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ANALYSIS OF THE WORLD MARKET OF STEEL PRODUCTS

Abstract

The article analyzes the trends of the world steel market and the prospects of its development. The volumes of production of leading steel supplying countries were analyzed for the period of 2005-2014 years. The comparative analysis of changes in steel production between different countries was carried out and in addition problems of the industry were singled out. The objective of this study is analyzation of the global steel market and its current trends, identifying key market suppliers of metallurgical production and development of forecast of its future trends.

The metallurgical industry is one of the most important components of the global economy, that's why a lot of world scientists have dedicated their researches to the global steel market, its problematic aspects and benefits. However, despite the significant amount of scientific publications on research of the main advantages and problems of the global steel industry the development of future trends in the light of current market situation is still relevant.

For Ukraine, which is an active participant of the world market of steel products, the steel industry is also strategic, providing a large share of state revenues and about 26% of GDP, but there is the problem of obsolescence of the industry and its technologies. Therefore, the current study on implementing key aspects of modernization of obsolete enterprises to enhance their competitiveness in world markets is also required.

Keywords: *steel, iron and steel industry, the world market of metal production, export potential, internal usage, problems and perspectives, future development.*

Research results:

Over the past decade there have been significant changes in the steel industry not only in Ukraine, but also in the world. According to the World Steel Association (WorldSteel) world steel production in 2014 reached a record high level: 1,674 megatons (Mt), 4.2% higher than the previous year figure and 45% higher than in 2005. Till 2012 Ukraine confidently occupied the 8th place in the overall ranking among the leading countries in production of steel (tab. 1), but in 2013 it concedes Turkey which ousted Italy from the list. [8]

Tab.1

List of countries by steel production

| Country | 2005 | | | 2011 | | | 2012 | | | 2013 | | | 2014 | | |
|-------------|-----------------------|--------|----------|-----------------------|--------|----------|-----------------------|--------|----------|-----------------------|--------|----------|-----------------------|--------|----------|
| | Production (mega ton) | Rating | Share, % | Production (mega ton) | Rating | Share, % | Production (mega ton) | Rating | Share, % | Production (mega ton) | Rating | Share, % | Production (mega ton) | Rating | Share, % |
| China | 355,8 | 1 | 31,6 | 695,5 | 1 | 45,5 | 708,8 | 1 | 45,9 | 730,3 | 1 | 49,4 | 822,7 | 1 | 49,1 |
| Japan | 112,5 | 2 | 10 | 107,6 | 2 | 7 | 107,2 | 2 | 7,1 | 124,4 | 2 | 6,9 | 110,7 | 2 | 6,6 |
| USA | 94,9 | 3 | 8,4 | 86,4 | 3 | 5,7 | 88,6 | 3 | 5,9 | 91,2 | 3 | 5,5 | 88,2 | 3 | 5,2 |
| India | 45,8 | 4 | 4,1 | 72,2 | 4 | 4,7 | 76,7 | 4 | 5,1 | 84,3 | 4 | 5,1 | 86,5 | 4 | 5,1 |
| Russia | 66,1 | 5 | 5,9 | 68,7 | 5 | 4,5 | 70,6 | 5 | 4,7 | 69,0 | 5 | 4,4 | 71,5 | 6 | 4,2 |
| South Korea | 47,8 | 6 | 4,2 | 68,5 | 6 | 4,5 | 69,3 | 6 | 4,6 | 68,6 | 6 | 4,2 | 71,6 | 5 | 4,2 |
| Germany | 44,5 | 7 | 3,9 | 44,3 | 7 | 2,9 | 42,7 | 7 | 2,8 | 41,0 | 7 | 2,7 | 42,9 | 7 | 2,5 |
| Ukraine | 38,6 | 8 | 3,4 | 35,3 | 8 | 2,3 | 32,9 | 10 | 2,2 | 28,97 | 10 | 2,1 | 27,2 | 10 | 1,6 |
| Brazil | 31,6 | 9 | 2,8 | 35,2 | 9 | 2,3 | 34,7 | 9 | 2,3 | 31,1 | 9 | 2,1 | 33,9 | 9 | 2,0 |
| Italy | 28,7 | 10 | 2,5 | 29,35 | 11 | 1,9 | 27,2 | 11 | 1,8 | 25,5 | 11 | 1,6 | 23,7 | 11 | 1,4 |
| Turkey | 21 | 11 | 1,9 | 34,1 | 10 | 2,2 | 35,9 | 8 | 2,4 | 32,4 | 8 | 2,2 | 34,0 | 8 | 2,0 |
| Other | 268,5 | - | 23,8 | 279,5 | - | 18,3 | 215,6 | - | 14,3 | 211,23 | - | 13,7 | 193,2 | - | 11,5 |
| Total | 1148 | 100 | 152 | 1537 | | 100 | 1559 | 100 | | 1606 | 100 | | 1674 | 100 | |

Source: World Steel Association

Despite the fact that 2013 was not an easy year for the metal industry, taking into account such issues as: excess capacity and cost of raw materials, the demand for the global steel market had a positive growth of 3.6%. World steel production was 1,606 mega tones, which was a record for the industry.

Major steel producers, according to World Steel Association, in 2014 were: China (822.7 million tons), Japan (110.7 million tons), USA (88.2 million tons), India (86.5 million tons), South Korea (71.5 million tons), Russia (715 million tons), Germany (42.9 million tons), Turkey (34 million tons), Brazil (33.9 million tons), Ukraine (27.2 million tons), Italy (23.7 million tons). Top companies in steel production in 2014 were: ArcelorMittal, Nippon Steel-Sumitomo Metal Corporation, Hebei Group, Baosteel Group, POSCO, Shagang Group. [8]

2014 became a new stage in the global steel market. Inspite of the growth of world production by 4.2%, the steel industry is now entering a period of pause, in particular because of China, which has had the most notable impact on the steel market for decades. Of course, experts expect market growth due to new players, noting that urbanization in countries with developing economies will play a key role for the steel market in the nearest future.

In 2012, among the leading countries, only six increased production, namely: China, USA, India, Russia, South Korea and Turkey. If we look at 2013, we can conclude that the rating of leaders remained the same, but almost all countries have reduced production of steel, except of China, which has an increase of 8.6%, Japan (1.1%) and India (3.1%), which in the aggregate reflected the general increase in global steel production by almost 2.3%. [6]

China, India, Russia, South Korea, Germany showed positive dynamics in 2014 while the US and Japan slightly reduced production.

Moving ahead we will perform comparative analysis of steel production between different countries.

Ukraine and Russia

Despite the common historical past of Russian and Ukrainian steel industry, differences in their performance increased significantly in the post-Soviet period, after the privatization of steel companies in 1990's. Positive and negative factors in the steel industry of both countries are similar, but profit margins of Russian steel companies outpaced indicators of Ukrainian companies.

One of the key common features, which remained in both countries are low costs, primarily due to low labor costs. This is an important factor for the industry, which

conducts mostly standardized products. In addition, both countries kept export opportunities of products that contribute to the diversification of market position and - as markets of steel products are mainly regional - help in fighting risks of price fluctuations.

However, high capital expenditure requirements and financial policies of companies make the negative impact on the performance of companies. Both Russian and Ukrainian companies are faced with significant institutional risks that negatively affect the ratings, such as the uncertainty of the application of taxation and regulation.

This trend in broader terms - the creditworthiness of companies - determines such differences as assets, levels of corporate governance and disclosure, the size and growth of the domestic market and the prospects of transactions of mergers and acquisitions. [1]

Since 2009 all CIS countries, including Ukraine significantly reduced the production of ferrous metals. After the decrease of production in the steel industry by 12.3% and 26.7% in 2008 and 2009, there was an increase in the post-crisis period by 12.2% in 2010, 8.9% in 2012, 9.1% in 2013.

Europe

European leading countries in steel production in 2014 showed mostly positive dynamics.

Germany produced 42.9 million tons of steel in 2014 (+1.9% compared to 2013), but slightly decreased its share in world production, which is associated with the overall growth in other countries .Italy produced 23.7 million tons (-1.8% compared to 2013), steel production in Turkey was 34.0 million tons. (+ 1.6%).

The main advantages of Turkey's metal business are:

- geographical location. Nearest neighbors - large shopping areas: the EU, North Africa, the Middle East and the CIS.
- Turkey (as a member of NATO) has a special relationship with the EU and the US who are loyal to Turkish exporters of metal. In 1996 Turkey signed with the EU agreement on the country's accession to the EU single customs union, whose members have duty-free trade in steel. And adopted by the USA anti-dumping restrictions on imported steel products in 2002 didn't affect only Turkish metal producers because the country has been recognized as an emerging market.
- The country from the north and west is washed by the sea. The main volume of foreign traffic is carried by sea. Large and modern port facilities of Turkey are able to process quickly and cheaply large volumes of export-import cargoes, including steel products and raw materials.

The disadvantage is the fact that the country has a significant shortage of qualitative raw materials and cheap energy and is completely dependent on imports; in addition there is not very stable political and economic situation inside the country.

Germany ranks fifth in the world steel output. The main area of concentration of the steel industry is west of the Ruhr coal basin.

Italy for the entire study period had a positive trend, except for a slight decline in 2014. The country has developed machine building, production of cars, scooters, bicycles, ships, and therefore may further increase melting ferrous metals. Steel is based on import and scrap iron, coke, iron ore, alloy metals. Features of raw materials affect the structure and placing the companies in this sector. The largest plants are situated in ports. [5]

America

In 2007 in the US industry decreased steel consumption by 0.38%. GDP of the country continues to slowdown. Production of automobiles, industrial equipment and other durable products sharply decreased in the end of 2006 and is decreasing further due to falling demand. The slight increase in metal consumption may occur due to the construction - the future replacement and repair of bridges generates thousands of prospects for growing demand for high-strength steel. Optimistic forecasts of accelerated growth of the world economy and increasing annual steel consumption stimulated its production, which led to oversupply on the US market, excess inventory and falling of prices.

Steel industry of Brazil has a number of competitive advantages in the international division of labor. Including:

- abundant natural resources for the steel industry;
- the most modern equipment and technology;
- relatively inexpensive labor;
- sufficient transport infrastructure;
- advantageous geographical position, which allows the transportation of raw materials.

Metallurgy of the region is rated as one of the biggest low cost production in the world. In Latin America is produced almost 25% of the global amount of iron, using the most promising methods of direct reduction.

Latin America's steel industry is characterized by a high degree of consolidation, as well as plans of expansion and development of production.

Asia

India and China are characterized by rapid economic development and a large capacity of their domestic markets. High demand for steel products in the region explains the increase in pig iron production in neighboring countries, such as China and India - Japan and South Korea.

There is speculation that India may become a world leader in steel production. Indian steelmakers argue that the country has in stock all competitive advantages. Including:

- availability of iron ore;
- low labor costs;
- high level of training;
- significant governmental support of the steel industry as one of the strategic sectors of the Indian economy.

However, at present India is largely inferior to the undisputed leader of China, which produces one-third of global steel production volume and is one of its largest customers. In 2014 China produced 822.7 million tons of steel, while the annual production in India is almost ten times lower. (86.5 million tons) According to [6], in China the average steel consumption per capita is 265 kg, while in India - only 30 kg. For example, China produces more than 5 million cars a year, while India - less than 1 million.

Conclusions

The world steel market is gaining the new format at the current stage, in which the speculative component of the cost of steel products is minimized. With the setback in prices for raw materials (ore and coal) to "fair" value, price of steel will be more determined by the underlying market factors and ultimately steel should become more accessible. Excess power will remain a major challenge for the steel industry. The growing gap between global steel production capacity and current demand has led to deterioration of the financial situation of the worlds steel producers, which threatens the long-term economic viability and efficiency of the industry.

In the nearest future the most important factor influencing the market of metal will be the new levels of prices on raw materials. And not only on raw materials, which is directly used in steelmaking, but also on other raw materials, especially oil, which value affects many sectors, including the steel industry.

It is expected that in 2015 growth of demand for steel will be moderate (optimistic) or zero (pessimistic forecast). According WorldSteel, world demand for steel in 2015 will grow by about 2%. The weakening dynamics of growth reflects a significant slowdown in the increase of the demand for steel in China and other large countries with developing economies. Although the demand of some developed countries, including

the US, Canada, Japan and some EU countries, is restored, its level is not enough to offset the decline in developing countries, which provide over 70% of consumption of steel products in the world. According to WorldSteel, the global demand for steel has reached 1,562 mega tones by the end of 2014 and in 2015 the level of 1,594 mega tones is expected to be hit. Meanwhile steel consumption in developed countries increased by 4.3% in 2014 and is forecasted to grow by 1.7% in 2015, while in emerging markets consumption grew only by 1.7% in 2014, with the projected growth of 4.7% at the end of 2015. China steel consumption increased by 1% in 2014, this year will grow by about 0.8%. However, the current turbulence of financial markets and uncertainty about economic prospects of the CIS countries are likely to affect the forecast of moderate growth.

Up to these days Ukraine remains almost the only country in the world, companies of which export up to 80% of production and 20% sell on the internal market. [3] At the same time the production of high-tech products is significantly reduced, the main product groups in total exports are semi-finished and finished steel, which indicates its imperfections. Other problems in the metallurgical industry that prevent the country from strengthening its competitiveness on world markets are: production with high energy consumption and inefficient consumption of other resources, resulting in significant expenditures of natural gas, increasing dependence of industry on imports, lack of innovative developments, the decline of science industry and ineffectiveness of mechanisms of involving potential academic institutions in conducting applied research, which leads to technical and technological backwardness of steel industry (25% of steel is still smelted in Martin, the continuous casting machine spreads 53% of steel, to compare with averages worldwide: 1.1% and 93% respectively); high level of depreciation of fixed assets (70-80%), most domestic steel industries are equipped with old equipment, over time exploitation ; reduction of foreign investments ; low productivity at metallurgical enterprises; insufficient budget financing of the sector; growing environmental problems, especially in areas where the steel industry is dominant.

These deformations are reinforcing export orientation based on raw materials and are encouraging the country to adapt to the needs of the global market within the available internal capacity and ongoing competitive advantages. Current trends on world markets could lead to a reduction in demand for major export products of Ukraine and disrupt the stability of post-crisis recovery. There is an urgent need of modernization of metallurgical enterprises of Ukraine, introduction of energy saving technologies, shift in production cycle from open-hearth furnaces to converter steelmaking method. For domestic metallurgical industry very urgent is the task of adapting to changes in external market conditions.

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