

ORIGINAL PAPER



DOI: 10.26794/2304-022X-2022-12-2-21-32

UDC 338.4:621.6(045)

JEL L16

Strategic Management of Russian Metallurgy in the Context of Challenges and Risks

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ABSTRACT

The subject of the study is Russian metallurgical companies, which in the context of the transformation of the economy, taking into account the difficult geopolitical situation, need to move from a recovery strategy to a strategy of progressive growth. The latter, taking into account the factors that ensure the success of Russian companies in the metal market, should become a tool for effective management, as well as for predicting business risks. The article presents the risk-dominating elements and macroeconomic indicators for building an effective strategy for the development of enterprises in the metallurgical industry, which will allow for a comprehensive assessment of the situation and making rational and effective management decisions to increase the competitiveness of companies, their adaptability to modern factors of the external environment, the growth of economic potential and capitalization. The peculiarity of the study is to identify the dominant factors of entrepreneurial risk and improve ways to increase the investment attractiveness of the company.

Keywords: ferrous metallurgy; geopolitics; capital; efficiency; environmental, social and management factors; progressive growth; strategy

For citation: Kostyukhin Yu. Yu. Strategic management of Russian metallurgy in the context of challenges and risks. *Management Sciences*. 2022;12(2):21-32. DOI: 10.26794/2304-022X-2022-12-2-21-32

INTRODUCTION

Geopolitical situation, sanctions and anti-sanctions, disruption of logistics supply chains of finished products, raw materials and energy, environmental constraints are affect the performance of industrial enterprises, causing enormous damage to the global economic market. This results in high volatility of metal prices that reflected in its entire technological and production chain. Since 2017, the ferrous metallurgy has entered the current renaissance period. The main reason was the global increase in demand for metal products, which significantly increased both its prices and production volumes [1]. At the same time, under the conditions of the pandemic in 2019, the metallurgy managed to maintain a high growth rate, which was primarily due to the development of the Chinese economy.

According to World Steel Association (WSA),¹ world steel production for 2020 amounted to 1 878 mln tons, which is almost in line with the level of 2019 (1 874 mln tons). The maintenance of steel production during the pandemic was primarily due to an increase in steel smelting in China (on 69.4 mln tons).

As seen from the *table 1*, steel smelting change was uneven: in different countries, it was heavily influenced by the constraints imposed by the pandemic.

The largest reduction in output occurred in the USA (–17.2%), Japan (–16.2%), India (–10%), Germany (–9.8%). In the Russia, it remained practically unchanged. At the same time, significant growth occurred in China (+7%), Turkey (+6.2%), Iran (+13.3%). From the changes in positions in the rating can be provide India, who took the 2nd place instead of the 3rd, South Korea, ranked 5th and ahead

of Russia, as well as Iran, which is in the top-10 manufacturers, in the world ahead of Italy and Vietnam, in 17th place, ahead of Poland and Canada and approaching to Spain.

Statistics for metal exporting and importing countries are given in *table 2 and 3*.

As seen from the *table 2*, China has become a major producer, importer and exporter of ferrous metals; Russia became the second country in the world to export, taking advantage in 2020 of the opportunities that appeared during the pandemic; India is gradually improving its trade balance in this area through development of metallurgy (*табл. 3*).

Analysis of the data presented in the *table 2 and 3* shows that the feature of the Russian metallurgy is its high export orientation. If the Russian Federation is ranked 6th place in the world for steel smelting, how the net-exporter is consistently in the top three: Russia took the 1st place in terms of exports of metal products in 2020, which indicates a high degree of involvement of this industry in the world economy.

ESSENCE OF THE PROBLEM

The Russian steel market has traditionally followed world trends. Over the last ten years and to date, metallurgical enterprises have taken leading positions in the rating of 400 largest companies in the country: according to the data of analytical center “Expert”, in 2020 PJSC “Nornikel” was at the 11th position, group “EurAZ” — on the 18th, Novolipetsk Metallurgical Combine (PJSC “NLMK”) — on the 20th, Incorporated Company “RUSAL” — on the 21th, PJSC “Severstal” — on the 26th, LLC “Metalloinvest” — on the 30th, PJSC “Magnitogorsky Metallurgical Plant” — on the 31th and Pipe Metallurgical Company (PMC) — on the 31th place.²

¹ World Steel Association (WSA). URL: https://worldsteel.org/steel-by-topic/statistics/annual-production-steel-data/P1_crude_steel_total_pub/CHN/IND/WORLD_ALL

² Analytical Center “Expert”. Steel Technology Platform. URL: <https://expert.ru/expert/2021/43/spetsdoklad/41/> (accessed on 08.03.2022).

Table 1

Crude steel volume became the world's largest producers, mln tons

Rank	Country	2018	2019	2020	Growth rate 2019/2018	Growth rate 2020/2019
1	China	928.3	995.4	1064.8	+7.2%	+7.0%
2	India	106.5	111.4	100.3	+4.6%	-10.0%
3	Japan	104.3	99.3	83.2	-4.8%	-16.2%
4	USA	86.7	87.8	72.7	+1.3%	-17.2%
5	South Korea	72.5	71.4	67.1	-1.5%	-6.0%
6	Russia	71.7	71.7	71.6	0%	-0.1%
7	Germany	42.4	39.6	35.7	-6.6%	-9.8%
8	Turkey	37.3	33.7	35.8	-9.7%	+6.2%
9	Brazil	34.7	32.6	31.0	-6.1%	-4.9%
10	Iran	25.0	25.6	29.0	+2.4%	+13.3%

Source: compiled by the author based on [1].

Table 2

Countries, the largest net-exporters and net-importers of steel products, mln tons / place in the rating

Exporting countries			Importing countries		
Country	2020	2015	Country	2020	2015
China	51.4/1	111.6/1	China	37.9/1	13.2/10
Russia	31.5/2	28.8/4	USA	19.9/2	36.5/1
Japan	29.8/3	40.8/2	Germany	18.2/3	24.8/2
Republic of Korea	27.6/4	31.2/3	Italy	15.5/4	19.9/4
Germany	21.2/5	25.1/5	Vietnam	13.7/5	16.3/6
Turkey	18.5/6	15.0/9	Thailand	13.1/6	14.6/7
India	17.1/7	No data	Turkey	12.5/7	18.6/5
France	18.2/8	14.0/10	France	11.8/8	13.7/8
Ukraine	15.2/9	17.7/6	Republic of Korea	11.5/9	21.7/3
Italy	14.9/10	16.5/7	Poland	10.8/10	No data
Belgium	12.9/11	15.2/8	Belgium	10.4/11	12.1/12
Brazil	10.6/12	13.7/11	Mexico	6.8/13	12.7/11
Taiwan (China)	10.0/14	11.2/12	Indonesia	5.7/23	11.4/13
Netherlands	8.3/16	10.6/13	India	No data	13.3/9

Source: compiled by the author based on World steel in Figures. URL: <https://aceroplatea.es/docs/StainlessSteelFigures2021.pdf> (accessed on 08.03.2022).

Table 3

Countries – the largest exporters and importers of steel products, mln tons / place in the rating

Exporting countries			Importing countries		
Country	2020	201	Country	2020	2015
Russia	26.4/1	24.5/3	USA	13.6/1	26.5/1
Japan	24.8/2	34.9/2	Thailand	11.9/2	13.4/3
Republic of Korea	16.1/3	9.5/6	Philippines	6.6/3	No data
Ukraine	13.9/4	16.9/4	Vietnam	6.0/4	14.9/2
China	13.5/5	98.4/1	Saudi Arabia	5.7/6	6.4/7
India	12.1/6	importer	Poland	5.6/7	4.1/11
Brazil	8.7/7	10.5/5	Mexico	4.5/8	8.6/5
Turkey	6.0/8	3.8/7	Indonesia	4.2/9	9.4/4
Taiwan (China)	2.7/11	3.7/8	Israel	3.3/10	No data
Austria	2.6/12	3.2/9	Bangladesh	2.5/11	4.0/12
Belgium	2.5/14	3.1/10	India	exporter	5.7/10

Source: compiled by the author based on World steel in Figures. URL: <https://aceroplatea.es/docs/StainlessSteelFigures2021.pdf> (accessed on 08.03.2022).

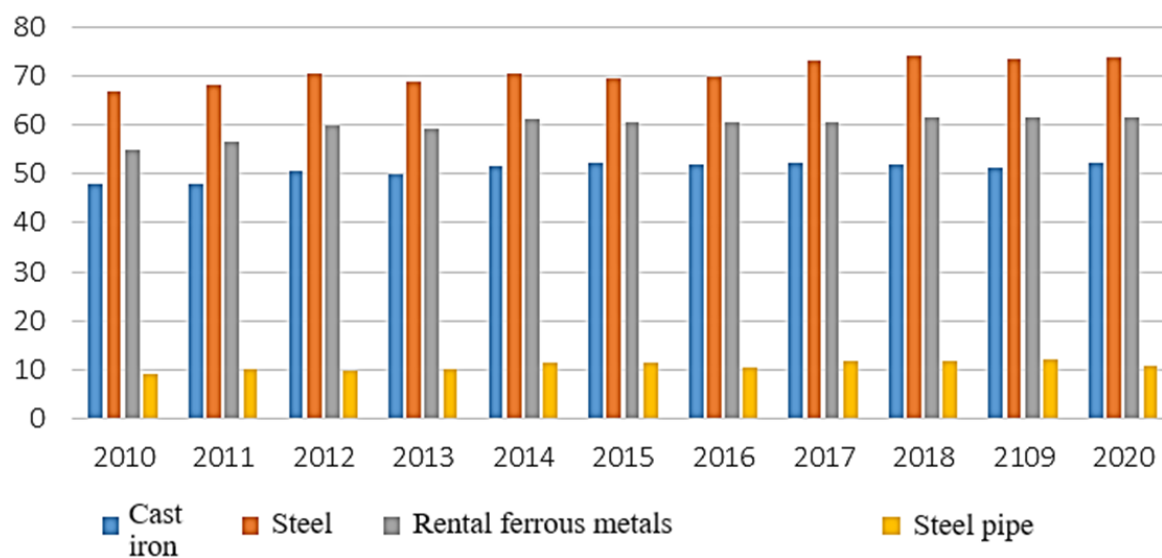


Fig. 1. Production of finished metal products for 2010–2020 years

Source: compiled by the author based on Federal State Statistics Service. URL: <https://rosstat.gov.ru/storage/mediabank/god17.htm> (accessed on 03.03.2022).

Table 4

Performance measures of the largest steel enterprises in Russia for 2019

Organization	Growth potential to fair price			Multipliers				
	Current price, rub.	Target price, rub.	Growth potential, %	P/E	E/P, %	P/S	EV/ EBITDA	P/ CF
JSC "MMP"	46.11	73.7	60.00	6.32	15.8	0.99	3.36	4.23
JSC "Severstal"	1094	1739.4	59.00	7.01	14.27	1.71	4.84	5.49
JSC "NLMK"	173.08	235.4	36.00	7.57	13.20	1.32	5.0	5.54
PJSC "Pipe Metallurgical Company"	63.10	44.8	-29.00	13.74	7.28	0.20	5.03	2.19
PJSC "Mechel"	69.4	69.4	0.00	2.14	46.74	0.15	6.17	0.67
PJSC "Ashinskiy Metallurgical Plant"	4.05	12.1	201	3.47	28.84	0.08	4.52	1.29
PJSC "Nornikel"	14176	10206.7	-28	11.96	13.20	3.08	7.00	7.09

Source: compiled by the author based on World steel in Figures. URL: <https://aceroplatea.es/docs/StainlessSteelFigures2021.pdf> (accessed on 08.03.2022); Federal State Statistics Service. URL: <https://rosstat.gov.ru/storage/mediabank/god17.htm> (accessed on 03.03.2022); Analytical review. URL: [https://blackterminal.com/companies?hl=ru; \[2-4\]](https://blackterminal.com/companies?hl=ru; [2-4]) (accessed on 03.03.2022.)

Through information and analytical inputs, and development strategy analysis these enterprises have developed and substantiated the basic provisions on increasing the efficiency of management of metallurgical companies during the transformation of economic processes.

The change of production volumes in physical terms in metallurgy in the period 2010–2020 years is given in *fig. 1*.

Russian metallurgical companies need to move from the strategy of recovery after the crises of 2008–2014 years to the strategy of finding new directions of development;

taking into account the complex geopolitical situation, adjust their investment policy in the new realities. In five years, the steel industry has overcome the low phase of the cycle, characterized by overproduction and low available capacity.

The multiplier EV/EBITDA³ value is important at the level 3.3–7.0: there are free financial flows, and profitability indicators are unstable.

³ The EV/EBITDA multiplier represents the enterprise value (EV) ratio to its profit before interest, income tax and depreciation on assets EBITDA (Earnings before interest, taxes, depreciation and amortization).

CURRENT CHALLENGES AND RISKS AFFECTING ON RUSSIAN METALLURGY

Six major challenge groups can be identified:

1. Through geopolitics, COVID-19 pandemic, change layout of political forces, flurry of sanctions and anti-sanctions (including export controls and industrial policy, aimed at increasing the “self-sufficiency” of critical and vital products and the introduction of a global minimum tax for the world’s largest companies), logistics chain disruption are created barriers to globalization and exacerbate tensions in a global order, based on US rules. This will require the search for new markets, the support of the domestic market for metal products, the stimulation of significant construction projects. In 2022, there are likely to be more geopolitical problems, including changing governments and resource nationalism, leading to increased royalties and taxes. Varieties of techniques are needed to reduce these factors, including engagement with Governments and enhancing the sustainability of the supply chain.

2. Access to capital remains a complex task for steel companies as investors keep risks, related to geopolitics, community issues and metal price volatility [6, 7]. Some enterprises with high carbon assets are exploring alternative sources of financing, such as direct investment. Competition for capital at a reasonable price requires companies to better demonstrate their performance for both financial and non-financial reasons. In a resource-constrained environment, they should also change portfolios and investments to those that are consistent with their strategies and that benefit from changing demand, including for minerals.

3. As environmental, social and governance factors (ESG) become an increasingly high priority for investors,

shareholders and a broader group of stakeholders, steel companies are increasingly integrating ESG into corporate strategies, decision-making process and accountability for stakeholders. Pressures from the latter on issues such as biodiversity and water management are likely to increase, which will require enterprise management to plan for the gradual closure of mines and better water-energy management, to meet expectations by taking greater responsibility for their impact on the environment and social communities and going beyond their normative obligations [8–10]. Metallurgists who help to ensure long-term, sustainable economic and social growth in their regions of presence can leave a positive legacy beyond the life of the plant.

4. Decarbonization of industry. As investors and governments refuse to investment in thermal coal, while carbon prices will rise, businesses should treat decarbonization as any other strategic risk. Building a flexible pathway to decarbonization, which includes scenario modeling and analysis of finance, technology and assets, can help companies achieve clean zero and differentiate. Those that manage emissions can create real value and long-term sustainability.

5. License to operate (LTO) is developing rapidly as expectations of the contribution of the metallurgical industry to communities, economies, protection of heritage sites and interaction with the State and social groups. As LTO becomes increasingly tied to the organization’s ability to access resources, capital and debt, a proactive approach to these issues is crucial.

6. Uncertainty of demand. Energy transition increases demand for minerals needed for renewable energy, electric vehicles and energy storage systems. To meet this demand, enterprises will need to overcome major supply-side constraints, including access to

capital, ensuring LTO and geopolitical risks associated with mining concentrated in just a few markets. The threat of replacement is also real in a sector with long project lead times. Advances in technology and the evolution of the energy transition can change the demand for different products [11–14].

METHODS

The strategy of steady growth of steel companies due to economic transformation needs to change, and these changes need to be seen as key elements of the industry specific [15–19]:

1. Labour protection and industrial safety: reducing the level of harm to the environment (green technologies), reduce (eliminate) employee injuries.
2. Customer focus: increasing customer loyalty, maintaining supply discipline.
3. Leadership of efficiency: improving the end product rather than scale, increasing income per ton of output to increase value added.
4. Balanced approach: efficient investment management.
5. Sustainable development: reduced environmental impact, reduced electricity consumption, responsible use of natural resources, maintenance of a positive social climate in the regions of presence and regular support of city infrastructure, educational, cultural and sports institutions [20–24].

Consider the elements of the growth strategy and the methods currently used in metallurgical enterprises, which are major players in the market and provide growth of the industry as a whole.

MMP focused on expanding the range of products, investing in the modernization of production lines and launching new ones.⁴

⁴ Company website PJSC “NLMK”. URL: <https://nlmk.com/ru/> (accessed on 07.03.2022).

The main directions of development of PJSC “Severstal” — are modernization of production and expansion of product line.⁵

PJSC “Mechel” develops new profiles on railroad mill, and also continues to implement a strategy to increase the share of higher margin products in the metallurgical division: in particular, the company is interested in the modernization of stainless-steel production, which in the future may give a significant increase in the revenue of the metallurgical division.⁶

EurAz objective — strengthen leadership in key market segments by developing the investment portfolio and modernizing production.⁷

Novolipetsk Metallurgical Combine (PJSC “NLMK”) proved to be a high-performance and profitable enterprise in 2020, compared to the previous five years. Its growth strategy is aimed at improving the efficiency of its functioning, it has a modular structure, includes a number of projects aimed at improving the operational efficiency of the company and existing business processes, self-sufficiency in critical resources, as well as achieving leadership in key markets.

Key elements of the strategy:

1. Increasing efficiency through the development of the production system.
2. Creating a world-class resource base. Increased self-sufficiency in key commodities and reduced consumption of expensive resources.
3. Leadership in strategic markets. Increase sales share and presence in attractive segments.

⁵ Company website PJSC “Severstal”. URL: <https://www.severstal.com/rus/about/> (accessed on 07.03.2022).

⁶ Company website PJSC “Mechel”. URL: <https://www.mechel.ru/> (accessed on 07.03.2022).

⁷ Company website PJSC “EurAz”. URL: <https://www.evraz.com/ru/company/> (accessed on 07.03.2022).

4. Primacy in the field of sustainable development and security. Continuous minimization of environmental impact; improvement of industrial safety system; leading in industry productivity.

Result implementation of development plans PJSC “NLMK” — this is an additional economic impact of about 160 mln dollars in 2018 due to recently completed investment projects.

As the analysis shows, all major Russian manufacturers are aimed at expanding the range of products, developing the investment portfolio and modernizing production. The elements proposed above will complement the enterprise strategy and turn it into an incremental and more effective tool.

RESULTS

Domestic steel companies need to move from a recovery strategy to a sustained growth strategy to increase operational efficiency of production and move towards the best technological practices, global steel cost leadership, allowing them to increase their share of sales in the highly competitive Asian markets.

Correcting development plans to new realities and complex geopolitical environment, domestic enterprises need to rely on the formation of a sales portfolio of world-class, which will allow to increase the production and sale of high value-added products (HVA). Sustainable development leadership will minimize environmental impact and increase production safety.

Consider the elements of a sustained growth strategy and the expected impact of their implementation.

1. According to the main indicators of enterprise activity it is assumed:

- cost reduction from savings in resources consumed;
- gross and net profit growth;

- increase in paid dividends (estimated dividend yield of 6%);

- increase in the cost of fixed assets, which will affect the growth of business value (projected growth of 20–22%).

2. Strengthening the position in priority markets:

- meeting current and future customer needs through development of support systems, identification of individual needs, feedback;

- strengthening positions in the most profitable geographical, industry markets;

- increasing sales margins by mastering innovative products;

- increase in the share of metal products in the structure of sales to the domestic market and near-abroad countries;

- introduction of digital tools to improve the quality of rolled metal products;

- fast introduction of best practices and best available technologies by a low-cost manufacturer;

- functional development improvement.

3. By capitalization and increase in value of the company's assets:

- financial recovery of the company, reduction of debt burden;

- development of “corporate governance practices” on the scale of the National Corporate Governance Rating (NCGR).⁸

4. To safe production:

- ensuring healthy and safe working conditions, industrial safety;

- intolerance on infringements of safety requirements at all levels.

5. Staff development:

- 100% involvement in the production process;

⁸ National Corporate Governance Rating (NCGR) — corporate governance quality indicator, which allows to compare the level of development of corporate governance and related risks in different companies. Since 2004 it has been assigned to companies by the Russian Institute of Directors — the exclusive right holder of the NCGR.

- personal responsibility of managers;
- competency development;
- increasing motivation to achieve goals through professional development, job satisfaction;
- high productivity;
- provision of social guarantees;
- health promotion.

Business Transformation, aimed at leading the steel industry of the future, incorporates all elements of a strategy for sustained growth and covers all areas. The elements of the strategy proposed above will provide a platform for new business models and a tool for effective management decision-making [25–28].

CONCLUSION

Strategic positioning and expansion of the ore base are priorities for most companies (besides PJSC “MMP”). However, there are also specific indicators. In addition, the development plans of each enterprise should include specific benchmarks related to the type and segment of activity and target markets.

Sanctions restrictions will cause significant harm to domestic metallurgists.⁹ Russia as world leader of ferrous metal exports (total exports amounted to 43.9% of production in 2020). So, PJSC “Severstal” exported more than 45% of production,¹⁰

⁹ Refusal of the EU and USA products of metallurgical companies. What are the risks and what are the consequences? Finpotok. 2022. URL: <https://smart-lab.ru/blog/780742.php> (accessed on 14.03.2022).

¹⁰ Share of export of “Severstal” in the second quarter of 2020 exceeded the historical maximum. Prime. 2020. URL: https://finance.rambler.ru/realty/44360974/?utm_content=finance_

PJSC “NLMK” — 59%, including in the EU-17%, the USA — 15%. In the best situation is PJSC “MMP” which focused on Russian (81% of sales) and Asian markets. Its exports to the EU and the Americas account for several per cent.

The imposition of sanctions will require greater concentration on the domestic steel market, as well as State support aimed at its development, and any projects to reduce the negative impact on the environment by:

- providing of tax benefits in accordance with the procedure established by the legislation of the Russian Federation on taxes and fees;
- providing incentives for payments for adverse environmental impacts in due course;¹¹
- allocation of funds from the federal budget and the budgets of the constituent entities of the Russian Federation in accordance with the budgetary legislation of the Russian Federation.

The practical significance of the work is that analysis of the main challenges will allow metallurgical industry enterprises to assess the situation in a timely and comprehensive manner and make rational and effective management decisions to build a strategy for the company’s progressive growth, increasing competitiveness, adaptability to environmental factors and economic potential.

media&utm_medium=read_more&utm_source=copylink (accessed on 14.03.2022).

¹¹ Federal Act of 10 January 2002 No. 7 (ed. of 26 March 2022) “Environmental protection”. URL: http://www.consultant.ru/document/cons_doc_LAW_34823/

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Conflicts of Interest Statement: The author has no conflicts of interest to declare.

The article was submitted on 14.03.2022; revised on 17.03.2022 and accepted for publication on 04.04.2022.

The author read and approved the final version of the manuscript.