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Too big, too quick? An institutional and systemic overview of the rise of Russian metallurgical transnationals

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Transnationales, institutions, développement, crise, métallurgie, investissement direct étranger, Russie

Transnationals, Institutions, Development, Crisis, Metallurgy, Foreign Direct Investment, Russia

1. Introduction

Russian outward foreign direct investment (OFDI) has expanded rapidly during the years 2000. The country has become the leading foreign investor among the BRIC countries (Figure 1), but the global crisis led to a spectacular retreat since 2008. The rise of multinational companies from non-triadic countries has attracted growing attraction in the recent period (see Goldstein, 2007 for a review), but the Russian case has been somewhat neglected, given the scale and the speed of the phenomenon. It is also highly original as far as the sectoral concentration of these FDI is concerned. After the oil and gas sector, metallurgy is the second sector to participate to this foreign expansion (Liuhto and Vahtra, 2007; Kalotay, 2008; Skolkovo, 2008).

Russia benefits from a strong relative position in metal production. The United Company Rusal is the world's largest producer of aluminium and alumina and Norilsk is the world's leading producer of nickel and palladium. Russia is also the fourth largest steel producer and exporter in the world, with four companies ranking among the top 30 of the industry in 2009. Between 2003 and 2008, most of these metallurgical companies acquired assets in both peripheral and core countries of the world economy, for more than 30 billion USD.

This paper presents some stylized facts about the expansion of the Russian metallurgical firms. It describes the trajectory of internationalization of these firms and specifies its geographical and industrial orientations (horizontal, vertical upstream or downstream). This empirical research presents a very peculiar case. Indeed, Russian metal firms' internationalization occurred at a very rapid path since there were almost no foreign operations before the turn of the millennium. This process took place in an idiosyncratic domestic context resulting from the traumatic decade of post-soviet institutional transformations. Moreover, the global metal mining industry is a mature and highly oligopolistic industry. It has gone through a further process of concentration and vertical integration during the past two decades (UNCTAD, 2007) and benefited from a spectacular commodity boom in the mid 2000's.

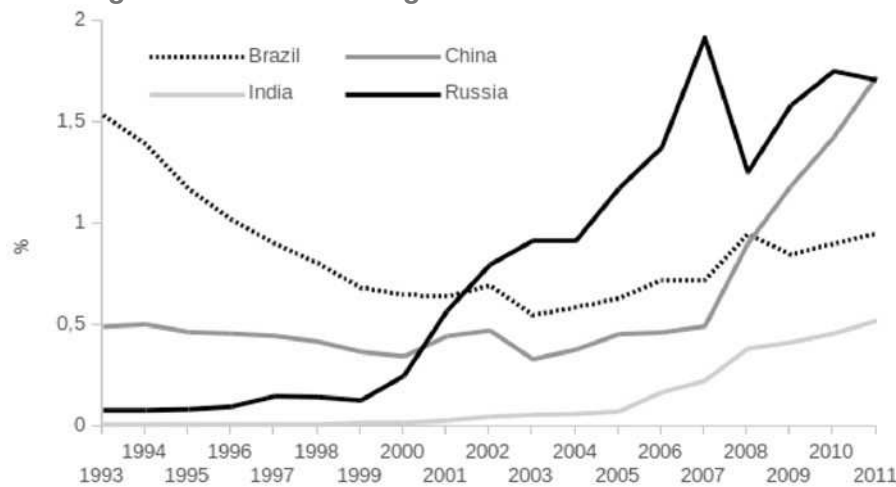
This specific internationalization path does not fit well with available theories. In order to address these shortcomings, we point to the need to better integrate the rise of non-triadic transnationals¹ within the broader literature on the determinants of firms' internationalization and suggest an exploratory institutional and systemic framework. The conceptual issues discussed throughout the paper are thus relevant beyond the limits of our case study.

¹ There is some confusion in the literature concerning the denomination of firms which operate internationally. We choose the concept of «transnationals» rather than «multinationals» in order to stress that such firms do not only operate in different markets but also organize internationally their different stages of production.

The central point is the birth of transnational corporations, thus we focus on the firms level. We compiled data on the acquisitions of the main metallurgists from the corporations and from business publications². Our research also draws on an analysis of consolidated financial accounts published in the Osiris database under the so-called “global detailed format” of a sample of the top seven Russian metallurgical firms.

The second section presents the context and the various stages in the internationalization of the firms since the early nineties. It then describes the geographical and strategic direction of investments abroad. The third section presents our institutional and systemic analytical framework and its theoretical background. The fourth section associates the stylized facts developed in section 2 to the conceptual framework. The concluding section summarizes our empirical results and draws some conclusions of wider interest for theoretical debates on transnationals.

Figure 1. Outward foreign direct investments stocks – world share



Source: The authors based on UNCTAD Handbook of Statistics.

2. A favorable context for the international development of metallurgical firms

Two major developments supported the birth of Russian metallurgical transnational. First, exports were a leading factor in the reorganization of this sector during the nineties. Second, a very favorable economic environment has widely increased their financing capacities from 2003 to 2008.

Table 1 summarizes the characteristics of the main Russian metallurgical firms, accounting for most of the Russian production of steel, nickel and aluminium products.

2.1. The role of exports and the reorganization of the metallurgy in the post-soviet period

The internationalization of metallurgical firms occurred during the first years of the post-soviet transformation through the development of exports. The radical reforms implemented then led to a sharp drop in internal demand, a rise in atypical forms of payment and an acute level of uncertainty. These changes created strong incentives for the development of exports, which were made possible by the recent trade liberalization. Between 1992 and 1997, exports grew from 20 to 80% of the production of non-ferrous metals and from 3 to 65% of ferrous metals (Ekspert, 1998; Budanov, 1998). As a consequence, metallurgy was less affected than other sectors by the downturn in activity, leading to an increase in its weight in the Russian economy.

² Companies' websites: Evraz Group, <http://www.evraz.com>; MMK...

At the same time the industry went through a radical process of dislocation of ownership structure. The privatization of almost all the enterprises between 1993 and 1995 delivered a fatal blow to the existing Soviet hierarchical relations (Appel, 1997; Durand, 2003 and 2004). Formally, the property rights fell in the hand of companies' managers. However, the effective control was in the hand of the trading company TransWorldGroup (TWG) which controlled the export channel, thanks to its links with the Eltsin' administration. In 1995, TWG political supporters lost ground in the Kremlin. As a result, TWG lost the support of state representatives in board meeting and, consequently, the managers' support. At the same time, the "loan-for-shares" scheme allowed several Moscow-based banks to buy shares in the leading metallurgical companies at a hugely discounted price. In most cases, the banks supported the management against TWG. They helped them to strengthen their effective control by creating their own trade networks or by passing new agreements with foreign traders.

Table 1. The largest Russian metallurgical firms (2011)

COMPANY	MAIN ACTIVITY	TOTAL REVENUE (BLN USD, 2011)	NATIONAL RANK AMONG MAIN COMPANIES BY SALES (FORBES, 2012)	NET PROFIT MARGIN (AVERAGE 2003-07)	NET PROFIT MARGIN (AVERAGE 2008-11)	REPORT ON OUTWARD INVESTMENT	SHARE OF FOREIGN SALES (2007 OR 2008)	MAIN SHAREHOLDER (TOTAL OWNERSHIP) (DATE OF INFORM)	RANK IN 2012 (2008) FORBES WORLD'S BILLIONAIRES AND 2012 NET WORTH, BLN USD (2008)
SEVERSTAL	Steel and Mining	15,3	11	15,9 %	- 3,62 %	yes	56 %	A. Mordashov (82,37%) (02/2007)	45 (18) 15,3 (21,2)
EVRAZ GROUP*	Steel, Mining and Vanadium	12,9	12	15,3 %	- 3,62 %	yes	50 %	R. Abramovitch (41%) (12/2007)	68 (15) 12,1 (23,5)
NORILSK NICKEL	Nickel and Palladium	13,3	13	31,5 %	18 %	yes	93 %	V. Potanin (25,2%) (04/2008)	46 (25) 14,5 (19,3)
RUSAL	Aluminium	14,3	17	n.a.	-0,01 %	yes	77,5 %	O. Deripaska (53,8 % 03/2009)	9 (107) 8,8 (28)
MECHEL	Mining and Metals	6,7	19	16,3 %	11,2 %	yes	na	I. Zyuzin (73 %) (02/2008)	367 (77) 3,1 (10)
NLMK	Steel	7,8	21	31,9 %	13,2 %	yes	62 %	V. Lisin (> 80 %) (01/2009)	41 (21) 15,9 (20,3)
MMK	Steel	8,3	22	22,8 %	3,96 %	no	About 50%	Rashnikov (42,44%) (02/2007)	183 (73) 5,6 (10,4)

* Evraz Group is included in the list although it has been transformed in EVRAZ plc, a public company limited by shares incorporated in the United Kingdom incorporated in the UK in november 2011.

sources : Osiris database, companies' websites, economic press, Forbes, Global 2000 companies, april 2012 <http://www.forbes.com/global2000/>

The distribution of property rights was seriously altered after the 1998 financial crisis. On the one hand, banks rolled back because of the impact of the financial crisis. Moreover, metallurgical firms benefited from rising income stemming from devaluation. The changes in the economic context created new opportunities for top managers. They increased their shareholding in many companies and implemented a strategy of external growth. Moreover, new actors penetrated the industry such as Sibneft in the aluminium business.

Spectacular vertical and horizontal mergers occurred in the post-1998 period: creation of Rusal and Sual aluminium groups, constitution of Evraz-Holding, reinforcement of industrial groups around the ferrous metallurgical combines of Magnitogorsk (MMK), Novolipetsk (NLMK) and Severstal. Two of the aims of this reorganization were to build vertically integrated structures and to reinforce control over export channels. To that end, groups created their own commercial representations abroad and took stakes in transport infrastructure assets. Metallurgical groups also set out to secure their inputs through acquisitions of iron mines (Severstal, NLMK) or alumina plants and bauxite mines (SUAL, Rusal). Less significantly, some of them have also sought to expand to downstream industries: Severstal acquired and developed assets in the automotive industry, but assets acquired by Rusal in non-ferrous transforming mills were sold to Alcoa in 2004, as the company preferred to focus on its upstream strengths. The United Company Rusal was established in March 2007 following the

merger of three companies: the two main players in the aluminium business in Russia –Rusal and SUAL– and the alumina assets of the Swiss Glencore.

2.2. 2003-2007: the golden years

Russia exports mainly basic metallurgical products. The competitiveness of these products is based on cheap energy and low labor costs, as well as on the availability of natural resources (Budanov, 2008). However, metallurgical firms have realized impressive financial performances since 2003, thanks to the strong growth of domestic and international demands and higher prices.

2.2.1. Dynamic world markets

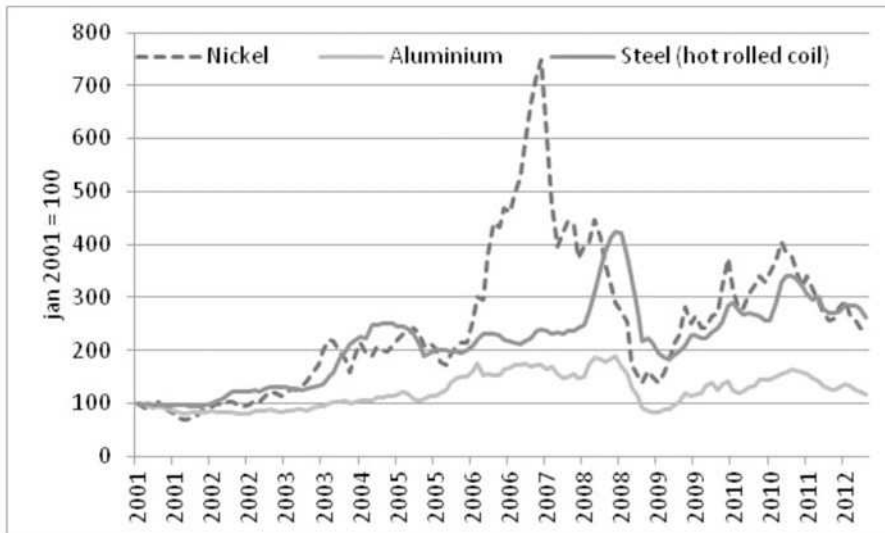
Since 2003, the situation on steel, aluminium and nickel markets has become extremely favorable because of a structural super-cycle in commodities (Figure 2). This super-cycle results from supply and demand factors. On the demand side, the key factor is the resource-intensive expansion of BRIC countries, including population growth, the rise of the urban working class and fast industrialization. On the supply side, the industry has suffered from a number of bottlenecks, due to underinvestment and the long-term trend of deteriorating quality in mining projects (Troika Dialog, 2008).

As far as the steel industry is concerned, prices increased dramatically between autumn 2003 and 2004, contrasting with 20 years of stability. There was another huge but brief surge at the end of 2007. This dramatic evolution is only partly explained by the weakening of the US dollar. Growing demand, mainly from China, higher transportation and energy costs, strain on iron ore and almost-saturated production capacities are the main factors explaining the rise. Moreover, rising oil prices and a massive move of speculative funds on the commodities markets caused the spectacular rise of 2007-2008. This shift has been abruptly reversed by the global downturn, but steel prices are still significantly higher than before 2003. Nickel prices followed a similar dramatic evolution, although most of the rise occurred in 2006 and the fall began in early 2007.

Aluminium prices also rose substantially between 2003 and 2006, mostly for the same reasons as in the case of steel products. Here again, there was a dramatic reversal in 2008 that wrote off all the gains accumulated since 2003. Although China's role was crucial as well, it was in a quite different manner than in the steel industry. Mounting over-production capacities in China have driven prices down in the post-crisis period toward their level at the beginning of 2000s.

During this period of high prices there were numerous mergers and acquisitions within the steel and the aluminium industries, as illustrated by the takeover bid of Mittal on Arcelor, numerous acquisitions by Alcan and the creation of Rusal.

Figure 2. Steel aluminium and nickel world prices (index based on USD/ton prices)



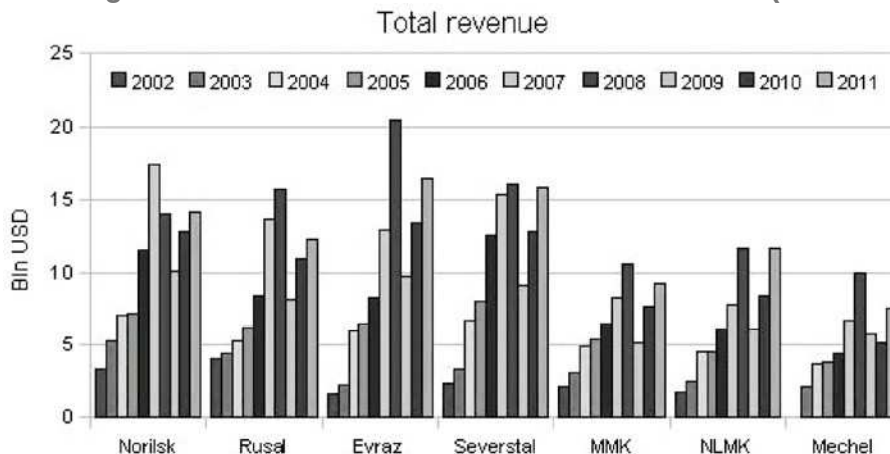
Source: The authors based on Reuters/EcoWin.

2.2.2. Outstanding cash-flow for the metallurgists

As the share of foreign sales is very important – from 45 to 93% depending on the firm, the enterprises have fully benefited from world growth. Moreover, the internal market expanded fast as well. However, the disruption of 2008-2009 was a tremendous shock.

Thus, we firstly observe a spectacular rise in the sales of the main companies (Figure 3). In dollars the rise is astronomic for all the firms. The least impressive figures are those of MMK and NLMK, for which we observe a fourfold increase between 2002 and 2007. The change is even more impressive for the others firms, which were more involved in M&A operations: the revenues of Norilsk, Rusal, Evraz and Severstal grew by about 700% over the period! The shock of the crisis was huge for all firms; however their total revenue began to recover in 2010.

Figure 3. Evolution of total revenue of main firms (2002-2011)



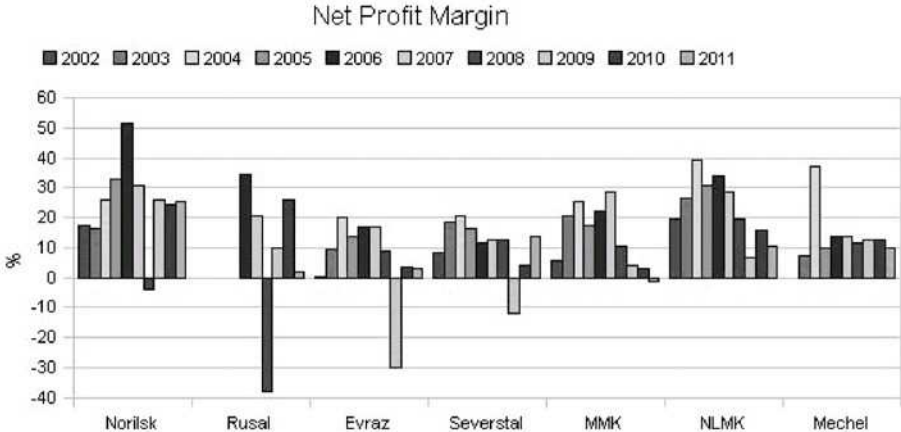
Source: The authors based on Osiris database and companies' reports.

This exceptional increase in gross sales generated financial results that are no less impressive. All their profit margins were significantly higher at the end of the period (Figure 4). The best performers were Norilsk and NLMK with an average profit margin of 40%, while the ratio was “only” about 20% for the others. In value terms, the evolution is no less spectacular (figure 5): the net profits of the firms, in USD, increased between 7 and 20 times over the period.

It would be inaccurate to explain this surge in profitability in terms of changes in world markets only. According to their annual reports, firms modernized their production tools,

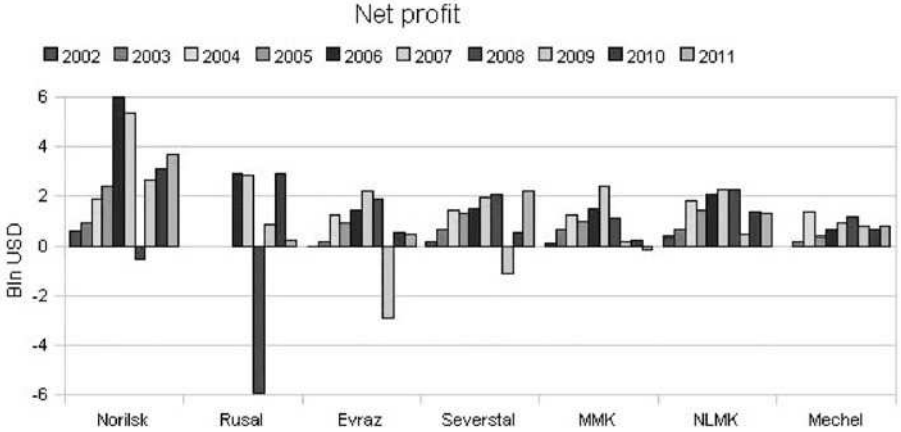
increased labor productivity, increased their production assortment, improved their quality levels and commercial channels and increased economies of scale. Moreover, the weakening of the dollar should also be taken into account. However, the evolution of prices as well as the strength of Russian and international demands are still the decisive explanatory factors of the performances of these firms, which is particularly clear when one considers the very strong negative impact of the global crisis on their profits and margins.

Figure 4. Evolution of profit margin (2002-2011)



Source: The authors based on Osiris database, companies' reports.

Figure 5. Evolution of net profit (2002-2011)



Source: The authors based on Osiris database and companies' reports.

The rise of exports during the nineties allowed metallurgical firms to avoid a complete production collapse. This internationalization of the sector is also the main reason of the producers' high profitability since 2003, thanks to a very favorable international conjuncture. In this context, metallurgical firms have also been able to obtain international funding. Some of them have been listed in London, New York and Hong-Kong (Norilsk, NLMK, Evraz, Severstal, Rusal) and most of them have obtained syndicated loans, involving famous international investment banks, for their foreign acquisitions.

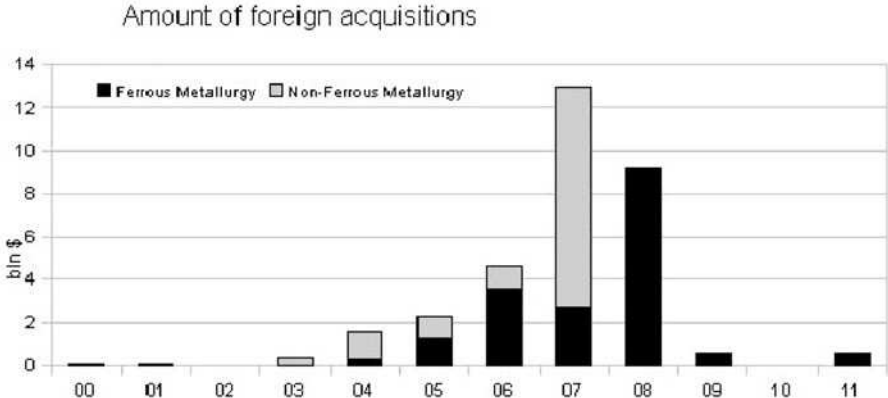
World markets are not only an opportunity for growth for Russian firms. They are more and more exposed to foreign economic downturns and they must be able to face world competitors on specific grounds such as prices, quality and access to strategic inputs. This exposure to world competition constitutes a set of constraints that shape the geographical and strategic orientation of their foreign investments.

2.3. Geography and strategy of metallurgists' foreign investments

What is the orientation of foreign investments by metallurgical firms? Based on information published by the press and by companies, we have compiled data on foreign acquisitions. This synthetic view is given in Figure 7. In addition to the firms presented in

Table 1, the acquisitions of two smaller firms are included: TMK, a steel pipe producer, and Metallo-Invest, whose accounts are not publicly available. Among the main Russian metallurgical firms, MMK is the only one which has not expanded abroad, in spite of several attempts.

Figure 6. Amount of foreign acquisitions by Russian metallurgical firms (2000-2011)



Source: The authors based on business publications and companies' reports.

The data allow us to make two observations. Firstly, the productive internationalization of Russian metallurgy barely existed up until 2003 and has dramatically increased since then. Secondly, foreign operations of Russian metallurgists are not restricted to Central Europe and the CIS countries. On the contrary, they mainly target the core markets of the world economy (North America and the European Union), southern countries (Latin America, Africa, Oceania) where important mineral deposits are located and, to a lesser extent, China (Tables 2 and 3). Indeed, non-ferrous metallurgical groups, as well as Severstal –which is building a gold mining business–, have sought to access to mineral inputs in peripheral countries of the world economy. The main operations in industrialized countries have been linked to the 2007 creation of UC Rusal, which has allowed the Russian aluminium leader to take control of Glencore’s alumina and aluminium assets in Ireland, Italy, Sweden and Jamaica.

Ferrous metallurgical companies have more clearly sought access to core markets in Western Europe and North America, with the most notable exception of Evraz which has acquired steel production facilities in China and South Africa in 2006, 2007 and 2008 for more than 2 billion USD.

These two paths of international development are grounded on very different industry dynamics. Access to inputs appears to be less critical for the steel industry than for non-ferrous metallurgy and gold mining. Indeed, most of the investments of Norilsk and Rusal aimed at gaining access to raw materials. In the case of the rapidly expanding aluminium industry, the supply of bauxite was perceived as being the main point of tension. With the exception of the Glencore’s deal, most of the investments in the EU and North America were also oriented upward.

Most Russian steel makers already stabilized their supply chains through the acquisition of iron ore and steel coal mines. The motive for productive internationalization therefore lies elsewhere. Russian metallurgists were affected by antidumping procedures in the nineties; since then tariffs and quotas restricted their imports in the EU and the US. One of the main strategic problems for them was thus to stabilize their access to markets over the medium and long term. The acquisitions of metallurgical firms in Europe and the US provided an opportunity to overcome this difficulty. The amplitude of the investments were very significant: Russian companies, led by Severstal and Evraz Group, accumulated 9.1 percent of the steel capacity in the United States, according to a 2008 Reuters calculation from data supplied by London-based consultancy CRU.

Table 2. Amount (and number) of foreign acquisitions by region and orientation - ferrous metallurgy (2000-2011 – millions USD)

	CIS AND CENTRAL EUROPE	UE AND NORTH AMERICA	REST OF THE WORLD
MINING	1000 (1)	698 (1)	37,5 (1)
PROCESSING	1056 (8)	12975 (21)	2457(4)
DOWNSTREAM		100 (1)	

Source: The authors based on business publications and companies' reports.

Table 3. Amount (and number) of foreign acquisitions by region and industrial orientation - non-ferrous metallurgy (2000-2011)

	CIS AND CENTRAL EUROPE	UE AND NORTH AMERICA	REST OF THE WORLD
UPSTREAM	328 (1)	290 (1)	9010 (8)
PROCESSING	283 (5)	4020 (2)	290 (3)
DOWNSTREAM			

Source: The authors based on business publications and companies' reports.

The lack of market-led investment in the global south –with the exceptions of two cathode plants acquired by Rusal in China and some more significant investments by Evraz– may seem surprising. Although further explanations are required on this issue, one can stress that market-led investments in Europe and in the US often involve loss-making firms, whereas there is a lack of such opportunities in fast-growing developing countries.

To conclude this section, we may stress that the internationalization of metallurgical firms is a massive but heterogeneous phenomenon. We observe two main strategies: resource-seeking in the non-ferrous metallurgy sector and market-seeking in the ferrous metallurgy sector, which reflect the respective market specificities of these industries. However, market-seeking strategies in western countries have been abruptly reversed by the crisis. Since then, debt trapped Russian companies have almost completely stopped foreign expansion. Several firms have adopted a divestment strategy in non-core assets, including the sale of significant assets in the US and in Europe by Severstal and by Mechel. However, projects of further expansion in India are still considered by Severstal, suggesting that a possible next stage of Russian internationalization –when Russian metallurgists will have recovered from the crisis –may be oriented toward emerging markets, where demand growth has outpaced expansion elsewhere.

3. An institutional and systemic approach to corporate internationalization

The emergence of new transnationals from developing and transition economies has led to a renewal of the theoretical thinking about firms' internationalization. Our case study points out some shortcomings of the recent literature, which lead us to suggest a new analytical framework.

3.1. Theoretical issues raised by the emergence of non-triadic transnationals

Transnational corporations are such specific and complex organizations that the most influential framework in this field has been called the *eclectic paradigm* (Dunning, 1993 and 2000; Dunning and Lundan, 2008). The eclectic paradigm articulates different theoretical tools and it suggests that the mode and level of internationalization result from the combination of three main forces: the specific advantage of the firm (*Ownership*), the advantage of localizing abroad in some specific country (L) and the advantage of internalizing

transactions within the firm (I). This eclectic approach is so large that it has been criticized for being more a taxonomy than a real theoretical framework (Ietto-Gillies, 2007), but also for being focused solely on the interest of the private firms (Andreff, 2003). Moreover, it is completely disconnected from the macro-economic environment.

The “investment development path” (IDP) perspective is an additional development of the eclectic paradigm which links the dynamic of foreign investment with the economic development of nations (Dunning and Narola, 1996). It represents a significant improvement of the paradigm, as it allows conceptualizing the expansion of transnationals beyond the micro analysis and it has received some empirical corroboration (Andreff, 2003; Duran and Ubeda, 2001). However, it is very hard to establish a simple relationship between gross domestic product per capita and foreign investment patterns; for example, contemporary Russia with a ratio of outward to inward stocks of about 0.8 in 2007 appears to be a premature outward investor from the IDP perspective (Kalotay, 2008). As a matter of fact, countries are highly idiosyncratic: “different countries at similar levels of income may have very different patterns of ownership advantages in activities that go multinational, depending on their initial conditions and government strategies as well as accident of history” (Lall, 1996, p. 424). Moreover, the IDP needs to be considered alongside with the transformation of the international regime. Therefore, recent empirical researches suggest that globalization – through increased competition and opportunities, fueled “a secular shift in the link between development stages and internationalization, so that TNCs from developing and transition economies are increasingly investing at an earlier stage in their development” (UNCTAD, 2006).

In addition to this insightful but problematic hypothesis of a linear pattern of FDI for every country, the rising literature about non-triadic transnationals has pointed out a new range of assumptions. A first hypothesis suggests a progressive pattern of internationalization: established transnationals continued to dominate knowledge and brand-intensive businesses, whereas companies from developing countries hold an advantage in industries where production and logistics matters (Ghemawat and Hout, 2008; UNCTAD, 2006). Our case study is consistent with this hypothesis as the foreign expansion of Russian firms from the mining and metal industries is linked to a geographically bound access to natural resources.

A second set of explanation follows Vernon’s (1979) argument which pointed out that transnationals would start by locating in familiar economies and only at a later stage they will spread to less familiar locations. The contemporary debates has focused on institutional affinity, suggesting that developing-country transnationals are able to transform the disadvantages of their *weak* domestic institutional background into advantages as they expand in other developing countries with the same characteristics (Vora and Kostova, 2007; Cuervo-Cazurra and Mehmet Genc, 2008). The internationalization pattern of Russian metallurgists is not fully consistent with this assumption as they have expanded in neighboring economies in transition but also in remote developing and developed countries.

Finally, it is generally supposed that there is a positive impact of outward FDI on the home economy which arises from the improvement of transnationals competitiveness (UNCTAD, 2006), although there may be crowding out effect on domestic investment (Dunning and Lundan, 2008). This last issue may be one of the aspects of the vulnerability of the metallurgical firms in particular and of the Russian economy more generally which results from an excessively outward economic orientation (Drahokoupil and Myant, 2010).

Further theoretical developments are needed, firstly because of the inner limits of the OLI paradigm and of its macro additional component, the IDP theory. Moreover, our case study point out inconsistencies of these theoretical hypotheses in front of the rise of non-triadic transnationals. The exploratory institutional and systemic approach, presented in the following section aims at integrating the peculiar case of transnationals from developing

countries –and in particular Russian Metallurgical firms– within a more general theoretical framework.

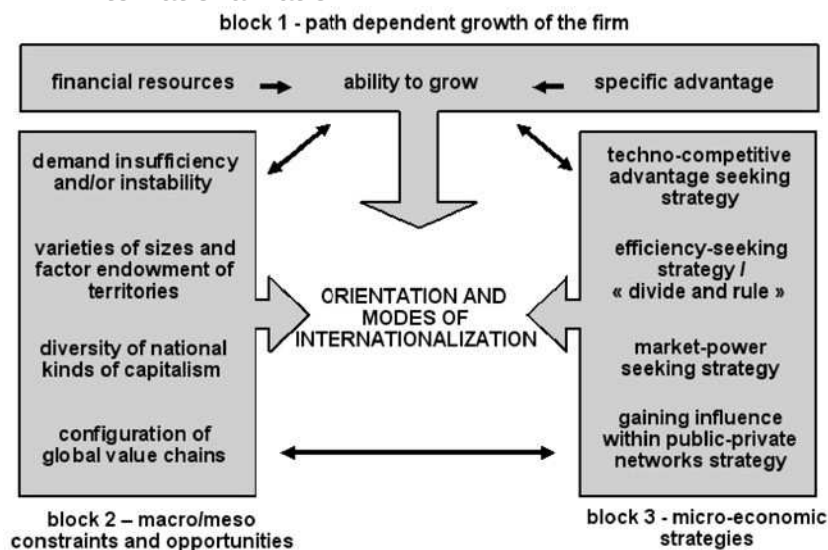
3.2. An institutional and systemic analytical framework

Figure 9 presents our institutional and systemic approach of firms’ internationalization. We mobilize various set of literature in order to articulate the macro- and meso-context to the microeconomic competitive strategies on which underlying foreign investment decisions are based. Moreover, we link these decisions to firms’ ability to pursue growth. Three interdependent dimensions of the internationalization paths of the firm are thus combined: factors related to company growth, macro-meso institutional and economic features, and micro-economic strategies.

Block 1 presents two factors related to company growth. First, internationalization is conditioned by the firm’s capacity to grow: the availability of financial or managerial resources pushes the firm to expand. Second, the growth is guided by some specific advantage (or “ownership advantage”, in the OLI perspective) that exerts a pull pressure in some directions, which may entail the option of international expansion of the same business. This suggests that at the firm/sector level the process of capital accumulation is to some extent path-dependent, in other words it is embedded in specific organizational forms, and deploying the same process in other fields entails some additional costs.

Block 2 is about the meso- and macro-determinants of the orientation and modalities of international expansion. It includes determinants deriving from the demand-led explanation exposed below, from national characteristics in terms of size and factor endowment (for both the host-economy and the country of origin). Moreover, it appears highly relevant to explore a combination of two schools of thoughts that are usually presented as antagonistic – but not always (Noelke and Vliegthart, 2009): on the one hand, the diversity of national capitalisms (Amable, 2005; Berger and Dore, 1996; Boyer and Hollingsworth, 1989; Dore, 2000; Hall and Soskice, 2001; Jacoby, 2005; Whitley, 1999) and, on the other hand, the world system perspective, which focuses on the integration of national economies within a hierarchical capitalist world system (Michalet, 1998; Chesnais, 1997; Wallerstein, 2002). Indeed, the international expansion trajectories of firms are obviously affected, and to some extent motivated, by the heterogeneity of countries. But, at the same time, as firms occupy specific positions in the global value chains, they shape the meso-foundations of an interdependent and hierarchical world system (Gereffi and Korzeniewicz, 1994).

Figure 7. An institutional and systemic perspective on corporate internationalization



Source: The authors.

The microeconomic strategies summed up in block 3 can be considered as the set of responses available for managers facing the constraints and opportunities stemming from the economic and institutional context (block 2) and from the past trajectory of the firm (block 1).

3.2.1. Path-dependent growth of the firm

The theory of the growth of the firm (Penrose, 1959) considers the company as a centre of resources that has to grow or die. These resources may be financial but are mainly, in the mind of Penrose, managerial resources. Her analysis is then somewhat precursor of the evolutionist concept of *collective knowledge* (Nelson and Winter, 1982). These resources contribute to a *specific advantage* made of intangible assets (Hortsman and Markusen, 1989) or related to localization (geographical situation and institutional context). This *specific advantage* orientates the growth of the firm.

Depending on its resources and opportunities, the company has three options for growth (Wolf, 1977; Kay, 2000): 1/ Growing in its own business and in its own country; 2/ diversifying its activities while staying in its own country; 3/ diversifying its activities geographically by exporting or expanding its business abroad. The internationalization option and especially that of creating a transnational corporation is the most difficult. Indeed, many different factors make it more complicated and expensive to operate abroad. However, in core industries (Crotty, 2000), the process of capital accumulation is deeply embedded in a specific sector. First, as the production process is not subject to the law of diminishing returns, there are strong incentives to increase the scale of operations, possibly through internationalization. Moreover, as the assets of the firms are significantly immobile, irreversible or specific, they lose substantial value if reallocated to a different industry or sold on a second hand market. As a consequence of these sunk costs, there are strong incentives to acquire complementary assets –possibly abroad– insofar as they may positively affect the valuation of the firm.

In such a perspective we have firstly to identify the resources which have fuelled the foreign expansion of Russian metallurgist and, secondly, we need to discuss if this expansion has increased the value of firms' domestic assets.

3.2.2. Macro-meso constraints and opportunities

With the concept of *all weather company*, Pitelis has suggested an original macroeconomic approach based on the demand side. He indicates the desire of firms to protect themselves against national economic cycles while diversifying geographically (Pitelis, 2000). This argument allows enlarging the relevance of demand-led explanations but cannot explain why internationalization involves foreign investment and not just exports.

In addition to macro factors, there is also a complex sectoral and institutional web of constraints and opportunities.

The Global Production Networks (GPNs) approach (Henderson et al., 2002) points out that “GPNs do not only connect firms functionally and territorially but also they connect aspect of social and spatial arrangements in which those firms are embedded and which influence their strategies and the values, priorities and expectations of managers, workers and communities alike”. There are two main forms of this embeddedness. Firstly, territorial embeddedness, whereby GPNs do not merely locate in particular places but absorb characteristics of these places and are constrained by them. Secondly, network embeddedness, which refers to the mutual dependence of the firms with regard to the architecture and institutional configuration of the networks. Concerning transnationals, Kostova et al. (2008) stress rightly that “the multiplicity and ambiguity of the organizational fields at the meso level result in more diverse but weaker institutional pressure for MNCs overall. [...] They are in a way buffered, protected, less dependent, and in some cases perhaps even exempt from institutional pressure

because of their unique and complex positioning in the web of organizational sectors” (p. 998). Nonetheless, institutional characteristics of networks and territories are not only constraints for firms but also resources. They constitute institutional configurations which may evolve significantly not only endogenously but also through interplay between certain corporate leaders and political figures.

The peculiarity of the Russian post-soviet institutional context is essential to understand Russian firms’ behavior. In particular, we need to explore the local and global institutional features which have favored the internationalization of metallurgists as a further step of their growth, and to what extent the foreign expansion was an attempt to escape from weak property rights.

3.2.3. Microeconomic strategies

The importance of the political design of institutional productive configuration has been particularly clearly exposed for the development path of newly industrialized East Asian countries, but also for countries like Japan and France in the post-WWII period (Tylecote, Visintin, 2007; Johnson, 1995; Amsden, 1989; Wade, 1990; Jessop and Sum, 2006). Firms are then not only *institution takers* but also *institution makers*, which means that improving their positions within private-public networks could be a major source of competitive advantages. But at the same time, their international strategies may be partially shaped to satisfy the requirements of their political allies, suggesting a two-way relationship between internationalization and private-public network embeddedness.

The literature has underscored that the issue of private-public networks is of particular relevance in the Russian post-Soviet context. “Znakomstva I Svyazi” (acquaintances and connections) have played a key role to regularize the disruptions in the soviet planning process (Rehn and Taalas, 2004). Such informal institutions still occupied a prominent place in the nineties when barter’s networks were used to face the hardening of monetary conditions in a context of radical uncertainty (Huber and Wörgötter, 1998; Ould-Ahmed, 2003) and appeared to be long a lasting feature of post-communist economies (Puffer, McCarthy and Boisot, 2009). This phenomenon is probably even greater in sector highly concentrated such as the metallurgy where business-State relations take the form of direct connections between political personal and business leaders rather than formal relations through business associations (Duvanova, 2011).

More generally, these networks appear to be a dominant form of coordination in Russia because of (i) the weak legitimacy of property rights, (ii) the size and importance of the industrial base inherited from the Soviet Union, from both the social and the strategic points of view and (iii) the possibility of providing support by centralizing and redistributing huge rents from extractive industries (Durand and Petrovski, 2008). These networks are all the more important in the exporting sectors as federal policies on international integration and energy directly affect the competitiveness and profit prospects of these companies. In this context, the objective of firms’ network and institutional design strategies is to build a favorable environment for their international activities.

However, the literature also stresses some intrinsic motives for internationalization: the firms may be seeking market power, techno-competitive advantage or efficiency gains. In addition to the gains from increasing scales of operation (Vernon, 1966; Crotty, 2000), market power analysis shows a trend towards the elimination of conflict between main firms as a result of the growth and behavior of transnational corporations (Hymer, 1976; Caves, 1971; Sweezy and Magdoff, 1974; Palloix, 1975; Cowling and Sugden, 1987; Graham, 1978). Within the global value chain analysis (Gereffi and Korzeniewicz, 1994; Gereffi and Kaplinsky, 2001; Gereffi, Humphrey and Sturgeon, 2005; Bair, 2005) growing market power, as seller or buyer, allows the firm to strengthen its bargaining power and thus improve its financial results.

The literature also suggests that the encounter between the domestic way of producing and innovating and new market conditions favors innovation (Cantwell, 1995; Dunning and Wymbs, 1999). In the case of transnationals from developing countries, it is supposed that the integration in global production network should foster economic upgrading. A successful path, exemplify by Korean transnationals in the US (Miotti and Sachwald, 2001), result from technological and know-how spillovers as firms invest or operate in more advanced economies.

Finally, the literature on the strategy of seeking efficiency gains focuses mainly on lowering labor costs and taxation, in particular through a *divide and rule* mechanism (Marglin, 1974; Bowles, 1985; Peoples and Sudgen, 2000; Crotty, Epstein and Kelly, 1998). Labour costs are not the main issue in capital intensive industries such as metal and mining industries. However the firms' ability to increase their bargaining power vis-à-vis local communities and their national State is a relevant issue. Corporations can use different kinds of threat related to their control over production chains to obtain favorable changes in social, ecological, fiscal and monetary rules or to gain some support from the state for its international development. Firms sometimes extort advantages from local authorities when they look for a site to locate their activities. The ability of firms to build strategies of tax optimization by using transfer prices mechanisms internal prices (Saint-Etienne, Le Cacheux et al. 2005) is a key-advantage of transnationals. These organizations are thus partially emancipated from the social and political constraints linked to territorialization (Andreff, 1996), what Kostova et al. (2008) called the "institutional pressure".

Russian metallurgist's investments dedicated to the acquisition of firms based near key markets in developed economies, and the extensive reliance on international schemes of tax avoidance fits with the variety of strategies of FDI pointed out in the literature in term of market power, techno-competitive advantage or efficiency gains. However, the importance of the public-private networks as key drivers of firm's internationalization has been insufficiently taken into account, yet.

4. Determinants of the internationalization of Russian metallurgical firms

4.1. Path dependent growth: an accelerated international expansion fueled by a short-term surplus of financial resources

The international expansion of metallurgical firms is a path-dependent process. It follows a decade of adaptation to foreign markets through exports. Moreover, it has been preceded by a wave of consolidation of the internal market, allowing managerial teams to expand and acquire new kinds of skills to manage multi-company groups.

The surges in firms' revenues and the rise of foreign investments have been simultaneous. In addition to huge profits, access to world financial systems has provided metallurgical firms with financing capacities from international investment banks, giving them a new capacity of acquisition. As a result, there has been a spectacular surge in the long-term debt of the major firms, especially to fund acquisitions in 2007 and 2008 (Figure 10).

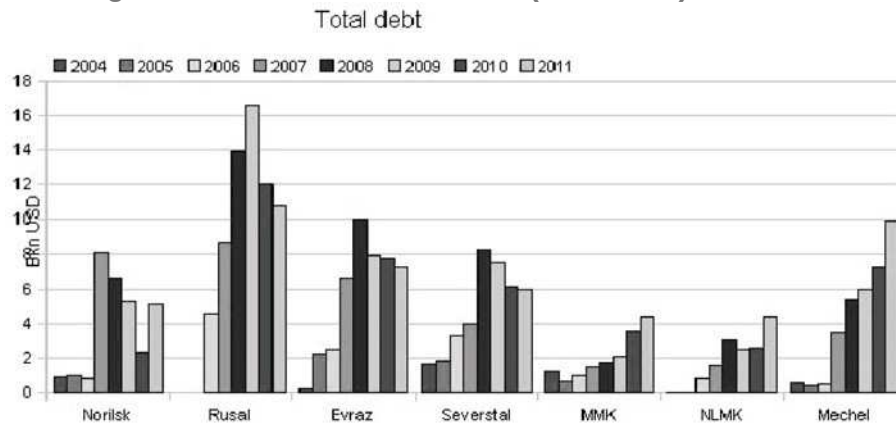
Not surprisingly, these elements confirm the relationship between the availability of financial resources and the growth of the firm. The cancellation of the 3.5 billion USD acquisition of U.S. John Maneely by NLMK in November 2008 as a consequence of the global crisis is a negative confirmation of this link.

However, this relationship does not explain why firms expand abroad instead of expanding domestically –in the same business or through diversification–, nor why they choose to invest abroad instead of expanding exports. Part of the explanation lies in the Penrosean view of the

growth of the firms; as resources are firm-specific, in particular managerial resources, there are some advantages to expanding in the same business instead of diversifying. It is also worth noting that some acquisitions are made with the aim of stabilizing existing production chains, like Rusal's acquisition of an alumina plant in Ukraine and a number of bauxite mines in Guinea that were already supplying Soviet smelters.

Beyond this tendency to grow along a dependent path, other determinants of the modes and direction of expansion are related to the set of macro/meso constraints and opportunities.

Figure 8. Evolution of total debt (2002-2011)



Source: The authors based on companies' reports.

4.2. An international expansion shaped by a specific set of macro/meso constraints and opportunities

The first stages of internationalization through exports during the early phase of the transition resulted from the disorganization of industrial relationships and the monetary disorders (demonetization, liquidity crunch) that led to a sharp fall in domestic demand. Exports enabled firms to maintain their activities and to limit the destruction of both physical and managerial production capacities inherited from the Soviet era. They also helped to prevent potential social troubles by limiting unemployment in mono-industrial cities. This evolution was made possible by the radical post-Soviet institutional transformation, in particular the liberalization of foreign trade and capital flows (Vercueil, 2002) and it was favored by trade and financial liberalization.

However, numerous conflicts about alleged dumping practices arose between Russia and Western countries, increasing uncertainty about export demand. Thus, the acquisition of foreign affiliates can be seen as a means to reduce such uncertainty –a move that can be interpreted in the light of Pitelis's *all weather company* hypothesis– and to secure its foreign outlets.

The international expansion of Russian metallurgical firms took place within a core-periphery world system structuring of economic relationships (Wallerstein, 1994). Indeed, Russian investments are directed towards, on the one hand, Southern countries because of their mineral resources and, on the other hand, developed countries with huge consumer markets. However, Russian firms managed to expand abroad largely because of the cost advantage they derived from the natural resources endowment of the country (low energy costs and raw materials), and this expansion does not conflict with a deepening of the specialization on low-range industrial products of the Russian economy.

Finally, the specificity of the domestic Russian competition regime also created an incentive for horizontal foreign expansion in the steel industry in the place of domestic investment and expanding exports. Indeed, as Gaddy (2007) argues, consumption goods markets are fairly competitive in Russia, whilst investment goods markets are relatively

closed, resulting in a sort of “mark-up” when investing in fixed capital. Consequently, spending the same amount on investment in Russia does not yield the same results compared to a country where investment goods markets are more open.

4.3. Microeconomic strategies: improving the firm’s position within global chains and securing asset ownership

Metallurgical firms act to improve their positions within global value chains and in the face of international competition. Such an objective means that they have to secure their supplies, protect their outlets for trade and improve transactional conditions. At the same time, some operations also aim to gain techno-competitive advantages from joint-ventures or from proximity to leading customers.

According to transaction costs theory, when asset specificity leads to captive relationships, firms choose to internalize transactions (Coase, 1937; Williamson, 1985; Pitelis, 1993; Hennart, 2000). The aim of foreign acquisitions is then to transform the governance structure of value chains (Humphrey and Schmitz, 2001; Gereffi, Humphrey and Sturgeon, 2005). Investments in bauxite mines, alumina plants or Russian transportation infrastructure and commercial representations abroad are indicative of such logic. In return, investments in the European Union and in North America are related to structural market failures analyzed in early studies on internalization within transnational corporations (Hymer, 1976; Caves, 1971), as a means to reduce the adverse consequences of commercial restrictions such as anti-dumping procedures and quotas.

Market-power seeking is an explicit strategy of metallurgists. For example, in its strategic orientations, Evrazholding underlines the benefits deriving from its leading position in terms of negotiation power vis-à-vis its suppliers. Severstal is even more direct (Annual report, 2003, p. 33): “One of Severstal’s key strategic aims is to become a leading participant in the global steel market. To achieve this, Severstal intends to actively participate in consolidation, both in Russia and internationally. Consolidation in the world steel industry is expected to change the current balance, whereby suppliers of raw materials (such as coal and iron ore) and the largest consumers of steel products (such as the automotive industry), are able to obtain higher margins for their products than are the steel producers, as their respective industry are substantially more concentrated than the steel industry.”

Metallurgists experienced another way of improving their position while internationalizing: to acquire techno-competitive skills. To increase their prices, they have to diversify their production. Such an improvement implies a better understanding of markets and customer expectations, and internationalization helps to provide this. Indeed, acquiring firms in more advanced economies and investing in joint ventures close to leading world customers favors access to advanced productive knowledge. Severstal’s investments close to existing car plants in the United States do illustrate this strategy. Rusal’s partnership with the main aluminium producers in the alumina plants in Queensland is also a way to acquire the newest technological know-how. However, Russian firms also use other means to acquire new technologies and skills, by modernizing their production apparatus, training, setting up joint ventures in Russia (Severstal-Arcelor) or recruiting senior Western managers and board-members (Rusal, Severstal, NLMK, Evraz).

The link between State policies and corporate expansion is a key issue. These firms are not global transnationals (Andreff, 2003), because of their dependency on mineral raw materials and of the prohibitive sunk costs of leaving their mills. However, transnationals may develop *divide and rule* strategies against governments, for example, by optimizing taxation. Basically, they may use the threat of relocation to increase their bargaining power and obtain additional support for their activity or for their expansion abroad. The tax evasion issue is particularly relevant for Russian firms, notably in the aluminium industry where the tolling

scheme was used in the nineties and where the long term sales' contracts between Rusal and Glencore were contested by minority shareholders in 2012. Rusal's tax evasion through illegal transfer pricing is well known; in 2004, an internal report of the tax ministry pointed out that Rusal's tax payments in 2003 were just 2% of its official sales revenue, a fraction of what other metal producers paid.

Clearly, internationalization reinforces firms' bargaining power against governments. However, this bargaining power is not without limits. Transnationals usually request the support of their national government for their expansion abroad (Chesnais, 1997; Michalet, 2004). It is even more essential in an industry such as metallurgy, where localization is a crucial issue because of the reliance on natural resources and the size of irreversible investments. In the Russian case too, the cooperation between business and foreign policy is vital for both the firms and the government. For example, according to the press, the failed merger proposed by senior managers of Arcelor and Severstal was primarily discussed directly between president Putin and Severstal's CEO, Alexei Mordashov. Moreover, Russian metallurgists request political support in order to preserve social peace. National corporatism in the Russian metallurgical industry may thus not be dissociated from the political and economic framework of internationalization. Finally, the stability of property rights is still a hot issue in Russia, because the illegitimacy of the privatization process during the nineties (Wedel, 1998) makes reconsideration of these operations still possible. The Khodorkovski case and the takeover of important assets through the re-development of the state as producer indicate that the government does sometimes act in this direction; the pretext of violations of the regulation has been frequently used (Durand, 2008). Metallurgical firms are indeed exposed to this kind of pursuit: in July 2008, Mechel and Evraz were scrutinized by the Federal Antimonopoly Service for abusing their dominant positions on the market. In the midst of the crisis, the state has also taken control over certain key assets. After it granted a \$4.5bn bail-out loan to Rusal at the end of 2008 and a \$1.8bn loan to Interros –one of Norilsk main shareholders– a state representative, Alexander Voloshin, the former Kremlin chief of staff, was appointed as chairman of the board of Norilsk, while another VEB (a state-controlled bank) representative moved onto its board and the first deputy head of VEB moved onto Rusal's board. After January 2009, the State's priority has been to prevent bankruptcies and ownership upheavals that might worsen short-term economic and social disorder. The government urged public banks to roll over loans. As far as foreign banks are concerned, the State has modified its attitude, but none of the banks wants to take over the assets pledged as collateral for the loans and they preferred to restructure debts rather than to have to cope with uncertain default procedures. Moreover, negotiations were eased by the rebound in commodity prices, leading to several agreements between international banks and Russian companies, including Rusal and Mechel. For example Evraz managed to raise \$800m from capital markets to refinance part of its debt.

Given the intensity of ties between politics and business, some investments can be understood as an attempt by private businesses to gain protection from political hazard (Vahtra and Liutho, 2004). Firstly, acquiring foreign assets enables the firms to protect part of their capital. Secondly, increasing upstream or downstream control of the international value chain puts their Russian assets into an integrated production network that limits the relevance of an eventual expropriation in Russia. From the perspective of the Global Production Networks approach, it may be interpreted as an attempt to relax constraints deriving from territorial embeddedness through more intense embeddedness in global networks.

5. The limits of internationalization

The 2008-2009 global downturn shows the limits and the risks of the foreign-led expansion of Russian firms and its deleterious consequences for the Russian economy as a whole. The

economic crisis has struck Russian metallurgical firms violently, with a sharp fall in operating revenue in the first half of 2009 (Figure 3). As metal prices fell sharply (Figure 2) and global demand collapsed, major companies were running for cash and had to apply for rescue loans from the State bank VEB to refinance their Western loans and to cope with increasing debts of their customers. Such change has led to intense talks on the restructuring of the sector under the supervision of the government and its agencies.

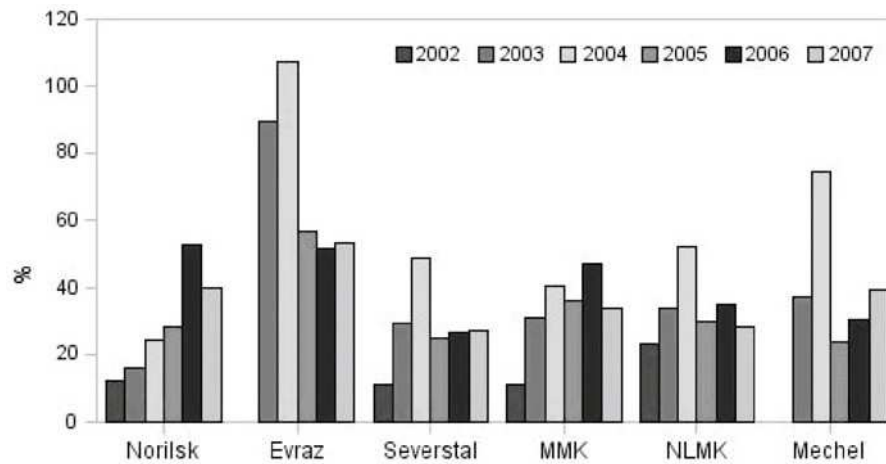
The crisis has not only deteriorated the financial position of the firms. Between January and December 2008, production of crude steel fell by 50% and firms like Severstal, NLMK and MMK had idled blast furnaces. The fall in demand was less severe in the aluminium industry, but Rusal has also announced plans to cut output. Moreover, firms have severely reduced wages, through the cancellation of bonuses, reduced working-time and some limited lay-offs. Finally, the consequences for regions of production are dramatic, as many firms are located in mono-industrial towns and they are the main contributors to local government budgets.

Beyond the crisis, the record of this sequence of international expansion from the point of view of national development is highly debatable. There is no doubt that, for the owners, it has been very beneficial. The ROE of the major firms was between 23% and 57% in 2005, 2006 and 2007. Incredible returns of up to 107% were attained in 2004 (Figure 11). As far as Rusal is concerned, financial data are not available but, according to the press, Deripaska appears to have withdrawn at least \$10 billion in proceeds out of Rusal since 2001. On average, the wealth of the main shareholders of these firms increased fourfold between 2004 and 2008, leaving no doubt about how favorable this sequence had been for them; however, they were hit very hard by the crisis and their estimated aggregate wealth significantly fell between 2008 and 2012 (Table 1).

However, as far as Russian industrial development is concerned, the 2000's have seen an increase in the dependency of the country on imports of manufactured and specific metallurgical products (Budanov, 2008). This confirms that Russian metallurgy is still specialized in basic ferrous metal products and is not able to provide the inputs the Russian machine industry needs. There is some reliance on imports in the nickel business as well, whereas Norilsk is the leading producer in the world. In this case it is due to tax evasion chains and bribery mechanisms. These facts suggest that the huge resources of the golden years of the Russian metallurgists were used to expand the wealth of the owners of the firms instead of funding the development of the industry notably downstream. A comparative outlook confirms a tremendous gap between the weakness of the domestic investment and the growth of foreign operations: in 2007, the ratio FDI outward stock / Gross fixed capital formation was 6,8% for China, 11,9% for India, 55,9% for Brazil but 136,4% for Russia (UNCTAD FDIstat, 2010).

Overall, the foreign expansion of metallurgical firms should have contributed to some industrial upgrading process. Nonetheless, the above statements challenge the assertion of Liuhto and Vahtra (2007, p. 137-138) that “the outward expansion of foreign firms is essential for both individual companies and the Russian economy as a whole” and that it should be encouraged by government policies.

Figure 9. Return on equity for main metallurgical firms (2002-2007)



Source: The authors based on Osiris database and companies' reports.

6. Conclusion

This article has described the extent of the internationalization of the Russian metallurgical firms and the main steps of the process since the early nineties. The speed and the scope of the foreign expansion of the Russian metallurgy has given us the opportunity to discuss the available conceptual tools explaining FDI in the light of original stylized facts which led us to suggest an exploratory institutional and systemic theoretical framework.

This framework has allowed us to inter-relate three kinds of determinants of the foreign expansion of Russian metallurgical companies. Firstly, foreign expansion is a path-dependent trajectory of company growth based on the availability of resources. One important feature here is that the initial shift to internationalization by metallurgists occurred during the nineties through the development of exports. Thus, foreign expansion is rooted in the initial conditions of the systemic transformation. After a phase dominated by internal consolidation and stabilization of property rights, the highly favorable business situation since 2002 has played a major role, enabling metallurgists to finance foreign international investment.

Secondly, foreign expansion is a response to a set of macro/meso economic and institutional constraints and opportunities. The initial step towards internationalization is to be found in the surge of transaction costs in the internal market and the drop in national demand during the nineties. Foreign expansion then arose as a new stage of international development, as firms sought to secure their market access and supply chains. However, we observe very different features in the ferrous and non-ferrous metallurgy sectors, depending on global value-chain specificities and in response to international competitive pressure. In the first sector, the international expansion is mainly downstream and in developed markets; in the second sector, foreign investments are mainly upstream and in peripheral countries.

Thirdly, foreign acquisitions result from microeconomic strategies related to advantage-seeking behavior, improving the position of the firm in relation to its competitors by acquiring market power and/or techno-competitive advantages. Within this third block of mechanisms, interaction with the political authorities has been specifically discussed. In the current Russian context, we have stressed the complex intertwining of autonomy-seeking behavior on the part of company owners and the strong dependence of these same owners on their political connections not only for foreign expansion and for the stability of their property rights and the capital-labor nexus, but also, during the first turbulences of the global crisis, for their financial survival.

This research confirms the relevance of key contributions to the theoretical literature on firms and transnationals. In particular, we have relied extensively on the Penrosean perspective on the growth of the firm and on the influential OLI paradigm to build the

microeconomic foundations of our institutional and systemic approach. However, moving at a more aggregate level, we have pointed out the limits of the IDP which does not allow understanding idiosyncratic FDI patterns of developing countries, such as Russia's, and does insufficiently take into account the importance of the international rules governing the economy as a key driver of FDI behaviors. We have not discussed here in a systematic manner the literature on the growth of non-triadic transnationals, but our work raised some arguments relevant in this area. First, within the limitations inherent to a sectoral study, the internationalization of Russian metallurgists corroborate the assumption of a progressive pattern, where transnationals from developing countries emerge primarily in mature industries and less knowledge intensive sectors. In return, the role of "institutional affinity" do not appear as the main driver of firms FDI behavior, lagging behind determinants linked to the competition regime within the industry. However, this factor has played a role as far as the M&A in the ex-soviet countries were concerned.

Finally, should we consider that the race towards internationalization among Russian metallurgical firms happened too early and too fast? The violence of the 2008-09 economic shock for Russian Metallurgists suggests that their internationalization has not reduced their economic vulnerability. Moreover, there is in our case study no obvious positive relationship between the surge of outward FDI and economic or social development. Thus, in term of efficiency and sustainability, both at the micro and macro levels, evidence suggests a positive answer. In particular, evidence from business reports show that productivity in the steel industry has risen sharply since 1997 but almost entirely on the back of higher capacity utilization, not improved efficiency. In 2007, labor productivity in Russia was just 33% of labor productivity in the US (McKinsey, 2009) which suggests that foreign expansion has, to some extent, been made at the expense of domestic investments to boost Russian plants performances.

However, much research remains to be done. The analysis should continue on this subject in in-depth analysis on the institutional framework and its evolution in time and differences in regions. Moreover, this case study needs to be compared to with other researches on the emergence of transnationals from peripheral countries. It may be useful to discuss the possibility of common patterns among the transnationals that have emerged during the commodity boom. Another key point concerns the impact of these transnationals on receiving economies. In particular, the question needs to be examined of whether there will be further retreat of the transnationals from developed countries, which could feed de-industrialization trends. Finally, the case of the Russian metallurgical firms shows the importance of the geo-economic consequences of a surge in natural resources prices. It suggests to considerate accurately the consequences of a comeback of the classical rent issue at a global scale, should the medium term prospects of a shortage of natural resources for key raw materials materialize.

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