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Key Rate Pass-Through to the Cost of Corporate Debt: Firm-Level Evidence from Russia, 2021-2026

Alexander Kudryashov

akudryashov2017@gmail.com

Financial University under the Government of the Russian Federation

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Key Rate Pass-Through to the Cost of Corporate Debt: Firm-Level Evidence from Russia, 2021-2026

Abstract: The paper estimates the pass-through of the Bank of Russia key rate to the cost of debt of large Russian non-financial companies over the 2021-2026 cycle, during which the policy rate rose from 7.5% to 21% and was then reduced to 14%. The cost of debt is measured from consolidated IFRS statements as interest on borrowings, including capitalised interest, divided by average borrowings, so that it reflects the whole stock of corporate debt rather than rates on new loans. In an unbalanced panel of 20 companies and 65 firm-period observations, a one percentage point change in the average key rate is associated with a 0.72 percentage point change in the cost of debt within the same period and about 0.80 points over two years; complete long-run pass-through cannot be rejected. Pass-through rises with the share of floating-rate debt: ten additional percentage points of floating-rate borrowings raise the coefficient by about 0.08. Companies that reduced debt or borrowed at fixed rates, such as Transneft and NLMK, showed almost no pass-through. About 60% of the increase in corporate interest in 2025 was due to higher rates and 40% to larger borrowings. Scenario calculations based on the Bank of Russia base forecast suggest a gradual recovery of interest coverage in 2027-2029.

Keywords: interest rate pass-through; monetary policy transmission; cost of debt; floating-rate debt; interest coverage; Russia

JEL: E43, E52, G32

1. Introduction

Between July 2023 and October 2024 the Bank of Russia raised its key rate from 7.5% to 21%, kept it at that level until June 2025 and then reduced it in ten steps to 14% by July 2026 (Bank of Russia, 2026a). For non-financial companies the question is not only how high the policy rate was, but how much of its change reached the interest they actually paid. This depends on the structure of corporate debt: the share of loans with floating rates, the maturity of fixed-rate bonds, the use of subsidised credit and the capitalisation of interest into the cost of assets.

This paper measures the pass-through of the key rate to the cost of debt of large Russian non-financial companies from their consolidated IFRS statements for 2021 to the first half of 2026. Unlike most studies of pass-through, which use bank lending rates on new loans, it measures the rate on the whole stock of corporate borrowings, including bonds and previously contracted fixed-rate debt. The analysis estimates the average pass-through coefficient, tests

whether it depends on the share of floating-rate debt and uses the estimates to assess interest coverage under the Bank of Russia base forecast for 2027-2029.

2. Literature review

2.1. The interest rate channel and the credit channel

The interest rate channel is the starting point of most models of monetary transmission: a change in the policy rate alters short-term market rates, then lending rates and the cost of capital, and through them investment and consumption. Bernanke and Gertler (1995) argued that this direct cost-of-capital effect is too small to explain the observed response of spending to monetary shocks and pointed to the credit channel, in which a tighter policy also weakens borrower balance sheets and reduces the supply of bank loans. Their balance sheet argument rests on the observation that higher interest payments reduce cash flow and collateral values at the same time, so that the external finance premium rises together with the risk-free rate. Gertler and Gilchrist (1994) found that small manufacturing firms in the United States contracted sales and inventories much more than large firms after monetary tightening, which they interpreted as evidence that financial frictions amplify transmission for borrowers with limited access to markets. Crouzet and Mehrotra (2020) revisited this result with confidential census data and found that the largest firms, the top 1% by size, are less cyclical than the rest, but that differences in cyclicality appear largely unrelated to proxies for financial strength.

More recent work uses firm-level data to show that the strength of transmission depends on financial characteristics of borrowers. Ottonello and Winberry (2020) found that firms with low default risk respond more strongly to monetary policy shocks in their investment, because their marginal cost of external finance is flatter. Cloyne et al. (2023) showed for the United States and the United Kingdom that younger firms that do not pay dividends adjust investment more strongly, and that the response works through changes in borrowing and in asset values used as collateral. Gürkaynak, Karasoy-Can and Lee (2022) found that stock prices of firms with more short-term and floating-rate debt react more strongly to monetary policy announcements, which they called the cash flow effect. All these studies treat the cost of debt as the link between the policy rate and corporate decisions, but they observe it only indirectly, through investment, sales or stock prices.

2.2. Pass-through to lending rates

A large literature estimates the pass-through of policy and money market rates to bank lending rates. Gregor, Melecký and Melecký (2021) systematised this literature by meta-analysis and found that estimated pass-through coefficients are systematically lower for

consumer lending rates and for rates on long-term loans than for corporate lending rates. De Bondt (2005) found for the euro area that the pass-through of official rates to market rates is complete for money market rates with maturities up to three months but not for longer maturities, which in turn limits the pass-through to retail bank rates. Sander and Kleimeier (2004) used pass-through estimates to assess the convergence of euro-area retail banking and related differences between countries to competition and market integration. Iorngurum (2025) summarised by meta-analysis the evidence on asymmetric pass-through of overnight rates to bank loan rates, that is, on whether loan rates respond differently to increases and decreases of the policy rate.

These studies measure the rate on new loans. The interest rate actually paid by a company on its whole portfolio of borrowings responds more slowly, because part of the portfolio was contracted earlier at fixed rates. The cost of debt calculated from financial statements therefore combines the pass-through to new loans with the speed at which the debt portfolio is repriced and refinanced. Studies of corporate pass-through measured in this way are much less common than studies of bank rates, and for emerging markets they are rare.

2.3. Floating-rate debt and interest rate risk management

The composition of corporate debt by type of rate determines how quickly the policy rate reaches interest payments. Ippolito, Ozdagli and Perez-Orive (2018) showed that in the United States the share of bank debt with floating rates is high and that firms with more floating-rate debt reduce investment and inventories more strongly after monetary tightening, because their interest payments rise immediately. They called this mechanism the floating rate channel. Gomez et al. (2021) studied the bank side of the same mechanism and showed that the gap between rate-sensitive assets and liabilities of banks affects how their lending responds to changes in the policy rate, so that the repricing structure of balance sheets influences transmission on both sides of the credit market.

The choice between fixed and floating rates is itself a decision of the firm. Faulkender (2005) found that the interest rate exposure of new corporate debt in the United States depends mainly on the slope of the yield curve at the time of issuance, which he interpreted as market timing rather than hedging. Chava and Purnanandam (2007) showed that the choice between floating-rate and fixed-rate debt depends on firm characteristics and on the risk-taking incentives of managers. Vickery (2008) found that small firms manage interest rate risk mainly through the choice between fixed-rate and adjustable-rate bank loans rather than through derivatives. Chernenko and Faulkender (2011) used interest rate swaps to separate

hedging from speculation and found that firms use swaps both to reduce exposure and to take views on future rates. Theories of hedging explain why firms might want to stabilise interest payments in the first place. Smith and Stulz (1985) linked hedging to expected costs of financial distress and convex taxes, while Froot, Scharfstein and Stein (1993) showed that hedging is valuable when external finance is costly and investment opportunities need internal funds. Graham and Rogers (2002) found that firms hedge to increase debt capacity rather than to respond to tax convexity.

The interest rate exposure of non-financial firms can also be measured from market data. Bartram (2002) estimated the sensitivity of stock returns of a large sample of non-financial companies to interest rate changes and found evidence of both linear and nonlinear exposures. The accounting approach used in this paper complements market-based measures: it shows how much of the policy rate change appeared in the interest actually recognised by the company.

2.4. High rates, weak borrowers and financial stability

Prolonged periods of high interest rates raise the question of how many firms can service their debt. Studies of so-called zombie firms define them by interest coverage below one for several years. Adalet McGowan, Andrews and Millot (2018) found that the share of such firms in OECD countries rose after the global financial crisis and that their survival slowed productivity growth. Banerjee and Hofmann (2022) documented for 14 advanced economies a rise in the share of zombie firms among listed companies from 4% in the late 1980s to 15% in 2017 and found that such firms are smaller, less productive and more leveraged. Caballero, Hoshi and Kashyap (2008) and Acharya et al. (2024) linked the survival of weak firms to continued lending by banks. From this perspective high rates have a cleansing effect, but they also increase the risk of default among firms that are viable in normal conditions but carry large floating-rate debt. Borio, Drehmann and Tsatsaronis (2014) discussed the limitations of macro stress tests in capturing such effects. The present paper does not test for zombie firms, but it uses interest coverage to show which companies were closest to the threshold during the period of high rates.

2.5. Contribution

The paper contributes to this literature in three ways. First, it estimates the pass-through of the policy rate to the cost of the whole stock of corporate debt, measured from financial statements, rather than to rates on new bank loans. Second, it tests the floating rate channel on firm-level data from an emerging market where the share of floating-rate debt rose quickly

during the tightening and where the policy rate rose by 13.5 percentage points within fifteen months. Third, it shows how the estimates can be used together with the central bank's forecast to assess the recovery of corporate interest coverage, which is relevant both for financial stability analysis and for corporate financial planning.

3. Monetary policy and corporate borrowing in Russia, 2021-2026

3.1. The key rate cycle

The period studied covers a full cycle of Russian monetary policy with three distinct phases. In 2021 the Bank of Russia raised the key rate from 4.25% to 8.5% in response to rising inflation. In February 2022, after the imposition of large-scale sanctions, it raised the rate to 20% and then cut it in six steps to 7.5% by September 2022. The rate stayed at 7.5% until July 2023. The second phase began in July 2023: the rate was raised to 8.5% on 24 July, to 12% on 15 August, to 13% in September, to 15% in October and to 16% in December 2023, then to 18% in July 2024, 19% in September and 21% in October 2024. The third phase started in June 2025, when the rate was reduced to 20%. It was then cut to 18% in July, 17% in September, 16.5% in October and 16% in December 2025, and to 15.5%, 15%, 14.5%, 14.25% and 14% between February and July 2026 (Bank of Russia, 2026a).

Because financial statements report flows over a year or a half-year, the policy rate relevant for interest expense is its average over the reporting period. Table 1 shows the average key rate by period, calculated over calendar days from the Bank of Russia key rate history. The average rate almost doubled between 2021 and 2022 because of the spike in the spring of 2022, fell slightly in 2023, when the rate was low in the first half of the year and high in the second, rose to 17.5% in 2024 and to 19.2% in 2025, and fell to 15.2% in the first half of 2026.

Table 1. Average key rate of the Bank of Russia by reporting period, % per annum

Period	2021	2022	2023	2024	2025	H1 2025	H1 2026
Average key rate	5.75	10.62	9.95	17.50	19.18	20.88	15.16

Note: the average is calculated over calendar days of the period from the dates on which each key rate level applied.

Source: author's calculations based on Bank of Russia (2026a).

This path is useful for identification. The average key rate rose by 13.4 percentage points between 2021 and 2025 and then moved down by 4 points within half a year. Annual averages also differ from end-of-period rates: in 2023 the average was 9.95% while the rate at the end of the year was 16%. A company whose debt is repriced with a lag of several months therefore recognised most of the 2023 tightening in its 2024 interest expense, which is one reason to include the lagged average rate in the estimation.

The base scenario of the Bank of Russia, presented in its Monetary Policy Guidelines for 2027-2029, expects an average key rate of 14.6% in 2026, 12.5-13.5% in 2027, 9.0-10.0% in 2028 and 7.5-8.5% in 2029 (Bank of Russia, 2026b). The gradual reduction of the rate under this forecast is the main scenario used in Section 6 to assess the recovery of interest coverage.

3.2. Structure of corporate debt

Large Russian companies borrow through bank loans and bonds. The domestic bond market grew strongly after 2022, when access to foreign markets was closed for most issuers. According to the Bank of Russia, the volume of bonds outstanding on the domestic market amounted to 75.5 trillion rubles on 1 October 2026, of which the debt of the corporate sector was 37.9 trillion rubles (Bank of Russia, 2026c). Bonds with a floating coupon linked to the key rate or to the RUONIA overnight rate offer investors protection against further increases in rates, while issuers avoid fixing coupons at peak levels for a long time. In the sample, the median share of floating-rate debt among companies that disclose it exceeded 45% in 2024 and 2025 (Table 3).

For bank loans priced as the key rate plus a contractual margin, the pass-through of the key rate is close to one and occurs with a lag equal to the period between rate resets. Fixed-rate loans and bonds transmit the policy rate only when they are refinanced. A third group consists of subsidised loans, for which the borrower pays a fixed rate or a rate set as a share of the key rate and the state compensates the bank for the difference. In the sample used here subsidised credit plays a minor role, because developers and agricultural producers, who rely most on such programmes, are excluded.

These features imply that the expected pass-through coefficient of a company differs from one and depends on the composition of its debt. If f is the share of floating-rate debt, s the share of subsidised debt with a fixed rate, and ρ the share of the remaining fixed-rate debt that is repriced within a year, then the expected annual pass-through is approximately

$$\lambda_j \approx f_j + \left(1 - f_j - s_j\right) \rho_j. \qquad (1)$$

Equation (1) is not used for estimation. It serves as a benchmark for the econometric estimates and explains why pass-through differs across companies. A company with half of its debt at floating rates and a quarter of the fixed-rate debt refinanced each year would have a pass-through of about 0.6 within a year, while a company that borrows through long fixed-rate bonds would have a pass-through close to zero until the bonds mature.

3.3. Interest capitalisation and other accounting issues

Measuring the cost of debt from IFRS statements requires several adjustments. Under IAS 23, borrowing costs directly attributable to the construction of qualifying assets are capitalised into the cost of these assets instead of being recognised as an expense. For companies with large investment programmes, such as SIBUR Holding, capitalised interest is comparable to interest recognised in profit or loss: in 2025 SIBUR recognised 81.6 billion rubles of interest on borrowings in profit or loss and capitalised another 78.5 billion rubles. A cost of debt calculated from the expense alone would understate the rate on borrowings for such companies and would make it appear less sensitive to the policy rate than it is. The measure used here therefore adds capitalised interest to interest recognised in profit or loss whenever capitalised interest is disclosed.

Second, finance costs in IFRS statements usually include interest on lease liabilities, unwinding of discounts on provisions and pension obligations and other items unrelated to borrowings. These items are excluded, and only interest on loans, borrowings and bonds is used. The difference can be large: for Magnit interest on leases was 82.9 billion rubles in 2025 against 100.4 billion rubles of interest on loans and bonds. Third, some companies present statements in US dollars or have most of their debt in foreign currency, for which the key rate is not the relevant reference rate. RUSAL, which reports in US dollars, is excluded from the estimation. LUKOIL is also excluded: its debt consisted largely of US dollar bonds, and its notes do not separate interest on borrowings from interest on lease liabilities.

4. Data and method

4.1. Sample and data sources

The sample consists of 20 large Russian non-financial companies from ten sectors: oil and gas (Tatneft, Transneft), petrochemicals and fertilisers (SIBUR Holding, PhosAgro), metals and mining (NLMK, Seligdar), electricity networks (Rosseti, Rosseti Centr), telecommunications and information technology (MTS, Rostelecom, Yandex, Astra Group), retail (Magnit, X5, Fix Price, M.Video), transport (Aeroflot), engineering (Sollers, Transmashholding) and forestry (Segezha Group). The companies were selected among the largest issuers of bonds and shares on the Moscow Exchange whose consolidated IFRS statements disclose interest on borrowings and the amount of borrowings. Developers and agricultural producers are deliberately excluded. Their debt is dominated by project finance with escrow accounts and by subsidised loans, which follow specific rules and require a

separate analysis. Banks and other financial companies are excluded because their interest expense reflects deposit funding.

Data were collected from annual consolidated statements for 2021-2025 and interim statements for the first half of 2025 and 2026. For PhosAgro the interim periods are nine months, because the company did not publish half-year statements with the required notes. The full period 2021-2025 is available for MTS, Magnit and X5, and 2022-2025 for Transneft. For the other companies the panel covers 2024, 2025 and the first half of 2026, because detailed notes on borrowings in earlier years are not available in a comparable form for all of them. Comparative figures were taken from the later statements whenever a company restated them. The resulting panel is unbalanced and contains 65 firm-period observations. Table 2 shows its composition by period.

Table 2. Composition of the panel by reporting period

Period	2021	2022	2023	2024	2025	H1 2025	H1 2026	9M 2025	9M 2026	Total
Observations	2	3	4	17	18	4	15	1	1	65

Note: H1 - first half of the year; 9M - nine months. Observations for 2021 require borrowings at the end of 2020.

Source: author's calculations based on the consolidated IFRS statements of the companies.

4.2. Variables

The cost of debt of company j in period t is calculated as

$$i_{jt} = \frac{I_{jt} + I_{jt}^{cap}}{\left(D_{j,t-1} + D_{jt}\right)/2} \cdot \frac{12}{m_t} \cdot 100, \qquad (2)$$

where I_{jt} is interest on loans, borrowings and bonds recognised in profit or loss, I_{jt}^{cap} is interest capitalised into the cost of qualifying assets, $D_{j,t-1}$ and D_{jt} are borrowings at the beginning and end of the period, and m_t is the length of the period in months. For annual periods the last factor equals one. For half-year periods it equals two, so that the cost of debt is expressed in annual terms. Borrowings include bank loans, other loans and bonds and exclude lease liabilities. For Transneft the notes report interest on borrowings before capitalisation, so this amount is used without adding capitalised interest.

The policy rate r_t is the average key rate over the reporting period from Table 1. The lagged rate r_{t-1} is the average rate of the previous year: for annual observations it is the average of the previous calendar year, and for interim observations of 2025 and 2026 it is the average of 2024 and 2025 respectively. The share of floating-rate debt f_j is taken from the notes on interest rate risk required by IFRS 7, where companies disclose the carrying amount of borrowings with fixed and floating rates. Because this disclosure is not available for every period, the firm average over available periods $\bar{f}_j$ is used. It is available for 15 of the 20

companies. The interest coverage ratio is calculated as EBITDA divided by interest on borrowings recognised in profit or loss. Table 3 presents descriptive statistics.

Table 3. Cost of debt, interest coverage and floating-rate debt by period

Period	N	Median cost of debt, %	Interquartile range, %	Average key rate, %	Median interest coverage	Median share of floating-rate debt, %
2021	2	6.9	6.8-7.1	5.75	-	-
2022	3	8.5	8.2-9.1	10.62	-	-
2023	4	8.8	8.4-9.1	9.95	-	-
2024	17	13.3	9.3-16.6	17.50	6.2	53.2
2025	18	16.8	13.6-18.1	19.18	5.4	46.8
H1 2025	4	18.7	17.6-19.6	20.88	6.3	-
H1 2026	15	14.9	13.3-16.3	15.16	3.2	68.6

Note: interim cost of debt in annual terms; interest coverage is EBITDA divided by interest on borrowings; the share of floating-rate debt is reported only where at least three companies disclose it. Nine-month observations of PhosAgro (2 observations) are omitted from the table.

Source: author's calculations based on the consolidated IFRS statements of the companies and Bank of Russia (2026a).

The median cost of debt followed the key rate with a smaller amplitude. It rose from 6.9% in 2021 to 16.8% in 2025, by about 10 percentage points, while the average key rate rose by 13.4 points. In the first half of 2026 the median fell to 14.9%. The dispersion across companies is large. In 2025 the cost of debt ranged from 7.7% for Transneft and 8.9% for NLMK to 18.8% for Transmashholding, 20.1% for MTS and 31.3% for M.Video. Such dispersion reflects differences in debt composition rather than in credit quality alone. Transneft kept a low and stable cost of debt throughout the period, NLMK reduced its debt and had almost no floating-rate borrowings, while Astra Group and Rosseti Centr had about 90% of their debt at floating rates and M.Video about half.

4.3. Estimation

The pass-through coefficient is estimated from the panel regression with company fixed effects

$$i_{jt} = \alpha_j + \beta\, r_t + \varepsilon_{jt}, \qquad (3)$$

where α_j is a company fixed effect and β is the pass-through coefficient. The fixed effect absorbs permanent differences in credit quality, in the average composition of debt and in the use of subsidised loans, so that β is identified from changes in the cost of debt of each company over time. Because the cost of debt responds to the policy rate with a lag, the second specification adds the lagged average rate:

$$i_{jt} = \alpha_j + \beta_0\, r_t + \beta_1\, r_{t-1} + \varepsilon_{jt}. \qquad (4)$$

The sum $\beta_0 + \beta_1$ measures the pass-through over two years, and the ratio of β_0 to this sum shows the share of the pass-through that occurs within the period. To test the floating rate

channel, the third specification adds the interaction between the key rate and the deviation of the company's share of floating-rate debt from its sample mean:

$$i_{jt} = \alpha_j + \beta\, r_t + \gamma\, r_t \cdot \frac{\bar{f}_j - \bar{f}}{100} + \varepsilon_{jt}, \qquad (5)$$

where $\bar{f}$ is the mean of $\bar{f}_j$ across companies. The coefficient β in (5) is the pass-through for a company with the average share of floating-rate debt, and γ shows how much the pass-through rises when the share of floating-rate debt is higher by 100 percentage points. Since the share enters as a deviation from the mean and is constant within a company, its level is absorbed by the fixed effect.

The models are estimated by ordinary least squares with dummy variables for companies. Standard errors are clustered by company, which allows for arbitrary correlation of errors over time within a company (Cameron & Miller, 2015; Wooldridge, 2010). With 20 clusters the cluster-robust standard errors may be somewhat understated, and the results are therefore checked with several alternative samples. The model does not include time fixed effects, because the key rate is common to all companies in a period and would be absorbed by them. The pass-through coefficient is therefore identified from the co-movement of the key rate and the cost of debt over time, and other common shocks that coincided with changes in the key rate, such as changes in credit spreads, could affect the estimate. Section 5.4 discusses this limitation.

5. Results

5.1. Pass-through over the cycle: descriptive evidence

Before turning to the regressions, it is useful to follow the cost of debt of the companies observed over the whole cycle. MTS, Magnit and X5 are available for 2021-2025 and Transneft for 2022-2025. Their paths show the main patterns that the estimation later quantifies.

The cost of debt of MTS rose from 6.6% in 2021 to 9.7% in 2022, remained at 9.1% in 2023, increased to 15.2% in 2024 and reached 20.1% in 2025. Interest on loans and bonds of the company grew from 29.4 billion rubles in 2021 to 134.4 billion rubles in 2025, while its borrowings rose from 462.1 to 713.1 billion rubles. In logarithmic terms, about 70% of the increase in interest came from the higher rate and 30% from the larger debt. Almost half of the debt of MTS carried floating rates, so the company recognised the tightening quickly: the cost of debt in 2025 exceeded the average key rate by about one percentage point.

Magnit shows a different path. Its cost of debt rose only from 7.2% in 2021 to 9.7% in 2024, although the average key rate rose from 5.75% to 17.5%. In 2025 it jumped to 17.3%. The reason lies in the composition of debt. At the end of 2023 Magnit reported no floating-rate borrowings, so the tightening of 2023-2024 reached its interest expense only as fixed-rate loans and bonds were refinanced. In 2025 the company almost doubled its borrowings, from 411.9 to 745.7 billion rubles, and its interest on bonds rose from 7.7 to 49.5 billion rubles. The share of floating-rate debt increased to 35.9% at the end of 2025. New borrowing at the rates of 2025 thus transmitted the accumulated tightening into the cost of debt with a delay of about a year.

X5 is between these two cases. Its cost of debt was 8.5% in 2022 and 2023, rose to 13.3% in 2024 and to 17.7% in 2025. Transneft is the opposite of MTS. Its cost of debt was 8.0% in 2023 and 7.7% in both 2024 and 2025, although the average key rate almost doubled. The company reduced its borrowings by more than half, from 430.0 billion rubles at the end of 2022 to 207.0 billion rubles at the end of 2025, so the policy rate had almost no effect on its cost of debt.

The easing phase provides a second type of evidence. Thirteen companies report the cost of debt both for 2025 and for the first half of 2026. Between these periods the average key rate fell from 19.18% to 15.16%, by 4.0 percentage points. The cost of debt declined in 11 of the 13 companies, and the median change was -1.8 percentage points. The largest declines were recorded by M.Video (-9.2 points), Yandex (-5.7), Fix Price (-4.9), Transmashholding (-4.4) and MTS (-3.8). These companies either had a high share of floating-rate debt or repaid expensive loans. The cost of debt rose for Aeroflot (+1.8 points) and Seligdar (+0.6 points). Seligdar had reduced its share of floating-rate debt from 60.3% at the end of 2024 to 46.8% at the end of 2025 and refinanced part of its borrowings at the fixed rates of 2025, which limited the growth of interest during the high-rate phase but delayed its decline after the easing began.

5.2. Baseline estimates

Table 4 presents the estimates of equations (3)-(5).

Table 4. Pass-through of the key rate to the cost of corporate debt: fixed-effects estimates

Specification	(1) Baseline	(2) With lag	(3) Annual only	(4) 2024-2026 only	(5) Floating-rate interaction	(6) Without M.Video
Key rate, r_t	0.716*** (0.137)	0.631*** (0.168)	0.711*** (0.184)	0.701*** (0.215)	0.805*** (0.113)	0.690*** (0.138)
Lagged key rate, r_{t-1}		0.165 (0.128)				
$r_t \times (\bar{f}_j - \bar{f})/100$					0.759** (0.365)	
Long-run pass-through, $\beta_0 + \beta_1$		0.796*** (0.124)				

Specification	(1) Baseline	(2) With lag	(3) Annual only	(4) 2024-2026 only	(5) Floating-rate interaction	(6) Without M.Video
Observations	65	65	44	56	49	62
Companies	20	20	19	20	15	19
Within R^2	0.501	0.548	0.638	0.272	0.534	0.505

Note: dependent variable - cost of debt by equation (2), % per annum; all specifications include company fixed effects; standard errors clustered by company in parentheses; *** $p < 0.01$, ** $p < 0.05$. Specification (3) uses annual observations only; specification (4) excludes observations for 2021-2023; in specification (5) the mean share of floating-rate debt $\bar{f}$ is 45.4%.

Source: author's calculations.

In the baseline specification a one percentage point increase in the average key rate is associated with an increase in the cost of debt by 0.72 percentage points within the same period. The coefficient is significantly different from zero and also from one ($p = 0.038$), so the pass-through to the stock of corporate debt is incomplete. Within-company variation in the key rate explains about half of the within-company variation in the cost of debt.

When the lagged rate is added, the coefficient on the current rate falls to 0.63 and the coefficient on the lagged rate is 0.17. The latter is not significant on its own, which is not surprising given that the current and lagged average rates are correlated and the panel is short. Their sum, the pass-through over two years, is 0.80 with a standard error of 0.12. The hypothesis of complete long-run pass-through cannot be rejected at the 5% level ($p = 0.098$). About 80% of the two-year pass-through thus occurs within the reporting period, which is consistent with a large share of floating-rate debt and short reset periods.

These magnitudes can be compared with the benchmark of equation (1). With an average share of floating-rate debt of about 45% and assuming that a quarter to a third of fixed-rate debt is repriced each year, equation (1) implies an annual pass-through of 0.59-0.63, close to the estimated coefficient on the current rate. The estimate of 0.72 in the baseline specification is somewhat higher, because without the lag it partly captures the delayed effect of earlier changes.

5.3. The floating rate channel

Specification (5) tests whether pass-through depends on the share of floating-rate debt. For a company with the average share of 45.4%, the pass-through is 0.81. The interaction coefficient of 0.76 is significant at the 5% level and implies that ten additional percentage points of floating-rate debt raise the pass-through by about 0.08. For a company with 20% of its debt at floating rates the implied pass-through is 0.61, and for a company with 80% it is about 1.07. A coefficient above one for companies with mostly floating-rate debt is possible if the margins over the reference rate also move with the cycle; given the small number of such companies, this extrapolation should be treated with caution.

The interaction confirms the floating rate channel described by Ippolito, Ozdagli and Perez-Orive (2018) for the United States in a very different environment. In Russia in 2023-2025 the policy rate rose by more than ten percentage points, and the share of floating-rate debt itself changed during the cycle. The companies in the sample responded in different ways. Magnit increased the share of floating-rate debt from zero at the end of 2023 to 35.9% at the end of 2025, Aeroflot from 13.8% at the end of 2024 to 32.3% and Segezha Group from 44.5% to 69.8%. By contrast, Fix Price reduced it from 68.4% at the end of 2024 to zero at the end of 2025, RUSAL from 33.8% to 14.2% and Seligdar from 60.3% to 46.8%. Companies that fixed their rates in 2025 limited the growth of interest during the period of high rates but locked in expensive debt for the easing phase. Companies that increased floating-rate borrowings bore the full cost of high rates in 2025 but benefited quickly from the cuts.

Firm-specific slopes, estimated by simple regressions on three to six observations, illustrate the same heterogeneity, although they are imprecise. The slope is close to zero for Transneft (-0.03), Segezha Group (0.01) and Seligdar (-0.18), and about 0.3 for SIBUR Holding and PhosAgro. It is between 0.6 and 1.0 for Magnit, Fix Price, Rosseti Centr, X5 and MTS, and above one for Yandex (1.38), Astra Group (1.43) and M.Video (2.37). The two companies with the highest shares of floating-rate debt, Astra Group (93% on average) and Rosseti Centr (89%), are among those with high slopes, while Transneft, NLMK and PhosAgro, which relied less on floating-rate borrowings, show low ones.

5.4. Robustness and limitations

The results are robust to the choice of sample. Using annual observations only, which avoids annualising interim figures, gives a coefficient of 0.71. Excluding the three companies observed in 2021-2023 and using only the period of high rates and the beginning of the easing gives 0.70, although the within R^2 falls to 0.27 because the key rate varies less within this period. Excluding M.Video, whose cost of debt exceeded 30% in 2024-2025 and declined sharply in 2026, gives 0.69. Excluding LUKOIL, as is done in all specifications for the reasons explained in Section 3.3, matters little: the baseline coefficient with LUKOIL included is 0.69.

Three limitations should be noted. First, the pass-through is identified from the common movement of the key rate and the cost of debt over time, because the model cannot include period fixed effects together with a variable that is common to all companies. Other factors that changed at the same time, such as credit spreads, bank capital requirements or tax

changes, could therefore affect the estimate. Specification (5) is less exposed to this problem, because the interaction coefficient is identified from differences between companies in the same period. Second, the share of floating-rate debt is not exogenous: companies choose it, and the choice may depend on their expectations of future rates (Faulkender, 2005). The firm average used in (5) reduces but does not remove this concern. Third, the panel is short and unbalanced, and the number of companies is small. With 20 clusters, cluster-robust standard errors may be understated, so the significance levels should be interpreted with caution. The consistency of the point estimates across specifications is more informative than any single test.

5.5. Rate and volume effects in 2025

The pass-through coefficient describes the response of the rate, but the burden of interest on companies also depends on how much they borrow. For the 14 companies with data on interest and borrowings for 2023-2025, the change in total interest on borrowings between 2024 and 2025, including capitalised interest, can be decomposed into a rate effect and a volume effect:

$$\Delta T_j = \Delta i_j \cdot \frac{\bar{D}_{j,2024} + \bar{D}_{j,2025}}{2} + \Delta \bar{D}_j \cdot \frac{i_{j,2024} + i_{j,2025}}{2}, \qquad (7)$$

where T_j is total interest, $\bar{D}_j$ is average borrowings in the year and i_j is the cost of debt. The first term shows how much interest would have changed if borrowings had stayed at their average level, and the second term how much it would have changed at the average rate. Table 7 presents the results.

Table 7. Decomposition of the change in interest on borrowings between 2024 and 2025, billion rubles

Company	Interest 2024	Interest 2025	Change	Rate effect	Volume effect
SIBUR Holding	88.1	160.1	72.0	37.6	34.4
Magnit	39.4	100.4	61.0	37.8	23.2
MTS	93.0	138.9	45.9	31.9	14.0
Rostelecom	75.0	103.2	28.1	21.4	6.8
Yandex	25.2	46.8	21.5	12.2	9.3
PhosAgro	19.2	31.0	11.7	8.5	3.2
M.Video	29.2	40.8	11.5	1.4	10.1
Aeroflot	7.6	18.8	11.2	6.3	4.8
Seligdar	10.3	17.8	7.5	0.7	6.7
Tatneft	1.4	2.6	1.2	0.6	0.6
Rosseti Centr	6.5	6.8	0.3	0.3	0.0
Fix Price	2.9	2.5	-0.3	-0.1	-0.2
NLMK	7.2	5.6	-1.6	0.0	-1.6
Segezha Group	23.6	19.1	-4.6	0.7	-5.3
Total	428.6	694.4	265.4	159.3	106.0

Note: interest includes interest on borrowings recognised in profit or loss and capitalised interest; the decomposition follows equation (7); totals may differ from the sum of rows because of rounding.

Source: author's calculations based on the consolidated IFRS statements of the companies.

Total interest of these companies rose by 265.4 billion rubles, or by 62%, in one year. About 60% of the increase was due to the higher cost of debt and 40% to larger borrowings. The relative weight of the two effects differed sharply between companies. For MTS and Rostelecom the rate effect dominated: their borrowings grew moderately or not at all, and the increase in interest reflected the repricing of floating-rate debt. For SIBUR Holding, Magnit and Yandex both effects were large, because these companies borrowed heavily at the rates of 2025. For Seligdar and M.Video the volume effect accounted for almost the entire increase, while the rate effect was small, because Seligdar had already reached a high cost of debt in 2024 and M.Video's cost of debt exceeded 30% in both years. Segezha Group and NLMK reduced their borrowings, and their interest fell despite higher rates. The decomposition shows that the growth of corporate interest in 2025 reflected not only the pass-through of the key rate but also the decision of several large companies to continue borrowing at high rates.

5.6. Capitalised interest and the measured pass-through

The treatment of capitalised interest affects the estimates. In 2025 capitalised interest accounted for 59% of total interest on borrowings of NLMK, 49% of SIBUR Holding, 30% of PhosAgro, 25% of Sollers and 18% of Fix Price. For telecommunications companies the share was small: 3% for MTS and 7% for Rostelecom. When the cost of debt is calculated from interest recognised in profit or loss only, the baseline pass-through coefficient falls from 0.72 to 0.66. The difference is not large on average, but it is concentrated in companies with large investment programmes, for which the expense-based measure understates both the level of the cost of debt and its response to the policy rate.

This matters for the interpretation of interest coverage as well. A company that capitalises half of its interest reports coverage in its income statement that is twice as high as coverage calculated from total interest. During the construction phase this difference is temporary, because capitalised interest is later recognised through depreciation of the completed asset. For analysts and lenders, however, the cash cost of servicing debt is what matters in the short run, and it includes capitalised interest. A measure of coverage based on total interest is therefore more appropriate for assessing interest rate risk than the one usually reported by companies.

5.7. Was the pass-through symmetric?

The comparison of 2025 with the first half of 2026 gives a first indication of the response of the cost of debt to the easing. Specification (2) predicts a decline in the cost of debt of 2.3 percentage points between these periods: the current average rate fell by 4.0

points, but the lagged rate, the average of 2025, was still 1.7 points higher than the average of 2024, which partly offset the effect of the current decline. The observed median decline was 1.8 points, so the cost of debt fell somewhat more slowly than predicted. The difference is within the precision of the estimates, and the sample of 13 companies is too small for a formal test of asymmetry.

The response to the easing differed across companies more than the response to the tightening. Six companies recorded declines larger than predicted: M.Video, Yandex, Fix Price, Transmashholding, MTS and Rosseti Centr. Four of them, M.Video, Transmashholding, MTS and Rosseti Centr, had shares of floating-rate debt close to or above 50%, and Fix Price reduced its borrowings by almost a third in 2025. The other seven companies recorded smaller declines or increases, most notably Magnit, Sollers, Segezha Group, Seligdar and Aeroflot. For Magnit and Aeroflot the explanation lies in heavy borrowing at high rates in 2025, which raised the average rate of the portfolio in 2026. For Seligdar the explanation is the shift to fixed rates described above. For Sollers and Segezha Group the cost of debt barely changed despite shares of floating-rate debt above 55%, which suggests that higher margins or the repricing of fixed-rate tranches offset the effect of the lower key rate.

The correlation between the change in the cost of debt in the first half of 2026 and the average share of floating-rate debt is negative but weak (-0.2 for 11 companies with data). This contrasts with the significant interaction found in specification (5) for the whole period and suggests that in the early phase of easing the composition of debt was not the only factor. Companies that had borrowed heavily in 2025 or had to refinance maturing bonds in a still restrictive environment saw a slower decline in their cost of debt. The evidence is consistent with the meta-analytic finding that pass-through can differ between rising and falling rates (Iorngurum, 2025), but a longer period of easing is needed to measure the asymmetry reliably.

6. Interest coverage, disclosure and scenarios

6.1. Interest coverage during the high-rate phase

The pass-through translated into a decline in interest coverage. The median ratio of EBITDA to interest on borrowings fell from 6.2 in 2024 to 5.4 in 2025, and in the first half of 2026 it was 3.2 for the 14 companies that report the necessary data. The decline in 2026 reflects not only interest but also lower operating profits in several sectors. Among the companies with data for 2025, Transmashholding had coverage of 1.75, Seligdar 1.85, MTS 2.08, Magnit 2.99 and Rostelecom 3.19. Two companies, Segezha Group and M.Video,

reported negative EBITDA in 2025, so they could not cover interest from operating results at all. In the first half of 2026 the coverage of Transmashholding fell to 0.43 and that of Sollers to 0.08. At the other end of the distribution, NLMK had coverage of 61.1 and Tatneft of 127.7 in 2025, because their borrowings were small relative to operating profit.

The distribution of coverage confirms that interest rate risk in the high-rate phase depended more on financing strategies than on sectors. Companies that financed investment from operating cash flow and reduced debt, such as NLMK, were hardly affected by high rates in their interest expense. Companies that increased borrowing to finance large projects, such as Seligdar and SIBUR Holding, saw interest on borrowings almost double within one year. For SIBUR Holding, interest recognised in profit or loss rose from 42.7 billion rubles in 2024 to 81.6 billion rubles in 2025, and capitalised interest from 45.5 to 78.5 billion rubles, so that half of the increase did not appear in the income statement.

6.2. Disclosure of interest rate risk

IFRS 7 requires companies to disclose a sensitivity analysis for each type of market risk, including interest rate risk. In practice the quality of this disclosure varies considerably. Of the 20 companies in the sample, seven present a quantitative sensitivity of profit to changes in interest rates in a form that allows comparison. Table 5 shows these disclosures converted to a change of one percentage point and expressed as a share of EBITDA.

Table 5. Disclosed sensitivity of profit to a one percentage point change in interest rates

Company	Period	Disclosed shock, pp	Effect per 1 pp, million rubles	Share of EBITDA, %
Seligdar	2025	1	718.8	2.41
Transmashholding	2025	1	1 327.3	2.16
Sollers	2025	1	103.0	1.28
Rosseti	2023	1	3 828.0	1.00
Rosseti Centr	2025	1	327.2	0.90
PhosAgro	2025	2	953.5	0.54
Fix Price	2024	2	79.5	0.17

Note: the effect for a 2 pp shock is divided by two; companies present the effect before or after tax, which is not always specified.

Source: author’s calculations based on the consolidated IFRS statements of the companies.

The disclosed sensitivities range from 0.2% to 2.4% of EBITDA per percentage point. They are consistent with the pass-through estimates in the sense that the companies with the highest sensitivity, Seligdar and Transmashholding, also had the lowest coverage. But the disclosures have three weaknesses. First, in most cases they refer to floating-rate debt and do not capture the repricing of fixed-rate debt on refinancing, which, as the case of Magnit shows, can be the main channel over a horizon of one to two years. Second, the size of the shock differs between companies and has little relation to the actual changes of the key rate, which reached several percentage points within a quarter. Third, the largest companies often

present abbreviated statements without notes on interest rate risk. Gazprom Neft and SIBUR Holding, for example, did not disclose the share of floating-rate debt in their statements for 2025.

6.3. Scenarios for 2027-2029

The estimates can be used to assess how interest coverage would change under different paths of the key rate. The cost of debt of company j in year $T + h$ is projected as

$$i_{j,T+h} = i_{jT} + \beta_0(r_{T+h} - r_T) + \beta_1(r_{T+h-1} - r_T), \qquad (6)$$

where T is 2025, $\beta_0 = 0.631$ and $\beta_1 = 0.165$ are taken from specification (2), and r is the average key rate. Interest coverage in year $T + h$ is then $ICR_{j,T+h} = ICR_{jT}\, i_{jT}/i_{j,T+h}$, which assumes that borrowings and EBITDA remain at their 2025 levels. This assumption isolates the effect of the key rate. Three scenarios are considered. The base scenario uses the average key rate of 14.6% in 2026 and the midpoints of the Bank of Russia base forecast for 2027-2029: 13.0%, 9.5% and 8.0% (Bank of Russia, 2026b). The second scenario keeps the rate at the 2026 average of 14.6% until 2029. The third is a stress scenario in which the average rate returns to 18% in 2027 and 14.5% in 2028 before falling to 8% in 2029. Table 6 shows the results for 13 companies with positive interest coverage in 2025.

Table 6. Projected median cost of debt and interest coverage under key rate scenarios

Scenario	Indicator	2026	2027	2028	2029
Base (Bank of Russia forecast)	Median cost of debt, %	13.5	11.7	9.3	7.7
	Median interest coverage	6.92	7.96	9.72	11.25
	Transmashholding / Seligdar / MTS	2.07 / 2.31 / 2.43	2.32 / 2.72 / 2.71	2.82 / 3.61 / 3.23	3.24 / 4.54 / 3.66
Rate held at 14.6%	Median cost of debt, %	13.5	12.7	12.7	12.7
	Median interest coverage	6.92	7.40	7.40	7.40
	Transmashholding / Seligdar / MTS	2.07 / 2.31 / 2.43	2.17 / 2.47 / 2.54	2.17 / 2.47 / 2.54	2.17 / 2.47 / 2.54
Stress	Median cost of debt, %	13.5	14.9	13.2	8.6
	Median interest coverage	6.92	6.34	7.04	10.36
	Transmashholding / Seligdar / MTS	2.07 / 2.31 / 2.43	1.90 / 2.06 / 2.25	2.10 / 2.36 / 2.47	3.00 / 3.99 / 3.41

Note: 2025 values of the cost of debt and interest coverage are held as the starting point; the median cost of debt in 2025 for these companies is 16.4% and median coverage 5.82; borrowings and EBITDA are kept at 2025 levels.

Source: author's calculations.

Under the base scenario the median cost of debt would fall from 16.4% in 2025 to 13.5% in 2026 and 7.7% in 2029, and median interest coverage would rise from 5.8 to 6.9 in 2026 and to 11.3 in 2029. For the most vulnerable companies the improvement is slower in absolute terms but large in relative terms: the coverage of Transmashholding would rise from 1.75 to 3.24 and that of Seligdar from 1.85 to 4.54 by 2029. If the rate stayed at 14.6%, median coverage would stabilise at about 7.4, and the weakest companies would remain close to 2. In the stress scenario, coverage of Transmashholding would fall below 2 in 2027, and

Seligdar and MTS would approach that level, but no company with positive coverage in 2025 would fall below one.

These projections are partial. They do not account for changes in operating profit, which in 2025-2026 declined for several companies and had a stronger effect on coverage than interest in the first half of 2026. Nor do they account for changes in debt, which for companies such as Magnit and SIBUR Holding grew rapidly. They also assume that the pass-through is symmetric, while the comparison of 2025 with the first half of 2026 suggests that the decline in the cost of debt during the easing was somewhat slower than equation (6) predicts. Specification (2) implies a decline of about 2.3 percentage points between these periods, while the observed median decline was 1.8 points. The scenarios should therefore be read as an estimate of the contribution of monetary policy to the recovery of coverage rather than as a forecast.

7. Discussion and implications

The results have several implications. For monetary policy, they show that the interest rate channel worked strongly through corporate debt during the tightening of 2023-2025. On average, about three quarters of a change in the key rate reached the cost of debt of large companies within a year, and the long-run pass-through was close to complete. The main reason for this strength is the high share of floating-rate debt, which in the sample averaged about 45%. The same feature means that the easing that began in June 2025 also reaches companies quickly: most companies in the sample recorded a lower cost of debt already in the first half of 2026. The gradual reduction of the key rate envisaged by the Bank of Russia base forecast would thus restore corporate interest coverage within two to three years even without an increase in operating profits.

For financial stability analysis, the heterogeneity of pass-through matters more than its average. Companies with a high share of floating-rate debt and low coverage, such as Transmashholding and Seligdar, were the most exposed during the high-rate phase. The fact that two companies in the sample had negative EBITDA in 2025 and two others had coverage below one in the first half of 2026 shows that the combination of high rates and weaker operating results can create problems even among large issuers. Monitoring of corporate interest rate risk could usefully rely on the share of floating-rate debt and the schedule of refinancing in addition to aggregate leverage ratios. The scenarios suggest that the strongest risk would arise if the key rate had to be raised again before companies had restored their coverage.

For companies, the results show that the choice between fixed and floating rates is a central element of interest rate risk management. Fixing the rate near the peak of the cycle, as Fix Price and Seligdar did in 2025, protects current interest expense but delays the benefits of easing. Increasing floating-rate debt, as Magnit and Segezha Group did, exposes the company to the full cost of high rates but allows it to benefit quickly from cuts. Neither strategy is optimal in all circumstances, and the choice should depend on the company's coverage, the volatility of its cash flows and its access to interest rate derivatives, in line with the theories of hedging discussed by Smith and Stulz (1985) and Froot, Scharfstein and Stein (1993). In the sample, Seligdar and SIBUR Holding report the use of cross-currency interest rate swaps to manage currency and interest rate risk, but most companies do not disclose the use of interest rate derivatives.

For accounting regulation and disclosure, the results point to the limited usefulness of current sensitivity disclosures under IFRS 7. A standard format that includes the share of floating-rate debt at each reporting date, the schedule of repricing and maturity of fixed-rate debt, and the sensitivity of interest expense to a uniform change of one percentage point would allow investors, banks and supervisors to assess interest rate risk consistently. Capitalised interest should also be disclosed together with interest recognised in profit or loss, because for companies with large investment programmes it can account for half of total interest on borrowings.

8. Conclusions

The paper has estimated the pass-through of the Bank of Russia key rate to the cost of debt of 20 large Russian non-financial companies over the cycle of 2021-2026, measuring the cost of debt from consolidated IFRS statements as interest on borrowings, including capitalised interest, divided by average borrowings. Within the reporting period, a one percentage point change in the average key rate was associated with a change of about 0.63-0.72 percentage points in the cost of debt, and over two years with a change of about 0.80. The long-run pass-through was not significantly different from one.

The pass-through depended on the composition of debt. Ten additional percentage points of floating-rate debt raised the pass-through by about 0.08, so that companies with mostly floating-rate debt transmitted changes in the key rate almost fully, while companies that borrowed at fixed rates or reduced their debt, such as Transneft and NLMK, were hardly affected. The changes in the share of floating-rate debt during the cycle, upward for Magnit, Aeroflot and Segezha Group and downward for Fix Price and Seligdar, show that companies

actively managed this exposure, with different consequences for the high-rate and easing phases.

The decline in interest coverage during the high-rate phase was moderate for most companies but significant for a few with high leverage and floating-rate debt. Scenario calculations based on the estimated pass-through and the Bank of Russia base forecast suggest that median coverage would rise from 5.8 in 2025 to about 11 in 2029, other things being equal. The main limitations of the study are the small number of companies observed over the whole cycle, the absence of period fixed effects and the endogeneity of the debt structure. Extending the panel as more companies publish detailed notes, and combining accounting measures with data on individual loans and bond issues, are natural directions for further research.

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Appendix

Table A1. Cost of debt of the sample companies by period, % per annum

Company	2021	2022	2023	2024	2025	H1 2025	H1 2026	Mean floating share, %
Aeroflot	-	-	-	9.3	15.5	-	17.3	20.6
Astra Group	-	-	-	20.7	-	19.8	10.8	92.8
Fix Price	-	-	-	17.2	16.4	16.6	11.4	27.6
M.Video	-	-	-	30.0	31.3	-	22.0	49.1
MTS	6.6	9.7	9.1	15.2	20.1	-	16.3	48.9
Magnit	7.2	7.8	9.2	9.7	17.3	-	16.2	15.0
NLMK	-	-	-	9.0	8.9	-	-	0.9
PhosAgro	-	-	-	6.6	9.4	10.7*	9.1*	33.0
Rosseti	-	-	-	-	-	-	13.9	62.7
Rosseti Centr	-	-	-	17.4	18.3	-	14.9	89.4
Rostelecom	-	-	-	14.2	18.0	18.0	16.2	45.7
SIBUR Holding	-	-	-	11.1	15.1	-	13.6	-
Segezha Group	-	-	-	16.6	17.1	-	17.0	60.1
Seligdar	-	-	-	13.8	14.6	-	15.2	53.5
Sollers	-	-	-	-	13.3	-	12.9	56.7
Tatneft	-	-	-	7.6	10.6	-	-	-
Transmashholding	-	-	-	-	18.8	-	14.4	70.2
Transneft	-	-	8.0	7.7	7.7	-	-	-
X5	-	8.5	8.5	13.3	17.7	-	-	-
Yandex	-	-	-	12.8	18.1	19.5	12.4	-

Note: cost of debt by equation (2), interim periods in annual terms; * nine months; the mean share of floating-rate debt is the average over available reporting dates. Rosseti is observed in one period only and does not contribute to the fixed-effects estimates.

Source: author’s calculations based on the consolidated IFRS statements of the companies.

Supplementary Files

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