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Christophe J. Godlewski, Zuzana Fungáčová  
and Laurent Weill

Stock market reaction to debt  
financing arrangements in Russia



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Christophe J. Godlewski\*, Zuzana Fungáčová\*\* and Laurent Weill\*\*\*

## Stock market reaction to debt financing arrangements in Russia

### Abstract

This paper investigates stock market reaction to debt arrangements in Russia. The analysis of the valuation of debt arrangements by stock markets provides information about the use of debt by Russian companies. We apply the event study methodology to check whether debt announcements lead to abnormal returns using a sample of Russian listed companies that issued syndicated loans or bonds between June 2004 and December 2008. We find a negative reaction of stock markets to debt arrangements that can be explained by moral hazard behavior of shareholders at the expense of debtholders. Further, we observe no significant difference between announcements of syndicated loans and bonds. Thus, our findings support the view that Russian companies could have incentives to limit their reliance on external debt.

Keywords: corporate bonds, event study, Russia, stock returns, syndicated loans.

JEL Classification: G14, G20, P30.

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\* Corresponding author. PEGE, 61 avenue de la Forêt Noire, 67000 Strasbourg, France. E-mail: [godlewski@unistra.fr](mailto:godlewski@unistra.fr), tel.: +333 68 85 21 21.

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\*\* Zuzana Fungacova, BOFIT, Bank of Finland \*\*\*Laurent Weill, University of Strasbourg & EM Strasbourg Business School

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## Stock market reaction to debt financing arrangements in Russia

### Tiivistelmä

Tutkimuksessa tarkastellaan osakemarkkinoiden reaktiota velkarahoitukseen Venäjällä. Osakemarkkinoiden reaktio velkarahoitukseen antaa tietoa tämän rahoituksen käytöstä venäläisissä yrityksissä. Tutkimuksessa arvioidaan tapahtumatutkimustekniikkaa (event study methodology) käyttäen, johtavatko ilmoitukset velanotosta epätavallisiin tuottoihin venäläisissä osakelistatuissa yrityksissä. Nämä yritykset laskivat liikkeeseen syndikoituja lainoja tai velkakirjoja kesäkuun 2004 ja joulukuun 2008 välillä. Tutkimuksessa havaitaan, että osakemarkkinoiden reaktio velkarahoitukseen on negatiivinen. Tämä selittyy osakkeenomistajien moral hazard -käyttäytymisellä, joka kohdistuu velan hallussapitäjiin. Ilmoituksilla syndikoitujen lainojen tai velkakirjojen liikkeeseenlaskusta ei ole merkittävästi toisistaan poikkeavia vaikutuksia osakemarkkinoilla. Nämä tutkimustulokset tukevat käsitystä, että venäläisillä yrityksillä saattaa olla kannustimia vähentää riippuvuutta ulkoisesta velanotosta.

Avainsanat: yritysvelkakirjat, tapahtumatutkimustekniikka, Venäjä, osaketuotot, syndikoidut lainat

# 1 Introduction

It is well-demonstrated in the literature that the presence of efficient financial intermediaries and stock markets contributes to economic growth by favoring access to financing sources. As a result, a consensus has emerged that development of the financial sector is positive for economic growth (Levine, 2005).

Given this insight, we postulate that the lack of development of Russia's financial system might constitute an obstacle to the country's economic development. Indeed, despite substantial GDP growth since 2000, Russia's financial system in 2007 remained dwarfish by international standards with a mere 32% ratio of private credit provided by financial institutions to GDP compared to a world average of nearly 55%.<sup>1</sup>

The financing problems of Russian companies reflect the underdevelopment of its financial system generally, and Russia's financial markets in particular. Rosstat figures show bank credit was used to finance only 11% of investments in 2008, and with the exception of a few major IPOs, companies largely refrained from equity issues to finance investment. In 2007, for instance, only about 2% of investments were financed through equity issues.

While the strong dependence of Russian companies on internal sources of funds is arguably a consequence of limited access to external funds, a case could also be made that the relatively modest reliance on bank credit might be the result of demand factors, and, that Russian companies actually have incentives to avoid external financing. Indeed, the pecking-order theory provides justifications for the priority use of internal financing, owing notably to the greater cost of external financing sources which is a result of information asymmetries in favor of managers.<sup>2</sup> Thus, the importance of retained earnings for Russian companies may very well be the product of their preference for internal funds.

To better understand the use of debt by Russian companies, we analyze the valuation of debt arrangements by stock markets. A negative reaction of stock markets would suggest that debt arrangements are negatively perceived by investors in Russia and thus unlike developed countries Russian firms may have reasons to avoid debt financing. This appears, at least potentially, to be a valid explanation of limited use of debt. By the same token, a positive reaction of stock markets would indicate voluntary avoidance of debt-taking by Russian companies.

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<sup>1</sup> These figures come from the update of Beck, Demirgüç-Kunt and Levine (2000) dataset released in 2009.

<sup>2</sup> Delcoursé (2007) provides support for the priority use of internal financing in Central and Eastern European countries.

To investigate the stock market reactions to debt arrangements in Russia, we apply the event study methodology. This allows us to measure the impact of a specific economic event on the stock price and the firm's valuation. We then look to see whether debt announcements by Russian companies lead to abnormal returns by considering a sample of Russian listed companies that issued 38 syndicated loans and 17 bonds between June 2004 and December 2008.

Our contribution to the literature is two-fold. First, this is the first study we are aware of that applies the event study methodology Russia. It contributes to the modest literature on stock markets in Russia (Rockinger and Urga, 2000; Anatolyev, 2005). Second, we extend the literature on stock market reactions to debt announcements by providing the analysis of stock market reactions to announcements of both syndicated loans and bonds. Former papers analyze the reaction to the announcement of a specific type of debt instrument (e.g. Gasbarro et al., 2004, for loans and Miller and Puthenpurackal, 2005, for bonds). As both instruments are used in financing large debt arrangements, we also analyze whether the type of debt instrument might induce different stock market reactions such that the choice of debt instrument was important for a particular situation.

The rest of the article is structured as follows. Section 2 provides literature overview and discusses testable hypotheses. Section 3 describes the most important features concerning financing sources for Russian companies. Section 4 presents the sample and the methodology. Section 5 displays the results. Section 6 provides our conclusions.

## 2 Background

In this section, we survey the relevant corporate finance literature on stock market reactions to external debt financing, and discuss the main testable hypotheses related to stock market perception of debt arrangements.

### 2.1 Literature review

Our research ties into several strands of existing literature. The first strand deals with stock market reactions to bank debt announcements. Starting with the seminal works of Mikkelsen and Partch (1986) and James (1987), research in this area has mostly found a positive impact of bank debt announcements on stock prices. A common explanation here is that banks play a unique role as information transmitters in capital markets (i.e. banks possess a competitive advantage in evaluating borrowers, so obtaining a bank loan is considered to be a positive signal of the prospective borrower's



creditworthiness to other market participants). Lummer and McConnell (1989) extend this analysis by distinguishing new bank loans and loan renewals for US borrowers. They find positive and significant abnormal return only for loan renewals, confirming that loan renewal serves as a certification device for the quality of the borrower. Aintablian and Roberts (2000) confirm more positive effects for loan renewals in their analysis of Canadian bank loan announcements. In addition to loan renewals other characteristics are found to contribute to larger abnormal returns. Slovin et al. (1992) show that positive impact of bank announcements concerns primarily small firms. Furthermore, as evidenced by Billett et al. (1995) higher quality lenders contribute to larger abnormal borrower returns. More recent results based on Japanese data suggest that the positive valuation effect of bank loan announcements for borrowing firms is mainly due to a wealth transfer from lending banks (Kang and Liu, 2008).

As most studies on this topic pertain to developed countries<sup>3</sup>, it is hardly unreasonable to wonder how stock markets react in emerging countries. We might, for example, see a higher cost of debt relative to internal financing in emerging countries than in developed ones, which, in turn, could lead to a negative reaction of stock markets following debt announcements. Cost of debt, after all, reflects agency costs between shareholders and debtholders that can lead to moral hazard on the part of shareholders. This could be more pronounced in emerging countries with weaker institutional frameworks to protect debtholders.

The second strand of literature involves studies of the Russian stock market. Despite the economic boom that got underway in 2000, there has been surprisingly little academic study of Russia's stock market. Fortunately, we find a number of solid works on the efficiency of stock markets in Russia (Rockinger and Urga, 2000; Abrosimova et al., 2002; Anatolyev, 2005). All these papers argue for increased efficiency of Russian stock markets. We contribute to this literature with our novel application of event study methodology in a Russian context.

The third strand concerns comparison of the stock market reaction to the announcement of two different debt instruments: a bond and a syndicated loan. Both instruments are used to finance large debt arrangements. We ask whether the stock markets react differently to these financing instruments as this could help in assessing the motivations of Russian companies.

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<sup>3</sup> The exception is a study by Bailey et al. (2010) who use Chinese bank loan announcements and find negative abnormal returns for borrowers with frequent related-party transactions, poor subsequent performance, high state ownership, no foreign class shares, loans from the four state banks, loans from local bank branches, or loans intended to repay existing debt.

The preferences for one debt instrument over another can be summarized as follows: (1) Stock markets confer a higher value to syndicated loans as they are less costly in terms of origination fees and act to certify the creditworthiness of borrower. (2) Bonds may be preferred by stock market participants as they are typically harder to renegotiate and markets find it easier to evaluate their quality.

Several studies analyze the impact of syndicated loan announcements confirming positive stock market reaction (e.g. Preece and Mullineaux, 1996; Gasbarro et al., 2004), while other studies examine the corresponding effect of bond issue announcements (e.g. Eckbo, 1986; Spiess and Affleck-Graves, 1999; Miller and Puthenpurackal, 2005) and find mixed results. Altunbas et al. (2009) investigate the financial characteristics that influence the choice of a European firm between raising funds through syndicated loan market and corporate bond market. They find that larger, more profitable, highly leveraged firms with fewer growth opportunities prefer syndicated loans over bonds. We are not aware of any study that compares the reactions of the stock market to announcements of bond and syndicated loans.

## 2.2 Hypotheses

Previous studies of stock market reaction to debt announcements provide evidence of differing reactions. We offer two hypotheses to explain the positive reaction of stock markets.

First, the issuance of debt is a positive signal, helping to solve adverse selection which results from information asymmetries between firm insiders and outsiders. Indeed, debt is used by high-quality firms to show their quality (Leland and Pyle, 1977). Notably, Ross (1977) advanced the notion that a high-quality firm can issue more debt than a low-quality firm, because the issuance of debt leads to a higher probability of default due to debt-servicing costs. Such an outcome can be very costly to firm insiders. Thus, debt is perceived as a credible signal as to the quality of a firm. This signaling role is especially important in countries with greater *ex ante* information asymmetries. Indeed, there is evidence for this for Russian syndicated loans (Fungáčová, Godlewski and Weill, 2011), although it should be noted that this finding pertains to a period when Russia's bond market was just emerging and alternative sources of funding were scarce.

Second, agency costs resulting from conflicts of interest between shareholders and managers can be reduced through issuance of debt. The problem is the moral hazard behavior on the part of managers when their objectives differ from those of the firm. Bad managers can waste firm resources or deliberately minimize their efforts rather than focus on increasing firm value. Debt fi-

ancing increases the pressure on managers to perform (i.e. stop wasting company resources and increase their effort) by restricting the “free cash-flow” at the disposal of managers (Jensen, 1986). Debt implies interest payment obligations that must be satisfied by managers; they might face bankruptcy if their firm’s debt obligations are not satisfied. Grossman and Hart (1982) further argue that debt financing provides strong incentive for managers to perform in the firm’s interests as otherwise they face personal costs related to the firm’s bankruptcy. As a consequence, issuance of debt can be considered a positive signal for firm performance and could be anticipated to lead to a positive reaction of stock markets.

The counterargument as to why we might expect stock markets to react negatively to debt events is based on the agency costs resulting from the conflicts of interest between shareholders and debtholders. Shareholders are tempted to take actions that benefit themselves at the expense of debtholders and do not maximize firm value. This divergence of interests manifests itself in two forms of moral hazard. First, it gives incentives to shareholders to invest in riskier projects than those preferred by debtholders (Jensen and Meckling, 1976). Such “asset substitution” comes from the asymmetry of gains for shareholders. Second, as demonstrated by Myers (1977), conflicts between shareholders and debtholders lead to underinvestment. Thus, the agency costs resulting from the conflicts of interest between shareholders and debtholders suggest that greater debt may enhance moral hazard behavior that can be perceived negatively by stock markets.

### 3 An overview of the Russian financial system

Russia’s financial system, like most transition countries, is bank-based. The system was essentially built from scratch after the end of the Soviet Union. Prior to the 1998 crisis, neither banks nor the stock market performed standard roles. Banks failed to channel financial resources into profitable investments, preferring instead to speculate on the financial markets or conduct treasury functions for their owners. Russia’s newly created stock market lacked transparency and legal protections for stakeholders, and boasted a very rudimentary infrastructure.

Russia’s financial system finally started to develop as it recovered from the 1998 financial crisis. Supported by a stable macroeconomic environment and major institutional reforms, the banking sector and financial markets began to grow. The ratio of bank assets to GDP doubled between 2000 and 2008, and exceeded 65% at the end of 2008. The same holds true for credit to private sec-

tor, which grew to 45% of GDP. While these numbers indicate the rapid growth of recent years, comparison with other countries reveals that Russia still lags most developed economies and even its counterparts in the Central and Eastern Europe. The Russian banking system remains small in relation to the size of the economy.

The most important source for financing investments of Russian companies is retained earnings. Unlike other countries, bank credit plays no significant role in Russia. Bank credit financed about 7% of investments in 2004 and only 12% in 2009 (Rosstat). Moreover, Russia's little banking sector is unable to satisfy the massive financial needs of Russia's oil, gas and metal producers, which today are quite integrated into the global economy.<sup>4</sup>

Nor have companies resorted to equity issues to finance investment. Before 2006, only about 0.5% of investment was financed through equity issues. There were 23 equity issues in 2006 and 28 in 2007. Equity issues allowed companies from industries other than energy and finance to enter the stock market; about 2% of investments were financed through equity issues. Stock market capitalization of Russian firms nearly doubled between 2004 and 2008.

The first syndicated loans contracts in Russia were made in the mid-1990s. In many instances, syndicated loans were the sole financing option for large companies as these contracts, unlike bond issues, require no credit rating. Lenders to Russian borrowers were exclusively foreign financial institutions. The growth of the syndicated loans business in Russia came to a halt in 1998, only to restart in the early 2000s. The amount of outstanding syndicated loans in Russia exceeded USD 40 billion in 2005 and reached nearly USD 70 billion in 2007.<sup>5</sup> Syndicated loans accounted for about a fourth of the domestic loan stock in 2007.

Russia's bond market emerged in the early 2000s. The number of bond issuers began to snowball in 2004 as rapid economic growth boosted confidence in the Russian economy and firms established credit histories. The amount of corporate bonds outstanding in Russia increased rapidly from USD 10 billion in 2004 to almost USD 62 billion in 2008.<sup>6</sup> Even with the increasing number of new bond issuers, bond financing in Russia today still largely remains an option available only to top-tier (often state-owned) companies and banks.

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<sup>4</sup> About 80% of banks are not able to provide a loan bigger than USD 10 million. The average size of the loan in our sample is USD 1.6 million.

<sup>5</sup> [www.cbonds.ru](http://www.cbonds.ru).

<sup>6</sup> Based on the data coming from the Central Bank of Russia ([www.cbr.ru](http://www.cbr.ru)).

## 4 Sample and methodology

### 4.1 Description of the sample

Our data are taken from Bloomberg. We start by selecting a sample of listed Russian firms with reasonable track records of stock returns (at least 120 trading days per year with stock price information) during the observation period, 2000–2008. This yields a sample of 76 companies.

The sample includes large firms, which is in line with the issuance of bonds and syndicated loans. Interestingly, these firms are profitable with a mean return on assets of 9.2% and have a relatively low indebtedness with a debt-to-assets ratio of 22% and financial leverage of 2.55. These companies are particularly active in the following industries: basic materials, financial, industrial, utilities, and energy & communications. Their average stock return over the eight-year period equals 0.338% (the average market return<sup>7</sup> during the same period was 0.054%) for an average volume of trading at 948.5 million shares.

We next identify the debt financing event dates. They come in two types: syndicated loans (161 events) and bonds (160 events) leading to a total of 321 debt financing events over the initial full sample period. We only observe syndicated loan events up to 2004; thereafter both types of financing occur. The most prolific year for syndicated loan financing is 2005 (31 syndicated loans), and 2006 is the best year for bond issues (60).

On average, bond issues are almost five times larger than syndicated loans (USD 5.5 million compared to USD 1.6 million) with nominal rate on face value equal to 9.25% for bonds and a spread of 189 bps over benchmark rate (such as Libor) for loans. Bond maturity is four times longer than for loans (4 years compared to 0.8 years). Most loans are term loans (88%) and only a quarter are secured. Companies that have issued debt have on average USD 95 million of outstanding debt (USD 12.3 million and USD 105 million for bonds and loans, respectively) for 7.5 issues in the past (3.8 and 5.5 for bonds and loans, respectively). We also observe that companies issuing bonds are larger, more profitable and less risky in comparison to those issuing debt through syndicated loans.

Finally, 41% of the companies in the full sample have issued bonds and loans at least once during the sample period. These companies have issued larger amounts of bonds and loans with longer maturities, with lower coupons and spreads, while having larger amounts of bonds and loans

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<sup>7</sup> Measured using the RTS (Russian Trading System) stock index.

outstanding and issued more debt in the past. However, companies that issued bonds and loans at least once are smaller, less risky, and more profitable.

To proceed with estimations, we need a sufficient number of observations of stock returns before and after the debt arrangement event, which in our case is the issuance of the bond or syndicated loan. Due to this restriction on data, our final, winnowed-down sample for estimation covers the period between 2004 and 2008 and includes 55 debt arrangements.

## 4.2 Methodology

The market model, which relates the return of a given stock to the return of the market index, is used to estimate abnormal returns around the event date (see MacKinlay, 1997 for a survey).<sup>8</sup> The event is the announcement of a debt financing arrangement (i.e. bond or syndicated loan). The date of announcement is taken as day 0. It is necessary to make sure that there is no other corporate news that could influence stock returns within an event window. We check it carefully and find no contamination caused by other events around our event dates.

Returns are defined in a standard way as  $[P(t)-P(t-1)]/P(t-1)$ , where  $P(t)$  is the daily closing stock market price at time  $t$ . To proxy the market return the RTS stock index return is used.<sup>9</sup> The market model parameters are estimated over the period  $(-100, -10)$ . The same results are obtained when using longer estimation periods (150 trading days) and finishing the estimation period up to 30 days before the event date.

Following notably Lummer and McConnell (1989), Preece and Mullineaux (1996), and Gasbarro et al. (2004), we examine one-day  $[0,0]$ , three-day  $[-1,+1]$  and five-day  $[-2,+2]$  event windows<sup>10</sup> and calculate average abnormal standardized, as well as non-standardized, daily returns. The cumulative average abnormal returns (CAARs) are calculated by summing over the respective event windows. Standard OLS regressions are used to estimate the market model, with a satisfactory average  $R^2$  equal to 15%.

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<sup>8</sup> Using a constant mean model (aka “beta one” model, where the abnormal return is supposed to be equal to the difference between the stock return and the market return) gives virtually the same results. However, this methodology is more attackable as it relies on a stronger underlying hypothesis than the market model. Indeed, the beta one model assumes that every stock has a beta equal to 1.

<sup>9</sup> Our results do not change when using MICEX stock index.

<sup>10</sup> It is worth noticing that since financial markets in emerging economies are not expected to be as strongly efficient as in developed economies, we may expect the existence of information leakage regarding the issuance of bonds or loans. Thus, it is possible that abnormal returns can be realized prior to the announcement date. To control for this issue, we also examine two additional asymmetric four days event windows, i.e.  $[-1,2]$  and  $[-2,1]$ . The results we obtain are very similar to those with symmetric event windows.

We perform T-tests to investigate the statistical significance of the CAARs and standardized CAARs. Then, to analyze if the stock market discriminates between different types of debt events (loans versus bonds), we apply Student, Wilcoxon and Kruskal-Wallis tests to the CAARs and standardized CAARs.

## 5 Results

We provide the results of the event study for the stock market reaction to an external debt financing arrangement in a first subsection. Results for different types of debt arrangements (loans vs. bonds) are provided afterwards.

### 5.1 Stock market reaction to debt arrangements

We now present the results on stock market reactions to debt financing arrangement of Russian companies. We report the CAARs and standardized CAARs for the three event-windows in Table 1. We observe that the percentage of positive CAARs ranges from 40 for the one-day event window to 25 for the five-day window. Nevertheless, the CAARs are systematically negative for every event window and significantly different from 0. The values of CAARs broadly correspond to the values found in the other studies<sup>11</sup>; the only distinction is our negative sign. Standardized CAARs are statistically significant for the largest event window. These results are confirmed when using cross sectional Patell (1976) and Boehmer et al. (1991) T-statistics.<sup>12</sup> Moreover, excluding financial firms from the sample has no effect on our results.

Hence, the results support a negative stock market reaction to debt financing arrangements and thus the moral hazard hypothesis, i.e. stock market investors envisage that debt financing increases agency costs between shareholders and debtholders.<sup>13</sup> Indeed, this latter argument plays a stronger role than the signaling role of debt or the pressure on managers raised by issued debt.

While this result does not comport with the conclusions of studies presented in the literature review, which mostly find a significant and positive stock market reaction to loan announcements, it should be noted that they analyze developed markets whereas we deal with the Russian

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<sup>11</sup> For the overview of these values see Chapter 2 in Degryse, Kim and Ongena (2009).

<sup>12</sup> Power sample tests show that sample size is sufficient to perform t-tests and obtain robust results.

<sup>13</sup> Recall that results are mostly driven by firms that did not tap both markets, i.e. bonds and loans (46 out of 55).

emerging market and its intrinsic specificities. Furthermore, these studies mostly investigate only one type of external debt financing (loans), while we consider stock market reactions to a broader spectrum of debt financing (loans and bonds).

It is worth mentioning that a positive and significant reaction to debt financing cannot be generalized. For instance, Armitage (1995) finds no significant reaction to syndicated loan announcements in the UK. Moreover, in their recent contribution Billett et al. (2006) show that over the long run firms announcing bank loans suffer negative abnormal stock returns.

Our conclusions described above are reinforced by the results of the correlation analysis. Indeed, CAARs are significantly and negatively correlated with most of the financial structure ratios such as current ratio, long term debt to common equity, total debt to common equity, total debt to ebitda, total debt to total capital, and financial leverage. We also find that measures of profitability such as return on assets, gross margin, and operating margin are significantly and positively correlated with CAARs.

Overall, our results suggest that investors in Russia do not value external debt financing, considering such funding a negative signal with respect to increased agency and moral hazard problems inside the firm.

## 5.2 Loan versus bond event

Next, we investigate stock market reaction based on the type of debt financing arrangement, i.e. bond versus loan financing event.

Several arguments can be advanced to support the expectations of a different reaction of stock markets to the type of debt. Following Altunbas et al. (2009), syndicated loans are expected to be perceived more positively by stock markets as the cost of loan is generally considered lower than the cost of bond. Furthermore, as syndicated loans are associated with a valuable bank monitoring, this certification effect would lead to better perception by stock markets. On the other hand, bonds may benefit from an enhanced perception of stock markets as they are seen as harder to renegotiate. It is more difficult to renegotiate with a multitude of bond holders than a small group of lenders. As a consequence, only borrowers with a low probability of financial distress would issue bonds.

Again, we report the CAARs and standardized CAARs by type of debt for the three event windows in Table 2. Results of various tests for the difference of CAARs and standardized CAARs are displayed in Table 3.



We observe that the percentage of positive CAARs for bond and loan events remains similar and close to 40% for the shortest event window, while this percentage becomes much smaller for loan events as the event window widens. For instance, only 12% of CAARs are positive for loans in the  $[-2,2]$  event window, while more than 30% of CAARs for bonds remain positive. Investors seem to value more debt financing through bonds issue than through loans. Nevertheless, CAARs are systematically negative for every event window (except  $[0,0]$ ), and significantly different from 0.

Turning to the results presented in Table 3, we observe that CAARs and standardized CAARs are not statistically different for bonds and loans according to results of our three tests (Student, Wilcoxon, and Kruskal-Wallis). Hence, although significant and negative, the stock market reaction is about the same for bonds and loans. In other words, investors do not appear to distinguish between these two types of debt issued by firms, but rather consider any announcement of external debt financing to be a negative signal.

## 6 Conclusion

In this paper, we investigate stock market reactions to debt arrangements in Russia by applying the event study methodology. This approach provides information on the valuation of debt arrangements by stock markets that further helps in understanding the use of debt by Russian companies. Indeed, while supply factors are usually offered to explain the lack of development of Russia's financial markets, there is no reason demand factors might also play a role in motivating Russian companies to avoid external financing.

Our study shows a negative reaction of stock markets to debt arrangements. This finding supports the view that Russian firms may be inclined to be more judicious in their use of debt financing arrangements than companies in developed countries. We explain this finding in terms of shareholder moral hazard behavior that favors expansion of debt at the expense of debtholders. While this conclusion differs from the general results observed in other studies concerning developed countries, it may imply that institutional frameworks in emerging countries influence stock market reactions to debt announcements. Further, we observe that both financing instruments, bonds and syndicated loans, are similarly perceived by stock markets. Therefore, possible arguments about differences in perception are irrelevant in the case of Russian companies.

The implications of these results should rivet the interest of Russia's policy advisors. Given that these results indicate that the low indebtedness of Russian companies may be the result of demand factors rather than of supply factors, authorities seeking to encourage greater use of debt by Russian companies need to design measures based on demand factors rather than supply factors. In particular, there is a need to reduce the perception of moral hazard behavior associated with the use of debt. This could be accomplished by improving corporate governance practices to favor the use of debt.

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Table 1 Cumulative average abnormal returns for debt events

This table displays CAARs and standardized CAARs for the selected three event windows in the second and third columns. The percentage of positive CAARs is in the fourth column, while the last two columns provide p-values for t-test of CAARs significance. The sample period is June 2004 to December 2008. The number of debt events is 55. \*\*\*, \*\*, and \* indicate CAAR and standardized CAAR statistically different from 0 at the 1%, 5%, and 10% confidence levels, respectively.

<i>Event window</i>	<i>CAAR</i>	<i>Std. CAAR</i>	<i>Positive CAAR (%)</i>	<i>Prob. &gt;  t  for CAAR</i>	<i>Prob. &gt;  t  for std. CAAR</i>
[0,0]	-0.012*	-0.069	0.400	0.058	0.596
[-1,1]	-0.031***	-0.123	0.309	0.004	0.189
[-2,2]	-0.053***	-0.216*	0.254	0.000	0.015

Table 2 Cumulative average abnormal returns by type of debt events (bond vs. loan)

This table displays CAARs and standardized CAARs by type of debt event (bond vs. loan) for the selected three event windows in the second and third columns. The percentage of positive CAARs is in the fourth column, while the last two columns provide p-values for t-test of CAARs significance. The sample period is June 2004 to December 2008. The number of events is 38 (bonds) and 17 (loans). \*\*\*, \*\*, and \* indicate CAAR and standardized CAAR statistically different from 0 at the 1%, 5%, and 10% confidence levels, respectively.

<i>Event window</i>	<i>Type of debt</i>	<i>CAAR</i>	<i>Std. CAAR</i>	<i>Positive CAAR (%)</i>	<i>Prob. &gt;  t  for CAAR</i>	<i>Prob. &gt;  t  for std. CAAR</i>
[0,0]	Bond	-0.009	-0.012	0.394	0.105	0.923
	Loan	-0.018	-0.197	0.411	0.270	0.542
[-1,1]	Bond	-0.031**	-0.103	0.342	0.027	0.400
	Loan	-0.029*	-0.166	0.235	0.057	0.217
[-2,2]	Bond	-0.052***	-0.185	0.315	0.005	0.121
	Loan	-0.055**	-0.284	0.117	0.023	0.015

Table 3 Difference significance tests by type of debt events (bond vs. loan) for cumulative average abnormal returns

This table displays the results of Student, Wilcoxon and Kruskal-Wallis tests for the difference of CAARs and standardized CAARs by type of debt event (bond vs. loan) for each of the three event windows. For the first two tests, the null hypothesis is that the difference of CAARs (standardized CAARs) between loan and bond events is null. For the Kruskal-Wallis test, the null hypothesis is that the loan and bond events samples come from identical populations. CAAR and standardized CAAR variances are unequal for the [0,0] event window according to Fisher tests, hence we use the Satterthwaite method for the Student tests. Variances are found to be equal for the other windows hence we use the pooled method for the tests. Student approximation gives similar results to normal approximation for Wilcoxon tests. The sample period is June 2004 to December 2008. The number of events is 38 (bonds) and 17 (loans).

<i>Event window</i>		<i>Student test</i>		<i>Wilcoxon test</i>		<i>Kruskal-Wallis test</i>	
		<i>T</i>	<i>Prob. &gt;  t </i>	<i>Z</i>	<i>Prob. &gt;  Z </i>	<i>Chi<sup>2</sup></i>	<i>Prob. &gt; Chi<sup>2</sup></i>
<b>[0,0]</b>	CAAR	0.54	0.594	-0.20	0.834	0.04	0.827
	Std. CAAR	0.54	0.593	0.04	0.963	0.00	0.956
<b>[-1,1]</b>	CAAR	-0.09	0.925	-0.11	0.905	0.01	0.898
	Std. CAAR	0.31	0.756	-0.24	0.805	0.06	0.798
<b>[-2,2]</b>	CAAR	0.08	0.934	-0.31	0.749	0.10	0.743
	Std. CAAR	0.52	0.603	-0.77	0.438	0.61	0.433

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Bank of Finland  
BOFIT – Institute for Economies in Transition  
PO Box 160  
FIN-00101 Helsinki

 + 358 10 831 2268

[bofit@bof.fi](mailto:bofit@bof.fi)

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