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Transformations of the Russian Metallurgical Branch (1991-2000)

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Abstract

The post-soviet economy underwent radical transformations during the last decade. How did reforms affect the specific character of the Soviet economic system? The aim of this paper is to contribute to the research on this issue, on the basis of an empirical study concerning a key sector of the Russian economy: the metallurgical industrial branch. In the first part of this paper, we will present the asymmetric crisis of the branch, caused by the liberalization shock. We will then examine how the liberal reforms induced rising transactions costs on the domestic market and a spectacular growth of exports, at the expense of the internal industrial coherence. In the second section of this paper, will be discussed the characteristics of the post-Soviet branch « régulation »: after a decade of wild struggle for control in the branch, the process of corporatist stabilization initiated in 1998 and the significant growth of the activity do not necessarily mean that the emergent model within the branch will help create a sustainable economic development.

KEYWORDS: Institutional change', Post soviet transformation', Metallurgy, Transaction costs , Property rights , Branch "regulation" ,Exports ,

JEL classification: B5, D23, L61, P20, F10

Introduction

The post-soviet economy underwent radical transformations during the last decade. What kind of mechanisms did the liberal reforms create? How did these reforms affect the specific character of the Soviet economic system? The aim of this paper[1] is to contribute to the research on these issues on the basis of an empirical study, which concerns a key sector of the Russian economy: the metallurgical industrial branch. Ferrous and non-ferrous metallurgy in the GNP[2] account respectively for about 8 and 10 percent each and occupy a strategic position ahead of the main manufacturing industries (machine-building, aeronautics, packaging…) and other important sectors such as construction. This theoretical inquiry has two concerns: the institutional changes in industrial relations and the study of branch « régulation »[3].

This paper is based on researches we did during several of our trips to Russia, starting 1997. We visited in particular the city of Lipeck (Lipetsk), where one of the three most important metallurgical plants in Russia is located, the city of Samara, where Sibirskij Aliuminij (now called Russkij Aliuminij) had acquired two factories pursuing vertical integration strategy, and the cities of Moscow and St-Petersburg. To reduce the risk of data misinterpretation we worked on different types of sources. On the one hand, we relied on interviews with managers, workers, trade unionists, economists[4], social scientists and political and administrative personnel. On the other hand, we processed the information available from Goskomstat (State Statistics Committee) as well as from national, local and professional press. When it was possible, we preferred to use statistics in volume rather than in value, because of the low liability of price data in the Russian context.

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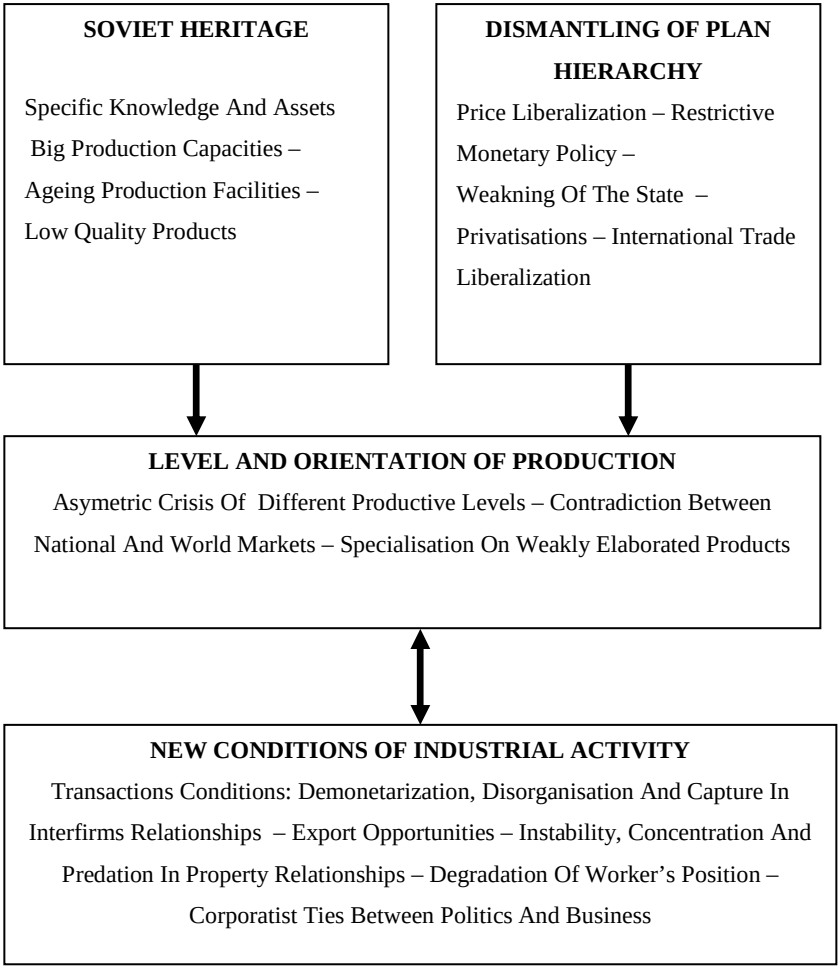
[1] *We are grateful to Maxime Petrovski, Guillaume Bellart and Marie-Laure Geoffray for their very useful support in the establishment of the English redaction.*

[2] *According to goskomstat, the ferrous metallurgy represented 8.1 % of type GNP and the non-ferrous metallurgy 9.7 % in January-May period of 1999.*

[3] *The term "régulation" is used hereafter in the sense of the French « école de régulation ».*

[4] *We should like to thank our colleagues from the National Institute for Economic Forecasting, the French Financial Agency in Moscow and our friends in Russia for the help they provided to our research.*

Figure 1. *Problems of the metallurgical branch transformation*



This scheme presents the different kinds of questionings regarding different factors we intend to examine in this paper. What are the determinants of the transformations of the Russian metallurgical branch? Which transformations were brought by the liberal reforms and what inherited characteristics have persisted? The mix of these two types of factors produces new conditions of industrial activity that induce major changes as far as the level and orientation of the metallurgical production are concerned. During the last decade, there has

also been a feedback effect of the crisis and the new orientation of production on activity conditions and branch organization.

To articulate theses numerous problems and provide an explanation for the dynamics of transformation of the branch, here studied, in the first part of this paper we will present the asymmetric crisis of the branch as a result of the liberalization shock. Then we will discuss the trajectory of the branch during the transformation process and the stabilization of the post-Soviet branch « régulation ».

The impact of liberal reforms on the branch coherence

Given the presence of conditions that could stimulate the development of the domestic demand - production capacities were under-utilised and there was a steady demand for steel coming from the population and the need to modernise infrastructures - we can say that the crisis that faced the branch was mainly linked to problems of industrial coherence.

The concept of coherence reflects the dynamic compatibility of supply and demand that permits economic growth. According to that, the absence of coherence within the metallurgical branch would imply divergent trajectories of highly complementary productive sections [Basle, Mazier, Vidal, 1993, p. 9; Jordan, 1999, pp. 35-79].

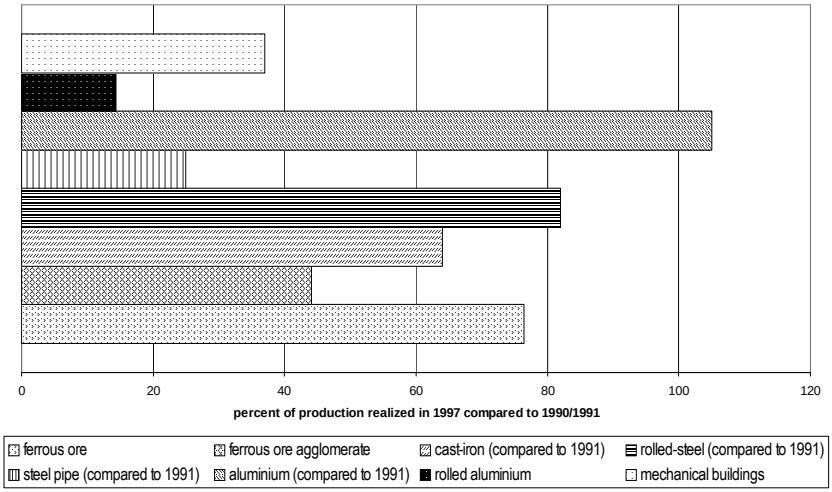
Yet, in this case, it results from obstacles to transactions that do not allow the satisfaction of demand, whereas, at the same time, the production capacities that could be eventually used to that end are under-utilised. More generally, the industrial coherence of a branch should take into account the procedures of social validation of the production, the access to this production, incentive and enforcement patterns and innovation processes that mould the reproduction of its activity. In the middle and long run, the reproduction process is a synonym of « growth » and « development ».

First of all we will expose the asymmetric crisis that the branch faced on different productive levels. After that, we shall turn to the mechanisms of this reorganisation/disorganisation, shaped by new transaction conditions, export development, instability of property rights and the degradation of the workers' situation.

The asymmetric crisis of different productive levels

Between 1990 and 1997, the volume of the metallurgical production decreased dramatically. In 1997 ferrous and non-ferrous metallurgy production represented respectively 56.7 % and 55.7 % of their 1990 level. Theses statistics are better than the average figure for the industry in general whose output in 1997 was only 48.9 % of its 1990 level level [EKSPERT, 1998, pp. 8-9]. However, there are big differences even within the branch.

Graph 1. Volume of production output in 1997 compared to 1990/1991



Aggregate data about production dynamics of sectors being unavailable, we made up the following graph using various sources[5]. It shows that less sophisticated output (ferrous ore, ferrous ore agglomerate, cast iron, aluminium, rolled steel) has experienced a weaker fall than other production outputs (rolled aluminium, steel pipe).

[5] *Ekspert [1998]; GosKomStat (Comité d'Etat aux statistiques); Rosbiznessconsulting, itogi nedielia, 24 05 99, www.rbc.ru (rbc601; P1714).*

As shown in the case of machine-building, the key factor is the collapse of the domestic demand. Between 1992 and 1997, it was reduced by nearly 60 %. This tendency continued until 1998. One of its most significant consequences was the reduction of the range of metallurgical products. The reduction in the consumption of certain products coupled with the increase of the production costs because of the diminishing scale returns, led to the disappearance of many products [Budanov, 1998, pp. 20-23].

The difference between the evolution of domestic consumption and heavy metallurgy activity corresponds to the rising share of exports. At the same time, imports decreased dramatically: during the nineties metal imports from CIS countries to Russia were divided by ten.

Between 1991 and 1997, the prices of heavy metallurgical products went up simultaneously to reach the level of world prices and even to exceed it. But the increase was not so considerable on the consumers' side. This loss of consumers' purchasing power led to a decrease of metal acquisition. The collapse of domestic demand can be explained by the drastic output decrease in several industries: light metallurgical industry that did not have the opportunity to shift its activity to export, some machine-building, aeronautics as well as some other industries that are dependent primarily on the defence expenditure. We must bear in mind, however, that the part of the consumption which corresponds to low quality products, increased significantly as the share of building and railway sectors was growing.

Transaction costs increase on the domestic market

As reforms go on, we observe a growing importance of atypical payment arrangements within the branch. While the relations within the branch, on the upper levels, remained quite stable, lower levels faced fundamental changes. In particular, discriminatory measures directed against domestic customers of metallurgical products started to be introduced.

The hardening of budget constraint and demonetarisation

The purpose of the shock therapy reforms was to impose financial discipline and to harden the soft budget constraint that characterise « socialist » economies [Kornaï, 1996]. High inflation during the initial period of reforms blew up the savings enterprises had. After that, restrictive monetary policy led to liquidity shortage and to a tightening of the loan-granting rules. This situation made it hard for the industrial sector to get access to credit [Sapir,

1996, pp. 207-210]. Moreover, GKO skyrocketing interest rates attracted most of the meagre financial resources of the country, at the expense of investment into the productive sector. This liquidity shortage had a direct depressing impact: many enterprises were unable to purchase their inputs.

To resolve the problem, managers used their specific knowledge inherited from the Soviet period to organise transactions using barter or quasi-monies (veksels issued by banks or big firms and sometimes guaranteed by local and even federal authorities [Ocde, 1997, pp. 125 et 198]). Paradoxically, monetary restrictions induced the weakening of the payment discipline [Mesnard, 1999, pp. 5-7], the disruption of industrial relations and the impoverishment of many metallurgical producers [Budanov, 1998, pp. 25-26]. The access or the absence of access to liquidities became a crucial factor in the establishment of the new economic hierarchy in favour of the heavy metallurgical plants.

While it virtually destroyed the Russian financial system, the 1998 crisis had a beneficial effect on the production; it softened liquidity constraint and led to the remonetarisation of transactions. The Russian metallurgy benefited from the rouble devaluation, the new exchange rate providing the exporters with additional financial resources. It also benefited, at the same time, the growing internal demand resulting from the substitution effect.

Stability of relations between heavy metallurgical plants and their suppliers

The reforms did not really disorganise the transactions between heavy metallurgical units and their suppliers (energy, transportation, raw materials). Since there was a very high degree of mutual dependence, the reforms did not lead to the generalisation of price co-ordination [Locatelli, 1998]. Concerning ferrous ore and alumina, one feature was the development of tolling in the beginning of the nineties[6]. At the same time, exchange conditions are still marked by the Soviet organisation of production: more than the market, the dominant form of coordination in this area is the network. These networks include different types of actors such as metallurgical plants, energy providers, the ministry of transportation and communication, ferrous ore and alumina producers. These agents use debt-clearing, veksels or barter as common means of payments in their transactions. In the case of metallurgical plants, these types of payment are means to keep their liquidity resources for other transactions and to resolve supply problems at a low cost. As for suppliers, theses operations

[6] *A tolling deal means that a trading company who provides inputs for production and sells the output on the market has to pay the plant for the production of commodities.*

guarantee a possibility of obtaining metallurgical products, to meet their own needs or as commodities easily exchangeable through commercial structures, sometimes for the benefit of the managers.

The mutual dependence of metallurgical plants and their suppliers bolstered vertical integration: this is the case of ferrous metallurgical plants that absorbed mining units, but also of aluminium smelters that acquired hydroelectric stations. This strategy pursued by heavy metallurgical producers shows their will to stabilise supplies and to guarantee their autonomy in the context of property rights battles.

Discriminations in access to metallurgical products

The conditions of transactions are not homogeneous. The types of payments accepted by the metal producer depend on who the buyer is: barter is very common in dealing with energy providers but very rare with rolled-metal and building materials consumers.

Until the beginning of 1997, ferrous metallurgical plants often accepted some types of barter exchanges with Russian consumers. After that date, they only accepted fresh money and even pre-payment: such conditions were not acceptable for many enterprises. At some point this even led to a disruption of delivery in the automobile industries. One example of discrimination against national consumers is the VAZ automobile plant, which had to buy in the Netherlands the steel that had actually been produced in Russia.

The asymmetry between metallurgical plants and their clients is very strong. When consumers come from a big and important sector, an agreement is often found, even if it requires a State intervention is necessary. But as for less important firms, the conditions of transactions are prohibitive[7]. In the aeronautical industry for example, where the production process is very long (about 2 years), purchasing inputs became extremely difficult once the Soviet stocks of specific metallurgical products were exhausted.

The existence of multiple prices for the same product is one of the clearest signs of discrimination against certain categories of buyers. The producer's dominant position found its reflection in the creditors' priority list: the threat to

[7] *See the testimony of the director of a light metallurgical firm of Perm in Segodnia I Zavtra, weekly journal of NLMK's workers, 8/07/1999.*

stop supplying urged the consumers to pay them, before paying their taxes and energy bills.

Export increase and the weakening of the coherence between internal supply and demand

After the trade liberalisation, high uncertainty on the domestic market pushed heavy metallurgists to a spectacular reorientation of their activity. Low production costs allowed metallurgical and aluminium plants to capture additional shares on foreign markets. At the beginning of the nineties, about 20 % of non-ferrous metallurgical production were exported, compared to more than 80 % in 1997 and 90 % in the case of primary aluminium (see graph 2). The share of ferrous metallurgy rose from 3 to 65 % during the same period. In 1997 metallurgical products represented 21 % of the Russian exports [Ekspert, 1998, vol. I, p. 8 et pp. 10-11].

The rising share of exports became a main differentiation factor. On the one hand, were the biggest plants that had managed to escape from the uncertainty of payments of the domestic market. On the other hand, were consumers only able to sell their output on the national market. The first were in a position, which allowed them to refuse deals in Russia or to impose their conditions on transactions. Moreover, the increase of exports allowed heavy metallurgist to limit the decline of their activity, to get hold of the supplies that had to be paid for in monetary form (alumina and some components of steel) and to engage in some urgent modernisation programs.

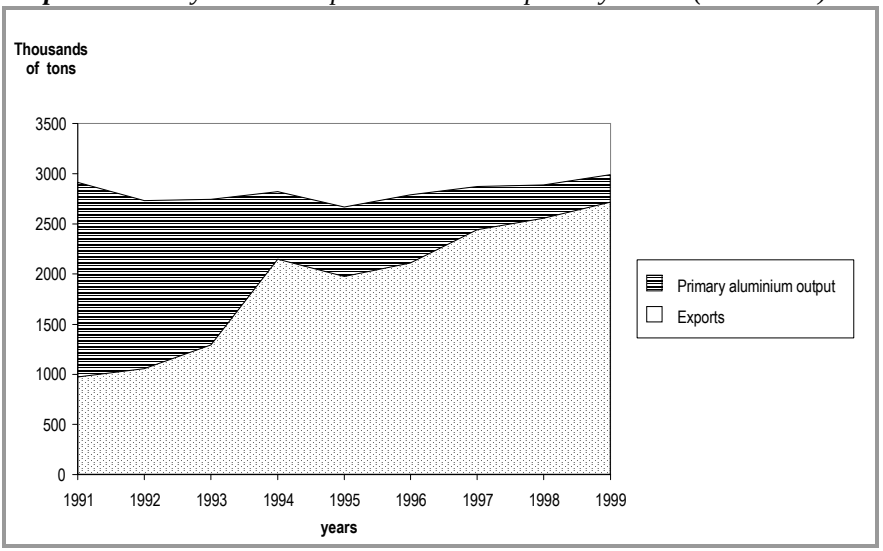
At that period, the difference between internal and external prices was very significant: in 1997, the internal price of cast iron was 58 % higher than the external price and internal rolled steel price about 25 % higher. This shows that the political choice, which gave priority to exports, was also partly responsible for the collapse of domestic demand [Budanov, 1998, pp. 23-25].

Export activity was usually conducted by traders, using tolling schemes. Heavy metallurgy production process requires that output remain at a relatively high level to be cost effective. This incited many companies to accept very disadvantageous prices. In addition, the absence of trade experience turned out to be a crucial factor. As a result, traders were able to exploit this situation and earned margins that were sometimes superior to 50 %.

Though limiting the contraction of output, the rise of exports did not result in a satisfactory restructuring of the branch. Compared to Soviet times, one could

observe a growing disequilibrium between the shrinking product range and the persistence of highly specific demands [Budanov, 1998, pp. 28-29]. On the one hand, the leading plants concentrated their efforts on meeting international standards on basic products. On the other hand, the bargaining power of Russian specific product buyers was damaged, their financial situation worsening. The difficulty in obtaining sufficient quantities of inputs, of a proper quality, caused a substantial loss of know-how, which could have been the basis of a future structural growth.

Graph 2: *Primary aluminium production and exports dynamics (1991-1998)*



Instability of ownership distribution

The privatisation of almost all the enterprises of the branch between 1993 and 1995 delivered a fatal blow to the existing Soviet hierarchical relations. Privatization aimed at establishing private property rights and avoiding collective ownership[8] in a very illegitimate way [Appel, 1997].

[8] *For liberal economists as Wing Thye Woo, it was considered as crucial that property rights be detained by individuals and alienable [1997, pp. 299-323]*

The new property rights set-ups were radically different from the former State ownership, but they were not similar to those found in Western market economies. In post-Soviet Russia, formal property rights were not sufficient and needed to be enforced by political and judicial means. They often did not mean assure the exercise of real control over cash flows. This explains why during the nineties, the political elections were of paramount importance for metallurgy business.

Since 1992 we observed three successive control configurations in the branch. Trans World Group, nominally a British company controlled by the Tchernoj brothers, was dominant in the period between 1992-1995. The main reason of this initial success was the support of President Yeltsin. On the average, they acquired a 15 % share in most of the enterprises and seized *de facto* control over approximately 30 % belonging to the state. Managers possessed about 5 % of shares, which did not place them in a position to challenge the State directly. The remaining 50 % were spread among workers. During this first period, most transactions were controlled by TWG through the use of tolling.

In 1995, TWG political supporters lost ground in the Kremlin. As a result, TWG lost control over the State shares and, consequently, over the managers' support. At the same time, the « loan-for-shares » scheme allowed several Moscow banks to acquire shares in the leading metallurgical companies. These banks were hardly experts in the field, but their political and financial weight made companies take their opinion seriously. Most of the time they were on the managers' side, against TWG. Local managers continued to shape ownership set-ups in the ferrous metallurgy as well as in the aluminium industry. They began to strengthen their substantive property rights by creating their own trade networks or by passing new agreements with foreign traders.

After the financial crisis of 1998 the distribution of property rights was seriously altered. Managers did not have to do much to oust banks from the branch; the financial crisis did it for them. The new situation brought new opportunities to top managers. They increased their shares in many companies, tried to minimise the relative weight of other shareholders and pursued the strategy of external growth. Moreover, new actors such as Gazprom and Sibneft penetrated the branch.

Managers as well as energetic groups have initiated a massive concentration process in metallurgy. The most spectacular example is the transformation of the Sajanskij aluminium plant into Sibirskij aliuminij (1997) and, with the support of Sibneft shareholders, in Russkij Aliuminij (2000). This huge group

accounts for about 70 % of the national aluminium production and pursues a strategy of external growth, particularly in the car and aeronautical industries. Similar dynamics can be observed in the ferrous metallurgy.

The conflict between managers, traders and financial actors had a clear financial underpinning: about 3 billions of dollars of profits resulting from 15 billion export trade (1999 estimate)[9]. One of the main explanations of this instability of ownership is to be found in the « soft legal constraint » and institutional weakness. Nonetheless, apart from the instability of property rights distribution, it is necessary to underline the stability of personal management: many of currently ruling managers used to belong to Trans World Group. Moreover, the recent evolution suggests that the property rights set-ups will become more stable: reinforced by the logic of horizontal and vertical integration and the disappearance of many competitors.

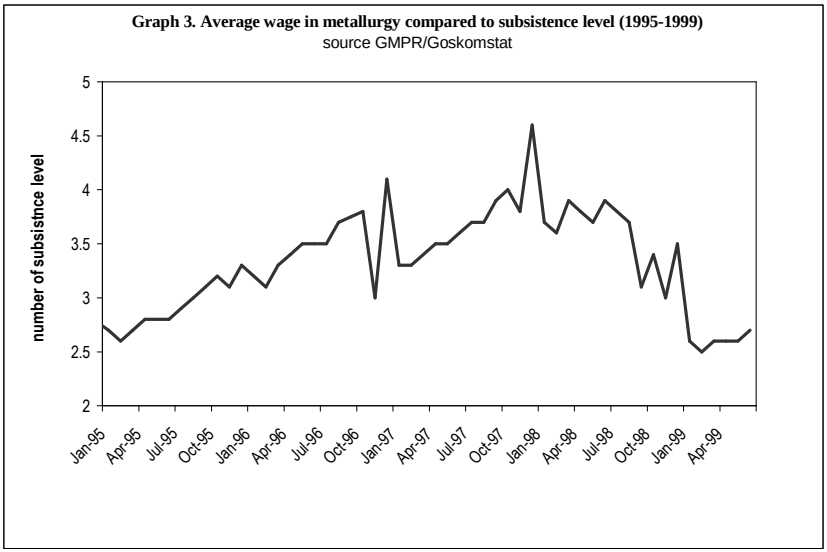
Degradation of workers' position

The reforms induced a major change in the workers' situation that largely resulted from the reduction of the State's role.

First of all, the Russian society shifted from a sellers' labour market to massive unemployment. Soviet institutional set-ups were partially to the advantage of workers; directors, struggling with a high turnover rate, introduced various advantages for employees [Berliner, 1957]. The development of underemployment led to the strengthening of the employers' position, accentuated by the growing dependence of workers on their respective enterprises, which followed the collapse of the existing system of social benefits. The high rate of trade union membership did not have a great impact on the situation. In the metallurgy, GMPR (Trade union of metallurgical and extractives industries of Russia) counts about one million of members for 1, 2 million of workers. This impressive number notwithstanding, workers' unions at that time were going through a major ideological crisis [Clement, 2000] that made their leaders adopt a « modern » stance in favour of liberal reforms, this explaining the limited number of strikes[10].

[9] *Information about ownership distribution come from press, interviews and equally specialized sites such as : www.rusmet.ru, www.sibirskyalum.ru, www.transworldmet.com.*
[10] *There is also a weak tradition of conflict in metallurgy [Crowley, 1997].*

Graph 3. *Average wage in metallurgy compared to subsistence level (1995 – 1999)*



Source: GMPR/Goskornstat

Throughout the nineties the number of workers kept decreasing. Between 1993 and 1999, the ferrous metallurgy lost about 20 % of its employees and the non-ferrous metallurgy 25%. The majority of the shed labour was employed in social services or activities that had been externalised.

The evolution of wages in the metallurgy is similar to that in the Russian economy. Between 1991 and 1995 real wages were almost halved. As shown in the graph, the 1998 crisis had a serious effect on wages in spite of the spectacular rise of export earnings.

Others signs of degradation were the development of wage arrears and the changing composition of workers' incomes. However, wage arrears were significantly less striking in the leading metallurgical plants than in the rest of the economy because of the credibility of the strike threat in the industry, stopping the production process being a very costly exercise for managers. An important part of the workers' wages has always come from bonuses (more

than 50 %). The fall of indirect incomes (social benefits such as housing, health care, holidays, etc.) make the workers' situation even worse.
The issue of authority within the plant should here be addressed [CHAVANCE & Magnin, 1996**,** pp. 137-139]. Some companies launched programmes aiming to develop or tighten work discipline. Top-managers made it plain that those who were not sufficiently committed to the company would be the first to be laid-off.

In the second half of the nineties some enterprises introduced changes in their contractual practice. Instead of signing habitual contracts of unspecified duration, Sibirskij Aliuminij tried to sign short-term contracts of 6-12 months with virtually all the workers. The unions challenged such a practice but it was nevertheless applied to some categories of employees. Viewed as an externalisation of some categories of workers, this development seems to indicate that the process of stratification of the working class is under way.

Although the employees of the metallurgical branch were better protected than the others, the last decade has led to a serious degradation of their situation in terms of unemployment and part time work, real wages reduction and, finally, loss of bargaining power. These elements reveal a radical shift from Soviet sellers' labour market to a liberal form of buyers' labour market.

At the end of this first section we can already draw some conclusions. Assessing the impact of the reforms on the development of the branch and social justice we can single out four mechanisms that brought about negative tendencies:

1/ The destruction of transaction routines via the dismantling of the existing mega-hierarchy and the hardening of budget constraints led to an important increase in the transaction costs. In such a situation, when there is a high degree of mutual dependence that guarantees loyalty, barter transactions or pre-payments in money reduce uncertainty. Firstly, this implies that many transactions are no longer possible and provides an explanation for the serious depression of the activity. Secondly, high transaction costs strengthen suppliers' bargaining power and, more generally, that of the industries situated at the beginning of the production chain; acquiring a strong bargaining power against the buyers who need inputs for their production.

2/ Trade liberalisation had a negative effect on national buyers, by inciting producers to turn to foreign markets. This aggravated structural disequilibria between national supply and demand by reducing the product range.

3/ The instability of property rights and weaknesses of the legal system resulting from the illegitimate privatisation process favour short-term and opportunistic strategies. They also contribute to the collusion of interests between politicians and the business community.

4/ The workers are the main victims of the reforms: they have lost their job security, part of their wages, much of their bargaining power and had to face a spectacular development of inequality in incomes and patrimonies.

In order to understand the functioning of the branch in the post-soviet environment these elements should be taken into account.

Foundations of the post-soviet branch regulation

As a rule, the concept of regulation [Aglietta, 1976; Boyer & Saillard, 1995, pp. 548-549] is not used in meso-economic analysis. We postulate here that it is possible to adapt this concept to the analysis of an industrial branch because of its autonomy towards the overall economic evolution of the country. Before trying to characterize the post-soviet branch regulation, we shall first try to identify the path-dependent character, which comes from its Soviet origin.

The Soviet origins of the branch and its path dependency

The contemporary situation of the Russian metallurgy is not independent from its Soviet history. On the one hand, are initial conditions of the reforms, which shaped the paths by limiting the range of options. On the other hand, many of the contemporary characteristics of the branch can be seen as a recombination in a new context of the Soviet institutions. Persistence and strength of giant enterprises, high mutual dependency of various productive levels or the importance of networks take their roots in the Soviet past.

A radical institutional change means that productive structures created in a very different economic context have no choice but to adapt to the new environment, or disappear. The structures' effort level to produce metal in the Soviet period, is still an important in determinant of their production supply, quality and price, today. This principle is based on the long-term characteristics of the investment: the existing productive structure is a source of irreversibility: high costs linked to the initial investment almost prevent the complete replacement of productive assets. Moreover, the deep depression experienced by Russia since the demise of the Soviet system reduced the investment made in the

restructuring of supply and led to de-capitalisation. In such conditions, the change in relative prices failed to induce simultaneous adjustments of supply.

The administrative organisation of the branch during the Soviet period has left a particular field of production. Many productive units were highly specialised to satisfy the particular needs of a particular sector such as aeronautics, car industry or defence. These relations make vertical mutual dependence of companies and their common knowledge key factors. Moreover, in such a big country as Russia, geographical factors create natural links. These factors imply the impossibility of an « *exit* » option if one of the partners is not satisfied with the other [Hirschman, 1970]. In the context of assets specificity, risk of opportunistic behaviours and high degree of uncertainty, market transactions are less efficient than transactions carried out within a firm, because of the bargaining and the control costs [Coase, 1937; Williamson, 1993; Dugger, 1991, pp. 95-109; Pitelis, 1993]. Non-payment chains and barter can be interpreted as institutional arrangements, which aim at reducing transaction costs, and also as an indicator of the pressure towards vertical integration, finally materialised. They show that the same networks of managers that had played a key role to limit the deficiencies of the planning system [Berliner, 1957], were used in the post-soviet « co-ordination mix »[11] to reduce uncertainty and to maintain production.

The persistence of industrial giants, the high degree of mutual dependence between productive levels and the role of networks can be seen as common characteristics for the Soviet and the post-Soviet metallurgical branch. However, the asymmetric crisis, the rise of exports and the weakening of the workers' position are clear signs of the establishment of a new type of corporate governance.

A predatory appropriation of surplus and property rights

Until 1998, predatory forms of surplus appropriation dominated the «régulation» of the branch. The disorganisation of industrial relations which followed the collapse of the Soviet system as well as the instability of property rights, allowed a few agents to capture « middleman » rents.

[11] *About the concept of mix of coordination in the post-socialist context see Chavance & Magnin [1996, pp. 136-140].*

Tolling schemes deprived enterprises of their control over profits, transferring it to traders. On the internal market, managers were able to get hold of considerable sums: if it is very difficult to hide the real volume of production in metallurgy, it is possible not to have an extremely transparent policy regarding sales and to resort to massive tax evasion [Grajdaninova, 1999]. Using their specific knowledge concerning various possibilities of trading metal, a few people managed, by using predatory practices, to become big shareholders. The development of sub-contracting in order to accumulate debts in small companies and the corruption of bankruptcy procedures in order to take control over a firm or restructure a company at the expense of employees and creditors, are very common. One other aspect of these predatory practices is a massive capital flight to offshore countries like Cyprus. In 1996, the capital flight from Russia was ten times higher than the total investment into the economy[12] and it is still very important.

The incapacity of the state to organize transactions in a way that would be compatible with the new institutional context pushed the leading economic actors to re-structure transactions themselves, for their own benefit. This is one of the major causes of the crisis within the metallurgical branch. In fact, the case of the metallurgical branch is a typical example of sudden and massive concentration of economic power in a handful of individuals. This situation resulted from specific mechanisms of profit and productive assets appropriation in post-Soviet Russia. Some researchers term it «economy of private persons» [Grajdaninova, 1999], others «capitalist behaviour of speculative character» [Bouzgaline, 1997, p. 207] or «predatory economy ». All of these terms emphasize the fact that during the nineties the Russian economy was permeated by atypical forms of resource appropriation for the benefit of individuals and at the expense of the Russian society as a whole.

In this context of high uncertainty and weak legal norms, the behaviour of ruling actors was characterised by a short-term horizon. They were unwilling to engage into mid and long term industrial development. At the beginning of the nineties no one could legally possess considerable capital. The first period of the post-Soviet era can therefore be viewed as a wild struggle for accumulation of resources before rents created by social disorder were eliminated. However, since 1998 several elements point also to a change of tendency within the branch suggesting that a new stage has begun.

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[12] *Information from Mikhail Grishankov, vice-Président du comité parlementaire de la Douma aux questions de criminalité économique et financière, Conférence IRSES, Paris, 15/09/2000.*

Corporatist stabilization

The resumed growth following the crisis in 1998 brought a significant restructuring of the branch that seems to be establishing new forms of corporate governance. As we already noticed, the distribution of property rights was greatly altered by a massive concentration process. As a result, there is a low degree of effective competition in Russian metallurgy, not altogether surprisingly: the quasi-monopolistic « régulation » of metallurgical branch is a common fact in western countries too; it has to be explained by the idiosyncratic character of the production process and the expensive specific assets that it requires.

In the context of transition, managers of the leading plants as well as some outsiders, coming principally from the energy sector (Gazprom and Sibneft), drove the concentration dynamics. Deep depression fed concentration dynamics within the branch, the biggest companies having the most resources to face the difficulties[13]. Enterprises that had less suffered in the course of transition, had not been deeply affected by the financial crisis and had increased their relative weight in national economy through export rents staged this re-organisation.

On the one hand, concentration reduces opacity of transactions and increases the security of input supply of some metal consumers. It reflects the decline of informal institutions and creates conditions for the industrial enterprises to get hold of profits. Meanwhile the government has suppressed fiscal advantages for tolling, granted during the Yeltsin times. On the other hand the regulation of the branch shows growing ties between judicial and political powers, and business leaders. Corporate towns and even corporate regions are often deprived of regulation assets. In Lipeck, the town council is already dominated by a list of salaries and managers of the plant and, the NLMK's director - Vladimir Lissin – is one of the main political actors of the oblast. At the federal level, the relative decline of illegal practices participates in a common objective of the ruling personal of the branch and federal authorities, to stabilize and legalize the situation resulting of a ten years wild struggle.

Conclusion: what model for post-Soviet Russian metallurgy?

As a result of the liberalization shock, the over-development of heavy industry within the metallurgical branch is now worse than ten years ago and we can

[13] *About industrial growth and concentration process see [Penrose, 1963, 223 p.]*

observe an impoverishment of the industrial potential of this branch. This is exactly the contrary of what had been promised at the beginning of the transition.

After a decade of wild struggle for the control in the branch, the process of corporatist stabilization since 1998 and the significant growth of the activity have not necessarily induced a productive model that will stimulate the economic development of the Russian society.

In spite of the important differences between enterprises in the branch, we shall try to identify some common features that might help define the probable productive model [Boyer & Freyssenet, 2000] in the years to come.

Rent seeking and the maintaining of the level of activity are geared to three main elements:

1/ *Poor innovation policy*. It aims at acquiring already existing technology to make use of the cost advantage. Even if the internal demand seems to be growing, the producer's goal is, with the help of exports, to maintain an important share of activity, as illustrated by the new investments that have been made into international trading structures by Severstal and NLMK. The government forecast corroborates this hypothesis[14]. This choice implies that the branch will dedicate efforts to the production of basic products, while struggling to lower the prices of energy and raw materials.

2/ *Inertial productive organization*. The highly capitalistic character of the activity and the low flexibility of facilities limit the restructuring concerning mainly, the externalisation of social services and associated activities, and the development of a complex sub-contracting network around the leading companies. However, some enterprises (Severstal and Russkij Aliuminij) undertook significant reforms that aimed to tighten discipline and simplify internal management.

3/ *Continuing the degradation of workers' situation*. The new labour code adopted at the beginning of 2002 confirms this tendency. In a context of massive unemployment, most firms have already introduced methods of individualization of contracts and wages that imply a rising insecurity of

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[14] Federalnaja Celevaja Programma, « Strategija razvitija metallurgičeskoj promyšlennosti do 2005 goda », Moskva, 1999. For a critical analysis of this strategy in Russia, see Budanov [1998].

labour. Moreover the government and the firms are intended to suppress 350 000 jobs in the branch before 2010.

The table sums up different characteristics of the contemporary metallurgical branch concerning productive model, creating and appropriating surplus strategies, investment and insertion into Russian growth regime. This synthesis shows that in the current social context, there is a low probability that the branch will contribute to a sustainable growth in Russian economy. The productive model that we describe is oriented by a rent seeking behaviour based on the use of the soviet production tool. Weakly innovating and weakly favourable to productive investment, the new organisation of the branch is influenced by its growing weight in the Russian economy. Nevertheless, middle term development perspectives are constrained by general and specific difficulties of the reproduction process.

Furthermore, it is useful to notice that, connected with the rent of energy and raw materials exports, the orientation of the activity of the branch in direction of international markets induces a risk of Dutch disease for the Russian economy.

Table 2. Analytical presentation of metallurgical branch situation

Productive model	*Product policy*	Specialisation on weakly elaborated products Cost competitiveness, particularly through struggle for low cost input supplies Progressive improving qualities up to international standards
	Productive organisation	Inertial productive organization, because of the highly capitalistic character of the activity and the low flexibility of equipments Externalisation of social services and associated activities, and development of a highly dependent subcontracting network around main enterprises
	Capital-Labour relationships	Weakening wages, fall of indirect subsides (social advantages and welfare) Rising weight of flexible payments depending on individual or workshop performances Rising precariousness of working contracts
Creating and appropriating surplus strategies		Private rent seeking strategy ; fiscal and capital evasion Production level maximising, while minimising costs Attempt to stabilize substantial ownership rights by external growth and financing political and administrative rents
Behaviour of Investment	*Volume*	Rising but weak ; no significant direct foreign investment
	Orientation	Capacities and modernising but weakly innovating investments Perpetuating specialization over basic productions
	Financing	Mainly self financing and, for a limited part, credits guaranteed by exports
Dynamic insertion into growth regime		Rising weight in GNP and in total employment Significant autonomy because of exports; secondary preoccupation about satisfying local needs. Weakness of middle term coherence because of the degradation of the fundamental terms of reproduction (ageing production tool, pollution) and of the general terms of socio-economic reproduction (health, education, ecology, public infrastructures …)

References

Aglietta, M., 1976, *Régulation et crise du capitalisme*, Calmann-Levy, Paris.

Appel, H., 1997, «Voucher Privatisation in Russia: Structural Consequences and Mass Response in the Second Period of Reform», in *Europe-Asia Studies*, vol. 49, n° 8.

Basle, M., J. Mazier et J.-F. Vidal, 1993, *Quand les crises durent*, Economica, Paris, 591 p.

Berliner, J. S., 1957, *Factory and manager in the USSR*, Harvard University Press, Cambridge.

Bouzgaline, A., 1997, «La Russie à la croisée des chemins : les problèmes de la transformation économique et politique», in Motamed-Nejad, R., (ed.), *URSS et Russie : rupture historique et continuité économique*, PUF-Actuel Marx, Paris.

Boyer, R., and Freyssenet, M., 2000, *Les modèles productifs*, La Découverte et Syros, Paris.

Boyer, R., andSaillard, Y., 1995, *Théorie de la Régulation, Etat des savoirs*, La découverte, Paris.

Budanov, I. A., 1998, «Stanovlenie rossiskovo rynka tchiornikh Metallov», Problemy prognosyrovaniia, n°4.

Chavance, B., and Magnin, E., 1996, «L'émergence de diverses économies mixtes dépendantes du chemin dans l'Europe centrale post-socialiste» in R.DELORME, *A l'Est du nouveau, nouveau : changement institutionnel et transformation économique*, L'Harmattan, Paris.

CIA, 1982, «Sluggish Soviet Steel Industry Holds Down Economic Growth», in *Selected Papers Submitted to the Joint Economic Committee Congress of The United States*, 31 December.

Clement, K., 2000, *Les ouvriers russes dans la tourmente du marché*, Syllepse, Paris.

Coase, R. H., 1937, «The Nature of the Firm», *Economica*, n. s. 4.

Crowley, S., 1997, *Hot Coal, Cold Steel*, The University of Michigan Press.

Dugger, W. M., 1991, *Underground Economics*, Sharpe, New-York.

Ekspert (Reitingovoe agenstvo), *Rossiskaja Metallurgija*, Moskva, vol. 2.

Federalnaja Celevaja Programma, 1999, *Strategija razvitija* metallurgičeskoj *promyšlennosti do 2005 goda*, Moskva.

Gicquiau, H., 1991, «Une ressource stratégique de l'URSS: l'aluminium», *Le Courrier des Pays de l'Est*, n° 357, février.

Grajdaninova, M. P., 1999, «Problemy i Perspectivy Vertikalnovo vzaimodestvija firm na rynke černovo metalloprakata», *Problemy Prognozirovanjïa*, n° 3.

Harris, C. A. (CIA), 1987, «Modernization of the Soviet Steel Industry: What Lies Ahead?», in *Selected Papers Submitted to the Joint Economic Committee Congress of The United States*, 23 November, pp. 305-317.

Hirschman, A. O., 1970, *Exit voice and loyalty: the response to decline in firms, organizations and states*, Harvard University Press, Cambridge.

Jordan, A., 1999, «De la crise industrielle de l'URSS à la fin des années 70 à celle de la Russie post-soviétique ruptures et continuités», *seminar, CEMI-EHESS*, Paris, 31 mars.

Kornaï, J., 1996, *Le système socialiste: l'économie politique du communisme*, PUG, Grenoble.

Locatelli, C., 1998, *Energie et transition en Russie: les nouveaux acteurs industriels*, L'Harmattan, Paris.

Mesnard, M., 1999, «Les groupes industriels et financiers russes après la crise d'août 98 : troc, ordre monétaire fractionné et impuissance du capital», XLVIII Congrès de l'AFSE, septembre.

OCDE, 1997, (Etudes économiques de), *Fédération de Russie*, CCET, Paris, Décembre.

Penrose, E. T., 1963, *Facteurs, conditions et mécanismes de la croissance de l'entreprise*, Editions Hommes et Techniques, Neuilly sur Seine, (first published in English 1959).

Pitelis, C., 1993, *Transaction Costs Markets and Hierarchies*, Basil Backwell, Oxford.

Saggers, M. J., 1992, «The Aluminium Industry in The Former USSR in 1992», *Post-Soviet Geography*, vol 33, n° 9.

Sapir, J., 1996, «Action publique et agents privés. Vers un modèle russe?», *Revue d'études* comparatives *Est-Ouest*, vol. 27, n° 2, juin.

Verdeil, O., 1997, *Politique publique et Transition. L'analyse du changement dans la politique ferroviaire russe 1992-1997*, Mémoire de DEA, dir. D. Colas et J.-R. Raviot , IEP de Paris, Paris.

Williamson, O. E., 1993, *The Nature of the Firm*, Oxford University Press.

Woo, W. T., Parker, S., and J. D. Sachs, 1997, *Economies in Transition: Comparing* Asia *and Europe*, The MIT Press, Cambridge.