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Montenegrin Journal of Economics

Dmitriev, N., Zaytsev, A., Dubanevich, L. (2020), "Determining the Strategic Prospects of an Enterprise by Assessing the Dynamics of its Intellectual Rent", *Montenegrin Journal of Economics*, Vol. 16, No. 4, pp. 187-197.

Determining the Strategic Prospects of an Enterprise by Assessing the Dynamics of its Intellectual Rent

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ARTICLE INFO

Received May 12, 2020
Revised from May 29, 2020
Accepted June 30, 2020
Available online December 15, 2020

JEL classification: E22, J24 O12, M21, F61

DOI: 10.14254/1800-5845/2020.16-4.15

Keywords:

Cross-border,
merger,
acquisition,
predictor,
economic sector

ABSTRACT

The success of long-term economic development of enterprises depends on the resources they use in their business operations. Until recently, efficiency was achieved mainly through material resources. However, economic transformation has increased the importance of non-material components in the performance of any enterprise. The intellectualization of production makes it possible to talk about the availability of intellectual rent, which is a prerequisite for successful business operations. This study aims to explore the possibility of assessing dynamics of the intellectual rent of enterprises based on proprietary tools to determine the strategic prospects of business entities. The study uses mathematical calculation of excessive profits gained by the enterprise from its operation. The authors make an assumption that it is strategically important for any modern enterprise to efficiently use intellectual capital in its activities. By calculating the volume of intellectual rent and comparing the obtained data between different entities, it is possible to determine the prospects for further economic development and formulate recommendations for improving business operations. The importance of the rent income of enterprises for the sustainable development of territorial entities is considered. Approbation of proprietary tools for assessing the intellectual rent at enterprises engaged in the production of metal structures allowed the authors to identify strategic directions for their development. Thus, only one out of five analyzed enterprises showed a stable growth of intellectual rent during the period under consideration, and three showed a complete lack of rent income in different periods. The obtained data allowed the authors to develop initial recommendations to modernize the strategic operations of business entities. The proposed approach makes it possible to assess efficiency of individual entities within their industry, and in the future would allow us to consider the state of the entire national economy on a global scale.

INTRODUCTION

Economic entities are the most important element of the market economy, and their success depends on the sustainable development of the territory and society. Thus, sufficient attention should be paid to searching for opportunities to improve the efficiency of the business sector with allowance for the current trends in the management of economic processes. These trends include improving economic efficiency through knowledge and innovation capable of generating additional revenue for their owner. Strategic development of enterprises in any industry requires specific actions in the long term. Given the buoyancy and unpredictability of market relations, it is necessary to ensure smooth adaptation to various events by utilizing internal and external economic potential. In the context of informatization of management processes, identification of strategic prospects of entities directly depends on technological and innovative development. Long-term business planning should be based on key development areas and on the assessment of a variety of factors.

It is almost impossible to ensure efficiency through traditional assets, which include material and financial components. While intangible assets have been considered as a strategic resource for the development of economic entities for over a decade, modern intellectualization processes have become a determinant of corporate development worldwide. It is the use of intellectual potential that determines the transition towards intensive production and rational use of resources (Jona-Lasinio et al., 2019; Zaytsev et al., 2019). Business entities get the opportunity to gain additional profit with the same amount of tangible assets through investment in human capital, introduction of innovative technologies, and intensification of intellectual property creation. The strategic goal of any company is to achieve a sufficient level of intellectual capital that would allow it to enhance competitiveness of production and reduce costs. The implementation of these tasks should be set in the company's development strategy, which is not always considered by the management, preventing the company from developing competitive advantages through utilization of the intellectual potential. Insufficient intellectual rent harms not only the economic entity, but also the national economy – due to the lack of additional financial resources in the form of tax revenues and a reduced rate of scientific and technological progress (Dmitriev et al., 2019; Mednikov et al., 2018).

Exclusive use of technologies, licensing, and patent activities leads to the modernization of production and management processes. However, many enterprises have not yet fully realized the importance of the intellectual components of production. This problem is particularly severe in Russia, where innovation activity is at a very low level (Asaturova, 2019). The strategic prospects of any enterprise can be called favorable only in the context of adequate intellectual development. Intellectual capital provides an opportunity to enhance market competitiveness and make profits above the norm – for example, by increasing goodwill and the company's information influence (Tikhomirov & Komshilova, 2019). As a result, the company receives not only standard profit, but also intellectual rent, the economic essence of which is manifested in the difference between the efficiency of innovative production compared to traditional production. These processes form the basis of the innovation economy, which means that the government should directly contribute to the development of the intellectual potential of business entities through incentives (Dmitriev et al., 2019; Schwab & Werker, 2018).

A competent policy of top management should be aimed at a stable growth of economic results. To this end, it would be necessary to ensure the implementation of a set of tactical actions, which is impossible without analyzing the indicators of economic activity (Jordao et al., 2019). This study proposes to evaluate the dynamics of the level of intellectual rent of an enterprise as one of the main indicators of a successful business. Formation of intellectual rent leads to technological breakthroughs and improves the population's quality of life. The aforementioned points determine relevance of the study, which aims to assess the intellectual rent of enterprises and its dynamics to determine the long-term prospects for the development of an entity within the national economy. In the course of the study, the authors set the following tasks: to examine a model for assessing intellectual rent; to test it on specific enterprises; to determine the correlation between the volume of intellectual rent and strategic prospects.

The subject of the study is formation of intellectual rent by economic entities. The object of the study is the intellectual resources of enterprises, which, when used correctly, make it possible to make profits above the norm, provide competitive advantages, and help to take a leading position. The authors'

standpoint is based on the high importance of intellectual resources for the strategic development of companies and the development of the national economy. Having obtained data on the volume of intellectual rent at a particular enterprise, it is possible to develop recommendations for improving economic activities and identifying problems relative to the average industry values. Intellectual capital management based on rent mechanisms would ensure long-term sustainable development of not only the business sector, but also the industry and the country, and would also have a positive impact on the quality of life.

1. REVIEW LITERATURE

For the purpose of the study, the authors analyzed works on formation and use of quasi-rent, intellectual capital of corporate strategic management and general economic development. Based on a comprehensive study of this problem, it is considered possible to develop an approach for calculating performance of enterprises in a particular industry through the assessment of their intellectual rent and its dynamics to determine the prospects for the development of entities in the long term. The impact of intangible resources on the success of enterprises and economic development was considered as early as the last century. Thus, the most popular works analyzed the significance of investment in human resources for national economic development. Gradually, these questions were adapted to the issues of ensuring the efficiency of economic entities on a long-term basis, particularly in classical works (Stewart, 1997). The authors focused on the formation of leadership qualities based on intangible assets, which formed the basis of new views on the market economy.

The paper (Kelly, 1998) explained the need for all economic entities to adapt to the conditions of the "new economy". Increasing integrative linkages at the global scale, globalization processes, and intensification of innovations are already determining the efficiency of enterprises. It is almost impossible to talk about commercial success without taking into account these macro factors. Trends established by Industry 4.0 defined strategic development paths through creating intellectual value for all market entities (Schwab, 2017). Every year, it becomes increasingly important to determine the potential resources of enterprises and to improve the efficiency of business operations in general. Thus, decisions on long-term development issues should be made with allowance for the possibilities of creating intellectual profit. Achieving maximum return on tangible and intangible resources would allow economic entities to function with minimum risks of adverse situations, creating the necessary innovative potential (Mednikov et al., 2018).

The use of intellectual capital serves as the basis of the innovative economy. The following elements can directly affect the modern business sector: marketing; production volumes; market capacity; potential expansion markets; market competitiveness; industry-specific features. Studying most of these factors would allow economic entities to prepare for almost any manifestations of the external environment. However, intellectual capital is one of the most effective instruments for managing production processes as it makes it possible to rationally organize short- and long-term planning, reducing financial risks of investment implementation and ensuring the intensification of innovation processes (Widodo, 2018). As of today, the issues of intellectual capital are well developed in economic science. Papers (Tikhomirov and Komshilova, 2019; Vetrenko et al., 2017; Zaytsev et al., 2019; Zhilenkova et al., 2019) examined the major opportunities for evaluating the use of the intellectual capital, its importance for the company's position in the market, and capitalization growth as a result of its formation and development. The diversity of studies and new perspectives indicates that the problem is not sufficiently studied, which opens the door for the adaptation of new categories to the conceptual framework of intellectual capital, including rent-based approaches.

Intellectual capital is involved in almost all economic, managerial, technological, and sociological processes that were previously often considered unpredictable (Jordao et al., 2019). For example, (Tikhomirov and Komshilova, 2019) analyzed company stocks and found that the intellectual component accounts for a significant share of their value in many tech companies. That said, the intellectual effect can also be negative due to the impact of ambiguous external factors. For example, negative manifestation in the information environment can have an adverse impact on the company – up to bankruptcy and

complete liquidation (Durand and Milberg, 2020). Paper (Vetrenko et al., 2017) explored the possibility of improving brand image, increasing brand awareness, and promoting customer engagement through social media and information flows. It showed that the information environment becomes a harbinger of a paradigm shift in brand management and processes monitoring through the use of intellectual capital.

Enterprises operate in an external environment and are strongly influenced by information flows, which become an important condition for the formation of intellectual potential not only of companies, but also of individuals – consumers and other interested parties. Strategic development is closely linked to the information environment of the enterprise, and the quasi-rent obtained by an economic entity is highly susceptible to informational influence (Birch, 2020). The importance of intellectual capital for the innovation-driven and digital economy generates an objective need for an in-depth study of the processes of its creation, formation, and application, which would make it possible to correctly choose objectives and directions for further development, resulting in an economic development strategy based on the concept of a person with accumulated knowledge, skills, and innovative ideas (Zhilenkova et al., 2019).

In the context of strategic development, it is necessary to consider the importance of human resources. Human capital should have the required knowledge and competencies. It can be argued that creation of conditions for the formation and development of the intellectual component of human capital, which facilitates the transition towards an innovative digital economy, is an objective feature of the current stage of development of the global community (Akhmetshin et al., 2019; Jona-Lasinio et al., 2019). It is worth noting that, apart from being a determinant of the sustainable development of a territorial entity, intellectualization of economic entities is also indicative of the social effect of more competent use of human resources. Today, it is impossible to imagine modeling of strategic economic development without taking into account creation of intellectual income at the enterprise level. In economics, such income is called quasi-rent. The issues of obtaining excessive profits via qualitative benefits from the use of technologies, human resources, and other intangible elements were addressed in papers (Dmitriev et al., 2019; Schwab and Werker, 2018; Yakovets, 2003). Rent formation determines the success of business operations, with intellectual capital being the main determinant of its activation. The most common way to create quasi-rent is through a monopoly on intellectual property that is valuable for innovative production.

The concept of rent has long been associated with a narrow range of industries – mainly agriculture, mining, and processing industries. However, today it also applies to non-rent industries due to its specific ability to generate excess profits for enterprises (Birch, 2020; Schwab and Werker, 2018). As one of the major types of quasi-rent, intellectual rent comprises such intangible concepts as information, innovation, scientific achievements, and human knowledge. This type of rent leads to the reproduction of intellectual capital in the context of the innovative digital economy (Yakovets, 2003). It becomes obvious that the importance of intangible resources for the success of business operations of economic entities has increased significantly. The first manifestations of the strategic importance of intellectual capital in the corporate environment date back to the turn of the millennium (Green, 1995), but they were not detailed enough. Analysis (Galeitzke et al., 2015) showed that most factors of intellectual capital are well developed, but intra-organizational and inter-organizational innovative ecosystems and strategic management are virtually ignored by researchers.

With regard to the issues of determining the strategic prospects of enterprises in the macroeconomic environment, it is worth noting the work (Nerur et al., 2008), which analyzed the existing approaches to strategic management. It demonstrated that intellectual structure plays one of the key roles in achieving long-term efficiency. This fact is confirmed by book (Klein, 2009), which drew a parallel between the strategic and operational roles of intellectual capital in the organization, and also substantiated the need for the innovative development of enterprises to maintain the competitiveness of the national economy. Development of economic relations has led to significant structural changes in the management of business entities. The quality of managerial decision-making at an enterprise depends on the efficiency of its operation in the market. Thus, management actions should be aimed at maximizing the return on available resources and achieving sustainable development from a strategic perspective. Company strategy is an important element of stable long-term operation as it establishes the main development directions and alternative actions.

It may be noted that not all successful organizations have a strategy of their own – often due to sufficient intellectual capital as shown in (Widodo, 2018). That said, by including intellectual capital and its formation into the corporate strategy enterprises can significantly increase performance and efficiency of processes. With regard to Russian economic conditions, it should be noted that there are significant issues in the field of R&D and organization of engineering and manufacturing activities. Enterprises do not always implement high-quality strategies that would take into account intellectual developments. However, increasingly widespread use of information technologies in the management of economic processes is an important step (Mednikov et al., 2018). Assessment of the intellectual effect makes it possible to evaluate the success of strategic development of economic entities. This problem is vital for economics, since correct choice of tactics determines further actions of the entity. The authors believe that gaining a sufficient amount of intellectual rent from operation may ensure survival of an enterprise in the long term and competitiveness of the national economy on the global stage.

2. METHOD

The economic results of intellectual capital utilization include standard profit and intellectual rent. Processes involved in profit formation are sufficiently developed in economic science, while the issues of intellectual rent are not fully examined and often ignored by the scientific community. It is noteworthy that rent income determines the competitiveness of all economic entities from the strategic perspective. For the purposes of this study, the authors suggest using mathematical methods for calculating key indicators. By using mathematical modeling in economics, it is possible to find quantitative and relative indicators of a specific phenomenon. Adaptation of mathematical tools to the calculation of intellectual rent makes it possible to examine its dynamics and determine the strategic prospects of an enterprise based on the identified trends and dependencies. The absence of rent may indicate a negative state of the enterprise, while strong fluctuations in the rent of most enterprises in the industry or within a territory indicate ambiguous economic development and the need for macroeconomic analysis to identify industry-specific problems. Intellectual rent was directly examined in (Dmitriev et al., 2019). The proposed algorithm is very useful for improving rent-based approaches to the assessment of intellectual efficiency with allowance for the industry-specific features of the enterprise. Intellectual rent is formed when there are excessive profits:

$$IR = + C - P_s - R, \quad (1)$$

where IR is the intellectual rent;
 C are the costs;
 P_s is the standard profit;
 R is the revenue.

If revenue is equal to standard profit or loss, then intellectual rent is not formed, i.e. it equals 0. Intellectual rent cannot be negative, but a value below 0 can be considered foregone revenue. Figure 1 shows a general pattern of intellectual rent formation at an enterprise.

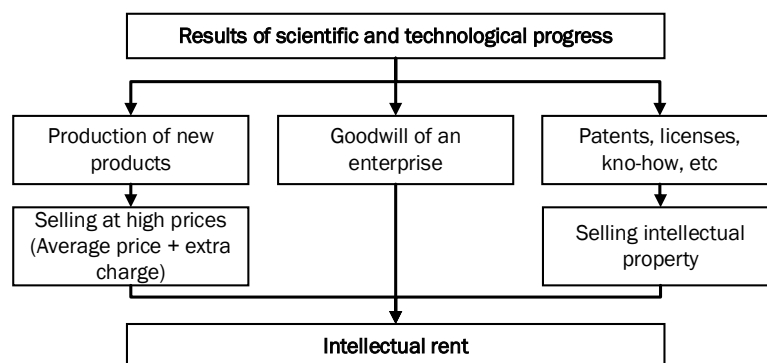


Figure 1. Formation of intellectual rent

Source: adapted from Dmitriev et al., 2019.

The authors propose that calculation of intellectual rent and its impact on the strategic prospects of enterprises should be based on a multi-factor model:

$$IR = \{x_1; x_2; x_3; x_4; x_5\}, \text{ with } S \in IR, \quad (2)$$

where IR is the intellectual rent;
 x_1 is the value of intellectual property;
 x_2 is the quantification of intellectual property;
 x_3 is the value of the manufactured goods;
 x_4 is the revenue from patent sales and licensing agreements;
 x_5 is the amount of goodwill;
 S is the strategic prospects of the enterprise.

The provided list of factors is not exhaustive, but it is sufficient for the purposes of this study. The calculation of intellectual rent is complicated by the poorly defined rent factors of revenue generation at various levels. While making calculations at the enterprise level is not difficult, the same calculations at the level of individual products may present a significant challenge due to incomplete information. The following formula can be used to calculate intellectual rent at the enterprise level:

$$IR_{ie} = I - C - N_{pie} \quad (3)$$

where IR_{ie} is the intellectual rent at the enterprise level;
 I is the enterprise income;
 C is the enterprise costs;
 N_{pie} is the annual standard profit.

The proposed method can be used to calculate the intellectual rent of an enterprise and analyze its dynamics. By comparing enterprises, it is possible to draw conclusions about the quality of management and the position of entities in the industry. Higher intellectual rent indicates a more efficient use of intangible elements. Systematic use of knowledge, experience, and other intangible components for the purpose of getting a competitive advantage would allow for sustainable development from the strategic perspective (Klein, 2009). Intellectual rent can become an efficient way of achieving strategic leadership through standard profit combined with excess profits. The benefits of rent are shown in Figure 2.

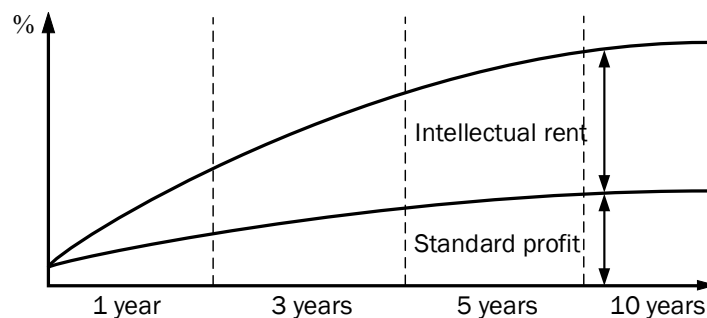


Figure 2. Benefits of intellectual rent

Thus, effective management of intellectual capital can maximize the company's profit, and additional resources can be directed towards completing priority objectives. The proposed method for assessing dynamics of intellectual rent would make it possible to develop long-term development measures based on the need to generate rent. From the economic perspective, the proposed method can be used to analyze enterprises in the industry and select the most efficient ones, which can be useful not only for determining the strategic prospects of industry development, but also for creating economic behavior models to ensure more rational business operations and generate more rent income.

3. RESULTS & DISCUSSION

The authors propose to examine the practical application of this method on specific enterprises. For this study, 5 enterprises operating in Russia in the field of production of finished metal products were selected. These enterprises are major players in the industry and implement innovative development projects. Therefore, they have a sufficient amount of intangible resources. It is worth noting that in the most developed countries, this industry is characterized by a significant proportion of intellectual rent in the profit, sometimes several times higher than standard profit. For the purpose of calculations, the EBIT of enterprises was taken for the difference between income and expenses, and the industry-average return on assets (ROA_{ia}) was taken for calculating the standard profit. Note: it is advisable to use the ROA indicator when assessing enterprises of different sizes, but this indicator can be replaced if the compared enterprises are of equal size.

Table 1 shows the industry-average dynamics of return on assets. Note: data up to 2015 may produce mixed results due to the Russian economic crisis of 2014.

Table 1. Dynamics of industry-average return on assets

Year:	2015	2016	2017	2018
ROA_{ia}	3.9%	4.6%	4.8%	4.9%

Table 2 shows the EBIT data of the analyzed enterprises. Note: the names of enterprises were changed in order to maintain trade secrecy.

Table 2. EBIT of the analyzed enterprises (€)

Enterprise	2015	2016	2017	2018
A	2 628 850	4 863 313	8 078 375	9 333 900
B	6 337 338	5 515 613	10 244 825	6 145 013
C	2 159 525	3 363 875	2 092 125	2 293 713
D	375 000	531 613	4 626 688	4 008 988
E	1 077 100	2 584 000	4 442 263	3 678 938

To calculate the standard profit, it is necessary to be aware of the level of assets enterprises have at the end of the year. Table 3 shows data on the volume of assets of the analyzed enterprises.

Table 3. Assets of the analyzed enterprises (€)

Enterprise	2015	2016	2017	2018
A	24 621 600	39 990 538	45 560 350	44 178 788
B	32 347 863	36 547 513	44 409 725	46 151 088
C	22 513 938	20 694 900	22 698 963	18 605 475
D	1 962 513	14 680 588	35 840 663	55 824 175
E	15 877 738	16 479 213	24 267 025	40 670 963

The standard profit is calculated using the following formula:

$$N_{pie} = A * ROA_{ia} * \beta_1 * \beta_2, \quad (4)$$

where N_{pie} is the annual standard profit of the enterprise;
 A is the volume of assets of the enterprise at the end of the year;
 ROA_{ia} is the standard return on assets ratio in the industry;
 β_1, β_2 are the correction factors.

Note:

1. Correction factor β_1 is introduced when industry-average indicators are too low or too high due to non-market factors. For instance, the Russian economy is characterized by decreasing profitability, which can have a negative effect on the industry and lead to inflated intellectual rent figures. The decrease in ROA in the industry is covered by a 1.6 factor.

2. Correction factor β_2 is introduced to make allowance for the territorial features of the enterprise's operation. This factor may vary depending on the region's level of development. The factor ranges from 1 to 2. For example, Moscow is the most developed region of Russia, so the factor is 2.

It is worth noting that these indicators are not particularly significant for examination of the industry dynamics. Table 4 shows the calculated standard profit figures for the analyzed enterprises.

Table 4. Standard profit of the analyzed enterprises (€)

Enterprise	2015	2016	2017	2018
A	1 920 485	3 679 129	4 373 794	4 329 521
B	2 523 133	3 362 371	4 263 334	4 522 807
C	1 756 087	1 903 931	2 179 100	1 823 337
D	153 076	1 350 614	3 440 704	5 470 769
E	1 238 464	1 516 088	2 329 634	3 985 754

The next step is to calculate the intellectual rent of the analyzed enterprises (the formula is adapted to this study):

$$IR_{ie} = EBIT - N_{pie} \quad (5)$$

where IR_{ie} is the intellectual rent at the enterprise level;

$EBIT$ is the difference between income and expenses for all types of activities;

N_{pie} is the annual standard profit.

Table 5 shows the calculated intellectual rent figures for the analyzed enterprises.

Table 5. Intellectual rent of the analyzed enterprises (€)

Enterprise	2015	2016	2017	2018
A	708 365	1 184 183	3 704 581	5 004 379
B	3 814 204	2 153 241	5 981 491	1 622 206
C	403 438	1 459 944	0	470 376
D	221 924	0	1 185 984	0
E	0	1 067 912	2 112 628	0

The dynamics of these indicators is shown in Figure 3.

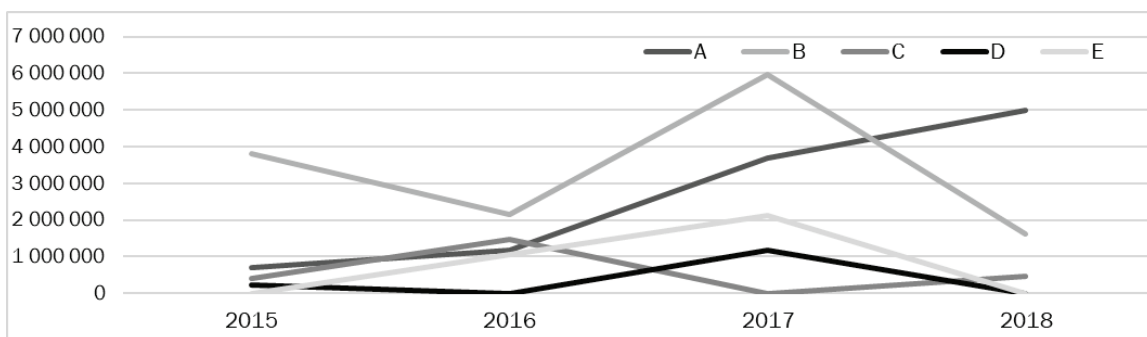


Figure 3. Intellectual rent dynamics of the analyzed enterprises (€)

Based on this chart, it can be seen that not all enterprises have intellectual rent. Enterprises D and E had no rent during two periods, both in 2018 due to the standard profit exceeding the revenue. The chart also shows that the rent of enterprise A has been steadily increasing over the entire period, which indicates the company's good strategic position. However, to improve the quality of analysis, the authors propose to consider the share of rent in profits. Table 6 shows the percentage of intellectual rent in the total revenue of the enterprise.

Table 6. The share of intellectual rent in the revenue of enterprises

Enterprise	2015	2016	2017	2018
A	27%	24%	46%	54%
B	60%	39%	58%	26%
C	19%	43%	0%	21%
D	59%	0%	26%	0%
E	0%	41%	48%	0%

As previously stated, this industry is characterized by a high level of intellectual rent in the revenue of enterprises. Figure 4 shows the percentage of intellectual rent in the revenue of enterprises.

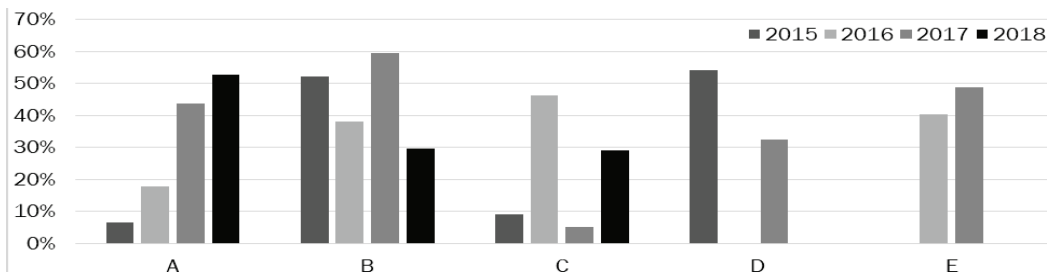


Figure 4. The share of intellectual rent in the revenue of enterprises

The obtained results indicate good strategic prospects and a competent development strategy of company A. Despite the difficulties experienced by the company in 2014 due to the crisis, the level of intellectual rent increases during the period and maintains the subsequent trend of growth. By 2018, the enterprise's revenue was generated largely through intellectual rent. However, even though enterprise B has rent during the entire period, there are serious fluctuations that can lead to its further decline. This effect can be attributed to temporary difficulties, but it is still necessary to take urgent measures in order to prevent further reduction of rent income. It may be necessary to use the existing intellectual resources more rationally or adjust the development strategy. However, the strategic prospects of the enterprise can be considered favorable, since the level of rent income is rather high throughout the analyzed period.

Enterprises C, D, and E lack stability in obtaining intellectual rent. Since this study is linked to the volume of assets, this can indicate irrational use of available resources and an ineffective development strategy. Enterprises C, D, and E should reconsider the algorithm of their actions or they could lose their leading positions and competitive advantages that all of the analyzed enterprises possess. The average share of intellectual rent in this industry ranges between 15% and 23% in the Russian economic environment. These values are rather modest compared to developed countries, where intellectual rent reaches 60%. Such figures are unlikely to be achieved in the near future due to the unstable economic and political situation in Russia. However, activation of innovation processes will undoubtedly have a positive impact on the prospects of economic entities and territories.

In the past century, material resources and major production factors were considered the main source of income and strategic stability, but as the economic theory gradually transformed a completely new factor of production began to dominate the national economy. This factor is information, which can

be understood as intellectual capital in the context of economic activities (Schwab, 2017; Stewart, 1997). Investment in human resources was the first step in developing the theory of intellectual capital and an important factor in achieving economic efficiency. In the current economic conditions, the key role is played not so much by facilities and equipment, but by the profit from patents, trademarks, copyrights, and other so-called "intangible" assets (Jona-Lasinio et al., 2019; Kelly, 1998). When these changes are considered from the perspective of the information society and the new knowledge-based economy, it can be argued that intellectual resources play an important role in determining the strategic prospects of the national economy by changing its market value and efficiency.

In a highly competitive environment, the enterprise that takes the most efficient advantage of its resources will prevail. It is the strategy of an enterprise that determines its long-term development and potential. The absence of a strategy or insufficient consideration of intellectual opportunities for improving efficiency will not allow an enterprise to develop in the long term and may lead to negative consequences. Advanced technologies and competent business analytics make it possible to predict the company's processes aimed at improving operational efficiency in the innovative economy. New knowledge passes the stage of commercialization and translates into new or modified goods and services, and monopoly on this knowledge provides an opportunity to gain excess profits (Marchese & Privileggi, 2018). The conducted study is the first step in the examination of the rent income of enterprises. Further elaboration will enable dividing intellectual rent into separate types of rent.

It is particularly interesting that strategic development of enterprises directly affects sustainable regional development, utilization and development of industrial potential, because improvement of the economic performance of an entity makes it possible to predict the socio-economic situation in the territory. This factor reinforces the importance of creating rent income, and intellectual rent becomes a major factor in the optimally balanced transition towards a digital collaborative environment. Thus, it is advisable to further consider the possibility of a more comprehensive study of intellectual rent at the level of a territorial entity. There is also merit in conducting an in-depth study of correction factors to assess the impact of infrastructure and territorial location of entities on rent income.

CONCLUSION

Any economic entity seeks to gain not only standard profit from its operation, but also additional income, since growth of income above the level of competitors is the main factor in achieving competitive advantages under market conditions. The conducted analysis clearly showed the possibility of identifying rent and examining its dynamics. Thus, enterprises with a stable rent flow are strategically successful, while the absence of rent indicates negative development and incompetent management of the enterprise.

In this study, the authors proposed to assess dynamics of intellectual rent and identify its trends. Based on the obtained data, it is possible to determine the prospects for the development of enterprises. Approbation of the proposed method at enterprises revealed ambiguous dynamics and made it possible to determine the primary strategic prospects of enterprises within the same industry.

Obviously, one study is not enough to explain the importance of rent income. The authors are planning further studies aimed at a more thorough examination of individual indicators. In particular, it is planned to consider industry-specific features to better determine indicators such as the correction factor.

ACKNOWLEDGMENTS

This research work was supported by the Academic Excellence Project 5-100 proposed by Peter the Great St. Petersburg Polytechnic University.

REFERENCES

- Akhmetshin E.M., et al. (2019), "Acquisition of entrepreneurial skills and competences: Curriculum development and evaluation for higher education", *Journal of Entrepreneurship Education*, Vol. 22, No. 1, pp. 1–12.
- Asaturova, Y. (2019), "Peculiarities of development of industry 4.0 concept in Russia", *IOP Conference Series: Materials Science and Engineering*, Vol. 497, St. Petersburg.
- Birch, K. (2020), "Technoscience Rent: Toward a Theory of Rentiership for Technoscientific Capitalism", *Science Technology and Human Values*, Vol. 45, No. 1, pp. 3–33.
- Dmitriev, N., Degtereva, V., Zaytsev, A. (2019), "Mathematical Approach to Calculating the Intellectual Rent of an Industrial Enterprise for Achieving Innovative Leadership", *VI International Conference «Social, Economic, and Academic Leadership»*, pp. 178–184.
- Durand, C., Milberg, W. (2020), "Intellectual monopoly in global value chains", *Review of International Political Economy*, Vol. 27, No. 2, pp. 404–429.
- Galeitzke, M., Steinhofel, E., Orth, R., Kohl, H. (2015), "Strategic intellectual capital management as a driver of organisational innovation", *International Journal of Knowledge and Learning*, Vol. 10, No. 2, pp. 164–181.
- Green, S.G. (1995), "Top Management Support of R&D Projects: A Strategic Leadership Perspective", *IEEE Transactions on Engineering Management*, Vol. 42, No. 3, pp. 223–232.
- Jona-Lasinio, C., Manocchi, S., Meliciani, V. (2019), "Knowledge based capital and value creation in global supply chains", *Technological Forecasting and Social Change*, No. 148, pp. 102–121.
- Jordao, R., Novas, J., Gupta, V. (2019), "The role of knowledge-based networks in the intellectual capital and organizational performance of small and medium-sized enterprises", *Kybernetes*, Vol. 40, No. 1, pp. 116–140.
- Kelly, K. (1998), *New Rules for the New Economy. Ten Radical Strategies for a Connected World*, Penguin Books, New York.
- Klein, D.A. (2009), *The Strategic Management of Intellectual Capital*, Routledge, London.
- Marchese, C. & Privileggi, F. (2018), "Endogenous economic growth with disembodied knowledge", *Journal of Public Economic Theory*, Vol. 20, No. 3, pp. 437–449.
- Mednikov, M.D., Sokolitsyn, A.S., Ivanov, M.V., Sokolitsyna, N.A., Yuryev, V.N. (2018), "Capital structuration as enterprise management strategy elaboration basis", *32th IBIMA Conference*, pp. 6600–6613.
- Nerur, S., Rasheed, A., Natarajan, V. (2008), "The intellectual structure of the strategic management field: An author co-citation analysis", *Strategic Management Journal*, Vol. 29, No. 3, pp. 319–336.
- Schwab, D., Werker, E. (2018), "Are economic rents good for development? Evidence from the manufacturing sector", *World Development*, Vol. 112, No. C, pp. 33–45.
- Schwab, K. (2017), *The Fourth Industrial Revolution*, Crown Business, New York.
- Stewart, T. (1997), *Intellectual Capital. The New Wealth of Organizations*, Currency Doubleday, New York.
- Tikhomirov, A., Komshilova, S. (2019), "New approach to analyzing the risk of intellectual capital in the structure of the market price of shares", *IOP Conference Series: Materials Science and Engineering*, Vol. 497, St. Petersburg.
- Vetrenko, P.P., Chernysheva, E.A., Levitina, I.Y., Voronkova, O.V., Mikheeva, D.G. (2017), "Encouraging Employees to Increase the Labor Intellectualization Level as a Factor of Evolution of the Intellectual Capital", *European Research Studies Journal*, Vol. 20, No. 4, pp. 568–577.
- Widodo, W. (2018), "Grand theory model of strategy quality: Strategic asset approach at industry", *Academy of Strategic Management Journal*, Vol. 17, No. 2, pp. 163–173.
- Yakovets, Y.V. (2003), *Rent, Anti-Rent, Quasi-Rent in the Global Civilization Dimension*, Akademkniga, Moscow.
- Zaytsev, A., Rodionov, D., Dmitriev, N., Kichigin, O. (2019), "Comparative analysis of results on application of methods of intellectual capital valuation", *International Scientific Conference «Digital Transformation on Manufacturing, Infrastructure and Service»*, St. Petersburg.
- Zhilenkova, E., Budanova, M., Bulkhov, N., Rodionov, D. (2019), "Reproduction of intellectual capital in innovative-digital economy environment", *IOP Conference Series: Materials Science and Engineering*, Vol. 497, St. Petersburg.