Bohdan Petrushchak
Ivan Franko National University of Lviv

The influence of metallurgical sector on Ukrainian economy

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 is not 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 natural resources and ruined economy, but the country realized its economic potential and became one of the most developed countries nowadays. Paradoxically, however, as some scientists note, it is now almost conventional wisdom that resources are a "curse" for currently developing societies and this claim is supported by some basic facts.[1] As noticed by M. Ross, until recently most of the evidence for the resource curse hypothesis came from the states that export either hard-rock minerals or petroleum,[2] for example, for OPEC (Organization of the Petroleum Exporting Countries) as a whole GDP per capita decreased on average by 1.3 percent each year during 1965–1998. Another example of resource curse is that from the period of 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 non-mineral states.

[1] J. Robinson, R. Torvik, Th. Verdier, *Political foundations of the resource curse*, "Journal of Development Economics" 79, 2006, p. 448.
[2] M. Ross, *The political economy of the resource curse*, "World Politics" 51, 1999, p. 300.

Studenckie Prace Prawnicze, Administratywistyczne i Ekonomiczne 10, 2011

Iron ore: basis for Ukraine's 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 Fig. 1).

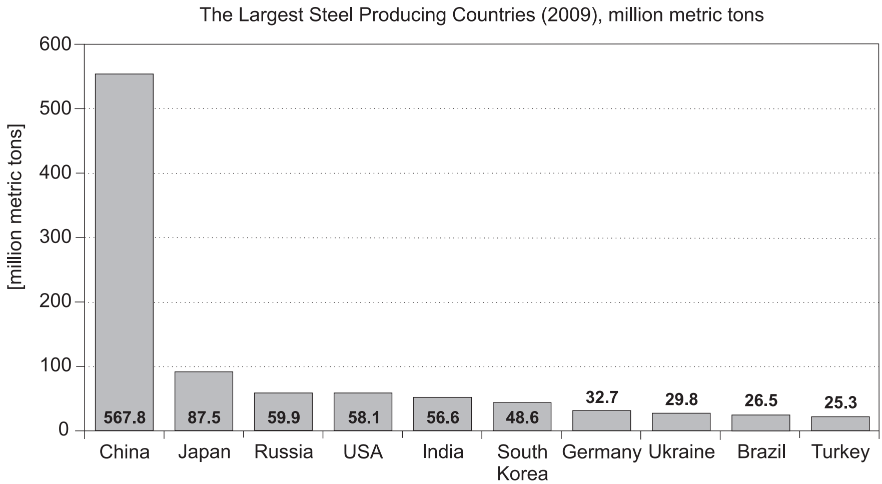

Fig. 1. The largest steel producing countries in 2009
Source: World Steel Association, www.worldsteel.org.

Ukrainian iron and steel industry accounted 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, the global economic downturn and slump in world trade, particularly in world steel markets, resulted in the fall of revenue from domestic steel and iron industry during seven quarters (from the second quarter of 2008 till the fourth quarter of 2009). There was a breaking point in the fourth quarter of 2008 — export revenue from domestic metallurgical sector in terms of percentage in the structure of total export revenue began to rise, which can be connected with the beginning of recovery of the 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 developing countries' increasing need for steel for their infrastructural projects has pushed the steel producing companies near their operative capac-

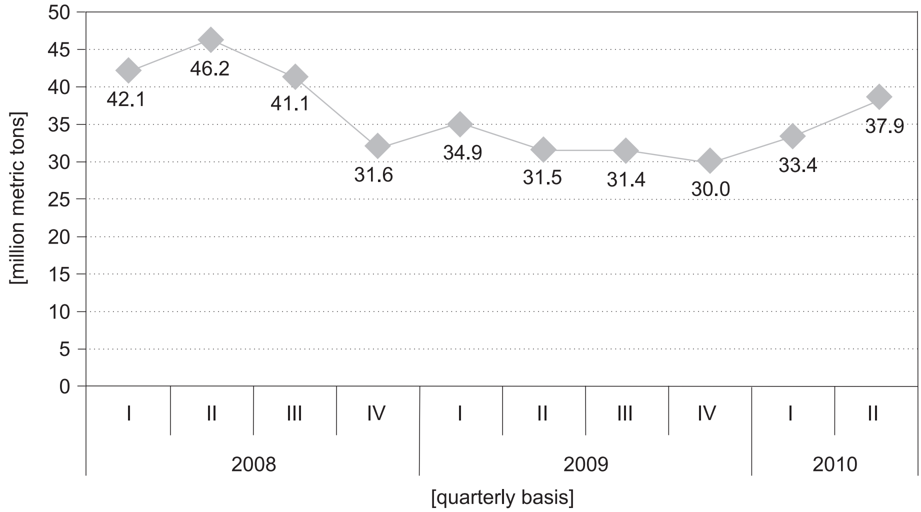

Fig. 2. The share of steel and iron export in Ukraine's total export revenue
Source: National Bank of Ukraine, *Dynamika towarnoji struktury exporty*, www.bank.gov.ua.

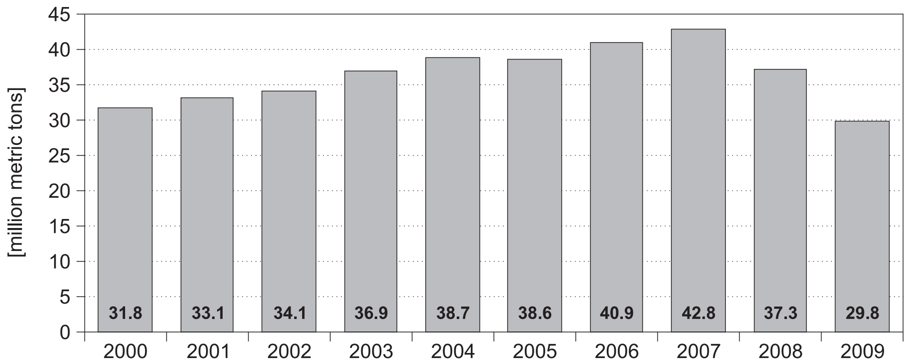

Fig. 3. Steel production in Ukraine
Source: World Steel Association, www.worldsteel.org.

ity. 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 the 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 pro-

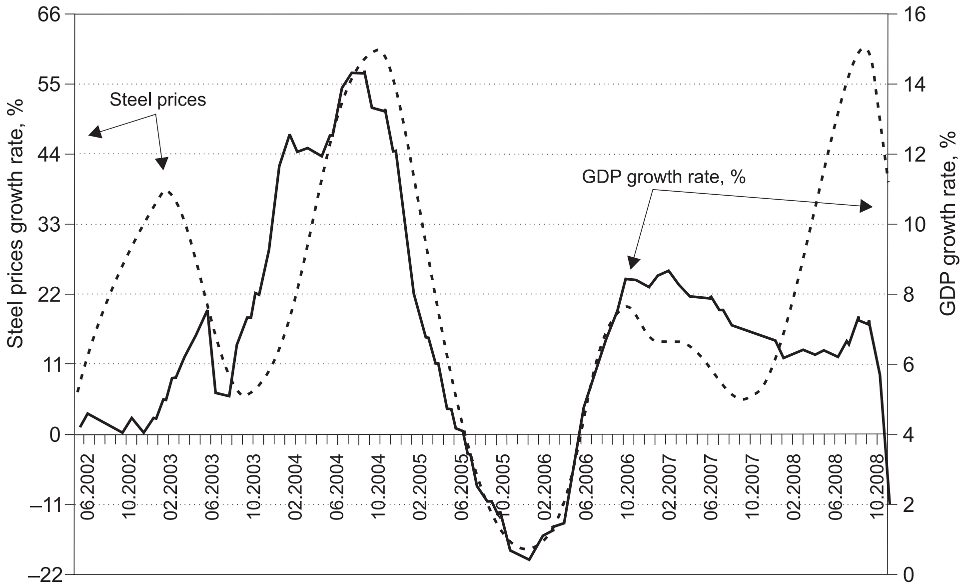

Fig. 4. Growth rates of world steel prices and GDP of Ukraine [%] (6-month simple moving averages, 2002–2008)

Source: S. Korablin, *Kursowi tupyky syrowynnyh ekonomik*, "Dzerkalo Tyjna" 23 October 2010, No. 39.

duction 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.

Ukrainian steel sector can be seen in two ways — as the driver of economic development of Ukraine on the one hand, but as the "resource curse" on the other, because the country's abundance in non-renewable resources, like iron ore in Ukraine's case, can cause a tendency of less economic growth and worse development outcomes, as it could be without export revenues from steel production. The real problem of Ukrainian steel sector is its dependence on global commodity markets swings — as emphasized by S. Korablin, the conjuncture of world commodity markets actually determines the dynamics of Ukrainian economy.[3] As depicted visually in Figure 4, there is a strong positive correlation between the growth rate of world steel prices and GDP growth rates of Ukraine, which highlights the importance of steel sector for Ukrainian economy on the one hand, and its dependence on international steel markets swings on the other.

[3] S. Korablin, *Kursowi tupyky syrowynnyh ekonomik*, "Dzerkalo Tyjna" 23 October 2010, No. 39.

The impact of metallurgical sector on Ukrainian stock market

After considering the importance of metallurgical sector for Ukrainian economy, it is worth taking 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 the structure of Ukrainian stock market index (PFTS-Index), the fluctuation of steel world prices is an important determinant of the dynamics of Ukrainian stock exchange (direct influence). PFTS-Indexincludes the shares of the 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 provides the data concerning the trading volume of these companies' shares.

Table 1. Trading volume of Ukrainian steel companies' shares (2010)

Company	Trading volume [million UHA]
Yenakievo Steel Works	238.34
Azovstal Steel Works	201.53
Alchevsk Iron & Steel Plant	191.64

Source: National Bank of Ukraine, *Stock market survey for January–October 2010*, www.bank.gov.ua.

There is an indirect impact of metallurgical sector on the performance of stock exchange too: due to dependence of many other economic activities on the steel sector its dynamics has a strong impact on forming rational expectations of investors. For example, investment decision making will be influenced by the 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 Ukraine's case), high volatility of world commodity markets can play a destructive role in government activities. Abrupt changes in economic realities can cause significant problems 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."[4]

Some problems have to be solved in order to maintain further development and competitiveness of the 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 minimization and at the same production maximization. Only after solving these problems and implementation of new technologies can the Ukrainian metallurgical sector be seen as the real driver of economic development with competitive advantages, not as a "resource curse" of domestic economy.

Bibliography

Hofman D., *Metal fatigue*, "Finance and Development — A Quarterly Magazine of the IMF" 46, March 2009, No. 1. Available at: http://www.imf.org/.

Korablin S., *Kursowi tupyky syrowynnyh ekonomik*, "Dzerkalo Tyjna" 23 October 2010, No. 39.

Levine R., Brininstool M., Wallace G., *The mineral industry of Ukraine*, "2007 Minerals Yearbook", pp. 1–10. Available at: minerals.usgs.gov/minerals/pubs/country/2007/myb3-2007-up.pdf.

National Bank of Ukraine, *Dynamika towarnoji struktury exporty*, www.bank.gov.ua.

National Bank of Ukraine, *Stock market survey for January–October 2010*, www.bank.gov.ua.

Robinson J., Torvik R., Verdier Th., *Political foundations of the resource curse*, "Journal of Development Economics" 79, 2006, pp. 447–468.

Ross M., *The political economy of the resource curse*, "World Politics" 51, 1999, pp. 297–322.

World Steel Association, www.worldsteel.org.

The influence of metallurgical sector on Ukrainian economy

Summary

The purpose of this article is to analyze the influence of metallurgical sector on Ukrainian economy. The author tries 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 the performance of domestic stock exchange.

---

[4] D. Hofman, *Metal fatigue*, "Finance and Development — A Quarterly Magazine of the IMF" 46, March 2009, No. 1. Available at: http://www.imf.org/.