Quantitative Finance and Economics

QFE, 3(3): 425–439.
DOI: 10.3934/QFE.2019.3.425
Received: 08 May 2019
Accepted: 19 June 2019
Published: 01 July 2019

http://www.aimspress.com/journal/QFE

Research article

Investor reaction to economic sanctions: the case of Russian Global Depositary Receipts

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Abstract: We examine the impact that the economic sanctions imposed by the Western community on the Russian economy in March 2014 have had on the pricing of Global Depositary Receipts (GDRs) traded in London. We document that following the first announcement of the imposition of sanctions, the returns of Russian GDRs increased in the case of both the Moscow Exchange and London listings, indicating an enhanced risk of trading with Russian securities. This effect was more pronounced in the case of London listings compared to local listings, which resulted in an overall decrease in the returns spread between the GDR and underlying home market shares. In contrast, we do not find evidence that imposition of sanctions affected turnover by volume of home or London-based GDR trades around the sanctions announcement, suggesting that investors did not pull out of Russian GDRs, but instead, reassessed investment risks associated with Russian securities. Last, our findings provide no evidence of a moderating impact on pricing of Russian GDRs by the two mechanisms that are expected to be indicative of enhanced (decreased) risks for GDRs, namely, state ownership (presence of foreign nationals on boards of directors). Our study contributes to the debate on the importance of complex assessment of outcomes of international sanctions on individual economies and firms.

Keywords: asset pricing; economic sanctions; Global Depositary Receipts; London; Moscow Exchange

JEL Codes: G14, G15

1. Introduction

Using a 100-day trading window around the announcement of economic sanctions, we examine the market reaction and impact on returns of 21 Russian Global Depositary Receipts (GDRs) on both the home market and the London Stock Exchange (LSE). Our findings indicate that, contrary to the anticipated sanctions outcome, local and foreign investors did not begin withdrawing their investments from Russian GDRs, as we did not find evidence of changes in turnover by volume around the sanctions announcement date[1]. Furthermore, we found that the returns of Russian GDRs increased following the announcement, which was more pronounced in the case of London-based listings as opposed to local listings. Accordingly, the returns spread of examined GDRs decreased following the imposition of sanctions. Together, these results indicate that investors reassessed the level of risk in Russian GDRs but remained loyal to their investments. Although the sanctions primarily targeted state-owned firms and those affiliated with state-monitored (strategic) industries, we did not find evidence of a moderating impact of state ownership on the changes in returns series and spread of GDRs following the imposition of sanctions. Results also revealed that the liquidity of GDRs on both the home and London markets is positively associated with the board's nationality diversity, defined as the presence of foreign directors on corporate boards. In contrast, we found no evidence that this governance feature affected changes in pricing of GDRs as a result of sanctions.

Our investigation provides insight into a recent global political event, namely, the imposition of economic sanctions on the Russian economy by Western nations in 2014 as a result of Russia's annexation of Ukraine's Crimea region and related events in early 2014. Consistent with prior research, we define economic sanctions as restrictions imposed by policy makers of sanctioning countries on their commercial affairs with target nations' governments, firms, and individuals (see Early, 2015). The first official announcement regarding imposition of economic sanctions against select Russian firms and individuals was made on March 17, 2014, which we consider the key date for the purpose of our study. The US initiated the sanctions and was soon joined by the European Union (EU), Canada, Australia, and New Zealand. The economic sanctions imposed significant limitations on the business activities between the companies of sanctioning nations and Russian firms. Russian financial institutions' access to the money markets of the aforementioned countries was also severely reduced. Each sanctioning country introduced a list of Russian individuals, predominantly with significant connections to the Russian government, who were banned from entering those countries (Brooking Institutions, 2018).

At the top of the list of Russian public companies targeted by sanctions were Russia's leading firms—Russian blue chips—cross-listed on overseas markets and for which the London Stock Exchange (LSE) has been the primary destination (Kim, 2013; RBC, 2014). These companies, both with and without state ownership, had conducted initial public offerings (IPOs) in London's Main Market as GDRs, beginning as early as the 1990s. While the sanctions did not explicitly prohibit listing

[1] This evidence is broadly consistent with the findings in Kim (2019a), who documented that following the imposition of sanctions, there was no significant change in the cross-listing statistics of Russian GDRs cross-listed in London. The author also documented that foreign investors were not deterred from investments in Russian stocks—not limited by blue chips cross-listed overseas—and that their interest in investment opportunities offered by the Moscow Exchange was steadily increasing between 2014 and 2016 despite the sanctions.

and trading activities of Russian public firms in London[2], they were expected to obstruct the GDRs' ability to conduct business with overseas partners and obtain syndicated foreign currency loans, which would make them riskier and less attractive for market participants. Additionally, foreign individuals serving as directors on boards of Russian blue chips were expected to leave their positions. Experts believed that shareholders, especially those based in London, would begin withdrawing their capital from investments in Russian GDRs, which was the precise goal of the sanctions (Brooking Institutions, 2018; RBC, 2019). However, our findings point to a different outcome.

Our study is motivated by lack of clear or consistent findings regarding the ultimate impact of international sanctions on target countries' economies. For centuries, economic and political sanctions have been used as a measure to discipline states that adopt policies violating international obligations and endangering core community values (Hufbauer et al., 1985; Kaempfer and Lowenberg, 1988). According to the instrumental theory, the ultimate goal of sanctions is to impose severe economic hardship in the target country. Nevertheless, scientists have expressed significant doubts regarding the effectiveness of sanctions in bringing about anticipated political and economic responses in the target nation. In particular, it has been argued in the literature that interruption of trade due to sanctions may be costly to both the initiating and the target parties (Doxey, 1983; Kaempfer and Lowenberg, 1988). More importantly, history has witnessed instances when international sanctions created their own antidote when the population of the target country became more aligned with the government (Hufbauer et al., 1985), counter to the anticipated outcomes. Lastly, the literature suggests that due to repetitive sanctions, some target countries have developed sophisticated ways to circumvent and undercut foreign sanctions' effectiveness, as was the case of Iran repetitively being sanctioned by the US (see Early, 2015).

We contribute to the strand of research examining the effect of increased risk driven by imposition of sanctions on capital markets systems of target countries. We are particularly interested in the changes in the investor decision making process as a result of elevated securities risk driven by sanctions. Based on a large panel of 171 countries, Biglaiser and Lektzian (2011) reported that, from 1965 to 2000, foreign direct investments by US multinational corporations in the target countries decreased prior to sanctions, due to information asymmetry and increased business risk. Nevertheless, when foreign investors gained better insight into the implications of the sanctions, foreign investments in target nations returned to pre-sanction levels. Thus, economic sanctions may not distort equilibrium for long in the target country, but they could cause painful business interruptions in the sanctioning countries. Our study complements the stream of research examining repercussions of economic sanctions for various capital market groups: we found that foreign investors bore the informational costs associated with uncertainty due to the sanctions imposed on Russian GDRs, with no significant impact for the latter.

Relatedly, this study contributes to the literature that examines how democratic institutions and events in a given country affect foreign investments. Russia's annexation of Crimea in 2014 was widely considered as an undemocratic event that violated the sovereignty of another state—Ukraine (McCarthy et al., 2019). On one hand, prior research suggests that investors favor democracy and that there shall be a positive association between democratic arrangements and the level of foreign direct investments (FDIs) into a country (Olson, 1993). On the contrary, some studies reported that, in fact,

[2] According to Kim (2019a), the vast majority of Russian cross-listed firms selected London as their primary or only cross-listing destination. A London listing is often followed by listings on other European exchanges, such as those of Germany, followed by the non-Nasdaq over-the-counter (OTC) trading platform.

authoritative regimes are more attractive to investors, as they provide better protection of property rights and guarantee political stability (O'Donnell, 1978). Li and Resnick (2003) provided insight into the complex and conflicting effects of democratic arrangements on inflows of FDIs in several less developed countries. Our study complements these works, and we also shed light on complexity of the interplay between political events, sanctions, and foreign investments in a developing (emerging) country—Russia. Unlike aforementioned works, this study focuses on one country and is not subject to limitations of cross-country empirical studies that may struggle with interpretation of the results due to a large number of confounding factors. Moreover, to examine changes in investor behavior, we chose the "convenient" case of the sanctions imposed on Russia in 2014, which represents a strong exogenous shock to the capital market system in Russia and is a powerful experiment.

In the following sections, we provide background information on the sanctions against Russia, describe the methodology, and report the results of our empirical investigation.

2. Background and literature review

2.1. Economic sanctions imposed on Russia

Following a series of political events culminating in Russia's annexation of Crimea in early 2014, the United States, the European Union, Australia, New Zealand, and Canada introduced the first sanctions against Russia in mid-March, 2014. The annexation of Crimea was viewed by many as a violation of Russia's commitment to respect the independence and sovereignty of other nations (Washington Post, 2014; McCarthy et al., 2019). In particular, on March 17, 2014, these nations imposed visa restrictions and asset freezes on select Russian officials (politicians), including presidential aides and ministers. Sanctions were also imposed on select Russian companies–predominantly those with state ownership and those affiliated with the Russia's strategic industries. These included Russia's largest public companies—VTB, Novatek, Rosneft, and others—that were leading contributors to the Russian economy and were cross-listed overseas. Additionally, restrictions were placed on Russia's import and export capabilities with the aforementioned nations. The EU restricted access to capital markets for select Russian blue chips, and the US imposed restrictions on the export of oil and gas technologies to Russia (RBC, 2019).

Figure 1 depicts the statistics of the foreign clients (investors) of Moscow Exchange—the major equity listing and trading platform in Russia—over time. We observe a steady increase in the total number of foreign investors over the examined period. Although foreign entities somewhat decreased their presence on the Moscow Exchange, the decline was outweighed by the increasing number of foreign individual investors. This indicates that economic sanctions did not diminish foreign investor confidence in the Russian stock market.[3] In a related study, Kim (2019b) examines auditor reaction to the first wave of economic sanctions against Russian firms. In response to the first wave of sanctions, in April, 2014, the State Duma accepted a proposal for consideration, which banned auditing and consulting

[3] Vedomosti (2016) reported conclusions similar to ours based on the total volume of foreign investors' transactions; the presence of foreign investors did not decline as a result of economic sanctions and their buy/sell trading balances with respect to Russian equities did not change (see https://www.vedomosti.ru/finance/articles/2016/03/22/634550-inostrannih-investorov).

firms that had foreign affiliations and partnerships—predominantly Big Four accounting firms—from providing services to Russian companies with state ownership (TASS, 2018). Among the arguments supporting this proposition were that Big Four companies did not have government-issued licenses granting access to state secrets and other sensitive information. Moreover, the fact that the Russian representatives of Big Four firms shared working papers with foreign affiliated offices and stored information on overseas servers were also of concern (RBC, 2014). Accordingly, the economic sanctions imposed by the Western nations created their own antidote, as world's leading accounting firms headquartered in sanctioning countries were under threat of losing the lion's market share of auditing and consulting revenues in Russia. Kim (2019b) reported that Big Four firms responded to this threat by lowering their contractual fees with Russian firms, in order to retain clients.

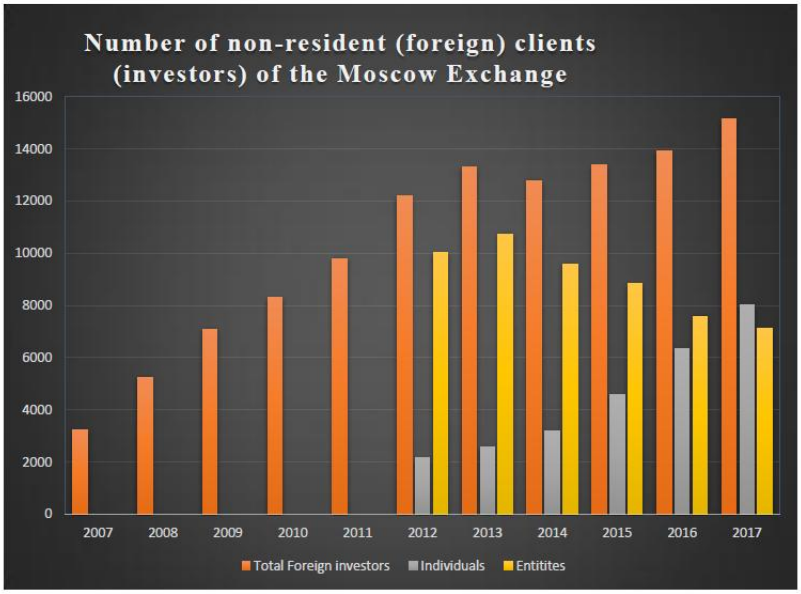

Figure 1. Non-resident (foreign) clients (investors) of the Moscow Exchange, 2007–2017. Source: The Moscow Exchange (2018); Kim (2019a). The breakdown for individuals versus entities is not available prior to 2012.

In summary, the first wave of economic sanctions has led to unpredictable outcomes for both Russia and the sanctioning nations, supporting the notion of complexity for both sanctioning and target parties documented in prior research (Olson, 1993; Li and Resnick, 2003; Early, 2015; Kim 2019b).

Importantly, the first wave of economic sanctions also included a proposition to forcibly delist Russian blue chips from the main market of the LSE (RBC, 2014). This extreme measure was not implemented, possibly because Russian GDRs had occupied the leading positions among companies traded as GDRs through London's International Order Book (IOB) (LSE, 2019). Losing Russian blue chips would adversely affect the liquidity and the investor base of London's GDR niche, experts predicted (RBC, 2014). Nevertheless, market professionals expressed concerns that select Russian firms would put their initial public offering plans on hold. More importantly, there was a strong fear that global investors would start withdrawing their capital from Russian GDRs due to the increased

risks associated with uncertainty surrounding these stocks. Below, we provide evidence regarding the investor reaction to the first wave of sanctions using the sample of Russian GDRs as a target group.

2.2. Literature on economic sanctions

Prior research on economic sanctions provided extensive discussions and evidence on pros and cons of imposition of sanctions on a single country or a group of nations. The literature predominantly focused on sanctions imposed by the US on other nations with the purpose of tarnishing the reputation of sanctioned governments as well as imposing severe commercial restrictions on target nations' relationships with the rest of the world. As noted by Early (2015), "many of the costs associated with using economic sanctions are not immediately observable to US policy makers…. The real costs associated with the use of sanctions tend to be overlooked or ignored" (p. 6). Indeed, the literature has documented costly effects of economic sanctions for the US businesses and economy as a whole. For example, Biglaiser and Lektzian (2011) reported that US investors bear significant information costs as a result of uncertainty associated with sanctions announcements. The US multinational firms often have to halt their businesses and temporarily withdraw their presence from target countries, which may result in production process interruptions and distortion in reported revenues.

Despite being heavily criticized for their ineffectiveness, sanctions have become a major post-World War 2 policy tool of choice of the US. Hufbauer et al. (2019) reported that US-imposed sanctions worked only in five cases and that the US economy bears high economic cost when imposing the sanctions, estimated to have reached 18 billion US dollars in lost exports in the 1990s alone, according to Early (2015). The author noted that erroneously, sanctions are often viewed as a nation's low-cost substitute for more radical responses such as military interventions.

The literature suggests that overall, anticipated economic decline due to sanctions makes the target country less attractive for investment purposes (Crawford and Klotz, 1999). The empirical research, however, provides evidence of limited effects of sanctions on the national economy of target nations, as US firms and investors withdrawing their funds from target nations are commonly fast replaced by other developed nations' firms. Moreover, according to Early (2015), target nations have become increasingly sophisticated at managing US sanctions, which undermines their effectiveness. Additionally, Biglaiser and Lektzian (2011) provide evidence on the moderating effect of democratic institutions and political regimes in the target countries on the association between FDIs and imposition of sanctions (see also Li and Resnick, 2003).

The empirical works examining repercussions of sanctions have been predominantly based on case studies and/or covering large panels of countries; they commonly employed macroeconomic measures of foreign investor confidence in target nations, such as FDIs. To our knowledge, no other study examined market reaction and investor behavior to sanctions targeting a group of cross-listed firms, which, we believe, is a more direct experiment to examine changes in investor confidence with respect to the Russian market as a result of sanctions.

3. Methodology

We focused on the Russian firms cross-listed as GDRs on the Main Market of the LSE, as those firms were the main targets of economic sanctions, as explained above[4]. In Datastream, we identified Russian blue chips with sufficient daily trading activity on both the LSE and the home market surrounding the key date when the official sanctions announcement was made—March 17, 2014. We identified twenty-one companies domiciled in Russia and dual-listed on the LSE as GDRs and on the home Moscow Exchange; these firms were actively trading on both markets 50 days prior to and 50 days following the sanctions announcement (including the announcement day). Accordingly, our investigation period is between January 6 and May 23, 2014. For these 21 GDRs, two price/return series were available in Datastream—one sourced from the local (Russian) market and the other sourced from the LSE—along with other financial variables required to compute the control regressors. Table 1 reports the list of the examined GDRs[5].

We relied on the returns of the underlying security traded on the home market (Ret_Home), the GDR's returns on the LSE (Ret_GDR), and the difference between the two variables—returns spread (Spread_ret), consistent with Kim's (2016a) methodology. Both the home and the LSE returns series were downloaded in the common currency of USD. Returns were calculated from the total return index (RI) downloaded from Datastream. RI represents a shareholding's theoretical growth in value over a specified period, assuming that dividends are reinvested to purchase additional units of equity at the closing price applicable on the ex-dividend date. The total returns index is cumulative as it adds any changes to the previous day's value. The value of the index is defined as:

$$RI_t = RI_{t-1} * \frac{P_t}{P_{t-1}} \tag{1}$$

except when t is the ex-date of the dividend payment D_t, in which case:

$$RI_t = RI_{t-1} * \frac{P_t + D_t}{P_{t-1}}. \tag{2}$$

[4] We omit the discussion on the history of global GDR listings as well as comparative costs and benefits to firms of cross-listing as ADRs or GDRs, as these are extensively discussed in Kim and Pinnuck (2014).

[5] Prior studies based their inferences on intra-day statistics with overlap trading hours (e.g., Gagnon and Karolyi, 2010; Alsayed and McGroarty, 2012), while our study relies on daily closing prices on the Moscow Exchange and the LSE, primarily due to unavailability of hourly trading statistics for the local market. Nevertheless, as reported in Kim (2016a), there is a substantial overlap in the daily trading activity between the two exchanges: the LSE's Main Market executes trades from 8 am until 4.30 pm, which corresponds to the 11 am–7.30 pm trading interval in Moscow (local summer time). The Moscow Exchange (Main Market sector) trades from 9.30 am until 7 pm. Overall, there is an 8-hour trading overlap, and the two exchanges close only 30 minutes apart (LSE, 2019; Moscow Exchange, 2019). Using daily closing prices rather than intraday statistics is a limitation of our study.

Table 1. The list of examined Russian GDRs.

Company name	Industry	State ownership [0; 1]	Foreign directors on board [0; 1]
Acron	3	0	0
Bank Otkritie	1	0	0
LSR group	3	0	0
Lukoil	2	1	1
Magnit	3	0	0
Magnitogorsk Iron and steel	2	0	1
Megafon	4	0	1
Novatek	2	1	1
Novolipetsk steel	2	1	1
Novorossijsk commercial sea port	3	1	0
Pharmstandard	3	0	0
Phosagro	3	0	1
PIK	3	0	1
Rosneft	2	1	1
Rosseti	2	1	1
Sberbank of Russia	1	1	1
Severstal	2	0	1
Sistema	4	0	1
TMK	2	0	1
Uralkali	2	0	1
VTB	1	1	1

Note: The table reports the list of examined GDRs cross-listed on the Main Market of the LSE. We used a broad industry classification: (1) financial institutions; (2) mining, energy, and related business; (3) retailers, food and drug producers, and transporters; (4) media and telecommunications. State ownership (foreign directors on board) is a dummy variable that is equal to one if the state has ownership in a company's equity capital (a company has at least one foreign director on the board of directors).

Accordingly, the return of a firm i at the closing day t is defined as $r_{it} = RI_t / RI_{t-1} - 1$. We introduced several control variables. The empirical literature emphasizes the importance of controlling for both local and international market returns when examining the behavior of depositary receipts (Patro, 2000; Blouin et al., 2009). The main index for the Russian equity market that we used in the empirical analysis is the Russian Trading System Index (RTSI)—$RTSI_t$—which comprises the 50 most liquid stocks (blue chips) domiciled and traded on the RTS platform[6]. The overseas (global) market index that we included in the model is the FTSE All Share index ($FTSE_t$). We incorporated the exchange rate between the Russian ruble (RUB) and the USD as an additional explanatory factor (FX_t) (Blouin et al., 2009). Furthermore, provided that the individual sanctions were aimed at Russian state officials, we expected that state ownership in public firms may have a

[6] While the two Russian stock exchanges, RTS and MICEX, merged in 2012 to form the Moscow Exchange, during the examined period RTSI remained the major equity index of the Russian stock market.

moderating impact on pricing of Russian GDRs and changes in post-sanctions returns levels. Accordingly, we included a dummy variable *StateOwn* that equals to one if a public firm has any level of state ownership. Last, we controlled for the presence of foreign directors on the board of examined firms: *Dexpat* is a dummy variable that is equal to one if a company has at least one foreign director on the board during the sanctions announcement period[7]. The prior literature indicates that nationality diversity on boards is an important governance feature (Masulis et al., 2012; Hahn and Lasfer, 2016). In the case of Russian GDRs, the presence of foreign directors on boards is expected to be associated with greater bonding, and it is argued that foreigners are hired by Russian firms for their advisory and monitoring roles (Association of Independent Directors, 2014). We also controlled for industry affiliation and trading volume on both markets (*VOHome*, *VOGDR*) in the regression tests, consistent with prior research.

To capture the sanctions announcement effect, we introduced two dummy variables in the model. *Dkeydate* is a dummy variable that is equal to one for firm-day observations on March 17, 2014. *Dafter* is a dummy variable that is equal to one for all observations post this date. This leads to the following empirical model for testing the effect of the sanctions announcement on pricing of Russian blue chips:

$$\begin{aligned}\mathrm{Re}\,t_{it} = {} & \alpha_0 + \alpha_1 RTSI_t + \alpha_2 FTSE_t + \alpha_3 VOHome_{it} + \alpha_4 VOGDR_{it} + \alpha_5 FX_t + \alpha_6 StateOwn_{it} + \alpha_7 D\exp at_{it} \\ & + \alpha_8 Dkeydate + \alpha_9 Dafter + e_{it}.\end{aligned} \tag{3}$$

In the model (3), the dependent variables are *Ret_Home*, *Ret_GDR*, and *Spread_ret*. The coefficients of interest are α_8 and α_9.

4. Empirical results and discussions

Figure 2 depicts the behavior of the home market and LSE return series (averaged across examined GDRs) around the period of sanctions announcement. It is evident that the volatility of both the home market and LSE return series increased around the sanctions announcement date, indicating that the risk of Russian GDRs was greater than prior to sanctions. Figure 3 shows the behavior of the returns spread series, defined as the differences between home market and LSE returns (averaged across examined GDRs); the pattern of increased volatility is similar to that reported for individual return series. Interestingly, the highest volatility can be spotted before the official sanctions announcement date: days (−10) and (−9), although we did not identify any sanctions-related events on those days.

[7] The information regarding the composition of Russian firms' boards of directors and state ownership was sourced from firms' quarterly reports available in the SKRIN database.

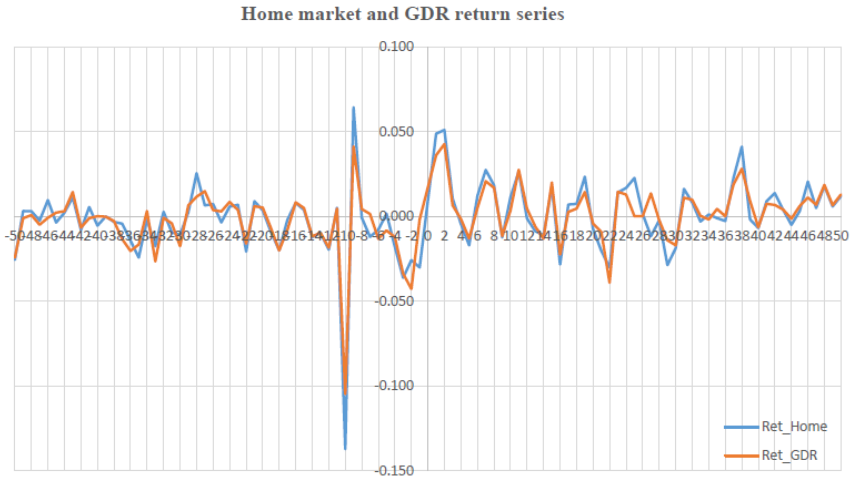

Figure 2. Home market and LSE return series of Russian GDRs.

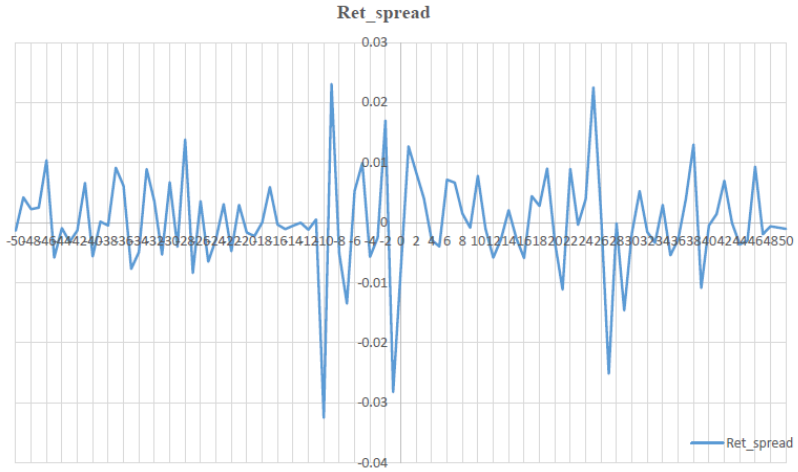

Figure 3. Returns spread of Russian GDRs.

Table 2 reports the results from estimating model (3). The return series on the LSE market and returns spread are positively associated with both market indices. The foreign exchange rate is not priced, which is expected given that both of the returns series are denominated in USD. While we controlled for trading volume in our regression estimation, we found no evidence that this liquidity metric affects pricing of Russian companies. In this baseline estimation, there was also no evidence of impact of either state ownership or foreign directors' representation on boards on returns series and spread. Most importantly, the results revealed a significantly positive (significantly negative) coefficient on the *Dafter* variable for both the home market and LSE returns series (returns spread). The magnitude of this coefficient in the case of GDR returns series (value = 0.004***) exceeded that of the home market returns series (value = 0.002*). Accordingly, following the sanctions announcement, Russian companies' risk increased, and even more so in the case of London-based trading, driving decrease in the returns spread. Overall, our findings are consistent with the notion that imposition of sanctions creates information asymmetry around target companies and raises information processing costs for investors (Biglaiser and Lektzian, 2011).

Table 2. Returns series and returns spread around the sanctions announcement day.

Variable	Ret_GDR		Ret_Home		Ret_Spread	
	Coeff.	t-stat	Coeff.	t-stat	Coeff.	t-stat
Constant	0.027	0.896	0.030	1.527	0.003	0.139
FX	−0.001	−1.113	−0.001	−1.662*	0.0003	0.051
VOHome	0.0001	0.291	0.0001	0.034	−0.0001	−0.310
VOGDR	0.001	1.035	0.0001	0.728	−0.0004	−0.795
RTSI	0.759	12.104***	0.988	21.932***	0.229	3.776***
FTSE	0.460	4.353***	0.113	1.614	−0.347	−3.419***
StateOwn	−0.001	−0.718	−0.001	−0.832	0.0001	0.049
Dexpat	−0.0001	−0.071	0.002	1.133	0.002	1.527
Dkeydate	0.001	0.035	0.003	0.609	0.003	0.392
Dafter	0.004	2.927***	0.002	1.845*	−0.002	−2.119**
Adj. R-sq.	0.31		0.59		0.02	
No. obs.	1,682		1,682		1,682	
Industry effects	Included		Included		Included	

Note: The table reports the results from estimating model (3) using OLS with robust standards errors and controlling for industry-fixed effects. The dependent variables are London (GDR) and home market return series, and the returns spread is defined as the difference between the home and LSE returns series. The examined period is 50 days before and 50 days after March 17, 2014 (including this key date) when the first sanctions announcement was made. *, **, and *** denote statistical significance at 10, 5, and 1 percent, respectively.

In our next empirical test, we replaced the returns-based dependent variables with trading volume-based metrics. This metric is defined as the turnover by volume and represents thousands of shares sold and purchased on a daily basis. Accordingly, we re-estimated the model (3) and report the results in Table 3. Interestingly, the presence of foreign directors on corporate boards was the only significant factor across estimations, and the coefficient on the *Dexpat* variable was significantly positive at one percent or better. On the other hand, state ownership in a company's capital positively affected both the home market trading volume and the volume spread. Turning to the coefficients on the dummy variables of interest, we found evidence that trading volume spread increased on the sanctions announcement date, while there was no change for both the home and GDR volume series. Taken together, this evidence is inconsistent with prior works that documented investors' withdrawing funds from target nations and firms following sanctions announcement (Biglaiser and Lektzian, 2011).

For completeness, we examined the moderating impact of state ownership and foreign directors' representation on the boards of Russian firms on changes in returns and trading volume. As discussed above, the sanctions were predominantly targeting state officials and their businesses. Additionally, it has been argued in the literature that the presence of a dominant shareholder, such as the state, may significantly affect firms' corporate governance choices (La Porta et al., 2000). Therefore, one may expect a differential impact of sanctions on returns and trading volumes for firms with state ownership versus others. Furthermore, foreign directors are named to Russian firms' boards for their monitoring and advisory potential, and they are viewed by market participants as an important bonding mechanism (Kim, 2016b; 2019a). Accordingly, there can be differential changes in returns and volumes around the sanctions announcement for firms with foreign nationals on boards versus others (see also Masulis et al., 2012).

Table 3. Turnover by volume and volume spread around the sanctions announcement day.

Variable	VoGDR		VoHome		VoSpread	
	Coeff.	t-stat	Coeff.	t-stat	Coeff.	t-stat
Constant	−0.483	−0.103	1.488	0.254	−0.571	−0.099
FX	0.210	1.577	0.121	0.726	−0.015	−0.089
RTSI	2.951	1.104	0.672	0.238	−4.129	−1.237
FTSE	−3.075	−0.330	−8.601	−0.738	−2.569	−0.215
StateOwn	−0.031	−0.104	3.591	10.619***	3.282	7.946***
Dexpat	1.894	5.136***	3.596	6.724***	1.875	3.746***
Dkeydate	−0.460	−0.815	0.762	1.365	1.312	1.995**
Dafter	−0.132	−0.556	−0.180	−0.568	−0.044	−0.146
Adj. R-sq.	0.29		0.61		0.41	
No. obs.	1,746		2,015		1,682	
Industry effects	Included		Included		Included	

Note: The table reports the results from estimating model (3) using OLS with robust standards errors and controlling for industry-fixed effects. The dependent variables are London (GDR) and home market trading volumes and the volume spread defined as the difference between the home and LSE volume series. The examined period is 50 days before and 50 days after March 17, 2014 (including this key date) when the first sanctions announcement was made. *, **, and *** denote statistical significance at 10, 5, and 1 percent, respectively.

Table 4. Moderating impact of state ownership and presence of foreign directors on Russian boards of directors on changes in returns series following the imposition of sanctions.

Variable	Ret_GDR		Ret_Home		Ret_Spread	
	StateOwn	Dexpat	StateOwn	Dexpat	StateOwn	Dexpat
Constant	0.027	0.027	0.030	0.030	0.003	0.003
FX	−0.001	−0.001	−0.001*	−0.001	0.004	0.003
VOHome	0.001	0.001	−0.001	0.001	−0.001	−0.001
VOGDR	0.001	0.001	0.001	0.001	−0.001	−0.001
RTSI	0.759***	0.759***	0.988***	0.988***	0.229***	0.229***
FTSE	0.460***	0.460***	0.112	0.113	−0.347***	−0.347***
StateOwn	−0.001	−0.001	−0.002	−0.001	−0.001	0.001
Dexpat	−0.001	−0.001	0.002	0.002	0.002	0.002
Dkeydate	−0.002	0.011	0.003	0.004	0.004	−0.007
Dkeydate*StateOwn/Dexpat	0.005	−0.016	0.001	−0.001	−0.004	0.015
Dafter	0.004**	0.004	0.001	0.002	−0.003**	−0.002
Dafter*StateOwn/Dexpat	0.001	0.001	0.003	0.001	0.002	0.001
Adj. R-sq.	0.31	0.31	0.59	0.59	0.02	0.02
No. obs.	1,682	1,682	1,682	1,682	1,682	1,682
Industry effects	Included	Included	Included	Included	Included	Included

Note: The table reports the results from estimating a modified model (3) using OLS with robust standards errors and controlling for industry-fixed effects. The dependent variables are London (GDR) and home market returns, and the returns spread is defined as the difference between the home and LSE return series. The examined period is 50 days before and 50 days after March 17, 2014 (including this key date) when the first sanctions announcement was made. *, **, and *** denote statistical significance at 10, 5, and 1 percent, respectively.

We estimate a modified model (3) where we observe the interaction of the dummy variables of interest, *Dkeydate* and *Dafter*, with *StateOwn* and *Dexpat* regressors. The results are reported in Table 4. We do not find evidence of a moderating impact of either state ownership or the presence of foreign directors on changes in returns (and the spread metric) around the sanctions period. Unreported results lead to similar conclusions regarding the trading volumes and the volume spread. For completeness, we also repeat our analysis by replacing the state ownership metric with a dummy variable indicating a firm's affiliation with strategic industries that are under heavy monitoring and control by the Russian government [8]. This research design modification (unreported) returns qualitatively similar results and does not affect our main conclusions. Our inferences also remain unaltered when we define state ownership as a percentage and when we measure the presence of foreign directors on boards as a number or proportion of foreign individuals.

5. Conclusions

The economic sanctions imposed in March, 2014 on the Russian economy were expected to adversely affect the tradability of the leading Russian firms in London. At the very extreme, the Western community proposed forcibly delisting Russian GDRs from the main market of the LSE. Our analysis revealed that the outcomes of the first wave of economic sanctions were complex and inconsistent with the expectations of sanctioning countries. We find that, despite increased risks associated with investments in Russian GDRs following the imposition of sanctions, the trading volume of these stocks did not significantly change, indicating that investors did not start withdrawing their funds from Russian cross-listed firms. Furthermore, according to our analysis, the returns spread decreased following the imposition of sanctions, and the realized returns of Russian GDRs increased both locally and in London, suggesting that investors' risk perceptions towards examined stocks had changed. Last, we do not find evidence of a moderating effect on the aforementioned results of either state ownership or the presence of foreign directors on Russian boards.

The evidence in the study contributes to the debate of pros and cons of imposing economic hardship on countries, firms, and individuals, and whether or not sanctioning countries achieve the goal of tarnishing reputations and commerce opportunities of target parties. Similar to prior research, we provide insight into the complexity of sanctions outcomes for both initiating and target parties (Biglaiser and Lektzian, 2011; Hufbauer et al., 2019; McCarthy et al., 2019). Unlike prior research that predominantly focused on implications of foreign sanctions for country-level FDIs, our study provides first-hand evidence regarding whether foreign investors price the risks of investments in sanctioned firms. We believe this represents a more powerful experiment to examine investor reaction to enhanced uncertainty and risk driven by imposition of sanctions. The findings of our study are timely, provided that sanctions on Russia are still in progress and several additional waves of sanctions have recently taken place. Furthermore, the evidence in this study is of interest to the global community, as Russia remains an integral part of most Western multinational companies' emerging markets portfolios (Harvard Business Review, 2017).

[8] Aerospace and defense; electricity, oil, and gas producers; gas, water and multi utilities; mining; industrial transportation; and industrial engineering.

Acknowledgments

The author is grateful to the editor-in-chief and the two anonymous reviewers for their time dedicated to the manuscript and the comments that enhanced its quality.

Conflict of interest

I declare that the submitted paper is not associated with any kind of conflict of interest towards organizations or others.

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