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# **The influence of metallurgical sector on Ukrainian economy**

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## **The Influence of Metallurgical Sector on Ukrainian Economy**

The purpose of this article is to analyze the influence of metallurgical sector on Ukrainian economy. We try to examine what is iron ore for Ukraine – a basis for successful economic development or resource curse, and investigate the impact of steel and iron companies on performance of domestic stock exchange.

### **Introduction**

The stock of natural resources is an important factor of economic development, because they – as an endogenous factor – determine the initial potential of economic development. The countries and regions poor in natural resources have fewer chances for successful economic development than countries with an abundance of natural resources. It should be emphasized that this relationship isn't deterministic, because there are many examples, when some countries poor in natural resources became the most developed economies in the world. We mean Japan, whose perspectives of economic development after World War II were affected by the lack of the natural resources and ruined economy, but the country realized its economic potential and became one of the most developed countries at nowadays. Paradoxically however, as note some scientist, it is now almost conventional wisdom that resources are a “curse” for currently developing societies and this claim is supported by some basic facts<sup>1</sup>. As noticed M. Ross, until recently, most of the evidence for the resource-curse hypothesis came from states that export either hard-rock minerals or petroleum<sup>2</sup>, for example, for OPEC as a whole GDP per capita decreased on average by 1,3 percent each year during 1965–1998. Another one example of resource curse is that from 1960 to 1976 the developing world's leading hard-rock mineral exporters had a per capita GDP growth rate of 1,9 percent, half the rate of a control group of nonmineral states.

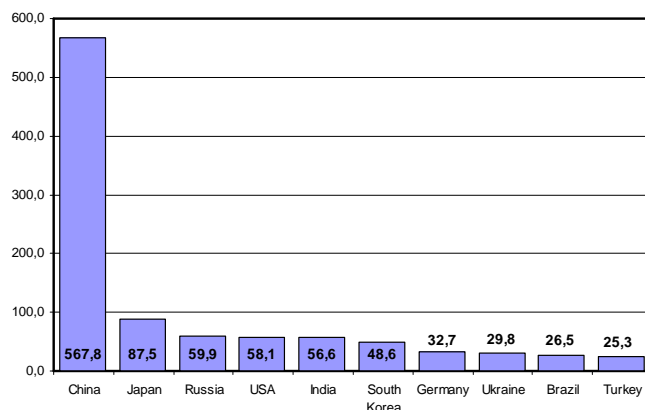
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<sup>1</sup> Robinson J., Torvik R., Verdier Th. *Political foundations of the resource curse* // Journal of Development Economics. – Vol.79. – 2006. – P.448.

<sup>2</sup> Ross M. *The Political Economy of the Resource Curse* // World Politics. – Vol.51. – 1999. – P.300.

## Iron ore: basis for Ukraine' successful economic development or resource curse?

The main significant natural resources in Ukraine include: iron ore, manganese, coal, natural gas etc., which form the base for development of Ukrainian industry. Ukraine, where metal production, in particular iron and steel industry, is the dominant heavy industry, is one of the largest steel producing and exporting countries in the world (see Figure 1).



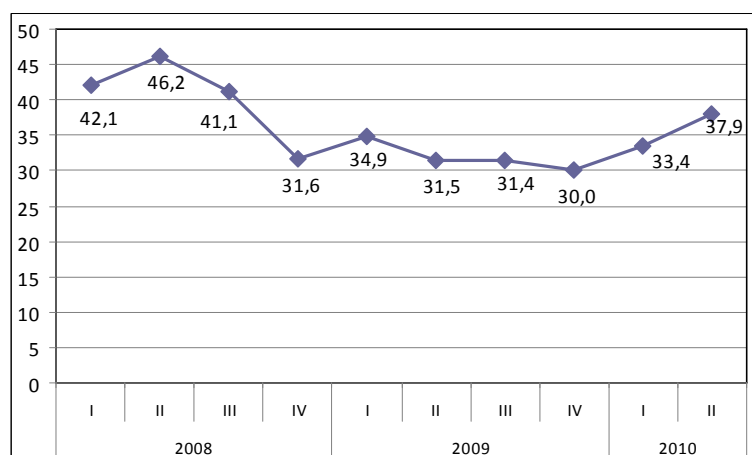
**Figure 1.** The Largest steel producing countries (2009), million metric tons

Source: World Steel Association // [www.worldsteel.org](http://www.worldsteel.org)

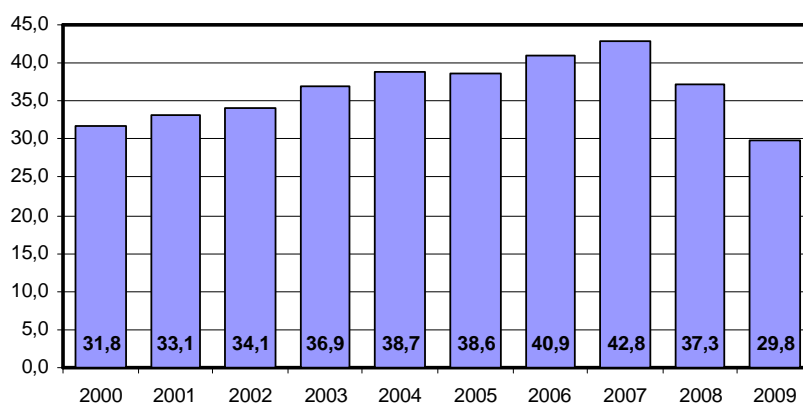
Ukrainian iron and steel industry accounts for around 5 to 6 % of the national gross domestic product and 33,2 % of Ukrainian export revenue in 2009 (40,25% in 2008). Large as these numbers may already be, indirectly steel is even more important because many other economic activities depend on the steel sector. Figure 2 shows graphical interpretation of the importance of Ukraine's metallurgical sector in total export revenue, as we can see global economic downturn and slump in world trade, particularly in world steel markets, resulted in fall of the revenue from domestic steel and iron industry during seven quarter (from second quarter 2008 till fourth quarter 2009). There was a breaking point in fourth quarter 2008 –export revenue from domestic metallurgical sector in percentage term in the structure of total export revenue began to rise, which can be connected with a start of recovery of world economy.

Some years ago increased demand for steel in the world was mainly generated by the automobile, construction, infrastructure, container industries and oil and gas industry. The increasing need for steel by the developing countries for their infrastructural projects has pushed the steel producing companies near their operative capacity. Due to increasing demand for steel and iron production Ukrainian metallurgical industry, as shown in figure

3, peaked at 42,8 million tons in 2007. As a global car manufacturing and construction activity – and hence the prices – have sunk in the deepening world slowdown, Ukraine’s steel and iron export has been dragged down too. As a result Ukrainian metallurgical sector has been gravely affected by the current financial crisis of 2007–2008 and declined to 29,8 million tons in 2009. In 2007, Ukraine’s metallurgical sector had its best year according to a statement by the Ministry of Industry, based primarily on the volume of production of metallurgical products. Not only did the volume of production increase, but so did investment in new equipment too. In 2007 investment in producing 1 metric ton of steel was \$31, which was on the level of advanced European economies. Profitability in the metallurgical industry in 2007 reached 18,9% compared with 14,09% in 2006<sup>3</sup>.



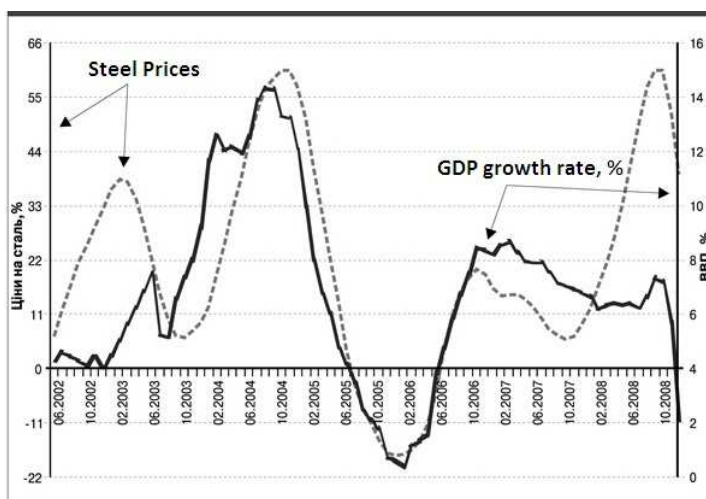
**Figure 2.** The share of steel and iron export in Ukraine’s total export revenue (quarterly basis)  
**Source:** Dynamika towarowej struktury eksportu // National Bank of Ukraine. – [www.bank.gov.ua](http://www.bank.gov.ua).



**Figure 3.** Steel production in Ukraine, million metric tons  
**Source:** World Steel Association // [www.worldsteel.org](http://www.worldsteel.org)

<sup>3</sup> Levine R., Brininstool M., Wallace G. *The Mineral Industry of Ukraine*. – 2007 Minerals Yearbook. – P.2. – Available at: [minerals.usgs.gov/minerals/pubs/country/2007/myb3-2007-up.pdf](http://minerals.usgs.gov/minerals/pubs/country/2007/myb3-2007-up.pdf).

Ukrainian steel sector can be seen twofold – as a driver of economic development of Ukraine on one hand, but as the “resource curse” on the other hand, because country’s abundance of non-renewable resources, like iron ore in our case, can cause a trend to less economic growth and worse development outcomes, as it could be otherwise. The real problem of Ukrainian steel sector is its dependence on global commodity markets swings – as emphasized S. Korablin, the conjuncture of world commodity markets actually determines the dynamic of Ukrainian economy<sup>4</sup>. As depicted visually in Figure 4, there is a strong positive correlation between growth rate of world steel prices and GDP growth rates of Ukraine, which highlights importance of steel sector for Ukrainian economy on the one hand and its dependence on international steel markets swings on the other hand.



**Figure 4.** Growth rates of world steel prices and GDP of Ukraine, % (6-month simple moving averages, 2002–2008)

**Source:** Korablin S. *Kursowi tupyky syrowynnyh ekonomik* // Dzerkalo Tyjna. №39. – 23.10.2010

### **The impact of metallurgical sector on Ukrainian stock market**

After considering the role of metallurgical sector for Ukrainian economy it is worth to give a closer look at its influence on domestic stock market, because steel and iron companies are among the biggest public companies in Ukraine and have direct influence on its performance.

High volatility of revenues from export of steel production means fewer opportunities of forecasting future trends of steel companies’ stock prices movements. Due to big share of steel companies in structure of Ukrainian stock market index (PFTS-Index) the

<sup>4</sup> Korablin S. *Kursowi tupyky syrowynnyh ekonomik* // Dzerkalo Tyjna. №39. – 23.10.2010

fluctuation of steel world prices is an important determinant of dynamic of Ukrainian stock exchange (direct influence). PFTS-Index includes the shares of three Ukrainian steel works – Alchevsk Iron & Steel Plant (Industrial Union of Donbas), Azovstal and Yenakievo Steel Works (Metinvest Holding), which are among the most traded shares on PFTS stock exchange. Table 1 gives a closer look at the trading volume of these companies' shares.

**Table 1.** Shares' trading volume of Ukrainian steel companies (2010)

**Source:** Stock market survey for January–October 2010 // National Bank of Ukraine // [www.bank.gov.ua](http://www.bank.gov.ua).

Company:	Yenakievo Steel Works	Azovstal Steel Works	Alchevsk Iron & Steel Plant
Trading volume, million UAH	238, 34	201,53	191,64

There is an indirect impact of metallurgical sector on performance of stock exchange too: due to dependence of many other economic activities on the steel sector its dynamics has strong impact on forming rational expectations of investors. For example, investment decision making will be influenced by expected level of steel exporting volume because of its impact on exchange rate through the mechanism of currency inflows.

Stock exchange index is an indicator or barometer of business environment and structure of national economy. The fact that 40% of shares from Ukrainian stock index are the shares from basic materials sector illustrates that Ukraine has a resource-based economy. There must be an agreement in society and government on necessity of diversification of national economy, because when government revenues are dominated by inflows from natural resources (from steel production in our case), high volatility of world commodity markets can play destructive role for government activities. Abrupt changes in economic realities can cause significant problem for government and private companies, such as debt crisis, problems with exchange rate, decline in stock market prices etc.

### **Conclusions**

As D. Hofman notes “Ukraine’s strong link to metal’s prices previously helped boost the economy. A 2000-08 surge in steel prices – to levels far above their long-term downward trend – underpinned Ukraine’s largely favorable export performance and

impressive GDP growth: between 2001 and 2007, the Ukrainian economy grew by an average of 7,5 percent a year in real terms”<sup>5</sup>.

There have to be solved some problems to maintain further development and competitiveness of Ukrainian steel sector, particularly the problems with natural gas supply (mainly from Russia), installation of air pollution control and labor-saving equipment, which have a significant impact on domestic iron and steel industry. Ukrainian metallurgical companies have to implement new technologies, such as thin-slab casting, making steel through the use of electric furnace, vacuum degassing etc., which are needed for cost minimizing and at the same production maximization. Only after solving these problems and implementation of new technologies Ukrainian metallurgical sector can be seen as a real driver of economic development with competitive advantages, not as a “resource curse” of domestic economy.

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<sup>5</sup> D. Hofman. *Metal Fatigue* // Finance and Development – A quarterly magazine of the IMF. – Vol.46. – No.1. – March 2009. – Available at: <http://www.imf.org/>