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# CURRENT TRENDS OF UKRAINIAN METALLURGICAL MARKET EQUILIBRIUM FORMATION IN THE CONTEXT OF EUROPEAN UNION MEMBER STATES

### Hamova O.V.

Zaporizhzhia National University Ukraine, 69600, Zaporozhzhia, street Zhukovsky, 66 gamova5oxana@gmail.com ORCID: 0000-0002-9752-6900

#### **Key words:**

metallurgical market, market equilibrium, export-oriented model, competitiveness, innovation, European vector of development

Equilibrium in the Ukrainian market of metal products is a separate, deep issue and a scientific problem that should be studied in detail and justified in terms of market conditions and domestic levers of influence and regulation. To address this issue, it is necessary to find out what exactly includes the concept of the metallurgical market of Ukraine, under the influence of which factors demand and supply are formed, and what determines the mechanism for establishing optimal demand, supply and prices in this market. This article is devoted to these questions, as well as to identify methods to improve the efficiency of the domestic metallurgical market in a dynamic environment and openness to change that will promote its development, increase effectiveness and, consequently – rise welfare and the economy as a whole. The purpose of the study is to analyze and identify problems related to the functioning of the market of metallurgical products, study the basics of its operation, determine the factors influencing supply and demand, which will approve the effectiveness of individual market transformations and confirm their feasibility, as well as adjust or neutralize. The theoretical and methodological basis of the work are the publications of domestic and foreign scientists in the field of evaluating the effectiveness of metallurgical enterprises. To achieve this goal general and special research methods are used, such as: a systematic approach, methods of analysis and synthesis, methods of logical generalization. The article examines the current state, trends and main factors influencing the formation of market conditions in the domestic market of metallurgical products. The last tendencies and structural shifts in the world metallurgical market are analyzed, the priorities of the direction of foreign economic activity of the domestic metallurgical branch are determined. The advantages and disadvantages of the modern model of market functioning of the metallurgical market are defined taking into account its export orientation, which is a traditional strategy and currently irrelevant in the light of global transformations of the world metallurgical market. Weaknesses of the domestic metallurgical market have been identified, which are causing stagnation in the industry and need to be urgently addressed at the national level. Perspective methods and directions of improvement of activity of the domestic metallurgical market in the light of orientation of foreign economic policy on a sector of the markets of the member states of the European Union are defined.

## СУЧАСНІ ТЕНДЕНЦІЇ ФОРМУВАННЯ РІВНОВАГИ НА МЕТАЛУРГІЙНОМУ РИНКУ УКРАЇНИ В КОНТЕКСТІ КРАЇН-ЧЛЕНІВ ЄВРОПЕЙСЬКОГО СОЮЗУ

### Гамова О.В.

Запорізький національний університет вул. Жуковського, 66, м. Запоріжжя, Україна

### Ключові слова:

металургійний ринок, ринкова рівновага, експортоорієнтована модель, конкурентоспроможність, інновації, європейський вектор розвитку В статті виконано дослідження сучасного стану, тенденцій та основних чинників, що впливають на формування ринкової кон'юнктури вітчизняного ринку металургійної продукції. Проаналізовано останні тенденції та структурні зрушення в світовому металургійному ринку, визначено пріоритети спрямування зовнішньо економічної діяльності вітчизняної металургійної галузі. Визначені переваги і недоліки сучасної моделі ринкового функціонування металургійного ринку з урахуванням його експортної орієнтації, що  $\epsilon$  традиційною стратегією та на сьогоднішній день неактуальною в світлі глобальних трансформацій

світового металургійного ринку. Виявлені слабкі сторони вітчизняного металургійного ринку, що спричиняють стагнацію в галузі та потребують нагального вирішення на загальнодержавному рівні. Визначені перспективні методи і напрями вдосконалення діяльності вітчизняного металургійного ринку в світлі орієнтації зовнішньоекономічної політики на сектор ринків країн-членів Європейського Союзу.

# Problem statement in general and its connection with important scientific or practical tasks

The metallurgical market of Ukraine is an important factor in the competitiveness of the economic system, which has a significant impact on the formation of the country's welfare. Peculiarities of its functioning, pricing processes and establishment of equilibrium prices for metallurgical goods are important issues, the solution of which requires attention from scientists and practitioners involved in the activities of this sector of the economy. The metallurgical complex is one of the most potentially important sectors of the economy and is the largest basic industry in general, which forms together with other industries the overall level of socio-economic development of the country. In addition, the metallurgical industry, forming a complex market system, is the basis for the formation of other key manufacturing, including engineering, chemical industry, construction. And in our country, metallurgy is the primary export-forming sector of the economy, which in turn affects significantly the definition of vectors for the development of the export direction of foreign economic policy. Therefore, identifying the factors influencing the level of development of the metallurgical complex in terms of its individual components, which form the general market situation, does help to increase the competitiveness of domestic producers of metallurgical products and is a source of improving the economic system of Ukraine.

In recent years, the metallurgical industry of Ukraine has reduced its production and lost significantly market position in both international and domestic markets, which was caused by many reasons. Despite the fact that domestic metallurgy has great potential and competitive advantages in the market, but under pressure from global producers and the rapid development and introduction of innovative production methods in industry by other competing countries, this sector of our economy is forced to adapt to change due to loss of market leadership. Therefore, the definition of directions of development of metallurgy of Ukraine in the context of global market interaction requires detailed analysis, as well as making recommendations on the basis of this analysis for strategic progress of domestic enterprises in order to fully function at the global level, taking into account the priority areas of enlargement and the choice of the European segment of the global market of metallurgical products as a promising market niche.

Analysis of recent research and publications, which initiated the solution of this problem and on which the author relies, the highlighting previously unsolved parts of the general problem, which are the subject of this article

Metallurgy as a leading sector of the domestic economy has always attracted and continues to attract considerable attention

from a large number of researchers and scientists, analysts and practicing leaders. In particular, in recent years the works of A. Amosha, V. Bolshakov [2], S. Kulytskyi [2], V. Grynko, I. Androsova [3], N. Kushakova [6], D. Dovhan [10], O. Honcharuk, T. Ignashkina [11] are devoted to the problems of the metallurgical industry, identification of its problems and prospects of development. In addition, researchers such as L. Deineko [5], T. Hurtovenko [8], O. Temchenko, N. Shevchuk [4], T. Hudz [12], S. Kukhno [13], V. Wenger [5] paid attention to the analysis of the competitiveness of the domestic metallurgical market and the identification of its competitive potential in the context of global challenges affecting the formation of supply and demand in this market. However, the issues remain insufficiently resolved about generalization of the current state, problems and prospects of development of the metallurgical market of Ukraine as a subject of world market relations in modern conditions of operation, the peculiarities of the formation of market equilibrium of the metallurgical market at the global and domestic levels. Dynamic changes and rapid development of technologies, improvement of production methods by industry leaders and changing priorities in the structure of world production require further research on the factors influencing the position of the domestic metallurgical market on the world stage.

#### Formulation of the goals of the article (task statement)

The purpose of the study is to analyze and identify issues related to the functioning of the market of metallurgical products, investigate the basics of its operation, determine the factors influencing supply and demand, which will approve the effectiveness of individual market transformations and confirm their expediency, as well as adjust or level the action of others.

### Presentation of the main material of the study with a full justification of the obtained scientific results

The issue of market equilibrium has always been on the focus of many researchers, as the success of market mechanisms and the level of well-being of all participants in market relations, namely – suppliers and consumers – depend on it. Throughout the existence of economic relations between them, conditioning by the action of many factors and the specifics of the product that is the object of purchase and sale, the peculiarities of establishing market equilibrium are determined and taken into account individually, but under the influence of patterns, which is why this issue needs additional attention and research. As for the establishment of equilibrium in the market of metallurgical products, this aspect should be considered in the context of national and global operating conditions at the same time.

Today, the problem of economic equilibrium remains one of the key problems in political economy. If economic equilibrium is observed in one or more enterprises in the absence of market equilibrium – this is a sign of monopoly or oligopoly, respectively. This is exactly the situation in Ukraine. In the economy of Ukraine, the vast majority of leading enterprises have a certain level of financial imbalances. The worst situation is in the chemical industry and technologically related metallurgy. The unbalanced financial condition of most companies does not promote healthy competition among them. Further debt growth will lead to an increasing deviation from equilibrium. The cost of industrial production of domestic enterprises is constantly under pressure from prices for energy, raw materials and supplies, and its high level has a negative impact on competitiveness in both domestic and global markets [4].

Ukraine belongs to the group of countries with the socalled «small open economy». Its share in world GDP was only 0.18% last year, so it is «small» and «open», as the country exports and imports a significant share of goods and services [7]. As the scale of openness of the national economy increases, the range of connecting links of direct interaction of individual markets and enterprises with the world economic community expands. The global market, which is the integration of separate markets, in which both governments and businesses are involved, transmits the dynamics of the global market: both its equilibrium and its entropy. The strength of the impact of these impulses depends on the degree of integration of the economy of states and enterprises themselves in world economic processes [12]. That is why the formation of an effective vector of the metallurgical industry of Ukraine and achieving high competitive positions in the international market is possible under the full use of market mechanisms in both domestic and foreign markets, taking into account the factors that create a perfect competitive environment. An important issue is the study of the conditions of the market of metallurgical products in terms of its individual components and the identifying mechanisms for the formation of the market environment, which also determines the type of market and affects the results of market interaction between trade participants.

Metallurgy is a strategic component of the national economy, as the growth of most industries in Ukraine is contingent on its development, it is an important source of foreign exchange earnings, is a leader in tax deductions to the state budget and a source of many jobs [6]. The metallurgical complex provides more than 25% of industrial production, 34% of total exports of goods, Ukraine's share in world steel production is 2.4%. Large metallurgical complexes play a significant role in the development of regional economies and the functioning of their social infrastructure [4]. Investment in this sector is the highest among other industries. Last year companies of mining complex invested every third dollar in industries – a total of \$1.7 billion [8].

In the mid-1990s, the formation of the national market of metal products began in Ukraine by transforming the metallurgical industry into a modern market structure with all its infrastructural and institutional elements [14]. Today, the domestic metallurgical complex is a holistic system, which includes separate economic entities that manufacture metal products, combined into a single technological chain «mining and processing of iron ore  $\rightarrow$  coke production  $\rightarrow$  smelting of iron and steel  $\rightarrow$  production of rolled products» (Fig. 1) [6].

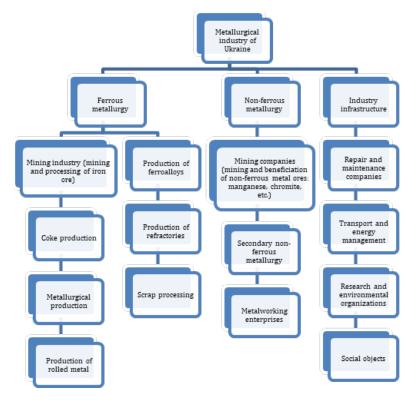


Fig. 1 – The structure of the metallurgical complex of Ukraine

Source: developed by the author based on [14]

The mining companies that provide mining and beneficiation of iron, manganese and chromite ores are the main raw materials link of the mining complex. On this basis, the work of processing enterprises is provided, which are engaged in the production of iron, steel and rolled products, ferroalloys, reuse of metal raw materials, coking coal, production of refractories and auxiliary materials for them [13]. The peculiarity and main advantage of Ukrainian metallurgy is the reliance of the raw material base on significant internal natural reserves of iron and manganese ores, coking coal, fluxes, refractory clays and other mineral resources. This allows satisfying the needs of the national metallurgical sector in almost all types of strategic raw materials (except natural gas). The industry has a pronounced territorial «binding». Historically, three main metallurgical districts have been formed in Ukraine: Donetskyi, Pryazovskyi and Prydniprovskyi [2].

The metallurgical industry of Ukraine represents an export-oriented industry, which due to the lack of significant qualitative and quantitative advantages of its products in international markets has no decisive influence on the formation of its world price and is forced to adapt to external conditions generated by the dynamics of more important participants in the world economy. The export orientation of domestic metallurgy was caused by vital necessity, attempts to survive in the face of a sharp decline in domestic demand and almost complete lack of working capital in enterprises [14].

Ukraine is almost the only country in the world whose enterprises export nearly 80% of their metal products and sell just over 20% on the domestic market. This is due conditioned by the fact that the metallurgical industry of Ukraine has a production potential that far exceeds the domestic needs of the national economy. However, focusing on the export of metal products, domestic manufacturers have significantly reduced the brand and size range, considerably diminishing the production of high-tech products, which indicates the imperfection of exported products [2]. The supply of raw materials and semi-finished products to major competitors in world markets further worsens Ukraine's position in the global division of labor and leads to further reduction of markets for finished products and significant losses of foreign exchange for mining complex [10].

The enterprises of MMC of Ukraine supply to the world market: iron ore raw materials, including concentrate, pellets and lump ore, ferroalloys, cast iron, semi-finished products (square billet, slabs, pipe billet), finished rolled metal, including hot-rolled and cold-rolled rolls and sheets, as well as profile rolling in the form of round, square, rectangular and hexagonal grades, rails, reinforcing steel and wire rod, as well as products of further redistribution – steel pipes, hardware, rolled products with coatings, etc. [13]. Most of the rolled products are intended for domestic consumption. Domestic using of metallurgical products in Ukraine is quite limited; in addition, there is a tendency to decrease [11].

The most important feature of modern national economic systems and the world economy in general is the accelerated growth of concentration of capital and production in various spheres of economic activity. The most obvious manifestation of large-scale concentration and centralization of capital is the creation of various forms of business groups [14]. Assessment of the corporate affiliation of MMC ferrous metallurgy enterprises showed that as a result of large-scale changes in management, up to 95% of enterprises of ore mining, coal mining, and coke, ferrous and nonferrous metallurgy of Ukraine actually became part of large transnational industrial and financial groups [13]. As FIGs were formed against the background of political, socio-economic permanent crises, the commodity and financial flows over which they exercised were concentrated in the spheres of foreign economic activity, which allowed business groups to avoid losses from changes in economic policy within the country. It is due to the difference between domestic and foreign economic conditions that their superprofits were created [14]. Today in the metallurgical industry of Ukraine there are ten largest and most influential business groups, which are at different stages of structuring and formalizing the business. These are such groups as: ISD, SCM, Smart Holding, Interpipe, Privat, Donetskstal, VS Energy International Ukraine, ArcelorMittal, Evraz, Mechel [13].

Timely assessment and reasonable interpretation of the challenges of the global metallurgical market are important conditions for providing trade policy makers with relevant information for resource mobilization at the national level [11]. Metal markets are formed under the influence of changes in world demand and supply for them, respectively; any changes in metal markets have an impact on the world economy [12]. Domestic metallurgical industry is an integral part of the world industry, its development takes place in the context of global trends, the leading of which is the constant growth of metal production against the excess of metal smelting over its consumption, radical change in geographical structure of production and use of metal products increasing the industry's ability to generate and implement innovations [1]. The global steel industry faces many obstacles, such as the volatility of raw materials and energy markets and the risks of protectionist policies. Scientific and technological progress, globalization of the economy and structural restructuring of the world economy have fundamentally changed the sectorial priorities of economic development. In industrialized countries, the absolute and relative demand for mass-produced metal products has significantly decreased. But the role of resource conservation increased and, in particular, metal conservation, which has become one of the basic principles of economic practice of all countries [14].

The main competitors of metallurgical enterprises of Ukraine in Europe are metallurgical plants in Germany, France, Italy, the Netherlands, Slovakia, and in the East – plants in China, India, Japan, and South Korea [6]. Over the past 10 years, steel production in China and India has doubled, indicating increased competition in the global metallurgical market. The 20 largest steel-producing countries together produce more than 90% of world production. There are also countries that do not produce metallurgical goods or do not produce enough to satisfy domestic needs, namely the countries of the

Middle East, Africa, South and Central America [10]. In the United States, Germany, France, Italy, and the United Kingdom, due to the introduction of new technologies, the volumes of own steel production have decreased. At the same time, steel production in developing countries grew. This was preceded by the construction of metallurgical facilities mainly on a new technological basis and advanced production structure [14]. In March 2018, the US administration imposed an import duty on any metal products imported into the country. This led to a «chain reaction», protective measures against imported metal from the European Union, Turkey, and Russia [1]. This situation has led to growing uncertainty, reduced business willingness to invest, take risks, lower consumer expectations, which, in turn, has caused a slowdown in China's economic development and, consequently, falling demand for steel products. The deceleration in the development of mechanical engineering and construction has provoked a decrease in steel consumption in the EU-the main market for Ukrainian metal products, which supplies about a third of exports [10]. Thus, exports of Ukrainian metal products diminished, which led to a reduction in the large share of foreign exchange earnings in the country [1].

At the end of 2019 – beginning of 2020, the world market of ferrous metals for metal producers has a very favorable situation, which lasted until mid-March 2020. Due to long-term quarantine measures in most exporting countries, the work of metal processing enterprises was stopped, and the purchase of raw materials was limited indefinitely. Trade activity in the main export regions fell to the lowest levels, and export prices for finished metal products and some commodity prices reached their lowest level since 2016. And only from the middle of 2020 the general trade activity began to recover gradually [8]. In January-August 2021, the world produced 981.96 million tons of cast iron

(911.87 million tons by blast furnace and 70.09 million tons by direct recovery). This is 5.5% more than in the same period of 2020. The first place in world cast iron production still belongs to the People's Republic of China, whose metallurgists smelted 605.38 million tons of this product in 8 months of 2021 (0.6% more than in January-August 2020). The share of Chinese cast iron in world production was 61.7%. The second place among world cast iron producers in January-August 2021 was taken by India (77.97 million tons; 22.5% more than in the same period in 2020), the third – Japan (47.04 million tons; 14.6% more). In January-August 2021, Ukraine ranked tenth among the world's 38 cast iron producers, smelting 14.48 million tons of these products during this period, 6.8% more than in January-August 2020. Among the 64 steel-producing countries in January-August 2021, Ukraine ranked fourteenth, smelting 14.59 million tons of steel, which is 6.6% more than in the same period in 2020 (Fig. 2) [7].

In domestic metallurgy, the trend of large-scale closure of production has become dominant [2]. The most serious test for the industry was the hostilities in Donetsk and Luhansk regions since 2014. The suspension or reduction of business activity of metallurgical enterprises in the temporarily uncontrolled territory of Ukraine has led to negative dynamics of steel production in the country [1]. Since 2014, Ukrainian metallurgical enterprises have also lost the Russian market, which has significantly reduced exports of many products and negatively affected the country's economy. Therefore, it was decided in 2015 to reorient to the markets of the EU, North Africa and the Middle East [13]. In 2017, Ukraine lost market share to China, but was able to gain market share in Japan, Serbia and South Korea [11]. The abolition of import duties to the EU on metal products boosted exports, which contributed to the growth of exports in 2018 by 35.9% compared to 2017 [11]. The metallurgical

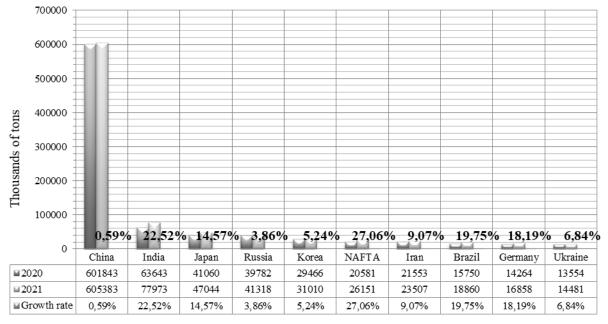


Fig. 2 – Dynamics of cast iron production by leading countries in 2020–2021 (January-August) on the world metallurgical market

Source: developed by the author based on data [7]

industry was able to restore gradually the growth trajectory and maintain one of the leading positions in the structure of national industry (Fig. 3) [2].

The general favorable situation in the main foreign markets and a fairly active recovery of domestic consumption in the fourth quarter of 2020 helped domestic metal producers to increase considerably production and increase exports by the end of the year, thus leaving the results of the year at the level of 2019 [8]. According to Ukrmetalurgprom, total in 2020 Ukrainian metallurgical plants produced more than 20.42 million tons of cast iron, 20.62 million tons of steel and 18.43 million tons of rolled steel. Compared to 2019, the production of cast iron increased by 1.8% and rolled steel – by 1.2%, while the production of steel decreased by 1.1% and pipes – by 15.8%. For the fourth year in a row, in the dynamics of development of Ukrainian metallurgy, the main indicators of ferrous metals production at leading metallurgical plants remain at the level of 2017 with small changes each year. The main export markets of Ukrainian metal products in January-December 2020, according to LLC COMPANY PSC-GRUP, are the countries of the European Union (28.5%), other Europe (14.5%) and Asia (14.2%). Among metallurgical importers for 12 months of 2020, the first place is occupied by the CIS (38.5%), the second by EU (24.5%), the third – Asian countries (20.5%) [9].

The situation on world markets is such that in Ukrainian metallurgy there is a real threat of losing markets. Therefore, the development of the domestic market of metal products today is one of the highest priorities of the industry [2]. The domestic market of Ukraine is characterized by ultra-low demand for metallurgical products compared to the volume of its production, which against the background of foreign economic conditions exacerbates the low-tech nature of production [14]. In 2020, the problems caused by the global coronavirus

pandemic COVID-19 were added: declining business activity, further strengthening protectionism, breaking and shifting logistics chains, falling consumer incomes, closing borders among countries, etc. [11]. The largest consumers of metal products in the domestic market of Ukraine are directly the metallurgy itself (especially producers of pipes and hardware) and metal traders. These two segments together consume more than 55% of the metal supplied by domestic producers to the domestic market. At the same time, the share of such branches of the domestic economy as mechanical engineering, automobile construction and construction is rather low in the structure of domestic consumption of metal products. The revival of consumption in the domestic market was due to the recuperation of related industries, the main of which is the defense industry, represented by such enterprises as «Zoria-Mashproekt», «Zaporizhtransformator», etc. (Fig. 4) [1].

In general, in 2020, 5.46 million tons of metallurgical products were delivered to the domestic market, of which 4.19 million tons rolled metal were from domestic producers. Meanwhile, the share of imported metal in total deliveries in 2020 decreased to 23.3% against 28.03% in the same period last year [8].

Despite the favorable situation and attractive low prices in the first half of 2020 for metal products in foreign markets (China, Moldova, Russia and Belarus), imports of rolled metal products to Ukraine declined by 14.8% for the year. During this period, products were purchased mainly for own needs and in small batches. Also, to protect domestic producers and prevent the influx of cheap goods, antidumping measures continued to apply to certain types of rolled metal, which further helped to reduce imports of these goods to Ukraine [7]. In total, over 1.35 million tons of ferrous metals worth almost \$1.16 billion were imported to Ukraine in 2020. Compared to the same period in 2019,

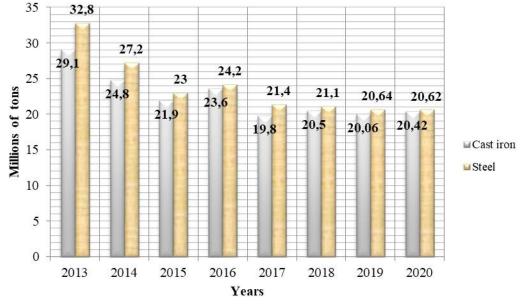


Fig. 3 – Dynamics of production of the main types of metallurgical products of Ukraine for the period from 2013 to 2020

Source: developed by the author based on data [1; 8]

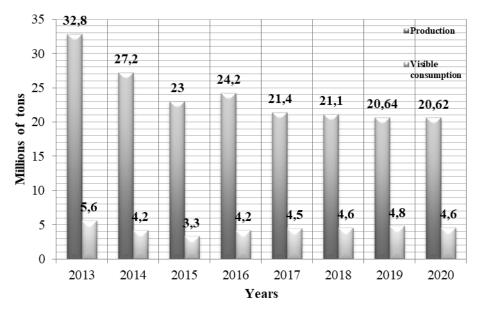


Fig. 4 – Dynamics of production and visible consumption of steel in the domestic market of metallurgy of Ukraine, 2013–2020

Source: developed by the author based on data [1; 8]

imports to Ukraine decreased by 15.9% in physical terms, while in value terms, imports fell by 19%. Metal products of European production are in constant demand on the Ukrainian market [8].

Ukrainian metallurgical enterprises face a wide range of problems, both external and internal:

- low quality of products, non-compliance with international standards, which leads to a low level of competitiveness in the global metallurgical market [1];
- strengthening competition in traditional export markets in connection with the establishment of trade defense measures;
- reinforcing the influence of the countries of the Asian region on world markets for metal products;
- insufficiently high level of protection of the domestic market;
- unsatisfactory demand for metal products in the domestic market because of its low capacity [6];
- dependence of the efficiency of Ukrainian metallurgical enterprises on the world market situation, which is combined with the weakness of the domestic market [5];
- lack of innovative changes, decline of branch science and inefficiency of mechanisms of attraction of potential of academic institutes for performance of applied developments;
- high degree of depreciation of fixed assets (up to 70–80%);
  - reduction of foreign investment in the industry;
  - inefficient use of production capacity;
  - insufficient level of budget funding;
- growing environmental problems, especially in regions where the metallurgical industry is dominant [13];
  - availability of excess capacity;
- underdeveloped logistics system, which does not allow to move to other markets and slows down the system

of transportation of products in Ukraine [10];

– low level of cooperation in the mining and metallurgical complex, which does not permit to establish rational channels of resource provision of metallurgical enterprises and to create full technological cycles of production [14].

Solving these problems requires a comprehensive program of informed decisions, the main of which should be the formation of an equilibrium model of the domestic metallurgical market, taking into account its potential. The export-oriented model of development of the metallurgical industry has both advantages and disadvantages. On the one hand, the export of the metallurgical industry is the main source of income for Ukrainian industry. On the other hand, the focus on foreign markets makes the industry extremely sensitive to fluctuations in the economies of importing countries. A strategically correct solution would be to reduce the economy's dependence on metal exports. However, the consumption of metal products in the domestic market also tends to decrease, especially in recent years [2]. The domestic market of metal products can be significantly expanded due to the large-scale restoration of the domestic metal fund, more than half of which is now in a dilapidated condition. Also, more than 60% of domestic heating networks that operate beyond the standard service life require immediate replacement. This is especially true of infrastructure facilities in both the industrial and social spheres, as well as mechanical engineering as the basis for the country's innovative development. A certain increase in demand for domestically produced metal products can be provided by agriculture, woodworking industry, road construction, small mechanization of life, the service sector, etc. [5].

The European market remains relevant for Ukraine, where half of Ukrainian iron ore exports go. In the near future, the European direction will remain attractive, given the small transport distances [2]. Under conditions of the intensification of competition in the world market of ferrous metals, it is

extremely important for Ukrainian metallurgists to develop not only new geographic markets, but also new product markets in regions where Ukrainian products are already present. One of such quite promising markets, according to some experts, is the European market of foundry products (casting). A number of experts also believe that Ukrainian metallurgical companies should move from the sale of semifinished products and raw materials to the export of metal products with a high share of value added [3]. The real demand for domestic metal products will largely depend on the state, trends and priorities of the industry in both Ukraine and the European Union. To maintain and expand Ukraine's presence in the European market, coordinated actions of the state, business and science are needed, the priority of which should be modernization of production with an emphasis on reducing its energy and resource consumption and increasing environmental friendliness and stimulating the rise of the domestic market of metal products where Ukrainian innovative developments would be tested. This will ensure a competitive price / quality ratio for domestic metal products, help to reduce the industry's dependence on exports and allow building business relationships with European partners on an equal footing [14].

In order for the proposed improvements to have a positive result, the Ukrainian metallurgical industry needs to implement the following measures:

- priority development of the domestic market of metal products, which will ensure more stable sales of manufactured products and reduce dependence on fluctuations in world conditions;
- intensification of realization and implementation of innovative developments to create fundamentally new technical and technological metallurgical solutions, increase production of deep processing products and design its new types, improve the quality and competitiveness of metal products, reduce its resource intensity [1];
- diversification of production and optimization of its structure by increasing the range of new products;
- innovative improvement of equipment and technology of metal production, diminishing of harmful effects of industry on the environment [5];
- training of new generation specialists, who will be distinguished by the highest level of digital culture, will be able to deeply combine and comprehensively apply modern digital technologies in real production and will be ready for continuous learning;
- public-private partnership that will help determine resources, new technologies, active domestic demand.

the strategic framework goals and objectives of the industry, improve the institutional environment of production with science and investors, solve the problem of volume and priority areas of funding and state support for scientific, technological and socio-economic changes in metallurgy of the future [1];

- creation of favorable economic conditions for accelerated renewal and modernization of fixed assets in order to increase energy efficiency, especially in the metallurgical industry and the competitiveness of its products;
- constant coordination of development of plans of metallurgical enterprises with strategies of other industries of Ukraine;
- use of all available opportunities of state influence by developing and implementing a legislative framework aimed at creating advantageous conditions for the development of the domestic market of metal products and satisfying the needs of Ukraine's own metal products;
- formation of effective and efficient support of scientific and technical potential of the country, fundamental and applied research aimed at ensuring innovative development [5].

# Conclusions from this study and prospects for further exploration in this direction

Thus, a study of the advantages and disadvantages of the development and functioning of the domestic metallurgical market found that a characteristic feature of its activities is export-oriented, which dictates pricing rules and determines the dependence on global trends and world prices for leading sectors of the economy. Therefore, to increase the efficiency of the domestic metallurgical market, the urgent task, which must be resolved at the national level, is the structural reorganization and maintenance of advanced development trends on the basis of innovative modernization. Excessive enthusiasm for the export-oriented model of development turned into a strategic loss for Ukrainian metallurgy, creating for it «traps» of economic prosperity with overall low competitiveness, growing resource and energy dependence, imports of quality metal products for a few high-tech industries. The adequacy of the responses of industry and government to these challenges will have a decisive impact on the development of metallurgy in the short and long term. A new strategy for the development of the industry should be formed on the priorities of the concept of neoindustrialization of the national economy. Its basis is own

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