Ownership concentration in Russian industry

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Using a unique dataset built for the World Bank's Country Economic Memorandum, we find that a relatively small number of tycoons ('oligarchs') control a substantial share of Russia's economy. Oligarchs seem to run their empires more efficiently than other Russian owners. While the relative weight of their firms in Russian economy is huge, they do not seem to be excessively large by the standards of the global economy where most of them are operating. However, a majority of the Russian population deems their property rights illegitimate, which creates a fundamental problem for building a democratic and prosperous Russia.

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Introduction

A relatively small number of Russian industrial tycoons, or "oligarchs," control a substantial share of Russia's economy. Are these oligarchs likely to be agents of economic and political change, or opponents of such change?

Some consider the oligarchs to be the engine of Russia's economic recovery and institutional reform since 1999 (Boone and Rodionov, 2002, Aslund, 2004). As oligarchs are the only feasible counterweight to the predatory and corrupt Russian bureaucracy, they are a unique constituency that is both willing and able to lobby for development of market institutions. They are also the only Russian owners who can afford to invest and restructure Russian industries in a very hostile business environment. To others, the oligarchs have weakened Russia's economy by stripping assets from Russian firms and sending money abroad, and by bringing the ideas of private property and corporation into disrepute. In addition, the oligarchs have also arguably weakened Russia's democratic institutions, by causing tremendous inequality and through their capture of federal and state politics (Stiglitz, 2002, Braguinsky and Myerson, 2003, Goldman, 2004, Hoff and Stiglitz, 2004).

In this paper, we seek to understand the role of oligarchs in Russia's transition to capitalism. We use a unique data set to describe who Russia's oligarchs are, what assets they control, and how well they manage their assets. We also discuss the implications of high concentration of wealth for Russia's reforms. To many readers, the term "oligarchs" may have a negative connotation. We do not use the term to imply a legal, economic or moral judgment on Russia's richest businessmen, but merely as the conventional and convenient term for referring to Russian industrial tycoons.

What we know about Russian oligarchs

Who are the oligarchs?

High concentration of economic power in Russia has attracted public attention after implementation of the loans-for-shares scheme. In the middle of 1990s Russian government sold several valuable assets to private owners at a very low price for support of incumbent President in the elections of 1996 (Freeland, 2000). In its current meaning in Russia, the term "oligarch" denotes a large businessman[1] who controls sufficient resources to influence national politics.[2] It is not clear who first used the term oligarch to describe the newly emerged class of Russian tycoons. Kommersant (2003) refers to a pro-market politician Boris Nemtsov (then a governor of Nizhny Novgorod region, later to become a deputy prime-minister) and a journalist Alexander Privalov (*Izvestiya* daily, currently *Expert* weekly), both introducing the term in 1994-95.

There is no ultimate list of Russian oligarchs. Given the multi-layered and non-transparent ownership structure of Russian companies, compiling a list of oligarchs takes a lot of time and effort. On the other hand, any such list has to be constantly updated: there is substantial vertical mobility among Russia's richest. For example, out of seven or eight business groups that dominated Yeltsin's Russia, two were destroyed by the 1998 crisis (SBS and Inkombank), one took a hit but survived (Roskredit-cum-Metalloinvest), two have their leaders in exile (Berezovsky and Gusinsky) and one – in prison (Khodorkovsky). Other problems are related to the vagueness of the definition of oligarch. First, there are different views on how to measure tycoons' power rather than wealth (De Long, 1998, emphasizes this distinction with regard to US robber barons). Second, it is not clear whether to count public officials and CEOs of large public companies as oligarchs. On the latter issue we stick to the definition of oligarchs as of private owners.

The first list of oligarchs probably belongs to Boris Berezovsky (by all accounts, an oligarch himself) who, in his 1996 interview to Financial Times, named 7 bankers that controlled about 50% of productive assets of Russian economy. Since then there have been numerous lists, some even endorsed by oligarchs themselves. As recently as in June 2003, Vladimir Potanin's Interros Holding Company supported a book by Kommersant (2003) that included the most comprehensive list of oligarchs with their profiles under an optimistic title "Oligarch – that has a proud sound" (a parody of Soviet writer Maxim Gorky's "Man – that has a proud sound").

All the oligarch rankings identify similar sets of individuals. Table 1 presents a list that we built based on the study of ownership concentration for the World Bank's Country Economic Memorandum (CEM) for Russia, 2004 (World Bank, 2004). The World Bank project identified the structure of control for about 1700 large firms in 45 sectors of Russian economy in the summer of 2003. The sectors were drawn from mining, manufacturing, construction, and market services.[3] The sectors were selected based on their size in order for the survey to cover as large a portion of the economy as possible. The 45 sectors represent 40 percent of Russian employment; in industry (mining and manufacturing), the selected 32 sectors represent 50 percent of employment and 77

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[1] No oligarch ranking includes a female oligarch. The richest Russian businesswoman is probably Elena Baturina, the wife of the mayor of Moscow (Forbes Russia, 2004), but she is usually not considered an oligarch.

[2] This is perfectly in line with the original meaning of the term introduced by Plato in "The Republic" and Aristotle in "Politics", as well as the modern understanding as in Ramseyer and Acemoglu. Russian elite's thinking of oligarchs has also been affected by Jack London's "The Iron Heel" anti-utopia on the rise of robber barons oligarchy that was widely publicized in Soviet Times.

[3] The World Bank sample included the largest five-digit OKONKh (similar to 4-digit ISIC) sectors that can be described as single "markets" or "sectors."

percent of sales. The next stage was to target the largest establishments and firms within the sectors. In industry, for example, our firms represented 35 percent of employment and 85 percent of sales of the selected sectors, and therefore 60% of Russia's total industrial output.[4] Finally, economists and business journalists interviewed investment banks, consultancies, business advisors, information agencies and other institutions. They identified the main controlling owners of each firm and the portion of the firm they owned, and also any subsidiaries owned by the firms. This in turn generated new sets of firms to be investigated – subsidiaries and corporate owners. A chain would stop downward when a firm owns no subsidiaries, and would stop upwards when an "ultimate owner" or "controlling party" was identified. The data were checked and supplemented with publicly accessible information.

With these data, we have tracked the degree of control up the pyramidal structures to construct a list of ultimate owners. We went through more than 500 intermediate owners, and eventually arrived at the list of almost 700 ultimate owners which included foreign firms, individuals, federal government or regional governments. We merged individual owners into a group whenever they appeared together as ultimate owners for every firm in which they had non-trivial ownership.[5] We merged individual owners into a group whenever they appeared together as ultimate owners for every firm they had a non-trivial ownership of. This approach has helped to establish the basis for stable business groups (usually direct investment companies, registered as partnerships offshore with 2-7 partners). We also made some further adjustments. In particular, we merged the holdings of Vladimir Potanin and Mikhail Prohorov (who jointly own Norilsk Nickel, by far the most valuable asset of Potanin's Interros). We have also merged Popov, Melnichenko and Pumpiansky's holdings; even though these individuals started delineating their assets within a group already in 2003, the survey participants believed that in summer 2003 they still exercised joint control over the group's assets.

We ended up with 627 ultimate owners or groups of owners (432 in industry). In order to rank the owners by size, we calculated the total sales and employment controlled by each owner using a proportional rule. E.g., employment controlled by group i is $E_i = \Sigma_j \alpha_{ij} E_j$, where α_{ij} is the share of control that group i has over firm j, and E_j is the employment of firm j. As most oligarchs hold majority or supermajority stakes in their firms, our choice of proportional rather than majority rule provides a lower bound on concentration.

Table 1 includes 22 largest private domestic owners in this dataset. The threshold is as follows: either total annual sales revenues controlled by a particular group of owners are above 20 billion rubles (USD 700 million), or total employment controlled by the group are above 20 thousand people. In both sales and employment rankings, the 23rd largest private owner was Ural Rakhimov, the son of Bashkir Republic's President, who held largest stakes in Bashkir firms but none outside the region.

The list in Table 1 was constructed from bottom up, by summing up control over a large sample of industrial enterprises. We did not have any list to start with. Yet, Table 1 is consistent with other

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[4] This paper pays special attention to industry (defined as mining and manufacturing) for two reasons. First, industry plays a crucial role in Russian economy; after adjusting for transfer pricing, industry accounts for 65 percent of Russian GDP (World Bank, 2004). Second, in industry it is easier to build comparable measures of productivity.

[5] The issue of joint voting/control is a serious methodological challenge for every study of concentration of ownership and control (Barca and Becht, 2001, pp.38-39). For example, consider the stakes controlled by Bill and Melinda Gates, Paul Allen, and Steven Ballmer in Microsoft in 1996 (LaPorta et al, 1999). All the four individuals disclose their stakes (38% in total) separately and report that they do not have any commitment to vote in an agreed way. It seems reasonable to consider the group as a single blockholder. This is the approach followed by LaPorta et al. (1999), on the contrary, Becht (1999) assumes that Bill and Melinda Gates vote together, while Paul Allen, and Steven Ballmer may be separate owners.

oligarch rankings we are aware of. According to Forbes (2004), 19 individuals in Table 1 have personal wealth in excess of USD 1 billion; all but one groups have joint wealth of at least USD 0.7 bln. Our list is based on sales and employment rather than on wealth, as most companies are not listed or not actively traded and provides a good proxy for oligarchs' power. This explains why some of our groups do not show up in other rankings. Indeed, as the stock market is not developed, the market capitalization of their assets is well below its fair value; we expect them to be included in future Forbes rankings.

A few words of warning about this list are appropriate. Table 1 does not include the largest owners' interests in the industries outside our sample, so three clarifications are in order. First, we only account for a part of each conglomerate. Our comparisons with other studies of oligarch empires (in particular, with PSI Foundation, 2003) suggest that on average, we cover about 70% of each group's sales and employment; this is not surprising given that our sample covers 60% of Russian industry. Second, our ranking of oligarchs may be distorted in favor of oligarchs who have stronger presence in the 45 sectors we cover. Third, our ranking excludes a couple of groups whose main assets are in industries outside our sample (e.g. Alexander Lebedev of National Reserve Corporation).

Our methodology does not classify politicians, bureaucrats or executives of public companies as oligarchs. Unlike Hoffman (2003) and Kommersant (2003) we exclude Anatoly Chubais (CEO of nationwide electricity monopoly), Rem Vyakhirev (former CEO of Gazprom, the world's largest producer of natural gas), or Yuri Luzhkov (Mayor of Moscow). We assume that large companies with majority stakes of federal government are ultimately controlled by the federal government, even if most decisions are made by incumbent management. A good example of Kremlin's grip on power was the replacement of once-omnipotent Vyakhirev and his team shortly after Putin's election.[6] We have *not* merged regional governments with private owners that are related with regional officials. For example, Moscow mayor's wife Elena Baturina is considered to be a separate private owner different from the Moscow City Government, and so are Vice-Mayors of the Moscow City wherever they own firms individually. Similarly, Ural Rakhimov is also considered to be a private owner, rather than a representative of Bashkir regional government headed by his father.

Table 2 presents the breakdown of ownership of the firms in our sample. The oligarchs on our list control about 40 percent of the sample, measured by employment or sales. In extrapolating these percentages to state what share of the Russian economy as a whole is owned by oligarchs, it is wise to be cautious. Our sample is only a share of total Russian output, which suggests that the percentages may overstate the extent to which oligarchs control the economy, but the percentages are calculated using the proportional method, which tends to understate the influence of the oligarchs.[7] While we do not have firm-level value-added data, World Bank (2004) estimated value added by sector, and found that the sectors controlled by oligarchs add more value added per unit of output. Thus, the fact that oligarchs control 39 percent of sales probably implies that they control an even higher share of value added.

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[6] Forbes (2004) lists Vyakhirev as a billionaire presuming that he still keeps a large stake in the Gazprom. It is alleged though that he was forced to sell his shares when he was fired (Latynina, 2004). The federal government proved its credibility by the imprisonment of Yakov Goldovsky (CEO of Sibur, Gazprom's subsidiary) who was released only when he returned the assets he tunneled from Gazprom.

[7] We have also recalculated the size of groups based on majority (rather than proportional) rule – that is, adding up total sales (employment) of firms where a given group has a majority stake. This would increase the oligarchs' share to 43 percent in terms of sales and 47 percent in employment.

Table 1. Russian oligarchs. Source: World Bank (2004).

Senior partner(s)	Holding company / firm, major sector(s)	Employment, 000 (% sample)	Sales, R Bln (% sample)	Other rankings*	RSPP bureau, head of committee/taskforce (as of June 2004)
Oleg Deripaska	Base Element / RusAl, aluminum, auto	169 (3.9%)	65 (1.3%)	P, BR, DS, K, F	B, Railroad reform
Roman Abramovich	Millhouse / Sibneft, oil	169 (3.9%)	203 (3.9%)	S, BR, DS, K, H**, F	
Vladimir Kadannikov	AutoVAZ, automotive	167 (3.9%)	112 (2.2%)	BR, K	
Sergei Popov, Andrei Melnichenko, Dmitry Pumpiansky	MDM, coal, pipes, chemical	143 (3.3%)	70 (1.4%)	F	B, Financial markets (Mamut**)
Vagit Alekperov	Lukoil, oil	137 (3.2%)	475 (9.2%)	S, P, BR, DS, K, F	
Alexei Mordashov	Severstal, steel, auto	122 (2.8%)	78 (1.5%)	BR, DS, F	B, Customs and WTO accession
Vladimir Potanin, Mikhail Prokhorov	Interros / Norilsk Nickel, non-ferrous metals	112 (2.6%)	137 (2.6%)	B, S, P, BR, DS, K, F	B, Social and labor relations (Eremeev**)
Alexandr Abramov	Evrazholding, steel	101 (2.3%)	52 (1.0%)	F	B
Len Blavatnik, Victor Vekselberg	Access-Renova/TNK-BP, oil, aluminum	94 (2.2%)	121 (2.3%)	DS, F	B
Mikhail Khodorkovsky	Menatep/Yukos, oil	93 (2.2%)	149 (2.9%)	B, S, P, BR, DS, K, H, F	B, International affairs
Iskander Makhmudov	UGMK, non-ferrous metals	75 (1.7%)	33 (0.6%)	K	
Vladimir Bogdanov	Surgutneftegaz, oil	65 (1.5%)	163 (3.1%)	P, BR, DS, K, F	
Victor Rashnikov	Magnitogorsk Steel, steel	57 (1.3%)	57 (1.1%)		
Igor Zyuzin	Mechel, steel, coal	54 (1.3%)	31 (0.6%)		
Vladimir Lisin	Novolipetsk Steel, steel	47 (1.1%)	39 (0.8%)	F	B
Zakhar Smushkin, Boris Zingarevich, Mikhail Zingarevich	IlimPulpEnterprises, pulp	42 (1.0%)	20 (0.4%)		
Shafagat Tahaudinov	Tatneft, oil	41 (1.0%)	41 (0.8%)		
Mikhail Fridman	Alfa/TNK-BP, oil	38 (0.9%)	107 (2.1%)	B, S, P, BR, DS, K, F	B, Judiciary reform
Boris Ivanishvili	Metalloinvest, ore	36 (0.8%)	15 (0.3%)	P*	B, Land reform (Kiselev**)
Kakha Bendukidze	United Machinery, engineering	35 (0.8%)	10 (0.2%)	BR, K	B, Budget and taxes
Vladimir Yevtushenkov	Sistema/MTS, telecoms	20 (0.5%)	27 (0.5%)	S, P, BR, DS, K, F	B, Industrial policy, Pension reform (Yurgens**)
David Yakobashvili, Mikhail Dubinin, Sergei Plastinin	WimmBillDann, dairy/juice	13 (0.3%)	20 (0.4%)		
Total		1,831 (42.4%)	2,026 (39.1%)		

NOTES:

Each entry lists the leading shareholder(s) in a respective business group, the name of the holding company or the flagship asset, and one or two major sectors. We report several individual per group only when there is equal or near equal partnership.

Ranking is based on employment in the sample and may therefore be different from actual, as the sample disproportionally covers assets of different oligarchs. Employment and sales are based on official firm-level data for 2001. The exchange rate was $1=29 rubles.

RSPP stands for Russian Union of Industrialists and Entrepreneur, the leading lobbying organization for Russian business. B stands for RSPP Bureau membership (in total RSPP Bureau includes President and 24 members); we also list the RSPP committees/taskforces the particular oligarchs are in charge of (in total there are 17 committees/taskforces in RSPP).

* Other oligarch rankings:

B – Berezovsky's Group of Seven (Financial Times, 1996)

S – Classified as oligarchs in the "Sale of the Century" (Freeland, 2000, p. xv-xvii)

P – Pappe (2000)

BR – Boone and Rodionov (2002)

DS – Dynkin and Sokolov (2002)

K – Kommersant (2003)

H – Hoffman (2003)

F – Forbes (2004)

** Some of RSPP committee chairs have retired from active business

Mamut was MDM Board Chairman at the time of appointment at RSPP

Kiselev was Metalloinvest Board Chairman at the time of appointment RSPP

Eremeev was an Interros executive prior to the appointment at RSPP

Yurgens was a Sistema executive prior to the appointment at RSPP

Hoffman discusses Berezovsky rather than Abramovich. In 2000-2003, Abramovich took over most of Berezovsky's assets in Russia as Berezovsky went into exile.

*** Khodorkovsky has remained a Bureau member and a Committee Chair even though he was in jail since Oct 2003.

Table 2

Breakdown of the sample by ownership categories (total sales and employment of the firms in the sample controlled by each category of owners)

	Employment	*Annual sales*
Oligarchs	42%	39%
Other private domestic	22%	13%
Foreign owners	3%	8%
Regional governments	6%	6%
Russian federal government	15%	26%
No data	12%	8%

Oligarchs and market power

Each group in Table 1 controls assets in multiple provinces of Russia and even other countries, and in several industries. Mostly, the oligarchs' conglomerates are horizontally and vertically integrated.[8] Table 3 presents the share of sales controlled by oligarchs in each of the 32 industrial sectors. The oligarchs' shares in the second column and concentration ratios in the third and forth columns are calculated relative to the entire industry, not just our particular sample. Table 3 suggests that oligarchs dominate the largest industrial sectors, in particular natural resources and automotive. The only large sectors not controlled by oligarchs are natural gas, energy, and manufacture of machinery. The gas and energy sectors are dominated by federally owned monopolies Gazprom and RAO UES; machinery production is a diverse sector which is populated by defense equipment suppliers (controlled by federal government), oligarch firms and smaller firms controlled by non-oligarch private domestic owners.

Do oligarchs hold excessive market power in the sectors that they control? Table 3 presents the four-firm concentration ratio and Herfindahl-Hirschman Index for each sector; the concentration ratios are based on market shares of individual owners rather than market shares of establishments.[9] The sectors controlled by oligarchs are indeed the ones that are highly concentrated. However, these are also the tradable goods sectors that are subject to global competition. For example, consider the ten sectors where oligarchs control more than 20 percent of total sales. Except for ore and automotives, all these sectors sell to global market: they export 30 to 90 percent of their output; actually, these sectors account for half of total Russian exports. The first exception, ore production, is mostly owned by oligarchs' vertically integrated conglomerates, where ore is an input. The second exception, the automotive sector, is a classic example of interest groups politics as described in Grossman and Helpman (1994). Russian cars are not internationally competitive and the industry has always relied on protection. Such protection was usually granted, especially in the period in

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[8] Only Abramovitch, Deripaska, MDM group, and Potanin control major assets in unrelated industries, but even in their empires a single industry accounts for most of the conglomerate's value.

[9] The four-firm concentration ratio is the share of four largest owners in the sales of the sector, and ranges from 0-100 percent. The Herfindahl-Hirschman Index (HHI) is calculated as the sum of squared shares of all owners in the industry, and ranges from 0 to 10,000.

1990s when the largest carmaker's CEO, Vladimir Kadannikov, served as the first deputy prime minister in charge of economic policy. Yet even with high import duties and support of domestic producers via both generous tax write-offs and subsidies, import penetration was 25 percent and rising. As of 2000, Oleg Deripaska consolidated his control over the second largest carmaker and almost all of the bus and truck production, and the lobbying for stronger protection reached new heights. Indeed, one of the main reasons that Russia is not yet a member of the World Trade Organization is that the WTO requires lowering import duties for cars, and Russia's automotive lobby launched an aggressive (and a very successful) anti-WTO campaign (Financial Times, 2002a). The lobbyists managed to install prohibitive tariffs on imports of cars more than 7 years old and high tariffs on 3-7 year old cars (Moscow Times, 2003b). Russian cars are priced in the range of $4000-8000; the new barriers were equivalent to giving Russian carmakers a slack of $2000-4000 per car. Even though WTO succession was declared by government and president to be a priority in economic policy back in 2000, Russia is still not a member of WTO.

The large industries where oligarchs play a large role are also industries with substantial economies of scale. Indeed, these are exactly the sectors where large business empires originated in many countries in the late nineteenth century and the early twentieth century including the United States (DeLong, 1998), Japan (Morikawa, 1992), and Sweden (Hogfeldt, 2004). But except for the automotive sector, there seems little reason for concern that Russia's oligarchs have excessive market power. Although their conglomerates are large by Russian standards, they are certainly not excessive by global standards. Some oligarchs are important global players in their industries (especially in oil and metals), but none is a dominant market leader. Russia therefore does not need antitrust policies aiming at breaking up oligarchs' empires. Instead, it is more important that Russian competition policy assure the level ground field for all owners without regard to their size and political influence – so-called "political antitrust" (Rajan and Zingales, 2003).

Table 3

Oligarchs' control and ownership concentration by sectors

Sector	Sales 2001, billions of rubles	Oligarchs' share in sales	Four-firm Concen-tration ratio	HHI
Oil	1,256	72%	59%	1,347
Natural gas	579	1%	94%	8,655
Energy	499	8%	49%	1,736
Ferrous metals	275	78%	66%	1,180
Automotive	225	71%	71%	2,365
Machinery	209	12%	12%	51
Non-ferrous metals (except aluminum)	154	92%	95%	6,250
Milk	100	18%	23%	215
Pulp and paper	93	30%	41%	646
Coal	89	48%	47%	691
Aluminium	84	80%	90%	2,274
Construction Materials	82	6%	32%	385
Jewelry	74	0%	87%	2,666
Meat	69	16%	29%	299
Fertilizers	61	46%	66%	1,350
Beer	59	2%	57%	1,171
Tobacco	59	0%	91%	3,121
Bakery	58	0%	5%	11
Rubber	51	4%	65%	1,291
Confectionary	50	0%	59%	1,179
Timber	48	5%	8%	32
Vodka	45	14%	33%	384
Fish	42	0%	22%	202
Mill	40	5%	14%	95
Pipes	34	55%	85%	3,541
Ore	30	73%	59%	1,190
Tyre	28	10%	64%	1,338
Pharmaceutical	28	17%	37%	446
Cable	23	15%	34%	411
Poligraphy	22	2%	38%	659
Furniture	20	3%	23%	206
Non-alcoholic drinks	18	0%	62%	1,610
Total	**4,500**	**39%**		

Note: The table presents the share of sales controlled by oligarchs in 32 industrial (that is, mining and manufacturing) sectors sorted by size. The last two columns present concentration ratios: CR4 (the share of four largest owners in the sales of the sector) and Herfindahl-Hirschman Index (the sum of squared shares of all owners in the industry). CR4 ranges from 0 to 100 percent; the HHI index ranges from 0 to 10,000. The total output of the 32 sectors (R 4,500 billion) represented 76.5 percent of Russia's industrial output and 50 percent of GDP in 2001.

How Did the Oligarchs Gain Control?

A common belief is that the oligarchs owe their fortunes to the "loans-for-shares" auctions held in mid-1990s, which are widely regarded as the most scandalous episode of Russian privatization. In the classical loans-for-shares scenario, government appointed a commercial banker to run an auction that would allocate a controlling stake of a large natural resource enterprise in exchange for a loan to federal government that the latter never intended to repay. Not surprisingly, the auctioneer always awarded the stake to himself for a nominal bid (usually, slightly above a very low reserve price) by excluding all outside bidders. The scheme was designed to consolidate the bankers' support for Yeltzin's reelection campaign in 1996 (Freeland, 2000).

The conventional loans-for-shares story fits Abramovich (in 1995-97, a junior partner of Berezovsky), Khodorkovsky, and especially Potanin. The other two winners were the oil sector insiders Alekperov and Bogdanov, who obtained stakes in firms they already controlled. However, most of those listed in Table 1 did not become oligarchs through the loans-for-shares program. Some of the 22 largest owners tried to participate in the loans-for-shares and even offered more competitive bids but were excluded by those in charge of respective auctions; some even raised their concerns in public (Freeland, 2000).

Most of the individuals listed in Table 1 are relatively young: nine of them are in their 30s, and 13 are in their 40s.[10] The older oligarchs have typically come from Soviet-era nomenklatura. Prior to transition, they were either managing the respective enterprises or working in government agencies supervising the enterprises, and when the Soviet-era firms were privatized, they converted their de facto control into ownership rights. The younger entrepreneurs started from scratch in the late 1980s building their initial wealth during Gorbachev's partial reforms when co-existence of regulated and quasi-market prices created huge opportunities for arbitrage. In 1992, as price liberalization and privatization began, most of them owned leading trading companies, banks, and/or investment funds. Thus, when privatization of industrial enterprises occurred, they had financial capital available to purchase ownership in privatization auctions. For example, in early 1990s, Kakha Bendukidze consolidated a large number of privatization vouchers, and then purchased controlling stake of his main industrial asset Uralmash in a voucher auction (at a fraction of its current price). In the course of 10 years, he then built a large engineering company that competes in global market, has modern corporate governance and shares listed in London. The Wimm-Bill-Dann shareholders David Yakobashvili, Sergei Plastinin and Mikhail Dubinin introduced a new product–Western style juice–to the Russian market; in 1992, they took a $50,000 loan and leased a production line in a dairy plant in Moscow. They then took over the whole plant and other 13 dairy and juice plants around Russia, in 2002 they did an initial public offering at the New York Stock Exchange. In a sence, both Bendukidze and Wimm-Bill-Dann shareholders could qualify as success stories of Russian reform as envisioned by its authors (Boycko et al., 1995). These entrepreneurs were neither industry nor government insiders and did not even try to bid in the loans-for-shares program; yet, they converted Soviet manufacturing enterprises into successful modern capitalist firms. Of course, a cynic might note that both companies are near the bottom of the list in Table 1 in terms of size, while the loans-for-shares winners dominate the top of the list.

[10] Both mean and median individuals in Table 1 are 44 years old. Russian oligarchs are much younger than their American counterparts. In the Forbes (2004) list, the average age of 25 richest Americans is 64 years; the average age of all 262 U.S. billionaires is the same.

Russian oligarchs in international perspective

Cross-country comparisons of wealth concentration are usually based on the share of stock market capitalization controlled by a given number (often ten) of families. Certainly, it is not a perfect metric – after all, it doesn't include firms not listed on stock markets and emerging markets are likely to provide at best an imperfect measure of value. But we are not aware of comparable datasets on non-listed firms, so we have to rely on the data on the share of the stock market owned by the top 10 families. By that measure, ownership concentration in modern Russia is higher than in any other country for which the data are available.

The top 10 families or ownership groups (a subset of Table 1) owned 60.2 percent of Russia's stock market in June 2003. This percentage is much higher than in any country in continental Europe, where the share of 10 largest families is below 35 percent in small countries and below 30 percent in all large countries (Faccio and Lang, 2002). In the United States and the United Kingdom, this share is in single-digit percentages (Faccio and Lang, 2002, Claessens et al, 2000).[11] In east Asian countries before 1997 crisis, the highest shares of 10 largest families were in Indonesia (58 percent), Philippines (52 percent), Thailand (43 percent) and Korea (37 percent) (Claessens et al., 2000). The numbers for Indonesia and Philippines include the holdings of Suharto and Marcos families, each controlling 17 percent of total market capitalization in the respective countries. In Russia, the personal wealth of Yeltsin and Putin is considered to be very modest.

But even these comparisons probably underestimate the extent of control of Russia's oligarchs. In Europe and East Asia, dispersed ownership allows largest family to exercise control with a relative small ownership stake in the respective companies (both Faccio and Lang and Claessens use the threshold of 20 percent). In Russia, oligarchs typically hold majority and supermajority shares of both control and cash flow rights.[12]

While ownership concentration in Russia is higher than in other countries today, it does not seem unprecedented in historical perspective. Owners of Korean chaebols (Graham, 2003), Japanese zaibatsu (Morikawa, 1992, Miwa and Ramseyer, 2003), Swedish and Italian largest family-controlled firms (Hogfeldt, 2004, Aganin and Volpin, 2004), and U.S. "robber barons" (DeLong, 1998) controlled a similar share of economic and political power. Also, in many of these countries the oligarchs' wealth was accumulated with a substantial support from the state (in direct subsidies, tax breaks, land grants, subsidized credit etc.) and was deemed illegitimate by a substantial share of the public at some points in history.

These examples also suggest that oligarchic economies can be successful for long periods of time. However, such economies can also be vulnerable to crises from a generational change in conglomerates' leadership or from inherent inflexibility (Acemoglu, 2003). Generational change has led the decline of many family controlled businesses in Italy (Aganin and Volpin, 2004), Sweden (Hogfeldt, 2004), and Korea (Graham, 2003). At the time of retirement, the founders of family firms face a tough dilemma of either hiring a professional manager, and thus separating ownership and control, or passing control to a less competent heir (Ekelund and Tollison, 1980, Burkart et al.,

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[11] A less rigorous approach is to look at Forbes' billionaires lists. Even though Russian companies are significantly undervalued relative to their OECD counterparts, Forbes (2004) lists 26 billionaires in Russia; only the United States and Germany have more. The 26 Russian billionaires are worth $81 billion, or 19 percent of Russia's annual GDP. The 26 richest US citizens are worth 4 percent of U.S. GDP; the total wealth of all U.S. billionaires is below 7 percent of U.S. GDP.

[12] This argument was first put forward by Boone and Rodionov, 2002, who argue that Russian oligarch firms benefit from overcoming the separation of ownership and control. Our data are consistent with this argument: on average, see the next section.

2003). Russian oligarchs are young, so this issue is hardly relevant in any foreseeable future. They face a rather different tradeoff. As Russian public deems their property rights illegitimate,[13] they need an exit strategy. The obvious solution is to sell a large stake to a reputable foreign investor. Indeed, expropriating foreigners is harder for the state because they are more popular than oligarchs, and because of pressures from foreign governments. However, the timing of the exit is a risky gamble. Selling too early would bring too little as the assets' are initially undervalued. Delaying the sale in order to restructure the company and improve transparency would raise the price, but would also increase the risk of expropriation by the Russian government.

[13] In a July 2003 poll by ROMIR (an independent Russian research and polling agency), 88 percent responded that all large fortunes were amassed in an illegal way, 77 percent said that privatization results should be partially or fully reconsidered, and 57 percent agreed that government should launch criminal investigations against the wealthy (Vedomosti, 2003b).

Economic Performance of the Oligarchs

Methodology

Do oligarchs improve the performance of the firms they control, or injure their performance? Theoretical arguments cut in both directions.

One argument that oligarch-owned firms should be less efficient is that many of these firms are conglomerates with many different lines of business. The "conglomerate discount" literature shows that large conglomerates should be less efficient than stand-alone firms, since they are likely to suffer from multi-layered agency problems and redistribute capital inefficiently (Scharfstein and Stein, 2000). Another reason is that if the oligarchs gain and sustain their position through political favoritism, they may care less about improving firm performance.

On the other side, several arguments suggest that Russia's oligarchs might improve firm performance. First, the oligarchs' performance might be superior because they have successfully overcome the separation of ownership and control (Boone and Rodionov, 2002). An oligarch who owns a very large majority share should have strong incentives for restructuring companies and seeking to improve the value of this asset, rather than for diverting cash flows and stripping the assets. Even if a firm was originally privatized to dispersed shareholders, its ownership structure was quickly consolidated through dilution and, in some cases, outright expropriation of outside investors including government and foreigners (Boone and Rodionov, 2002). The current champions of transparency Mikhail Khodorkovsky and Vladimir Potanin (now chairing Russia's National Council for Corporate Governance) kept expropriating outside investors until as recently as 1999 (Black, 2001, Dyck, 2003). In our sample, oligarchs do control large stakes in their firms. In an average firm where the largest owner is the oligarch, he controls 78 percent; in case of non-oligarch private domestic owners, this number is only 64 percent. The difference is statistically significant but not necessarily economically important. The average degree of control by smaller owners over their companies is also very high. Poor protection of minority shareholders rights resulted in consolidation of control within most Russian companies (consistent with LaPorta et al., 1998). As a result, smaller owners are not investors that hold small stakes in large companies; rather, they hold large stakes in small companies.

Second, vertical integration can mitigate the risk of hold-up problems, where in a situation of relatively few buyers and sellers, each party must be concerned that the other will attempt to renegotiate and seize a greater share of the joint surplus. Many oligarch empires have been built to overcome such hold-up problems: for example, all Russian major oil companies are vertically integrated; most steelmakers own sources of coal and ore; some companies own ports, fleets of railroad cars and even railroad track. Indeed, Blanchard and Kremer (1997) show that the hold-up problems due to Soviet industrial structure were one of the major factors behind output collapse in early Russian transition. Third, in a situation with underdeveloped financial markets, the lack of finance will be a barrier to entry for smaller firms, and larger oligarch-run firms can benefit from their access to internal finance (Rajan and Zingales, 2003; Acemoglu, 2003, Perotti and Volpin, 2004). Fourth, Russia lacks a clear rule of law, and the larger conglomerates are certainly more effective than small firms in influencing judicial and political decisions and protecting their property from the predatory "grabbing hand" of federal and local governments (Olson, 1971; Grossman and Helpman, 1994; Sonin, 2003; Yakovlev and Zhuravskaya, 2003; Kumar et al., 2003).

Formulating a plausible empirical test of whether and how oligarchs affect the performance of their firms is a challenge. One simple starting point is that labor productivity in oligarch firms is about four times as high as the economywide average (PSI Foundation, 2003). However, comparing oligarch firms to all other Russian industrial enterprises without controlling for industry, region, firm size makes little sense. Indeed, oligarchs' assets are concentrated in a few sectors where average firm tends to be larger in size and more productive. Moreover, the interesting question isn't just oligarchs vs. all other firms, but the performance of firms owned by oligarchs vs. those of other domestic owners, foreign owners, and the state.

In this paper, we use firm-level data on 1200 industrial firms from the Russian Industrial Enterprise Registry – the official census of Russian industrial firms. Our main equation estimates the effect of controlling owner's type on the total factor productivity growth:

$$\log(Y_{i,2002}/Y_{i,2001}) = \alpha + \beta \log(K_{i,2002}/K_{i,2001}) + \gamma \log(L_{i,2002}/L_{i,2001}) + \lambda' \text{ control\_type}_i + \mu' \text{ sector}_i + \nu' \text{ region}_i + e_i .$$

The dependent variable is the output (annual sales revenue) of firm *i* in 2002 divided by its output in 2001, measured in logs. The explanatory variables are: a constant term α; the ratio of the capital stock *K* of firm *i* in 2002 and 2001 (measured as the book value of fixed productive assets); the ratio of the employment level *L* of firm *i* in 2002 and 2001. Our main focus is on the *control_type* variable, which is a dummy variable for the type of controlling owner. We distinguish between "oligarchs," "foreign owners" (usually large multinationals), "federal government," "regional governments," "other private domestic owners" (omitted category), and "no controlling owner." Sector dummies for each of the 32 industrial sectors help to control for changes in relative prices, technological and other industry-specific shocks, and adjust for the fact oligarchs tend to control firms in more attractive industries. Regional dummies $region_i$ are included to control for the province-specific factors, for example, differentials in price level and real wages across regions.

As this regression compares the change in output holding constant the inputs of capital and labor, the coefficients λ can be interpreted as the effects of the different forms of ownership on the growth of total factor productivity.

Main results

Table 4 presents the regression results. In 2002, the oligarchs outperformed other private Russian owners by about 8 percent in terms of total factor productivity growth. For comparison, foreign owners outperformed other private Russian owners by 11 percent. The firms controlled by federal and especially regional governments lagged behind, although the difference from non-oligarch domestic private firms was not significant. The latter result may be due to the fact that we classified firms controlled by relatives of regional governors as private; a proper identification of all such firms would however be an effort beyond this paper's focus on oligarchs.

Does the productivity growth come from shedding excess labor force, selling less productive assets or from increasing output given the factors of production? We estimated a set of three regressions using, respectively, the change in the log output Y, the change in the log employment L, and the change in log capital K as the dependent variables. The explanatory variables included only the dummies for ownership control, for sector, for region, and the constant term. These regressions show whether there are significant differences across ownership types in change of output, labor, or capital. The results, appearing the last three columns of Table 4, show again that oligarchs and foreign owners are associated with greater output growth rather than a more dramatic decrease in employment. None of the owner types are statistically significant variables for explaining the change in employment, or the change in capital stock. In private communications with authors, executives of several oligarchs' conglomerates acknowledged the need for cutting their employment by one-half or even two-thirds to become competitive with global leaders in their industry, but political constraints preclude drastic employment changes for the oligarchs as they do for state-owned and other firms. These findings confirm the results of the productivity regression in column 1, that the oligarchs have managed to produce more output holding constant the change in inputs.

Table 4

Oligarchs outperform other Russian owners in terms of productivity growth.

	Productivity growth	Growth in output, employment, and assets		
Dependent variable	Change in log Y	Change in log Y	Change in log L	Change in log K
Oligarch	0.08	0.08	0.01	-0.01
	(2.32)**	(2.22)**	-0.19	-0.60
Foreign	0.11	0.10	-0.03	0.05
	(2.01)**	-1.62	-0.76	-1.05
Federal	-0.01	0.01	0.03	0.04
	-0.15	-0.20	-0.64	-0.62
Regional	-0.10	-0.10	-0.01	-0.05
	-1.06	-1.05	-0.22	-1.12
Change in log L	0.60			
	(7.11)***			
Change in log K	0.05			
	-1.07			
Observations	1005	1005	1005	1005
Adj R2	0.34	0.19	0.56	0.32

* significant at 10%; ** significant at 5%; *** significant at 1%. Robust t statistics in parentheses. The definition of control is based on the type of largest controlling stake holder given that the stake is at least 25%. The omitted category is "other private domestic owner", dummy for "no controlling owner" included but not reported. Dummy variables for regions and industries are included in all regressions but not reported. Outliers: 1% highest and 1% lowest observations of $log(Y_{i,2002}/Y_{i,2001})$, $log(K_{i,2002}/K_{i,2001})$, and $log(L_{i,2002}/L_{i,2001})$ are excluded.

Other results and robustness checks

The results above are robust. We have tried different definitions of "controlling owner" dummy–from the type of largest controlling shareholder to the one who controls 50 percent or more–but they all provide similar results. The concentration of control within firms is very high (only in 5 percent of firms does the largest owner controls less than 25 percent). The effect of degree of control on productivity is not significant; apparently, there is too little variation in the degree of control in our sample. Once we control for industry, it is likely that regressions for output *Y* would provide results similar to those for value added; unfortunately, due to omnipresent avoidance of the value-added tax, there are no reliable firm-level data on value added in Russia. Results are robust to choosing alternative specifications for production function, to controlling for size, the largest owner's stake or past productivity levels in total factor productivity growth regressions (Table 5). We have also found that oligarch firms feature higher reported accounting profits 2002 than other Russian owners (Table 6). The difference may reflect higher productivity or more transparent accounting. The higher profits do not come at the expense of wages (Table 6): the wages in the oligarch firms are slightly higher than in other Russian firms (although the difference is not significant in most specifications).

The firms controlled by oligarchs have not always been more productive. In regressions for years prior to 2002 (Table 7), the difference in productivity growth between oligarchs and other owners is not significant. Also, the productivity *levels* were lower in oligarch firms in 2001 and before (Table 7); by 2002 the productivity gap has decreased substantially. Given that our ownership data refer to June 2003, there can be two potential interpretations. First, if we assume that ownership has not changed much in 2001-2003, then the regressions for 2001 and prior years compare firms within and outside oligarch groups. In this case, it may just take some time to consolidate ownership and restructure, so that the restructuring efforts have not produced tangible results before 2002, and only now are starting to show up.[14] Alternatively, if we assume that a substantial part of oligarch holdings was purchased after 2001 then pre-2002 regressions point at firms that were not yet within oligarch groups but only joined them later. This argument implies that oligarchs have taken over poorly performing firms and turned them around. In both cases, the evidence is consistent with the view that oligarchs do manage their firms better than other Russian domestic owners and better than regionally owned firms, and almost as well as foreign owners.

Naturally, the results should be treated with caution. We only have one observation on ownership structure and only contemporaneous data on performance. The performance of these firms should be tracked for years after the date of our ownership survey. Also, it would be useful to have more than one observation on ownership structure for each firm and test whether changes in ownership imply changes in performance. The other problem is the endogeneity of oligarch ownership: the oligarchs may have acquired assets with higher growth potential. Controlling for industry and regions does not fully address this problem; one has to devise instruments related to the nature of acquisition of each asset by its current owner. Finally, oligarchs' productivity advantage may be explained at least in part by political connections, rather by superior management skills.

[14] Braguinsky and Myerson (2003) offer yet another explanation: oligarchs first stripped their firms to establish a safe base outside Russia; once the successfully diversify their risks, they can afford investing in their Russian assets as the latter provide a higher return on capital.

Table 5

Productivity growth in 2001-02, robustness checks

Dependent variable	Change in log Y	Change in log Y	Change in log Y
Oligarch	0.07	0.08	0.07
	(1.86)*	(2.31)**	(1.69)*
Foreign	0.11	0.11	0.07
	(2.14)**	(2.03)**	-1.08
Federal	0.01	-0.01	0.07
	-0.16	-0.19	-0.97
Regional	-0.11	-0.10	0.03
	-1.14	-1.07	-0.33
Change in	0.60	0.60	0.51
log L	(7.05)***	(7.12)***	(4.56)***
Change in	0.07	0.06	
log K	-1.44	-1.10	
Size	-0.03		
(Log Y_{2001})	(2.78)***		
Controlling stake		-0.03	
		-0.45	
Log Y_{2001}/L_{2001}			-0.04
			-1.61
Observations	1005	1005	1038
Adj R2	0.35	0.34	0.46

* significant at 10%; ** significant at 5%; *** significant at 1%. Robust t statistics in parentheses. The definition of control is based on the type of largest controlling stake holder given that the stake is at least 25%. The omitted category is "other private domestic owner", dummy for "no controlling owner" included but not reported. Dummy variables for regions and industries are included in all regressions but not reported. Outliers: 1% highest and 1% lowest observations of *$log(Y_{i,2002}/Y_{i,2001})$, $log(K_{i,2002}/K_{i,2001})$, and $log(L_{i,2002}/L_{i,2001})$* are excluded.

Table 6

Wages, profits, and capital per worker

Dependent variable	Log $Wage_{2002}$	Log $Wage_{2002}$	$Profit_{2002}$/ Y_{2002}	$Profit_{2002}$/ Y_{2002}	Log K_{2002}/ Y_{2002}
Oligarch	0.011	0.03	0.072	0.063	-0.033
	-0.31	-1.28	(3.12)***	(2.79)***	-0.39
Foreign	0.313	0.147	0.003	0.021	0.639
	(4.39)***	(2.72)***	-0.09	-0.87	(4.47)***
Federal	0.09	-0.024	0.023	0.009	-0.221
	-1.44	-0.56	-0.68	-0.28	-1.29
Regional	0.04	0.043	0.052	0.05	-0.062
	-0.61	-1.1	(1.72)*	(1.79)*	-0.39
Log L_{2002}	0.026	0.012			
	(2.05)**	-1.11			
Log Y_{2002}			0.045	0.038	
			(7.20)***	(6.54)***	
Log $Wage_{2001}$		0.57			
		(5.08)***			
$Profit_{2001}$/ Y_{2001}	0.05			0.043	
	-1.07			-1.59	
Observations	1222	1212	1082	1066	1080
Adj R2	0.55	0.78	0.25	0.25	0.49

* significant at 10%; ** significant at 5%; *** significant at 1%. Robust t statistics in parentheses. The definition of control is based on the type of largest controlling stake holder given that the stake is at least 25%. The omitted category is "other private domestic owner", dummy for "no controlling owner" included but not reported. Dummy variables for regions and industries are included in all regressions but not reported. Outliers: 1% highest and 1% lowest observations of $log(Y_{i,2002}/Y_{i,2001})$, $log(K_{i,2002}/K_{i,2001})$, *and* $log(L_{i,2002}/L_{i,2001})$ are excluded.

Table 7

Past productivity growth and productivity levels.

	Productivity growth 2000-01	Productivity levels 2002, 2001, 2000		
Dependent variable	log Y_{2001}/Y_{2000}	log Y_{2002}	log Y_{2001}	log Y_{2000}
Oligarch	0.01	-0.15	-0.24	-0.24
	-0.17	(1.94)*	(3.01)***	(2.87)***
Foreign	0.02	0.18	0.11	0.23
	-0.32	-1.35	-0.67	(1.71)*
Federal	-0.07	0.17	0.21	0.16
	-1.31	-1.23	-1.35	-1.02
Regional	-0.03	-0.22	-0.14	-0.11
	-0.62	-1.22	-0.89	-0.73
Change in	0.62			
log L	(9.00)***			
Change in	0.04			
log K	-1.21			
Log L		0.71	0.73	0.75
		(13.52)***	(13.80)***	(12.73)***
Log K		0.32	0.28	0.26
		(8.56)***	(7.28)***	(6.58)***
Observations	1084	1005	1005	936
Adj R2	0.31	0.86	0.85	0.84

* significant at 10%; ** significant at 5%; *** significant at 1%. Robust t statistics in parentheses. The definition of control is based on the type of largest controlling stake holder given that the stake is at least 25%. The omitted category is "other private domestic owner", dummy for "no controlling owner" included but not reported. Dummy variables for regions and industries are included in all regressions but not reported. Outliers: 1% highest and 1% lowest observations of $log(Y_{i,2002}/Y_{i,2001})$, $log(K_{i,2002}/K_{i,2001})$, *and* $log(L_{i,2002}/L_{i,2001})$ are excluded.

Ownership Concentration and the Political Economy of Reform

As a small group with many common interests and substantial economic resources, oligarchs possess enormous political power (Olson, 1971). Do oligarchs as a group promote or impede the institutional change in Russia? On one hand, oligarchs are large private owners who should be interested in establishment of private property rights, contract enforcement and the rule of law (Boycko et al., 1995). On the other hand, given Russia's immature political system, they can use their political influence for redistribution from other economic agents (Stigler, 1971; Sonin, 2003; Glaeser et al., 2003). A brief look at oligarchs' lobbying activities in 2000-2003 suggests that both effects are important in Russia. Oligarchs work hard to reduce the cost of doing business in Russia, but do not lobby for other entrepreneurs to have access to improved business environment.

Oligarchs have always recognized the importance of political influence. A few of them served in government in 1990s (two as high up as deputy prime ministers in charge of economic policy), many have been members of parliament. In 2000, the oligarchs took over the Russian Union of Industrial and Entrepreneurs (RSPP), which was converted from an association of middle-size manufacturing enterprise managers into a leading lobby of big business. After the oligarchs secured control over the RSPP's governance; they then created and led multiple taskforces each responsible for a specific avenue of reform: tax reform, industrial policy, foreign trade, land reform, judiciary reform, railroad reform, international relations, and many others. Since 2000, RSPP's leaders have regularly met with President Putin to discuss economic policy, reform of bureaucracy and other strategic issues. They also provided "advice" to the government and parliament on legislative changes; on several occasions RSPP even drafted and put forward important pieces of legislation. In many cases, the RSPP lobbying activities have been conducive to Russia's long term economic prosperity. RSPP leaders lobby for low and transparent taxes, competent judiciary, reform of bureaucracy, reform of natural monopolies, Russia's accession to the World Trade Organization, development of small business, and even pragmatic foreign policy. Indeed, since other pro-market constituencies in Russia – like small- and medium-size entrepreneurs and consumers – have failed to acquire any political weight, RSPP has become the only effective interest to support these reforms.

However, the intensity and outcomes of RSPP's efforts vary widely across specific activities. RSPP has been most successful in lowering taxes, liberalizing current and capital accounts, and promoting land reform. Some progress was achieved in administrative reform. However, RSPP was much less active in promoting banking reform and establishing a strong competition authority. This pattern is consistent with Stigler (1971) and Rajan and Zingales (2003), who argue that powerful insiders try to design the rules of the game so that benefits obtained from the state (for example, through lower taxes) are not shared with new entrants.

RSPP members have been divided on Russia's accession to the World Trade Organization ("Putin's bid to join WTO," 2002). While the steel exporters were in favor of accession, the oligarchs that had stakes in protected sectors such as automotive, insurance and banking strongly opposed it. Also, again in line with Stigler (1971), many oligarchs were interested in delaying accession until they have completed their acquisitions of Russian firms, and then in switching to support accession so that they could at that time more easily sell assets to foreign investors.

Curbing the oligarchs' political influence was an essential part of Vladimir Putin's presidential campaign already in 2000. In his open letter to voters, he promised to treat the oligarchs in the same way as other entrepreneurs; a few days later he announced that all interest groups would be kept at an "equal distance" from his government. In the first meeting with the leading oligarchs on July 28, 2000, President Putin offered them the following pact. As long as the oligarchs paid taxes and did not use their political power (at least not against Putin), Putin would respect their property rights and refrain from revisiting privatization. This pact defined the ground rules of oligarchs' interaction with central and regional government for Putin's first term (2000-2004). Although the pact could have never been written down, even general public was well aware of its existence. A poll by FOM (an independent nonprofit Russian polling organization) a week after the meeting showed that 57 percent Russians knew about it.

Putin's threat to prosecute any oligarch who would deviate from the pact was based on the median voter's support for expropriating the oligarchs. Putin has proved his credibility in 2003, when the prominent oligarch Mikhail Khodorkovsky, the major owner of the Yukos oil company, deviated from the pact by openly criticizing corruption in Putin's administration (Moscow Times, 2003a) and supporting opposition parties and independent media (Vedomosti, 2003a). He and his partners were soon arrested or forced into exile, and their stakes in Yukos appear likely to be expropriated.[15] It is not clear why Khodorkovsky did not stick to the pact. Perhaps Khodorkovsky thought that if he supported opposition parties, rather than challenged Putin himself, he was not violating the pact. Probably he did not expect Putin to respond so decisively. The expropriation of Yukos shareholders has certainly involved serious costs for Russian economy – the investment climate worsened and capital flight increased substantially. Stock of Yukos, once the most valued Russian company, is now traded at about 20 percent of its earlier price even though world oil prices are at historical high. However, Putin has clearly demonstrated that his priority was to establish his credibility even if this damaged his economic agenda.

The Yukos affair has clarified the rules of the game between oligarchs and the Kremlin. Oligarchs have learned the risks related to violating the pact, and so in the future, they will be less likely to interfere in national politics. Ironically, by crushing Russia's most transparent company, Putin has pursued the "political antitrust" policy that was crucial in building the U.S. democracy and economy in the beginning of twentieth century (Rajan and Zingales, 2003). Even though oligarchs remain economically powerful, they have no longer any weight in politics.

Khodorkovsky's case may even have made the oligarchs too vulnerable. Given that bureaucracy is as corrupt as before, the Yukos affair effectively shifted the bargaining power from oligarchs to bureaucrats. Although outright expropriation of oligarchs will probably remain just a threat, their cash flows will be milked more intensively by bureaucrats in the form of kickbacks, donations to pet projects, and direct bribes.[16] This will in turn undermine oligarchs' property rights and incentives to invest. To sustain economic growth, Putin has to constrain rent-seeking by his own bureaucrats. This task is certainly not an easy one, given that democratic checks and balances are very weak. Moreover, neither government nor oligarchs are interested in the development of democracy and civil society. Bureaucrats do not like to cede their control, while oligarchs are afraid of the median voter's redistributive agenda.

Putin's task is difficult but not impossible. It is instructive to look back at Park Chung-hee's first years in power in Korea. While there are many differences between Korea in the 1960s and Russia, it is certainly not true that corruption was initially low in Korea. Nor did Korea possess developed democratic institutions. General Park came to power in 1961 after Korean public was deeply disappointed in the corrupt regime of Syngman Rhee, the first president of independent Korea. At

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[15] Yukos case hearings are still underway as we are writing the paper. The logic of our argument suggests that the most likely outcome is a full expropriation and imprisonment/emigration of Yukos majority owners even if this fully destroys the value of the company.

[16] The renovation of Konstantinovsky Palace in St Petersberg in 2003 provides a striking example. The renovation was run by Kremlin; the total cost amounted to $300 million even though a private firm offered to do it for $56 million (Vedomosti, 2003b). The project was financed via "voluntary" donations of oligarchs of $10 million apiece. Anonymous oligarchs complained that they "were made an offer they could not refuse." The cost per square meter exceeded even Yeltsin's luxurious (and allegedly overpriced) renovation of Kremlin palaces by the factor of six. Another example is the financing of the ruling "United Russia" party that raised $150 million from oligarchs in 2003, an order of magnitude higher than pro-business opposition parties.

that time chaebol owners have already built their initial wealth; public deemed their wealth illegitimate as it was related to corrupt deals and misuse of U.S. aid (Graham, 2003). General Park started off with a crackdown on these "oligarchs." He even made them promise to donate large parts of their wealth to charities or return to the state. Korea's richest person, Lee Byung-chol of Samsung -- who supposedly held 19 percent of all national wealth (Graham, 2003) -- was in opposition to Park and eventually had to pay fines to government in 1963. Yet no chaebol lost any serious part of its wealth. No chaebol leader was prosecuted, even though Park's new laws certainly allowed that and 24 arrests were initially made to establish credibility. In Park's later years, chaebols have received a substantial support from the state in the form of subsidized loans. The support was awarded mostly to those who succeeded in the export markets. Apparently, Park's administration was happy with chaebols as long as they led Korea's industrialization and economic growth.

There are two important problems with the Korean scenario for Russian voters and Russian rulers. First, it illustrates that democracy may take a very long time to emerge along this path. After losing popularity, Park Chung-hee first rigged an election, and then cancelled presidential elections altogether, appointing himself a president for life. He was assassinated by his own intelligence chief in 1979. The second problem is that part of Korea's success was an ingenious winner picking by Park. Against all odds and economists' advice he promoted specific industries where Korea did manage to establish a market niche. It is hard to reproduce this strategy now, because Russia is no longer in the industrialization stage, and global competition is much tougher. However, this may be less of a problem because oligarchs should be capable of choosing profitable market strategies themselves.

The more straightforward approaches to resolving the problem of illegitimacy of property rights are either to confiscate the oligarchs or to legitimize their wealth via some sort of an amnesty. Let us consider these "solutions" one by one.

Confiscation

Confiscation of oligarchs' property and prosecution of oligarchs is certainly the most popular option with Russian public. There seems to be little doubt that in modern Russia government can expropriate and prosecute oligarchs. It is less clear though what would happen with the assets after confiscation. There can be two approaches: one is to simply renationalize them and manage as a public company, the other one is to auction them off again. Both are problematic. The assets currently controlled by oligarchs can and should be run by private owners; there are no externalities or public good arguments involved, and the inefficiency of Russia's state companies is notorious.

Selling the confiscated assets to other private owners may not succeed in building legitimacy of property rights. Indeed, suppose that the auctions are not open to foreign strategic investors. Given financial underdevelopment, the only buyers who can offer a high price are other oligarchs.[17] Certainly, government may exclude other oligarchs (or expropriate all the oligarchs simultaneously). The others buyers will be financially constrained and will necessarily pay a very low price. Therefore the new owners' property rights will also be at least partially illegitimate. Russian public will know that they have bought the assets at the fraction of the value. Moreover, given Russia's institutional

[17] When Berezovsky went into exile, his assets were purchased by Abramovich. When Abramovich started moving to London, his assets were bought by Deripaska. In July 2003 poll by VCIOM, only 10% respondents believed that confiscated assets will benefit the public, the most popular responses were that the assets will be appropriated by other oligarchs (31%), state (24%), bureaucrats (23%), and organized crime (18%).

environment, the new owners will quickly learn that “size matters” and consolidate into oligarchs themselves.

It is also not clear whether the government will be able to run the auctions honestly. A very recent example of Slavneft privatization shows that collusion between bidders (and, possibly, between bidders and auctioneers) is as common in Putin’s Russia as it was in Yeltsin’s (Financial Times, 2002b). In Dec 2002, a large state owned oil asset was sold at a price slightly above the reserve price, with competing bids (including ones by foreigners) either discouraged or excluded on technical grounds. Rigging the auctions will further reduce the price and the legitimacy of subsequent property rights.

The confiscation will therefore just reproduce a new generation of oligarchs whose incentives to invest will not necessarily be stronger.

An interesting example of breaking up conglomerates by force is the story of Japan’s zaibatsu that are in many ways similar to Russian largest conglomerates (Morikawa, 1992). In 1945, US occupation authorities accused zaibatsu’s controlling families of supporting Japanese militarism and ordered dissolution of zaibatsu (Miwa and Ramseyer, 2003). Effectively, zaibatsu’s owners were expropriated, and their individual firms were mostly bought by incumbent management. However, already by 1958, zaibatsu re-emerged in the form of keiretsu (Bergloef and Perotti, 1996, Miwa and Ramseyer, 2003). Although keiretsu were not as centralized as zaibatsu (where all firms within a conglomerate were controlled by a single family), they engaged in cross-shareholding and coordinating their activities; firms that were part of a zaibatsu now joined the keiretsu that was built in place of this particular zaibatsu.

This experience suggests that the size and composition of conglomerates does depend on institutional environment and market conditions. Hence, if oligarchs’ empires are broken off and sold by piece, they are likely to reemerge as unified groups albeit controlled by new owners.

Confiscation can only work if the assets are sold in honest auctions open to foreigners. Ruling bureaucracy will certainly try to prevent this from happening, as this will result in their loss of control over the assets and cash flows. In order to do so, the predatory state will masquerade as populist democracy and appeal to the median voter’s nationalist sentiment.

Amnesty

A direct application of Coase theorem to the problem of illegitimacy of property rights provides a seemingly straightforward solution. The property rights should be clearly defined and awarded to a party that is willing to pay the most. Since the current oligarchs seem to be a good match for the assets, and they are also the only ones who are financial unconstrained, they should keep their assets but compensate others. This solution–known as a privatization amnesty– has been advocated by both critics of the reform (Goldman, 2004) and oligarchs themselves (Deripaska, 2004). There are many possible versions of the amnesty, but the most general approach could be the following. Russian government passes a federal law on statute of limitations granting property rights to anyone who acquired them at least T years ago. In exchange, oligarchs make a lumpsum payment to the public.

There are many technical problems: (i) how much the oligarchs should pay; (ii) which oligarchs should pay; (iii) how the payment should be structured to avoid strangling oligarchs’ companies; (iv) how to make sure payments reach out to public rather than get appropriated by corrupt bureaucrats; (v) how the statute of limitations be structured.

These problems are not impossible to solve. The dominant view is that the payment should be proportional to the current value of the oligarchs’ assets (Deripaska, 2004, suggests 75-80%). The assets' value could be self-assessed; there should be a provision that outside bidders (including foreigners) can buy out the assets at self-declared value times a pre-specified factor; this multiplier should be sufficiently low to encourage truthful revelation but not too low, and certainly above 1, so that truthfully revealed value is not taken over easily.[18] The participation in the program should certainly be voluntary for the oligarchs – those who have done no wrong, do not have to pay. Yet, the voluntary participation will only work if the other party's commitment to amnesty is perfect. Indeed, the very fact of an oligarch's participation in the amnesty provides a signal to the public that the particular oligarch is afraid of prosecution. So if there is risk of reneging on the amnesty, the primary targets of prosecution will be exactly the oligarchs participating in the amnesty.

The problem of structuring the payment is certainly more difficult. From the macroeconomic point of view, the oligarchs could simply redeem some of Russia's sovereign debt. However, in this case the payment will not reach the median voter; rather, this arrangement will soften government's budget constraints by allowing new debt issues; and higher government spending is not necessarily good for a median Russian. A more appealing alternative is to take responsibility for some of Russia's pension obligations, as pensioners are the ones who suffered the most in 1990s. The back of envelope calculations provide an estimate of about 3 average annual pensions. Indeed, the total oligarchs' wealth is in the range of $80 billion (Forbes, 2004) and there are about 40 million pensioners in Russia, hence using Deripaska's 75% tax, we arrive at the total of $1,500 per person. Certainly, the compensation cannot be made overnight (this would destroy oligarchs' companies). There should be a fund that would finance either annuity payments or lumpsum payments to the oldest pensioners. The deal may also be accompanied by a reduction in pension tax to spread part of the benefit to the working population.[19]

It is much less clear what the oligarchs would get in exchange for the payment. The contract is inherently incomplete. Indeed, while the statute of limitations on privatization can be enforced, it is hard to keep away from prosecuting oligarchs on charges of tax fraud or other wrongdoings. Even if one assumes commitment on the part of the President in office, the new President can again appeal to public's negative attitude and return to confiscatory policies. Notice that the latter do not have to be as drastic as expropriation of property. Confiscation of value can simply occur through raising taxes on natural resource industries.

Hence, it is not clear how government and public can commit to the amnesty. Yet, there are examples of similar deals that did succeed. In 1938, Swedish social-democratic government introduced a new tax code. In exchange for higher income taxes (and pro-labor laws and regulations previously introduced), Swedish tycoons received very generous tax breaks on investments which gave large firms a serious advantage over new entrants (Hogfeldt, 2004). The deal has effectively been in place until 1990s.

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[18] This and many other ideas in this section were suggested to authors by Luigi Zingales in private communications.

[19] Another appealing solution suggested by Serguey Braguinsky could be to pay off the retail deposits in the state-owned Sberbank destroyed by hyperinflation in 1992-94. This is a more logical approach, yet it is harder to implement as assessing the value of pre-reform ruble and rationing the payments is technically a serious challenge.

Conclusions

Both negative and positive stereotypes about Russian oligarchs are true. Russia's oligarchs do control a substantial part of the economy including natural resources industries. The concentration of ownership in modern Russia is probably higher than in other countries. Moreover, it is likely to increase further as Russian's natural monopolies are reformed and privatized. Oligarchs seem to run their empires more efficiently than other Russian owners. While the relative weight of their firms in Russian economy is huge, they do not seem to be excessively large by the standards of the global economy where most of them are operating. However, a majority of the Russian population deems their property rights illegitimate, which creates a fundamental problem for building a democratic and prosperous Russia. This problem is neither insurmountable, nor unique to Russia. Quite a few countries have experienced a period of high ownership concentration, but then eventually moved beyond it.

An unpleasant implication of this analysis is that the development of democracy in Russia may take a long time. Countries with concentrated ownership have lived with "1½ party system" for decades. A real competition between strong political parties is more likely to emerge when financial development, competition policies and openness lower entry barriers and promote the rise of middle class. Neither oligarchs nor the bureaucracy seem to be interested in implementing these policies in Russia anytime soon.

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