

Influential ownership and capital structure*

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Abstract

This paper explores the relation between ownership structures and capital structures in Russia – an economy with a state-run banking sector, weak corporate governance, and highly concentrated ownership. We find that firms with the state as controlling shareholder have significantly higher leverage than firms controlled by domestic private controlling shareholders other than oligarchs. Both firms controlled by the state or oligarchs finance their growth with more debt than other firms. Profitability is negatively related to leverage across all types of controlling owners indicating a preference for internal funding over debt. The results indicate that firms with owners that have political influence or ties to large financial groups enjoy better access to debt.

Key words: capital structure, ownership structure, state ownership, oligarchs, political connections, Russia.

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1. Introduction

The institutional setting and firm-specific characteristics have been shown to impact the choice of capital structure. Growing firms and economies are often equity financed, whereas more mature firms and economies rely more on bank financing when they have a need for external financing (Shleifer and Vishny, 1997). Debt finance seems to be most common for firms with tangible assets (e.g., Rajan and Zingales, 1995). Firms' access to external capital to finance growth may be limited when investors' rights are poor (e.g., La Porta *et al.*, 1998). In despite of its exceptional institutional setting with multiple potentially relevant characteristic features, there appears to be little systematic evidence on how the institutional environment has affected the capital structures of Russian firms.

We attempt to explore three central aspects in relation to capital structure that are characteristic features of the Russian market: namely, high ownership concentration (Guriev and Rachinsky, 2005), high frequency of politically connected firms (Faccio, 2006), and weak legal investor protection (e.g., Shleifer and Vishny, 1997). We aim to answer two fundamental questions. Firstly, how are publicly traded Russian firms financed? Secondly, to what extent do firms with controlling owners that have political influence or economic influence through ties to large financial-industrial groups enjoy better access to external debt capital?

Corporate ownership concentration in Russia is among the highest in the world (Guriev and Rachinsky, 2005) and the transparency of ultimate control structures is typically low (Chernykh, 2008). In Russia, the 22 largest oligarchs control about 40 % of sales in a large sample of Russian firms (Guriev and Rachinsky, 2005). The term oligarch

denotes an owner with sufficient wealth and strategic ownership to have significant economic and thus also political influence.¹ The state controls 37 % of Russian traded firms (Chernykh, 2008). While state-controlled firms' may have easier access to debt financing through state banks, Guriev and Rachinsky (2005) argue that oligarch-controlled firms may have better access to capital than other privately controlled firms through internal finance within the oligarch-controlled financial conglomerates. Moreover, Faccio (2006) argues that politically powerful owners may get preferential treatment from government-controlled banks. Taken together, we would expect firms with strong political and economic ties to have better access to debt financing. Such financing benefits could also be associated with a lower average cost of capital and consequently higher firm value.

Using a sample of 95 Russian listed firms over the period 2000-2004, we find that traditional determinants and ownership variables impact capital structures. Firm profitability is significantly negatively related to debt financing. This result indicates that many profitable Russian firms rely less on debt financing and more on less expensive internal funds.

The governance structure and reporting practices also help explain the level of debt financing. When the state is the controlling shareholder, firms have significantly more debt in their capital structures than firms with domestic private controlling shareholders other than oligarchs. Firms with controlling shareholders that are either foreign or oligarchs do not have debt levels that are significantly different from other privately controlled firms. The results on ownership structures suggest that Russian firms

¹ In line with Guriev and Rachinsky (2005), the term oligarch is not used to imply a legal, economic or moral judgment on Russia's richest businessmen, but merely as a term for referring to Russian industrial tycoons.

do not have equal access to external capital. Moreover, after controlling for ownership characteristics, we do not find that firm size is associated with higher debt levels in cross-sectional tests. Regarding reporting practices, we find that firms reporting financial statements according to Russian statutory accounts have significantly lower levels of long-term debt. Taken together, firms with controlling ownership by the state as well as firms issuing financial statements prepared according to international standards employ significantly more debt financing.

We also explore how firms' growth opportunities are related to capital structures. Equity financing is typically preferred when the firm has limited collateral to back credit and when near-term cash flows cannot service large debt payments (e.g., Shleifer and Vishny, 1997). To measure how firms finance their growth, including the need to expand their long-term operating assets, we relate the firm's market-to-book ratio of equity to leverage. Contrary to expectations, we find a positive and significant relation between the market-to-book measure of growth and debt financing. Moreover, the market-to-book ratio is significantly positively related to leverage in firms with the state or an oligarch as controlling shareholder, while we find no such relation in firms with other control structures. One explanation for the positive relation is that high market-to-book firms with powerful owners may have better access to external capital due their influential owners. Another explanation would be that high market-to-book firms simply have lower risk premiums and therefore better access to external capital. However, the latter explanation cannot be the whole reason since we do not find that higher valuations would be associated with higher leverage in firms without influential owners.

As a positive development, the use and maturity of financial debt have increased significantly during the study period. The increase in the use of financial debt, and long-term financial debt in particular, indicate that the market for external capital has developed.

The results in this paper are related to several strands in the literature. Our paper adds to the studies that analyze the impact of the costs and benefits of political power on firm productivity (Guriev and Rachinsky, 2005) and valuations (Faccio, 2006; Maury and Liljeblom, 2009) in Russia. We also add to the small number of studies focusing on traditional determinants of capital structure in Russia (Ivashkovskaya and Solntseva, 2007; Delcours, 2007). More generally, our paper adds to the studies analyzing capital structures in emerging markets (e.g., Booth *et al.*, 2001).

The paper proceeds as follows. Section 2 briefly describes the Russian institutional setting, and discusses the relation between influential owners and capital structure decisions. Section 3 describes the data and presents descriptive statistics. Section 4 presents regression results. Section 5 concludes the paper.

2. Influential owners and capital structure

2.1. Overview of ownership and banking in Russia

Russian firms have undergone significant changes in their corporate governance structures since the privatization began in the early 1990s. The aim of the privatization was to move away from bureaucratic control and to enable more efficient private ownership (Boycko *et al.*, 1995). Various privatization options were available for Russian

firms, which moved former state property into the hands of managers, employees, and outside shareholders to various degrees (see Brunswick UBS equity guides for these options). The subsequent sales of blocks of state holdings in large Russian firms also enabled increases in the concentration of private ownership. However, concentrated control together with weak legal shareholder protection often leads to minority shareholder expropriation -- as was the case in Russia especially in the 1990s (e.g., Black *et al.*, 2000; Filatotchev *et al.*, 2001). An efficient corporate governance system is likely to arise with some form of concentrated private ownership coupled with efficient enforcement of legal investor rights (e.g., Shleifer and Vishny, 1997; La Porta *et al.*, 2000). In Russia, the latter was initially disregarded.

Chernykh (2008) traced the ultimate ownership and control rights in Russian firms for the year 2003 and found that the Russian state effectively controls about 38 % of publicly traded firms. Moreover, pyramid ownership structures and golden shares are often used by the state to maintain control. In addition to extensive state control, Guriev and Rachinsky (2005) estimate that the 22 largest private owners, or so-called oligarchs, in Russian industry control around 40 % of the sales and employment in a large sample of both listed and unlisted firms. Guriev and Rachinsky (2005) consider ownership concentration in Russia to be among the highest in the world. Guriev and Rachinsky (2005) and Gorodnichenko and Grygorenko (2008) argue that oligarch-controlled firms may obtain performance advantages compared with other privately controlled firms due to lower separation of ownership and control, better protection against the grabbing hand of the state, better control of hold up problems due to their often vertically integrated group structures, and better access to capital from within their group as well as to external

capital. Summing up, the continued strong presence of the Russian state as well as powerful private individuals characterizes the ultimate control in Russian traded firms.

The Russian government plays a central role in the Russian banking sector both via direct ownership and through regulatory bodies. Based on data on the ten largest banks in Russia, La Porta *et al.* (2002) find that the state owns about one-third and exercises control over approximately 50% of the banking assets. Vernikov 2007 reports that official Russian sources put the total share of the public sector in banking at 33-34%. However, he suggests that official sources understate state holdings. The actual figure is likely to be higher as the four biggest state-owned banks themselves are reported to control 40.7% of Russia's total banking assets.² Using cross-country analysis, La Porta *et al.* (2002) find support for the view that state ownership of banks politicizes resource allocation and generally lowers efficiency. Vernikov (2007) also notes that Russia differs from most other transition economies in that the banking industry is largely in the hands of Russian domestic owners with only a very small share under foreign control. The power of the Russian state exceeds its ownership interests in the largest banks since the state is the regulator through the Central Bank, the largest creditor, and controls most insolvency proceedings (see also, Tompson, 1997, 2002). Thus, firms with significant ownership interests by the Russian state are likely to be in an advantageous position in terms of access to debt financing compared to other firms.

² The four biggest banks are all state-controlled. They are Sberbank; Vneshtorgbank group which includes VTB, its retail subsidiary Bank VTB 24, and Promstroybank; Gazprombank; and Bank Moskvyy.

2.2 Influential owners and access to external finance

Large Russian firms are typically politically connected (Faccio, 2006), and oligarch owners as a group have considerable political power and vast economic influence (Guriev and Rachinsky, 2005). While Freeland (2005) characterizes the relationship between the political elite in Kremlin and most oligarchs as highly interrelated in the 1990s, Glaeser *et al.* (2003) argue that President Putin's rise to power lead to a reduction in the oligarchs' high political influence (see also, Maury and Liljeblom, 2009). However, the oligarch-controlled firms may still enjoy significant advantages in their access to debt capital compared to other private firms. Faccio (2006) note that politically connected firms may get preferential treatment from government-owned banks, though lending by government banks mostly benefits large state-owned companies themselves (see Claessens and Perotti, 2007). In addition, oligarch-controlled firms may obtain better access to debt financing due to oligarchs' affiliations with financial-industrial groups (e.g., Guriev and Rachinsky, 2005; Perotti and Gelfer, 2000). One can also draw a comparison to Chang and Hong (2000) who argue that Korean companies affiliated with corporate groups can utilize the group's reputation to enhance the access to external finance. Similarly Manos *et al.* (2007) find that group affiliated firms in India enjoy exceptional access to government and foreign loans. In summary, firms with significant ownership interests by the government and firms with political and group connections such as those controlled by oligarchs are likely to enjoy better access to debt markets than other firms.

Influential owners can also affect the relative importance of traditional theories of capital structure. Firstly, the pecking order theory suggests that firms prefer internal

financing in the form of retained earnings as it involves no direct costs. Debt is the secondary choice as it involves lower costs than the most expensive type of financing, equity. The differences in the cost of financing stem from asymmetric information. A negative relation between profitability and leverage that has been found in empirical studies (e.g., Rajan and Zingales, 1995; Booth *et al.*, 2001; Nivorozhkin, 2005) is often viewed as support for the pecking order theory. When firms in developing economies use debt, they tend to use more short-term debt than firms in developed economies (Delcours, 2007). Moreover, firms in developing economies often have to rely on expensive equity financing due to underdeveloped bond markets and poor institutions governing the banking industry (Delcours, 2007; Shleifer and Vishny, 1997). Assuming state-owned and oligarch-owned companies have improved and less costly access to debt financing, one would expect them to utilize more debt than other firms on average.

According to the trade-off theory, each firm has an optimal capital structure that stems from the tradeoff between the benefits of tax deductibility of interest rate costs and the higher bankruptcy risk from debt. Political contacts by owners may affect this balance since they may face lower tax liabilities in the first place (Faccio, 2006; Manos *et al.*, 2007). In Russia, such lower tax liabilities could pertain to oligarchs particularly in the Yeltsin era during which oligarchs enjoyed tremendous political influence (e.g., Guriev and Rachinsky, 2005). After the political regime shift in year 2000, we would expect the tax deductibility of interest rate costs to play a larger role again, which would favor the use of debt in oligarch-controlled firms.

The agency theory of capital structure (e.g., Jensen and Meckling, 1976) predicts lower debt levels in growth firms due to the risk of agency conflicts between debt and

equity holders and the risk of underinvestment due to debt payments in early stages. This stems from the inflexible relationship between regular annual debt payments and future cash flows that are difficult to predict for a growth firm. The increased possibility of risk shifting to the detriment of creditors in growth firms, which correspondingly raises the cost of debt, makes debt a less attractive alternative. Generally, Shleifer and Vishny (1997) note that growing firms and economies tend to rely more on equity than debt. In a weak institutional environment, politically connected firms with growth opportunities may be able to access external debt capital on more favorable terms than other firms, which would reduce the relevance of the prediction of agency theory. In addition, large shareholders who may also be connected to creditors may on average reduce such agency conflicts.

Politically influential owners may also have an impact on the importance of other traditional determinants of capital structure such as asset tangibility and firm size – this is particularly true in developing markets (Rajan and Zingales, 1995, 2003). Berger and Udell (1995) claim that firms who have close relationships with their creditors may be required less physical collateral. More generally, Rajan and Zingales (1995) argue that asset tangibility as a proxy for collateral may matter less in bank-oriented markets than in market-oriented ones. If we extend these arguments to ownership, politically influential owners may reduce the sensitivity of debt financing to the size of the physical collateral. The argument that larger firm size is associated with lower probability of default may also be affected by owner characteristics. For Japanese firms, Hoshi *et al.* (1990) argue that firms tied to a main bank may face lower cost of financial distress. Similarly, politically connected ownership may replace the significance of firm size as a guarantee

for stability and thus limit its role as a determinant of capital structure. For example, government bailouts in politically connected firms may reduce the default risk in small firms (see Faccio *et al.*, 2006).

3. Summary of research focus

Our principal interest is determining whether firms with powerful owners have superior access to debt financing on a market with weak institutions governing debt and equity markets. Firstly, we assess the direct impact of politically and economically influential owners such as the state and the oligarchs on firms' leverage ratios. Secondly, we compare the relevance of traditional determinants of capital structure in firms with influential owners and firms without such owners.

3. Data

3.1. Sample and data sources

We use accounting, ownership, and market data from several editions of the Russian Equity Guide by Brunswick UBS.³ The guides include historical accounting and ownership data, as well as key performance and valuation ratios. Ownership data has also been obtained from Skrin (a database containing Russian public companies).

The sample period begins in year 2000, motivated by the change in the political regime in the beginning of year 2000. The change in the institutional power balance combined with the exceptional situation on the credit market following the default of government bonds in 1998 motivates our focus on year 2000 and onwards.

³We use guides titled 2002/2003, 2004/2005, 2005/2006, and 2006.

The sample consists of publicly traded companies on the Russian Trading System (RTS) and Moscow Interbank Currency Exchange (MICEX). We focus on publicly traded companies due to three main reasons. Firstly, most of the companies are considerable in size and have a substantial impact on the Russian economy (e.g., Kuznetsov and Muravyev, 2001). Secondly, ownership and accounting data are easier to obtain and far more comparable in quality. Finally, the firms' access to external finance is more comparable when focusing on mid- and large-cap companies. The average market capitalization is USD 3025 million (median USD 512 million).

The accounting and ownership information has been obtained from an independent and established third party institution, Brunswick UBS. The figures are reported in nominal US dollars (year-end exchange rates for the balance sheet and year-average rates for the income statement). The problem with including data from multiple sources stems from differences in currency conversion, comparability across years as well as inflationary accounting and consolidation practices. Firms can report in dollars, roubles, or real roubles (Brunswick UBS Russian Equity Guide 2004) and different versions of historical statements do appear. Thus, it is better to use data from a source that aims to provide consistent and comparable data across all firms. The sample consists of firms listed during the period 2000-2004. Firms that have been de-listed or introduced during the period are included. The final sample consists of a panel of 95 firms with 368 firm-year observations.

3.2. Definitions of leverage

The ambiguity in prior research regarding capital structures may be partially due to the difficulties in measuring leverage and the explanatory variables (e.g., Harris and Raviv, 1991). We consider multiple definitions for leverage -- partially to illustrate the dominant types of debt in Russia. Three different definitions will be considered using book values and market values. The broadest definition of leverage is total liabilities to total assets. It is the most common definition in previous research (see Frank and Goyal, 2004). We use two variables for total debt: (1) Total Debt / Total Assets (TD/TA), and (2) Total Debt / Enterprise Value (TD/EV). Throughout the study, 'Total Assets' denotes the value of the firm at book value, whereas 'Enterprise Value' denotes the market value of the firm. The market capitalization figures in the enterprise value are based on year-average prices.⁴

Total debt does not provide a good indicator of whether the firm is at risk of default in the near future, nor does it only reflect interest cost liabilities as it includes items such as accounts payable. They may be used for transaction purposes rather than financing, thus overstating financial leverage (Bevan and Danbolt, 2002). Therefore, 'Financial Debt' that only considers interest bearing debt is included: (1) Financial Debt / Total Assets (FD / TA), and (2) Financial Debt / Enterprise Value (FD / EV).

Long-term debt (LTD) with a maturity exceeding one year is regarded separately to assess the definitional sensitivity discussed by Bevan and Danbolt (2002). This split-up is interesting in developing markets where short-term debt tends to be important. Long-term debt (LTD) consists of long-term financial debt and other long-term liabilities.

⁴ For some firm-years that we could not obtain average stock prices, we use prices from August for the relevant year.

3.3. Explanatory variables

To define profitability, we use the ratio of income before interest, tax, depreciation, and amortization to total assets. The natural logarithm of sales is used as a proxy for firm size. Tangibility is measured by the proportion of tangible fixed assets to total assets. In addition to debt financing, firms can use trade credit – especially when debt financing is unavailable or expensive. The fourth explanatory variable is thus net trade credit to total assets. This variable is only used in regressions where the definition of the dependent variable debt excludes operative leverage such as trade credit. The market-to-book ratio (M/B) is used as a proxy for growth opportunities.

The ownership structure of firms is included in the main model through ownership dummies. Three dummies are included: oligarch, state, and foreign. Other private ownership is the control group in the regression models. Ownership data published in the Brunswick UBS equity guides and by Skrin are used as raw data.⁵ To identify oligarch ownership, we use information on private oligarchs in Guriev and Rachinsky (2005), “Moscow’s Group of Seven” (1996), and Barnes (2003). The oligarch ranking in Guriev and Rachinsky (2005), as they note, is generally consistent with various other rankings.⁶ Our definition is also consistent with Maury and Liljeblom (2009). If the firm has a controlling shareholder with at least 20 % of votes, it is identified as state-owned, oligarch-owned, foreign-owned, or privately owned following the ultimate controlling owner definition used in La Porta *et al.* (1999). A controlling shareholder that is not identified as being the state, an oligarch, or a foreign owner is identified as a privately

⁵ The aim is to utilize year-end ownership figures.

⁶ To be included in their list of the 22 largest Russian oligarchs, it is required that total annual sales revenues controlled by a particular group of shareholders are above \$700 million or the total employment controlled by the group is above 20,000 people.

controlled firm. The few companies that do not have a controlling shareholder with at least 20 % of votes are identified as having dispersed ownership. Private control and dispersed ownership are combined due to the limited amount of observations with dispersed ownership. The 20 % voting control, which has been used in La Porta *et al.* (1999) and Perotti and Gelfer (2001), can be viewed as a threshold that gives the shareholder significant power to control the management.

The remaining dummy variables control for industry, accounting standards and time effects. Industry effects are controlled for by including industry dummies as industries may by virtue be subject to varying risks and volatilities or may be growing at a different pace. The industry classification is based on the classification in the Brunswick UBS equity guides: auto, consumer, metals, telecom, power, oil & gas, and other. In addition, we use a dummy variable that indicates reporting according to Russian Statutory Accounting (RSA). This is done to control for differences in asset valuation and profit measurement.⁷ A time dimension is included by adding a time dummy for each year following year 2000. This is also used to control for a tax reform in 2002 whereby the corporate tax rate was cut but at about the same time tax law enforcement was also considerably increased, which had the consequence of raising the effective tax rate for firms (see Desai *et al.*, 2007). *Ceteris paribus*, we would expect this to increase the attractiveness of debt finance due to the tax shelter provided by interest rate payments.

3.4. Model

Regressions are performed using an ordinary least squares (OLS) regression model. We use standard errors that control for within-cluster (firm) correlation and

⁷ See Russian Equity Guides by Brunswick UBS for an overview of accounting practices in Russian firms.

heteroscedasticity to relax the independence assumption required by the OLS estimator to being just independence between clusters (firms).⁸ Summing up, the leverage model we employ takes the following form (see Table 1 for detailed variable descriptions):

$$\frac{D_{i,t}}{V_{i,t}} = \alpha_0 + \beta_1(\text{profit}_{i,t}) + \beta_2(\text{trade debt}_{i,t}) + \beta_3(\text{size}_{i,t}) + \beta_4(\text{collateral}_{i,t}) + \beta_5(M/B_{i,t}) + \beta_6(\text{ownership}_{i,t}) + \beta_7(RSA_{i,t}) + \beta_8(\text{year dummies}) + \beta_9(\text{industry dummies}) + \varepsilon$$

where

profit = EBITDA / total asset; *trade debt* * = trade credit / total assets,

size = ln (sales); *collateral* = fixed assets / total assets (tangibility), *M/B* = market cap of equity / book value of equity; *ownership* = ownership type (1 for each), *RSA* = 1 for the accounting standard RSA; *year dummies* = 1 for each year after 2000,⁹ and *industry dummies* = 1 for industry groups.

* included when definition of D excludes trade credit

The model is used on the entire sample as such to determine the significance of ownership structure while controlling for traditional capital structure determinants within the Russian institutional context. Secondly, the model is used on sub-samples to evaluate the significance of traditional capital structure determinants depending on the type of controlling owner.

⁸ Some previous studies have employed a censored Tobit model due to several observations with zero indebtedness. These studies also find that the results on the determinants of leverage are very robust to the estimation technique used (Rajan and Zingales, 1995; Bevan and Danbolt, 2002). We do not use a censored Tobit due to the problems relating to panel data analysis and due to the previous findings on the robustness of various methods. Moreover, zero debt observations only represent 0.0%-7.5% of the observations in our sample depending on the measure of gearing.

⁹ By including year dummies, we have also considered the impact of the tax reform in 2002 that reduced the value of tax shields. The change in the corporate tax rate was not found to reduce the use of leverage as indicated by the insignificant year dummy for 2002 (though not reported in the tables).

3.5. Descriptive statistics

The descriptive statistics for the 95 major Russian firms are displayed in Table 2. Panel A shows that the average Russian listed firm has a total non-equity liabilities to total assets ratio of 40.0 %, whereas the corresponding figure using market values amounts to 36.1 % (Panel B). A mean debt ratio of 40.0 % may appear quite high. It is, however, worthwhile to notice that a considerable fraction of net liabilities are made up of payables, which is a non-interest bearing operating debt. The financial debt amounts to 17.1 % of assets (Panel A), while the figure is 13.8 % as of the market value of the firm. Panels A and B also show that total long-term liabilities amount to 16.2 % of total assets, or 13.4 % of the market value of the firm.

Our leverage ratios for Russia differ from, e.g., data on a large sample of UK firms in Bevan and Danbolt (2002), who report total liabilities amounting to 49 % of total assets. With similar sized US companies in 2001, the ratio of debt to net worth equaled 59 % using market values (Federal Deposit Insurance Corporation). In sum, Russian companies appear to employ significantly less debt than their Western peers.

The descriptive statistics for the explanatory variables, displayed in Panel C of Table 2, reveal considerable variety among the sample firms. The mean return on assets of 17 % is very close to the average figure of 16 % reported by Rajan and Zingales (1995) for UK companies during 1988-1990. The variation in our return-on-assets variable is nevertheless large. The variation in trade credit is large as well, ranging from -40.6 % to 36.4 %, with a mean of -0.7 % in proportion to total assets. The figure for total sales, measured in million USD, averages 2023. The mean ratio of asset tangibility equals 60.7 %, and the market-to-book ratio is on average 1.05.

Interesting changes in the composition and the level of debt occur over the period 2000-2004, as shown in Panel A of Table 3. The development is particularly clear when one decomposes financial debt into short-term and long-term financial debt. The use of debt has increased during the period 2000-2004, particularly the use of financial debt. Long-term financial debt has increased considerably during the period. In 2000, it should be noted that the interest-bearing financial debt consisted mostly of short-term financial debt. For the same year, short-term financial debt as a percentage of total assets equals on average 5.3 %. The total financial debt ratio measured 10.0 % -- leaving 4.7 % of assets as long-term financial debt. Over the period, short-term financial debt and long-term financial debt diverge. By 2004, the level of the financial-debt ratio is 23.2 %, the short-term financial debt ratio equals 9.7 %, and the long-term financial-debt ratio amounts to 13.5 %. The increase in the use of long-term financial debt indicates that the market for external capital has developed over the period.

Panel B of Table 3 displays the composition of debt by the type of controlling shareholder. Interestingly, the Russian state-controlled firms have the highest levels of long-term financial debt to total assets (LTD_fin/TA) of all controlling shareholder types and oligarch-controlled firms appear highly debt-financed across all debt types. Perhaps more importantly, the firms that have private controlling shareholders that are neither foreigners nor oligarchs tend to have significantly lower long-term debt ratios (LTD/TA). Non-oligarch controlled firms (with private Russian owners) may thus have lower access to external long-term debt capital (see also Guriev and Rachinsky, 2005).

4. Regression results

4.1. *The impact of influential owners on capital structure*

Table 4 relates politically powerful controlling ownership by oligarchs and the Russian state to leverage ratios. Panel A of Table 4 shows that state-controlled firms employ significantly more debt in their capital structures than firms with domestic non-oligarch controlling owners. The coefficient for the state controlling shareholder dummy is economically significant and equals 0.10 using financial debt to total assets as the leverage ratio (column 2) and it is statistically significant at the 5% level. Panel A of Table 4 also shows that the coefficient for the dummy for oligarch control is positive and equals 0.04 in column 2, although the coefficient is not statistically significant at conventional levels. The positive coefficient support the higher than average leverage ratios for oligarch-controlled firms reported in Table 3. Panel A of Table 4 also shows that the coefficients for controlling foreign owners change sign between specifications and is statistically unrelated to leverage ratios, which as a whole indicates that foreign and non-oligarch privately controlled firms do not employ different leverage levels. Furthermore, Panel B of Table 4 shows that the relation between the type of controlling ownership and leverage ratios is less clear when leverage is measured using market value of equity. However, the market value of equity tends to be affected by the governance structure and owner types of firms (e.g., Maury and Liljeblom, 2009), which makes leverage ratios for firms with various controlling owner types less comparable. Taken together, after controlling for traditional determinants of capital structure, we conclude

that firms employed by the state tend to employ significantly more debt than firms with domestic nonoligarch controlling shareholders.¹⁰

While Table 4 explored the direct impact of controlling owner types on capital structure, Table 5 focuses on the relative importance of various variables used as determinants of capital structure in previous literature in different controlling owner categories. The coefficient for firm size is negatively related to leverage in state-controlled firms (column 1) and oligarch-controlled firms (column 2), while the coefficient is positive in other firms. Moreover, the coefficient for firm size is significantly different between oligarch-controlled firms and other privately controlled firms.¹¹ The results for firm size suggest that influential owners can substitute for the importance of the size effect as a determinant for debt capacity. The variable tangibility measured as fixed assets to total assets is positively related to leverage in firms with oligarch and other controlling shareholders (though not statistically significantly), whereas tangibility is significantly negatively related to leverage in state-controlled firms (significant at the 5% level). The coefficient of tangibility is significantly different between the state-controlled and group “other firms”.¹² Thus, the collateral value of fixed assets does not explain higher debt levels in state-controlled firms.

¹⁰ As a robustness test, we re-run the regressions by excluding observations in each variable that represent the three highest and three lowest values in each explanatory variable excluding dummy variables. The results from the reduced sample confirm the findings in Table 4; and the relations are even stronger using this reduced sample. In particular, the ownership dummies obtain increased statistical significance levels. The state dummy is systematically positive and highly significant.

¹¹ We obtain this result by including an interaction variable between the oligarch dummy and the size variable to the basic model used in Table 5 for a sample of oligarch-controlled and “other firms”. The interaction variable has a *t*-statistics of -1.88.

¹² This result is obtained by including an interaction variable between the state dummy and the tangibility variable to the basic model used in Table 5 for a sample of state-controlled and “other firms”. The interaction variable has a *t*-statistics of -3.28.

Furthermore, Table 5 shows that our proxy for growth opportunities, the market-to-book ratio of equity, is significantly positively related to leverage in firms with the state and oligarchs as the controlling shareholder (significant at the 1% level), while the growth measure is statistically unrelated to leverage in the group “other firms”. The results for the market-to-book ratio indicate that growth opportunities have a significantly different relation with leverage whether the firm has politically and economically influential owners such as oligarchs or the state or not.¹³ This result could mean that firms with a need to expand long-term operative assets to support growth have better access to debt only if they have strong owners.

4.2. Traditional determinants of capital structure

Table 4 shows that firm profitability is negatively related to leverage. The coefficient for profitability using financial debt to total assets as the dependent variable equals -0.185 and -0.289 (significant at the 1% level), using book values and market values, respectively. Moreover, profitability is significantly negatively related to the different measures of leverage in the firm-level fixed-effects model in Table 6. To explore whether the negative relation is a short-term effect, we also relate lagged profitability to leverage. We still find a negative relation to leverage when we lag profitability (not reported in the tables).¹⁴ The overall negative relation between

¹³ We estimated the significance between groups by including an interaction variable between the oligarch dummy and the growth variable to the basic model used in Table 5 for a sample of oligarch-controlled and “other firms”. The interaction variable has a *t*-statistics of 1.63. Likewise, we estimated the significance between groups by including an interaction variable between the state dummy and the growth variable to the basic model used in Table 5 for a sample of state-controlled and “other firms”. This interaction variable has a *t*-statistics of 3.28.

¹⁴ The significance of profitability as an explanatory variable is somewhat lower when it is lagged by one year, though it remains statistically significant and negative for four out of the six definitions for gearing in Table 4.

profitability and leverage suggests that internal financing through retained earnings plays an important financing role.

The variable size is negatively related to leverage in the cross-sectional regressions in Table 4, although only statistically significantly so for the financial debt-to-total assets measure. In the fixed-effects specification in Table 6, the size variable is positively related to all leverage ratios, which suggests that size does also have an independent effect. Taken together, firms size, as measured by the logarithm of sales, does not have a strong independent effect after controlling for owner and other firm characteristics in the cross-sectional model, whereas increases in size is significantly associated with increases in leverage ratios in the firm-level fixed-effects model.

Tangibility defined as fixed assets to total assets is positively related to leverage using long-term debt, although the coefficient is statistically insignificant (columns 3 and 6 of Tables 4 and 6). Tangibility consistently takes a negative sign when we use total debt to total assets (column 1 in Tables 4 and 6), which indicates that firms with more collateral value rely less on trade debt. The fact that we do not generally find a statistically significant positive impact of tangibility on long-term debt suggests that other factors such as an influential owner may substitute for physical collateral as a guarantee for stability as shown in Table 5.

Our measure of growth opportunities, the market-to-book ratio, is significantly positively related to leverage using book values (Panel A of Table 4). The coefficient ranges from 0.049 to 0.061 depending on the specification and it is significant at the 1% level. These results imply that firms with more growth opportunities employ higher debt levels in their balance sheets. Table 5 also showed that the positive relation occurs

significantly so only in firms with influential owners. Furthermore, Panel B of Table 4 shows that the market-to-book ratio is significantly negatively related to leverage using market values. Such a negative relation, also reported by Rajan and Zingales (1995), may arise due to the fact that a higher market valuation results, by definition, in lower leverage. The results using a firm-level fixed-effects specification (Table 6) are in line with the OLS results in Table 4.

Table 4 shows that firms reporting according to Russian statutory accounts (RSA) employ significantly less debt in their capital structures than firms reporting in accordance with IAS or US GAAP (columns 3 and 6). The coefficient for RSA is economically significant and equals -0.11 using long-term debt to total assets and long-term debt to enterprise value (significant at the 1% level). The fixed-effects specification in Table 6 measuring changes in reporting practices also shows a negative relation for RSA and leverage ratios. The obtained negative relation is interesting since one could expect the opposite because asset valuation according to RSA on average measures below that of international accounting standards (see, e.g., Brunswick UBS Russian Equity Guides). In sum, reporting according to international accounting standards seems to have a positive impact on leverage after controlling for owner and firm characteristics.

When operating debt is excluded from the definition of leverage, the coefficient for trade debt is typically negatively related to leverage in both the cross-sectional and fixed-effects models (Tables 4 and 6). This implies that firms with more trade debt have lower levels of financial debt in their capital structures. In general, the problems relating to informational asymmetries and an underdeveloped capital market are likely to be reflected in considerable use of operating debt (see also Delcoursé, 2007).

5. Conclusions

The Russian institutional environment is characterized by a largely state-run and concentrated banking sector, high ownership concentration, and weak investor protection. The state (e.g., Chernykh, 2008) and the so-called oligarchs (Guriev and Rachinsky, 2005) have a dominant and influential position. In this paper, we focus on how politically and economically influential owners impact firms' access to debt financing.

Using a sample of 95 major Russian traded firms over the period 2000-2004, we find that firms with the state as controlling shareholder use significantly more debt financing than firms with domestic private controlling shareholders not affiliated with the oligarchs. Higher growth opportunities are associated with higher debt financing in firms with either an oligarch or the state as controlling shareholder, while other firms do not appear to finance growth opportunities with debt capital. Furthermore, we find that more profitable firms across different controlling owner types use less external debt financing than less profitable firms, which would indicate a preference for internal financing.

The significance of traditional determinants of capital structure also varies across different types of controlling owners. Firm size, for instance, appears to be negatively related to the level of debt in oligarch- and state-controlled companies, whereas the relation is positive for other companies, as one would expect. In terms of the role of collateral, the results show a negative and significant relation between asset tangibility and leverage in state-controlled companies while this relation is positive, though not statistically significant, in other firms. The results illustrate the relative importance of ownership characteristics as a determinant of capital structures in Russian firms.

The results indicate that Russian firms do not have equal access to debt financing to finance their operations and growth. Both state and oligarch controlling owners appear to have better possibilities to optimize firms' capital structures than do firms without such owners. Improvements in legal investor protection as well as improved transparency are likely to contribute to a better access to external financing.

Unequal access to external funding is not without consequence as poor corporate governance reduces much needed access to external finance. Historically, the relatively high cost of external financing has made internal financing the primary alternative. For example, Guriev *et al.* (2004) report that out of the 78% of Russian firms that made investments in 2002, only 21% financed their investments with bank loans -- and only 0.7 percent by issuing stock. Earlier, the situation was even less encouraging. For the 1990s, Judge and Naoumova (2004) report that only five percent of funds were raised from banks and only one percent from equity finance in larger Russian firms with more than 200 employees. The statistics give support to the pecking-order theory implying that equity financing is indeed the most expensive source of funding. While firms with politically and economically influential owners have superior access to debt finance, other firms are on average forced to rely on more expensive funding to finance growth or alternatively restrict growth. This type of inequality impacts the development of the economy by making it skewed towards certain sectors and leaving it underdeveloped in others. This reinforces the already dominant status of Russia's financially and politically influential groups.

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Table 1. Variable definitions

Descriptions of the main variables used in the analysis.

Variable	Description
Total debt (TD) / Total assets (TA)	Total non-equity liabilities / Book value of total assets. Source: Brunswick Warburg Russian Equity Guides.
Financial debt (FD) / Total assets	Financial interest-bearing debt / Book value of total assets. Source: Brunswick Warburg Russian Equity Guides.
Long-term debt (LTD) / Total assets	(Long-term financial debt + other long-term debt) / Book value of total assets. Source: Brunswick Warburg Russian Equity Guides.
Total debt / Enterprise Value (EV)	Total non-equity liabilities / Market value of total assets. Source: Brunswick Warburg Russian Equity Guides.
Financial debt / Enterprise Value	Financial interest-bearing debt / Market value of total assets. Source: Brunswick Warburg Russian Equity Guides.
Long-term debt / Enterprise Value	(Long-term financial debt + other long-term debt) / Market value of total assets. Source: Brunswick Warburg Russian Equity Guides.
Profitability	Equals EBITDA over total assets. Source: Brunswick Warburg Russian Equity Guides.
Trade debt	Trade credit divided by total assets. Equals (payables - receivables) over total assets. Source: Brunswick Warburg Russian Equity Guides.
Size	Log(sales). Equals the logarithm of sales. Source: Brunswick Warburg Russian Equity Guides.
Tangibility	Equals fixed assets divided by total assets. Source: Brunswick Warburg Russian Equity Guides.
M/B	Market value of a firm's equity divided by the book value of a firm's equity. Market capitalization is measured as year-average. Source: Brunswick Warburg Russian Equity Guides.
Oligarch	Equals one if a firm in a particular year is controlled by an oligarch or a holding company controlled by an oligarch with at least 20 % of the votes and otherwise zero. Ownership is measured at the end of the year. Source: Brunswick Warburg Russian Equity Guides, Skrin.ru, Guriev and Rachinsky (2005).
State	Equals one if a firm in a particular year is controlled by the state or a state-owned holding company with at least 20 % of the votes and otherwise zero. Ownership is measured at the end of the year. Source: Brunswick Warburg Russian Equity Guides, Skrin.ru.
Foreign	Equals one if a firm in a particular year is controlled by a foreigner or a foreign held company with at least 20 % of the votes or otherwise zero. Ownership is measured at the end of the year. Source: Brunswick Warburg Russian Equity Guides, Skrin.ru.
RSA	Equals 1 if the accounts are prepared according to Russian Statutory Accounts and zero if the accounts are prepared according to IFRS or US GAAP. Source: Brunswick Warburg Russian Equity Guides.
Industry dummies	Industries are Auto, Consumer, Metals, Telecom, Power, Oil & Gas and Other industries. A dummy is included for each but Other industries. Source: Brunswick Warburg Russian Equity Guides.
Year dummies	Dummy variables for years 2000-2004.

Table 2. Summary statistics

This table presents means, standard deviations, minimums, and maximums for the various definitions of leverage and the explanatory variables. The sample consists of 95 Russian listed firms with 368 firm-year observations during the time period 2000-2004. Variable definitions are presented in Table 1.

	Mean	St. dev.	Min.	Max.
<i>Panel A: Leverage using book value</i>				
Total debt	40.0%	19.1%	4.3%	94.9%
Financial debt	17.1%	14.7%	0.0%	91.3%
Long-term debt	16.2%	14.0%	0.0%	65.4%
<i>Panel B: Leverage using market value</i>				
Total debt	36.1%	19.2%	5.3%	91.9%
Financial debt	13.8%	10.8%	0.0%	51.6%
Long-term debt	13.4%	11.5%	0.0%	59.8%
<i>Panel C: Explanatory variables</i>				
Profitability	17.0%	12.7%	-12.9%	94.9%
Trade credit	-0.7%	9.1%	-40.6%	36.4%
Log(sales)	6.42	1.43	3.12	10.44
Tangibility	60.7%	18.5%	7.2%	90.4%
M/B	1.05	1.00	0.04	5.81

Table 3. The composition of debt by year and type of controlling owner

This table displays the annual levels of leverage measured at book value for each year within the sample period 2000-2004. The different leverage measures are included to illustrate the change that has occurred in capital structure and in the composition of debt within the period (Panel A). For clarity, the table only includes the measures at book value. The sample consists of 95 Russian publicly traded firms with 368 firm-year observations during 2000-2004. The variables are the same as the measures used in the regressions: total debt to total assets (TD/TA), financial debt to total assets (FD/TA), long-term debt to total assets (LTD/TA). In addition, financial debt has been split into long-term and short-term financial debt, LTD_fin/TA and STD_fin/TA, respectively. This split is done to further illustrate the change in the composition of debt. Panel B illustrates the capital structures for the firms by controlling shareholder type.

Year	Observations	TD/TA	FD/TA	STD_fin/TA	LTD_fin/TA	LTD/TA
<i>Panel A. Leverage ratios by year</i>						
2000	68	38.7 %	10.0 %	5.3 %	4.7 %	11.2 %
2001	77	37.8 %	15.2 %	6.5 %	8.7 %	14.2 %
2002	72	37.1 %	16.4 %	6.4 %	9.9 %	16.4 %
2003	80	41.1 %	19.6 %	8.2 %	11.3 %	18.3 %
2004	71	45.1 %	23.2 %	9.7 %	13.5 %	20.0 %
<i>Panel B. Leverage ratios by controlling owner type</i>						
Oligarch	120	43.8 %	19.2 %	10.3 %	8.9 %	18.4 %
State	181	38.9 %	16.4 %	5.0 %	11.3 %	16.9 %
Foreign	13	35.8 %	18.8 %	12.5 %	6.3 %	12.7 %
Other private	54	41.6 %	16.3 %	9.3 %	6.7 %	11.0 %

Table 4. Regression results

The table presents coefficient estimates from regressions of leverage on profitability, trade debt, size, tangibility, market-to-book, and controlling owner types. The coefficients are estimated using an OLS regression model with industry and time dummies. A control variable for the accounting standard is also included. The sample consists of 95 Russian publicly traded firms with 368 firm-year observations during 2000-2004. Variables are defined in Table 1. TD refers to total non-equity capital, FD to financial (interest bearing) debt and LT to long-term debt. TA stands for total assets at book value, whereas EV stands for enterprise value that is the value of all assets at market value. Robust standard errors that control for firm-level clustering are in parentheses below the coefficient estimates. ***, **, * denote statistical significance at the 1%, 5%, and 10%, respectively.

	Panel A. Leverage using book values			Panel B. Leverage using market values		
	(1)	(2)	(3)	(4)	(5)	(6)
	TD/TA	FD/TA	LTD/TA	TD/EV	FD/EV	LTD/EV
Constant	0.867*** (0.140)	0.216* (0.117)	0.081 (0.082)	0.735*** (0.082)	0.266*** (0.075)	0.168** (0.065)
Profitability	-0.325*** (0.119)	-0.289*** (0.076)	-0.050 (0.059)	-0.216*** (0.076)	-0.185*** (0.053)	-0.057 (0.043)
Trade debt		-0.057 (0.149)	0.022 (0.098)		-0.164 (0.102)	-0.079 (0.073)
Size	-0.025 (0.020)	-0.021* (0.012)	-0.004 (0.011)	-0.017 (0.012)	-0.019** (0.008)	-0.007 (0.010)
Tangibility	-0.410*** (0.088)	-0.005 (0.088)	0.102 (0.080)	-0.100* (0.056)	0.111* (0.066)	0.157** (0.065)
M/B	0.063*** (0.016)	0.055*** (0.011)	0.049*** (0.014)	-0.093*** (0.014)	-0.026*** (0.008)	-0.022** (0.009)
Oligarch	0.053 (0.043)	0.042 (0.036)	0.014 (0.030)	-0.030 (0.026)	-0.001 (0.028)	-0.015 (0.023)
State	0.095** (0.046)	0.100** (0.040)	0.063* (0.034)	0.058* (0.029)	0.041 (0.033)	0.044 (0.029)
Foreign	-0.019 (0.063)	0.023 (0.072)	-0.064 (0.078)	0.031 (0.030)	-0.003 (0.031)	-0.046 (0.031)
RSA	-0.111** (0.045)	-0.027 (0.029)	-0.112*** (0.024)	-0.103*** (0.027)	-0.028 (0.020)	-0.113*** (0.019)
R ²	0.44	0.36	0.38	0.60	0.35	0.45

Table 5. Regression results by owner types

The table presents coefficient estimates from regressions of leverage on profitability, trade debt, size, tangibility, market-to-book for sub samples based on controlling owner types (state, oligarch, and other types). The category “other firms” in column 3 includes primarily nonoligarch private controlling shareholders. The dependent variable is defined as financial (interest bearing) debt / total assets. The coefficients are estimated using an OLS regression model with industry and time dummies. A control variable for the accounting standard is also included. The total sample consists of 95 Russian publicly traded firms during 2000-2004. Variables are defined in Table 1. Robust standard errors that control for firm-level clustering are in parentheses below the coefficient estimates. ***, **, * denote statistical significance at the 1%, 5%, and 10%, respectively.

	State-controlled firms	Oligarch-controlled firms	Other firms
	(1)	(2)	(3)
Constant	0.539*** (0.136)	0.330** (0.132)	-0.061 (0.209)
Profitability	-0.520*** (0.146)	-0.170 (0.111)	-0.166 (0.111)
Trade debt	-0.282** (0.109)	-0.153 (0.146)	0.046 (0.229)
Size	-0.025 (0.015)	-0.031** (0.015)	0.032 (0.047)
Tangibility	-0.212** (0.096)	0.124 (0.136)	0.013 (0.194)
M/B	0.074*** (0.010)	0.054*** (0.018)	0.003 (0.021)
RSA	-0.078*** (0.027)	-0.002 (0.052)	-0.008 (0.087)
Observations	181	120	67
R ²	0.60	0.40	0.34

Table 6. Regression results using firm fixed effects

The table presents coefficient estimates from regressions of leverage on profitability, trade debt, size, tangibility, market-to-book. The coefficients are estimated using a firm-level fixed-effects regression specification. Time dummies are included in the models. The sample consists of 95 Russian publicly traded firms with 368 firm-year observations over the period 2000-2004. Variables are defined in Table 1. TD refers to total non-equity capital, FD to financial (interest bearing) debt and LT to long-term debt. TA stands for total assets at book value, whereas EV stands for enterprise value that is the value of all assets at market value. Dummy variables for controlling owner types are included but not displayed. Standard errors are in parentheses below the coefficient estimates. ***, **, * denote statistical significance at the 1%, 5%, and 10%, respectively.

	Panel A. Leverage using book values			Panel B. Leverage using market values		
	(1)	(2)	(3)	(4)	(5)	(6)
	TD/TA	FD/TA	LTD/TA	TD/EV	FD/EV	LTD/EV
Profitability	-0.342*** (0.053)	-0.249*** (0.053)	-0.115* (0.062)	-0.199*** (0.051)	-0.131*** (0.040)	-0.090** (0.043)
Trade debt		-0.250*** (0.079)	-0.069 (0.092)		-0.297*** (0.060)	-0.161** (0.063)
Size	0.128*** (0.023)	0.086*** (0.023)	0.057** (0.027)	0.070*** (0.022)	0.054*** (0.017)	0.034* (0.018)
Tangibility	-0.543*** (0.060)	-0.193*** (0.059)	0.026 (0.069)	-0.142** (0.058)	-0.000 (0.045)	0.027 (0.048)
M/B	0.011 (0.010)	0.022** (0.010)	0.010 (0.011)	-0.119*** (0.009)	-0.035*** (0.007)	-0.032*** (0.008)
RSA	-0.192*** (0.029)	-0.174*** (0.029)	-0.221*** (0.033)	-0.138*** (0.028)	-0.108*** (0.022)	-0.138*** (0.023)
R ²	0.41	0.38	0.23	0.55	0.33	0.24