

De-Capacity Policy in Metallurgical Industry as a Way to Protect National Producers: Experience of China

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Abstract: The research aims to determine correspondence between government measures of support and protection of national metallurgy producers and the de-capacity policy in China. The author uses the methods of systematization and generalization to analyze government measures of support and protection of national metallurgy producers, as well as the method of correlation to analyze possible economic effects by implementing the de-capacity policy. The research object is Chinese government policy in metallurgical industry. The research subject is the economic indicators of Chinese metallurgy. In the face of global economic challenges and internal structural problems, the government policy and implemented measures of support may not correspond to the declared course of economic development. Judging by statistics, the de-capacity policy in metallurgy was eliminated by measures of support and protection of national metallurgy producers. Government measures taken were not coordinated with each other. Moreover, these measures may have deteriorated the national economy due to foreign trade restrictions. This paper focuses on the importance of enhancing the efficiency of government support measures taken.

Keywords: metallurgy, overcapacity, trade defense, stimulating the economy, China

JEL codes: F50, L52, L61, O25, O53

China is a world leader in metallurgical industry: 64% of world crude iron production, 53% of world steel-making production and a half of world hot-rolled steel production is placed in China. In 2023, among the 113 largest steel companies, 64 are registered in China (World Steel Association, 2023). In 2022 China ranked 1st, 4th, and 5th in the world in terms of aluminum, copper, and tin exports (United Nations, 2023).

Metallurgical products are widely used in such industries as mechanical engineering, construction, heavy industry, and oil and gas industries, which indicates the strategic importance of metallurgy for the economic security of any country. Thus, considering the leading position of Chinese metallurgy, Chinese economy status, and its metallurgical industry, the country has the opportunity to influence the world market of metals, price level and overall volume of production. Since 2016, Chinese authorities have been actively implementing

reforms in the metallurgical industry, the main goal of which is to eliminate overcapacity and increase profitability of metallurgical enterprises. By 2023, it is possible to analyze the results of measures taken, which determines the relevance of this paper.

The research aims to determine correspondence between government measures of support and protection of national metallurgy producers and the de-capacity policy in China. The research hypothesis is the statement that all elements of the de-capacity policy planned were consistently implemented, and China has reached the goal of eliminating overcapacity in metallurgy.

This paper is providing the analysis of the status of Chinese metallurgy, determining the reasons of excess capacity, analyzing the measures proposed by the government to solve the overcapacity problem, and specifying the national producers defense measures. Eventually, the stated hypothesis will be confirmed or refuted.

Materials and Method

The main sources of information are official statements of Ministry of Natural Resources and The State Council of the People's Republic of China. OECD and United Nations statistical databases and World Steel Association, WTO, and United States Trade Representative analytical overviews are widely used in this paper.

General issues of the development of the Chinese economy were studied in the work by Gusakov (2019). Issues related to the additional costs in the Chinese metallurgical industry were analyzed in the work of Opalskiy and Shishov (2019). Liu et al. (2019) consider the impact of government subsidies on the economic performance of metallurgical enterprises. The supply and demand problems in Chinese metallurgy are studied by Brun (2016) and Ni et al. (2020). Yu and Shen (2019) and He et al. (2020) study the environmental aspects of the Chinese metallurgical industry. Finally, the general issues of Chinese de-capacity policy are considered in the works of Tian et al. (2022) and Wang et al. (2019).

The author uses the methods of systematization and generalization to analyze government measures of support and protection of national metallurgy producers, as well as the method of correlation to analyze possible economic effects by the implementation of the de-capacity policy.

Results

The current leading position of the Chinese metallurgical industry is the result of rapid development of the Chinese economy. Growth rates of production capacities in China significantly exceeded such growth rates of other countries (Figure 1).

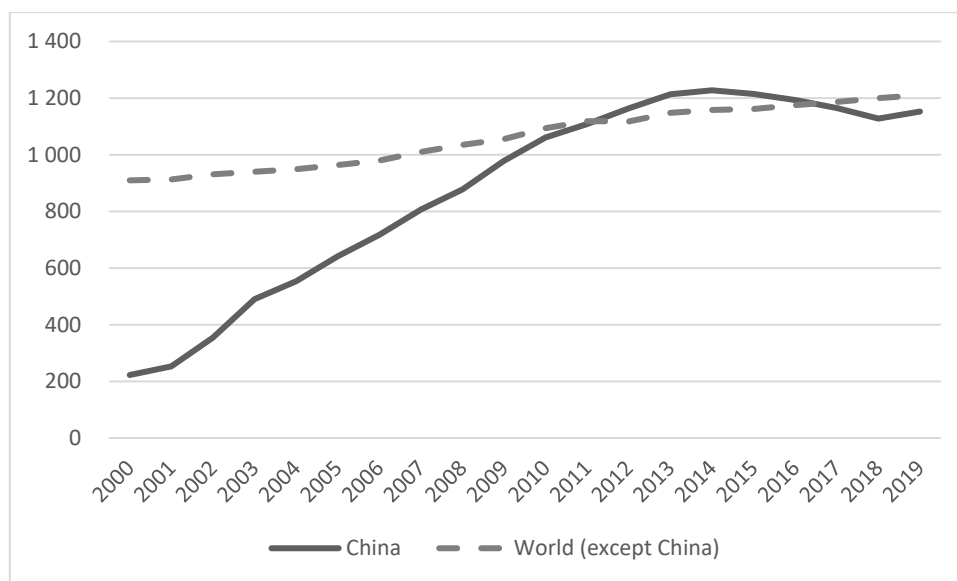


Figure 1

Aggregate production capacities of ferrous metallurgy enterprises, million tons

Source: Calculated and built by the author based on (OECD.Stat, 2023)

Such a high rate of development led to the overcapacity in metallurgy, which has become the subject of discussion among economists in China and beyond. Since metallurgy is strongly connected with other industries, the overcapacity may cause severe problems in the national economy.

For example, the excess capacity in the industry can lead to production downtime, involuntary or hidden unemployment, and a decrease in enterprises' profitability (Opalskiy & Shishov, 2019), which will negatively affect the level of tax deductions to the state budget and indicate a general slowdown in development of the country's economy.

Overcapacity forces businesses to enter new markets abroad, where the authorities implement prohibitive measures like anti-dumping duties and non-tariff barriers trying to protect national producers from sharply increased Chinese imports. As of the beginning of 2023, there are 311 anti-dumping and 71 countervailing measures implemented to protect national producers from imports of Chinese metallurgical products (according to WTO). For comparison, at the beginning of 2023, the total amount of anti-dumping and countervailing measures notified to the WTO across the world is 915 and 151, respectively.

In other words, the overcapacity causes potential detriment such as possible slowdown in economic growth, which is accompanied, at least, with foreign trade defense measures that close new markets for domestic producers.

The overcapacity in Chinese metallurgy was formed as a result of several factors, the main of which is the different rate of the country's economic growth in different periods. The problem of overcapacity is most acutely felt during periods of decline in business activity. Second, the authorities seeking to return high rates of economic growth have provided additional support in the form of extensive investments and subsidies for the development of production (Brun, 2016; Wang et al., 2019). As a result, unprofitable enterprises have abandoned the idea of complete business liquidation, retained production capacities, and

remained in the market (Liu et al., 2019). Third, in addition to government subsidies, metallurgy producers have tried to cut their production costs per unit by expanding production capacities (Tian et al., 2022). Finally, the creation of artificial barriers by existing enterprises to the new producers. Large companies that had reduced production costs lowered prices in the domestic market making the new smaller businesses unprofitable (Brun, 2016). In this context, Chinese metallurgical companies have not been interested in reducing excess capacity, as this would increase intra-industry competition. Thus, a combination of factors caused by government policy and the interests of producers has led to the overcapacity in China.

In 2016, the problem of excess capacity in metallurgy was noted by Chinese authorities. The State Council of the People's Republic of China (2023d) published recommendations for solving the overcapacity problem, where, to achieve the goal of reducing 150 million tons of excess production capacity in metallurgy over a five-year period, the following was announced: (a) a ban on the registration of new metallurgical enterprises; (b) an encouragement of M&A of enterprises with the following restructuring of production capacity; (c) increasing the requirements for the quality of manufactured products; (d) strengthening control over compliance with environmental legislation. The government also provided support to employees subject to layoffs and financial and tax support to enterprises that implement the recommendations of the State Council. These measures were supposed to bring the industry to a stable position, where unprofitable and environment-unfriendly enterprises would be closed or modernized as part of larger companies. Moreover, demand for metallurgical products would correspond to supply in the domestic market.

The Chinese government approached the overcapacity issue quite cautiously because closure of enterprises is followed by unemployment and slowdown in economic growth. In other words, the reduction of production overcapacity is no less a challenge for the economy than the overcapacity itself. The government had to provide support to enterprises of the metallurgical industry countervailing the most acute consequences of the de-capacity policy. Thus, in 2016, tax preferences such as the return of the VAT paid and government guarantees for loans were announced for companies that fulfill the recommendations of the State Council. Local authorities were to provide orders for metallurgical products as part of the social programs' implementation for the modernization of housing stock.

In 2018, the Ministry of Natural Resources of the People's Republic of China (2023) reported that metallurgical enterprises do not seek to implement the recommendations of the State Council and report fictitious reduction in production capacity to receive appropriate tax incentives and financial support. Simultaneously, local authorities have been aware of such practice of "closing" already non-functioning enterprises but did not show proper participation in solving the problem.

Consequently, in 2018, the State Council of the People's Republic of China (2023c) supplemented the recommendations of Chinese government by establishing new criteria for the restructuring of metallurgical enterprises: enterprises are required to decommission 1.25 tons of obsolete production capacities for each ton of modernized production lines being put into operation (Table 1). Simultaneously, the government continues to supervise over profitability of enterprises, encouraging closure or acquisition of obsolete capacities with low-quality production that threaten the environment.

Table 1

Production capacities of the metallurgical industry, million tons

	2016	2017	2018	2019	2020	2021
China	1192.9	1164.5	1122.9	1148.3	1147.9	1146.5
China dynamics, %	100%	98%	96%	102%	100%	100%
World total	2368.3	2351.6	2382.2	2416.4	2425.3	2431.3

Source: Compiled by the author based on (OECD, 2022; OECD.Stat, 2023)

The measures taken had impact on the reduction of overcapacity. At the end of 2018, China reached the minimum level of the capacity indicator of recent years. However, elimination of overcapacity has been complicated by the slowdown in economic growth and falling demand for metallurgical products caused by the COVID-19 pandemic, as well as trade defense measures taken by the Chinese government. At the beginning of 2023, out of 122 anti-dumping measures applied in China, 13 measures concern various types of metallurgical products (Table 2). The purpose of trade defense measures is to support national producers in the face of external economic pressure and create conditions for the development of the industry. However, the above 13 anti-dumping measures came into force in the period from 2010 to 2021. In other words, trade defense measures have been taken without regard to the national industry's state and the de-capacity policy.

Table 2

Dates of applying the anti-dumping measures of China in the metallurgical industry

	Certain alloy-steel seamless tubes and pipes for high temperature and pressure service	Certain iron or steel fasteners	Grain oriented flat-rolled electrical steel	Stainless steel billet and hot-rolled stainless steel plate (coil)
United Kingdom	01.01.2021	01.01.2021		01.01.2021
European Union	09.05.2014	28.06.2010	23.07.2016	22.07.2019
Indonesia				22.07.2019
Rep. of Korea			23.07.2016	22.07.2019
United States	09.05.2014			
Japan			23.07.2016	22.07.2019

Source: Compiled by the author based on (WTO, 2023)

As a part of the 13th Five-Year Economic Development Plan, China launched the Made in China 2025 program, identifying ten key industries where 80% of demand must be met by domestic producers by 2025. To achieve this goal, the government have created special investment funds, issued loans at the level below market rates, applied tax incentives, and provided various kinds of financial support (OECD, 2019). The total amount of support is estimated at \$500 billion (United States Trade Representative, 2023). Metallurgy is not among the 10 key industries. However, many key industries are directly dependent on supply of metallurgical products, such as aviation, shipbuilding, the railway industry, or the semiconductor industry. Thus, a part of the government support to strategic industries concerning the Made in China 2025 program will eventually be used to artificially increase

demand in the metallurgical industry.

In 2021, China launched the 14th Five-Year Economic Development Plan, which sets goals for expanding metal production (The State Council of the People’s Republic of China, 2023b). The concept of the new Five-Year Plan is based on the strategy of dual circulation, where domestic demand is the main economic driver. And the main task in world trade is the diversification of global supply chains. In other words, China is abandoning the idea of the de-capacity policy trying to increase demand for its metallurgical products (Ni et al., 2020). Moreover, in the 14th Five-Year Economic Development Plan, the de-capacity policy was transformed to the idea of modernizing the metallurgical industry in accordance with new environmental standards and reducing carbon emissions. Despite the fact that Chinese authorities have been facing the environmental issues for quite a long time (Gusakov, 2019), in this case, the combination of these two problems confirms the change in concept of the de-capacity policy.

However, at the beginning of 2023, there are no examples of tightening the tax regime or administrative control in the industry, which could increase effectiveness of the combined de-capacity and environmental policy (Yu & Shen, 2019). According to He et al. (2020), it could be effective to carry out a state audit of all metallurgical enterprises in order to identify unregistered and environment-unfriendly production capacities, as well as financial performance of enterprises, and to develop a more detailed mechanism for the de-capacity and environmental policy using the results of such audit (Liu et al., 2019).

The economic effect of the declared de-capacity policy can be confirmed by negative correlation of export prices for metallurgical products and nominal volume of production capacity. Calculations made based on data for 2010–2021 partially confirm the weak relationship of variables: the correlation coefficient is “-0.45” (Figure 2).

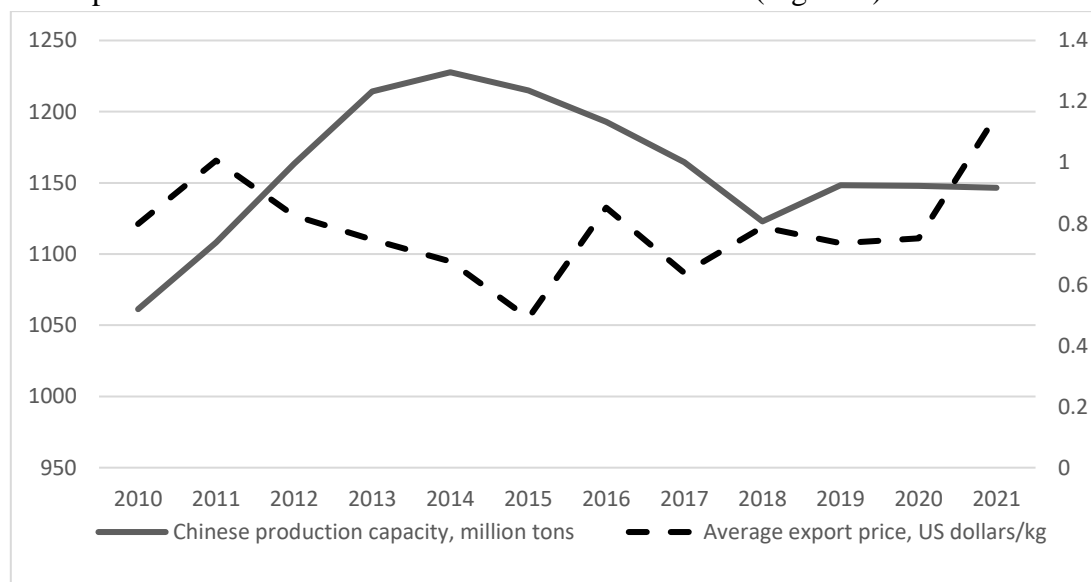


Figure 2

Correlation of Chinese production capacities and average export prices for metallurgy products in 2010–2021

Source: Calculated and built by the author based on (OECD, 2022; OECD.Stat, 2023; United Nations, 2023)

Thus, implementation of the de-capacity policy positively affects the industry and the national economy. However, the analysis carried out does not confirm consistency of Chinese authorities' approach to the de-capacity policy. Chinese authorities were able to admit the overcapacity problem but did not insist on taking any effective measures to solve it. In 2022, the State Council of the People's Republic of China (2023a) also emphasized the importance of strengthening the coordination of the metallurgical industry's policy that indicates the ineffectiveness of the policy taken earlier.

Discussion

This paper expands the results obtained by Liu et al. (2019) about negative effects of governmental subsidies in China. The opinion of Ni et al. (2020) is different from the results declared in this paper considering the expected and performed effects of governmental policies in metallurgy. While Tian et al. (2022) has investigated the specific mechanisms of the de-capacity policy and Wang et al. (2019) has studied its impact among Chinese provinces, this paper focuses on comprehensive analysis of the situation in Chinese metallurgy.

The key point is that overcapacity continues to negatively affect the Chinese metallurgical industry and the global economy. The creation of artificial demand for manufactured products does not solve the problem and only postpones the structural crisis.

Conclusion

This paper shows that China has not become consistent in implementing the de-capacity policy, which refutes the hypothesis proposed. The implementation of unpopular government measures (e.g., closure of enterprises) was used locally as another opportunity to obtain government support.

The de-capacity policy declared by Chinese authorities could have an economic effect to the development of both the industry and the national economy. However, the overcapacity problem requires the full involvement of all interested parties. The declarative desire of authorities to reduce the excess capacity meets with local misunderstanding. Consequently, the initial concept is being transformed into another one: the de-capacity policy was transformed into the program of increasing the quality of products and modernizing metallurgical production due to environmental agenda. This paper proves that the de-capacity policy turned out to be ineffective considering the consequences of other governmental measures in Chinese metallurgy.

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