods of integrated companies, and therefore, the decrease in speed of their sale, overstocking and, as a consequence, the reduced efficiency of using funds. As noted by Jordan Brennan in his Article (2017), *integration processes in the form of mergers and acquisitions* are often associated with the decline in both production capacities and employment of population, since the duplicate functions identified in the process of integration of companies are optimized.

Also, during the development of integration processes, there is a danger of high losses in case of the incorrect assessment of a situation by managers or owners of companies. In addition, problems can arise with the staff due to the complexity of processes of adjusting organizational and managerial structures, and with the transfer of advanced technologies. Thus, in the work of Jordan Awan (2015), it is noted that integration of companies impedes competitive relations, and therefore, at the macro-level, the obvious disadvantage is the possibility of monopolization of the branch, in which integration processes take place. It is also believed that integration processes quite often destabilize situations in a particular branch or region, which may negatively affect their development as well.

Therefore, the development of integration processes requires the careful attention of researchers in any branch of the economy. Among obvious positive pictures, some researchers determine that integration will lead to a more stable and repetitive production environment, similar to an internally branded one, and thus, supply chain will work better (Vrijhoef, 2011).

According to the Latvian scientist Ivars Kassalis, it is specified that integration of business entities is the gateway for the integrated development and increase in competitiveness on the world markets. (Ivars Kassalis, 2011). A. Dankevych notes that integrated structures are "an effective tool for enhancing competitiveness of the national production and raising the social living standards of workers, upgrading rural areas and implementing social programs".

The analysis of publications on the problems chosen has allowed to reveal other opinions in this regard. Namely, the Article of Valentina Diana Rusu & Angela Roman (2018) analyzes the main economic factors affecting competitiveness of the Central and Eastern European countries, among which the authors highlight a significant impact of the performance of companies, but without taking into account the form of their creation.

As noted by S. Radziievska (2012), competitiveness, i.e. its level, is determined by processes occurring in the economy, particularly by integration processes. Such processes are managed by both the State and the private management.

The annual study of the World Economic Forum in the global economy shows that the situation with competitiveness has radically changed under the influence of the Fourth Industrial Revolution. For example, the countries that display indicators denoting openness, such as low tariff and non-tariff barriers, simplicity of hiring the foreign labor force and cooperation in the patent field, among other things, also have good indicators in terms of innovations and efficiency of the market. This precisely concerns the countries that are in the transition stage from efficiency to innovations. According to conclusions of the Report, the positive impact on the global economic health will return to a greater openness and raise the profile of companies' integration (Oliver Cann, 2018).

The most common type of integration is vertical one, which is the most popular type in many countries around the world. In view of this, it seems rather interesting to find out whether the influence of results of vertically integrated structures' functioning in the economy on the level of competitiveness of the country varies depending on the stage of its development.

In order to achieve the purpose in view, the following tasks were fulfilled:

- There were revealed approaches to understand the essence of integration and multidimensionality of this concept; and
- There was established the mutual relationship between vertical integration of companies and the level of the country's competitiveness.

In order to systematize the views of scientists, who investigated integration, the content-analysis methods were used, which, combined with the methods of empirical and theoretical studies, such as the abstract logic, comparison, logical generalization and synthesis methods, allowed to determine the basic approaches to understanding this complicated multiplex concept, and to form the author's approach to its interpretation, and to highlight the main characteristics of companies' integration and its methods.

The application of the analytical grouping method allowed to establish the connection between the results of activities of vertically integrated companies and the level of competitiveness of the country, taking into account the stage of the economic development.

Based on the content-analysis in publications of scientists who investigated integration and its essence, the multidimensional vision of integration was substantiated, and the following approaches to its understanding (Table 1) were highlighted:

Table 1
Approaches to determining
the essence of integration

Approach	Prevalence in the scientific literature	Vision of integration
Process	33,3%	Process of becoming the integral whole
Resultant	12,5%	Result: consistency, orderliness, stability of a system
Process-resultant	20,8%	Simultaneously as a process and result of the

		interaction of separated structural elements of any set, which leads to optimization of links between them, their integration into the integral whole – into a system that has new qualities and new potential opportunities
Objective	25,0%	A phenomenon, that is, a certain property, a set of inter-business relations, a form of an enterprise's development, a form of production organization, etc.
Complex	8,4%	Combination of individual elements of approaches

Source: Systematized and compiled by the authors

As researches of scientific works have shown, in the scientific literature, the process approach (33,3% of publications), the objective one (25,0% of publications) and the process-resultant one (20,8% of publications) are the most widespread. The less widespread approach to some extent is the resultant approach, which is presented in 12,5% of publications. Despite the fact that the complex approach is less widespread in scientific researches, we believe that the economic essence of integration should be considered from the standpoint of the complex approach, taking into account all the diversity of economic relations that arise in its implementation.

In our view, integration of companies represents a set of business relations that arise as a consequence of functioning, based on the interaction, of separated business entities and their combination into a single system, the result of which is to ensure their adaptability to unstable conditions of the economy development.

In light of considering integration in relation to competitiveness, we selected the stages of countries' development as a feature for systematization of the main tasks that are designed to be fulfilled by integration of companies, according to the methodology for calculating the global competitiveness index. The systematization of the tasks of companies' integration allowed to divide them into three groups:

1. Tasks in the field of accumulating resources (the factor-oriented stage of the development) include: combination of resources (intellectual, technological, financial and marketing) to achieve the synergistic effect and diversity of activities; activation of structural transformations in the country's economy; increase in volumes of the production of raw materials, which enables industrial enterprises to work at capacities of the maximum utilization; decreasing cost of the raw material procurement, weakening influence of "intermediaries", saturation of the market with cheap and high-quality products; and stimulating the capital investment of processing companies in the production of raw materials;
2. Tasks in the field of creating opportunities to improve efficiency (the efficiency-oriented stage of the development) envisage focusing on: minimization of commercial risks by obtaining the guaranteed access to target markets; enhancement of the strategic orientation towards the resource re-distribution; improvement of the investment climate; development of the healthy competitive environment; rising the export potential and improving competitiveness of domestic industrial products on the basis of change in the technical and economic level of production of all enterprises – participants in integration associations; combination of interests of product manufacturers at different levels of the production-technological chain; improvement of the product quality and competitiveness of enterprises-participants on this basis; and improvement of forecasting and planning of processing companies' activities.
3. Tasks in the field of mainstreaming the innovation activity (the innovation-oriented stage of the development) include: optimization of expenses for scientific-research works, organization of the technological process, corporate management, promotion and support of goods in order to achieve the maximum economy and increase the business profitability;

implementation of progressive structural changes in the industrial sector; formation of close technological and cooperative links in conditions of the market economy; creation and use of multi-level technological complexes; workout of the newest mechanisms for combining the industrial and banking potentials, as well as introduction of innovative financial schemes and systems of managing the share capital; and expansion of possibilities for introduction of innovations.

That is, for the country, depending on the development stage of its economy, the tasks that integration is called to perform will also be different with the advantage of appropriate benchmarks whether in production resources or innovations.

Considering the functions inherent in integration in the modern economy, representing the form of expressing its public purpose, we have come to the conclusion regarding the dominance of separate integration functions at the different development stages of the economies of countries. Thus, the organizational function of integration must ensure a certain order in relations between business entities, and accelerate the cycle of the individual capital of business entities. The stimulating function is aimed at the reduction in the cost of the final product with the possible decrease in its price, ensuring the development of innovation processes, motivation to obtain a positive synergistic effect and competitive advantages. The resource integration function is called to perform concentration and acceleration of reproducing the individual capital, expansion of possibilities for mobilization of financial resources and attraction of investments. The conciliatory function of integration consists in the coordination of participants' interactions, priority of the product presence at the different stages of reproduction, enhancement of links between the production and consumption, and continuity of the production process. In addition, integration acts as a means of the harmonization of economic interests within the framework of entities taken individually. The efficiency of business entities' integration depends on the fact of how efficiently these functions are implemented and how appropriate is the chosen form of integration.

The diversity of socio-economic conditions for the development of countries, the aim, with which integration is implemented, and the status of the regulatory legal support for integration processes cause the existence of the different types of integration: — vertical, horizontal, diagonal or mixed. Given the prevalence of exactly the vertical form of companies' integration, the fact of identifying whether integration of such type influences on competitiveness of countries is of particular importance.

When trying to get an answer to the question raised on the existence of the mutual relationship between results of the functioning of vertically integrated structures in the country (as an indicator, it is proposed to use the share of volumes of products sold in total by vertically integrated structures) and the level of competitiveness of the national economy achieved depending on the stage of the country's development, the methodical approach was developed to the establishment of the mutual relationship between results of activities of vertically integrated companies and the level of competitiveness of the country, which involves the unconventional combination of blocks for setting goals, choosing tools, approbating the approach and outlining prospects of the application.

The block of selecting tools envisages the choice among existing methods of the analytical grouping, the application of which allows to determine whether there is a dependence of the country's global competitiveness index on production volumes of vertically integrated companies, and creates the basis for forecasting the performance of management actions aimed at activation of integration processes in the economy.

The methodology for calculating the global competitiveness index involves the division of all the countries under study, depending on their attribution to one of the development stages: focusing on factors (Stage 1), focusing on efficiency (Stage 2), focusing on innovations (Stage 3), or on the functioning under conditions of the transition from one stage to the other. The distribution of countries depending on the development stage and functions corresponding to them in our opinion, performed by vertical integration of companies, are presented in Table 2.

Table 2

Distribution of countries depending on the development stage,
and the main functions of companies' vertical integration

Development Stage	Countries	Vertical integration function that dominates
Stage 1. Countries focusing on factors	Bangladesh, Benin, Burundi, Cambodia, Cameroon, Chad, DR Congo, Ethiopia, Gambia, Ghana, Guinea, Haiti, India, Kenya, Kyrgyz Republic, Lao PDR, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Moldova, Mozambique, Nepal, Pakistan, Rwanda, Senegal, Sierra Leone, Tajikistan, Tanzania, Uganda, Yemen, Zambia, Zimbabwe	Organizational and resource functions
Transition from Stage 1 to Stage 2	Algeria, Azerbaijan, Bhutan, Botswana, Brunei, Honduras, Kazakhstan, Kuwait, Mongolia, Nicaragua, Nigeria, Philippines, Ukraine, Venezuela, Vietnam	Stimulating and conciliatory functions
Stage 2. Countries focusing on efficiency	Albania, Armenia, Bosnia and Herzegovina, Brazil, Bulgaria, Cape Verde, China, Colombia, Dominican Republic, Ecuador, Egypt, El Salvador, Georgia, Guatemala, Indonesia, Islamic Republic of Iran, Jamaica, Jordan, Mexico, Montenegro, Morocco, Namibia, Paraguay, Peru, Russian Federation, Serbia, South Africa, Sri Lanka, Swaziland, Thailand, Tunisia	Stimulating, and conciliatory functions and function of the harmonization of economic interests
Transition from Stage 2 to Stage 3	Argentina, Chile, Costa Rica, Croatia, Hungary, Latvia, Lebanon, Lithuania, Malaysia, Mauritius, Oman, Panama, Poland, Romania, Saudi Arabia, Seychelles, Slovak Republic, Trinidad and Tobago, Turkey, Uruguay	Function of the harmonization of economic interests and conciliatory function
Stage 3. Countries focusing on innovations	Australia, Austria, Bahrain, Belgium, Canada, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hong Kong, Iceland, Ireland, Israel, Italy, Japan, Republic of Korea, Luxembourg, Malta, Netherland, New Zealand, Norway, Portugal, Qatar, Singapore, Slovenia, Spain, Sweden, Switzerland, Taiwan China, United Arab Emirates, United Kingdom, United States of America	Conciliatory function

Source: built by the authors on the basis of the data of World Economic Forum and The Global Competitiveness Report 2017–2018

The countries were distributed by experts from World Economic Forum on the basis of such criterion, as GDP per one inhabitant (Stage 1 – less than 2,000 US\$, transition from Stage 1 to Stage 2 – from 2,000 up to 2,999 US\$, Stage 2 – from 3,000 up to 8,999 US\$, transition from Stage 2 to Stage 3 – from 9,000 up to 17,000 US\$, and Stage 3 – more than 17,000 US\$). We conducted the selective study, having chosen five countries from each group being the most typical ones among its representatives. From within each group of the countries, there were selected those, which meet certain requirements: firstly, they have relation to this development stage for at least the last three years; and secondly, for the last year, the studies have the GDP values per one inhabitant approximating to the average group ones.

It was found that in the countries related to Stage 1, vertical integration generally performs the organizational and resource functions. In the transition from the first development stage

to the second one, vertical integration with the dominance of the stimulating and conciliatory functions prevails. The second development stage is characterized by integration processes, which perform, in the most part, the stimulating and conciliatory functions, and function of the harmonization of economic interests. For the countries that are in the transition from the second stage to the third one, vertical integration basically performs the function of the harmonization of economic interests and conciliatory function. At the last stage, vertical integration is characterized by the dominance of the conciliatory function.

As reflected by the results of studies, to a certain extent, there is an extension of the list of functions, which vertical integration is called to perform. In particular, at the second stage, integration processes perform the widest list of functions. Further, the list of functions, which vertical integration is called to perform in specific conditions, is narrowed. In a predictable manner, the question arises whether the breadth of the coverage of functions performed by vertical integration in different conditions, influences on competitiveness of the country.

In order to answer this question, it is necessary to form some hypotheses that need to be checked:

1. Hypothesis 1: there is the link between competitiveness and results of vertically integrated companies' activities, and it is direct;
2. Hypothesis 2: the link between competitiveness and vertical integration is significant;
3. Hypothesis 3: when increasing or decreasing the share of vertically integrated structures in the total volume of products, the average value of the global competitiveness index is proportionally increasing or decreasing.

In order to confirm or refute the first hypothesis on the basis of the data of The Global Competitiveness Report 2017–2018, as well as other materials of World Economic Forum, the analytical grouping has been carried out. Thus, for each group of the countries, the average share of sales volumes of vertically integrated companies in the total volume, as well as the average value of the global competitiveness index for the group of countries, has been calculated. The comparison of the groups of countries by these two indicators made it possible to establish availability of the direct link between the share of vertically integrated companies in the total volume of products sold as for the economy and the level of the countries' competitiveness (Table 2).

Table 3
Analytical grouping of the countries (economies)

Development Stage	Number of countries (economies)	Average share of sales volumes of products of vertically integrated companies in their total volume	Average value of the global competitiveness index by the group of countries
Stage 1. Countries focusing on factors	35	10,9	3,57
Transition from Stage 1 to Stage 2	15	18,2	4,11
Stage 2. Countries focusing on efficiency	31	18,9	4,17
Transition from Stage 2 to Stage 3	20	21,4	4,37
Stage 3. Countries focusing on innovations	36	32,6	5,15

According to the analytical grouping data, with the transition from one development stage to the other, the value of the indicator characterizing the contribution to the economy of vertically integrated structures increases. Thus, the average share of vertically integrated companies' sales volumes in the total volume of the countries focusing on factors is the lowest and amounts to nearly 10,9%, while the value of this indicator for the countries focusing on innovations is the highest – 32,6%.

In parallel with the growth of the average share of vertically integrated companies' sales volumes in the total volume, there is also the increase in the average value of the global competitiveness index in the group of countries. Such connection is typical, since the activation of integration processes in the transition to higher development stages results in the increase in efficiency of the functioning of business structures. Thus, the first hypothesis can be considered as confirmed.

In order to confirm whether the direct relationship between the level of the country's competitiveness and the indicator characterizing the contribution to the economy of vertically integrated structures is significant, the coefficient of the pair correlation between these indicators was calculated. The correlation value of 0,98 is coming close to 1, and therefore, the relationship between the indicators is very strong and can be considered as significant. This confirms the second hypothesis proposed by us.

As for the third hypothesis, it is necessary to make certain calculations for its confirmation or refutation (Table 4).

Table 4
Determination of the proportionality of changes in competitiveness of the country and the share of vertically integrated companies

Development Stage	Gain of the average share of vertically integrated companies' sales volumes in the total volume in the transition to this group of countries	Gain of the average value of the global competitiveness index by the group of countries, in the transition to this group of countries	Gain of competitiveness in the group by 1% of the gain of the average share of vertically integrated companies' sales volumes
Stage 1. Countries focusing on factors	-	-	-
Transition from Stage 1 to Stage 2	7,30	0,54	0,074
Stage 2. Countries focusing on efficiency	0,70	0,06	0,086
Transition from Stage 2 to Stage 3	2,50	0,20	0,080
Stage 3. Countries focusing on innovations	11,20	0,78	0,070

Source: calculated by the author

As can be seen from Table 4, in the transition from one to the other stage, 1% of the gain of the average share of vertically integrated companies' sales volumes accounts for the different value of the competitiveness gain. That is, the third hypothesis can be refuted and hence, one can speak of the disproportionate relationship between the investigated

indicators.

At the same time, Stage 2 is characterized by the greatest return from the increase in the contribution of vertically integrated companies in the economy. It should be noted that precisely at this stage the list of functions performed by integration is the most extensive.

4. Conclusion

The study of theoretical foundations of the integration essence allows concluding that the activation of vertically integration processes is associated with the emergence of both positive and negative impacts on the economy and its development. In specific circumstances, the predominance of positive or negative aspects of vertical integration largely depends on the stage, at which the economy is for the time being.

Solving the problem to determine the impact of results of vertically integrated structures' activities in specific conditions of space and time creates the opportunity to select an appropriate scenario for regulating integration processes. Thus, at the first development stages, it is advisable to create incentives for integration, and in the transition to higher development stages – to containment of integration processes.

The correctly selected scenario of regulating will enable to improve competitiveness of the modern national economic system, depending on its development stage, either through integration of companies, or conversely, through disintegration.

According to the results of the study, the dependence of the country's global competitiveness index on the share of sales volumes of products of vertically integrated companies in their total volume was identified with the use of materials of statistical reports. And, it was established that the influence of vertical integration results on the country's competitiveness is positive and rather strong. Therefore, the hypothesis of the direct relationship between the performance of integrated structures and the level of the country's competitiveness has been confirmed. At the same time, it was found that the return from vertical integration considerably varies at the different stages of the economy development.

The complication of the economic phenomenon of integration causes the necessity to apply exactly the complex approach to understanding its essence. The stimulation of vertical integration processes is able to contribute to the transition of the economy to a higher development level up to a point.

The results obtained can be taken into account in the formation of various strategic documents of the national economies, including in formulating the strategy of social and economic policies of external relations, and further studies will be aimed at determining the impact of integrated enterprises on the innovative and investment potential of the economy. At the same time, further surveys can be directed to questions about studying the impact on competitiveness of vertical integration results in various sectors of the national economy.

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