

Comparative Analysis of Trends in the Development of Finance of Large Corporations in the Metallurgical and Coal Industries in Russia in the Context of Global Challenges



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Abstract. Since the beginning of the escalation of the Ukrainian situation, the Collective West has imposed an unprecedented number of sanctions against the Russian economy. Restrictions in international trade operations and, in some cases, their full termination have forced large domestic businesses to look for “friendly” markets and develop new logistics routes. And if at the end of the first half of 2022, the oil and gas industry has shown significant growth, some Russian corporations of metallurgy and coal industry were under a jeopardy. Despite favorable conditions in the first months of 2022, the financial results of the second quarter are expected to be much more modest. The fall in revenues of metallurgy and the coal industry from spring 2022 was influenced by higher transportation costs as a result of the turn to the East, insufficient capacity of the Baikal-Amur Mainline and Trans-Siberian Railway, sales of products

For citation: Pechenskaya-Polishchuk M.A., Malyshev M.K. (2023). Comparative analysis of trends in the development of finance of large corporations in the metallurgical and coal industries in Russia in the context of global challenges. *Economic and Social Changes: Facts, Trends, Forecast*, 16(1), 122–138. DOI: 10.15838/esc.2023.1.85.7

at a large discount to Asian consumers, and lower export revenues due to the strengthening of the ruble. All these factors will have a negative impact on the volume of the taxable base and revenues of regional budgets. The article was written using methods of vertical and horizontal data analysis, methods of comparison and forecasting, and the method of expert evaluations. The information base of the study was the domestic and foreign literature on the development of metallurgical and coal industries; financial statements and operating results of the largest Russian corporations of ferrous metallurgy (PJSC Severstal), nonferrous metallurgy (PJSC Nor Nickel) and coal industry (JSC CC Kuzbassrazrezugol); data of the Federal Tax Service in the Vologda and Kemerovo Oblasts, and Krasnoyarsk Krai; information of Forbes.ru; data of information and news portals.

Key words: sustainable development, ferrous metallurgy, nonferrous metallurgy, coal industry, global challenges, anti-Russian sanctions, socio-economic development of territories.

Acknowledgement

The article was prepared in accordance with the state task for VoIRC RAS on research topic no. FMGZ-2022-0012 “Drivers and methods of sustainable socio-economic development of territorial systems in changing conditions of the external and internal environment”.

Introduction to the problematics

Sustainable socio-economic development of RF constituent entities is impossible without growth and stability of the revenue base of regional budgets. In turn, the key taxes in the formation of regional revenues are income tax and personal income tax from large corporations. And while personal income tax deductions from large industrial businesses are increasing due to periodic indexation of company management, the value of profit tax is extremely unstable. We should note that it is influenced by such factors as volume, price and currency of product sales, the level of production cost in revenue, commercial and management expenses, tax benefits and regimes. In addition, all lines of companies' financial results depend on the presence or absence of sanctions.

We should say that since February 24, throughout 2022, the countries of the European Union and the United States, and their satellites, have imposed various economic restrictions and bans on Russia. The sanctions affected almost all economic spheres: cessation of international trade; withdrawal of foreign companies from the market; arrest of foreign exchange reserves; restrictions in the field of investment, etc. While in November

2021 – February 2022, the average dollar exchange rate was 73–77 rubles, by March 11, the price of the U.S. currency had risen to 120.38 rubles. However, no matter how much the Collective West would have wanted the dollar at 200 rubles¹, by April 9, the dollar had already fallen to 74.85 rubles (-37.8%). The key reasons for the strengthening of the Russian ruble were: the ban on exports of currency from the country of more than 10 thousand dollars; gas trade with unfriendly countries in rubles; the obligation for exporters to sell up to 80% of foreign currency earnings (*Fig. 1*).

After the April recovery, the ruble began to hit new records. Due to the loss of interest in and demand for the USD, caused by the impossibility to buy anything with it, and also due to the increased risk of holding this currency, because of Russia's gold reserves arrest², by June 30 the price of the

¹ Two hundred rubles for a dollar: What the ruble exchange rate may be by the end of the year. Available at: <https://www.forbes.ru/mneniya/460107-operacia-rubl-kak-v-2022-godu-politika-stala-opredelat-kurs-rossijskoj-valuty>

² The Minister of Finance announced the freezing of \$300 billion in foreign currency reserves due to sanctions. Available at: <https://www.rbc.ru/economics/13/03/2022/622dd6ee9a7947081b63341c>

Figure 1. Dynamics of the USD/RUB exchange rate from November 2021 till September 2022



Source: USD – exchange rate of the Central Bank of RF. Available at: <https://invest.yandex.ru/catalog/quote/usd-cbr/>

USD fell down to 51.16 rubles, which is 57.5% lower than the April maximum. However, such a strong ruble is not profitable not only for exporters and the Russian budget, but also for import-substituting companies, which are afraid of losing market share due to the appearance of cheap goods from foreign countries³. According to Vice-Premier A. Belousov, the optimal dollar exchange rate is in the range of 70–80 rubles⁴.

The purpose of the article is to determine the prospects and directions of development of large corporations in the metallurgical and coal industries of Russia in the current context of global challenges. Accordingly, it is necessary to solve the following tasks:

- 1) to analyze the dynamics of financial results of large companies, to evaluate production efficiency, commercial, managerial and tax burden;
- 2) to determine the contribution of companies in the formation of revenues of the budget system through tax deductions (profit tax, VAT, personal income tax and property tax);

³ The exchange rate is fake! Why the ruble strengthened despite the sanctions war. Available at: https://www.dp.ru/a/2022/10/14/Prioritet_zabota_o_paci

⁴ Belousov called a comfortable dollar rate for Russia. Available at: <https://www.rbc.ru/economics/16/06/2022/62aa59d59a79476e1177f1fc>

3) to identify key problems of effective combination of private and public interests;

4) to analyze the current situation in the metallurgical and coal industries in the new conditions of restrictions and market conditions;

5) to determine the prospects for the development of major companies in the face of sanctions and restrictions.

Large private corporations PJSC Severstal (ferrous metallurgy, Vologda Oblast), PJSC Nornickel (nonferrous metallurgy, Krasnoyarsk Krai) and JSC CC Kuzbassrazrezugol (coal industry, Kemerovo Oblast) constitute the object of the study.

Literature review on the subject of the research

Metallurgical industry

Researcher I.A. Budanov notes the inseparable influence of metallurgical production on the formation of socio-economic conditions in the country is noted. The author highlights the mainsocial functions carried out by metallurgy: maintenance of environmental safety at a proper level; improvement of working conditions of employees; participation in the development of local communities. The consequence of social expenditures of metallurgical companies is the public recognition of the results of their activities,

and the changes in the level of their capitalization (Budanov, 2021). P.A. Degtyarev notes that under the current conditions of tough sanctions restrictions, difficult access to capital markets, the intense fall of the Russian currency many enterprises of the industrial sector of the economy were faced with a difficult choice of priorities. The greatest success was achieved by those metallurgical companies that initially organically integrated environmental and social objectives into the overall development strategy (Degtyarev, 2022). Yu.Yu. Kostyukhin devoted his work to the strategic management of the Russian metallurgy in the face of challenges and risks. According to the author, sanctions against Russia will cause the need for greater concentration in the domestic steel market, and government support associated with the provision of various kinds of tax and other benefits (Kostyukhin, 2022).

The article by O.A. Romanova and D.V. Sirotin substantiates the importance and highlights the drivers of resilience of metallurgy in the new reality. The increasing role of structural policy in the basic sectors of the economy, particularly in metallurgy, with a focus on the intellectualization and servicization of production is noted (Romanova, Sirotin, 2022). According to D.V. Bazhenov, a leading analyst of the brokerage company Kit Finans, ferrous metallurgy is the most affected industry from the sanctions pressure as a result of the events in Ukraine. The fall in demand and steel prices, the strengthening of the Russian ruble, production decline, growth in supply chain costs and loss of markets will lead to a decrease in revenue and a lack of net profit. It is expected a negative free cash flow and growth of the debt burden, which will not allow Russian steelmakers to pay dividends soon. This, in turn, will lead to a negative revaluation of steel companies due to the downward dynamics of quotations (Bazhenov, 2022).

Over the years, scholars of RAS Vologda Research Center of have published numerous

articles and monographs concerning the interaction between the government and large corporations in the metallurgical industry, determining the role in the formation of budget revenues, the level of social responsibility, features of distribution policy and tax burden, giving the characteristics of export and import activities (Ilyin, Povarova, 2014–2019; Ilyin et al. (2021); Malyshev (2021); Pechenskaya-Polishchuk, Malyshev, 2021a; Pechenskaya-Polishchuk, Malyshev, 2021b; Pechenskaya-Polishchuk, Malyshev, 2022).

Coal industry

There are a significant number of publications on the Russian coal industry in the economic literature. For example, N.V. Vasil'eva analyzes the current state of the Russian coal industry in terms of production levels, exports, and price changes. The leading positions of the Russian Federation in production and export of coal are noted. Particular attention is paid to the global trend to reduce coal production due to environmental motives, which, in turn, negatively affects consumer demand (Vasil'eva, 2020). O.I. Khokhrina studies the issues affecting the transformation of the established model of development of Russia's leading coal mining center – Kuzbass – under the influence of external and internal risks. The author identifies five key factors of influence: decarbonization of the world economy; falling coal prices; the COVID-19 pandemic; long-term reduction of coal consumption in Russia; and the formation of new coal mining centers in eastern Russia. It is noted that as a result of the decrease in global demand for hydrocarbons, the volume of coal production in Kuzbass will fall by 70–100 million tons per year, which will provoke a deep socio-economic crisis in the region (Khokhrina, 2020). Scientists of Voronezh State Agrarian University tried to analyze the state and trends of development of the coal industry of the Russian Federation in the context of the transition of the global economy to carbon neutrality. In this case, the tool to achieve the goal will be a carbon tax, which will directly

affect the export of Russian hydrocarbons (oil, gas and coal). It is not easy for Russia to reorient itself to new markets in Asia; it needs serious investments in infrastructure to increase the capacity of the Trans-Siberian Railway and the Baikal-Amur Mainline (Salnikova, Grineva, 2022).

Review of English-language sources about the subject of the research

In the foreign economic literature, a considerable number of studies related to the events in Ukraine and the sanctions against Russia have already appeared. Thus, K. Mahlstein used CGE modeling to analyze the short- and medium-term economic consequences of the trade embargoes imposed by allied countries on Russia. The trade sanctions consider restrictions in imports, exports, and trade costs between Russia and non-allied countries. According to the researcher, the Russian economy would suffer significant losses, over 14% of real GDP. In addition, it is noted that Russia would have incurred much greater losses if it had accepted the counter-sanctions instead of accepting the fact that it was the object of sanctions (Mahlstein et al., 2022). P. Beauregard noted that transatlantic politicians were short-sighted and “were empowered by intense emotions”⁵ when adopting economic sanctions against Russia. According to the author, the scientific community of the EU and the U.S. understood the negative consequences of the implementation of various restrictions. Western economic experts predicted serious costs for several European countries and were surprised when the sanctions were eventually adopted. The incitement of EU countries by the U.S. to impose sanctions has caused tensions between these political “allies” (Beauregard, 2022). S.H. Allen notes that in response to the special operation, a wide range of countries imposed a series of sanctions against the Russian President and his supporters. However, according to the author,

⁵ EU and U.S. politicians.

the future success of sanctions in deterring Russia is highly doubtful, even though they are targeted. In addition, restrictive measures could affect prices worldwide (Allen, 2022).

We should also note the publication of Chinese scientists, who analyzed the business activity of the Russian Federation at night based on observations of nighttime lighting. The researchers found a correlation between economic sanctions and regional differences. As sanctions increased, lighting in Moscow, Saint Petersburg and provincial capitals, and industrial cities became brighter than in the rest of the country. However, under the sanctions, coverage of Russia’s mining regions was dimmer. Finally, areas close to the Chinese border recorded relatively more economic activity. The lights of Blagoveshchensk were brighter compared to the rest of the country (Li, Li., 2022). D. Siegel argues that U.S. sanctions were designed to change Russian foreign policy by exploiting the political conflict between the oligarchs and the government elite. However, after nearly eight years of sanctions, Russian elites seem more united than ever. The author believes that Russian oligarchs can sometimes show cohesion, especially when their wealth is threatened by external rather than internal sources (Siegel, 2022). A collective publication by Geneva and Washington researchers notes that as part of the sanction’s regime, the United States has announced the imposition of import duties on 570 product groups from Russia. The European Union may follow suit and impose sanctions on Russia that mirror U.S. sanctions in scale and scope. Using a partial equilibrium model, the researchers estimated the damage to the Russian economy at \$996 million per year. At the same time, the losses for the EU would be about \$150 million per year. Thus, in keeping with the spirit of international coordination and harmonization, the EU might consider adjusting the tariff sanctions package instead of simply adopting the U.S. package (Latipov et al., 2022).

Research methods

During the work, we used methods of dynamic (horizontal) and specific-weighted (vertical) data analysis. In addition, methods of comparison, forecasting, and the method of expert evaluations were used.

The information base of the study includes domestic literature on the development of the metallurgical and coal industries, and foreign publications describing the impact of sanctions on the economy of Russia and European countries. In addition, we used financial statements and operating results of the largest Russian corporations of ferrous metallurgy (PJSC Severstal), nonferrous metallurgy (PJSC Nor Nickel) and coal industry (JSC CC Kuzbassrazrezugol), data of the Federal Tax Service in the Vologda and Kemerovo oblasts, and Krasnoyarsk Krai, information from Forbes.ru website, data from information and news portals (Kommersant, RBC, Yandex Investments, Tinkoff magazine, Interfax, RIA Novosti).

Research results

The role of Russian metallurgy in the structure of GDP is small (about 5%), but very important because three basic sectors of the economy depend on metallurgy: industry, construction, and the fuel and energy complex, which together account for 58% of GDP⁶.

The coal industry makes a significant contribution to the economy of the Russian Federation, including the country's energy security. Even though its share in the structure of GDP is 1%, it provides more than 150 thousand jobs, the fate of about 140 large settlements (single-industry towns) depends on the development of coal mining. Production of a quarter of electricity and about 70% of steel products depends on the situation in the fuel and energy sector. Also coal is a valuable export commodity, it accounts for 3–4% of all revenues

⁶ Metallurgy became the basis for three industrial sectors that contribute 58% of GDP in total. Available at: <https://www.kommersant.ru/doc/3947600>

from export activities, and there are high hopes for the effect of the development of the industry⁷.

Speaking of the financial results of the corporations specified in the object of the study, we should note that in 2012–2021, the outpacing growth of revenue over cost of sales led to a decrease in its share by 20.5 p. p. at PJSC Severstal and by 30.2 p. p. at JSC CC Kuzbassrazrezugol. In general, Nor Nickel's cost of sales also decreased, but production suspension at Oktyabr'skii and Taimyrskii mines in 2021 due to waterlogging led to lower revenues and higher costs for elimination of the consequences. As a result, the share of expenses in the cost of production in revenue became 44.9%, which is 11.5 p.p. higher than in 2020. The total 10-year cost-to-income ratio for PJSC Severstal amounted to 2.62 trillion rubles, or 70.3% of its revenues, while costs as a percentage of revenues for PJSC Nor Nickel and JSC CC Kuzbassrazrezugol were 37.8 and 52.8%, respectively. This difference is due to the higher cost of products manufactured by Nor Nickel (*Tab. 1*).

In the first half of 2022, the average selling price of cast iron at PJSC Severstal decreased by 41%, the price of slabs decreased by 2,4-fold, the cost of hot-rolled and bar iron products decreased by 13 and 17% respectively relative to the 1st quarter⁸ (*Tab. 2*).

Speaking about the changes in nonferrous metals prices in the first half of 2022, we should note the growth of nickel prices by 47%, while copper prices increased by only 9%. The cost of precious metals such as platinum and palladium has decreased by 12% and 17% respectively in comparison with the same period of 2021⁹ (*Tab. 3*).

⁷ Prospects for the development of the coal industry in Russia: Export potential, financial situation, socio-economic effects. Available at: <https://www.csr.ru/upload/iblock/fd6/fd69a69529035a5127eb498dfcc7d565.pdf>

⁸ Semi-annual operating results of Severstal. Available at: <https://journal.tinkoff.ru/news/review-chmf-1h2022/>

⁹ Who paid the dividends. Review of Nor Nickel's results. Available at: <https://journal.tinkoff.ru/news/review-gmkn-2h2022/>

Table 1. Production efficiency of major corporations of ferrous, nonferrous metallurgy and coal industry in 2012–2021

Period	PJSC Severstal (Vologda Oblast)			PJSC Nor Nickel (Krasnoyarsk Krai)			JSC CC Kuzbassrazrezugol (Kemerovo Oblast)		
	Revenue	Cost	Share	Revenue	Cost	Share	Revenue	Cost	Share
	Billion rub.		%	Billion rub.		%	Billion rub.		%
2012	224	182	81.5	289	112	38.7	67	44	65.7
2013	213	174	81.8	273	119	43.5	52	41	78.4
2014	234	171	73.3	346	127	36.7	58	43	73.9
2015	279	187	67.0	401	124	31.1	73	48	65.7
2016	305	210	68.9	423	171	40.4	69	50	72.2
2017	360	261	72.7	456	187	41.1	86	56	65.7
2018	433	297	68.7	609	237	38.8	137	62	45.3
2019	458	349	76.3	878	292	33.2	151	69	45.6
2020	451	318	70.4	924	309	33.4	127	66	51.6
2021	770	470	61.0	856	384	44.9	264	93	35.5
Total for 2012–2021	3725	2620	70.3	5454	2062	37.8	1085	573	52.8
2021 to 2012	3.45-fold	2.58-fold	-20.5 p.p.	2.97-fold	3.44-fold	+6.2 p.p.	3.96-fold	2.14-fold	-30.2 p.p.

Source: Own compilation based on data of corporate financial reporting.

Table 2. Dynamics of sales prices of PJSC Severstal products in the first and second quarters of 2022

Products	1st quarter of 2022	2nd quarter of 2022	Change, fold
	thousand rubles per 1 ton		
Cast iron	41.9	24.7	0.59
Slabs	45.2	19.1	0.42
Hot-rolled steel	67.3	58.5	0.87
Bar iron	58.8	48.9	0.83

Source: Own calculation based on data from journal.tinkoff.ru

Table 3. Dynamics of PJSC Nor Nickel's product sales prices in the first half of 2021 and 2022

Heavy metals	1st half of 2021	1st half of 2022	Change, fold
	thousand dollars per oz.		
Nickel	17.6	25.9	1.47
Copper	8.9	9.7	1.09
Noble metals	1st half of 2021	1st half of 2022	Change, fold
	thousand dollars per oz.		
Palladium	2.5	2.2	0.88
Platinum	1.2	1	0.83

Source: Own calculation based on data from journal.tinkoff.ru

Over the last 10 years, the share of management expenses of PJSC Severstal and JSC CC Kuzbassrazrezugol decreased by 2.6 and 5.6 p.p., respectively, while PJSC Nornickel increased by only 0.3 p.p. The steel company has the best managerial efficiency, which is confirmed by the share of management expenses at 3.5% of total revenues. For the other two companies, the total management burden amounted to 5.5% and 6.4% of revenue, respectively.

Commercial expenses of PJSC Severstal increased by 3.6-fold, and its share in revenues increased by 0.2 p.p., in PJSC Nornickel expenses increased by 28%, and its share decreased by 3.3 p.p., in JSC CC Kuzbassrazrezugol commercial expenses increased by 26.6-fold, and the commercial load increased by 23.1 p.p. in comparison with the revenues. PJSC Nornickel has the best commercial efficiency – the total commercial expenses of the company for 10 years amounted to 1.9% of the total revenue, which is also associated with a higher added value of products and

lower costs for transportation and packaging due to lower production volumes. The steel and coal companies' commercial expenses for the period were 6 and 22.3%, respectively.

During 2019 and 2020, OJSC Russian Railways has repeatedly reported that coal companies do not meet the parameters formed by the development of the first phase of the Baikal-Amur and Trans-Siberian Mainlines' expansion. It was initially supposed that coal transportation from Kuzbass to the Eastern polygon will make up only 39 million tons by 2020; in fact, it reached 55 million tons in 2020. Transportation from deposits in Eastern Siberia and the Far East will be only 33 million tons instead of 65 million tons. As a result, OJSC "Russian Railways" lost about 7.3 billion rubles due to the imbalance of freight flows.

We should note that the growth of commercial and managerial burden of major private companies negatively affects both the state and the companies themselves due to the reduction of the taxable base and net profit (*Tab. 4*).

Table 4. Commercial and managerial burden of major corporations in the ferrous, nonferrous metallurgy and coal industries for 2012–2021

Period	PJSC Severstal (Vologda Oblast)				PJSC Nornickel (Krasnoyarsk Krai)				JSC CC Kuzbassrazrezugol (Kemerovo Oblast)			
	Selling expenses	Share	Management expenses	Share	Selling expenses	Share	Management expenses	Share	Selling expenses	Share	Management expenses	Share
	Billion rub.	%	Billion rub.	%	Billion rub.	%	Billion rub.	%	Billion rub.	%	Billion rub.	%
2012	13.9	6.2	11.8	5.3	16.6	5.8	15.7	5.4	2.7	4.0	6.1	9.2
2013	14.2	6.7	9.4	4.4	11.2	4.1	19.9	7.3	2.1	3.9	6.1	11.7
2014	13.8	5.9	8.8	3.8	8.5	2.5	17.4	5.0	3.6	6.2	5.3	9.1
2015	16.8	6.0	9.4	3.4	8.8	2.2	22.6	5.6	2.9	4.0	5.97	8.1
2016	15.6	5.1	11.4	3.7	9.0	2.1	25.8	6.1	2.7	4.0	6.6	9.5
2017	17.3	4.8	11.7	3.3	5.1	1.1	30.7	6.7	3.6	4.1	7.01	8.2
2018	21.6	5.0	12.8	3.0	6.7	1.1	37.9	6.2	32.3	23.6	7.6	5.6
2019	29.7	6.5	15.6	3.4	7.8	0.9	41.3	4.7	67.1	44.3	7.4	4.9
2020	31.7	7.0	18.4	4.1	8.1	0.9	41.8	4.5	59.9	47.0	8.2	6.5
2021	49.6	6.4	20.4	2.7	21.2	2.5	48.96	5.7	71.5	27.1	9.5	3.6
Total for 2012–2021	224.2	6.0	129.8	3.5	103.1	1.9	302	5.5	248.5	22.9	69.8	6.4
2021 to 2012	3.56-fold	+0.2 p.p.	1.74-fold	-2.6 p.p.	1.28-fold	-3.3 p.p.	3.12-fold	+0.3 p.p.	26.61-fold	+23.1 p.p.	1.56-fold	-5.6 p.p.

Source: Own compilation based on data of corporate financial reporting.

Profit before taxation of PJSC Severstal increased 19-fold, and the profit tax itself – 15.7-fold. For 10 years its volume amounted to 87 billion rubles, i.e. 8.9% of the total tax base of the company. The current tax rate has decreased by 2.4 p.p., from 14% in 2012 to 11.5% in 2021. PJSC Nor Nickel's total income tax was 0.5 trillion rubles, equivalent to 20.9% of total profit before tax. The tax rate was reduced by 8.8 p.p., from 28.1% to 19.4%. JSC CC Kuzbassrazrezugol's tax share in total revenue was 24.4% and increased by 4.3 p.p. over the period (Tab. 5).

When analyzing the data of the Federal Tax Service, the growth of profit tax receipts from PJSC Severstal to the budget of the Vologda Oblast was noted by 47.5-fold – from 0.69 to 32.5 billion rubles. It increased the contribution of ferrous metallurgy by 21.5 p.p. to the budget incomes and by 49.5 p.p. to the total incomes of profit tax. The profit tax from PJSC Nor Nickel to the budget of the Krasnoyarsk Krai was reduced by 76% – from 21.4 to 5.1 billion rubles. At the same time, the

contribution of profit tax to the budget revenues decreased by 10.8 p.p., while the share of profit tax in total revenues decreased by 38.3 p.p. Coal mining in the Kemerovo Oblast increased profit tax allocations 4.8-fold – from 9.6 to 46.3 billion rubles, the share in total revenues increased by 11.6 p.p., in the total profit tax by 7 p.p. (Tab. 6).

According to the analysis of corporations' calculations with the federal budget, for 10 years the total VAT refund in favor of ferrous metallurgy of the Vologda Oblast was 18 billion rubles, in favor of nonferrous metallurgy of the Krasnoyarsk Krai – 155 billion rubles. The coal industry of Kemerovo Oblast paid a total of 6 billion rubles of VAT to the budget system. Income tax receipts to the federal budget from PJSC Severstal exceeded the VAT refund costs by 17 billion rubles. The refund of VAT in favor of Nor Nickel exceeded the amount of profit tax paid to the federal budget by 108 billion rubles. Profit tax from coal mining was 33 billion rubles (Tab. 7).

Table 5. Income tax receipts to the federal budget and VAT from major corporations in the ferrous, nonferrous metallurgy and coal industries in 2012–2021

Period	PJSC Severstal (Vologda Oblast)			PJSC Nor Nickel (Krasnoyarsk Krai)			JSC CC Kuzbassrazrezugol (Kemerovo Oblast)		
	Profit before tax	Current income tax	Current income tax rate	Profit before tax	Current income tax	Current income tax rate	Profit before tax	Current income tax	Current income tax rate
	Billion rub.		%	Billion rub.		%	Billion rub.		%
2012	16.3	2.3	14.0	99.3	27.9	28.1	12.7	2.3	17.8
2013	9.2	0.0	0.0	97.7	19.8	20.3	-1.8	0.0	0.0
2014	-37.7	0.0	0.0	64.2	24.4	38.0	-13.3	0.0	0.0
2015	44.3	0.0	0.0	171.6	24.9	14.5	5.0	0.8	16.7
2016	106.5	6.8	6.4	166.7	43.5	26.1	3.6	0.2	6.1
2017	146.0	6.5	4.5	173.0	37.6	21.7	12.3	1.0	8.3
2018	138.4	14.1	10.2	211.9	46.0	21.7	30.9	4.4	14.1
2019	119.7	14.5	12.1	625.4	110.7	17.7	0.5	0.9	185.7
2020	122.4	7.1	5.8	382.9	87.8	22.9	-8.5	2.2	-25.8
2021	310.8	35.8	11.5	386.0	74.7	19.4	72.1	15.9	22.1
Total for 2012–2021	976	87	8.9	2379	497	20.9	113	28	24.4
2021 to 2012	19.02-fold	15.72-fold	-2.4 p.p.	3.89-fold	2.67-fold	-8.8 p.p.	5.68-fold	7.04-fold	+4.3 p.p.

Source: Own compilation based on data of corporate financial reporting.

Table 6. Income tax receipts from major corporations in the ferrous, nonferrous metallurgy and coal industries to the budgets of the base regions in 2012–2021

Period	PJSC Severstal (Vologda Oblast)			PJSC Nornickel (Krasnoyarsk Krai)			JSC CC Kuzbassrazrezugol (Kemerovo Oblast)		
	Income tax to the regional budget	Share in total budget revenues	Share in total income tax	Income tax to the regional budget	Share in total budget revenues	Share in total income tax	Income tax to the regional budget	Share in total budget revenues	Share in total income tax
	Billion rub.	%	%	Billion rub.	%	%	Billion rub.	%	%
2012	0.69	1.3	6.3	21.4	12.1	40.7	9.6	7.9	39.1
2013	0.77	1.4	12.8	15.4	8.8	36.2	2.2	2.0	14.8
2014	0.61	1.1	8.0	26.4	13.8	53.1	3.6	2.8	18.5
2015	0.36	0.6	5.5	30.9	14.6	46.5	7.7	5.8	33.4
2016	2.6	3.9	22.6	24.2	10.8	33.1	8.3	6.1	32.5
2017	5.5	7.6	35.4	25.9	10.6	32.9	26.8	16.0	53.3
2018	13.4	15.0	54.0	0.35	0.1	0.4	33.5	16.4	50.1
2019	12.9	12.3	49.1	1.9	0.6	1.4	21.0	10.8	42.1
2020	8.3	7.2	44.1	2.9	0.9	2.4	7.1	3.5	23.4
2021	32.5	22.8	55.8	5.1	1.3	2.3	46.3	19.5	46.0
Total for 2012–2021	78	9.5	41.7	155	7.5	6.0	166	10.2	41.0
2021 to 2012	47.44-fold	+21.5 p.p.	+49.5 p.p.	0.24-fold	-10.8 p.p.	-38.3 p.p.	4.82-fold	+11.6 p.p.	+7.0 p.p.

Source: Own calculation based on data from the Federal Tax Service.

Table 7. Income tax receipts to the federal budget and VAT from major corporations in the ferrous, nonferrous metallurgy and coal industries in 2012–2021

Period	PJSC Severstal (Vologda Oblast)			PJSC Nornickel (Krasnoyarsk Krai)			JSC CC Kuzbassrazrezugol (Kemerovo Oblast)		
	Income tax to the federal budget	VAT	Sum	Income tax to the federal budget	VAT	Sum	Income tax to the federal budget	VAT	Sum
	Billion rub.			Billion rub.			Billion rub.		
2012	0.89	-0.59	0.3	6.1	-16.6	-10.5	1.7	-0.5	1.2
2013	0.57	-2.93	-2.4	9.0	-28.1	-19.1	0.3	-6.2	-5.9
2014	1.6	1.5	3.2	3.9	-26.4	-22.5	0.4	-5.4	-4.9
2015	1.6	5.8	7.4	4.5	-31.6	-27.1	0.7	-2.4	-1.7
2016	1.8	3.5	5.3	0.5	-27.5	-27.0	1.2	-3.8	-2.6
2017	5.9	0.5	6.4	1.8	-26.4	-24.7	5.8	10.9	16.7
2018	4.4	1.2	5.6	5.0	-32.5	-27.6	7.1	10.0	17.1
2019	3.9	-3.8	0.0	6.2	-8.4	-2.3	3.9	-1.9	2.0
2020	2.6	-11.1	-8.5	5.9	42.5	48.4	1.5	-10.2	-8.7
2021	11.0	-11.9	-0.9	4.1	-0.3	3.8	10.5	15.8	26.3
Total for 2012–2021	34	-18	17	47	-155	-108	33	6	39
2021 to 2012	12.39-fold	20.24-fold	x	0.67-fold	0.02-fold	x	6.09-fold	x	21.72-fold

Source: Own calculation based on data from the Federal Tax Service.

In the period 2012–2021 there was a characteristic increase in personal income tax revenues by 2.23-fold from ferrous metallurgy in the Vologda Oblast, by 2.15-fold from nonferrous metallurgy in Krasnoyarsk Krai and by 81% from coal mining in the Kemerovo Oblast. Such a change indicates the growth of salaries in these industries. However, the reason why the growth rate of personal income tax in metallurgy is 2.65–2.75-fold higher than in coal mining sector is the successful modernization of coal mining companies, which leads to a permanent reduction in their need for labor resources. The redundant workers are forced to look for jobs in much less prosperous industries, which causes more problems for both the population and the

regional authorities (Ivanter et al., 2018). The growth of personal income tax revenues led to an increase in the contribution of industries in the total personal income tax of each region by 1.2–2.3 p.p. Property tax decreased by 31% from PJSC Severstal, and its share in the total property tax for the region fell by 7.8 p.p. Property tax from nonferrous metallurgy and coal mining increased by 32 and 22% respectively, but its share decreased by 2.1 and 2.6 p.p. (Tab. 8).

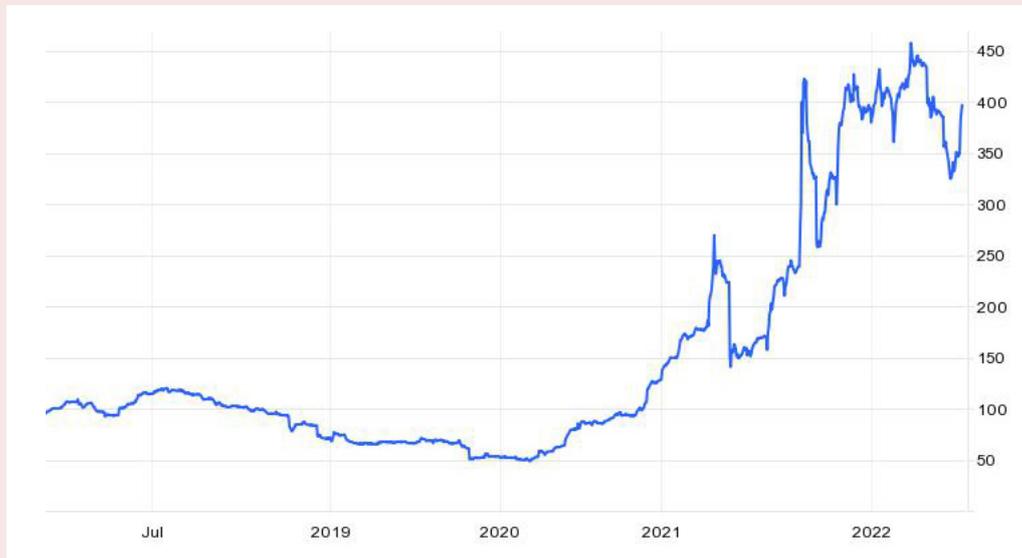
Of course, the sanctions also affected the tax payments of these corporations to the budget system of the country. In the first half of 2022, profit tax receipts from PJSC Severstal to the budget system amounted to 14.5 billion rubles, which is 18% less compared with the same period of 2021.

Table 8. Personal income tax and property tax receipts from major corporations of the ferrous, nonferrous metallurgy and coal industries to the budgets of the base regions for 2012–2021

Period	PJSC Severstal (Vologda Oblast)				PJSC Nornickel (Krasnoyarsk Krai)				JSC CC Kuzbassrazrezugol (Kemerovo Oblast)			
	PIT	Share	Property tax	Share	PIT	Share	Property tax	Share	PIT	Share	Property tax	Share
	Million rub.	%	Million rub.	%	Million rub.	%	Million rub.	%	Million rub.	%	Million rub.	%
2012	1.7	10.3	1.1	14.3	3.8	7.8	2.1	13.1	6.5	17.6	3.5	40.6
2013	1.7	10.2	1.3	13.0	4.4	8.1	2.3	11.6	6.7	17.8	4.3	43.0
2014	1.8	10.4	1.0	10.2	4.6	8.2	2.4	12.8	6.6	15.6	3.5	39.7
2015	2.2	12.8	1.3	10.9	5.2	9.2	2.6	11.8	6.9	17.7	4.6	44.5
2016	2.5	13.4	1.2	9.5	5.4	8.8	2.5	10.6	7.4	18.8	3.1	36.4
2017	2.8	14.0	1.2	8.7	6.6	10.3	3.5	13.9	8.6	19.9	3.5	38.6
2018	3.0	13.9	1.1	7.0	6.4	9.1	3.9	13.7	10.9	21.5	5.0	40.6
2019	3.0	12.6	0.8	5.3	7.0	9.1	3.5	13.4	10.6	19.4	3.7	36.1
2020	3.2	11.9	0.6	5.8	7.0	8.4	2.6	10.9	9.7	17.7	3.9	38.4
2021	3.7	12.6	0.7	6.5	8.3	9.0	2.7	11.1	11.8	19.2	4.3	38.0
Total for 2012–2021	25	12.3	10	8.7	59	8.9	28	12.3	86	18.7	40	39.6
2021 to 2012	2.23-fold	+2.3 p.p.	0.69-fold	-7.8 p.p.	2.15-fold	+1.2 p.p.	1.32-fold	-2.1 p.p.	1.81-fold	+1.5 p.p.	1.22-fold	-2.6 p.p.

Source: Own calculation based on data from the Federal Tax Service.

Figure 2. Dynamics of average prices for coal per 1 ton from July 2018 to December 2022, USD



Source: Coal – Futures Contract – Prices. Available at: <https://ru.tradingeconomics.com/commodity/coal>

Profit tax from nonferrous metallurgy in Krasnoyarsk Krai decreased by 20% – from 6.6 to 5.3 billion rubles, mainly due to a fourfold increase in other expenses of PJSC Nor Nickel and the growth in management expenses and interest payable by 60 and 88%, respectively.

The 13.7-fold growth of Kemerovo Oblast's coal production tax is due to an intensive increase in coal supplies to India and China. Deliveries of coal anthracite to India increased by 1,300-fold and reached 419 thousand tons. Exports of coking coal increased 1,400-fold and reached 572 thousand tons. It is worth mentioning that Russia supplies coal to India at a discount of up to 50% because the ban on trade with the European Union forced to redirect 36.6% of coal production (63 out of 172 million tons of coal). Coal supplies from Russia to China in the first 10 months of 2022 amounted to 53 million tons, which is approximately 23% of China's total imports. According to the General Customs Administration of the PRC, coal imports from

Russia to China in 2022 increased by 57% compared to 2021. In August, Beijing purchased \$1.4 billion worth of coal from the Russian Federation, twice as much as during the same period in 2021.

In addition to the intensive increase of coal supplies to the largest Asian countries, the growth of income tax is inextricably linked to an increase in prices for this raw material. Thus, in the first 11 months of 2022 the price of coal rose 2.5-fold, from \$157 to \$397 per ton (Fig. 2).

The increase in personal income tax receipts from ferrous metallurgy in the Vologda Oblast was 12%, from nonferrous metallurgy in Krasnoyarsk Krai – 61% and from coal mining in the Kemerovo Oblast – 45%. Such changes are associated with periodic indexation of the payroll, as well as an increase in the number of personnel. For example, in 2021, the number of employees in the Russian production segment of Norilsk Nickel grew by 2.3% against 2020. Moreover, according to PJSC Nor Nickel's corporate management, the number of

Table 9. Comparative analysis of tax revenues from ferrous, nonferrous metallurgy and coal corporations to the budget system for the first half of 2021 and 2022

Corporation (region)	Income tax			PIT		
	1st half of 2021	1st half of 2022	Change	1st half of 2021	1st half of 2022	Change
	Billion rub.			Billion rub.		
PJSC Severstal (Vologda Oblast)	17.7	14.5	0.82	1.7	1.9	1.12
PJSC Nor Nickel (Krasnoyarsk Krai)	6.6	5.3	0.80	4.6	7.4	1.61
JSC UK Kuzbassrazrezugol (Kemerovo Oblast)	6.9	94.6	13.71	5.3	7.7	1.45
Corporation (region)	VAT			Severance taxes		
	1st half of 2021	1st half of 2022	Change	1st half of 2021	1st half of 2022	Change
	Billion rub.			Billion rub.		
PJSC Severstal (Vologda Oblast)	-9.4	-0.317	0.03	0.0036	0.013	3.61
PJSC Nor Nickel (Krasnoyarsk Krai)	5.8	-6.1	x	12.6	40.9	3.25
JSC UK Kuzbassrazrezugol (Kemerovo Oblast)	1.3	52.8	40.62	3.5	17.8	5.09

Source: Own calculation based on data from the Federal Tax Service.

employees in project offices by 2023 should reach 2.9 thousand people, which is 2.3-fold more than in 2019¹⁰.

The cessation of steel products exports to the EU from PJSC Severstal led to a 31.3-fold reduction of VAT refundable from the federal budget. While over the first 6 months of 2021 the steelmaker's VAT refund amounted to 9.4 billion rubles, by the end of the first half of 2022, its amount was only 317 million rubles. VAT payments to the budget from Nor Nickel in the amount of 5.8 billion rubles have been replaced with a refund of 6.1 billion rubles in favor of the company. VAT receipts from the Kemerovo Oblast's coal industry increased 40.6-fold.

Speaking about the dynamics of severance tax, we should note that there are no coal mines and surface mines in the Vologda Oblast, and the

activity of PJSC Severstal, despite the inclusion of Vorkutaugol until December 2021¹¹, is associated mainly with the production of steel and ferroalloys, so the value of severance tax in the first half of 2022 from the company was only 13 million rubles, which is 3.6-fold more than in the previous period. Severance tax revenues from nonferrous metallurgy in Krasnoyarsk Krai increased 3.3-fold – from 12.6 to 40.9 billion rubles. The growth of this tax from coal mining in the Kemerovo Oblast was 5.1-fold – from 3.5 to 17.8 billion rubles. The increase of severance tax revenues from metallurgy was achieved through application of 3.5 rent coefficient¹². Such measures were introduced due to the desire of the government to withdraw part of the super incomes of metallurgists, obtained due to the growth of metal prices on the world market (Tab. 9).

¹⁰ Annual Report 2021 of PJSC Nor Nickel's. Strategic Report. Expansion of the investment cycle. Available at: https://www.nornickel.ru/upload/iblock/53b/k7mqjhb1n9o0y8eieu0adzgn3b98z8xg/NN_AR_2021_Book_RUS_26.09.22.pdf

¹¹ Severstal drops coal. Available at: <https://www.kommersant.ru/doc/5103528>

¹² The State Duma raised the mineral extraction tax for metals and mineral fertilizers 3.5-fold. Available at: <https://www.interfax.ru/business/729337>

In September 2022, the Russian Finance Ministry decided to ease the burden on the steel sector, which has lost its marginal European market and is trying to find new export destinations. The cut-off price when levying excise tax on steel will be increased to 30 thousand rubles per ton instead of \$300 retroactively from August 1. Besides, the Ministry is also planning a temporary increase of severance tax only on coal from January 1 to March 31, 2023: rates for anthracite, coking coal and steam coal will increase by 380 rubles per ton. This will bring an additional 30 billion rubles a year into the budget¹³.

Bans on coal supplies from Russia to Europe have led to increased consumption of more expensive Australian coal. In addition, it is worth noting that the EU has been actively fighting against coal mines in recent years, considering them unprofitable and environment-unfriendly. For example, the last mine in Germany was ceremonially closed in 2019, and now, instead of feeding its own miners, the EU is feeding Australian ones. In response to the ban on Russian coal imports to the EU, Russia redirected the released volumes to the Asian market, primarily China and India. However, one of the main problems of the turn to the East is the underdeveloped transport infrastructure of central and eastern Siberia¹⁴.

To conclude the study, let us identify the key prospects for the development of the metallurgical and coal industries in Russia under current conditions. For the development of the metallurgical and coal industries it is extremely important effective interaction between the authorities and corporations, which can be achieved by implementing the following measures.

¹³ Coal will take a beating. Available at: <https://www.kommersant.ru/doc/5581349>

¹⁴ A 180-degree turn. The West decides to give Russia a chance to get rich. Available at: <https://ria.ru/20220827/ugol-1812396247.html>

1. Increasing the attractiveness and reliability of special administrative areas¹⁵, and intensifying incentives for global Russian companies to move to Russian jurisdiction will attract capital and investment into the Russian economy, form favorable financial and administrative conditions for business development, and stop the outflow of capital from Russia.

The existing conditions offered by Russian SARs are quite attractive: confidential ownership and management of companies, the possibility of applying the rules of foreign law, the possibility of expressing the nominal value of shares of an international company in foreign currency¹⁶.

In addition, the following tax incentives apply in the SAR: dividends received by an international holding company are subject to income tax at a zero rate; dividends paid by an international holding company to foreign persons are subject to income tax at the rate of 5%¹⁷. Minister of Economic Development of Russia Maksim Reshetnikov said that in the 5 months of 2022 there were 26 companies registered in the SAR. They are often the head structures of large holdings, and their redomiciliation in Russia is the stability of management of Russian business, the preservation of jobs and the continuation of investment projects¹⁸.

¹⁵ The Special Administrative Region (SAR) is an area with a flexible tax and currency regulation regime for companies that decide to transfer from a foreign jurisdiction to a Russian one.

¹⁶ Advantages for residents of special administrative regions. Available at: https://www.economy.gov.ru/material/directions/investicionnaya_deyatelnost/specialnye_administrativnye_rayony/preimushchestva_dlya_rezidentov_sar/

¹⁷ Tax incentives for residents of special administrative regions. Available at: https://www.consultant.ru/document/cons_doc_LAW_303607/dbf5d9a352f7ee61b5842d7cf24d753d8458d463/

¹⁸ Maksim Reshetnikov reported on the registration of 26 new companies in the SAR of the RF in the first 5 months of 2022. Available at: https://www.economy.gov.ru/material/news/maksim_reshetnikov_sobshchil_o_registracii_26_novyh_kompaniy_v_specialnyh_administrativnyh_rayonah_rf_za_5_mesyacev_2022_goda.html

2. *Providing inspection agencies with the ability to bring representatives of private companies to administrative (criminal) liability in case of their refusal or resistance when trying to check the condition of industrial hazardous facilities.*

As an example, we can cite the situation with Nor Nickel, where Rostekhnadzor since 2016 has had no access to the tank from which the fuel subsequently spilled. By decision of the administration of Norilsk-Taimyr Energy Company (NTEC), the tank was taken out of service, and in this case Rostekhnadzor had no opportunity to inspect the facility. According to NTEC's annual production control reports, this tank continued to be under repair¹⁹. Also, in 2020, an unscheduled inspection at one of PJSC Nor Nickel's subsidiaries revealed 139 violations of mandatory requirements²⁰.

3. *Development of import substitution and domestic demand for the products of these companies, which will support export-oriented business under the ban on trade with unfriendly countries, and the strong ruble.*

This requires an ambitious plan for the gradual development of a more knowledge-intensive industry in the country, and the development of state support measures to facilitate the transition of Russian metallurgy to higher-value-added production. It is important to note that over the

past eight years the average cost of imported tons of nonferrous metals has been significantly higher than of exported (Pechenskaya-Polishchuk, Malyshev, 2022). Thus, by developing and introducing new technologies and equipment, it is possible to increase the level of income of metallurgical companies, which will favorably affect both business and the state.

We would like to pay special attention to the released volumes of steel products and further loading of domestic steelmaking facilities through domestic demand. In a situation when the European market is closed, the government and steel corporations should think about the development of railway infrastructure in the Asian direction, since the capacity of the Baikal-Amur Mainline and the Trans-Siberian Railway is not enough now. Considering that 1 km of rail track weighs 130 tons, the construction of 1,000 km of two-way railroad will require 260,000 tons of rails. Meanwhile, the construction of new branches and expansion of the Asian-Russian railroads network will lead to new joint projects, growth of trade turnover and development of tourism. Also, the production of additional units of freight cars, mainly for the coal industry, will increase the workload of the Russian steel industry.

Besides increasing production to meet the needs of Russian Railways, it is necessary to expand domestic production of metal-intensive products in general, including ships, machine, cars, road and construction equipment, etc. This is especially relevant for PJSC Severstal, which specializes more in rolled sheet products.

¹⁹ Rostekhnadzor has not inspected Nor Nickel's emergency reservoir for five years. Available at: <https://www.rbc.ru/business/05/06/2020/5eda7e429a7947585eac5b7e>

²⁰ WWF-Russia review "Disputable situations, accidents and incidents at Russian mining enterprises in 2020 PJSC MMC Norilsk Nickel". Available at: <https://wwf.ru/upload/iblock/511/NORNIKEL-2020.pdf>

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Received November 1, 2022.