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## Discussion Papers

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Pertti Haaparanta, Tuuli Juurikkala, Olga Lazareva,  
Jukka Pirttilä, Laura Solanko and Ekaterina Zhuravskaya

Firms and public service provision in Russia

Bank of Finland  
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# Contents

Abstract .....	6
Tiivistelmä.....	5
1 Introduction .....	8
2 Firms and the public sector in Russia.....	10
3 Survey design and implementation and sample description.....	16
3.1 Survey design and implementation.....	16
3.2 Sample description .....	20
4 Firms and the provision of social services in Russia.....	23
4.1 Social assets and services: within or outside the firm.....	23
4.2 Provision of social services in 1990-2003 .....	24
4.3 Trends in social assets and service provision .....	26
5 Firms and infrastructure.....	29
5.1 Heating.....	29
5.2 Electricity .....	31
5.3 Other items of infrastructure .....	32
6 Firms and regulatory environment.....	33
6.1 Overall summary statistics .....	33
6.2 Size and regulatory environment.....	35
6.3 Regional variation and regulatory environment.....	35
7 Performance, investment, finance, competition, and the relation to housing and heating .....	36
7.1 Sales and profits .....	36
7.2 Investment and finance.....	37
7.3 Liquidity.....	37
7.4 Direction of sales.....	38
7.5 Competition.....	38
7.6 Barter .....	39
7.7 Interactions with housing and heating .....	39
8 Concluding remarks .....	41
References .....	42
Appendix 1. Legal basis for the transfer of social assets to municipalities.....	77
Appendix 2. Survey preparation: questionnaire and pilot interviews .....	79
Appendix 3. List of regions .....	81
Appendix 4. Costs and income from social services in 2002 .....	83

All opinions expressed are those of the authors and do not necessarily reflect the views of the Bank of Finland.

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Jukka Pirttilä, Laura Solanko, and Ekaterina Zhuravskaya<sup>1</sup>

## Firms and public service provision in Russia<sup>2</sup>

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## Abstract

This paper reports first results from a survey of 404 middle-sized and large manufacturing firms from 40 Russian regions in April-June 2003. We examine the extent of social service and infrastructure provision by the firms and the firms' assessment of the quality of public infrastructure and the regulatory environment. Background information of ownership, investment, performance, competition, and finance decisions of the firms is also gathered.

The data reveal that despite major divestments of social services during 1990s, a great majority of firms still provide at least some form of social services. For example, 56% of the firms have their own housing or support local housing, and 73% of the firms have recreation facilities or support employee's recreation activities. While managers view the social service provision as non-essential and costly, many of the firms continue to provide these services, even to users other than their own workforce.

The quality of public infrastructure is generally assessed as being good or satisfactory; the respondents were the least satisfied with the quality of roads. Over a half of the firms provide their own heat, but mainly due to technological reasons – although public service interruptions do occur – and 24% of the firms give support to the maintenance and construction of public road network.

The regulatory burden the firms face continues to be severe. In more than half of the firms, for example, the general manager has to spend more than two weeks in negotiations about public infrastructure with the authorities.

These descriptive results indicate that there is still a lot scope for improvement in the quality and quantity of public service provision in Russia. Enterprises are still engaged rather heavily in social service provision, road network would require improvements, and the easing of regulatory burden should continue. Addressing these questions is likely to be vital for the sustainability of investments and growth in Russia.

# Yritykset ja julkisten palveluiden tuotanto Venäjällä

## Tiivistelmä

Raportoimme ensimmäiset tulokset yrityskyselystä, jossa haastateltiin 404 keskisuurta ja suurta teollisuusyritystä 40 Venäjän alueella keväällä 2003. Kyselyn päämäärä oli selvittää, missä määrin venäläiset yritykset vielä hoitavat julkisten palveluiden tarjontaa ja huolehtivat perusinfrastruktuurista ja asumisesta. Samalla yrityksiä pyydettiin arvioimaan julkisen infrastruktuurin laatua ja julkisen vallan toimien vaikutusta omaan toimintaympäristönsä. Taustainformaationa yrityksiltä kerättiin tietoa niiden omistusrakenteesta, investoinneista, tuottavuudesta, markkinakilpailusta ja rahoituspäätöksistä.

Tulosten mukaan on selvää, että vaikka yritykset supistivat julkisten palveluiden tuotantoaan 1990-luvulla, niin suurin osa niistä tuottaa yhä joitakin palveluita. Esimerkiksi 54 % haastatelluista yrityksistä pitää yhä yllä omia asuntoja tai tukee paikallista julkista asuntosektoria. Yrityksistä 73 % joko omistaa tai tukee erilaisia vapaa-ajan viettoon tarkoitettuja kiinteistöjä. Vaikka johtajien enemmistö pitää julkisten palveluiden tarjontaa tarpeettomana ja kalliina, niin monet yritykset tarjoavat niitä edelleen, osa jopa muillekin kuin omille työntekijöille.

Yritykset arvioivat julkisen infrastruktuurin olevan hyvässä tai tyydyttävässä kunnossa, vähiten tyytyväisiä ne olivat teiden kuntoon. Yli puolet yrityksistä huolehtii itse tarvitsemansa lämmön tuotannosta lähinnä teknisistä syistä. Julkisen sektorin tarjonnassa on katkoja, mutta niiden merkitystä ei keskimäärin pidetty suurena. 24 % yrityksistä tukee julkisen tiestön ylläpitoa ja rakentamista.

Yrityksiä säädellään edelleen paljon ja siitä aiheutuu niille suuria kustannuksia. Esimerkiksi yli puolessa yrityksistä pääjohtaja joutuu käyttämään vuodessa enemmän kuin kaksi viikkoa viranomaisten kanssa neuvotteluihin julkiseen infrastruktuuriin liittyvistä asioista. 12 % yrityksistä ilmoitti, että ne joutuvat käyttämään tuloistaan 1-5 % lahjontaan.

Nämä deskriptiiviset tulokset viittaavat siihen, että julkisten palveluiden tuotannossa Venäjällä on paljon toivottavaa sekä määrän että laadun puolesta. Yritysten rooli on edelleen hyvin suuri sosiaalipalveluiden tuotannossa, tieverkko kaipaa korjausta ja yritysten ylisäätelystä tulisi purkaa. Näiden ongelmien selvittäminen on elintärkeää Venäjän talouden kasvun ja sen kansalaisten hyvinvoinnin kannalta.

# 1 Introduction

This paper reports the first results from the project “*Infrastructure and Welfare Services in Russia: Enterprises as Beneficiaries and Service Providers*”. The results are based on a firm survey conducted among large Russian enterprises during in April-June 2003. The background of the project is the question as to why the Russian economy has been lagging behind the economies of most of the other Central and Eastern European countries. We approach the question by looking at the relationship between firms and authorities at the regional level in Russia.

Public infrastructure and public services are crucial for sustainable development. They are needed both for enhancing growth and for ensuring that benefits from growth reach the whole population. The World Bank’s World Development Report 2004 entitled “*Making Services Work for the Poor*” outlines the role of public services in eradicating poverty. Firms’ incentives to invest are e.g. reduced if their access to electricity is subject to daily blackouts. The same applies to basic services like health care and primary education: basic deficiencies in these services reduce the quality of the labor force and create social imbalances.

This study focuses on public sector delivery (infrastructure and social services) because it has been found to be the major obstacle to firm investment and growth in many developing countries. Reinikka and Svensson (2002) give evidence on the critical role of public infrastructure in firms’ investments in developing countries, a theme elaborated on by Reinikka and Collier (2001)<sup>1</sup>. These factors have not been systematically studied in transition economies, despite the fact that they have been recognized as being crucial to understanding the state of the Russian economy<sup>2</sup>. Public service provision by firms has been studied through only one firm survey, which was conducted in Russia in 1994<sup>3</sup>.

This paper offers a descriptive analysis of the scope, level, and funds invested in social services and infrastructure provision by enterprises. In later studies we will analyze, first, how public sector services (in particular social welfare services and infrastructure)

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<sup>1</sup> The evidence on the role of infrastructure and public capital in rich countries is more controversial (Hansson and Henreksson 1994, Holtz-Eakin and Schwartz 1994). But clearly, the issue in developing countries is whether infrastructure exists at all, not whether one should build a new turnpike.

<sup>2</sup> Brown and Earle (2001) is to the best of our knowledge the only study on the role of infrastructure on firm performance in Russia. Estrin et. al. (1997) consider the role of social benefits in wage setting in Poland.

<sup>3</sup> Recent firm surveys are reported in Angelucci et. al. (2002) and in Brown and Earle (2003). The only survey covering firms’ provision of social benefits was conducted in 1994 (Commander and Schankerman 1997, Commander, Fan and Schaffer 1996).

and the behaviour of the public sector (regulation, taxation, corruption) influence firm performance. Performance may be measured in a number of ways, including productivity, sales (including exports), profits, investment, and restructuring. The impact of public sector delivery will be examined while controlling at the same time for determinants that were found to be important in earlier firm surveys. Examples of such determinants include access to finance, indicators of corporate governance, ownership structure, and privatisation. Second, we will examine the reasons for social service and infrastructure provision by firms, as well as how private provision depends on geographical location, the politics of the firm's region, the structure of the labour market, firm size, ownership structure, and a few other variables.

During the Soviet era, both the supply of public services and the building and maintaining of the infrastructure were delegated to enterprises. Enterprises maintained kindergartens, schools, health centers, and vacation homes. This was natural, given the organization of production in the Soviet economy. The system hoped to reap economies of scale by designating certain regions to specialize in the production of a small variety of goods in large plants. In these regions, nearly everyone was employed by the single, local, large producer. Hence, in a way, there was no distinction between the government and the firm. After the collapse of the Soviet system, enterprises continued to supply public services and to maintain the infrastructure. This was necessary because enterprises basically owned all the facilities and housing.

The next section reviews the research regarding the relationship between firms and the public sector in Russia. Section 3 lays out the basic statistics from our sample, as well as facts about the sampling procedure. Section 4 presents data on firms' provision of social services; section 5 presents data on infrastructure; and section 6 presents data on firms' relationships with authorities (regulatory framework). Section 7 focuses on interesting correlations we have found in the data, and section 8 presents conclusions. All the Tables and Figures referred to in the main text can be found in the appendices.

## 2 Firms and the public sector in Russia

The interaction between firms and the public sector is important everywhere in the world. Particularly in Russia the relationship has significantly shaped the transition process. It has been characterized both by firms benefiting from subsidies (soft budget constraints) and by the attempts of the authorities to reap benefits from firms through bribes and excessive regulation (Roland 2000, Shleifer and Vishny 2000).

In Russia there is plenty of evidence of public authorities restricting entry to preserve monopoly rents subsidizing firms whose employment or other characteristics are important for political reasons or for rent-seeking purposes (Ponomareva and Zhuravskaya 2000, Lambert-Mogiliansky, Sonin and Zhuravskaya 2003, Slinko, Yakovlev and Zhuravskaya 2003, and Gehlbach 2003). There is evidence of the authorities regulating and harassing firms, especially small- and medium-sized enterprises, to extract rents by means of bribes (Frye and Zhuravskaya 2000, Frye 2002, Monitoring of Administrative Barriers to Small Business Growth 2002, and Sonin 2003).

What is the role of firms' public service provision? Provision may help large firms to increase their monopoly power in local labor markets (Friebel and Guriev 2000). Provision of services by firms can reduce labor market flexibility by helping to establish dual labor markets (Grosfeld et. al. 1999). Service provision can restrict entry by new firms, since old firms have "free" facilities either from Soviet times or from insider ownership of firms (Commander and Schankerman 1997). None of these explanations directly incorporates the public sector's incentives to allow service provision through firms. One possibility is that authorities want to enhance firms' market power in goods and labor markets to create extractable rents. Local authorities' incentives may also be affected by the relationships among the various levels of government.

### **Fiscal relations between federal, regional, and local governments in Russia**

The relationships among the various layers of government have gone through several changes since the breakdown of the Soviet system<sup>4</sup>. Regional authorities received and appropriated extensive powers in the early 1990's despite an attempt to increase federal power. The early 1990's was a period of almost uncontrolled decentralization. This process

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<sup>4</sup> See Gelman (2002), Kurlyandskaya (2002) Martinez-Vasquez (2002), and Lavrov, Litwack, and Sutherland (2001).

was brought under regulations beginning in 1993, when the prevailing structure was legalized. The resulting system can be called asymmetric federalism (Martinez-Vasquez 2002) or bargaining federalism (Gelman 2002). In this system, the center-region relationships were characterized by bilateral center-region treaties and regional lobbying.

One of the reasons for the decentralization and the system of regional privileges, which began in the early 1990s, was the desire to appease regions that were threatening to secede from the Federation. In this case, regions that were hostile to the federal authorities were treated favorably. Later, there may have been a move towards a system in which regions loyal to the central government received a privileged position. Regardless, the federal system was not able to equalize incomes among the regions (Golovanova 2003).

This system remained until the end of 1990's; it was extensively reformed by president Putin in 2000. Those reforms substantially increased the power of the federal authorities and reduced the power of regional and sub-national authorities. Though the regional authorities fought against the reforms, there are signs that the reforms are having an effect (Kahn 2002).

Currently, only the fiscal relationships between federal and regional authorities (subjects of Federation) are, at least in principle, well defined in Russia (Kurlyandskaya 2002). The same does not hold true for the fiscal relationships between federal and/or regional authorities and various sub-regional governments. Federal legislation applies only to regional governments and one level of local authorities. Regional authorities have the complete right to choose whether or not they recognize other levels of local authorities, which naturally creates many different arrangements, some of which may even contradict legislation (Kurlyandskaya 2002).

In principle, local autonomy has been very weak. Many sub-regional governments rely heavily on transfers from regional and federal authorities. Currently, local autonomy is essentially legally non-existent, as almost all the tax rates and expenditure requirements are set at the federal level. Yet local governments possess considerable informal power. This may be one of the reasons why local authorities rarely complain about the situation (Kurlyandskaya 2002).

The most significant source of tax revenue at both the regional level and the local level is revenue from taxes shared with the federal government; it accounts for more than 50 % of total revenues. Transfers from higher-level governments account for, on average, 20-30 % (with the share declining lately) of the revenue, though the regional variation is huge.

### **Fiscal relationships, public service delivery, and firms**

The system of regional autonomy with formal, local non-autonomy can be seen as a major source of problems in the Russian economy. Shleifer and Treisman (2000) have presented the most influential argument for this assessment. They argue that this system has supplied all the sub-national authorities with incentives to engage in rent extraction. Given that shared taxes are a major source of revenue, the problem of the commons arises where resources are devoted to fight for the revenue and to divert revenue for own use and away from everybody else. At the local and regional levels, it is understood that if they locally get only a share of the tax revenue collected, then it is beneficial to divert the revenue from higher level authorities. With large powers devoted to the regional authorities, this is certainly feasible.

This system also has implications for the relationships between firms and authorities. As noted above, one way to divert tax revenue is to extort payments from the firms indirectly by means of charging various extra fees and directly by blackmailing. This practice naturally shrinks the tax base, but is viewed as the optimal solution by sub-national authorities. However, this system does not offer an efficient means to collect revenue and certainly has implications for the regional and local provision of public services. In this system, authorities are biased towards subsidizing firms that are seen as a source of rents, while they are biased against protecting firms from corruption (Gehlbach 2003)<sup>5</sup>.

These problems are aggravated by the lack of local autonomy, which increases incentives for local authorities to use firms as a source of revenue, especially when expenditures dictated by federal authorities cannot be met. This situation also reduces incentives to efficiently provide public services (Litwack 2003). An additional source of inefficiency arises when local revenues are independent of local policies. This happens if municipalities' income comes from sources such as tax sharing and as changes in transfers from higher level governments<sup>6</sup>. In this case, local authorities do not have any incentive to efficiently produce public services. Zhuravskaya (2000) provides evidence for this mechanism. Her results have been partly challenged by Alexeev and Kurlyandskaya (2003), who argue that the marginal tax rates for own revenue are below 100 % and that

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<sup>5</sup> Timofeev (2002) argues also that local authorities are more sensitive to local "pressures" increasing the problem in regions with higher degree of sub-regional decentralization.

<sup>6</sup> Transfers to a municipality decline when its revenues increase.

the source of inefficiency is the inability of regional authorities to commit to efficient incentive contracts. But the main point of under-provision of local public goods remains.

The previous situation does not allow for the possibility of diverting taxes at the local level. Empirically, this is a significant phenomenon (Kurlyandskaya 2002, Lavrov, Litwack, and Sutherland 2001, and Sonin 2003). One possible route for diversion is to make local enterprises provide public services in exchange for reduced taxes or increased tax arrears<sup>7</sup>. Haaparanta and Juurikkala (2002) have amended the model in Zhuravskaya (2000) with this possibility. Their major finding is that tax diversion can lead to inefficiency in terms of overprovision of some public goods. It is also a simple way to model why, in the current situation, it may be optimal at the local level to provide public services through firms.

In summary, there may be different reasons as to why firms at the local level provide services. From the point of view of public finance, the main reason may be the prevailing fiscal relationships among the different layers of government. However, it must also be remembered that, in advanced capitalist countries, firms also provide services to their employees. In Russia, enterprises may be doing it for the exact same reasons as firms in advanced capitalist countries.

### **Current knowledge on public service provision by Russian firms**

#### *Social services*

According to Leksin and Shvetsov (1998, 1999), in 1992, 33.3 percent of the total housing stock in Russia was privately owned (mostly individual houses). The rest was considered public housing and included municipal housing (25.7 percent of total housing stock) and departmental (*vedomstvennoe*) housing that existed within enterprises (41 percent of total housing stock). Thus, substantial part of the state owned housing existed within the enterprises and they also provided dormitories to their workers. The amount of social spending by enterprises in 1992 was the equivalent of almost 4% of GDP. Before reforms started, over half of all workers enjoyed some social services provided by enterprises. The services provided by metallurgy, oil and gas, automobile and machine building industries were especially renowned for their good quality and wide quantity. In 1994 one third of the firms with fewer than 500 employees provided housing, the share increasing to 100% for enterprises with more than 10 000 employees. In the beginning of 1990's, some 70% of

large and medium-sized enterprises offered medical services while over 75% of large and 50% of medium-sized enterprises had kindergartens.

Commander and Schankerman (1997) report that by 1994 firms had reduced their social assets but, 25-35 % of them still provided services at a level comparable to the pre-transition level. Comparing the years 1990/1991 and 1994/1995, 36 % of firms reduced the scope of provision, 47 % maintained it, and 17 % increased it. Interestingly, new firms also provided services. Privatized and state-owned companies were similar in terms of scope of provision. Larger firms were less likely to reduce the number of benefits.

The quality of the services provided by the enterprise sector was generally better than that provided by municipal services. As Leksin and Shvetsov (1998) note, real expenses per child in enterprise-owned kindergartens were 30-50% higher those in the municipal sector. In Soviet times, enterprises also had sport and culture facilities, and sometimes they financially supported entire sports teams and vacations at resorts.

Basic legal documents requiring divestiture of housing and the main part of social assets within 6 months after the enterprise was privatized were adopted in 1992-1993. A gradualist approach was taken in the sense that instead of immediate privatization, the assets were to be divested to the local authorities, which were made responsible for the provision of the services.<sup>8</sup>

The transfer of social assets was supposed to be done by the end of 1997 and indeed the majority of assets were transferred. Roughly 80% of housing stock, 76% of kindergartens, 82% of medical services, 84% sports facilities, 75% of children's summer camps, 60 - 70% of recreation facilities became municipal during 1993-1997. The variation between regions, and especially between municipalities, was, however, very large, as the share of municipalized assets might vary between 15% and 100%.

According to Leksin and Shvetsov, in 1998, practically in all Russian regions enterprises' social infrastructure had already long ago become semi-municipal. Up to 50% of those who used enterprises' social services (housing, kindergartens) were not employees of that enterprise. Thus, firms financed municipal social infrastructure.

According to Starodubrovskaya (2002), more than 90% of enterprise housing and other social assets had been accepted to municipal ownership at the time of writing. The author accredits the success in asset transfer to a large extent to the 1.5% turnover tax introduced in 1995-1996 to finance housing and social facilities. As long as enterprises

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<sup>7</sup> See also Tonis (2003).

continued to hold the social assets on their balance, they could deduct their social expenditures from this tax. Before its abolishment in the 2000 tax reform, it created a mechanism allowing municipalities to receive additional funding after transfer with no mediation of the regional or federal governments, and was actually the “only serious local tax in the Russian tax system”. After the tax reform, federal subsidies remained the only source of financial compensation for housing accepted in the ownership of municipalities.

The pace of divestiture in different locations varied considerably. Starodubrovskaya (2002) argues that this is a result of complex relationships and incentive structures between the main players- enterprise management, local and regional governments, sometimes trade unions, and different groups of population. As the IMF study puts it:”Housing and communal services are characterized by pervasive implicit subsidies and other non-market features. Cost recovery levels for housing and communal services are low; for example, operational cost recovery for public housing maintenance is estimated at below 50 % (1999); for heating, water and sewage at 35% (2000); for gas at 50% (2000); and for electricity at 40% (2000). Utility tariffs are partly cross-subsidized, with industrial consumers subsidizing low tariffs for the household sector. In addition, public housing construction – which in 2000 still accounted for 20% of all residential housing construction by area – as well as publicly organized housing maintenance remain characterized by the absence of market-based and transparent tendering procedures.” (IMF 2002) These remarks serve as a good starting point to our research.

### *Energy infrastructure*

Electric power and natural gas play a significant role in the Russian economy. Both sectors have one large player: RAO UES in electricity and Gazprom in natural gas generation and distribution. The two companies together account for a large share of tax revenues, both at federal and regional levels. They played prominent roles in the virtual economy (see Gaddy and Ickes 1998), which was characterized by barter and other non-monetary means of payments. Domestic energy prices are still controlled and there is significant cross-subsidization in the virtual economy.

Tariffs for wholesale and transmission are regulated by the government through the recently-established Single Tariff Authority. Retail tariffs for both electricity and heat are regulated by regional energy commissions (REC) or, where they do not exist, directly by

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<sup>8</sup> See Appendix 1 for the legal basis of the transfer of social assets from the firms to the municipalities.

regional governments. In both cases, regional administrations continue to have a dominant influence in setting retail tariffs. In general, local and regional administrations may greatly influence the decisions made by the energy in its jurisdiction. "They have control over a number of variables important to utilities firms, including local distribution networks, price regulation, taxation, the ability to pressure consumers to make payments, and the ability to protect organizations from bankruptcy. Explicit negotiated and renegotiated comprehensive bilateral agreements between regional authorities and utilities are common." (OECD 2002.)

In most regions, there is still an additional structure between energy and the final consumers. Nominally independent local distribution companies (*oblkommunenergo*) control parts of the low voltage grid, purchase electricity from energy, and resell it to consumers. These companies are often under the control of regional or local administrations, thus giving them additional leverage in negotiations with both electricity companies and final users (local industry).

Further, Gazprom was established in 1992 as a state-owned, joint-stock company. Currently, it has de facto monopoly control over major processing plants and gas exports and over gas pipelines, excluding smaller local distribution networks. The majority of local networks still continue to be controlled by municipalities or regional governments, which creates a situation parallel to electricity delivery. However, regional companies are absent from natural gas distribution. Thus, in most regions Gazprom affiliates (Mezhregiongaz or others) sell directly to industrial users, either through their own pipelines or through local distribution lines.

## 3 Survey Design and Implementation and Sample Description

### 3.1 Survey Design and Implementation

#### **Questionnaire**

The preparation of the survey started more than a year before the actual survey was carried out, with background readings on topics related to public goods provision, fiscal federalism, welfare services, and infrastructure. In preparing the questionnaire, we utilized the experiences of previous enterprise surveys made in Russia and elsewhere. We also

conducted interviews with leading Russian experts in the sphere of social service provision, municipal reform (in particular, transfer of social assets from the firms to the municipalities), enterprise behavior, and performance. Finally, before launching the survey, we tested the questionnaire in three rounds of pilot interviews in three regions of Russia. As a result of these pilots, the survey was modified substantially.<sup>9</sup>

### **Sample design**

Our study serves both the need for a general description, as well as the need for a more in-depth analysis of the causes and consequences of social service and infrastructure provision by the firms. Thus, we had two objectives. The first one was to obtain a sample of the Russian industrial sector that included firms of different industries, regions, and sizes. This kind of sample would serve the descriptive purpose of the study well. The second aim was to build a sample that would have some degree of variation in the main object of the study – social assets and infrastructure- in order to determine why some firms provide social services while others do not.

In our sample design we tried to reach both objectives at least partially. Selecting firms with some degree of variation in their social services and infrastructure provision would have required a costly pre-screening procedure, as official statistics do not include information on these issues. Instead, we used the firm size (number of employees) as a proxy for the probability that a firm would provide social assets or infrastructure. It is natural to assume that larger firms are more likely to keep, for instance, housing, medical facilities or daycare facilities. The results of the pilots also supported this assumption. Consequently, the size of the firm is the main criterion in the sample construction.

### *Sample frame*

The source of information for the population of firms is the enterprise registry maintained by Goskomstat (State Committee of the Russian Federation on Statistics). Each firm is obliged to report its number of employees, output, profits, fixed capital and wages to Goskomstat. The registry database contains approximately 46,000 entries. Each firm in the database has a unique identifying number (OKPO). The database also contains the contact

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<sup>9</sup> More detailed description of the questionnaire preparation and the pilots can be found in Appendix 2. The survey instrument is available from the authors by request.

information and industry affiliation for each firm. At the time when our sample was constructed (spring 2003), the latest available dataset was for the year 2000.

In the construction of our sample we concentrated on the industrial sector, and within it manufacturing firms for which energy production is not a regular line of business. We set a minimum size limit of 400 employees, as the pilots indicated that smaller firms are unlikely to provide infrastructure or social services.<sup>10</sup> As the size of the firms is the defining criterion for our sampling procedure, we included only firms which report employment information for the year 2000 in the database. Information on the regional location of the firm should also be present. Thus, we surveyed medium and large manufacturing firms. Constructed in such a way, our sample frame contains 3523 firms.

#### *Choice of regions*

There are 89 regions (subjects of federation) in Russia. Not all of them have industrial enterprises of interest to our study. Appendix 3 presents regions where firms from our sample frame are located, listing the number of firms in each region. From this list we further excluded regions that are not easily accessible (some northern and eastern regions), are in the zone of ethnic conflicts (Caucasian regions), or are not covered by our interviewer network. These regions are in italics in Appendix 3.

From the remaining 63 regions we randomly selected 40 regions. Three of them - Amur oblast, the Republic of Khakasia, and Khanty-Mansi autonomous okrug – had too few firms in our sample frame, taking into account the expected refusal rate. We replaced them with three regions, drawn from large macro-regions, which were underrepresented in the initial selection. These are Irkutsk oblast, the Republic of Tatarstan, and Ulyanovsk oblast. The final selection of regions where the survey was carried out is also presented in Appendix 2 (in bold). The total number of firms from our sample frame in these 40 regions is 2379.

#### *Choice of firms*

Our target sample size was 400 firms. We constructed the initial sample for each selected region in the following manner: all firms in the sample frame in a given region were ordered by size (number of employees), from largest to smallest. The *initial sample*

included every sixth firm from these regional lists. In case the firm from the initial sample was not found or refused to be interviewed, it was to be replaced by the firm closest to its size from the list. All replacements were to be chosen from within the region where initial firm was located<sup>11</sup>.

Constructed in such a way, the sample should reflect the size structure of the medium and large industrial enterprises in the region. The sample also likely includes firms from different industries even without any industry stratification. Industries with higher average firm size can be expected to be overrepresented. Thus, our sampling technique includes a combination of clustering by region and systematic sampling by size.

#### *Fieldwork and data processing*

The survey was conducted in April – June 2003 by the survey firm GFK, which has a regional interviewer network. Before the start of the survey, a training session for representatives of the participating regional survey organizations was organized by the project team and the survey firm in Moscow. These representatives then trained the interviewers who were to carry out the fieldwork.

At an early stage of the survey, a control procedure was organized: project participants eye-checked questionnaires received up to that point for obvious mistakes or misunderstandings. All the questionnaires were eventually checked by GFK supervisors. At the end of the survey, control of interviewers' work was conducted by phone.

Data from the questionnaires was entered into electronic format twice, by independent typists. The two entries were compared in order to reveal entry mistakes. Finally, a cleaning program was devised in order to reveal inconsistencies among different parts of the questionnaire. Thus, control, checking, and cleaning procedures were devised in order to achieve the best possible quality data.

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<sup>10</sup> By firm we mean establishment, which is also a separate legal entity, either an independent firm or a subsidiary of another firm, as long as it has own bookkeeping and has production in the same place it is registered.

<sup>11</sup> In practice some regions did not fulfill regional quota due to high refusal rate and few replacement were made from other regions.

## 3.2 Sample description

### Response rate

In a survey of the medium and large industrial enterprises in Russia, one can expect a high refusal rate. Due to generally low informational transparency, Russian firms are suspicious of attempts to acquire information about their activities. Particularly sensitive questions include information on ownership structure, competition, and financial figures, such as sales, profits, taxes, and investment. It is also hard to reach top-level management of large firms. Each firm that was contacted during the survey received the letters of support from CEFIR and from the Ministry of Economic Development and Trade.

Out of the list of 2379 firms, which includes 399 firms from the initial sample (see definition above) and the replacement firms, a total of 1017 firms were contacted. Out of these, 45 % refused to be interviewed (see Figure 3.1), 15 % were excluded for other reasons (not found, bankruptcy, firm had different identifier than in the database, or did not have any production facilities in the region), and 40 % of firms were actually surveyed. If we look at the initial sample of 399 firms, the picture is similar - 43 % refused to be interviewed and 42 % were surveyed.

### Sample representativeness

Next, we examined how our sample related to the population of Russian firms. We compared the industrial, regional, and size structures of our sample with that of the population<sup>12</sup>. Figure 3.2 presents the distribution of firms in the population and in the sample by industry. The majority of industries are adequately represented in terms of the share of the firms. Metallurgy and construction materials industries are overrepresented in our sample as compared to the population of firms. Share of firms in forestry and pulp and paper is underrepresented when compared to the economy as a whole.

The fact that we surveyed medium and large enterprises explains the biased picture regarding the distribution of industrial employment (Figure 3.3)<sup>13</sup>. Metallurgical firms in our sample account for almost three times as high a share of employment as in the whole economy. The reason is that metallurgical firms are larger than firms in other industries

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<sup>12</sup> By population we mean all Russian industrial firms as described in the Goskomstat (Russian statistical agency) yearbooks as of year 2000

<sup>13</sup> In this chapter we use figures on employment for our sample from the Goskomstat database, not from the survey, because in the survey we asked for the total employment while Goskomstat gives figures only on industrial employment (*promyshlennno-proizvodstvennyi personal*).

(the average number of employees per firm in the metallurgy industry in our sample was 4461, as compared to 1449 employees in the general economy). Share of employment in machine building is lower in our sample than both in the population and in the initial sample, meaning that refusal rate among large firms in this sector was higher than average. The energy and fuel sector share is low, as compared to the whole economy, due to the exclusion of energy production firms and extracting firms from the sample frame, implying that only fuel processing firms are present.

Figure 3.4 shows the distribution of firms by the seven federal districts. In the Central, Urals, and Volga districts the share of firms in the sample is higher than in the population, meaning that there are relatively more medium and large manufacturing firms in those regions. North-Western, Southern, and Far East districts, on the contrary, have a lower share of firms in the sample.

Finally, the distribution of the firms in the sample by size (number of employees) is reported in Table 3.1. The initial sample includes relatively fewer small firms (400-500 employees), and more very large firms (more than 5000 employees) than the sample frame. Due to the higher refusal rate among the largest firms, however, size distribution in the resulting sample is closer to the sample frame. The majority of the firms in our sample employ between 500 and 5000 employees.

### **Origins and ownership structure**

The survey provides information on the year of origin and the organizational form of each firm. As was expected with medium and large manufacturing firms, most of them originated during the time before the transition period, and some of the firms existed even before the socialist revolution (see Table 3.2). Only 5 % of the firms in the sample are relatively new, as they were created during the 1990s. The majority of the firms in the sample are open joint stock companies (see Table 3.3), which is not surprising as most of the formerly state-owned firms were turned into open joint stock companies during the mass privatization of the early 1990s. Some 80 % of the sampled firms were privatized during 1991-1994. Altogether, 16 firms were always private, while 32 firms never went through privatization.

According to Table 3.3, almost 7 % of the firms are in the form of a state (*unitary*) enterprise. There are, however, more firms fully or partially controlled by the state (see Table 3.4 and Table 3.5). Approximately 40 % of the firms have some state ownership. Of

these, state has still majority ownership in more than half of the firms. The average stake held by the state is around 15 %<sup>14</sup>.

The extent of insider ownership which resulted from the mass privatization is continually decreasing. As Angelucci et al. show in their study of Russian firms, while at the time of privatization 79 % of firms were, for the most part, insider-owned, by the year 2000 this share reduced to 60 %. In our sample, as of the spring of 2003, only 27 % of firms were, for the most part, insider-owned. This reduction is due to decreasing worker ownership. In the Angelucci et al. (2002) study, at the time of privatization workers owned on average 54 % of shares. By 2000 this figure reduced to 34.5 %. In our sample, workers own on average 18 % of shares. Although some retired worker-owners can be in the “other persons” category, the figure is still quite low.

Managers<sup>15</sup>, on the contrary, increased their stakes since the time of privatization as several studies show (see Angelucci et al. 2002, Brown et al.2003). According to a survey of 1000 medium and large Russian industrial enterprises carried out in 2002, managers hold on average 19 % of shares (see Guriev et al.). In our survey this figure is lower but still quite high – 13.5 %.

There is also growing evidence in favor of increasing ownership concentration in the hands of outsiders, mostly through buying out dispersed shareholders. According to Angelucci et al., by the year 2000 outsiders doubled their share to 32 %. Guriev et al. find that the stake held by the largest outside shareholder in their sample is about 24 %. In our sample Russian and foreign firms hold on average almost 32 % of shares. Some individuals from the “other persons” category can also be large shareholders.

Thus, our findings are in line with the observed tendency for decreasing ownership by workers and the state and for the growing importance of outside blockholders, which has its implications for corporate governance of Russian firms.

### **Size and performance dynamics**

The survey asked information on several indicators, including number of employees and performance figures, for the five years from 1998 to 2002. Table 3.6 shows that the

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<sup>14</sup> Given generally low informational transparency and unwillingness of firms to reveal their ownership structure, the response rate to ownership questions in our survey is quite high: more than three quarters of firms provide information on their ownership structure.

<sup>15</sup> We also collected information about the seniority of managers. An average general manager has been working in the firm for 8 years.

average size of the firms in the sample was slightly increasing during 1998 – 2000, and then it started to decrease. The average firm in the sample had 1658 employees in 2002.

Lastly, similar to many previous surveys, the sample contains some degree of selection bias towards the better-performing firms. The share of loss-making firms was decreasing in 1998-2000 and then increased significantly so that in 2002 it was above the 1998 level (see Table 3.7) by both measures of the share of loss-making firms that can be calculated from the sample. Still, for all the years the share of loss-making enterprises in our sample is below the figure reported by Goskomstat for industrial enterprises, which was as high as almost 40 % in recent years.

## 4 Firms and the provision of social services in Russia

### 4.1 Social assets and services: within or outside the firm

The divestment of social assets such as housing and daycare from industrial enterprises to the public sector in Russia has been mostly thought as achieved. The attention has mostly shifted from the situation in firms to the problems of local and regional governments in managing their expenditure mandates. Our survey results, however, show that the large industrial firms still provide a wide array of social services or finance them despite having divested of them. There are also substantial differences across the interviewed firms and different types of assets in how fast and to what extent divestiture has taken place. Furthermore, many of the firms have no intention of divesting all their assets; rather, they intend to invest in the package of fringe benefits they provide to their employees (and in many cases also to users outside the firm).

Over 90 % of the surveyed firms had at least some kind of social assets in 1990, and over 90 % still provided or supported at least one service in 2003, though the scale of the firms' participation in social service provision has diminished significantly during the last decade. In this section, we describe the main findings on social assets.

## 4.2 Provision of social services in 1990-2003

### Housing

In 1990, 78.5 % of the 404 surveyed firms provided housing to their employees (see Table 4.1). Of those that did, close to 60 % have since then fully divested of housing, and almost all have divested either fully or partly.<sup>16</sup> In most cases, divestment has occurred to the municipality, but among more than 20 % of the firms that owned housing in 1990, apartments have been sold to other parties, at least partially. In the spring of 2003, over half of the surveyed social managers reported that their respective firms still owned housing or provided housing support in some other form, mostly through direct subsidies. It is also striking that in over a half of the firms that offer this benefit, users are not just employees and their families. Over 60 % of the firms reported that the people living in the apartments cover some part of the costs. Surprisingly, many firms, 15.1 %, had assets that were built after 1990.<sup>17</sup>

### Medical care<sup>18</sup>

Almost 80 % of firms provided medical care in 1990. However, only slightly more than 20 % have divested of it fully, and over 90 % continued providing support for medical services in some form in 2003. Two thirds of all surveyed companies still own these assets, mostly in the form of having a so-called *medpunkt* on site<sup>19</sup>. Firms allow outsiders to use their medical services less frequently than housing services, though the share of firms allowing other users is still close to 40 %. Taking into account that, according to the law, firms had to divest the medical facilities which were outside the plant area and serviced

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<sup>16</sup> Divested fully includes also firms that closed down operations, even if they did not actively divest of related assets, e.g. buildings

<sup>17</sup> Answers by social managers (Table 4.1) and general managers (Table 4.2) differ somewhat, as they were asked slightly different questions and also have different viewpoints to the firms' operations. For instance, *having* by general manager may mean both the firm having assets on balance, or still covering the costs of assets that used to belong to the firm, although technically already transferred to the municipality. In general one can expect that the social manager's knowledge of details of social services is more reliable, whereas the general manager can probably better put these issues into broader perspective.

<sup>18</sup> As in other categories of services, we use a broad definition of medical care, which includes in principle all the ways a firm uses funds on medical care, for instance through medical insurance.

<sup>19</sup> A *Medpunkt* is an on-site medical service, many times simply a room in an administrative building. This partially explains the low figures on active divestment of medical assets. Furthermore, for medical care, only approximately a half of the surveyed firms that have medical assets according to the general or social manager, report balance sheet figures, whereas for housing, daycare and recreation facilities, almost in all firms where managers report having it, balance sheet values are also reported. This can be taken as evidence that in a half of the firms, medical facility means *medpunkt* which doesn't have balance sheet value.

people from the region, this figure is especially high. In very few cases, fees are collected for using the service.

### **Daycare**

Daycare was also provided widely by the firms when the reforms started in the early 1990's. Approximately 90 % have divested their kindergartens, almost solely to the municipality. The firms that did divest gave up on average close to 90 % of their daycare capacity (see Table 4.4). Only a few have built any new facilities since 1990, and only one fourth provided support for daycare in any form in 2003, the service thus losing relative importance in the social benefit package the firms offer their employees, in part because of demographic changes and a lower demand for the service.

### **Recreation facilities**

Less than 40 % of the firms had recreation facilities in 1990. Over half of those have divested of their assets completely, and just a few have invested in new ones. In 2003, however, over 70 % still supported their employees' leisure activities in one way or another, mostly giving out direct subsidies for travel. As is understandable due to the nature of this support, users or recipients are generally just the employees and their families, not outsiders.

### **Other social assets**

Other social assets include, for instance, lunch cafeterias, sports or cultural facilities and pioneer camps for children, but even schools and hotels were mentioned by the firms. Over 80 % of the firms had at least some of these assets in 1990, and over 75 % still had them in 2003. Close to 20 % of the firms have built new assets since 1990. In 2003, 64 % of the firms had a cafeteria, which is a slight decrease from 76 % in 1990. Approximately one third of the firms that had sports facilities have since stopped operating them, and currently 25 % of these 404 firms have sports facilities. Lastly, 18 % still operate pioneer camps, and 16 % operate cultural facilities, which is less than a half of the firms that engaged in these activities in 1990.

## 4.3 Trends in social assets and service provision

### Divestment

Both the scale and timing of divestment differ significantly by type of asset. Figure 4.1 describes the annual number of firms that carried out their last divestment of certain assets between 1990 and 2003. Interestingly, housing divestiture seems to have continued more evenly until 2003 than daycare divestiture, which had a clear peak in the mid 1990's.<sup>20</sup> As mentioned above, only a few firms have divested of medical facilities in general.

The average firm has divested of 75 % of its housing and 86 % of its daycare (see Table 4.4). For both housing and daycare, almost 90 % of firms report having divested fully or partially, but only about 60 compared to about 90 % report full divestiture of housing and daycare, respectively.

When asked about the main reasons for the divestments that took place during the last three years (see Table 4.3), a clear majority of the general managers said that the assets were an excessive burden to the firm. Only a handful had the opportunity to sell the assets profitably, whereas many – about one third for housing, medical care, and daycare- had just been waiting for the time when the municipality would finally accept the assets.

From Figure 4.2 it is seen that larger firms, measured by employment, are more likely to have social assets left, especially for recreation assets. Also, with the exception of recreation, the general managers of the larger firms are less eager to divest of their current social assets than the managers of firms with fewer than 500 employees (Figure 4.3).

### Forms of current provision

In 1990 most firms had at least housing, medical care, and daycare facilities within the firm. The situation is similar in 2003 only in medical care. Direct subsidies to employees and their families have become more important, especially in supporting leisure activities. In housing, not only offering direct subsidies, but also providing loans or guaranteeing them for the employees have become relatively common. Of the firms that still have assets on the balance sheet (see Table 4.1), most seem to employ rather significant numbers of workers in these services (see Table 4.5).

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<sup>20</sup> Faster divestment of housing relative to daycare can be due to the fact that the share of expenses covered by user fees is typically higher in housing than in daycare.

Many of the users of the services come from outside the firms, which could mean two things: the firms are either forced to provide certain service in a community, where no other party does so, or they are simply selling the service. The share of users other than employees in an average firm that allows outsider-use is around 40 % for housing, daycare, and recreation facilities, and approximately 20 % for medical care (see Table 4.4).

In a great number of firms the users pay fees for the services.<sup>21</sup> Hence, the firms are moving towards semi-public provision, or more market-oriented ways of providing the services, both paying for their employees to use outside services and selling their services to outsiders as well. However, up to date, the magnitude of these fees remains low compared to the total costs of service provision. For the firms that report any costs in 2002, the current costs of housing are especially high relative to the wage bill (see Appendix 4).

Larger firms have higher social service costs relative to the wage bill (Figure 4.4),<sup>22</sup> and they are less likely to have completely divested of their social assets (Figure 4.5). Furthermore, the firms that had assets built after 1990 were approximately twice as large, measured by employment, as those that did not have new assets. Thus, as was the case with divestment details, the pattern of current provision also seems to indicate a more active role in social assets provision with larger firms. The forestry industry stands out from the other industries in building new social assets.

### **Relations to municipality**

Less than 10 % of the social managers reported that the firm financially supported municipal services that had previously belonged to the firm, whereas between 10 and 20 % of the general managers reported that their firm spent money on municipality-run assets in 2002 (see Tables 1 and 2). Also, according to the accounting figures, 8.7 % of firms reported that they provided financial support for housing that had already been transferred to the municipality, and for those firms these costs in 2002 were comparable to the costs of running their own housing (see Appendix 4). In general, the costs of supporting municipal assets are high compared to the costs of direct subsidies for housing, medical care, and daycare.

For all assets, the managers thought it was more likely that the tax burden would decrease rather than increase should they divest of their assets, irrespective of whether they

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<sup>21</sup> In principle the fees are regulated by local authorities, although there is a lot of variation in the tariff levels.

would transfer them to the municipality or sell them to some other party. This is in principle contrary to the expectation that providing the services would be seen as a favor to the administration, leading to a smaller tax burden of the firm, but the reported reduction in tax burden may be just due to decreases in property and land taxes. As to relations with the municipality other than taxation, the managers see generally no change as a result of a transfer, but many think the relations would worsen should the firm sell the assets (see Table 4.2). Municipalities can have many ways to put pressure on firms, e.g. by requiring firms to provide services and pay back through purchases of firms' products at prices above the market price. Therefore, informal agreements between firms and municipalities in service provision seem likely.

### **Social vision of the firm – is there one?**

Of the firms which provided certain services in 2003, less than 5 % of general managers per asset deemed them profitable. The majority of those that had housing left wanted to divest of it, and approximately a half of those few that still provided daycare wanted to divest of that asset as well. More than one third of those who would like to divest their housing and daycare faced legal or administrative barriers to selling them. Interestingly, the groups of firms that, on the one hand wanted to divest of their assets, and, on the other hand, faced legal or administrative barriers to selling them, did not completely overlap, meaning that a relatively large number of firms faced other barriers to divestment.

Firms seem to provide medical care, recreation facilities, and some other assets voluntarily. Over 40 % of the firms have invested in medical care during the last three years (see Table 4.3), whereas only 2 % have divested these assets. For daycare, the results are opposite; for housing, almost as many firms report investment as divestment.

Social services, and in general non-monetary payments, may be important for attaching workers to a particular firm. Indeed, among approximately half of the surveyed firms, at least some workers would quit if the firm stopped providing social services, especially in the firms with the highest social costs as a percentage of the wage bill. Relative to their wage bill, social service provision seems more important to the less-educated part of the workforce, particularly for the skilled blue-collar workers who comprise on average more than 60 % of the labor force (Figures 4.6 and 4.7).

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<sup>22</sup> According to the accounting figures, 92 percent of the firms report some costs of housing, medical care, daycare or recreation and for those firms the average total costs of these services amount to 8.4 percent of

In addition to the generally extensive social service provision, more than 40 % of the firms have also considerably more employees than they deem efficient, indicating that labor hoarding is still an important phenomenon. Moreover (Figure 4.8), the firms that have an optimal employment level reported less often that a large proportion of their workers would quit if the firm stopped providing social services. At the same time, both firms that reported a shortage of labor (optimal level more than 100 % of the current level) and those that reported labor hoarding more often tried to attach their workers to the firm through social services provision.

In conclusion, the social conscience of the firms, if any, seems at least partially forced or mandated by relations to the municipality. Also, the firms seem increasingly willing to attach their workers through providing part of the compensation package in the form of fringe benefits instead of only monetary salaries.

## 5 Firms and infrastructure

The aim of questions regarding firms' infrastructure is to determine whether firms mainly rely on outside or within-the-firm sources for their basic infrastructure needs. By basic infrastructure we mean the items every (Russian) industrial enterprise necessarily needs, irrespective of its industrial branch or geographical location. First and foremost are electricity and heat, but natural gas, water and sanitation, transportation networks, and other items usually provided directly by the public sector or by state-owned companies are significant and/or important.

A well-functioning public sector is a necessary condition for economic and social well being. This survey reveals how Russian industrial enterprises assess the quality of public infrastructure and to what extent they supplement it by their own production.

### 5.1 Heating

Russia's climatic conditions are generally very harsh, and a well-functioning heating system is necessary not only for convenience reasons, but also simply for ensuring that enterprises' buildings and machinery remain operational. In Russia, heating is mainly

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wage bill with the median firm spending 2.4 percent in 2002 (see Appendix 4).

based on central district heating. A local energy company often provides not only electricity, but also heating, i.e. warm water, to its customers. The heating networks – warm water pipelines – which Russia inherited from Soviet times, are generally in need of urgent repair, and thus news about disruptions in heat delivery to households are frequent.

Three quarters of the surveyed firms produce heat, and the majority of them cover all their own needs. Being self-sufficient in terms of heating does not seem to be more prevalent among larger firms; between 70 and 80 % of firms in all size categories produce their own heat. Regional and industrial variation in heat production is somewhat larger. Firms in the Urals and in the Siberian federal districts are less likely to have their own boilers than firms located in the Southern and North-Western federal districts. Two thirds of the enterprises in light industry, machinery, and chemical industries run their own boilers, while in other industrial branches over 80 % of firms produce their own heat (see Tables 5.1-5.3).

Over half of the 300 firms that produce heat also sell it to outside users, mainly to local housing entities and other firms in the same city. However, it seems that the reasons for producing and selling heat have less to do with low-quality provision by the local energy or with current market conditions than with Soviet inheritance. The majority of general managers we interviewed said that their firm produces heat due to traditions or due to technological needs, which could be exactly the same thing. Roughly one third of the firms that sell heat do so for commercial reasons (i.e. it brings profit to the firm). For most of the firms the main reasons were either traditions or social responsibility as the enterprise may be the sole provider of heat for its neighborhood.

Mainly due to this self-sustaining production, interruptions in heat delivery in 2002 had occurred only at 10% of the interviewed firms and they were on average not considered to be a significant obstacle for firm operations (Table 5.5). Where interruptions in heat delivery occurred, they lasted on average for 13 days. It seems, however, that long interruptions are concentrated in a small number of enterprises. The median length of all interruptions in heat delivery during the year 2002 was one week.

Thus, it seems that large industrial firms are rather self-sufficient when it comes to heating, and there is no clear indication of this being only a temporary phenomenon. The number of general managers wishing to get rid of their heating boilers (43) is smaller than the number of enterprises that have acquired their own heating systems only after 1990 (52). Further, a remarkable amount of the respondents (17% of total) said they give some form of support for the upkeep of local heating networks outside their plant area. Several

large enterprises continue providing heat to their neighborhood even though it does not bring them any profit. The reason clearly is that the district heating systems were built around the local large plants, and the firms can not afford to let their village freeze.

Contrary to some earlier beliefs, providing heat to local users outside the plant area does not seem to go hand in hand with favorable local tax treatment. The share of managers who believed that their tax burden would decrease if they were to sell their boilers is significantly larger than of those who anticipated an increased tax payment. The main finding here, however, is that producing heat (whether selling it to outsiders or not) is perceived by firm managers to influence a firm's tax burden. Less than 60 % of the managers think their tax burden would remain unchanged in the case of a sale or a transfer of their heating boilers (see Table 5.4).

## 5.2 Electricity

Only a handful of the enterprises (10%) have the capacity, to varying extents, to generate their own electricity. It seems that most of the generators are solely for emergency cases, as only 19 firms produced electricity in 2002. Further, only two general managers claimed the reason for generating their own electricity was for a non-technical reason. In those two cases, the reason was that the local provider's price was too high. On average, the price of electricity varies greatly within and across regions but much less so across different industries. The mean price of electricity in the Far East is about 70% higher than in the Siberian federal district.

Well above one third of the firms had experienced interruptions in electricity delivery in 2002, and a half of those forms considered that the interruptions had a significant impact on their operations (Table 5.5). As with heating delivery, long interruptions seem to be concentrated among relatively few firms. On average, power outages lasted six days in 2002, but the median of all 151 observations is only two days. The chief engineers estimated that the losses due to interruptions in electricity delivery were extremely small. The median estimate is 0.1 % of total production in 2002.

These results lead to several possible conclusions. First, it is clear that during Soviet times only very few industrial enterprises produced electricity since it was the task of separate companies. Consequently, there is very little inherited electricity-generating capacity among Russian industrial firms. Second, our findings may mean that the existing

electricity generation and distribution system works so well that the firms do not need to consider alternatives. Third, one must remember that we still do not know about the connections between large enterprises and local energy companies. Large enterprises may be not only large customers, but also significant owners in some local energy companies.

### 5.3 Other items of infrastructure

Some questions on a wider range of infrastructure services the firms generally use were also asked. As expected, almost all of the firms use electricity, post, roads, rails, garbage collection, natural gas, and water supplies provided from outside the firm. Less than half are dependent on public provision of heating and security (see Table 5.6).

On average, only the quality of roads was deemed rather poor, while everything else was rated between good and satisfactory. Given that people usually tend to give answers such as “normal”, “satisfactory”, and “medium” when asked these types of questions, it seems that chief engineers of large industrial enterprises are surprisingly satisfied with the quality of these services. One needs to remember, however, that quality is not an absolute measure; rather it is always assessed in relation to something else (past experience, a competing product, etc). Consequently, we may conclude that on average the Russian industrial enterprises we surveyed consider the quality of the services listed in Table 5.6 – apart from roads – as being good or satisfactory, and in general not worse than three years ago. Russian firms do not seem to consider the quality of infrastructure as any major hindrance to their operations.

A distinctive feature from most OECD countries is that many firms contribute directly to the construction and maintenance of public infrastructure. In all, 43% of the surveyed enterprises provide some form of support to one or several types of public infrastructure listed in table 5.7. Most often support is given to roads, but it is also given to municipal heating and water networks, as well as to municipal waste collection, which receives considerable support.

Since, on average, more than 60% of the firms’ transportation needs are covered by road transportation and only about 37% of their needs are covered by railroads, the perceived low quality of roads may be an indication that transportation is somewhat problematic for large firms. The fact that 24% of enterprises contribute voluntarily (i.e. in

addition to road taxes and fees) to the maintenance and construction of roads outside their production facilities adds support to this view.

Given the huge distances and inherited industrial geography in Russia, transporting both inputs and outputs is a vital issue for large enterprises. Firms typically own tens of trucks, lorries, buses, and other vehicles to satisfy their transportation needs. A large number of firms also own railroads. Over 40% of the respondents said that their firm has its own railroads, with 49 firms owning over 10 km of rails. Every sixth firm has its own railway cars, but only a few own a notable amount (i.e. over 10 cars). As one would expect, the average size of a firm that owns rail cars or railroads is significantly larger than the average of the sample.

## 6 Firms and regulatory environment

### 6.1 Overall summary statistics

The first thing to note about the regulatory environment in which firms that have public infrastructure or social assets are operating is that a fair number of firms have legal or administrative restrictions on divestiture of these assets (Table 5.1.). The most common regulatory obstacles are created for divestiture of housing and daycare: 33.6% and 34% of firms could not sell their housing and daycare, respectively, to a third party (that is not a part of the municipal government). Constraints are least frequent for selling recreational facilities but they are nonetheless quite common: 20% of firms face them.

Among many of the surveyed firms, regulatory agencies occupy a significant amount of top management's working time (Table 6.2.). Directors of over 50% of the companies spend more than two weeks per year dealing with authorities on questions of public infrastructure. Directors in about one third of the companies spend more than two weeks per year dealing with each of the following agencies: licensing, certification, and customs. The head engineer spends more than two weeks per year dealing with fire inspections and SES in 30 and 26% of the firms, respectively. The personnel manager allocates more than two weeks of his/her time to labor-regulating agencies in almost half of the companies. Interestingly, the time spent by management with licensing, certification, customs, fire inspections, and SES inspections is significantly (at 5% significance) correlated across firms. Time spent on questions about public infrastructure is significantly correlated with

time spent with labor regulating agencies. Thus, if a firm is facing a predatory regulatory environment along one of these dimensions, then the firm is likely to face a similar environment along other dimensions as well. There is a lot of variation in regulatory environments across firms: in 6% of the firms, management spends three days or fewer per year communicating with authorities on each of these problems.

The top managers of 173 firms also offered estimates in answer to a question regarding the level of bribes in companies such as theirs (Tables 6.3. and 6.4.). On average 0.8% of revenues was reported to be spent on bribes. The median among the firms that answered is 0. The manager refused to answer this question in 27% of the firms. Among those who answered the question, the distribution of answers is very wide (table 4R): 60% of the firms reported that there are no bribes; 27% admitted that bribes exist but are below 1%; 12% said that the bribe level is between 1 and 5% of revenues (which is a very substantial sum for the large companies that constitute our sample).

Almost half of the firms in our sample were awarded tax extensions during the three years preceding the survey (Table 6.5). A much smaller numbers got subsidized loans, tax breaks, or direct subsidies (8, 16, and 5%, respectively). Interestingly, almost 70% of top managers said that they did not know of any cases in which enterprises in their regions received unfair competitive advantages due to tax breaks given by the regional or local governments. There is a significant positive correlation between receiving tax breaks and direct subsidies. Thus, the few firms that get direct government support in our sample are likely to get it in different forms.

Roughly 5 to 10% of firms admitted that there is high incidence of capture of power by firms at each level of government (Table 6.6). Ten, eight, and six % of the firms thought of themselves as being very influential in drafting laws and regulations on the local, regional, and federal levels, respectively. Twelve, fourteen, and twenty-one % of the firms responded that their competitors are very influential in drafting laws and regulations that affect their own business at the local, regional, and federal levels of government, respectively. About 4% of the firms felt that unions are very influential. The firms that call themselves influential at one of the government levels are both very likely to think that they are influential on other levels of government and to think that (although significantly less so) their competitors are also influential.

## 6.2 Size and regulatory environment

The comparison of the median time costs by size category shows that, along all of the dimensions, the largest size category has the largest time costs of dealing with authorities (Table 6.7.).

Divestiture of public infrastructure and social assets is also correlated with size: it is harder for large companies to sell day care centers, but easier to dispose of housing (Figure 6.1.).

In our sample, actual special treatment received by firms from the government is not significantly correlated with size (except for the fact that the incidence of tax delays and tax breaks in the largest size category is substantially higher than in enterprises from all other size groups) (Figure 6.2). Larger companies, however, have a lower probability of perceiving that other firms receive special treatment.

In our sample, as one would expect, size matters a great deal for firms' actual engagement in capture, as well as for their perceptions about whether or not other firms have an influence on the institutional environment, particularly at the municipal and regional levels. Figures 6.3., 6.4, and 6.5. illustrate the percentages of firms that have a large influence on municipal, regional, and federal institutions, respectively.

## 6.3 Regional variation and regulatory environment

In addition, again as expected, the regulatory environment varies across regions and federal districts. In particular, the extent to which the Far East is over-regulated is striking, as shown in Table 6.8. Far-Eastern enterprise managers have to spend the most time negotiating with authorities (Table presents median values).

Regulations of divestiture of social assets and public infrastructure (Figure 6.6.) also vary significantly across federal districts. For example, about 60% of the firms in the Far East face obstacles to selling housing to a third party, whereas this share is about 10% in the Southern district. As shown in Figure 6.7, the extent of the government's paternalism towards firms in our sample also differs from one federal district to another. Figures 6.8. - 6.10 show the variation in capture across federal districts. The perception of capture at all levels of government seems to be the highest for the Far Eastern enterprises.

## 7 Performance, investment, finance, competition, and the relation to housing and heating

This section provides information on firm performance and investment. It also reports findings on finance, competition, direction of sales (as exports and to the public sector), and barter. At the end of this section, we describe how these background factors are related to housing and heating.

### 7.1 Sales and profits

Tables 7.1 and 7.2 report average median sales and average profit figures, respectively, from 1998-2002. Among the sampled firms, sales have risen since 1998, but there was a significant drop in sales from 2000 to 2001. Profits (earnings before interest payments and taxes) have followed a similar pattern. This somewhat surprising finding is corroborated by information on the number of profitable and loss-making firms. The share of firms reporting profits was highest in 2000 (90%); it dropped to 76% in 2002, which is lower than the 1998 figure, 79%.

There are no remarkable differences in the number of profitable firms in 2002 across Federal Districts. Medium-sized firms from the sample are only slightly more often profitable than the others.

There is some variation in profitability over industries in 2002 (see Figure 7.1). Strikingly, all firms in the power and fuel industries are loss-making, and firms in light industry are usually loss-making as well. All firms in the other categories are profitable.

One of the reasons for low profitability may be that the firms' capital stock is quite old (Table 7.6.), on average, one quarter of the machinery is less than ten years old. If old firms that have not been restructured properly are overrepresented then their position may have been weakened during the recent economic upswing.

## 7.2 Investment and finance

Investments in fixed capital (see Table 7.3) have increased since 1998, but, as with sales, there was a drop from 2000 to 2001.

Investments are still financed mainly through retained profits (Table 7.4). On average 77.5% of investments are financed through firms' own funds and 16.5% through bank loans. The role of other financing forms is minor. Note that a median firm only uses retained profits as a source of funds. However, the number of firms that do not use bank loans at all has moderately declined from 224 in 2000 to 213 in 2002.

The share of bank loans is slightly higher for small firms (19% in firms employing fewer than 500 workers as opposed to 11% for firms employing more than 1,500 but fewer than 5,000 workers). The share of bank loans is higher than average for iron and steel, machinery and metalworking, forestry, pulp and paper, construction, and light industries.

## 7.3 Liquidity

When asked about access to credit, 18% of firms said that they have not applied for credit, 77% have applied and received credit, and 5% have applied but not received credit.

Out of the 74 firms that have not applied for credit, 34 said that they have not done so because they have sufficient internal funds. High interest rates as a reason for not to apply for credit was mentioned 37 times. The companies that did not receive credit even though they applied for it reported that they did not receive credit due to high collateral requirements (7 answers) and other various reasons (9 answers).

Large firms receive credit more often. Firms in machinery and metalworking, as well as firms in forestry and pulp and paper have less often than average received credit. There is some variation over Federal Districts as well: firms in the South, the Volga region, and the Far East receive credit less often.

The average interest rate paid is 20.2%, while the median is 20% and the maximum 39%. The median length of a loan is only 12 months, while the maximum length is 10 years. There are no regional, industry or size differences in these figures.

In sum, based on access to credit, firms are relatively little credit constrained. Given the inflation (15% in 2002), the real interest rates for bank loans appear to be tolerable as well. However, loans are very short term, and their role in investment finance is still small.

## 7.4 Direction of sales

On average, firms export around 16% of their production, and 21% of the sales go to the public sector (Figure 7.2). Larger firms export a higher share of their production, though there is no clear relation between firm size and sales to the public sector. Forestry, pulp and paper, power and steel, and iron and steel sectors are the most open industries, while in the construction and food processing sectors, the export share is the smallest (Figure 7.3). Firms in the North-Western and Far East Federal Districts are relatively more export oriented (Figure 7.4).

## 7.5 Competition

The average share the firms have of the regional market is 43% (median 30%, maximum 100%). On the national market, the average share is 29% (median 20%, maximum 100%). The market shares are quite large.

There is very little variation in the regional market shares; the smallest and surprisingly the largest firms have the smallest share of national markets. On the other hand, there is much more industrial variation in the market share (Figure 7.5). Firms in the power and fuel, construction materials, and food-processing sectors report to have the smallest share of the national market. In the North-West and Siberia, the regional share is much smaller than elsewhere. Far Eastern firms have the lowest share (15%) on average of national markets, while Central area firms have the highest (33%).

The median number of competitors in the firms' main markets (as defined by the firms themselves) is 10 (mean 33, maximum 500). Larger firms have slightly fewer competitors (the median number is 8 for firms employing more than 5,000 workers). In forestry, the median number of competitors is the highest (50), while it is smallest (6) in the iron and steel sector and in the machinery and metal work sector.

Half of the firms reported that they face severe import competition. Only one third of the firms employing more than 5,000 workers faces severe import competition. Seventy % of the firms in light industry and other industries face serious competition, while only 33% of the firms in construction materials face it. Import competition is highest in North-West and the mildest in Siberia.

As one can notice from Figure 7.6, 50% of the firms reported that their sales would drop by more than 10% following a market price increase of 10%. Interestingly, 14% of firms believed that sales would not drop at all. This no doubt raises the question of why they do not increase their prices, which is perhaps due to administrative price controls. The demand seems to be the most elastic in light industry and the least elastic in iron and steel production. Larger firms face the least elastic demand: only 30% of firms employing more than 5,000 workers reported that demand would drop by more than 10%, and 20% of such firms said that demand would not change. Of the Federal Districts, the demand is reported to be the least elastic in the Volga region (38% of the firms said that demand would drop by more than 10%).

## 7.6 Barter

Since its peak prior to the currency crises in 1998, the share of barter transactions in Russian firms has fallen dramatically. Based on the information in our sample (Table 7.5), the median firm does not trade in barter at all. The Russian form of barter includes not only goods-for-goods trade, but also the use of promissory notes (veksels) and offsets. Even taking this into account, the picture does not change much. On average, 83% of payments are handled either by cash or bank payments. The share of barter transactions (goods-for-goods) with the public sector and the private sector is on average 1.2% and 1.8%, respectively.

Small firms trade more in barter with the private sector (mean = 3% if fewer than 500 workers). The use of non-traditional forms of payments is more frequent in the power and fuel sector. Veksels are more often in use in the Volga region and Siberia, and offsets are used much more often in Siberia (mean = 15) and the Far East (mean = 22). Barter with the private sector is less common in the North-West (0.4), as is barter with the public sector (0.6).

## 7.7 Interactions with housing and heating

The purpose of gathering data on issues reported in this section is not the information *per se*, but rather the relation of the information to public sector delivery, social services, and

infrastructure provision. Data on competition, finance, barter, etc. are also needed as additional variables in investment and profitability regressions.

This section takes first steps in exploring the interactions among these factors, social services, and infrastructure provision. As examples of these factors, we examine housing (its provision by firms and investment in it) and heating (to what extent firms financially support municipal heating).

The findings are based on simple cross tabulations, where no additional potential determinants can be taken into account. Therefore, the correlations must be seen as ideas for further analysis through more sophisticated techniques (regression analysis) that will be presented in future papers.

Based on the data, the following findings emerged:

- Foreign-owned firms more often provide housing (43% vs. insider-owned 38%), and they also invest in housing more often (37% vs. insider-owned 31%).<sup>23</sup>
- Publicly-owned firms support municipal heating more often than privately-owned firms (17% vs. 10% by insider-owned). Foreign-owned firms also support heating slightly less often than do privately-owned domestic firms.
- Firms that trade more with the public sector own more housing and tend to invest more in municipal heating.
- Firms that export relatively larger shares of their production own housing and invest in housing and heating more often than do other firms. On average, these firms tend to be large.
- Firms that do not provide housing receive credit for somewhat smaller interest rates. Firms that have applied for but did not obtain credit have less often than others divested their housing, while they have provided financial assistance to heating more often.
- The effect of competition is not clear cut: on the one hand, the more elastic the demand, the more firms invest in housing. Further, the more the firms face import competition, the more housing stock they own. On the other hand, the more elastic the demand, the less firms support heating in the local area.
- There is no remarkable difference between provision of, investment in, and divestment of housing with barter.
- Loss-making firms provide housing less often (32% vs. 43%) than profitable firms, and loss-making firms have divested of housing more often (35 vs. 29%).
- There is a very slight relationship between the aggregate number of days spent dealing with public administration and housing and heating. The only correlation is that if firms support municipal heating, they deal more with administration (14 % have more than 30 days of negotiation vs. 9% of those who do not support heating.)

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<sup>23</sup> Foreign-owned firms may provide these services for their foreign workers.

Based on these findings, it is not clear which sorts of firms provide relatively more housing and heating. Some correlations (ownership, liquidity) tend to indicate that traditional types of firms provide these services more often. On the other hand, firms that provide these services do not seem to suffer from it in terms of profit. All this suggests that further analysis is necessary.

## 8 Concluding remarks

The data from our survey clearly shows that firms in Russia are still very active in social service provision and in some infrastructure provision. The motives behind provision may differ considerably across firms and regions. While it is clear that firms would like to divest of some of their social assets, some firms may regard the provision as a means to compete for labor, and still some firms seem to use it to improve market power in the local labor markets. On balance, it seems that for most of the firms the social assets are more a burden than a benefit. Firms' relationships with local authorities shape also both social service provision, as shown by the difficulty of divesting the assets to the municipalities, and infrastructure provision, as shown by the support to the public infrastructure. Regulatory capture seems also to be a serious problem. In general, firms that provide services beyond the average seem to have closer ties to public sector authorities than other firms.

The data collected in the survey will be used systematically to study the impact of public sector provision on firm performance and investment, as well as the determinants of firms' provision. Our data also makes it possible also to test various hypotheses regarding firms' behavior in local labor markets and regulatory capture in a way that has not been possible in earlier studies.

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Figure 3.1 Response Rate

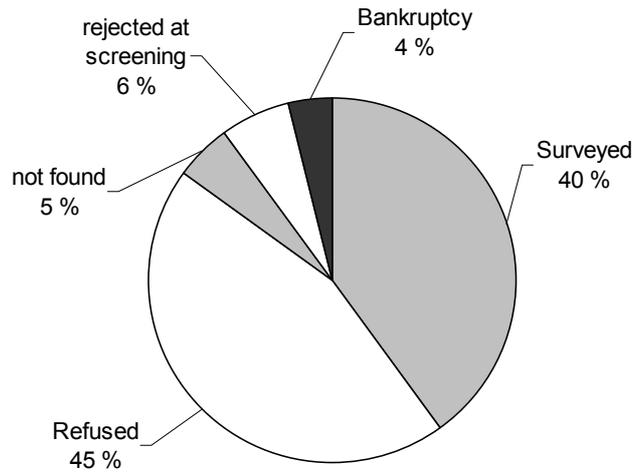


Figure 3.2 Industrial Distribution

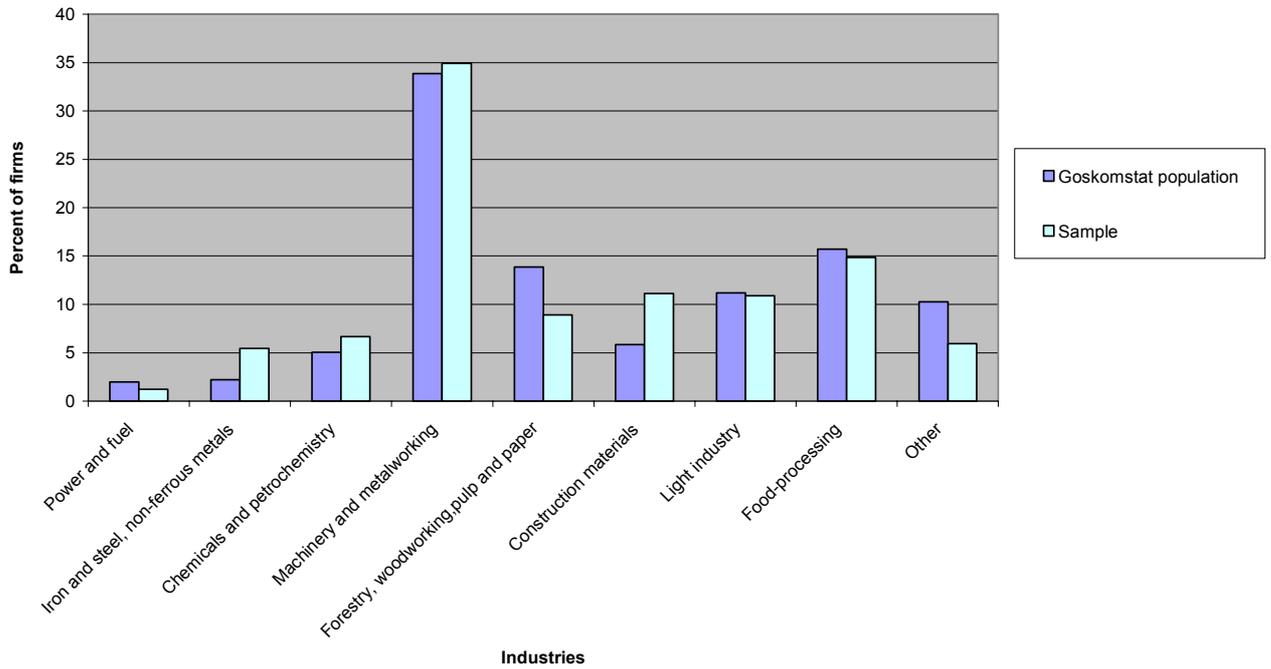


Figure 3.3 Distribution of industrial employment by industry

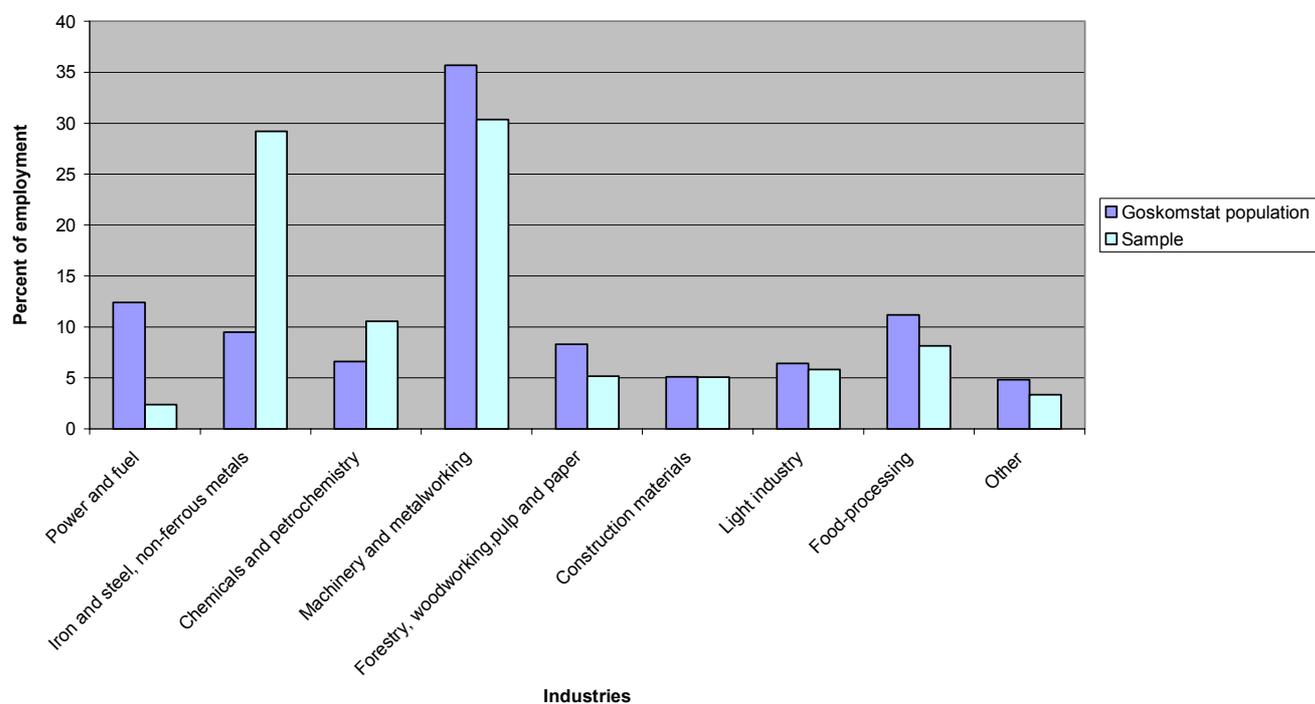


Figure 3.4 Regional distribution

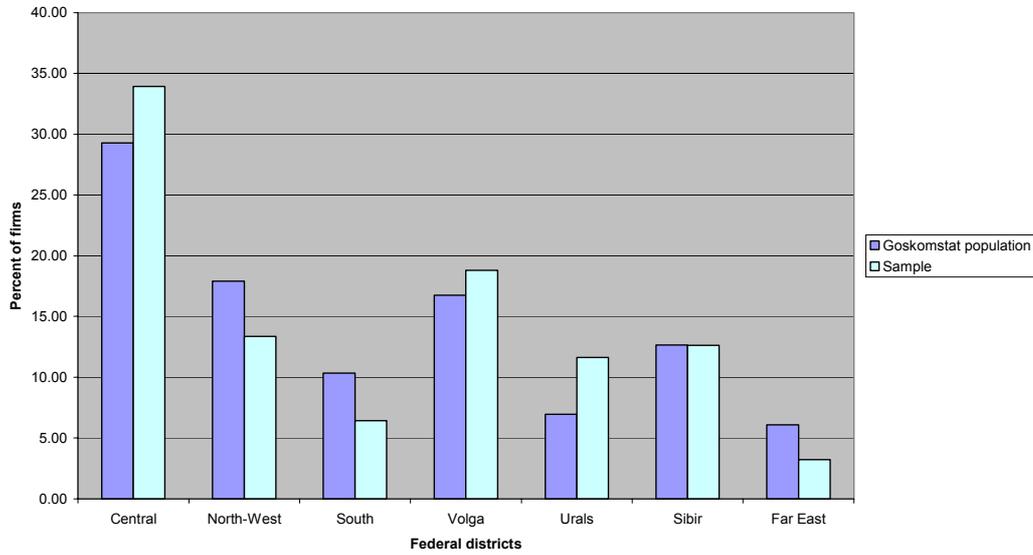


Figure 4.1 Divestment years, percent of firms that want to divest social assets, by firms size

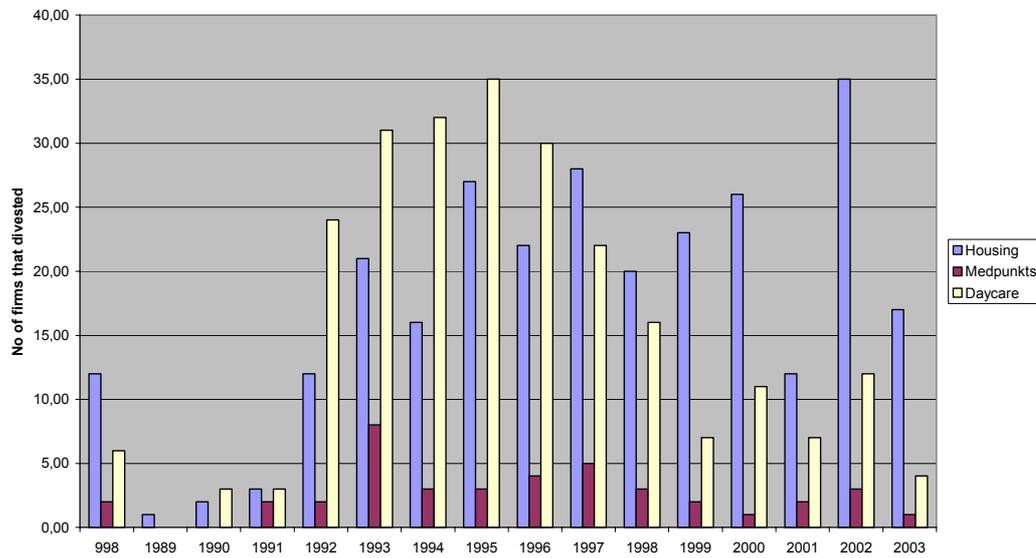


Figure 4.2 Percent of firms that have social assets, by firm size

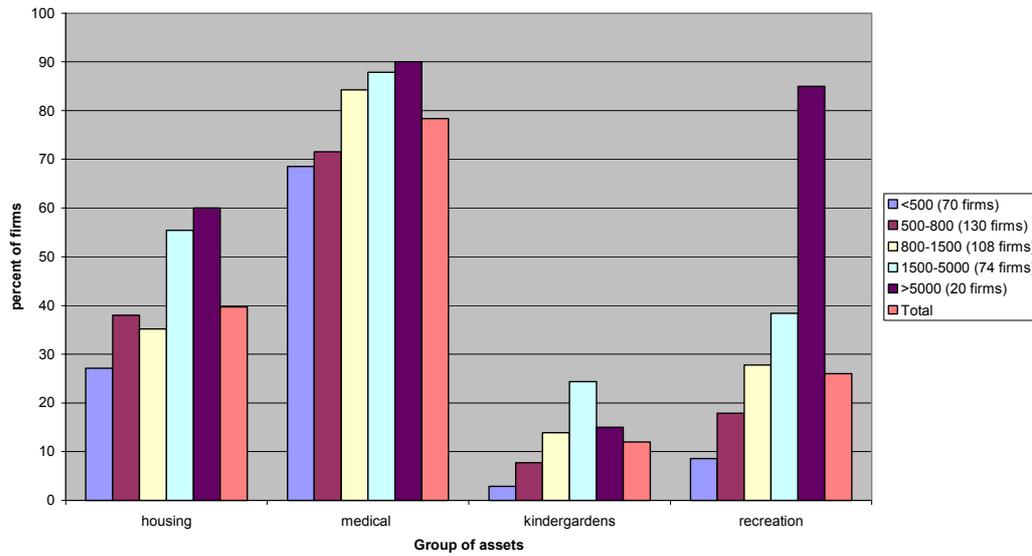


Figure 4.3 Percent of firms that want to divest social assets, by firms size

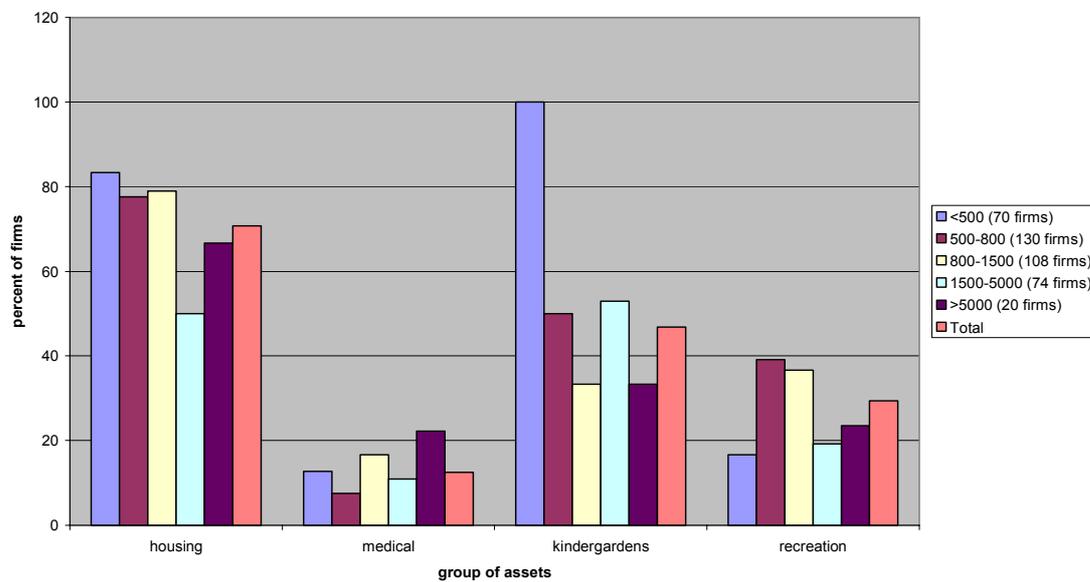


Figure 4.4 Costs of social services (as percentage of wage bill) by firm size

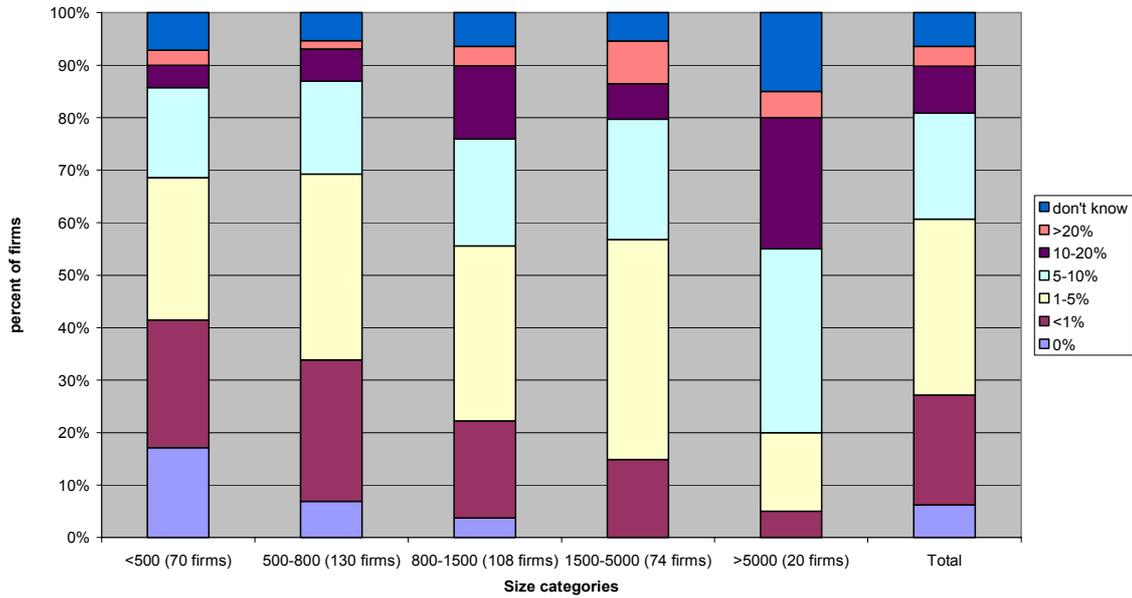


Figure 4.5 Percentage of firms that have divested social assets completely, by firm size

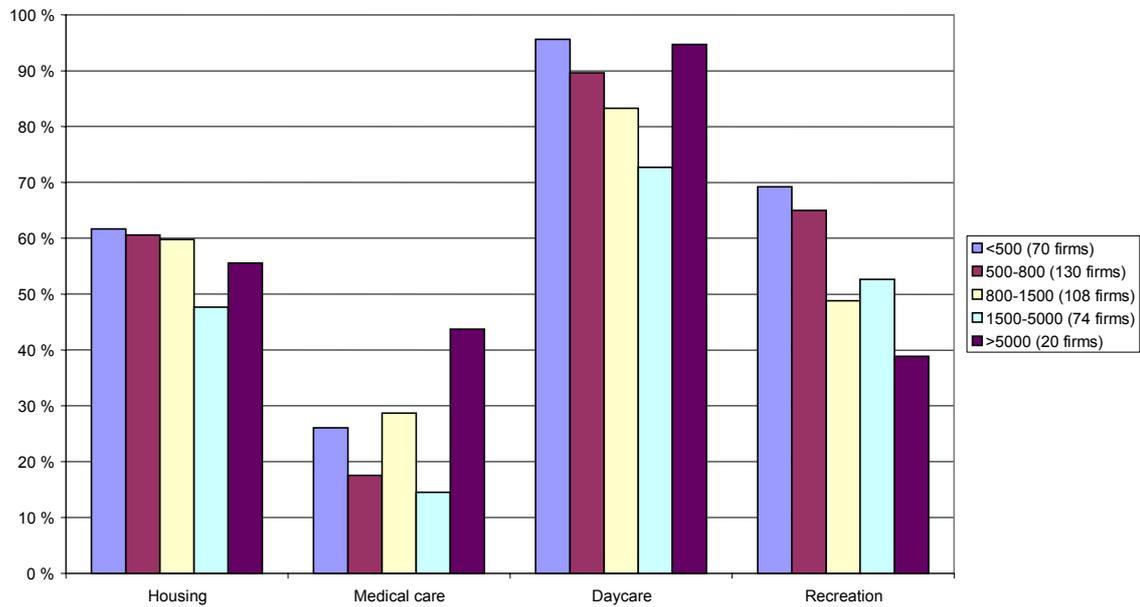


Figure 4.6 If you stop providing social services what percent of workforce will quit?

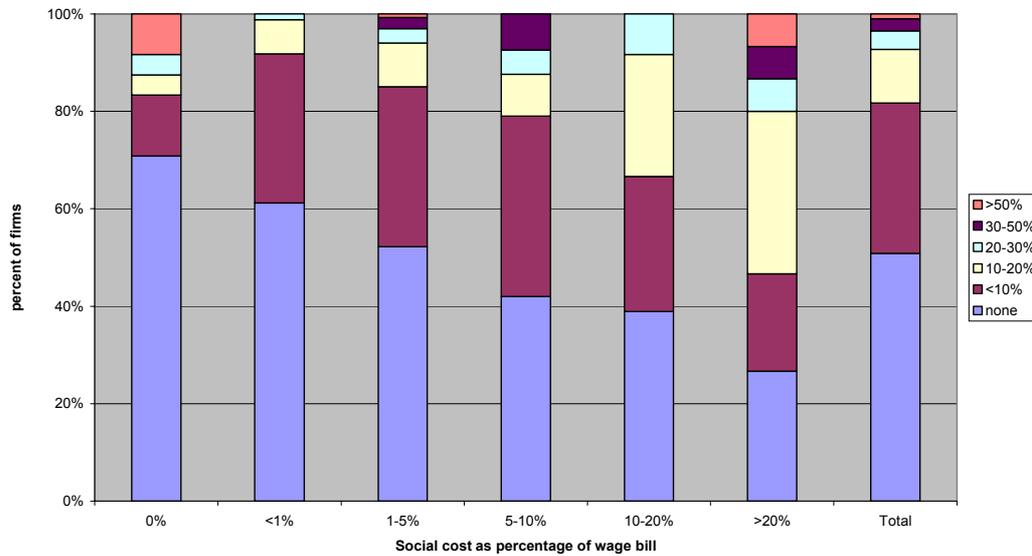


Figure 4.7 Wage increase needed to keep employees if social services stopped (by firm size)

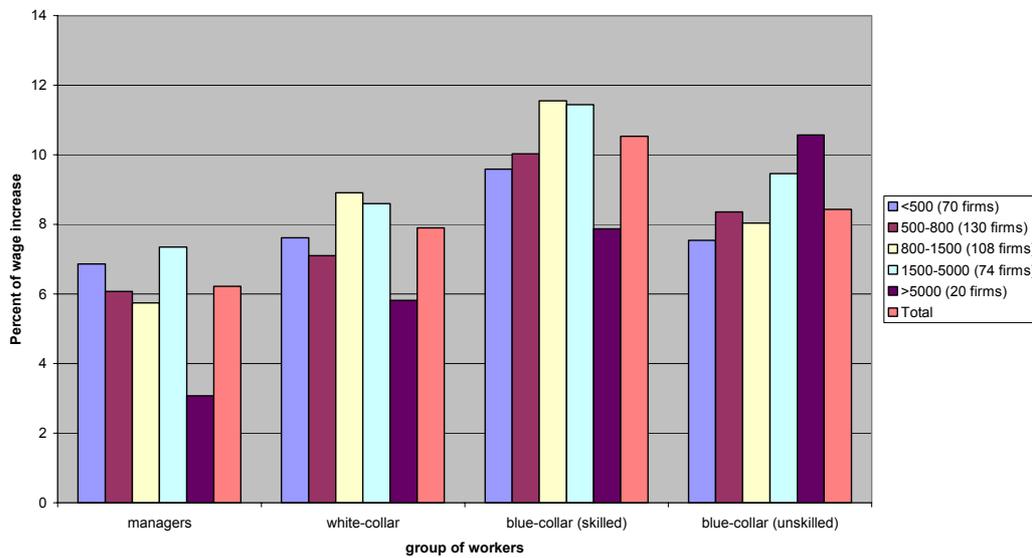


Figure 4.8 Labor Hoarding and Attachment through Social Services Provision

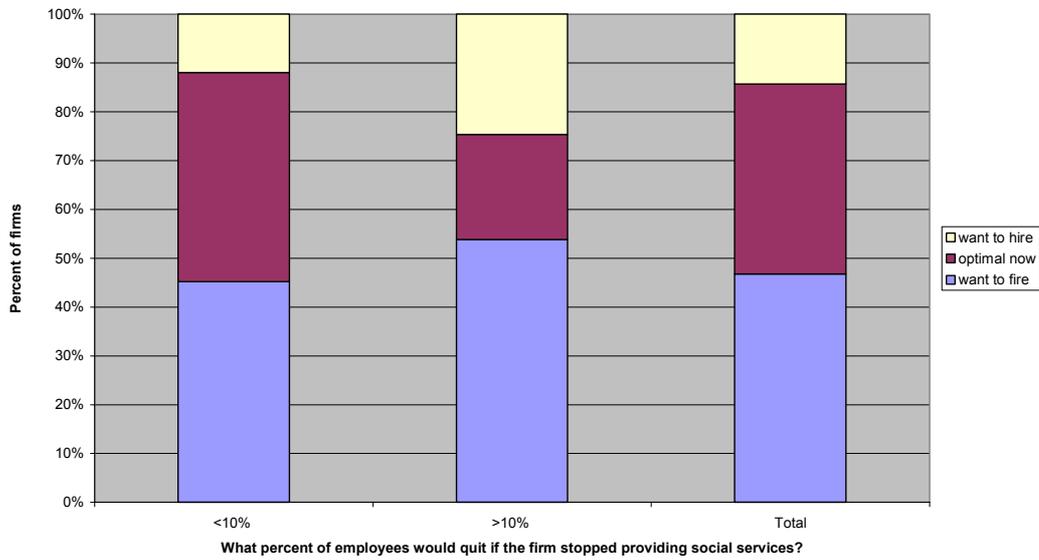


Figure 6.1 Percentage of firms that have legal obstacles to selling the asset, by size category

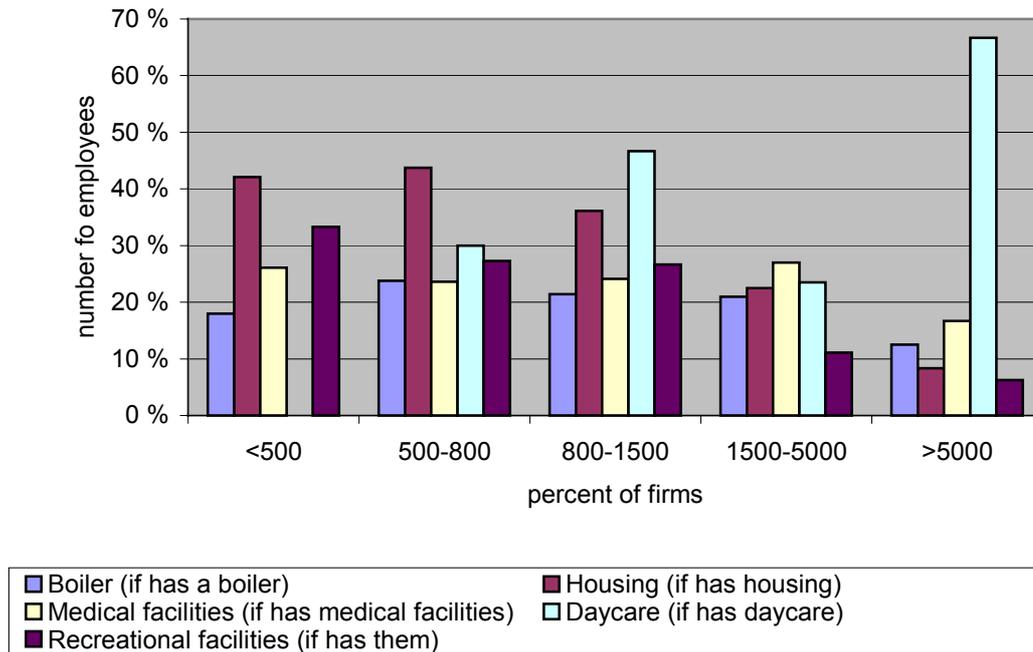


Figure 6.2 Government's special treatment, by size category

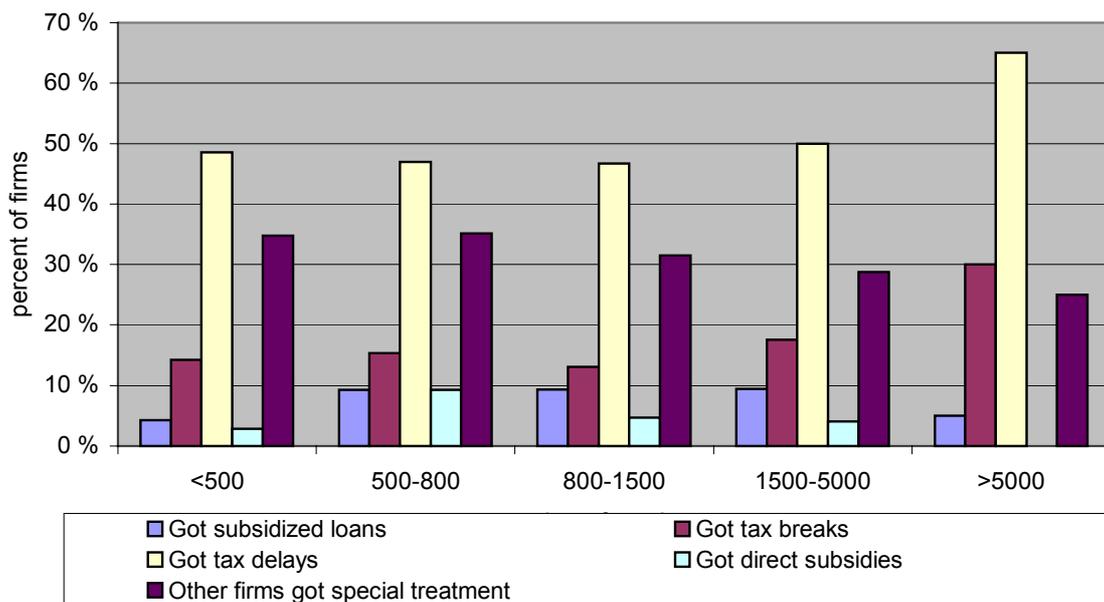
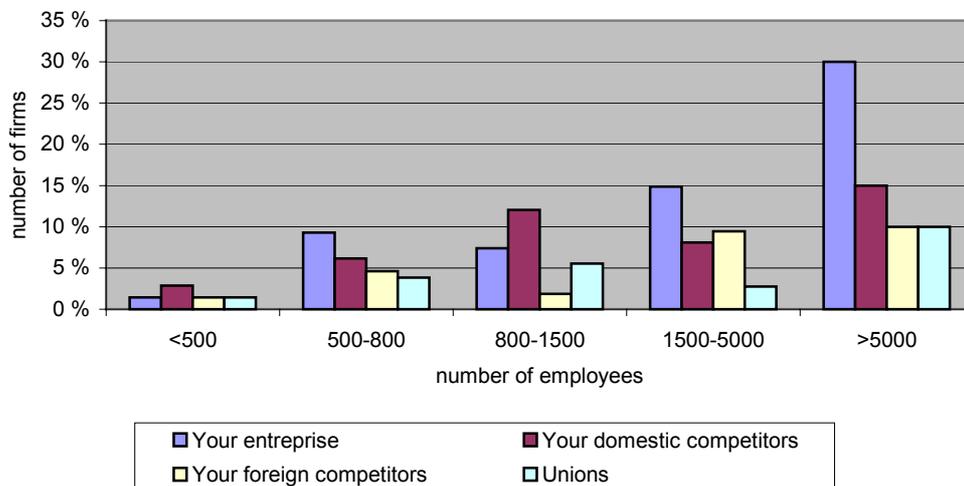


Figure 6.3 Municipal-level capture by size categories



\* In Figures 6.3.-6.5. the following question has been asked:

How do you think, up to what extent, do your company or other structures (domestic competitors, foreign competitors, labor unions) influence the process of the creation and approval of legal and regulatory acts at municipal/ regional/ federal level? (Figures show percent of firms that consider influence to be high)

Figure 6.4 Regional-level capture by size categories

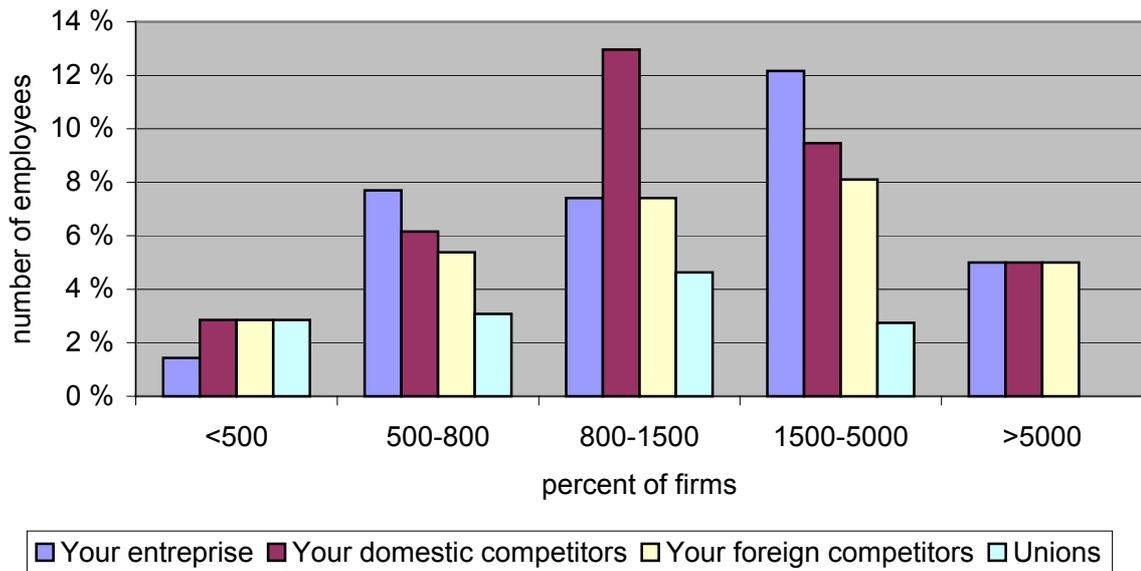


Figure 6.5 Federal-level capture by size categories

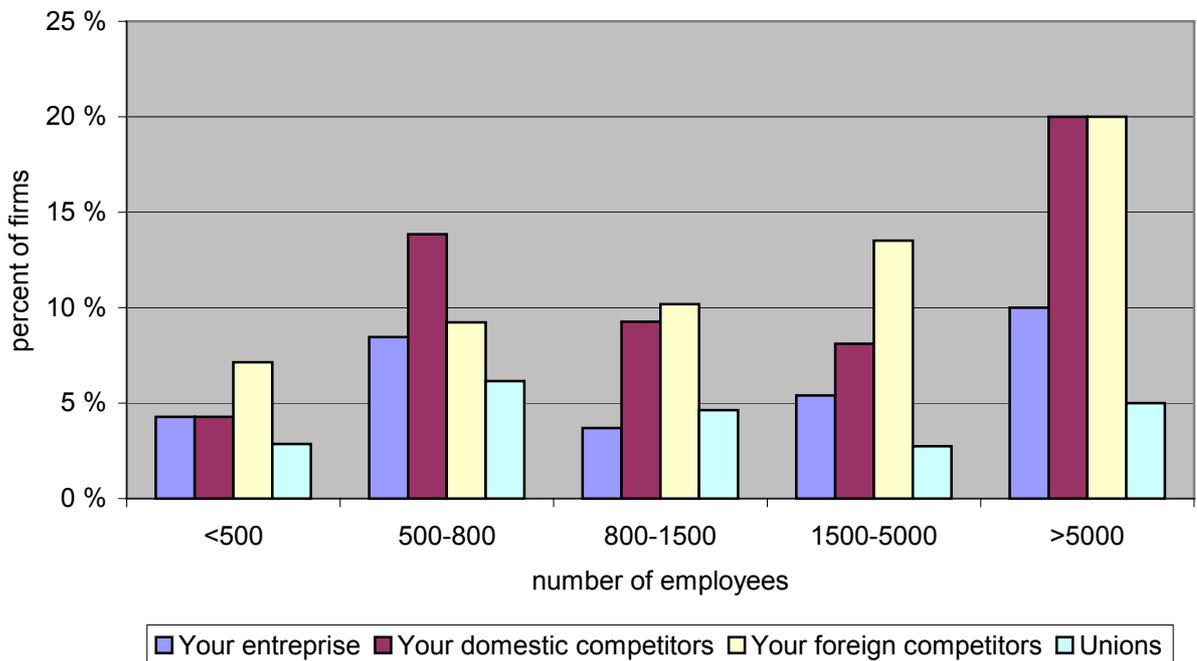


Figure 6.6 Percentage of firms that have legal obstacles to selling the asset, by federal district

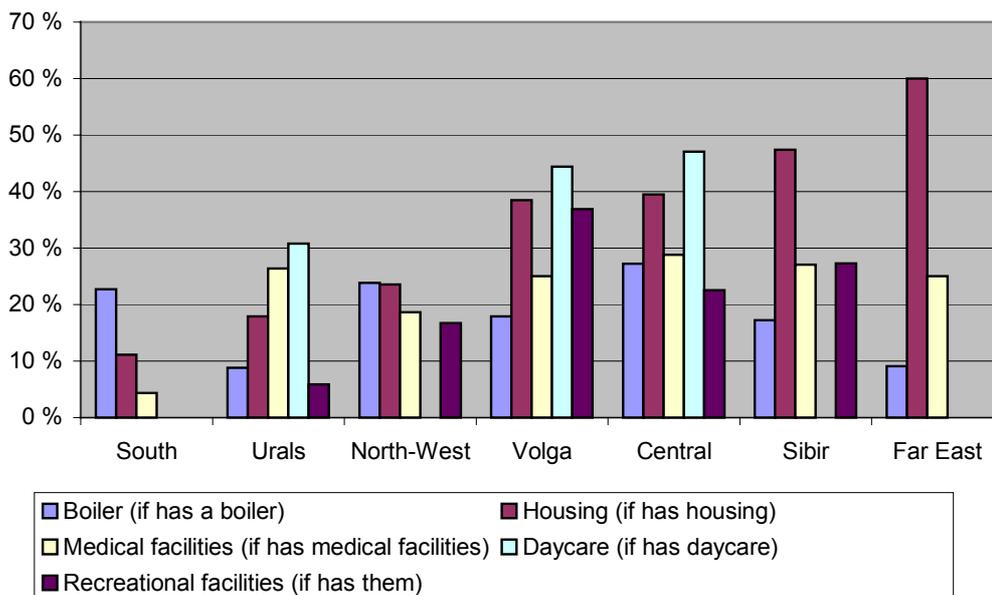


Figure 6.7 Government's special treatment by Federal Districts

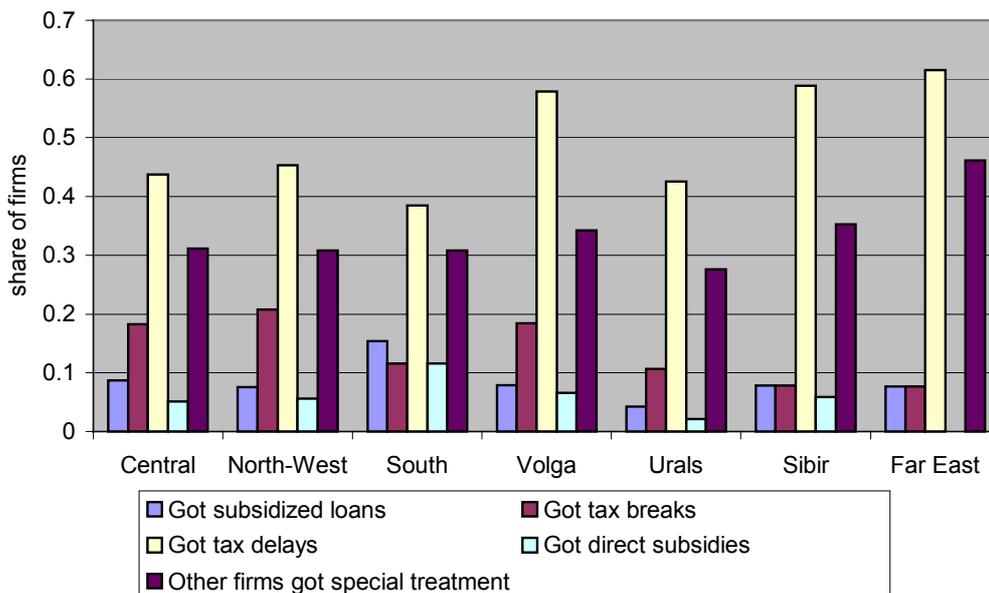
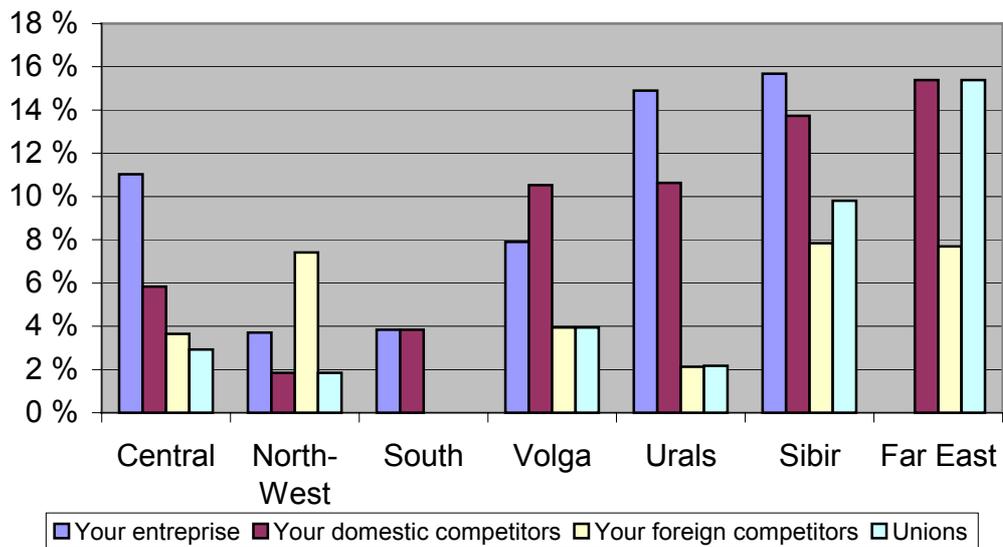


Figure 6.8 Municipal-level capture (high influence)\*



\* In Figures 6.3.-6.5. the following question has been asked:

How do you think, up to what extent, do your company or other structures (domestic competitors, foreign competitors, labor unions) influence the process of the creation and approval of legal and regulatory acts at municipal/ regional/ federal level? (Figures show percent of firms that consider influence to be high)

Figure 6.9 Regional-level capture (high influence)

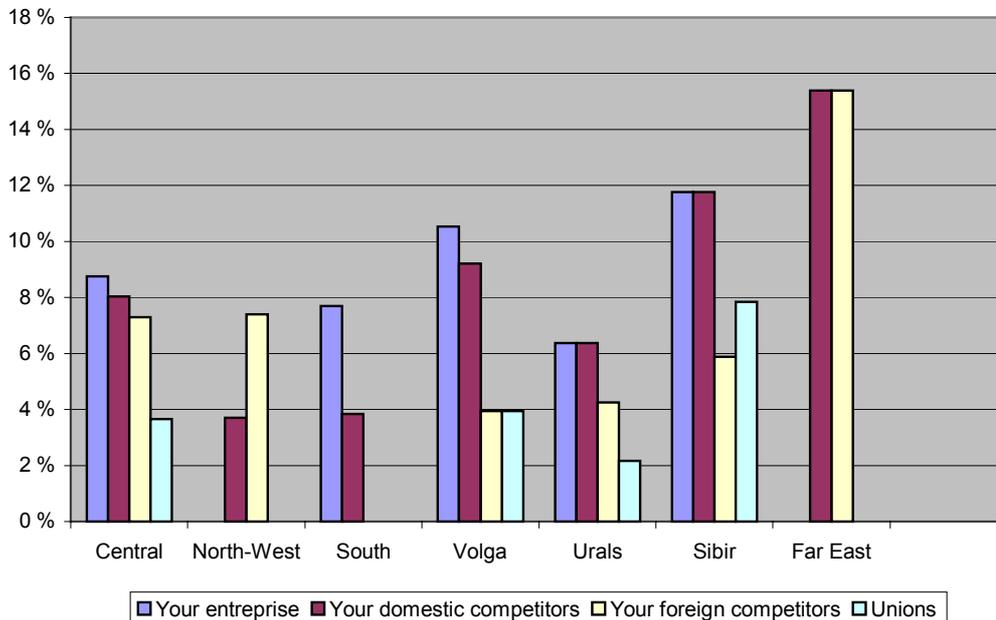


Figure 6.10 Federal-level capture (high influence)

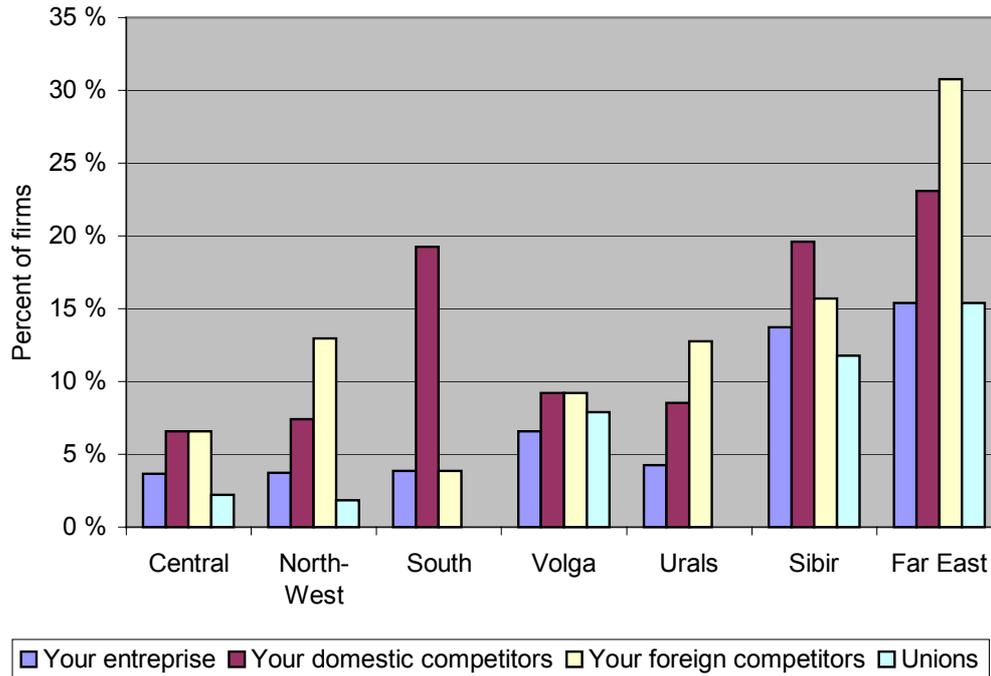


Figure 7.1 Share of profitable firms by industries, % of all answers

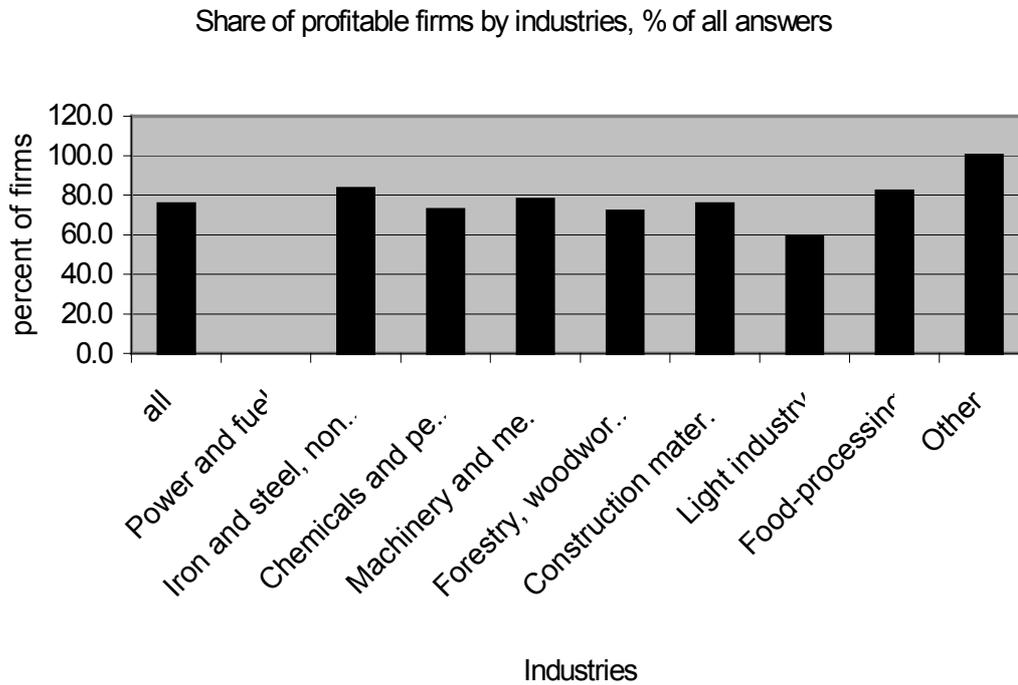


Figure 7.2 Mean shares of sales to export and to the public sector, by size

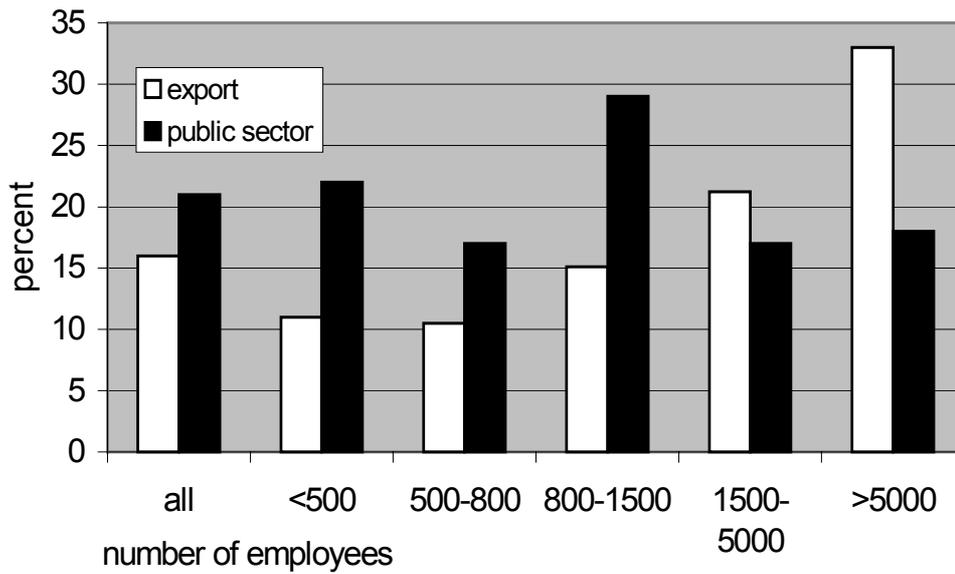


Figure 7.3 Mean shares of sales to export and to the public sector, by industry

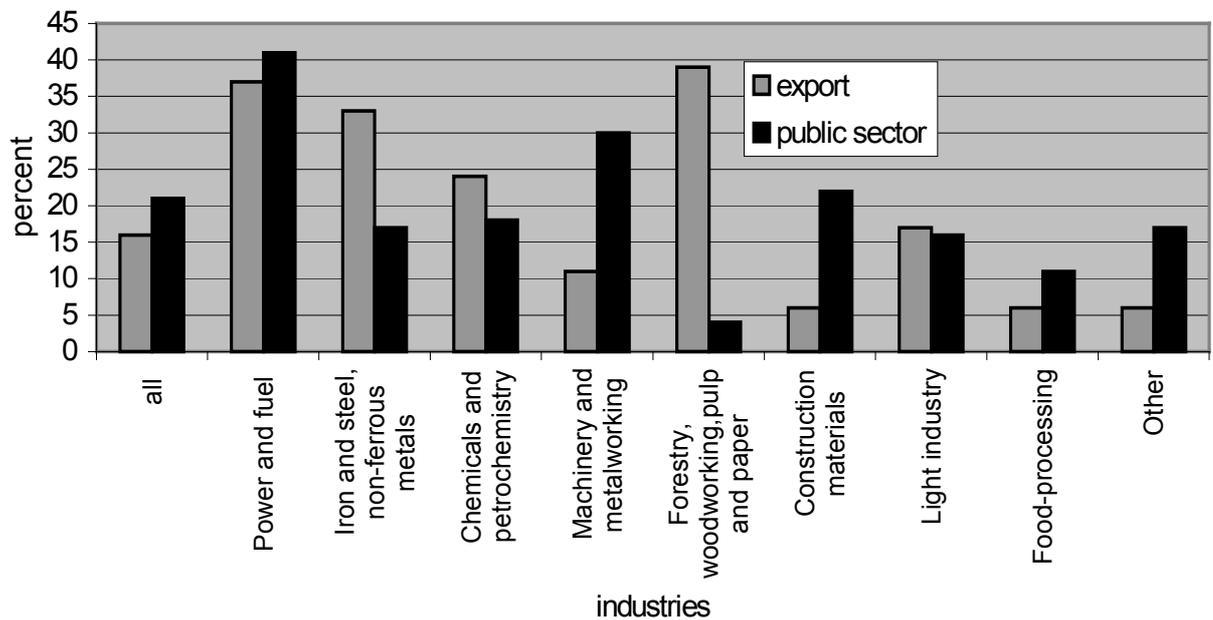


Figure 7.4 Mean shares of sales to export and to the public sector, by Federal District

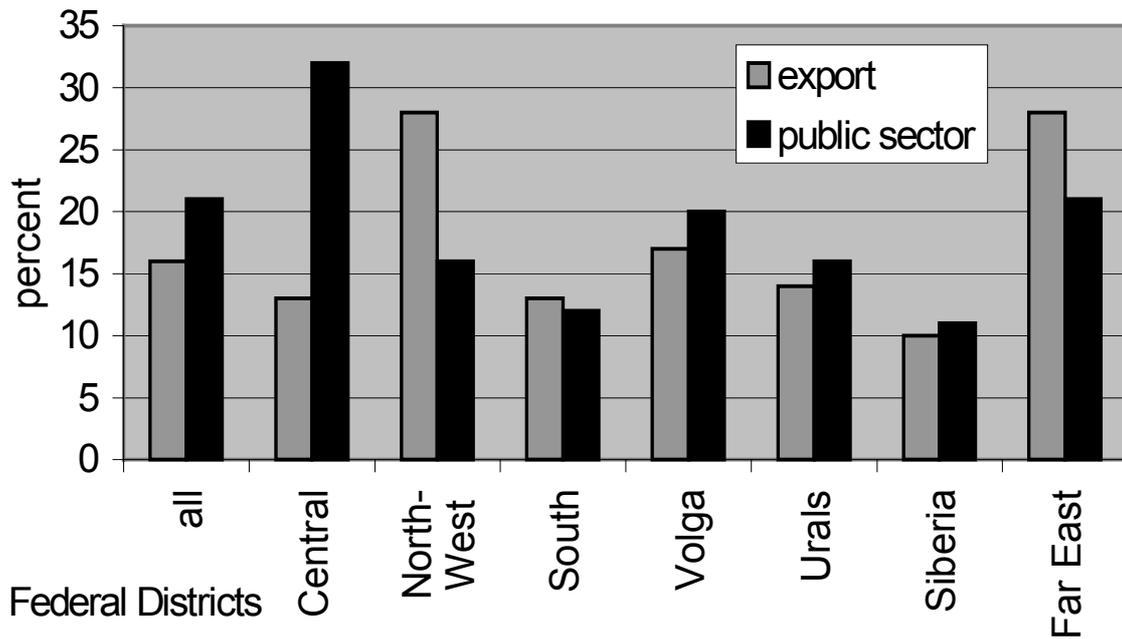


Figure 7.5 Mean shares of regional and national markets, by industry

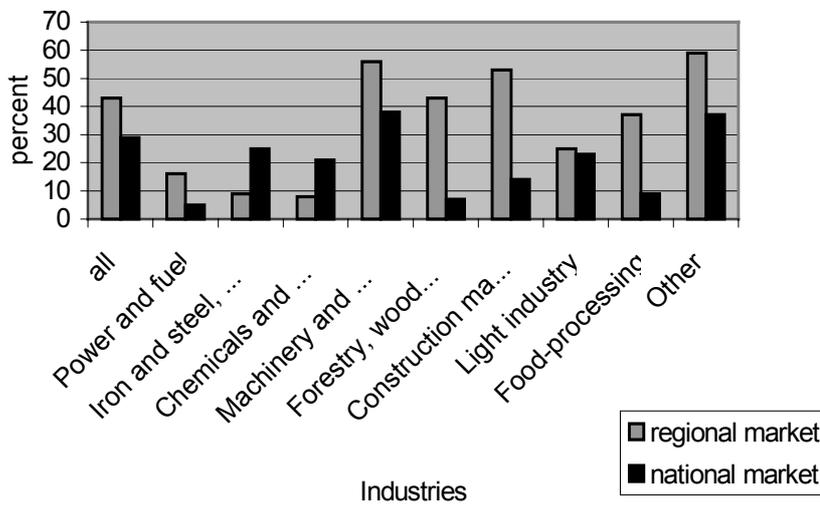


Figure 7.6 Drop in sales following a 10% price increase, % of firms by industries

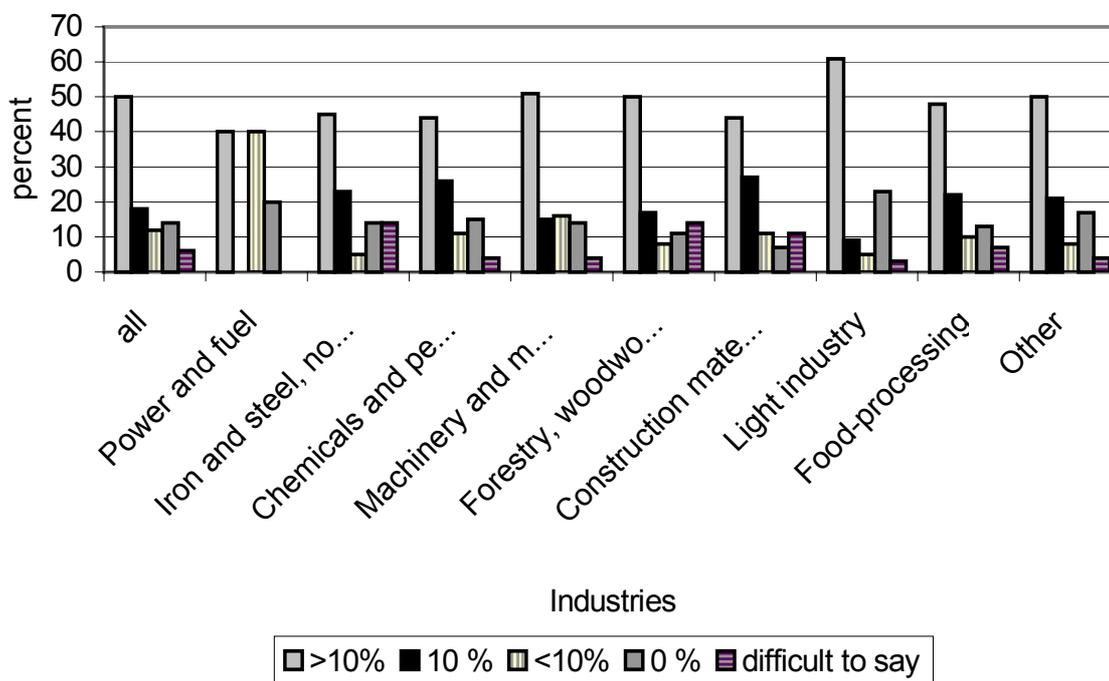


Table 3.1 Distribution of Firms by Size (number of employees) in 2000, Based on Goskomstat data

	Minimum	Mean	Median	Maximum	Number of firms
Sample frame	400	1449.3	749	100005	3523
Initial sample	400	2485.5	817	100005	399
Final sample	400	1648.8	784	38980	404

Table 3.2 Origins of Firms

Year of establishing the firm	number of firms	% of firms
1718 - 1916	75	18.56
1917 - 1940	95	23.51
1941-1945	46	11.39
1946-1989	164	40.59
1990 - 2002	21	5.20
Unknown	3	0.74
Total	404	100

Table 3.3 Organizational Form

Open JSC	289	71.53
Closed JSC	54	13.37
Limited liability company	22	5.45
Added liability company	1	0.25
State enterprise	27	6.68
Municipal enterprise	2	0.5
Other	9	2.23
Total	404	100

Table 3.4 Ownership Categories

Category of ownership	number	%*
100% state owned	32	9.38
Majority state owned	44	12.90
100% privately owned	240	70.38
Majority privately owned	297	87.10
100% insider owned	37	10.95
Majority insider owned	110	32.54
100% foreign owned	2	0.59
Majority foreign owned	14	4.13
Any foreign ownership	44	12.98

\*% of those who answered this question

Table 3.5 Ownership Structure

Type of owner	Mean ownership stake	Median ownership stake	Std. Dev.	Number of observations
Employees, of which:	36.54	22.25	36.30	338
Managers	13.53	1.00	23.37	301
Workers	18.18	6.00	25.41	301
Other persons	13.02	0.00	23.69	337
Russian firms, of which:	26.80	0.00	35.12	339
State firms	2.04	0.00	11.16	326
Private firms	23.16	0.00	33.97	327
State, of which:	14.57	0.00	30.46	341
Federal	7.99	0.00	24.14	329
Regional	3.01	0.00	12.84	328
Local	1.42	0.00	10.16	328
Foreign companies	5.11	0.00	17.17	339
Other owners	4.13	0.00	16.73	341

Table 3.6 Employment Dynamics

Year	Mean	Median	Number of observations
1998	1764.93	856	299
1999	1780.41	871	301
2000	1790.31	830	305
2001	1736.46	816	310
2002	1657.68	793	318

Table 3.7 Share of Loss-Making Firms, as Compared to the Population

Year	Share of loss-making firms*, %	Number of obs.	Share of loss-making firms**, %	Number of obs.	Share of loss-making firms by Goskomstat, %
1998	20.8	283	27.8	270	48.8
1999	11.2	312	16.1	304	39.1
2000	9.8	328	18.5	313	39.7
2001	19.0	343	26.0	327	39.3
2002	24.5	347	33.1	335	NA

\*loss from main (production) activity

\*\*total loss, including non-production activity, interest income etc

Table 4.1. Social Asset Provision - Social Manager's Perspective

<i>How many firms, % of total 404 firms surveyed...</i>	Housing	Medical care	Daycare	Recreation	Other	<i>At least one</i>
Had in 1990	78.5	76.7	69.8	38.2	84.4	94.6
<i>Of those that had:</i>						
% that divested all of 1990 assets	57.4	22.6	85.5	54.2	55.4	
% that divested all or part of 1990 assets	90.5	NA	89.7	NA	NA	
% that divested all or part of 1990 assets to municipality	86.1	12.9	86.2	NA	NA	
% that divested all or part of 1990 assets to other than municipality	22.4	NA	9.6	NA	NA	
In 2002, had assets which were built after 1990	15.1	NA	2.0	4.7	17.6	32.4
Have or provide support in some form(s) in 2003	55.7	90.8	26.0	73.3	76.5	97.8
Have on balance	34.2	67.1	10.4	20.8	76.5	91.8
Support assets transferred to the municipality	5.0	4.0	6.7	0.3	NA	14.1
Give financial assistance directly to the employees	22.0	42.1	8.9	58.7	NA	76.2
Support otherwise	11.4	8.2	3.0	4.5	NA	22.0
<i>Of those that have or support in some form(s):</i>						
Users not only employees and their families	55.6	38.7	41.9	29.4	NA	62.3
Receive payments from the users	61.8	10.1	37.6	57.3	NA	56.9

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NA = not available

Table 4.2 Social Asset Provision - General Manager's Perspective

<i>How many firms, % of total 404 firms surveyed...</i>	Housing	Medical care	Daycare	Recreation	Other	<i>At least one</i>
Have in 2003	39.5	78.5	11.9	25.9		
Spent money on municipal assets in 2002	11.6	15.4	16.6	5.7	16.3	34.2
<i>Of those who have:</i>						
Deem it profitable	1.9	1.3	2.1	4.8		
Want to get rid (sell or transfer)	70.7	12.4	46.8	29.4		
<i>Of those who want to get rid of:</i>						
Local authorities would agree to accept	42.7	35.9	63.6	40.0		
Have legal or admin. barriers to selling	38.9	35.9	31.8	23.3		
<i>In case of transfer to municipality:</i>						
Tax burden will						
decrease	19.6	10.8	16.7	18.3		
not change	62.7	68.3	64.6	65.4		
increase*	8.9	7.0	8.3	5.8		
Relations with municipality will						
worsen	8.2	5.4	4.2	5.8		
not change	74.7	81.0	87.5	76.0		
improve	7.6	2.5	4.2	6.7		
<i>In case of sale:</i>						
Tax burden will						
decrease	19.6	11.1	18.8	17.3		
not change	55.7	62.5	56.3	62.5		
increase	6.3	6.4	6.3	3.9		
Relations with municipality will						
worsen	12.03	7.3	18.8	15.4		
not change	66.5	75.2	70.8	71.2		
improve	4.4	1.6	0.0	0.0		

\*the rest is "difficult to say"

Table 4.3 Investment and Divestment of Social Assets during Last 3 Years- General Manager's Perspective

<i>How many firms, % of total 404 firms surveyed...</i>	Housing	Medical care	Daycare	Recreation	Other	<i>At least one</i>
Invested during the last 3 years	26.2	43.8	9.9	18.2	24.8	64.1
Reasons for investment						
<i>% of those that invested:</i>						
Build new assets	35.9	0.6	0.0	15.1		
Expand existing service	7.6	24.3	12.5	20.6		
Start providing new service	8.5	9.0	5.0	4.1		
Replace old equipment	21.7	52.5	55.0	42.5		
Other (mainly repair)	26.4	13.6	27.5	17.8		
Divested during the last 3 years	30.2	2.2	13.6	4.5	7.4	38.4
Reasons for divestment						
<i>% of those that divested:</i>						
Asset was an excessive burden for the firm	50.0	66.7	54.6	72.2		
Had an opportunity to sell it profitably	1.6	0.0	1.8	11.1		
Local or regional administration agreed to accept it	33.6	33.3	32.7	16.7		
Other (e.g. privatization to workers)	14.8	0.0	10.9	0.0		

Table 4.4 Social Asset Provision – Capacities

Asset/ service	On average per firm that reported:			
	Capacity in 1990	1990 capacity divested	Capacity in 2002	Of the total number of users in 2002, other than employees
Housing	97965 m2	74.7%	11509 m2	41%
Medical care	NA	12.9%	NA	21%
Daycare	576 places	86%	216 places	38%
Recreation facilities	NA	NA	NA	37%

NA= not available

Table 4.5 Employment in Non-production Divisions

	Percentage of firms employing	Absolute number of employees			Relative to total employment, percentages		
		Mean	Conditional mean	Max	Mean	Conditional mean	Max
Housing	33.4	15.1	44.9	1500	0.6	1.9	31.1
Medical care	51.7	8.4	11.5	300	0.5	0.6	6.1
Daycare	12.1	7.8	63.6	450	0.4	3.1	14.0
Recreation	17.1	6.8	39.5	845	0.2	1.3	8.5
Catering service	59.9	21.1	34.7	1100	1.0	1.6	8.8
Children's camps	13.9	4.5	31.6	232	0.2	1.4	13.3
Sports	22.8	7.9	33.8	1100	0.1	0.6	7.0
Culture	14.1	4.9	33.8	380	0.1	0.8	4.0
Other	16.6	5.9	35.0	504	0.3	1.5	24.5

Table 5.1 Infrastructure by Size Categories

Number of employees	Percentage of firms...					
	producing heat	producing electricity	owning rail cars	supporting road construction	supporting heating networks	supporting any of the infra items
<500	72.9	1.4	11.4	27.1	17.1	44.3
500-800	67.7	4.6	20.0	17.7	11.5	39.2
800-1500	78.7	3.7	24.1	21.3	14.8	37.0
1500-5000	87.8	2.7	43.2	29.7	24.3	50.0
>5000	80.0	25.0	70.0	45.0	30.0	60.0

Table 5.2 Infrastructure by Federal Districts

Federal district	Percentage of firms...			
	producing heat	producing electricity	owning rail cars	giving support to road construction
Central	75.4	4.2	10.2	16.8
North West	80.9	10.6	14.9	20.4
South	91.3	0.0	13.0	38.5
Volga	75.4	1.6	29.5	25.0
Urals	71.4	4.8	28.6	36.2
Siberia	62.5	2.5	20.0	23.5
Far East	77.8	0.0	11.1	38.5
Total	75.7	4.5	17.1	24.0

Table 5.3 Infrastructure by Industries

Industry	percentage of firms producing heat	percentage of firms producing electricity	percentage of firms owning rail cars	percentage of firms supporting road construction
Power and fuel	80.0	40.0	100	20.0
Iron and steel	81.8	22.7	100	45.5
Chemicals	66.7	3.7	75	37.0
Machinery	66.7	0.0	37.9	20.6
Forestry, paper	86.1	11.1	88.9	36.1
Construction materials	80.0	4.4	66.7	22.2
Light industry	68.2	0.0	0	11.4
Food processing	93.3	6.7	37.5	25.0
Other	54.2	0.0	25	16.7

Table 5.4 Heating

	Boilers
% of firms that have:	75.74
<i>Of those who have:</i>	
Provide heat to outsiders	56.23
Get profit from selling heat	36.90
Want to get rid of boilers (sell or transfer)	14.14
Local authorities would agree to accept	33.33
Have legal or admin. barriers to selling	20.74
<i>In case of transfer to municipality:</i>	
Tax burden will decrease	14.52
Not change	56.77
Increase*	8.58
Relations with municipality will	
Worsen	11.18
Not change	61.51
improve	3.95
<i>In case of sale:</i>	
Tax burden will decrease	12.87
Not change	58.09
increase	6.60
Relations with municipality will	
Worsen	11.55
Not change	64.36
improve	0.33

Table 5.5 Interruptions in the Delivery of Basic Infrastructure

	percentage of firms that experienced interruptions in	Of those: percentage of firms that deem the interruptions as significant	Mean / median length of interruptions, days
electricity	38.61	48.75	7.3 / 2
water	29.95	32.00	8.1 / 3
telephone	30.94	39.06	8.6 / 5
gas	10.5	39.13	18.1 / 3
heating	10.17	30.43	12.5 / 7

Table 5.6 Use and Quality of Outside-provided Infrastructure

	percentage of firms that use outside provided service	% of firms that asses the quality as good or satisfactory	% of firms that consider the quality improved or stayed constant
Electricity	98.3	96.7	91.9
Heat	43.6	90.3	86.4
Gas	70.3	96.5	90.1
water	83.2	94.6	92.2
telephone	95.8	91.9	92.5
trash collection	60.1	96.3	94.2
law enforcement	36.7	93.9	93.9
post	93.6	98.4	95.2
roads	86.1	67.3	74.1
railways	78.6	91.7	87.3
air transport	100.0	97.22	98.6
water transport	100.0	100.0	91.1

Table 5.7 Support to Public Infrastructure

	percentage of firms that give financial support to maintenance or construction of	percentage of firms that give non-financial support to maintenance or construction of	Percentage of firms that give either kind of support to maintenance or construction of	If firm owns, percentage of firms that give either kind of support to maintenance or construction of
municipal heating system	10.9	10.2	16.6	18.0
municipal electricity system	7.7	7.7	11.9	11.1
local gas network	6.5	4.2	8.4	
municipal water network	10.6	9.4	17.3	
municipal waste collection	10.9	7.7	15.4	
roads outside the plant area	19.9	10.4	24.1	
railroads not owned by the firm	5.5	4.2	7.7	12.2

Table 6.1 Administrative regulations or legal obstacles

Are there any administrative regulations or legal obstacles that prevent you from selling the following assets to a private party?	yes	no	total # of answers
Boiler? (if has a boiler)	20.88	79.12	297
Housing? (if has housing)	33.55	66.45	155
Medical facilities? (if has medical facilities)	24.26	75.74	305
Daycare? (if has daycare)	34.04	65.96	47
Recreational facilities (if has them)	19.80	80.20	101

Table 6.2 Working Days Spent by Management in Dealing with Authorities

	obs.	mean	SD	median	max	% of firms where it is 2 weeks or more
Top manager on question about public infrastructure (if has it)	340	17.31	23.69	10	150	51.91
Top manager with licensing authorities	397	9.05	19.81	2	200	33.50
Top manager with certification agency	397	8.87	21.88	2	255	30.98
Top manager with customs	398	9.18	25.48	0	264	26.63
Head engineer with fire inspectors	398	7.54	16.94	3	200	30.15
Head engineer with epidemiology (SES) inspection	398	8.07	20.68	3	300	26.88
Personnel manager with labor regulating agencies	373	14.30	23.75	7	200	44.77

Table 6.3 Bribes as Percent of Revenues

	obs.	mean	SD	min	max	# do not know	# refuse to answer
Estimate for enterprises like yours	173	0.82851	2.24	0	20	163	64

Table 6.4 Distribution of Bribe Estimates

% bribes as a share of revenue	0	0<B<=0.5	0.5	1	1<B<5	5	15	20
# answers	104	15	8	23	11	10	1	1
%	60.12	8.67	4.62	13.29	6.36	5.78	0.58	0.58

Table 6.5 Government's Special Treatment

	yes	no	total # of answers
Did you get:			
Subsidized loans?	8.19	91.81	403
Tax breaks?	15.63	84.37	403
Tax delays?	48.64	51.36	403
Direct subsidies?	5.46	94.54	403
Do you know of cases when certain enterprises in your region receive competitive advantages because of tax breaks from local or regional government?	32.25	67.75	400

Table 6.6 Capture: To what extent the following entities influence laws and regulations that affect your enterprise?

	No influence	Little influence	Lots of influence	Not relevant	Do not know	Total
	%	%	%	%	%	Obs.
<b>Municipal level</b>						
Your enterprise	52.4	31.0	9.7		7.0	403
Your domestic competitors	53.0	19.3	7.9	3.5	16.3	404
Your foreign competitors	63.9	10.2	4.5	4.5	17.1	404
Unions	64.5	17.6	4.0		13.9	403
<b>Regional level</b>						
Your enterprise	61.1	26.7	7.7		4.5	404
Your domestic competitors	54.0	22.3	7.9	2.0	13.9	404
Your foreign competitors	61.1	11.9	5.9	3.7	17.3	404
Unions	66.8	17.6	3.2		12.4	403
<b>Federal level</b>						
Your enterprise	73.8	14.6	5.9		5.7	404
Your domestic competitors	49.3	23.5	10.4	1.7	15.1	404
Your foreign competitors	49.8	17.1	10.4	3.2	19.6	404
Unions	61.0	20.4	4.5		14.1	403

Table 6.7 Medians of Working Days Spent by Management in Dealing with Authorities by Size Categories

Number of employees	on questions about public infrastructure	licensing authorities	certification agency	customs	fire inspectors	Epidemiology (SES)	labor regulating agencies
<500	12	2.5	3	0	3	2	10
500-800	9	3	2	0	3	2.5	5
800-1500	10	2	2.5	2	3	3	7
1500-5000	5	2.5	2	0	3	3	6.5
>5000	20	5	5	3	10	6	10

Table 6.8 Medians of Working Days Spent by Management in Dealing with Authorities by Federal District

	on questions about public infrastructure	licensing authorities	Certification agency	customs	fire inspectors	epidemiology (SES)	labor regulating agencies
Central	7	3	3	0.5	3	3	5
North-West	10	5	3	1	3	3	5
South	7	3	1	0.5	2.5	2	3
Volga	10	0	0	0	4	5	10
Urals	10	5	5	0	3	2	3
Siberia	9	0	2	0	3	2	6
Far East	30	1	5	0	10	10	36

Table 7.1 Average real<sup>1</sup> values of sales and profit in thousand rubles, 1998-2002

	1998	1999	2000	2001	2002
Sales	360223	460273	493505	429882	449303
Profit before interest payments and taxes*	44950	76725	67841	59095	54409
Losses before interest payments and taxes*	-27735	-10427	-21781	-18973	-12510
Profit/sales, %	13.4	14.6	14.4	19.2	11.1
Loss/sales, %	-22.3	-14.9	-15.2	-13.2	-20.3
Profits before taxes <sup>#</sup>	29525	52165	55027	47933	32877
Losses before taxes <sup>#</sup>	-125554	-29226	-34999	-30487	-27495
Tax on profit	10127	13956	14772	12868	16422
After-tax profit**	22071	36448	35110	30584	20442
After-tax losses**	-117854	-29176	-40544	-35317	-27567

<sup>1</sup> In 2000 values. The deflator is the producer price index, values: 1998:48, 1999:75.2, 2000:100, 2001:114.8, 2002:132.3. Source: The BEA.

\* income from selling goods and services minus production costs minus overhead costs (kommercheskie i upravlencheskie rashody).

# the former plus interest received and paid plus non-production income and costs.

\*\* the former minus income tax and some emergency (chrezvychainye) income/costs.

Table 7.2 Median real<sup>1</sup> value of sales and profit in thousand Rubles, 1998-2002

	1998	1999	2000	2001	2002
Sales	127906	140739	156162	136030	154735
Profit before interest payments and taxes*	12503	18157	18343	15978	17294
Losses before interest payments and taxes*	-7763	-6063	-5145	-4482	-6333
Profit/sales, %	10.3	12.2	10.8	10.2	8.3
Loss/sales, %	-12.0	-7.3	-6.8	-6.0	-7.8
Profits before taxes <sup>#</sup>	9604	15460	16939	14755	10066
Losses before taxes <sup>#</sup>	-11535	-5547	-3773	-3287	-6885
Tax on profit	1804	3140	3454	3009	1467
After-tax profit**	7892	12122	10992	9575	7091
After-tax losses**	-13719	-6709	-6615	-5762	-5688

<sup>1</sup> In 2000 values. The deflator is the producer price index, values: 1998:48, 1999:75.2, 2000:100, 2001:114.8, 2002:132.3. Source: The BEA.

\* income from selling goods and services minus production costs minus overhead costs (kommercheskie i upravlencheskie rashody).

# the former plus interest received and paid plus non-production income and costs.

\*\* the former minus income tax and some emergency (chrezvychainye) income/costs.

Table 7.3 Average real investment, thousand rubles, 1998-2000

	1998	1999	2000	2001	2002
In fixed capital	21685	33227	33493	29175	26128
In intangible assets	542	465	339	295	151
In other non-financial assets	54	445	1698	1479	1528

Table 7.4 Sources of investment in 2002, %

	Own funds	Bank loans	Public funds	Share issue	Obligations	Other
Nr of firms using	384	191	100	93	90	19
Mean	77.5	16.5	1.7	0.8	0.4	3.6
Median	100	0	0	0	0	0
Max	100	100	100	100	10	100

Table 7.5 The proportion of various forms of payments, %.

	Cash	Bank payments	Veksels	Offsets	Barter with private sector	Barter with public sector
Mean	8.5	74.6	4.3	9.0	1.8	1.2
Median	1.5	84	0	2	0	0
Max	100	100	100	100	90	55

Table 7.6 Age of machinery

	Obs.	Mean	Std. Dev.
Less than 5 y	389	10.36548	15.67676
5-10 y	389	16.11414	19.50531
10-20 y	389	31.98054	25.82078
over 20 y	389	41.51671	31.7101

## Appendix 1. Legal Basis for the Transfer of Social Assets to Municipalities<sup>24</sup>

In spite of the obvious importance of large scale transfer of social assets kept by enterprises under ownership of municipalities, there was never a federal law regulating this process. Instead, the reform was regulated by series of legal acts, enactments, decrees etc at all levels of government. Many important acts were introduced with delays, sometimes only several years after the start of actual process of transfer, when the most acute problems had surfaced.

The formation of municipal ownership over social and infrastructure assets started before mass privatization in 1991-1992. *Enactment by Higher Council of Russian Federation № 3020-1 on December 27, 1991* established the division of state ownership into federal ownership, ownership of subjects of federation and municipal ownership. This act defined the categories of assets which should be transferred into municipal ownership irrespective of who owned them or had them on their balance previously. They were:

- housing and other buildings
- enterprises servicing housing and other social assets
- infrastructure objects, city transport etc

Another *Enactment by President № 114-RP on March 18, 1992* established the procedures for the transfer of social and infrastructure assets, according to which municipal level property committee compiled the list of objects to be included into municipal ownership and higher level government confirmed the list.

As for the social assets held by enterprises, enterprises never owned them during soviet time as all assets were state owned, but they kept assets on their balance sheet. With the start of mass privatization of the enterprises these assets should have been either privatized or transferred to municipality. *Presidential Decree № 8 on January 10, 1993* defined the list of objects which could be included into the list of privatized assets of the firm with the requirement of keeping their profile. These included social and cultural objects (health, education, culture and sports facilities), consumer services (laundry, hairdressers etc.). At the same time Decree defined list of assets that could not be privatized by firms:

- Buildings occupied by trading, catering, consumer services establishments, organizations of social security for children, elderly and disabled
- Daycare and summer children's facilities
- Regional transport and electricity infrastructure
- Medical facilities servicing population of the city/region
- Housing and related service facilities

All these assets were defined to be under federal state ownership and should have been transferred to municipal ownership. Further, several legal acts of State Property Committee were issued to clarify the procedures for transferring the assets listed above from firms to municipalities (again, municipalities were responsible for compiling the list of objects to be transferred to municipal ownership). The Decree and further acts also provided for a possibility for agreements between municipality and a firm about joint usage and financing of transferred assets. There were also other provisions for the ways to finance transferred objects. *The State Privatization Program* introduced at the end of 1993 did not add

<sup>24</sup> Based on the book by Leksin and Shvetsov "New Problems of Russian Cities", Moscow, 1999

anything new to previous legal acts except that it set the time limit: municipality was obliged to accept non-privatized social assets during six months after the acceptance of firm's privatization plan.

There were still a lot of ambiguities and poorly defined aspects of reform left. The *Enactment by the Government of Russian Federation № 235 on March 7, 1995* was aimed at clarifying these issues. It extended the list of assets that could not be privatized and should be transferred to municipalities (mainly infrastructure objects, such as sewage and water supply systems, boilers, heating and electricity networks, servicing divisions of infrastructure and social objects etc). At the time when mass privatization was already close to an end, the Enactment defined that objects to be transferred to municipality should be included into privatization program as a separate list. The adoption of privatization plan of a firm then in practice initiated the process of transfer of these assets to municipal ownership.

Further problems and questions arising during the process of municipalization of social assets were solved through multiple minor acts issued by different government bodies at all levels of government and in some cases through courts.

## Appendix 2. Survey preparation: questionnaire and pilot interviews

The data was gathered in April-June 2003 through structured face-to-face interviews by GfK Russia's regional interviewer network. In each firm, three top managers were interviewed: the general manager, a manager responsible for the social sphere of the firm, and a manager aware of issues related to infrastructure, mostly chief engineer. In addition, the fourth part of the questionnaire was left for the chief accountant for self-completion. The issues covered were:

### General manager

- Firm background: ownership, establishment, main line of business
- Infrastructure and social services
- Liquidity, finance, investment, divestment
- Business environment, sales, competition

### Chief engineer

- Infrastructure
- Transport

### Social manager

- Social services
- Employment

### Chief accountant

- Costs and balance sheet values of social assets
- Basic productivity information

Questionnaire preparation started in the end of 2001, based on and with help from teams behind several surveys in Russia and elsewhere. As a result, questions in the social and infrastructure parts are mostly novel, in other parts we utilized previously tested questions to the extent it was possible.

During questionnaire preparation, we first met with several company representatives in informal discussions in Novgorod in October 2001 to reach a better focus in our study. Next, in February 2002, we held a round table discussion with local businesses and administration in Ivanovo. We also met with several Russian specialists to ensure correct focus of the survey.<sup>25</sup>

In summer 2002, we proceeded to actual pilots in co-operation with the interview company VTsIOM. Altogether, three pilots were carried out:

### Moscow, June-July 2002

- 4 firms, in electronics, metallurgy and textile industries
- Main results: need to shorten the questionnaire and divide it into 4 parts

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<sup>25</sup> We want to express our gratitude to the Finnish consulate in St Petersburg for the arrangements in Novgorod. We also thank Igor N. Zimin from the World Bank Moscow office and Deputy Chairman Grigori Oinvid, The Government of Russian Federation Federal Fund for Small Business Support, for excellent organization of the round table in Ivanovo.

Nizhnyi Novgorod and Vladimir, September 2002

- 3 firms in Nizhnyi Novgorod, 4 firms in Vladimir, in chemicals, machine building, food, textiles, printing and transport industries
- Main results: social sphere still important within the firms, infrastructure less so, all finance and accounting details need to be asked from the accountant

Moscow, January-February 2003

- 3 firms, in construction materials, machine building and textile industries
- Main results: cutting down the number of especially accounting questions, devising a screening procedure to use with the general manager to find the right persons to answer the other parts

After several rounds of revision, GfK Russia still tested the questionnaire in a few firms before the final version was launched in April 2003 for interviewer training and consequent rollout of the survey in the regions. An interviewer manual was prepared to accompany the training.

## Appendix 3. List of Regions

Name of the region	All regions		Selected regions
	Number of Firms	percentage of Firms	percentage of Firms
Adygeya republic	7	0.2	
<b>Altai krai</b>	54	1.53	2.23
Amur oblast	6	0.17	
<b>Arkhangelsk oblast</b>	50	1.42	1.93
Astrakhan oblast	11	0.31	
Bashkortostan republic	108	3.07	
<b>Belgorod oblast</b>	49	1.39	1.89
<i>Bryansk oblast</i>	51	1.45	
Buryat republic	12	0.34	
<b>Chelyabinsk oblast</b>	112	3.18	4.33
Chita oblast	5	0.14	
<b>Chuvash republic</b>	47	1.33	1.93
<i>Dagestan republic</i>	14	0.4	
Evrei autonomous oblast	4	0.11	
<b>Irkutsk oblast</b>	59	1.67	2.06
<b>Ivanovo oblast</b>	65	1.85	2.61
<i>Kabardino-Balkar republic</i>	9	0.26	
<b>Kaliningrad oblast</b>	22	0.62	0.92
<b>Kaluga oblast</b>	36	1.02	1.51
<i>Kamchatka oblast</i>	8	0.23	
<i>Karachaevo-Cherkess republic</i>	7	0.2	
<b>Karelia republic</b>	25	0.71	0.84
<b>Kemerovo oblast</b>	79	2.24	3.19
<b>Khabarovsk krai</b>	30	0.85	1.22
Khakasia republic	9	0.26	
Khanty-Mansi autonomous okrug*	0	0	
<b>Kirov oblast</b>	57	1.62	2.10
<i>Komi republic</i>	29	0.82	
<b>Kostroma oblast</b>	29	0.82	1.22
Krasnodar krai	95	2.7	
<b>Krasnoyarsk krai</b>	74	2.1	2.86
Kurgan oblast	20	0.57	
Kursk oblast	46	1.31	
<b>Leningrad oblast</b>	44	1.25	1.64
<b>Lipetsk oblast</b>	41	1.16	1.68
<i>Mari-El republic</i>	24	0.68	
<b>Mordovia republic</b>	27	0.77	1.09
<b>Moscow city</b>	201	5.71	7.73
<b>Moskow oblast</b>	183	5.19	7.36
Murmansk oblast	18	0.51	
Nizhny Novgorod oblast	114	3.24	
<i>North Osetiya republic</i>	10	0.28	
Novgorod oblast	26	0.74	

Novosibirsk oblast	52	1.48	
<b>Omsk oblast</b>	32	0.91	1.30
<b>Orenburg oblast</b>	35	0.99	1.47
Oryol oblast	29	0.82	
Penza oblast	42	1.19	
<b>Perm oblast</b>	96	2.72	3.61
<b>Primorskii krai</b>	48	1.36	1.68
Pskov oblast	22	0.62	
<b>Rostov oblast</b>	77	2.19	2.86
Ryazan oblast	27	0.77	
<i>Sakha (Yakutia) republic</i>	5	0.14	
<i>Sakhalin oblast</i>	5	0.14	
<b>Samara oblast</b>	80	2.27	3.11
Saratov oblast**	0	0	
<b>Smolensk oblast</b>	37	1.05	1.51
<b>St. Petersburg city</b>	141	4	5.51
<b>Stavropol krai</b>	31	0.88	1.18
<b>Sverdlovsk oblast</b>	154	4.37	6.26
<i>Tambov oblast</i>	31	0.88	
<b>Tatarstan republic</b>	100	2.84	3.78
<b>Tomsk oblast</b>	28	0.79	0.97
Tula oblast	56	1.59	
<i>Tuva republic</i>	1	0.03	
Tver oblast	61	1.73	
<b>Tyumen oblast</b>	34	0.97	1.09
<b>Udmurtia Republic</b>	39	1.11	1.60
<b>Ulyanovsk oblast</b>	44	1.25	1.85
<b>Vladimir oblast</b>	68	1.93	2.73
<b>Volgograd oblast</b>	60	1.7	2.40
<b>Vologda oblast</b>	50	1.42	1.89
<b>Voronezh oblast</b>	60	1.7	2.40
<b>Yaroslavl oblast</b>	59	1.67	2.44
<i>o/w Koryak autonomous okrug</i>	2	0.06	
<b>Total</b>	<b>3523</b>	<b>100</b>	<b>100</b>

\*Goskomstat database contains only extraction and energy firms for this region

\*\* Goskomstat database does not contain employment information for the year 2000 for the firms in this region

### Appendix 4 Costs and Income from Social Services in 2002 (accounting figures relative to wage bill, percentages)

Type of Services	Type of costs/income	% of firms were positive	Mean	Standard Deviation	Maximum	Number of Observations	Minimum	Mean	Median
								For firms where costs/income are positive	
Housing	Current costs*	39.45	3.42	30.32	507.10	289	0.007	8.66	1.73
	Subsidies to workers	12.15	0.21	1.37	16.67	288	0.001	1.70	0.33
	Support of housing transferred to municipality	8.65	0.45	2.59	28.08	289	0.129	5.24	1.24
Medical	Other costs	2.68	0.03	0.28	4.11	298	0.019	1.02	0.34
	Current costs*	66.44	1.04	6.59	109.30	289	0.004	1.57	0.50
	Subsidies to workers	38.95	0.64	6.82	114.29	285	0.004	1.65	0.17
Daycare	Support of municipal medical sphere	6.25	0.01	0.06	0.53	288	0.009	0.18	0.10
	Other costs	6.44	0.03	0.17	2.49	295	0.002	0.42	0.27
	Current costs*	15.12	1.12	8.96	136.73	291	0.160	7.40	2.48
Recreation	Subsidies to workers	10.00	0.12	1.36	22.95	290	0.003	1.21	0.30
	Support of municipal daycare	5.88	0.06	0.50	6.47	289	0.029	0.98	0.13
	Other costs	4.03	0.01	0.16	2.73	298	0.011	0.32	0.06
Income received from	Current costs*	20.34	0.93	8.63	144.19	290	0.036	4.56	1.07
	Subsidies to workers	44.37	1.13	14.00	235.96	284	0.005	2.54	0.29
	Support of municipal recreation sphere	1.04	0.00	0.01	0.14	288	0.007	0.05	0.01
Total cost (all of the above)	Other costs	4.36	0.18	2.00	33.56	298	0.070	4.17	1.67
	<b>Total cost (all of the above)</b>	<b>91.98</b>	<b>7.71</b>	<b>41.24</b>	<b>616.39</b>	<b>262</b>	<b>0.004</b>	<b>8.38</b>	<b>2.38</b>
	Housing	42.16	2.77	16.50	244.50	287	0.003	6.58	0.69
Total income (all of the above)	Medical	5.54	0.07	0.87	14.68	289	0.004	1.32	0.39
	Daycare	12.71	1.01	8.45	92.82	291	0.011	7.94	0.50
	Recreation	19.57	0.59	6.33	102.85	276	0.001	3.01	0.30
	<b>Total income (all of the above)</b>	<b>55.02</b>	<b>4.08</b>	<b>19.54</b>	<b>244.50</b>	<b>269</b>	<b>0.005</b>	<b>7.41</b>	<b>0.94</b>

\*Current costs of running the assets owned by the firm

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