

## Current global trends of demand for rolled metal products and features of management in case of their satisfaction

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### Abstract

World metallurgical industry is in serious decline, which signs are slack demand and overproduction. Recession covers almost all regional markets including developing countries. At the same time, the Ukrainian economy depends significantly on metallurgical sector. Correspondingly, the situation with the main metallurgical producers affects the domestic economic activity on a large scale. Therefore, idea of tendencies of market development of world rolled metal products and increase in a role of Ukraine in this market is an important scientific and applied problem.

The purpose of work is publication of results and features of analysis of current global trends of demand for rolled metal products and features of management in case of their satisfaction. In the paper, the analysis results of experience of the leading and successful global manufacturers of rolled metal products are presented. The metallurgical branch of Ukraine is in decline, as well as the situation in the world.

The analysis of practice of formation and functioning of trading houses of industrial holdings shows that the trading houses formed in the frame of industrial holdings supply the enterprises of holding with materials and raw materials, and also sale the products of holdings, including foreign economic activity.

Under the current economic conditions, the measures directed to increase in market capacity of products due to effective implementation of the infrastructure projects and state programs can promote development of the Ukrainian metallurgical industry. In addition, the domestic engineering industry can give support to the market.

**Key words:** ROLLED METAL PRODUCTS, MARKET AND PRODUCTION, GLOBAL TRENDS, DEMAND SATISFACTION, MANAGEMENT, EXPERIENCE OF LEADING PLAYERS OF MARKET

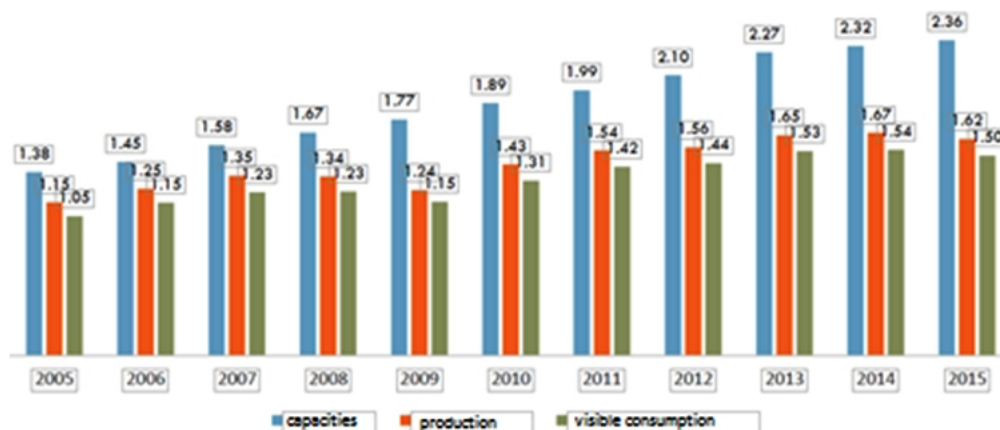
### Problem statement and global trends analysis

World metallurgical industry is in serious decline, which signs are slack demand and overproduction. Recession covers almost all regional markets including developing countries. In 2015, the steelmaking

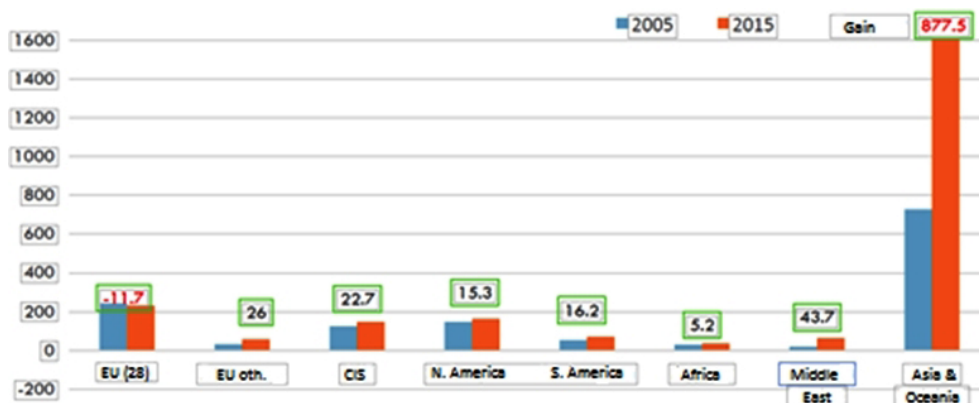
industry showed negative growth, it was the first time since 2009: in 2015, the volume of world production of steel was 1,620 million tons, which is less than in 2014 by 3 %. Overproduction in 2015 was at the level of 100 million tons (7.6 %), and excess capacities

exceeded 700 million tons. Totally, global capacities of steelmaking increased almost by 1 billion tons (by 88 % owing to Asia region) during last 10 years. Pre-

liminary results of 2016 do not allow us to predict recovery: according to WSA, during 10 months of 2016 steelmaking was reduced by 0.1 % to the level of 2015.



**Figure 1.** Balance of production capacities, production and visible consumption in the world market of steel, billion tons



**Figure 2.** Gain of capacities in the world market of steel, million tons

In a section of rolled metal products, in 2015 the greatest fall was shown by rolled section, which tapping has decreased by 3.1%. The total output of hot-rolled (h/r) products was 737 million tons in 2015. Output of rolled steel sheets was 339 million tons and of heavy plates - 243 million tons. Currently, a share of Ukraine in global output of rolled products is 4%.

## Objective of paper and statement of the main material

The objective of paper is publication of results and features of analysis of current global trends of demand for rolled metal products and features of management in case of their satisfaction.

The metallurgical branch of Ukraine is in decline, as well as the situation in the world. At the same time, during the last five years the situation in metallurgy was slightly worse, than in the processing industry in general. Negative dynamics of production caused these problems: -4.7% in metallurgical branch in gen-

eral, which is, however, is better by 0.7 percentage points than an average value of the processing industry. The significant impact on falling of performance characteristics of metallurgical branch was carried by nonferrous metallurgy (-7.4%).

Devaluation of hryvnia significantly increased competitiveness of the Ukrainian production in the world market that was especially important taking into account dramatically interested competitiveness. However, the potential of growth of external shipments is seriously limited by “steel wars”, which is introduction of an increasing number of protection measures by consuming countries. At the same time, up to 2015 the oil and gas industry was the leading branch of the Ukrainian market of metal rolling, it caused explosive demand for a heavy plates in 2013-2015. Decline in demand from construction sector became the greatest shock of the market. Demand has also decreased from mechanical engineering.

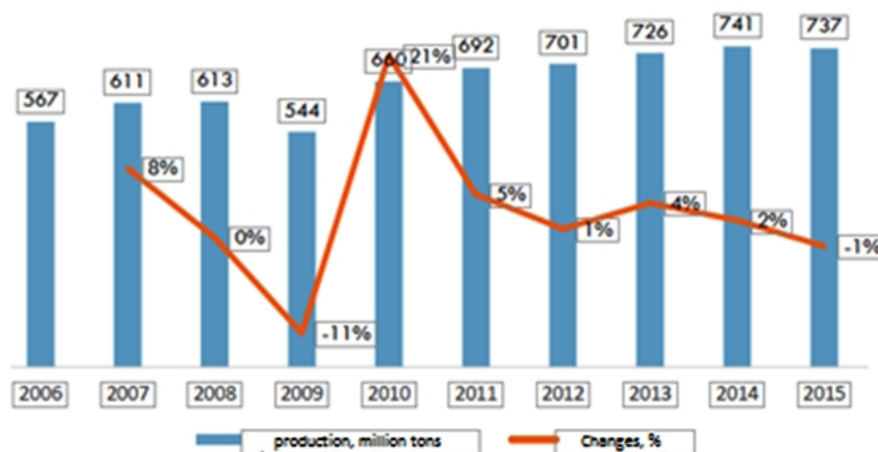


Figure 3. Volume of world production of h/r products, million tons

The volume of world export of rolled metal products exceeds 230 million tons at the present time. The main exporters are the Asian countries: China (25% of shipments in 2015), Japan (12%), South Korea (11%). However, the share of China has grown

by 7% during 2012-2015. The considerable volume of world deliveries occupies the share of EU countries; however, their share in world trade gradually decreases (from 36% in 2012 to 33% in 2015).



Figure 4. Volume of world trade of rolled metal products in 2006-2015

Feature of the market of rolled products of Ukraine is big number of players: three leaders provide more than 70% of internal production. The largest one is Ilyich Iron and Steel Works with a share 31% in the production in 2015, next is JSC “Zaporizhstal” - (25%), Alchevsk Iron & Steel Works - (17%). Foreign players in the rolled products market are represented by Russian enterprises, the largest producer is Magnitogorsk Iron and Steel Works, Novolipetsk Steel and “Severstal”, Kazakhstan plants (ArcelorMittal Temirtau, etc.), Chinese and Korean manufacturers, etc.

Functions of supply of the holding enterprises [1-3] with raw materials and materials, and also sales of products of holdings, including foreign economic activity are implemented by control of trading houses.

The analysis of practice of formation and functioning of trading houses of industrial holdings shows that the trading houses formed in the frame of industrial holdings supply the enterprises of holding with materials and raw materials, and also sale the

products of holdings, including foreign economic activity.

As practice of formation and development of corporations of Japan and Korea shows [3-6], the specialized intermediaries, namely, universal trading companies, trading houses are formed in structure of industrial associations for implementation of functions of supply, sale, and foreign economic activity. For example, in the Japanese corporations – “siudans” (Mitsubishi, Mitsui, Sumitomo, Daishi Kangin, Fue, Sanwa), supply, sales, and foreign economic activity are assigned to trading companies (sogo-sesya – multiple-purpose, “comprehensive” trading companies). There are also analogs of such firms in South Korea; they are so-called general trading companies. These firms in the Japanese corporations perform functions of universal “marketer” and “supplier”, and also a role of “department” of external relations.

For improvement of approaches to control of supplying trading houses within corporate system of

## Management

supply, distribution of functions of control of supply between the department of the head company supply, industry-based trading houses supplying branch subholdings of the diversified holding company and services of supply of branch holdings enterprises (Table 1) is proved.

**Table 1.** Distribution of functions of supply control in Siberian Business Union

Functions	Content of function (subfunction)	Subject of system of supply performing a subfunction
Planning	Studying of external and internal environment of the enterprise, market of certain goods (supply marketing)	Industry-based trading houses (at the level of branch subholding – studying of the markets of suppliers for the enterprises of the industry-based holding and other holdings). Department of supply (for all holding company – studying of external and internal environment of industry-based trading houses)
	Forecasting and determination of material resources requirement	Services of supply of the separate enterprises of each subholding (for each enterprise of holding). Industry-based trading houses (at the level of industry-based subholding on the basis of forecasts and plans of services of supply of the enterprises industry-based holding). Department of supply (for all holding company on the basis of forecasts and plans of branch trading houses)
	Optimization of production stocks	Services of supply of the separate enterprises of each subholding (for each enterprise of holding). Industry-based trading houses (at the level of industry-based subholding). Department of supply (for all holding company)
Function	Content of function (subfunctions)	Subject of system of supply performing a subfunction
	Material requirement planning	Services of supply of the separate enterprises of each subholding (for each enterprise of holding). Industry-based trading houses (at the level of branch subholding). Department of supply (for all holding company)
	Operational planning of supply	Services of supply of the separate enterprises of each subholding (for each enterprise of holding). Industry-based trading houses (at the level of Industry-based subholding)
Organizational	Collection of information about supplies (supply marketing)	Services of supply of the separate enterprises of each subholding (for each enterprise of holding). Industry-based trading houses (at the level of iIndustry-based subholding). Department of supply (for all holding company)
	Participation in fairs, exhibitions-sales, auctions, etc. (supply marketing)	Department of supply
	The analysis of all sources of satisfaction of need for material resources for the purpose of the choice of the most optimum one (supply marketing)	Industry-based trading houses (at the level of industry-based subholding). Department of supply (for all holding company)
	The contracts with suppliers of economic for delivery of production	Industry-based trading houses
	Obtaining and organization of delivery of resources	Services of supply of the separate enterprises of each subholding (for each enterprise of holding)
	Organization of warehouse economy	Services of supply of the separate enterprises of each subholding (for each enterprise of holding)
	Providing holdings, enterprises, shops, sites, jobs with necessary material resources	Services of supply of the separate enterprises of each subholding (for each enterprise of holding)
Regulation of amount of material stock	Correction of delivery time, method of payment, with the seller etc.	Industry-based trading houses

Controlling and coordinating	Control over the implementation of contractual obligations of suppliers and, performance of delivery time of production	Industry-based trading houses
	Control of an expenditure of material resources in production	Services of supply of the separate enterprises of each subholding (for each enterprise of holding). Industry-based trading houses (at the level of Industry-based subholding)
	Incoming control of quality and completeness of the incoming material resources	Services of supply of the separate enterprises of each subholding (for each enterprise of holding). Industry-based trading houses (at the level of Industry-based subholding)
	Control of production stocks	Services of supply of the separate enterprises of each subholding (for each enterprise of holding). Industry-based trading houses (at the level of Industry-based subholding) Department of supply (for all holding company)
	Promotion of claims to suppliers and transport organizations	Industry-based trading houses
	Analysis of system effectiveness of holding supply, development of measures for coordination of supplying activity and increasing in its efficiency	Branch trading houses (at the level of branch subholding). Department of supply (for all holding company)

All the mentioned indicators are the criteria characterizing efficiency, success of functioning of trading houses, quality of control of their activity.

## Conclusion

Under the current economic conditions, the measures directed to increase in market capacity of products due to effective implementation of the infrastructure projects and state programs can promote development of the Ukrainian metallurgical industry. In addition, the domestic engineering industry can give support to the market. For example, need for new freight cars in Ukraine during 2017-2020 will be 53.727 thousand units according to the recovery scheme or 69.240 thousand units according to the investment scheme. Experts [7-9] predict that growth of investments into construction of new cars will cause revival of economy, in particular, will stimulate work of the adjacent enterprises, and consumption of steel products will be increased by 1.236 million tons or by 1.593 million tons depending on the selected scheme. Besides, the fund of scrap metal due to utilization of old cars will rise by 1.15 million tons.

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