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TRENDS OF DEVELOPMENT OF FINANCIAL AND ECONOMIC ACTIVITY OF ENTREPRENEURIAL STRUCTURES DURING THE PERIOD OF QUARANTINE RESTRICTIONS

Purpose. To study the impact of quarantine restrictions on the financial and economic performance of business structures.

Methodology. Both general and special methods of cognition were used in the study: system analysis, structural and functional method, comparison, synthesis, deduction, logical research, graphical way of presenting information.

Findings. The study revealed the impact of quarantine restrictions due to COVID-19 on the financial and economic activities of business structures and studied trends in the industry. A financial and economic analysis of the activity of enterprises, leaders of the international market in the chosen field of research is carried out. The data in the forecasts for the following periods have been adjusted to take into account the following factors: recognition of assets in the form of rights of use, separation of lease obligations, transfer of lease costs from operating expenses and depreciation assets in the form of rights of use. This made it possible to study the further development of new tools and their impact on future financial and economic performance of enterprises in quarantine conditions.

Originality. The analysis, estimation and forecast concerning financial and economic activity of business structures are given and the tendencies of development in the period of quarantine restrictions of COVID-19 are revealed. This analysis makes it possible to make a forecast for the following periods adjusted taking into account quarantine restrictions.

Practical value. The results of the study presented in this work can be used by economists, scientists and practitioners to develop and launch investment projects for enterprise development programs.

Keywords: *quarantine restrictions, COVID-19, financial analysis, business structure, profit, capital*

Introduction. Entrepreneurship is a complex socio-economic phenomenon and covers many sectors of the economy. Entrepreneurs can compete with big companies successfully, as they have certain competitive advantages: the lack of cumbersome management, the ability to quickly adapt to new market conditions, financial flexibility associated with the availability of tax benefits, and so on [1, 2].

The main purpose of financial and economic activities of the enterprise is to ensure the circulation of funds as a condition of uninterrupted operation, to make all necessary costs and payments and obtain financial gain. Identifying the causes of disruption of the normal cycle allows companies to make decisions about methods to eliminate them. Achieving such goals is ensured by the formation of capital and further provision of reasonable proportions in the accumulation and use of income and financial resources, as well as the creation of conditions for the fulfillment of obligations towards the state, buyers and suppliers.

The relevance of the study is due to the importance of financial work for the functioning of any enterprise, as an effectively formed system of financial relations allows enterprises to improve the financial performance of the enterprise.

However, during the quarantine period of COVID-19, small and medium enterprises have limited resources, cannot get a significant effect on the scale of production, and are vulnerable to unfair competition from large market players seeking to monopolize the market. In such conditions, businesses are forced to take a number of measures that will get the maximum competitive advantage at minimum cost.

The financial activity of the enterprise ensures and maintains its financial stability in the long run, which is its ability to function, receiving sufficient income for its own reproduction and timely fulfillment of all payment obligations. In this regard, it should be clarified that the company is financially stable if its activities provide [1]:

- return on assets not lower than the interest rate on bank loans;
- return on equity is not lower than return on assets;
- balance of cash inflows and outflows or positive net cash flow in the medium-term financial period;
- a sufficient amount of net profit and depreciation to achieve the reproduction of the productive potential of the enterprise.

Literature review. Domestic scientists have studied the financial and economic condition of the company: in their works, Pavlova, et al. [3], Chukurna, et al. [4] consider the assessment of financial and economic state of a company, which allows investors and partners to make sound business decisions; for this it is necessary to have methods of financial analysis and economic and mathematical methods that allow modeling any process based on internal and external factors.

Assessment of bankruptcy according to the financial statements of the entity is reflected in detail in the work by Savchenko and Blishchik [5]. Savchyn assesses the production, technical and financial stability of enterprises and recommends developing an organizational and economic mechanism for attracting foreign investors to improve the management system [6].

In [7, 8] it is recommended to monitor and quickly analyze the financial condition of the enterprise, taking into account industry characteristics; to improve information and methodological support of analysis and forms of financial reporting; to

adapt foreign methods of analysis of financial condition to the practice of economic entities.

Some authors [9, 10] suggest using the method for compiling projected financial statements based on forecasting financial and economic activities. The conditions of stabilization are determined by increasing the share of working capital in current assets; raising borrowed funds under the positive effect of financial leverage; reduction of balances of goods and materials by selling stocks that are not used in production.

Unsolved aspects of the problem. The issues of comprehensive study of the factors and consequences of the impact of quarantine restrictions on the business structures of the mining industry remain insufficiently studied today. In our opinion, there is a need to introduce methodological tools for impact assessment, as well as the development of analytical characteristics of the identified impact on the financial and economic performance of mining enterprises.

The purpose of the article is to study the impact of quarantine restrictions on the financial and economic performance of business structures.

Methods. The main research methods were the method of system analysis, structural and functional method, method of comparison, synthesis, deduction, logical research, graphical way of presenting information.

Results. The use of advanced technologies is becoming an important feature of the world's leading mining companies.

Automation processes are gaining momentum, as companies prefer to use technology to reduce operating and production costs. However, compared to many other industries, the level of technological maturity of mining enterprises is still relatively low [11].

Mining companies need to adopt best practices in digital technology. In our view, they also need to expand towards new technologies to address sustainable development, security and changing consumer sentiments. There is no denying that the benefits of digital leadership are significant for companies nowadays. The International Center for the Digital Impact of PwC has found out that revenue increases and costs decrease over time in companies that implement digital technologies [12].

An important point in the digitalization of the industry is that investment in technology should not stop at the entrance to the mine. Such measures include investments by coal mining companies in carbon capture and carbon dioxide storage technologies or the work of companies producing platinum group metals to commercialize technologies based on hydrogen fuel cells. Consideration of technology in the context of the entire supply chain not only shows a responsible approach, but also begins to form a culture of innovation [13, 14].

The mining industry supplies many types of raw and other materials needed for advanced technologies and products that are in demand among consumers. Like other sectors, the mining industry is responding to concerns about the environmental friendliness of these products. For example, Rio Tinto and Alcoa formed a joint venture with Apple to create the world's first zero-emission aluminum production [15].

RCS Global, in partnership with a number of organizations, uses the blockchain to validate the principles of responsible cobalt mining used in lithium-ion car batteries, with the possibility of further tracking [16, 17].

However, as a result of growing demand for the final products of the mining industry before the industry – and consumers – a dilemma arises. On the one hand, mining companies must increase production to support economically viable supplies of raw materials.

Mining companies must play a fundamental role in bridging the gap between the perception of the mining industry and the benefits it brings to society, including the younger generation, which includes future investors and workers. To do this,

they need to become more customer-oriented and begin to better understand the issues of brand building.

As there is no real alternative to the supply of important raw materials, mining companies need to articulate that important role in meeting the existing and future needs of customers.

Let us consider the main financial and economic performance of mining companies, using the example of the world's largest companies included in the list of 40 largest and try to predict the results for 2022. Our forecasts for 2022 show that revenue will remain stable, as slight increases in production and increases in average iron ore prices will be offset by lower prices for coal and copper. As we have assumed, operating costs will increase under the influence of inflation of purchase prices for production resources. As a result, profitability indicators will generally remain at the level of the current year.

Our forecast is based on performance data for previous years, as well as estimates of future values of key variables such as prices, production costs and cost of production resources.

The main results for the raw material – copper – include the price increase by 6% and revenue by 12%. More than half of the companies analyzed from the world's largest companies in this field extract copper either as a base metal or as a by-product/after-product. They account for about 55% of world copper production. Compared to the previous year, these companies increased copper production by almost 7% in response to increased demand.

In general, according to forecasts of copper producers, in 2022 the volume of production will decrease as due to the deterioration of the quality of extracted raw materials and rising costs it becomes increasingly difficult to meet existing demand. At the same time, new deposits and projects for processing ore with lower copper content are put into operation not fast enough to avoid shortages of supplies. Stock supplies are now at their lowest level in ten years, but this has not yet been reflected in copper prices.

The main results for the raw material – coal – include increase in price by 21% and revenue by 12%. Coal remains the raw material with the largest share in total revenue, 38% of the world's electricity is produced by coal-fired power plants. The coal production of the largest companies analyzed increased, although some companies sold their coal assets. Thus, Glencore and Yangzhou have acquired Australian coal assets Rio Tinto.

Payments under long-term guaranteed purchase agreements are often not made at spot prices, which explains the difference between revenue and price growth. It is expected that countries such as China, India and Southeast Asia as a whole will continue to use coal to meet their primary energy needs.

Thus, the rates of economic growth that exceed global indicators in these countries indicate that the demand for coal in the short and medium term will remain.

In the long run, the development of renewable energy will lead to a change in the energy balance, and it is expected that starting from 2023 coal consumption will stabilize.

The main results for the raw materials – iron ore – include: a decrease in price by 3%, revenue growth by 2%. The closure of deposits and power plants in China, caused by concerns about the environmental threat, contributed to increased demand for offshore supplies of coal and iron ore, and hence rising prices in 2017.

In 2018, the increase in iron ore production has met demand, so prices are expected to stabilize over time. The volume of iron ore production by companies increased due to the fact that Australian and Brazilian mining companies expanded the development of their deposits. However, the tragic collapse of the storage dam in Brumadinho led to a reduction in supplies in the first half of 2019.

The structure of the supply of raw materials in the future will be determined in part by changes in consumption patterns, new energy sources in the transition period of energy development and increasing use of technical devices.

The mining sector continues to supply the raw materials needed for the fourth industrial revolution. From lithium to copper, from tantalum ore to rare earth metals and from platinum group metals to cobalt – these metals increase the supply of new energy sources and electricity transmission, the development of energy storage solutions and the creation of various products for the final consumer.

However, their impact on the aggregate financial performance of leading mining companies will be translational rather than transformational, as for many years to come their production will remain insignificant compared to the production of basic commodities.

The focus is still on increasing productivity and reducing costs hindered by deterrents [18, 19]. Efficiency of production and costs will dominate as drivers of future growth in the strategies of top mining companies, but it is worthy of notice that it would be useful to introduce more financial instruments in this industry.

As earlier, there are coordinated efforts by companies to develop technology and increase investment in this area to create the “mining industry of the future”, when the use of technology will open up new opportunities, improve costs and ensure industrial safety.

We noted that the world’s largest companies have been able to save a total of more than \$ 12 billion in recent years by increasing productivity. Rio Tinto has formed three centers of excellence, which allowed receiving \$ 1.5 billion additional cash flow annually due to improved productivity, and Anglo American has committed to increase EBITDA by an additional \$ 3–4 billion until 2022.

As part of its strategic procurement transformation project, AngloGold Ashanti has taken current core revenues and expenditures to the next level (Fig. 1).

Assessing productivity and efficiency growth at leading mining companies this year has been a bit more difficult due to higher-than-expected inflation.

There is a shortage of qualified personnel in the mining industry, which is reflected in the list of key risks of some of the largest companies, and this deficit is manifested not only in production staff, but also in IT staff and marketers.

Much more investment is needed to recruit the staff with the right mix of skills to ensure sustainable development in the future. Top companies must constantly invest in higher and secondary special education of their employees. The mining industry needs to establish close alliances with other industries, such as the high technology and logistics sector, so that mining employees can gain the necessary additional skills.

As for other operating expenses in 2019, losses increased significantly due to exchange rate differences related to loans

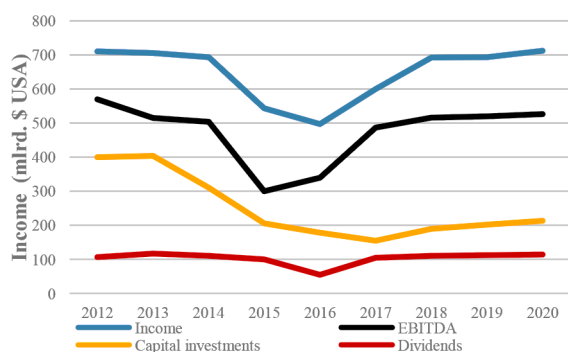


Fig. 1. Overview of income, capital investments and dividends of the world's largest mining companies (billion USD)

in US dollars in companies whose functional currency is the currency of developing countries. This is especially true of Vale, which acknowledged losses due to exchange rate differences in the amount of \$ 2.7 billion, and Norilsk Nickel, whose corresponding losses amounted to \$ 1 billion.

The amount of impairment reserves amounted to \$12 billion. The reserves were mainly related to agreements, and their appearance was caused by regulatory norms. Impairment of assets of Goldcorp (\$ 4.7 billion) and BHP Billiton (\$ 3.1 billion) appeared as a result of transactions where the selling price was below the book value of assets. Impairment losses of Glencore (\$ 1.6 billion) are related to copper mining assets in the Republic of the Congo and Zambia and changes in regulatory and tax requirements.

About half of the impairment losses of Barrick (\$ 0.9 billion) is due to rising state duties and rising electricity costs in Argentina. The market capitalization 1.4 times exceeds the amount of net assets, which is lower than the 1.7 ratio in 2019. Although the general financial situation does not indicate that there are still impairment losses, the net asset value exceeded their market capitalization in 12 of the world's 40 leading mining companies as of December 31, 2018. The number of such companies decreased to 10 by the end of 2019.

Return on invested capital and return on equity remained relatively stable with declining denominators, as significant dividend payments were made to shareholders and exchange rates declined in emerging markets by the end of the year.

Net cash inflows were \$ 16 billion (or 11 %) higher than in 2018 and \$ 3 billion higher than EBITDA, mainly due to a decrease of 5 billion receivables of enterprises of this group.

The amount of taxes paid was also \$ 5 billion higher than the cost of taxes according to the income statement. Expenditures on income tax of the largest enterprises in this industry decreased by 10 %, while taxes actually paid to the budget increased by 23 %.

This difference is due to the recognition of previously unrecognized deferred tax assets, as well as the impact of measures taken under US tax reform on last year's deferred tax data and the impact of large impairment losses on deferred tax.

First tier companies currently have a significant balance of unrecognized tax losses that could provide a future income tax benefit of approximately \$ 12.7 billion. It is noteworthy that of the top companies, Vale acknowledged a deferred tax asset of \$ 1.5 billion on the tax balance carried forward. It is possible that this approach marks the beginning of changes in the sphere of taxation, and in the future, it will be possible to see how other mining companies will be able to work using this example in cases when reimbursement of previously unrecognized deferred tax balances is expected. After a period of inactivity, mergers and acquisitions returned to the management of top

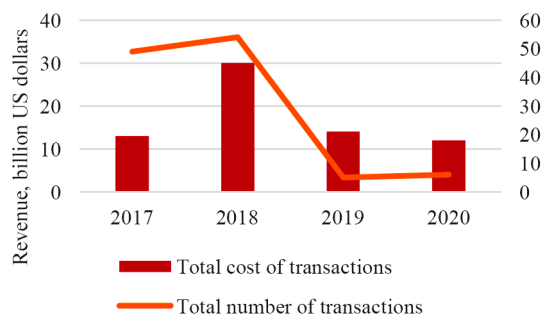


Fig. 2. Review of mergers and acquisitions of the world's largest mining companies (billion USD)

companies. In 2018, the value of the announced deals increased by 137 % to \$ 30 billion, which contributed to the surge in activity in the gold sector, the constant desire of mining companies to optimize their portfolios and the desire to acquire projects in the production of metals used in batteries to meet future demand.

As it was expected, interest in large transactions has resumed, and will continue this year: the value of transactions announced at the end of 2019 has already exceeded the value of all transactions announced in 2017 (Fig. 2).

Mining companies make the most of opportunities to optimize their portfolios and work with other large or medium-sized companies to obtain a synergy effect. For example, Rio Tinto's decision to withdraw from the coal market led to the sale of coal assets worth \$ 4 billion. Operating expenses increased by 8.6 %, well above headline inflation, and production increased only slightly.

The increase in operating expenses was mainly due to an increase in commodity prices by 12 %, an increase in freight and transportation costs by 11 % and remuneration of employees by 6 %.

With the growing popularity of electric vehicles and other mobile electrical devices, representatives of the top companies in the mining industry seek to ensure the supply of metals for batteries.

For example, the Chinese Tianqi Lithium acquired Sociedad Química from Minera de Chile S.A. (SQM) to provide itself with sufficient raw materials to develop lithium production in China. Thanks to the vertical integration after the acquisition of SQM, Tianqi receives cheaper raw materials for the production of lithium – metal that is needed in the production of batteries for electric vehicles.

Reducing the number of potential projects, decreasing the number of open deposits with a high content of precious metals and the lack of funding for young development companies are changing the situation in the gold mining sector. High fragmentation of the industry has led to inefficient allocation of capital and excessive competition for quality gold-bearing deposits in the development stage, the number of which is constantly declining.

These factors contribute to a new round of consolidation of the gold mining industry: in 2019 the value of transactions amounted to \$ 7 billion, in 2020 to date, \$ 14 billion worth of transactions were made. The share of transactions with gold mining assets in the total value of transactions of the top companies in the industry increased from 8 % in 2018 to 25 % in 2019 and approached 95 % in 2020.

Given the large deals on working with gold and copper assets, these figures are even higher. Following the merger, companies will start selling non-core assets, and medium-sized mining companies are encouraged to acquire some of them through mergers or joint ventures to increase their competitiveness and attractiveness to large investors.

Gold mining companies need to be careful about evaluating possible deals. All the benefits of the 2005–2012 mergers and acquisitions have now disappeared, and investors have not yet reacted to the effects of past deals when buyers overpaid for assets.

Mining companies need to demonstrate how much they need to secure the resources of the future and how they are able to respond quickly to new challenges in a rapidly changing world. They must use their strong financial position and ability to generate cash flow for difficult but important transformations with a focus on the low-carbon, high-tech and customer-oriented industries of the future. Investor sentiment is beginning to change, so it is time for mining companies to act.

In our analysis, we included indicators of leading companies from around the world, whose main activity is mining. The article summarizes the results of financial activities of mining companies, obtained from the financial statements of companies and annual reports to shareholders.

Companies have different end dates for the financial year, so they prepare and report in accordance with various accounting rules, including International Financial Reporting Standards (IFRS), US Generally Accepted Accounting Principles (US GAAP), and others. We have presented information for the financial year in individual companies, and no corrections for differences in reporting requirements and financial year end dates have been made.

Some diversified companies operate in spheres other than mining. For example, some Rio Tinto divisions operate in the aluminum market, and Glencore derives revenue from marketing and trading operations and incurs related costs. If the main business is not related to the mining industry, the companies were not included in the list for analysis.

All companies involved in future metal mining deals, such as Franco Nevada and Silver Wheaton, were not included in the top list.

The data presented in the forecast for 2022 are based on the performance of companies for previous periods, adjusted for a number of factors, including those briefly described below.

Profit and loss statement:

1. Deciphering of revenues by types of products in general corresponds to the data for 2020. We used price forecasts from a variety of sources, including data from the World Bank, the International Monetary Fund, and the consensus forecast of a large number of analysts.

2. Production increase data are based on forecasts provided by leading companies (if any) and production forecasts for the industry as a whole. As a result, overall production growth is expected to be around 2 %.

3. Forecasted indicators are extremely sensitive to commodity prices. As a guideline, it should be kept in mind that if actual prices are at a more conservative estimate of the expected range, revenue will fall to 3 % below 2019 and EBITDA will be even lower (as to 2018 level). On the contrary, if prices are in the upper limit of the expected range, then revenue will increase by more than 3 % and EBITDA – by 10 % (compared to 2019).

4. The forecast of operating costs is based on an estimate of the value of their components disclosed by top companies, with subsequent adjustments for expected growth according to sources such as the World Bank and the International Labor Organization (ILO), and also on the basis of the Baltic Freight Index forward rates.

5. Decrease in depreciation deductions reflects a decrease in the balance of fixed assets, partially offset by a small increase in expected production.

6. Net financial expenses decreased in line with the change in net debt.

7. The amount of income tax expenses was increased as a result of the use of the standardized effective tax rate for 2020 and its application to the calculation of pre-tax profit.

Statement of Cash Flows:

1. Cash inflows from operating activities were left at the level of 2020, as a slight expected increase; EBITDA was offset by projected working capital growth.

2. When forecasting cash flows from investing activities, it was assumed that fixed capital inflows would increase, taking into account the growth of EBITDA in the last two years and the rate of capital turnover compared to the current low level. We expect a decrease in cash outflows from other investment operations, taking into account the high level of investment in 2019.

3. Dividends are projected to remain at the same level, as the reduction in free cash will not increase them and shareholders do not expect them to decrease. Some top companies are pursuing an active policy of paying fixed dividends, which will maintain the level of dividends in the future, given the forecast of approximately the same profit for 2022.

4. Net outflows due to repayment of loans and borrowings will slow down because many of the companies analyzed have already solved the problem of excessive leverage and the loan-to-equity ratio has fallen below the ten-year average. The issue

of share capital is projected to decrease, reflecting the statements of many issuers of leading international mining companies that they have sufficient capital in the short term (in the absence of reports of new major projects).

Impact of changes in lease accounting (IFRS 16 and ASC 842), which came into force in 2019: we did not consider such an impact in the forecast to ensure comparability of data. However, the new standards affect the financial statements of the analyzed companies.

Our forecasts include:

- increase in balances on fixed assets in 2022 by 1–2 % due to the recognition of assets in the form of the right of use;

- 4–6 % increase in interest liabilities in 2022 due to the recognition of lease obligations and a corresponding increase in interest expenses;

- increase in EBITDA for 2022 by 1–2 % due to the transfer of rental costs from operating expenses;

- increase in depreciation deductions for 2022 by 4–6 % due to depreciation of assets in the form of the right of use.

A strategic approach is essential in order for a company to become a strong brand in an ever-changing market environment. It must take into account the state of the market, features and dynamics of consumer habits, the concept of consumer audience, which optimizes the commercial and marketing opportunities of the company.

Conclusions. Thus, the financial position of the enterprise is a concept that should be considered in the context of complexity, and its characteristics should be based on assessing the degree of efficiency of financial allocation, financial stability and solvency, sufficient financial base, the company's full working capital and organization calculations.

The analysis of the peculiarities of financial activity of enterprises showed that this is a specific activity aimed at timely and complete provision of the enterprise with financial resources to meet its reproductive needs, active investment activities and fulfillment of all its financial obligations.

The key role in the implementation of financial activities is played by such aspects of management as financial planning (affects all aspects of the business entity through the choice of financing, allocation of funds and promotes the rational use of material, labor and financial resources), operational management (which performs the task of permanent monitoring of the dynamics of changes in all significant positions on financial relations and flows) and control analytics (designed to monitor the performance of financial, cash, credit plans, as well as profit plans and give an objective assessment of these processes to improve activities of the enterprise in the future).

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Тренди розвитку фінансово-економічної діяльності підприємницьких структур у період карантинних обмежень

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Мета. Дослідити вплив карантинних обмежень на фінансово-економічний результат діяльності підприємницьких структур.

Методика. У дослідженні були використані як загальні, так і спеціальні методи пізнання: системний аналіз, структурно-функціональний метод, порівняння, синтез, дедукція, логічні дослідження, графічний спосіб подачі інформації.

Результати. У процесі дослідження виявлено вплив карантинних обмежень COVID-19 на фінансово-економічну діяльність підприємницьких структур і вивчені тренди розвитку галузі. Проведено фінансово-економічний аналіз діяльності підприємств, лідерів міжнародного ринку в обраній галузі дослідження. Дані, наведені у прогнозах на наступні періоди, були скориговані з урахуванням наступних факторів: визнання активів у формі права користування, виокремлення зобов'язань з оренди, перенесення витрат з оренди зі складу операційних витрат та амортизаційних активів у формі права користування. Що дало можливість ви-

вчення подальшого розвитку нових інструментів і їх впливу на майбутні фінансово-економічні результати діяльності підприємств у карантинних умовах господарювання.

Наукова новизна. Наведено аналіз, оцінку та прогноз щодо фінансово-економічної діяльності підприємницьких структур і виявлені тренди розвитку в період карантинних обмежень COVID-19. Даний аналіз дає можливість побудувати прогноз на наступні періоди, скоригований з урахуванням карантинних обмежень.

Практична значимість. Результати дослідження, висвітлені в даній роботі, можуть використовуватися економістами-науковцями та практиками для розробки й запуску інвестиційних проектів за програмами розвитку підприємств.

Ключові слова: карантинні обмеження, COVID-19, фінансовий аналіз, підприємницька структура, прибуток, капітал

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