

# Eichnerian megacorp and investment behaviour of Russian corporations

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Despite the prolonged economic recovery in 1999–2008, investment by Russian corporations in productive capacity was low and deficient in quality. Eichner's model of megacorp gives an insight into investment behaviour of Russian corporations due to its emphasis on indivisibility of investment decision, pricing and distribution of income between profits and wages. The typical Russian corporation is characterised by inseparability of ownership and management due to largely informal control of big insiders over enterprises. The groups, dominating over Russian corporations, seek to maximise the short-term rent. Along with a number of intra-firm conflicts this undermines both the supply of and the demand for investment funds.

*Key words:* Post-Keynesian economics, Alfred Eichner, Accumulation of capital  
*JEL classifications:* D23, D43

## 1. Introduction

According to official statistics, both investment and gross domestic product (GDP) in Russia declined enormously after introduction of the market reforms in 1990s. In 1998 the former amounted to only 21%, and the latter to 57%, of pre-reform 1990 levels (Goskomstat, 2000, p. 16). From 1999 a prolonged recovery of the Russian economy started and official statistics show steady growth of both variables (Rosstat, 2008, p. 35). Gross investment as a proportion of the total capital stock in Russian industry had grown over the period 2000–2007 from 1.8 to 3.9, while scrapped capital as a proportion of the total capital stock in the same period declined from 1.3 to 1.0 (Rosstat, 2008, pp. 74). These figures suggest that in the years of recovery the fixed capital stock of Russia was steadily increasing. Meanwhile, analysis of independent statisticians, provided by Valtukh (2000), Voskoboynikov (2004), and Khanin and Fomin (2007), reveals a very different picture. They show that the proportion of scrapped capital exceeded gross investment as a proportion of the total fixed capital stock in 1995 by 5 times (Valtukh, 2000, p. 8). The size of the effective fixed capital (i.e. fixed capital used for producing goods) decreased by the year 2002 by 2.6–2.7 times what it was in the pre-reform year 1990 (Voskoboynikov,

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2004, p. 3). In the same period the size of the fixed capital fit for operating declined by 1.2–1.6 times (Voskoboynikov, 2004). According to the account of Khanin and Fomin (2007, p. 30), in reality scrapped fixed capital as a proportion of the total capital stock exceeds gross investment as a proportion of total capital stock by a factor of 2.24. Every year the residual balance sheet value of fixed capital measured by its replacement value<sup>1</sup> decreases by 2.75%. Just to maintain its fixed capital stock at its present level Russia needs to increase the share of investment in productive capacities to 46.8% of its GDP (Khanin and Fomin, 2007). Thus, productive capacities in Russian industry were actually decreasing during a very prolonged economic recovery (which lasted until the second half of 2008). No less important is the quality of fixed capital stock.

Even official data show that the share of new equipment in the industrial sector aged up to 5 years has not reached the level of the mid-1990s (Rosstat, 2005A, p. 128). The categories of equipment with incomplete lifespans of 6–10 years and of 11–15 years have sharply decreased. At the same time the proportion of equipment in the range of 16–20 years and of more than 20 years has greatly increased, with the latter reaching the enormous level of 51.5%. As a result the average longevity of equipment in industry reached 21.2 years in 2004 (Rosstat, 2005A). For 2006 and 2007 the same source gives much more optimistic figures for the same variable: 14.4 and 13.1 years, correspondingly (Rosstat, 2008, p. 117). The change is too drastic for such a short period of time and suggests a significant change in the methodology of the underlying calculations. According to Aganbegyan (2008, p. 138) the current average longevity of machines and equipment in the Russian economy is 18–19 years in contrast with the desired 7–8 years. First, these data suggest that the value of gross investment as a proportion of total capital stock are too low. Second, the steady growth and then modest decline in the average longevity of equipment in the 2000s means that the rate of expansion of fixed capital in Russian industry is, at the very least, insufficient to overcome the growing obsolescence of its productive equipment. These considerations are further reinforced by the data according to which in the mid-2000s the majority of Russian industrial enterprises primarily used equipment installed before the start of market reforms (Rosstat, 2005B, p. 123). It follows from the above that the fixed capital stock in Russia not only shrank in size, but deteriorated in quality as well.

The evidence, which is provided in Section 4, shows that the majority of Russian enterprises consider their productive capacities as insufficient in size and obsolete to meet the growing market demand. At the same time surveys demonstrate that the management of Russian enterprises, as a rule, does not consider the condition of productive capacity as a significant limitation of output increase. This contradiction is further reinforced by surveys showing that Russian enterprises realise that Russian equipment is inferior to imported versions, yet, nevertheless, they tend to invest in the former (see Section 4). Thus, if one strictly relies on empirical evidence studying Russian economic growth, he/she becomes totally confused by the apparently contradictory data.

This problem is an illustration of the methodological limitations of positivism adopted by neoclassical economics. This approach reduces the scientific research agenda to data collection and measurement of phenomena in question (Caldwell, 1982). In contrast, critical realism emphasises the need to reveal the structures and mechanisms underlying the appearance of events (Bhaskar, 1978, 1986, 1989). This latter perspective is adopted by post-Keynesian economics (Dow, 1996; Lawson, 1997; Downward *et al.*, 2002). In

<sup>1</sup> Replacement value is measured in mixed prices: old equipment in prices at the last re-evaluation of fixed assets and new equipment in current prices, which leads to appreciation of the latter.

particular, the neoclassical theory of accumulation of capital is focused on technical aspects, while post-Keynesian theory stresses underlying social relations (Harcourt, 1972; Wood, 1975; Eichner, 1991). This paper suggests an explanation of investment behaviour of Russian corporations based on Eichner's model of the megacorp (Eichner, 1973, 1976, 1991). Generally speaking, Eichner's model was developed 'to provide a theoretical understanding of how prices are determined in the oligopolistic sector of the American economy and how those prices, so determined, affect the growth and stability of the economy as a whole' (Eichner, 1976, p. 1). Thus, if we compare the institutional nature of the Russian corporation with the model in question, we will be able to identify the major institutional obstacles to growth in the Russian economy. As we show below, in Sections 2 and 3, the emphasis of Eichner's model on indivisibility of investment, pricing and distribution of the firm's income between wages and profits is of prime importance for analysing accumulation of capital by Russian corporations.

## **2. The Eichner model of pricing and investment**

Eichner's model refers to the representative (i.e. possessing the typical properties) big corporation of the manufacturing sector, which he named the 'megacorp'. It has some distinctive features.

First, separation of management from ownership is seen as a major precondition of the megacorp, maximising its long-term growth rather than short-term profits as in neo-classical thinking. A wider spreading of equities among the shareholders of US and UK corporations in the twentieth century has led to the separation of ownership from control with the latter residing with the managers (Berle and Means, 1932; Lee, 1998, p. 22). Prosperity of the managerial staff is based not on short-run profits but rather on the position of the firm in the industry. The bigger the market share of the given organisation, the more power it exercises over the market and the greater the salaries and privileges that management will receive. Thus, the institutional nature of the megacorp 'dictates maximum growth as the goal of the firm' (Eichner, 1991, p. 361).

Second, production of the megacorp is organised within multiple plants and plant segments with fixed, in the short run, technical coefficients due to technological and institutional factors (Eichner, 1976, p. 28). Fixed coefficients of production are important to derive the cost curve of an enterprise, the shape of which differs in this model from the neoclassical U-type cost curve. The latter is based on the assumption that in the short run at least one of the production factors is fixed (usually capital). In contrast with this the megacorp starts or closes its whole segments, increasing or decreasing *all* of its factors in the same proportion (Eichner, 1976, p. 31). This leads to the assumption of constant prime unit costs of production.

Third, in Eichner's model oligopoly is characterised by the 'recognised interdependence' between its fellow-members together providing the major portion of the industry's sales (Eichner, 1991, p. 364). Among these few fellow oligopolists, one—usually the organisation with the largest market share and/or with the lowest costs—emerges as the leader, announcing changes in the industry price. Using its advantages, the price-leader is able to retaliate if some firm challenges the established price (Eichner, 1991). It is this following of the leader's price pattern, which makes oligopoly pricing—according to Eichner—a determinate process.

Since the imperative of growth becomes the prime objective of the megacorp, investment decision becomes the core of its long-term strategy. This demands sufficient finance. The

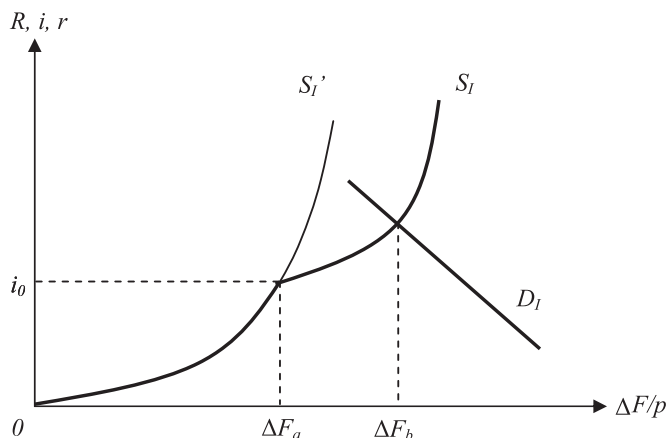
crucial ingredient of this approach is the notion of the ‘corporate levy’ ( $CL$ ), which is defined ‘as the amount of funds available to the megacorp from internal sources to finance investment expenditure’ (Eichner, 1976, p. 61).  $CL$  includes depreciation allowances, retained earnings, expenditures on R&D, advertising and ‘similar means of enhancing the megacorp’s long-run market position’ and excludes dividends (Eichner, 1976).<sup>1</sup> Thus  $CL$  determines the discretionary power of the firm over the resources it needs to maintain growth maximisation. It crucially depends on the size of the mark-up on prime unit costs set by the megacorp. It is the change in the size of a mark-up ( $\Delta m$ ) that is the focus of Eichner’s model. This is seen as the essence of the megacorp’s pricing policy, in which distributional and growth issues are deeply involved.

When considering a price increase, one should take into account its twofold effects on financial flows: (i) growth of internally generated funds; (ii) long-term losses inflicted by decrease of sales. A comparison of these two consequences gives an understanding of gains and costs resulting from price changes. Thus, growth of internally generated investment funds (residual income) is limited by the real cost incurred resulting from the increase of the industry’s price. This cost derives from three powerful constraints, namely: (i) the substitution effect, when customers move to the products/substitutes (Eichner, 1991, p. 377); (ii) entry factors, when rivals join the industry attracted by increase of expected profits (Eichner, 1991, p. 379); and (iii) probability of meaningful government intervention, when authorities react to what they consider to be a price increase unacceptable for social stability (Eichner, 1976, p. 77).

An important feature of Eichner’s model is that to decide whether a megacorp will be better or worse off after a price increase we cannot just compare the short-run gains and losses of such a decision, because the internally generated funds are not an end in itself but only a means to implement investment. Thus, it is necessary to compare the prospective rate of return on additional investment funds generated through the price increase with the costs of obtaining these funds. To do this we need to take into account the role of time. In the first period following the price increase the three effects referred to above are insignificant, while in the following periods these effects tell increasingly. We sum up the additional funds accumulated due to a price increase and the corresponding reductions of profit, appropriately discount the results and divide the latter value by the former. As a result we obtain the costs of accumulating a unit of additional investment funds, or the *implicit interest rate* ( $R$ ). Let us consider Figure 1 taken from Reynolds (1987, p. 70) with some modifications. The vertical axis measures the implicit ( $R$ ) and the external ( $i$ ) interest rates and the rate of profit expected from the investment in question. The horizontal axis measures the additional investment funds generated in the pricing period ( $\Delta F/p$ ).

The figure represents a simplified version of Eichner’s model of megacorp’s pricing and investment (Eichner, 1991, pp. 375–93). The supply of investment funds is depicted as the relationship between the value of the implicit interest rate,  $R$ , the explicit interest rate,  $i$ , and the amount of additional internally generated and externally borrowed investment funds per planning period,  $\Delta F/p$ . The increase in the size of the mark-up  $\Delta m$  is associated with the growing value of the implicit interest rate,  $R$ . Increases in the mark-up lead to growth of additional investment funds,  $\Delta F/p$ . The relation between  $\Delta m$  and  $R$  is reflected by the supply of internally generated investment funds curve,  $S_I$ . One can see that every

<sup>1</sup> Dividends are treated like interest paid to the firm’s external creditors and are included in fixed or overhead costs. The reason is that in conditions of Eichnerian megacorp the equity debt holders are ‘stripped almost entirely of any entrepreneurial function’ (Eichner, 1976, p. 59).



**Fig. 1.** The supply of and demand for internally and externally generated funds. The vertical axis measures the implicit ( $R$ ) and the external ( $i$ ) interest rates and the rate of profit expected from the investment in question. The horizontal axis measures the additional investment funds generated in the pricing period ( $\Delta F/p$ ).

incremental portion of additional investment funds corresponds to a higher value of the implicit interest rate, which becomes prohibitive starting from a certain point. This happens because all the effects of price increase described above grow over time. Apart from internal accumulation a firm can borrow some funds externally. Unlike Eichner, we depict the supply of external funds not as a horizontal, but rather as an increasing curve. This reflects Kaleckian ‘principle of increasing risk’ (Kalecki, 1971, ch. 9), which states that with growth of investment in relation to the firm’s own capital the probability of losses in case of failure increases. Such an approach suggests that with the increase of the gearing ratio, the explicit interest rate  $i$  should grow. This is reflected by the growing portion of  $S_I$  starting from the value  $i_0$ . It is expedient to generate funds internally only while the implicit interest rate is lower than its external counterpart. Thus, the total supply of additional investment funds curve consists of the two elements: internally and externally generated.

The demand for investment funds in the model in question is based on the expected rate of return on investment,  $r$ . Eichner defines  $r$  as the marginal efficiency of investment (*MEI*). An advantage of this term is that ‘what is being described is the increment in income, or revenue, relative to the cost of the investment project and not all of the firm’s net revenue, or profit, relative to the value of the capital stock’ (Eichner, 1991, p. 430). If we array the potential investment projects under consideration by the megacorp according to their descending prospective rates of return, we obtain the investment demand curve,  $D_I$ . The intersection of the demand for and the supply of investment funds curves determines the actual amount of investment undertaken by a megacorp at the level of  $\Delta F_b$ . It can be seen from Figure 1 that up to  $\Delta F_a$  finances will be generated internally, while the portion between  $\Delta F_a$  and  $\Delta F_b$  will be borrowed. The change in the mark-up, corresponding to the implicit interest rate  $R$  exactly equal to  $i_0$ , will determine the price change for the pricing period.

### 3. The nature of the modern Russian corporation

The genesis of the modern type of Russian corporation can be traced to the private income appropriation as a result of the privileges of state bureaucracy, as well as informal and

criminal activities under the surface of the Soviet State economy. A gradual increase in the 1970s–1980s expansion of the rights of control over material resources (finance played only a secondary role in the Soviet economy) by the heads of the state enterprises provided them and their associates pecuniary and non-pecuniary privileges (Yaremenko, 1998; Blokhin, 2002). Apart from official privileges, disintegration of bureaucracy and increasing co-operation on its part with criminal structures created foundations for the development of private income generation on the basis of public property (Rosmainsky, 1999; Cheloukhine and King, 2007). It is important to note that these activities were based not on legal private ownership, but on administrative control over productive assets and material resources. Hence, they can be treated as a form of rent-seeking behaviour based on control over the assets. This contributed to the ‘administrative class’ becoming, according to Lane (2006), a force that facilitated the fall of the Soviet system.

The actual form of ownership and control of Russian enterprises was shaped by privatisation starting in the early 1990s. The organisation of this process in Russia created widespread opportunities for abuses of the legal system by state bureaucrats and criminals and enabled them to gain control over the most profitable enterprises. This is officially recognised in the fundamental Report of the Accounting Chamber of the Russian Federation (the highest organ of financial control in the country) (Stepashin, 2004) and is consistent with other accounts of privatisation such as Radygin and Sydorov (2000), Radygin (2001), Goldman (2003), Menshikov (2007, pp. 5–6, 9–11) and others. The most significant characteristic of Russian privatisation with the most long-term consequences was the strong impetus that it gave to criminality and corruption. During privatisation conditions were formed for: laundering of the criminal capitals; transfer of a significant part of the state and municipal property to the criminal and semi-criminal structures; increase of the latter’s influence on the economy and political life; and corruption of the state. A widespread practice was for the heads of the state enterprises being privatised to withdraw valuable assets from these organisations into newly established firms in which they held a majority of shares. In the course of privatisation ‘the formal property rights became only a screen concealing legalisation’ of misappropriation of assets and resources of enterprises (Glavatskaya and Moldavsky, 2001, p. 24). ‘If in other countries capitalism grew from the development of private entrepreneurship, ... in post-Soviet countries, it has grown from a direct robbery of state property’ (Cheloukhine and King, 2007, p. 109). Thus, informal control over state assets underlying the rent-seeking activities of the state bureaucracy and criminal structures in Soviet times was institutionalised as private property in the course of privatisation. This produced a specific type of corporate governance.

The latter in the modern Russian economy has been studied by a number of Russian and foreign specialists (Desai and Goldberg, 2000; Dolgopyatova, 2002; Dorofeev, 2001; Dzarasov and Novojenov, 2003; Kapelushnicov, 1999; Novojenov, 2003A; Oman, 2001; Pappé, 2000, 2002A, 2002B; Radygin, 1998, 1999, 2001; Radygin and Sydorov, 2000; Radygin *et al.* 2002, Skorobogatov, 1998). These studies show large differences between the formal distribution of ‘property rights’ and the real relationships of ownership and control in the Russian economy. All the above mentioned studies arrive at the conclusion that in Russia it is difficult to exercise formal property rights if they are not backed by some kind of informal control over the enterprise. Ownership could generate revenue only if it ‘gave control over the cash-flows of an enterprise, in such conditions getting and/or keeping control over the current activities of a company became the main motive for buying shares’ (Dolgopyatova, 2005, p. 4). The highly concentrated corporate ownership of either top-managers or external investors is a characteristic feature of Russian

companies (Dolgopyatova, 2005). Kuznetsova and Kuznetsov (2001) observe that: 'As a source of control, ownership matters in Russia only to the extent it is underpinned with power associated with the position of authority in as much as extra-ownership control is highly effective'. This means that the classical separation of ownership and control is not characteristic of the typical modern Russian corporation.

Radygin and Sydorov (2000) find that the principal owners, occupying positions as the top-managers, obtain the largest incomes in their companies and frequently conceal their dominant role. Usually they do not possess equity shares directly. As a rule they own companies, funds, offshore firms, nominal shareholders and so on, which in turn are the owners of the controlled enterprise equities. Systems (chains) of the nominal firms are designed in such a way that the real owners are not present at all in any of the lists of shareholders as they are screened by an 'offshore cloud' (Pappe, 2002B, pp. 168–9). This is necessary to conceal the fact that one and the same group of individuals is simultaneously both top managers of the Integrated Business Group or company, and—directly or indirectly—its major shareholders (Pappe, 2002A, p. 20). This practice is predominant in modern Russia: a 2005 survey indicated that mergers of ownership and control were the most widespread—82% of interviewed individuals recognised the existence of an individual shareholder or group, who controlled the management of their companies (Dolgopyatova, 2005, p. 6). An important corollary from this should be emphasised. Becoming the dominant owner, the outsider becomes an 'insider', because he directly takes part in managing the enterprise or appoints top-management, which operates under his control (Dolgopyatova, 2003, ch. 2). Correspondingly, the other stakeholders, including rank and file managers and employees, who do not influence corporate governance, should be treated as 'outsiders'. To emphasise the role of the dominant owners we will call them from now on 'big insiders'.

The dominant position of the latter is based on a sophisticated 'infrastructure of control', under which we mean a set of formal and informal institutions ensuring domination of big insiders over enterprises. This infrastructure has external and internal dimensions. Given the unfavourable legal environment in Russia, big insiders need strong guarantees of their 'property rights' to protect them from encroachments by rival groups. Such guarantees can be provided by the state authorities. Pappe (2002B, p. 167) emphasises 'a high degree of dependency on the state' as one of the key features of Russian big business. Radygin and Sydorov (2000, p. 55) speak about the 'privatization of the state institutions' meaning the informal ties that connect big business and governmental officials to their mutual benefit. World Bank experts note that for the new entrants, capture of the state is a compensation 'for weakness in the legal and regulatory framework' (Hellman *et al.*, 2000, p. 2). The most important advantage of privatisation of the state is, of course, the protection of big business from a redistribution of the 'property rights'. The main instruments of 'taking over of the state' are bribes and 'rotation' between the civil service and employment in the private sector (Radygin and Sydorov, 2000, p. 55). By the mid-2000s Russia experienced a rapid shift from 'state capture' to 'business capture' characterised by 'the dominance of the state over big business' (Yakovlev, 2006). In particular this meant a much greater role for the state authorities in redistribution of the property rights in favour of individuals close to state officials.<sup>1</sup> Cheloukhine and King (2007, p. 118) describe state–business relations in modern Russia as corruption networks

<sup>1</sup> The notion of 'big insiders' means the real owners of the Russian enterprises, whether they are equity holders or state officials, having only informal control over the firms through their proxies.

comprised of three key elements: (i) the commercial or financial branch converts the influence of the network into cash; (ii) government officials provide favourable decision-making at the state level; (iii) law enforcement, protecting a network, ‘provides information, destroys compromising files, or even closes criminal cases’. Another type of guarantee of these ‘property rights’, widespread in Russia today, is the so-called ‘roof’. This term is used to represent a criminal structure or state law-enforcing agency that provides protection against adverse acquisition, usually for significant remuneration (Fochkin, 2002; Volkov, 2002).

Apart from protection against the external rivals, big insiders should prevent possible encroachments on the firm’s financial flows on the part of managers and employees. To achieve this they are compelled to create sophisticated internal elements of infrastructure of control. Strengthening their positions from the 1990s, big insiders started centralising management in order to secure redistribution of income in their favour (Novojenov, 2003A, 2003B). Their managing companies tend to set more detailed investment parameters (Dzarasov and Novojenov, 2005, pp. 276–91). Besides, rank and file managers and employees are strictly controlled by the controlling-revision services<sup>1</sup> and private security services of the enterprises (Dzarasov and Novojenov, 2005, p. 279). The latter are often represented by independent firms established by big insiders, allegedly to maintain order, but actually to keep an eye on personnel inclined to opportunism.

Since the infrastructure of control is largely based on criminal activities and abuse of power by state functionaries, we can conclude that it has a coercive nature. This coercive power of big insiders ensures inseparability of ownership and management and underlies the Russian form of corporate governance. Since the external infrastructure of control is so crucial to extract rent, expenditure on it should be treated as a kind of investment. One of the possible conclusions from this is that state corruption is a by-product of the accumulation of capital in a form of rent. Despite the development of sophisticated and expansive infrastructures of control, domination of big insiders over enterprises is essentially unstable.

One reason for this is that due to the given legal environment and to its largely criminal nature, privatisation laid the foundation for a permanent struggle between the rival groups of big insiders for control over profitable assets. A wide range of studies conclude that such a struggle for redistribution of property rights among the dominant groups is a permanent feature of modern Russian business (Deryabina, 2001; Dolgopyatova, 2002; Radygin and Sydorov, 2000; Radygin, 2001 and others). Kapelushnikov and Demina (2005) show that from the mid 1990s an annual change of the principal owners took place at 6–8% of industrial enterprises on average. Redistribution processes annually affect up to one sixth of the stock of capital (Kapelushnikov and Demina, 2005). The predominant form of this process is a hostile takeover. In Western literature this term usually means the legal act of acquiring the controlling parcel of a company’s shares with subsequent replacement of its managerial team (Keasey *et al.*, 2005, p. 4). In Russia a hostile takeover means appropriation of enterprises using violent, coercive methods (Bunin, 2008). The Trade Chamber of Russian Federation counted about 5,000 hostile takeovers in Russia during the period of 2000–2004, while in 2005 there were a further 1,900 (Kondratyeva, 2006). The results of the study of a hostile takeover mechanism (Vorobyev, 2005) suggest that

<sup>1</sup> By this it is meant not the external auditing but internal departments systematically and very closely monitoring the activities of employees and managers. Revealing theft and other abuses on the part of employees they provide information to the internal security departments.



there is a mature market providing services of this sort, with established firms and prices. This business is very lucrative (Ukhov, 2006). According to one estimation, annual turnover of this ‘industry’ amounts to US\$30 billion (Mayetnaya and Shypitsina, 2004). As a result ‘not a single JSC has guarantees against a hostile takeover’ (Kondratyeva, 2006, translated by the author). Other reasons for instability of control of big insiders are: (i) inability to bequeath it legally to one’s heirs due to its largely informal nature; and (ii) the social instability in Russia due to a great inequality of income distribution (see more on this below). Since instability of domination of big insiders over enterprises stems from the very nature of their control as a largely informal institution, we call it fundamental instability. It has far-reaching repercussions for Russian big business. The most important of which is the short-term time horizon of Russian big insiders.

Being under the permanent threat of ‘expropriation’ by some rival business group or state functionaries, and taking into account other dimensions of fundamental instability, big insiders are discouraged from making large investments, profits from which—even in a significant amount—will be available only in the long run. Indeed, facing a permanent possibility of a hostile takeover the insiders cannot be sure that they will enjoy future gains themselves. Of course, this threat can be partially diminished by investing in external elements of infrastructure of control discussed above. Although, as we have seen, this can strengthen but cannot secure a dominant position for big insiders. Short-term time horizon of big insiders determine the type of income which they extract from enterprises.

A number of studies maintain that the individuals dominating Russian enterprises extract their incomes from their control over the financial flows (Desai and Goldberg, 2000; Dolgopyatova, 2005; Dorofeev, 2001; Pappe, 2002B; Radygin, 2001 and others). The World Bank experts Desai and Goldberg (2000, pp. 8–9) argue that ever since privatisation, managers–owners have significantly degraded enterprises’ assets. ‘Instead of increasing a firm’s value through reinvestment’, they have

typically extracted income streams from these firms at the expense of minority shareholders. The managers have diverted cash flows to offshore accounts and shell corporations, concentrating losses among subsidiaries held by outsiders (rather than evenly distributing them between the insider-owned holding company and the subsidiary), and by delaying the payment of dividends. Since dividends are taxable and have to be shared with other shareholders, managers–owners are more inclined to withdraw cash flows from their enterprises through fictitious expenses or theft. (Desai and Goldberg, 2000)

We may conclude from this that, unlike the Eichnerian megacorp, Russian corporation maximises not long-term growth, but *insider rent*. Under the latter we mean a *kind of private short-term income that is extracted from enterprises due to control over their financial flows and appropriated by individuals or groups dominating these organisations*. The notion of insider rent plays the central role in our modification of the Eichnerian model. It reflects the institutional nature of the Russian corporation as based on the coercive power of big insiders over enterprises and sets the objectives of Russian firms. Extraction of insider rent leads to a number of intra-firm conflicts between big insiders and the other stakeholders in Russian enterprises.

First, there is a conflict with minority shareholders. Since, as was mentioned above, insider rent is extracted mainly through non-dividend payments, the majority of new shareholders in Russia have found that dividends were either negligible or not paid at all (Dolgopyatova, 2005, p. 4). Since dividend rates in Russia are usually lower than inflation, and Russian firms have low investment rates in new assets, minority shareholders find themselves with low returns and, as a result, financial investors value Russian corporate

shares at a very low level compared with similar institutions in other countries (Dorofeev, 2001).<sup>1</sup> Second, big insiders damage the interests of managers. Novojenov (2003B) argues that the incomes of managers of Russian corporations who do not belong to the dominant group are less than they would be without rent extraction by big insiders. Such conditions lead to widespread opportunistic behaviour by managers, which can assume a number of forms: theft of technical resources and final products; use of the firm's equipment for their own benefit; establishing of their own firms, which make deals with their employer's company on conditions unfavourable to the latter; and so forth (Novojenov, 2003A, pp. 61–7; 2003B). Third, there is a conflict with workers, which is potentially the most devastating for Russian capitalism. During the period of market reforms the position of Russian workers deteriorated in a number of ways: the real wages of Russian workers declined by 60% (Kokoritch, 2004); wage payments were often postponed (Erl and Sabyarinova, 2001, p. 107); in the 1990s wages were often paid by goods in kind at prices higher than market level (Ilyin, 1998, ch. 6); and so on. One of the most startling paradoxes of Russian market reforms is that they not only decreased the level of real wages, but also greatly increased the egalitarian nature of worker remuneration compared to Soviet times (A. Timofeyev, 2003, personal communication). In response to this workers developed their own types of opportunistic behaviour, organising 'alternative production' on the firm's equipment, selling their products at market (Kleman, 2003, pp. 68–9). With every delay in wage payments, theft by workers increases (A. Timofeyev, 2003, personal communication). An extreme form of opportunistic behaviour of workers is their participation in organised criminal communities sometimes being even able to challenge big insiders as in the timber and coal industries in Vorkuta (Ilyin, 1998, ch. 3). Sometimes worker unrest happens as at JSC 'Vyborgski Cellulosno-Bumajni Kombinat' in the late 1990s. When this enterprise was virtually ruined by systematic rent extraction, workers rebelled, took it over and succeeded in organising production on their own (Rudyk *et al.*, 2000). The authorities took the side of the criminal owners and after a prolonged struggle the unrest was suppressed.

Intra-firm conflicts became another dimension of fundamental instability of insider control and increase short-term orientation of the dominant groups. Big insiders reply by increasing investment in internal elements of infrastructure of control, resorting to coercion to submerge managers and workers. Thus, insider control as an institutional nature of Russian big business engenders fundamental instability in the dominant groups, short-term time horizons, rent extraction as the firms' objective and intra-firm conflicts. All this greatly affects the investment behaviour of Russian corporations.

#### 4. Modification of Eichner's model and investment of Russian corporations

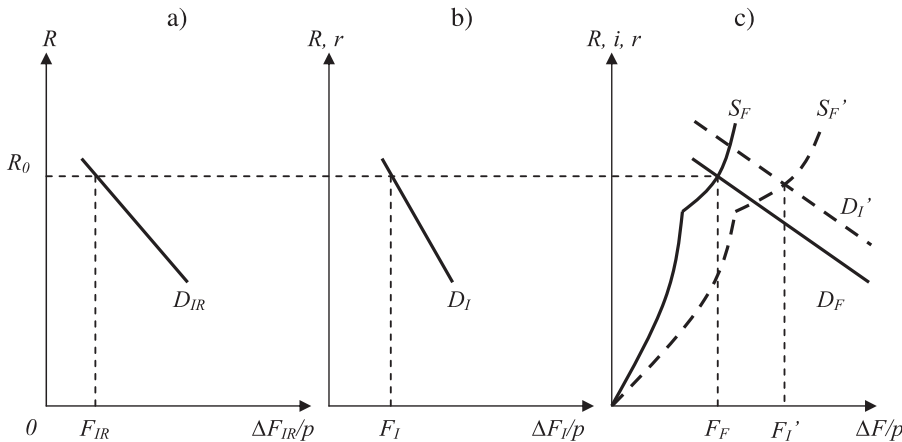
As was mentioned above, an advantage of the Eichnerian megacorp model for studies of Russian corporations is the emphasis of the former on the indivisibility of investment and distribution of the firm's income. This model allows us to analyse the effects of rent extraction on the investment behaviour of Russian corporations. Fund withdrawals by big insiders produced external and internal effects affecting both the supply of and the demand for investment funds of Russian companies. Unfavourable changes of the macroeconomic environment, which are caused not by any individual dominant group, but by big insiders

<sup>1</sup> By the mid 2000s the unprecedented growth of prices of the energy resources on the world market improved the performance of the Russian big exporters. But the beginning of the current world crisis again changed the situation for the worse.

taken as a social class, we call the *external* insider rent effect. Consequences for a firm of rent extraction undertaken by particular big insiders taken as an individual dominant group we call *internal* insider rent effect. Let us consider their influence on the supply of funds for Russian corporations.

In aggregate, the extraction of insider rent from Russian corporations as a whole affects the distribution of the national income causing great inequality (Rimashevskaya, 2006). As a result the Russian domestic market shrinks, depressing profits. Thus, the external insider rent effect decreases both the supply of and the demand for investments in the Russian corporate sector. Internal insider rent effect includes a number of effects on internal generation of investment funds by Russian companies. First, reductions of profits, inflicted on a firm by intra-firm conflicts, should be treated as costs of these conflicts (and hence of insider rent withdrawal). Part of these costs is formed by the expenditures on infrastructure of internal control, which enables the big insiders to suppress opportunistic behaviour and worker unrest. At the same time strengthening the internal elements of infrastructure is likely to increase centralisation. According to Novojenov (2003A, 2003B) over-centralisation, in turn, may damage managerial efficiency and inflict additional reductions on the firm's profits. Second, financial institutions charge additional risk premiums based on their estimated potential of rent withdrawal. As a result a firm dominated by big insiders is able to borrow far less than the Eichnerian megacorp.

In Figure 2 the thick curves correspond to a firm dominated by big insiders, while the dotted curve corresponds to the Eichnerian megacorp. It is seen in panel (c) that the supply of funds curve,  $S_F$ , is situated to the left of  $S_F'$ . This means that the first company can generate the same amount of funds as the second one, only with a greater implicit interest rate. In addition, the first company has to apply for external borrowing earlier than the Eichnerian megacorp. Apart from that, it can be seen that the externally borrowed portions



**Fig. 2.** The supply of and demand for funds of a medium-term oriented big insider and of a megacorp. The vertical axis measures implicit interest rate ( $R$ ), external interest rate ( $i$ ) and expected profit from investment projects ( $r$ ). The horizontal axis measures (a) the insider rent and (b) the investment shares of the additional funds generated in the pricing period (correspondingly  $\Delta F_{IR}/p$  and  $\Delta F_I/p$ ), and (c) the total amount of the same variable ( $\Delta F/p$ ). (a) The demand for insider rent curve ( $D_{IR}$ ) of a company dominated by a medium-term oriented big insider. (b) Demand for investment funds curve ( $D_I$ ) of the same organisation. (c) Total demand for funds ( $D_F$ ) obtained as the sum of the two former functions and the supply of funds ( $S_F$ ) for the former company and for a megacorp.

of the same curves are also different. The company dominated by big insiders can borrow less and at higher interest rates than Eichnerian megacorp. Thus, the insider rent effect diminishes the supply of funds for Russian corporations.

Insider rent effects on the demand for investment funds of Russian corporations are no less prominent. Since, as we have mentioned above, the external insider rent effect leads to a decline of expected profits, the demand for investment funds in such conditions becomes relatively low (see evidence below). Reduced market opportunities and decreased internal rate of return (IRR) of investments lead to rejection of otherwise profitable projects and induces firms to choose the shorter-term and usually less efficient, although often less expensive projects. These phenomena affect the portfolio of corporate investments as a whole, i.e. they affect all particular projects equally. Apart from that, short-term orientation and reluctance to sacrifice their potential current incomes induce the dominant groups to decline investments with long pay-back periods and significant costs (in present value terms). For these reasons, in practice usually only relatively cheap projects are funded, which only allow maintenance or insignificant expansion of production (see evidence below). It is possible to single out two main mechanisms whereby a dominant group reduces the corporation's investment portfolio. First, comparing the different methods of implementing particular projects, big insiders prefer the short-term, small-scale variants to big and long-term ones. Second, big insiders set the length of the payback period and the maximum size of the projects allowed. Investments that do not correspond to these restrictions are not realised.<sup>1</sup> Thus, the internal insider rent effect is connected with the decline of internal rate of return, and with the scale and quantity of investment projects undertaken by firms.

In Figure 2 one can see that the demand for investment funds curve of the Eichnerian megacorp ( $D_I'$ ) is greater at every level of the implicit interest rate ( $R$ ) than the total demand for funds curve of big insiders ( $D_F$ ) as a result of the external insider rent effect. Since the former affects the portfolio of investment projects as a whole,  $D_F$  is parallel to  $D_I'$ . The internal insider rent effect is shown by distinguishing between the demands for investment funds proper ( $D_I$ ) and for insider rent ( $D_{IR}$ ) on the part of the dominant group. As a result only a portion of the total demand for funds ( $F_F$ ) is used to finance the firm's investment ( $F_I$ ), while another portion ( $F_{IR}$ ) is withdrawn as the current income of the dominant group. One can see in the figure that the demand for investment funds of big insiders ( $D_I$ ) is not only less than the total demand for funds ( $D_F$ ), but has a steeper slope as well. The latter means that the function is less elastic with respect to expected profits ( $r$ ). This reflects the short- (or medium- at most) term orientation of big insiders, tending to ignore profitable, but long-term, investment projects. The figure illustrates our understanding that insider rent effects exercised both on the supply of and the demand for investment funds functions lead to much lower actual investment than would be financed by the Eichnerian megacorp ( $F_I < F_I'$ ).

The major hypothesis suggested by our modification of Eichner's model is that *short-termism of Russian corporations, predicated on insider control, leads both to decline in size and to low quality of their investment in productive capacities.*

It is difficult to provide conclusive empirical evidence to support the above. As we have seen in Section 1, even official data on accumulation of capital in Russia are largely unreliable. Even more difficult is to find information about rent withdrawals by big

<sup>1</sup> See discussion of this in more detail in: Dzarasov and Novojenov, 2005, pp. 348–67; see also a survey on payback periods of Russian corporations: Kovalin and Moiseev, 2006, p. 539.

insiders. One is compelled to rely on a number of case studies and surveys of Russian enterprises. Let us consider an exemplary case of a big chemical enterprise JSC Volgogradski Chimprom (later Chimprom). Our account is based on a number of sources, namely Andronova, 2005; Anisimov, 2006; Bitsev, 2004; Kolesnikov, 2003; Lemeshko, 2006; Snigirev, 2004; Sokolova, 2005; Trofimov, 2004; Vershinia and Samoylenko, 2004 and some private sources.

The struggle of the rival groups of big insiders for informal control over Chimprom was focused on its top-management positions, which suggest that it precluded the separation of ownership and control. In 2001–2003 the Savchenko–Kozlov group overwhelmed the Khaykin–Kutyandin grouping. In 2004, the former was crowded out by Mazepin and his henchmen only to be challenged in 2004–2005 by a powerful alliance of Levitsky–Vekselberg. All of them relied on support of government officials, sometimes of the highest rank, and law enforcement agencies. Since big insiders were unable to establish firm control over the enterprise top-management for a significant period of time, their dominant position was very unstable. This produced a very short-term time horizon of big insiders with significant rent withdrawal and assets tunnelling through: theft of millions of dollars of state finances provided for conducting conversion from military to civilian production; ruinous bond schemes; theft of a strategic stock of coke; selling of Chimprom products to the controlled trade firm at prices lower than the market level, later reselling them at market prices; and so on. A number of intra-firm conflicts ensued leading to opportunistic behaviour of managers and employees. As a result the level of wear and tear on the company's fixed assets was very high—they lost more than 80% of their original values. Chimprom's big insiders instead chose cheap investment projects of inferior quality with relatively short payback periods.

The results of Izyumov and Vahaly (2008) suggest that we cannot generalise the above case-study. They try to assess the ratio of the old capital (fixed assets) to new in the fixed capital stock of the CIS countries. The authors arrive at an optimistic conclusion that the new share in the capital stock of Russia is 46%, which looks a fairly good result. However, their inference raises some doubts. First, they subtract from the capital stock inherited from the Soviet times about 30% of what they consider as 'market unworthy' capital, allocated to such sectors of the economy as military production, unprofitable trade with Cuba, and the like. However, the Soviet military production industry contained the best human and technological resources in the country and could have been converted to become a source of high quality equipment for Russian civil production (Yaremenko, 1997, p. 25). Apart from that, even today this greatly damaged sector of the Russian economy is quite competitive in the world weaponry market. This means that at least a significant part of it was, and still is, market worthy. Hence that share of the new capital stock should be less than the subtraction figure estimated by Izyumov and Vahaly. Second, Izyumov and Vahaly rely on official data on investments in Russia, which appreciates the value of the new capacities, as we have shown above. Third, and most importantly, even if we take the calculation of new capital as suggested by Izyumov and Vahaly at face value, the major problem of its quality still remains.

Some surveys (Kovalin and Moiseev, 2006, p. 535; Kovalin and Moiseev, 2008, p. 547) of enterprises show that, among participants, the share of companies undertaking investment varied between 60% and 75% in 1999–2008. It is remarkable that in 2008, i.e. in the ninth year of recovery, more than 30% of businesses abstained from any projects at all. According to Kornev (2005, p. 44), the aggregate decline of demand for machinery in the period of the radical market reforms led to 'an almost sixfold reduction in the output

and purchase of machinery and equipment'. The overwhelming majority of enterprises, about 70% of the survey participants, undertake investment capable of securing only partial improvements or only maintain their productive capacities (Kovalin and Moiseev, 2006, p. 535). These findings suggest that the majority of Russian businesses are capacity constrained. Meanwhile this conclusion contradicts the results of another survey (Aukutsionek, 2003, p. 126), showing that neither in the slump nor in the recovery was the shortage of productive capacity seen as the main constraint on production. To solve this puzzle we should consider the type of demand for investment goods of Russian corporations. The data (Rosstat, 2009) suggest that in the 2000s physical wear and tear was the prime cause of scrapping equipment, with inefficient but still functioning machinery not being systematically replaced. This is indirect evidence of the short-term time horizon of Russian corporations neglecting the long-term consequences of preserving inefficient productive capacities. This observation is further reinforced by the data (Rosstat, 2005B, p. 124), which show that the overwhelming majority of Russian corporations buy Russian equipment both in the category of new and in the category of second-hand machinery. However, surveys (Kovalin and Moiseev, 2007, p. 225) demonstrate the belief of the overwhelming majority of enterprises that Russian-produced machinery that is competitive with imported counterparts is either rare or non-existent. Relating this to the data presented above, we conclude that the majority of Russian corporations invest in machinery and equipment that they themselves consider to be of inferior quality.

Kornev (2005) provides an important insight into this problem. He finds that reducing quality is one of the major ways by which Russian engineering adjusts to the decline in demand for investment goods on the part of Russian industry (see above). Engineering cuts its production costs by simplifying the machinery produced, moving from better quality technologies to their inferior counterparts, producing cheaper and less efficient models; and so on (Kornev, 2005, p. 44). Thus, Russian corporations can cut their costs of investment by choosing inferior capital goods that are much cheaper. Some Russian firms purchase best-quality pieces of imported machinery for crucial production processes, combining them with some Russian new or second-hand equipment, or simply prolonging the lifespan of existing counterparts. This is usually done in the old factories that were idle during the 1990s recession. According to Gladyshevskii *et al.* (2002, p. 452) such 'cheap' strategies usually require two or three times less investment per capital item than the strategies requiring new construction or expansion of existing enterprises. The average annual costs of the newly installed productive capacities in the ferrous metallurgy sector were, in 1991–2000, around 45% of the costs for 1986–1990 (Gladyshevskii *et al.*, 2002, p. 454). A similar situation is observed in engineering where costs of increasing production fell by up to half in the same periods (Gladyshevskii *et al.*, 2002). Investment in inferior capital goods explain why many Russian enterprises feel the need to expand and modernise their productive capacities and at the same time are not concerned about the shortage of the latter. Big insiders solve this problem by purchasing inferior but cheap equipment. According to Novojenov (Dzarasov and Novojenov, 2005, p. 425): 'the general decrease in wages compensates for the high current costs of production based on cheap but low quality equipment. As a result of this investment in such equipment labour is partly substituted for capital' (translated by the author), putting additional downward pressures on wages. This conclusion is supported by results from Izyumov and Vahaly (2008). According to their chart (Izyumov and Vahaly, 2008, p. 96) the ostensibly robust recovery of the Russian economy from the late 1990s led to a decline in  $K/L$ . At the initial stages of this process

such an event could be explained by labour growth, although it should be counterbalanced by high rates (according to official data) of investment. But in the mid-2000s, when recovery reached its climax,  $K/L$  nearly stagnated. This is indirect evidence of the inferior nature of this new capital as a vehicle for labour-intensive technologies versus capital-intensive ones.

In the long run such strategies undermine the quality of economic growth, weaken the competitive positions of Russian enterprises (Rayskaya *et al.*, 2003, p. 35) and aggravate inequality and social problems in the Russian society (Yaremenko, 2005). Thus, we may conclude that empirical evidence, although not conclusive, provides support for the hypothesis of decline in size and inferior quality of investment of Russian corporations.

## 5. Conclusion

The assumption of the Eichnerian model, that the decisions on investment and distribution of corporate income are made simultaneously, provides an important clue to the investment behaviour of Russian corporations. Indeed, informal control of big insiders dominating Russian corporations is fundamentally unstable, which engenders a short-term time horizon of these enterprises.<sup>1</sup> This in turn makes maximisation of short-term income of the dominant group—insider rent—the prime objective of Russian big business. Rent is extracted by big insiders through their control over the financial flows of enterprises at the expense of wages, salaries and dividends. This gives rise to a number of intra-firm conflicts between big insiders and workers, managers and minority shareholders who incur reductions of profit in Russian firms. Insider rent extraction undermines Russian corporations' investment. In order to remove this institutional impediment to growth in the Russian corporate sector it is necessary to reform the current system of corporate governance. The essence of this change should be to secure the rights of those stakeholders suppressed by big insiders. The major external precondition for this is the reform of the judicial system providing a real opportunity to enforce contracts through the courts. Complemented by some other measures, reform could effectively destroy the infrastructure of insider control over enterprises, removing the instability of control, extending the time horizon of Russian corporations and, hence, inducing higher investment rates.

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<sup>1</sup> This is not dissimilar to what happened in the USA/UK in the 1980s/1990s. According to Pugh (1998) the major advantage of the German companies in contrast with the US/UK firms was greater stability due to much lower role for the security markets, and consequently much less probability of a hostile takeover. As a result, German corporations applied longer-term investment strategies. When comparing these results to evidence on Russia one should take into account the largely criminal and violent nature of a hostile takeover in the latter case.

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