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THE EFFECTS OF MERGERS ON SELLERS, CUSTOMERS, AND COMPETITORS IN RUSSIA'S FERROUS AND NON-FERROUS METAL INDUSTRIES: THE APPLICATION OF FINANCIAL EVENT STUDY[2]

Russian producers are large participants in both domestic and international markets of ferrous and non-ferrous metals. Their market power is limited on the world market due to the presence of competitors, while in Russia most of them have achieved an "almost monopolistic" position strengthened by a high market share as a result protection from import tariffs. During 1999-2011 numerous mergers in these industries were completed and approved by the Federal Antitrust Service – Russia's competition agency. The key problem of merger analysis in Russia's ferrous and non-ferrous metal industries is the trade-off between a (possible) weakening of competition in domestic markets and achieving competitive advantages in international markets. Most merger deals were approved only together with precisely developed merger remedies aimed at preventing dominance abuse. However, it is still unknown whether the weakening of competition and the abuse of dominance on the domestic market as the result of a merger indeed lead to harmful consequences. Using the financial event study method developed by Eckbo and Wier (1985), this paper empirically verifies the significance of anticompetitive effects of mergers in the domestic ferrous and non-ferrous metal markets. I find that, according to the financial market, mergers between Russian metal producers restrict competition and reduce consumer gains.

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Keywords: merger, competition, financial event study, Russia.

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Introduction

During the last decade, a process of consolidation in the ferrous and non-ferrous metal market has taken place both in Russia and abroad. The integration process of companies on the market and its influence on the welfare of enterprises on the domestic market are important aspects for analysis. A merger can lead to positive or negative outcomes, depending on the effect of a deal. If it creates synergy effects and increases efficiency due to cost savings, then the effect is positive. On the contrary, if increased market power is the result of a merger and leads to an increase in prices on the market, then the outcome on society's welfare is negative.

A trade-off arises in the Russian metallurgy industry. On the one hand, a merger between Russian mining companies can increase their market power on the world market and create benefits therefrom. The (non-exhaustive) list of examples includes mergers between RUSAL and SUAL (2007), NLMK and VIZ-Stal (2006), and EVRAZ and Vitkovice Steel (2006). On the other hand, this can lead to negative outcomes on the domestic market in terms of price increases for Russian metal buyers. The problem is that Russian mining companies have a great deal of bargaining power on the domestic market due to a high level of concentration in Russian metallurgy and a high level of protection from imports. As a result, Russian buyers of metal suffer and have fewer opportunities to increase their own efficiency and competitiveness, which increases the government's concern over this situation. In this regard the following question arises: Which effect prevails? Is it possible that mergers have no negative impact on domestic buyers?

The main aim of this paper is to analyze the influence of mergers on competition in the metallurgy industry in Russia and abroad. Russian producers are large participants on both the domestic and international markets of ferrous and non-ferrous metals. On the world market their bargaining power is limited due to the presence of competitors, while in Russia most of them have achieved an 'almost monopolistic' position that is strengthened by a large market share as a result of the protection from import tariffs. That is why the effects of merger deals on the competition and customers of Russian metal companies might differ substantially.

Thus, it is necessary to assess merger effects. The problem is that it is difficult to measure these effects both before and after a merger and say whether a particular merger has a negative influence on competition. The most common method for analyzing the effects of mergers on social welfare, measured as the sum of producer and consumer surplus, is the financial event study [Eckbo, Weir, 1985]. If the hypothesis of the efficient financial market is correct, then the market must react to the merger announcement via a change in the stock prices of deal participants. Changes in stock prices should reflect the expected redistribution of welfare. For instance, in the case of weakening competition, we expect a profit increase for sellers (both

participants and non-participants of a merger deal) and a profit decrease for buyers. Thus, the stock return not only for merger participants but also for main competitors and large buyers also may change. The key element of this methodology is the abnormal return, which is calculated as the difference between the actual return and the return predicted by the market model. If the abnormal return is significantly different from zero, then they may conclude that a merger leads to significant consequences. There is some criticism of this methodology based on the possible bias when using an event study approach for prediction merger outcomes in antitrust cases [Kwoka, Gu, 2013]. For instance, the authors argue that the analysis of rival stock movements might be misinterpreted; a merger announcement might highlight the appearance of an attractive merger opportunity in that industry, causing an increase in the stock prices of rivals such that the conclusion about anticompetitive merger effects might be wrong. Including the stock changes of large buyers eliminates possible misinterpretations, as the combination of rival and buyer reactions enhances the reliability of this paper's conclusion.

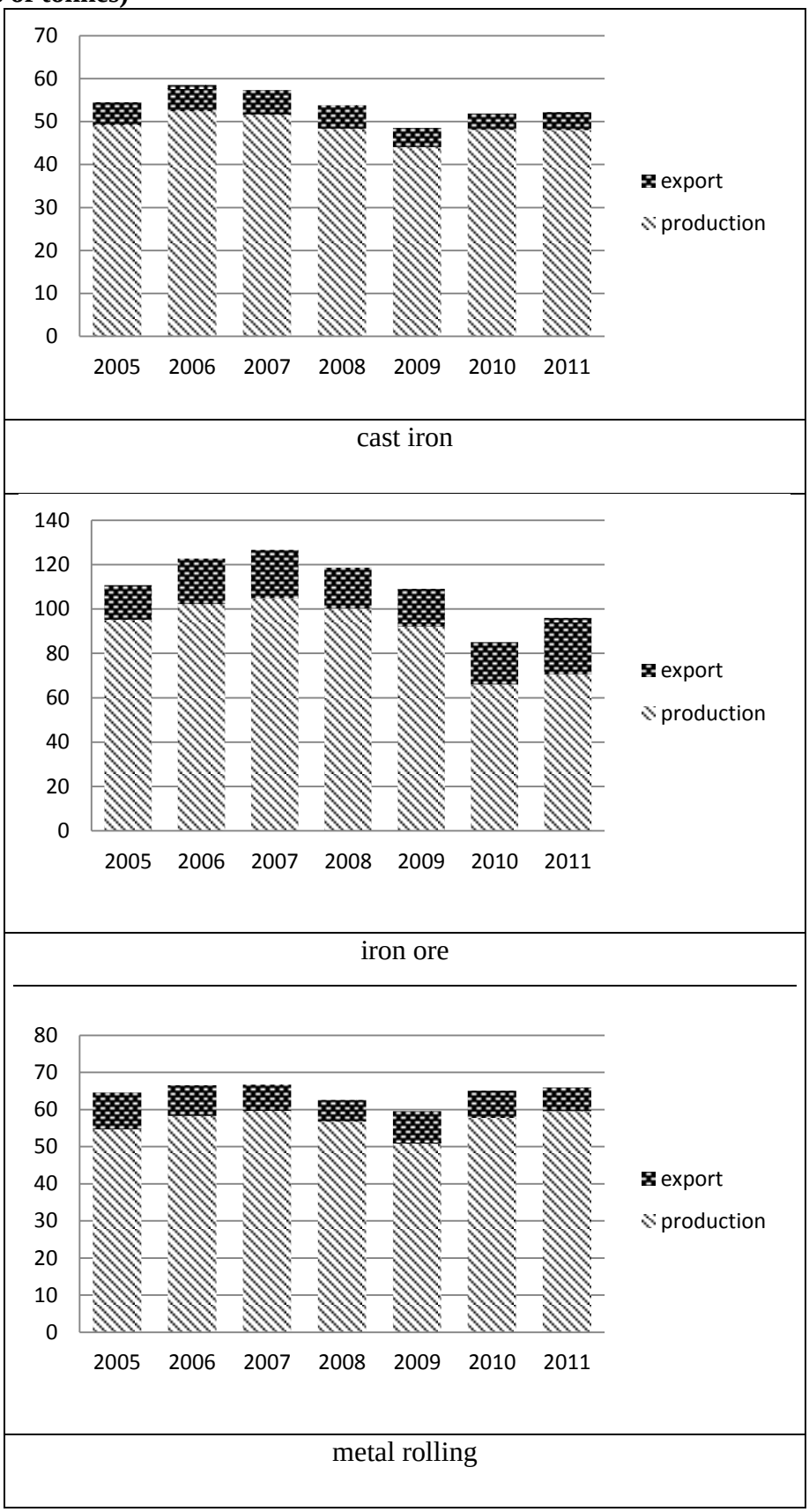
The structure of this article reflects its task. The first section analyzes the specific features of the structure of the ferrous and non-ferrous metal market, which affects competition for domestic customers. In the second section a literature review is presented. In the third section I describe the methodology and dataset. The last section discusses the obtained results.

1. Competition and bargaining power in the Russian metallurgy industry

Metallurgy is one of the key industries of the Russian economy. Its share of GDP is about 5%, while its share of industrial production and export is 18% and 14%, respectively. This industry consists of ferrous and non-ferrous metallurgy covering all stages of technological processes from the production and enrichment of raw materials to the production of finished metal products. The structure of Russian metallurgy reflects the orientation of production to its own natural resources, which results in a high share of basic production and an insignificant number of finishing repartitions. Providing more than 40% of internal consumption, the largest metal consumers are the mechanical engineering and construction industries. However their share in Russian industry is only 20%, while in developed countries it reaches the level of 35-50%. Considering this and the insufficiently high growth rates of these industries, the capacity of the domestic metal market in Russia is low and has an insignificant growth tendency. As a result, Russian metallurgy mostly focuses on exports, with more than a half of ferrous metals and 80% of non-ferrous metals being exported. Russian metal producers are deeply integrated into the world market. Table 1 shows the changes of export as a share of production for separate types of metallurgical products, namely cast iron, iron ore, and metal rolling, the dynamics of which are shown from 2005-2011. It should be noted that on average the share exceeds 10%, while in some

years, for example with iron ore, it reaches 35%, which confirms an orientation of the Russian metallurgy to the world market.

Fig.1 Dynamics of export as a share of production for different types of metal, 2005-2011 (in millions of tonnes)



Source: calculations based on EMISS database

It is significant that along with an increase in the competitiveness of Russian metal producers on the world market, the position of domestic metal buyers is considerably worsening. Their production in Russia suffers from insufficiently developed competition that grows out of two factors: high concentration and high import protection. In Russian metallurgy, concentration is high in comparison with the level of that in relative branches of developed countries. [Avdasheva, Golovanova, 2009]. During the period of 1999-2011, the CR3 concentration indicator (calculated as the sum of market shares held by the three largest companies in the industry) for almost all Russian ferrous and non-ferrous metal industries was above 50. For example, in 2011 the concentration index in extraction of iron ore was 56.86, in extraction and dressing non-ferrous metal ore (except uranium and thorium ore) the indicator was 63.44, while in aluminum production the indicator was 52.87, and in the production of iron and steel pipes the indicator reached 85.11. However, the metallurgy market's vertical integration is not so deep – not to the retail level, unlike, for example, the oil market – therefore, there are large independent buyers of metal in the market.

One of the possible explanations of the fact that domestic buyers of metal in Russia suffer more from a high level of concentration than foreign buyers do is that Russian metallurgy has the highest level of import protection [FAS report, 2008]. Before 2008 import duties on the majority of metal products were about 5%. Then, due to the financial crisis, these protection tools were increased from 5% to 15% and from 15% to 20% - depending on the position - on the majority of wire and pipes made from ferrous metals. Besides, a 15% preference for domestic producers at government procurements was provided, and anti-dumping and special protective investigations were conducted [The review of ferrous …, Infomayn, 2011].

Over the last ten years the prices of ferrous metals increased more than fourfold. In this situation metal producers enjoyed increased profits, however growing prices have an extremely negative impact on Russian companies with high expenses related to metal by increasing their costs. It is important that, as a result of high market concentration and protection from foreign competition, Russian metal suppliers achieve higher bargaining power on the domestic market than foreign companies do in their own markets. According to international trade theory, internal prices will be set at world levels minus expenses connected with export only if the domestic market of goods is characterized by a high level of competition and low barriers to entry. Otherwise, when domestic producers possess market power and have the opportunity to carry out price discrimination, the price of goods will be higher in the market with less elastic demand, i.e. in the domestic market. This statement is confirmed by various papers, showing that prices for Russian exports in the domestic market are higher than when exporting [Golovanova, 2010].

Although possessing bargaining power in the domestic market, sellers face high competition in foreign markets, and this pushes them to apply a third type of price discrimination.

This situation attracts close attention from government authorities. The problem is that it is difficult to determine whether it is better not to disturb the strengthening of Russian metal producers in the global market or to apply tools for supporting internal buyers of metal. The integration of domestic metal companies is accompanied by a positive effect that is expressed in an increase in their international competitiveness, and a negative effect in an increase in their market power and prices on domestic market. The Russian competition authority faces an important dilemma when analyzing merger deals: If the negative anticompetitive effects for Russian buyers outweigh the positive effects on company profits, then the deal should not be allowed. On the contrary, if the positive effects of the increasing competitiveness prevail, then the merger should be approved, while measures for protecting domestic buyers of metals are to be undertaken.

The market of transformer steel serves as an illustration of an increase in international competitiveness for Russian metallurgists. In 2001, the output of metal rolling by the Novolipetsk Steel Company (NLMK) was about 7.9 million tons. Further, in 2005 the output increased to 8.5 million tons, and NLMK became the most profitable company on the world the steel market [Annual report of NLMK, 2005]. The following year, after the acquisition of VIZ-Stal Ltd., the Russian market of transformer steel could be characterized as a monopoly that positively influenced NLMK's operations. Now the Russian market of cold-rolled grain-oriented steel actively continues to integrate into the world market. In 2012 the NLMK group took second place in a ranking of the top 35 most competitive steelmaking companies in the world according to World Steel Dynamics [Annual report of NLMK, 2012]. The competitiveness of Russian metal suppliers also increased on the aluminum market. In 2005 UC RUSAL ranked in the world in terms of aluminum output. Further, in 2006, after a merger with SUAL, the united company became the world's largest aluminum producer and one of the largest metallurgical companies based on capitalization (about $18 billion). At present, its position in the world market is becoming stronger: Based on the results of 2012, UC RUSAL is the largest producer of aluminum with an output of 4.7 million tons that comprises 9% of the world's metal production. Other metallurgic enterprises have also increased their competitiveness on the world market. For example, EVRAZ demonstrates a strengthening of its own position on the world market after a series of successful merges. Now EVRAZ ranks in the top 20 among the world's largest steel producers and is the world leader on the vanadium market and on the market of railway production [Annual report of EVRAZ, 2012].

It is important that mergers between these companies were allowed on the basis of exacting remedies, and, even despite the implementation of these remedies, companies were accused of abusing their dominant position. For example, during approval of the merger between NLMK and VIZ-Stal, the companies were assigned a set of remedies, according to which they, in particular, cannot increase the price of electric steel by more than 3% a month for 20 years without prior notice of the Federal Antitrust Service, and also must execute earlier signed contracts. However, five years later FAS admitted to the fact that NLMK and VIZ-Stal abused their dominant market positions by establishing high prices for electric anisotropic steel, and appointed a penalty of 97.6 million rubles. A similar situation happened after a merger between EVRAZ and Raspadskaya: The companies were accused of abusing a dominant position on the coking coal market.

Thus, it is important to emphasize the absolute inexpediency of strengthening the competitiveness of Russian metallurgists on the world market only for maintaining of domestic metal consumers. Certainly, such state measures are necessary, which would not only protect Russian metal producers on the world market, but also increase the competitiveness of processing industries through a price decrease for raw materials. However, how to do this is unknown. The task facing the Federal Antitrust Service is very difficult and even an analysis of international experience does not provide ideas for a solution. The reason is that the Russian economy has a special structure due to its Soviet origins in which producers were created based on domestic production. The Soviet system was isolated from the world market.

2. Literature review

In the literature devoted to mergers and acquisitions, there is much evidence that shareholders of merging companies receive benefits from such deals [Aktas, Derbaix, 2003]. It is assumed that this is due to the fact that an acquirer initiates a reevaluation of its shares due to the introduction of a better operating strategy. But so far it is not clear what the reason for such benefits is – primarily an effect of cost or of market power. Eckbo and Wier [1985] develop two main hypotheses – the Market Power Hypothesis (MPH) and the Economic Efficiency Hypothesis (EH) – and their implications for the behavior of the stock prices of bidders, targets, and competitors.

MPH is based on the idea that after a merger the new firm has an opportunity to limit competition and, as a result, receives additional benefits. Within MPH it is possible to distinguish two sub-hypotheses. First, according to the Collusion Hypothesis the merger leads to cooperation among members of the merger's industry. Since an efficient collusion creates a monopolistic profit, it is necessary to expect positive abnormal returns for merging firms and

their rivals. On the other hand, it would decrease the wealth of consumers and lead to negative abnormal returns for them. Second, according to the Predatory Pricing Model the merger could help the new firm to decrease prices below the average variable cost level in order to force competitors to leave the market and raise prices thereafter. In such a case it is likely to expect a fall in the stock prices of rivals and a decrease in the welfare of buyers. Actually, this idea is not typical for the metallurgy industry because the share of fixed costs in average costs is so high that in order to force a company to leave the market it is necessary to decrease prices drastically. Moreover, there is no leader who can follow such a strategy.

According to EH, the new firm provides more cost-effective production due to synergy effects. In this area two different effects can also be distinguished. The productivity effect says that due to economies of scale the new firm can implement a technological innovation that would decrease their average costs and prices for customers and as a result lower the rival's market value. Due to the information effect, news about the merger signals to competitors an opportunity to raise productivity, which consequently will lead to an increase in share prices.

Early papers investigating only the change in stock price of participants of a merger generally come to the conclusion about the value or profit creation for buyers. Ruback [1983] shows that as a result of a merger the welfare of the acquired company's shareholders increases and the welfare of acquiring company's shareholders does not decline, and not due to an increase in bargaining power. Aktas and Derbaix [2003] also reveal a positive statistically significant increase in the welfare of merger participants. However, these papers do not take into account the impact of mergers on competitors and buyers. Thereby, such conclusions about the influence of mergers on the market competition are not objective.

Later works expand the list of analyzed companies, covering also the reaction of competitors. Eckbo and Wier [1985], analyzing a dataset of 82 horizontal merges during 1963-1981, show that on average competitors receive a statistically significant positive abnormal return around the merger announcement date. The authors find the effects of a prevalence of information in productivity theory rather than in market power theory. Warell [2007] analyses the merger between Rio Tinto and North in the metal industry. The purpose of this research is to reveal whether this deal results in efficiency and whether it limits competition. Based on the positive abnormal return for the acquiring company and the negative abnormal return for the next competitor, Warell draws the conclusion that this merger does not have a negative impact on competition, confirming the efficiency hypothesis. However, the absence of buyer quote analysis does not allow us to make an objective conclusion about the impact of mergers on competition, in particular, about the validity of one of the hypotheses (efficiency or predatory pricing).

Only a small group of researchers include buyer quote investigation in their analysis. For example, Mullin et al [1995] consider the influence of mergers in the American steel industry not only on merger participants, but also on large competitors and buyers. The authors show the reaction of buyers of steel to the merger announcement. Railroads show a positive abnormal return.

This paper continues the main direction of the papers mentioned above, studying the financial market's reaction to mergers in the metal industry. I use data on the fluctuation of stock prices of all large market participants – companies involved in a merger, competitors, and large buyers of metal. The novelty of this research is the comparison of merger effects for Russian and foreign companies, which allows me to draw more objective conclusions on the level of bargaining power for Russian metal producers and necessary policy measures to be used.

To summarize, I expect that mergers will have a negative influence on competition in the Russian metallurgy industry due to its main peculiarities: high concentration, vertical integration, and protection against import. Thus, the main hypotheses in this paper are as follows:

1. The stock market estimates mergers with Russian companies in the metal industry to be more harmful for buyers of metal due to opportunities for competition restriction. It can be true in two alternatives:

1.1 Russian merger deals have a negative impact on domestic companies and a neutral effect on foreign buyers of metal.

1.2 Russian mergers have a more negative impact on other companies in comparison with foreign mergers.

2. The stock market estimates horizontal mergers as more detrimental to competition in comparison with vertical deals. This hypothesis is subordinate, but it is obligatory to check it because I expect hypothesis 1 to be valid mainly for horizontal mergers.

3. Data and methodology

Data on mergers is obtained from the Thomson database, which includes information concerning deal values, dates of announcement, participant details, and so forth, and from the website of the European Commission.[3] The sample consists of the 60 biggest deals (according to the ratio of merger participant capitalization to the capitalization of the relevant markets), half of which are between foreign companies and the others include a Russian company as either the bidder or the target (see Appendix). Tab.1 presents average characteristics of the analyzed sample compared to the entire amount of mergers and acquisitions in the metals and mining

[3] http://ec.europa.eu/competition/elojade/isef/

industry. On average, acquirers in the sample buy more than 80 per cent of a target's shares and the enterprise or equity values are higher than in the industry sample.

Tab.1 M&A sample characteristics

	% of Shares Acq.	% Owned After Transaction	Enterprise Value at Announcement ($mil)	Equity Value at Announcement ($mil)
Sample (60 m&a)	84.02	90.12	3322.13	3001.14
All m&a in the industry	88.25	92.16	1 637.61	794.81

Source: calculations based on Thomson database

The condition that at least one merger participant had shares on the stock market 250 days prior to a merger announcement date was an important selection criterion for transactions. Observance of this criterion is needed for the market model estimation according to event study methodology. Despite the fact that Russian mergers are the main interest of this paper, I also include foreign deals in the sample to compare results to those who are less protected from import markets. Mostly the sample covers mergers in the non-ferrous metal industry during the period of 2004-2009 (see Appendix for economic activities corresponding to each deal). The sample also contains stock prices of both Russian and international big rivals, and the largest consumers on the same markets. I obtain stock market data from the informational resources Yahoo! Finance and Finam. Company shares included in the analysis are listed on various stock exchange,s such as MICEX, NYSE, NASDAQ, and LSE.

To test the hypotheses I use a standard event study methodology [see Brown, Warner, 1985]. First, it is necessary to estimate the market model during the estimation period (-220; -30) before the announcement date:

$$r_{it} = \alpha_i + \beta_i r_{mt} \ , \quad (1)$$

where r_{it} is the current return for security *i* at day *t*, r_{mt} is the return on an appropriate market index at day *t*

Second, based on estimated coefficients from (1), I calculate abnormal returns for security *i* at day *t*:

$$AR_{it} = r_{it} - \hat{\alpha}_i - \hat{\beta}_i r_{mt}, \quad (2)$$

where $\hat{\alpha}_i$ and $\hat{\beta}_i$ are OLS values from the estimation period

Often it is not possible to precisely estimate an event date due to the time of information distribution. As such I am interested in the performance not only at the announcement date, but also over the period surrounding the event. The common way to do this is to calculate cumulative abnormal returns:

$$CAR_i = AR_{i,t1} + .. + AR_{i,t2}, \quad (3)$$

where *t1* and *t2* are the boundaries for the event period

Then I run a t-test to calculate whether CARs are significantly different from zero at a significant level. The null hypothesis is that the cumulative abnormal return is equal to zero:

$$H_0: E(CAR_i) = 0 \quad (5)$$

T-statistics are given by:

$$G = \sqrt{N}\frac{CAAR}{s} \approx N(0,1), \quad (6)$$

where *CAAR* is the cumulative average abnormal return, *s* is cross-sectional variance of the abnormal returns in period *t*:

$$s = \sqrt{\frac{1}{N-1}\sum_{i=1}^{N}(CAR_i - CAAR)^2} \quad (7)$$

However, the assumption that all abnormal returns are equally distributed is too rigid as some stocks are more volatile than others. The inclusion of such stocks into the dataset can lead to a high dispersion of ARi and, as a result, to decrease the power of tests.

In this regard, I use a standardization procedure [Brown, Warner, 1985]. For this purpose, the standardized abnormal return (SARit) is calculated by division of abnormal return into its standard deviation (si) calculated on an analyzed interval (t1, t2):

$$SAR_{it} = \frac{AR_{it}}{s_i}, \text{ where} \quad (8)$$

$$s_i = \sqrt{\frac{1}{t_2 - t_1}\sum_{t=t_1}^{t_2}(AR_{it} - \overline{AR_i})^2} \quad (9)$$

T-statistics is given by:

$$G_s = \frac{1}{\sqrt{N}}\sum_{i=1}^{N} SAR_{it} \quad (10)$$

This paper continues the main direction of the papers mentioned in the literature review by studying the reaction of financial markets to mergers in a particular industry. The analysis covers all market participants [Mullin et al., 1995], such as companies involved in a merger, competitors, and large buyers of metal. I also analyze only a particular industry, which prevents potential bias because other factors influencing company stock prices are the same so that it is easy to identify abnormal returns caused by the merger (e.g. banking industry in Beitel et al [2004] and automobile industry in Aktas and Derbaix [2003]). Despite the fact that a large number of papers used standard event study methodology [e.g. Ruback, 1983; Warrel, 2007], I implement a standardization procedure which results in a higher power of statistical test [Bartholdy et al, 2011]. It is, of course, a necessary condition for this methodology that analyzed

companies are all quoted on the stock market, but in this paper this is especially the case, because I inherently consider the largest producers and buyers of metal.

4. Results

The results confirm the main hypothesis. According to the stock market estimation, mergers involving Russian companies are more dangerous for competition and, therefore, detrimental to buyers. Russian mergers lead to a negative abnormal return for domestic buyers equivalent to 1.98 standard deviations during the period surrounding the announcement date (-5 days, +5 days). It is important that Russian deals do not have any significant impact on the welfare of foreign buyers, which proves the hypothesis. The foreign mergers effect on their customers is not statistically significant. The impact on competitors, both on domestic and foreign, is negative and significant as expected, the coefficient for the reaction of stocks of domestic competitors is higher than for foreign ones.

Tab. 2. T-statistics for SAR (30 deals with Russian companies)

	Analyzed period (0 — announcement day)		
	(–5, +5)	(–3, +20)	0
Parties of a deal	0.89	–0.82	2.17**
Competitors:	–3.35***	–1.90*	–1.10
foreign	–2.23**	0.22	–0.46
domestic	–2.80***	–4.02***	–1.35
Buyers:	–0.43	–0.20	–1.66*
foreign	0.82	0.68	–1.04
domestic	–1.98**	–1.36	–1.42

*, **, *** — significance at the 10%, 5%, and 1% level respectively

The data illustrates that for merger participants it is impossible to unambiguously define a sign of abnormal return, and the results are not statistically significant. The problem is that in the analyzed dataset, deal participants are mostly acquiring companies, as there is no data on the stock prices of target-companies due to the legal form of these organizations. These results are comparable to that of Ekbo [1983], who shows that the abnormal returns for acquirers are insignificant. However, target-companies in most cases receive a positive abnormal return, which partly confirms the idea of maximizing company value after a merger.

As for foreign transactions (see Tab. 3), their influence on both foreign and domestic metal buyers is statistically insignificant. Thus, an application of the event study approach confirmed the assumption that Russian suppliers of metal on the domestic market possess more bargaining power than do foreign companies.

Tab. 3. T-statistics for SAR (30 deals with international companies)

	Analyzed period (0 — announcement day)		
	(–5, +5)	(–3, +20)	0
Parties of a deal	0.29	–1.37	–0.36
Competitors:	–2.03**	–2.42**	0.99
foreign	0.42	–2.08**	2.65***
domestic	–2.47**	–1.68*	–0.26
Buyers:	–1.2	–0.80	–0.54
foreign	–0.67	–2.05**	–0.92
domestic	–1.02	0.01	–0.18

*, **, *** — significance at the 10%, 5%, and 1% level respectively

Further, I distinguish the dataset according to merger type – horizontal, vertical, or conglomerate. Since there are no conglomerate deals, a division was made on horizontal and vertical mergers. Results reveal the influence of different types of merges on participants of the market separately. Tab. 3 presents the t-statistics for a subset of 44 horizontal mergers, while Tab. 4 presents those for 16 vertical deals. Horizontal mergers of Russian companies have a considerable negative impact on the stock prices of competitors. Theoretically, after a horizontal merger, competitors not participating in the deal could receive some benefit since a decrease in the number of sellers leads to a strengthening of bargaining power of all market players. It is obvious that a merger between large sellers creates additional profit not only for themself but also for small competitors. On the other hand, merger participants could achieve a competitive advantage that will result in a profit decrease for their competitors. Results suggest that the aforementioned second effect significantly exceeds effects from a strengthening of bargaining power in the Russian Federation.

Holistically, these results paint an ambiguous picture of the effects of mergers on competition. On the one hand, the negative impact of deals on the expected profit of other sellers on the market suggests that merger participants gain competitive advantages and use them in competition. On the other hand, the expected profit decrease of Russian buyers illustrates the negative influence of mergers on their position in the market. This seeming contradiction is allowed as follows: The competitive field for large Russian metal companies is the world market, and the achieved competitive advantages affect their position in this market. However, the competition within the global market does not exclude the existence of separate segments protected from competition where integrated companies can exercise bargaining power to the detriment of local buyers. The Russian market being protected from foreign competition is a good example of such a case.

Tab. 4. T-statistics for SAR (44 horizontal mergers)

	Analyzed period (0 — announcement day)		
	(–5, +5)	(–3, +20)	0
Parties of a deal	0.36	0.51	–0.07
Competitors:	–3.06***	–1.89*	–2.41**
foreign	1.17	–0.04	–1.23
domestic	–3.21***	–2.06**	–2.62***
Buyers:	–1.31	–1.43	–0.5
foreign	0.58	–0.06	0.65
domestic	–2.29**	–1.51	–1.86*

*, **, *** — significance at the 10%, 5%, and 1% level respectively

On the contrary, vertical mergers do not significantly influence the stock prices of metal buyers. This result corresponds to the well-known statement that a negative impact on competition from vertical deals (between sellers and buyers) is less probable, than in horizontal mergers (between sellers of goods substitutes). The results show that vertical transactions with Russian companies have a larger negative impact on competitors, i.e. the stock market estimates the probability of competitive advantages acquired after a merger as being much higher.

Tab. 5. T-statistics for SAR (16 vertical mergers)

	Analyzed period (0 — announcement day)		
	(–5, +5)	(–3, +20)	0
Parties of a deal	0.86	–0.22	1.83*
Competitors:	–2.4**	–0.88	–2.73***
foreign	–1.74*	0.70	–2.58***
domestic	–1.66*	–1.37	–0.99
Buyers:	–0.05	–0.09	0.04
foreign	–0.09	–0.95	0.54
domestic	0.01	0.35	–0.7

*, **, *** — significance at the 10, 5, and 1% level respectively

The analysis confirms that the stock market does expect a deterioration of buyer positions as a result of mergers between large metal producers. Therefore, choosing necessary tools of economic policy is extremely important. At present the Russian competition authority is beginning to correct the behavior of large players on the metals market by obligating them to develop trading policies and publish them in open access. These trading policies should also be the basis for price setting. Technically, the document should contain a list of factors for price setting, such as production quality, seasonality, profitability of production, etc. In general terms, this is the introduction of price regulation on the metallurgy market, as the statement of this methodology assumes that this pricing is the only true method, and any deviation from it will be treated as a violation of antitrust law. It once again confirms that the problem in this industry is so sharp that the Federal Antitrust Service is ready to introduce price regulations. However, the

efficiency of these measures is not unambiguous. There are several possible consequences, including the effect of "creeping regulation", which distorts the incentives of market agents and arises when a legislator that is not able to reach the purposes set earlier enters additional norms. Other consequences include the emergence of additional expenses of control by the Federal Antitrust Service in Russia, and the restriction of contract alternatives instead of a search of mutually advantageous forms of cooperation [Radchenko et al, 2013]. The consequences of applying trade policies for the metallurgy industry in the Russian Federation are also unambiguous. Increases in world demand for metal and Russia's entry into the World Trade Organization demand a revision of protectionism and the refusal of market regulation. However, the use of the "fair prices" on the domestic metal market, equal to minimum export prices, can not only interfere with competition development in the domestic market, but also lead to a decrease in competitiveness for Russian metal producers on the world market.

At present, the main methods of competition policy in Russia are protective measures, i.e. the application of antitrust law that is generally aimed at the elimination of offenses, instead of at developing competition. Thus, there is a necessity to use tools for promoting the development of competition on commodity markets, such as tax policy, tariff and duties regulation, government procurements, and tariff regulation of natural monopolies. In particular, the reduction of the quantity and size of import duties can have a positive impact on competition in industries where a high concentration of domestic production leads to the deterioration of competitive conditions in relevant commodity markets. Coming back to the analysis of metallurgy in the Russian Federation, it should be noted that the elimination of import protection for metallurgy in Russia could positively affect competition and prices on the market by restricting the bargaining power of large metal producers.

Conclusions

A comparison of the effects of mergers with Russian companies and foreign mergers in the market sector of ferrous and non-ferrous metallurgy leads to the conclusion that, according to financial markets, mergers between Russian metal producers have a negative impact on the gains of Russian metal buyers. In other words, Russian suppliers of metal on the domestic market have more bargaining power than foreign companies do on their markets, hence they may achieve a dominant position and abuse it at the expense of buyers. The main reason for this is that for nearly 15 years the Russian metal market combined two peculiarities that served to weaken competition — high concentration and protection against imports. The obtained results do not provide evidence to state that the position of metal buyers indeed worsened as a result of mergers. However, the stock market did expect this. Many antitrust complaints from Russian

buyers of metal also prove that negative effects indeed exist. This is why the implementation of policy options is becoming a relevant topic.

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Appendix

Analyzed merger deals

Date	Target-company	Acquirer	Merger type*	Concerns economic activity
	Mergers with foreign companies			
21.05.1999	Armco Inc	AK Steel Holding	H	Manufacture of basic iron and steel
08.11.1999	Reynolds Metals	Alcoa	H	Aluminium production
04.04.2000	Southwire	Century Aluminum	V	Aluminium production
19.05.2000	Cordant	Alcoa	V	Aluminium production
01.08.2000	North	Rio Tinto	H	Mining of metal ores
25.08.2000	Rio Algom	Billiton	H	Uranium mining
27.10.2000	British Aluminium	Alcoa	H	Aluminium production
01.12.2001	Asturiana de Zinc SA	Xstrata	H	Zinc production
20.04.2001	CAEMI	BHP	H	Mining of metal ores
14.06.2001	Billiton	BHP	H	Mining of other non-ferrous metal ores
23.10.2001	BHP	Alcoa	B	Mining of other non-ferrous metal ores
30.10.2001	CVRD	Mitsui	H	Mining of metal ores
19.05.2003	MIM	Xstrata	H	Mining of metal ores
03.12.2003	KUMBA	Anglo American	H	Mining of iron ores

	RESOURCES			
16.03.2004	Nordural	Century Aluminum	H	Aluminium production
26.04.2005	WMC	BHP	V	Mining of metal ores
24.10.2005	Kryvorizhstal	Mittal Steel	V	Manufacture of basic iron and steel
27.01.2006	Arcelor	Mittal Steel	V	Manufacture of basic iron and steel
15.05.2006	Falconbridge	Xstrata	H	Mining of other non-ferrous metal ores
21.08.2006	EuroZinc Mining	Lundin Mining	V	Zinc production
04.04.2007	Rio Narcea Gold Mines	Lundin Mining	V	Mining of non-ferrous metal ores
19.04.2007	ORKLA	Alcoa	V	Forging, pressing, stamping and roll-forming of metal
31.07.2007	Pebble Copper-Gold-Molybdenum	Anglo American	H	Mining of non-ferrous metal ores
17.01.2008	IronX Mineracao	Anglo American	H	Mining of iron ores
31.01.2008	Berezovskaya Mine	ArcelorMittal	V	Mining of metal ores
09.04.2008	Bahia Mineracao	Eurasian Natural Resources	H	Mining of iron ores
20.08.2008	London Mining South America	ArcelorMittal	H	Mining of iron ores
16.09.2009	Central African Mining & Expl	Eurasian Natural Resources	H	Mining of non-ferrous metal ores
21.09.2010	BAHIA Minerals BV	Eurasian Natural Resources	H	Mining of iron ores
19.10.2011	Hathor Exploration	Rio Tinto	H	Uranium mining
	Mergers with Russian companies			
20.11.2002	Stillwater Mining	Noril'skiy Nikel'	H	Mining and manufacturing of non-ferrous metals
10.02.2005	Lucchini SpA	SeverStal	H	Manufacture of basic iron and steel and of ferro-alloys
28.07.2005	Kombinat Aluminijuma Podgorica	RUSAL	H	Aluminium production
21.02.2006	KMA ruda	NLMK	V	Manufacture of basic iron

				and steel and of ferro-alloys
29.03.2006	Altai-koks & Prokop`evskugol	NLMK	V	Manufacture of basic iron and steel and of ferro-alloys
12.09.2005	Yuzhkuzbassugol	Evraz Group	H	Mining and Manufacturing of basic iron and steel
23.12.2005	VIZ-Stal	NLMK	H	Manufacture of basic iron and steel and of ferro-alloys
13.04.2006	Carrington Wire	SeverStal	V	Manufacture of basic iron and steel
08.09.2006	Lucchini SpA	SeverStal	H	Manufacture of basic iron and steel and of ferro-alloys
22.08.2006	Vitkovice Steel	Evraz Group	H	Mining and Manufacturing of basic iron and steel
17.11.2006	OMG Harjavalta Nickel	Noril'skiy Nikel'	H	Mining and manufacturing of non-ferrous metals
20.11.2006	Oregon Steel Mills	Evraz Group	H	Mining and Manufacturing of basic iron and steel
01.02.2007	Sual	RUSAL	H	Aluminium production
05.02.2007	Bakalskoe rudoupravlenie	MMK	V	Mining and Manufacturing of basic iron and steel
17.04.2007	Vanadii	Evraz Group	V	Mining and Manufacturing of basic iron and steel
03.05.2007	LionOre Mining	Noril'skiy Nikel'	H	Mining and manufacturing of non-ferrous metals
08.10.2007	Yakutugol	Mechel	V	
10.12.2007	Claymont Steel Holdings	Evraz Group	H	Mining and Manufacturing of basic iron and steel
11.12.2007	Sukhaya Balka	Evraz Group	H	Mining and Manufacturing of basic iron and steel
21.03.2008	Baoguan	RUSAL	V	Aluminium production
13.03.2008	Onarbay Enterprises	MMK	V	Manufacture of basic iron and steel and of ferro-alloys
14.03.2008	IPSCO Tubulars	TMK	H	Manufacture of basic iron and steel and of ferro-alloys
20.05.2008	Esmark	SeverStal	H	Manufacture of basic iron and steel
22.08.2008	PBS Coals	SeverStal	H	Manufacture of basic iron

				and steel
04.09.2008	Beta Steel	NLMK	H	Manufacture of basic iron and steel and of ferro-alloys
10.12.2008	African Iron Ore Group	SeverStal	H	Manufacture of basic iron and steel
26.02.2009	Bluestone Coal	Mechel	H	Mining and Manufacturing of basic iron and steel
28.04.2010	DEMZ	Mechel	H	Mining and Manufacturing of basic iron and steel
16.09.2011	Alpart	RUSAL	H	Aluminium production
26.01.2012	Ol`hovoe	Rio Tinto	V	Mining of metal ores

* V — vertical; H — horizontal.

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