

# 俄罗斯出口制造企业的自我选择和路径依赖研究

**摘要：**文章主要关注俄罗斯出口制造业企业的具体特征。我们比较三类公司：20世纪中期俄罗斯经济快速发展期间进入出口市场的公司、传统的俄罗斯出口公司以及非出口公司，得到成为出口者的先决条件，其中主要关注自我选择假说的证实（进入出口市场的公司生产效率必须很高）。同时，我们将只向 CIS 国家出口的公司和面向全球市场的公司进行比较证实了路径依赖假说——假定只向 CIS 国家出口的公司是由于前苏联的历史因素决定的。文章使用的面板数据是 2005 和 2009 年两次调查俄罗斯制造业所使用的数据。我们发现了自我选择假说的实证证实：之前就存在的和新进入的出口公司都要比非出口公司生产率高且规模大，同时，公司在进入外部市场之前，要比国内的竞争者生产率更高。另外，那些先决条件不再与出口目的地有关（CIS 国家或非 CIS 国家）。也就是说，我们并没有在对外贸易的特征分布中找到路径依赖的证实。

**关键词：**俄罗斯；制造业；出口；自我选择；路径依赖

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## “Self-selection” and “Path Dependence” Evidence for Russian Exporting Manufacturing Firms

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**Abstract :** The paper focuses on specific features of Russian exporting manufacturing firms. We compare firms that entered export markets in the mid-2000s during the intensive economic growth of the Russian economy to traditional Russian exporters and non-exporting firms to reveal the specific features that serve as prerequisites for the firms to become exporters, primarily concentrating on the verification of the “self-selection” hypothesis (firms that enter export markets need to be more productive). We also compare firms that export exclusively to CIS countries with firms operating in global markets to verify the so called “path-dependence” hypothesis, which presumes that exports to the CIS are driven by the historical factor of a common Soviet past. The panel data from two surveys of Russian manufacturing firms conducted in 2005 and 2009 is used. We found empirical evidence for the self-selection hypothesis: both pre-existing and new exporters are more productive and larger than non-exporters, and firms need to be relatively more productive relative to their competitors in domestic markets before entering external markets. Additionally, those prerequisites no longer seem to be related to destination of the exports (CIS or non-CIS countries). In other words, we do not find any evidence of path-dependence in the nature of foreign trade.

**Keywords:** Russia, manufacturing, export, self-selection, path-dependence

## 1. Introduction

Globalization in general and trade openness in particular are expected to provide additional competitive pressures and deliver new business opportunities for firms, due to the access to new markets and technology transfers. Globalization generates specific rules of behavior, forces firms to learn and adjust and provides reallocation effects and improved industrial structure, as long as non-productive entities exit the market. The empirical evidence for the effects of globalization is usually based on the data for affluent democracies. Less empirical research exists on how globalization influences firms in countries in transition. Russia is, in this respect, particularly underrepresented in the literature, though remarkable growth dynamics in the 2000s and specific globalization trends give us reason to suggest that globalization might have a larger impact on the changes in firm performance and behavior than aggregated statistics and stylized facts allow us to see.

Since the 1990s, transition economies have experienced a substantial increase in economic globalization. By 2000, most countries in central Europe had adopted the trade standards of the advanced industrial economies, and the combined share of exports and imports in the GDP for some relatively small countries exceeded 100 percent. Russia lagged behind other countries in removing restrictions on trade and showed controversial globalization dynamics. Thus, between 2005 and 2009, the share of imports added to exports in the Russian GDP declined from 57 percent to 48 percent, while the FDI followed a growing though cyclical trend. During this period, the manufacturing industry's share of total exported merchandise declined to 17 percent in 2009. Conversely, the share of manufacturing imports grew to 79 percent.

Therefore, if Russian manufacturing firms are not increasing their export activity in international markets and their growth is predominantly driven by domestic demand, can we conclude that the impact of globalization is limited? Some authors argue that globalization did not affect the transformation in Russia; firms maintain the path-dependent nature of foreign trade relations and pursue survival strategies (Robinson, 1999). Others (Bessonova, Kozlov, Yudaeva, 2003, Gonchar, Kuznetsov (ed.), 2008) show that, as elsewhere, Russian manufacturing firms operating in the world market tend to be larger, more productive and proactive in making investments and innovations than are firms producing only for the national market. Aghion and Bessonova (2006), using micro-level data, show that firms' responses to trade liberalization in Russia are likely to be heterogeneous. Hence, it is essential that we be precise regarding the impact globalization has on transition firms and answer some interesting questions. Why do Russian manufacturing firms choose to export if competition in the domestic market remains relatively low and barriers to international trade remain prohibitively high? Under what circumstances does trade liberalization bring the expected benefits? If globalization's impact is modest or nonexistent, is there any sense in an export-promotion policy that keeps path-dependent exporters afloat? Do the findings from the Russian experience call the orthodoxy into question or prove it correct?

In this paper, we assess the self-selection and international trade premium arguments, relying

on the data from the survey of the Russian manufacturing firms and we try to understand which firms choose to export and whether the destination of exports (namely, inside the community of CIS countries and outside it) matter in terms of prerequisites for export activity.

## 2. Related literature

For the purposes of this paper, we consider globalization to be synonymous with international trade and disregard the FDI option in keeping with the literature that addresses the links between international trade and firm performance. In the last decade, this literature has advanced rapidly, especially since Melitz (2003) developed a theoretical model of monopolistic competition with heterogeneous firms and explained why exporting firms are larger and more productive than non-exporting firms.

Various empirical papers verified the prediction that firms participating in international trade outperform their domestic counterparts. Since the pioneering paper of Bernard and Jensen (1999), many authors have studied the link between productivity and exports and found that firms participating in export markets became more productive *before* they entered the world market. Greenaway (2004), Greenaway and Kneller (2007) and Wagner (2007) published important survey papers in this literature. Most studies suggest that firms generally have to become more productive in order to export with only a small number of studies suggesting that firms become more productive because they export. This finding is usually explained by the disadvantages to firms of entering new foreign markets, due to transportation costs, tariff barriers, the costs of adjusting to unfamiliar regulations and the needs of new customers. Thus, firms need to have productivity advantages in advance, and the best firms self-select into export markets.

Some works test the self-selection hypothesis using data from transition countries. As a rule, these works report self-selection. Thus, Damijan et al. (2004) confirmed that Slovenian exporting firms can improve productivity when serving advanced, high-wage, foreign markets. De Loecher (2007), also using the Slovenian data, provided evidence that de-novo exporters show productivity growth higher than that of non-exporters at least four years after their entry into the world market. Yang and Mallick (2010), using data from Chinese manufacturing firms, found evidence both for an export premium and self-selection. They showed that once a firm has entered the export market, there is additional productivity growth from the learning effect, particularly in the second year after entry. The analysis of Hagemeyer and Kolasa (2011) relies on Polish firm-level data and also reports the superiority of internationalized firms and positive overall effects from globalization, at least in the case of Poland. Sabirianova, Terrell and Svejnar (2005) compared Czech and Russian firms and established a negative spillover effect in both countries, yet, in Russia, the situation is worse, and the negative effect does not diminish over time. The authors found evidence that firms need to be more technologically advanced and open to competition to gain from foreign presence.

Wilhelmsson and Kozlov (2007) provided empirical evidence for the self-selection hypothesis for the Russian manufacturing firms using census data. They showed that Russian manufacturing exporters are larger and more productive than non-exporters. Exporting to developed market economies provides some learning effects, and exporters improve their productivity several years after starting their exporting activities. De Rosa (2006) used the same

Russian dataset and provided evidence that specific exporting experience is the main factor influencing a firm's international orientation, while firm-level characteristics, with the exception of firm size and labor productivity in the case of exports to developed markets, are less relevant. He also found some arguments in favor of the path-dependent nature of Russian manufacturing exports on the basis of dispersed location effects.

The empirical work presented in this paper is related to the above literature, though it differs due to the focus on de-novo exporters, comparing them with continuing exporters and non-exporting firms. The empirical methodology follows the literature in measuring self-selection effects.

### **3. Data and summary statistics**

We use data from two rounds of surveys of manufacturing firms conducted by the Higher School of Economics. The survey was first undertaken in 2005 as a joint initiative with the World Bank within the framework of Investment Climate Assessment Survey (ICA). In 2009 a second round of monitoring was implemented as a project of the Russian Ministry for Economic Development. The first round covered 1002 enterprises and the second 957 in eight manufacturing industries in Russia. The surveyed firms were located in 48 Russian regions.

The second round of monitoring targeted the same companies as the first round. Should this have proven impossible, the earlier sample characteristics were to be maintained (type of economic activity and enterprise size). The whole sample represents 8 percent of the total population output of the manufacturing industry and 5 percent of employment. The sampling frame of the 2005 and 2009 rounds of monitoring is identical. The sample covers medium and large sized enterprises that employ 100-10,000 persons. The panel of the companies surveyed consists of 499 observations. The distribution of firms across industries and sizes in both rounds of monitoring, including characteristics of the panel firms is presented in Table A1 of the Annex. In general, the panel adequately represents both the whole sample and the total population of the manufacturing industries.

The questionnaires in both rounds of monitoring are notably similar. They employed the same core questions about company goals, performance and behavior (exporting, importing, investment, innovation, training) with some additional questions related to the relevant political and economic events in the year of the survey. Firm characteristics include 2-digit industry codes, number of employees, age of the firm, ownership structure and participation in the integrated business groups. The survey data provide information on constraints related to the business environment and allows for some measurement of competition pressure.

The data were collected using "face-to-face" interviews with companies' CEOs.

We used the panel data for this paper we use, which allows us to analyze changes in firm presence in foreign markets in 2005-2009 and to explore the phenomenon of path-dependency in the exporting patterns of manufacturing firms. We consider exports to be one of the main channels for the internationalization of the economy. The share of exporters in both rounds of monitoring is high: 50.4% of firms in 2005 and 58.9% in 2009. The large share is due to the composition of the sample, which includes only medium and large enterprises.

Details on the export activities of the firms in the panel are presented below (Table 1). We distinguish four groups: companies without any export activity in 2005-2009, continuing exporters, new exporters (who reported exporting for first time in 2009) and “former exporters” (firms that were exporters in 2005 but stopped their exporting activity in 2009). This grouping covers all of the possible choices of company strategy in terms of operating in either local or global markets in the period surveyed. We also control for foreign direct investment (in the presence of a foreign owner in the ownership structure), the presence of the state and the age of the firm, separating firms with Soviet heritage (established before 1991) from new private companies.

**Нужно заменить все запятые на точки во всех таблицах**

**Table 1. Summary statistics on panel firms by exporting status in 2005-2009**

	No export activity in 2005-2009	Continuing exporters	New exporters	Former exporters (stopped exporting)
Labor productivity in 2005. mean (in thousands of rubles)	152 (11)	235 (19)	268 (68)	180 (24)
Size (number of employees) 2005. mean	275 (17)	937 (80)	470 (72)	573 (110)
Share of firms competing with imports or foreign firms in Russia in 2005	17.8	30.2	26.4	45.2
Participated in the integrated business group in 2005	28.2	32.0	27.8	9.7
Foreign shareholder in 2005	1.7	9.5	6.9	0.0
Government as a shareholder in 2005	10.3	12.2	8.3	6.5
Established before 1991	76.4	72.1	66.7	67.7
Food	43.1	6.3	20.8	16.1
Textile	13.8	7.2	12.5	12.9
Wood	7.5	10.8	5.6	12.9
Chemicals	3.4	14.9	12.5	9.7
Metal	4.6	13.5	5.6	0.0
Electrical equipment	12.6	12.6	12.5	32.3
Transportation equipment	5.2	13.1	15.3	6.5
Machine-building	9.8	21.6	15.3	9.7
N of observations	174	222	72	31

Note: standard errors in parentheses

Descriptive statistics provide clear evidence of sizable gaps in productivity between the groups (with new exporters being the most productive in 2005 and firms operating exclusively in

the local market being the least productive). Comparing continuing exporters with firms that failed to maintain their exporting position, we see that, even in 2005, they had lower productivity. Exporters were significantly larger than non-exporting firms in 2005 and had a foreign shareholder far more often.

In terms of the destinations of exports, we separate exporters into two groups: firms which export outside CIS countries and those that do export but do so exclusively to the CIS (Table 2). While the share of exporters among the panel firms increased by 8,5 percent from 2005 to 2009, their distribution by geographic market remained constant. The share of firms exporting exclusively to CIS markets in 2009 is the same as it was in 2005 (46.5% and 46.8%, respectively).

Запятые на точки

**Table 2. Geographic markets of the firms in the exporting panel in 2005 and 2009**

	2005	2009
Total exporters, including:	50.4	58.9
Exporters to CIS countries only	46,48	46.25
Exporters to the global market	53.52	53.75

Exporters are sorted by the destination of exports, whether to CIS markets only or to advanced countries' markets and CIS. Summary statistics are reported in Table 3. In terms of geographic destination, those firms exporting to CIS markets alone are two times smaller than firms operating on the global market. CIS-only exporters are less frequently members of business groups. All other characteristics are similar across both groups of exporters.

**Table 3. Summary statistics on panel firms by exporting status and destination of exports**

	No export activity in 2005-2009	Firms targeting only the CIS market in 2009	Firms targeting global markets in 2009
Labor productivity in 2005. mean	152 (11)	224 (34)	258 (28)
Size (number of employees) 2005. mean	275 (17)	576 (67)	1072 (106)
Share of firms competing with imports and foreign companies in Russia in 2005	17.8	30.7	25.0
Participated in the integrated business group in 2005	28.2	29.2	38.2
Foreign shareholder in 2005	1.7	8.2	10.5
Government as a shareholder in 2005	10.3	10.9	12.5
Established before 1991	76.4	73.9	69.7
Food	43.1	9.7	10.5
Textile	13.8	7.0	6.6
Wood	7.5	6.2	12.5
Chemicals	3.4	15.6	16.4

Metal	4.6	13.2	11.2
Electrical equipment	12.6	12.8	13.8
Transportation equipment	5.2	14.8	14.5
Machine-building	9.8	20.6	14.5
N of observations	174	257	152

Note: standard errors in parentheses

## 4. Model.

**Поскольку мы отделили второй блок, наверное, следует убрать подзаголовок 4.1.**

### 4.1. Propositions related to the self-selection and path dependence hypotheses

Proposition 1. More productive and larger manufacturing firms self-select to enter and continue in export markets.

Proposition 2. New exporters are more likely to self-select on the grounds of higher productivity than are continuing exporters.

Proposition 3. Direction of trade (to either developed or CIS countries) matters: exporters to the CIS are more likely to follow the traditional path-dependent mode of foreign trade and are less likely to self-select on productivity grounds than exporters to developed countries

As the literature overview showed, the evidence for self-selection effects exists for both developed and emerging economies. We believe this to be case in Russia where the administrative barriers to entry for exporting are higher than elsewhere, while long distances and an obsolete transportation infrastructure increase the regular entry costs associated with exporting. In the 2000s, many Russian firms lost cost their advantages relative to low-cost producers in both the international and domestic markets, and competition on product quality is still difficult for those firms that are far from the global technological frontier. Additionally, we are also interested in comparing “old” (continuing) and “new” exporters: firms that were exporting in both 2005 and 2009 and those that were not exporting in 2005 but do report exports for 2009. We presume that the new exporters are more likely to self-select on the grounds of high productivity and size.

While higher productivity and size may be the necessary prerequisites to begin exporting, we cannot rule out other factors being important. First, we expect exporting firms to produce goods that are competitive in price and quality. In the domestic market, a firm may be sheltered from this competition by high barriers to entry (both of tariff and non-tariff nature) for the Russian domestic market. However, as soon as the firm enters the international market, it has to compete. We cannot measure the competitiveness of goods directly, but we presume that the level of competition with other companies inside Russia may serve as a proxy indicator of relative competitiveness. In other words, we presume that those firms that have experience in dealing with strong competition inside the country are more likely to compete successfully in the international market. Furthermore, high competition inside the country creates additional incentives for firms to enter new markets and may facilitate exporting.

Another factor that may ease the path to external markets for a firm is its inclusion into global chains of production through foreign direct investment. FDI often leads to a transfer of

competencies to the recipient firm (including export marketing and technological competencies), and channels for selling goods abroad. Enterprises with a government stake in their ownership may also receive preferential treatment in arranging their exports through lower administrative costs and political support. Conversely, state-owned firms may have less incentive to risk entering new and highly competitive markets. Therefore, we will control not only for the presence of foreigners in the ownership structure, but for the presence of the state among the shareholders<sup>①</sup>.

Yet another factor that may have a positive effect on the propensity to export is a firm's belonging to a large holding company or an integrated group of companies. The sub-hypothesis we want to check is based on the assumption that belonging to a holding company may serve as a sort of compensation for a firm's not being large enough to engage in export. If the shared export infrastructure exists at the level of a group of companies belonging to the same holding company, this may significantly lower the fixed costs of entering the international markets. Though this argument *Нужно вычеркнуть*

One additional factor that we presume may be important is the age of a firm. Several results may be expected from this estimation: if the company was established in the time before the Soviet breakup, it will be more likely to show the signs of path-dependence because it maintains unreformed modes of behavior and managerial routines. *Изменение смысла*. Because it is more likely to rely on international connections established prior to reforms for other than profit maximizing purposes. On the contrary, older firms tend to be larger and to have accumulated vast experience to cope with international markets and barriers to exporting inside Russia. It should be noted, however, that we do not have absolutely "new" firms in our panel (those established between the years of the surveys). In this paper, we only use the panel data for the 2005 and 2009 surveys; all of our firms existed for at least 6-7 years prior to the last survey<sup>②</sup>. Thus, we control for the age of firms by dividing them into two groups: those which existed (were established) before 1992 and the rest of the sample, which was established after the dissolution of the USSR

The geographical destination of exports may also be important, as it may reflect several phenomena. First, exports to developed countries have higher barriers and fixed costs and encounter higher competition, while consumers demand higher product differentiation and quality. To meet all these requirements, exporters to high-wage countries need to be more productive prior to exporting. Exports to the countries of the former Soviet Union (the CIS in our case) may show the signs of the path-dependent nature of foreign trade. Firms that used to belong to the same Soviet-era supply chain tend to continue supplying each other "by habit", even if international borders divide their markets. It might be easier to serve CIS markets, which may be less sensitive to product quality and failures in trade management. That is, CIS destinations for exports may not have the same prerequisite features, such as higher productivity or size.

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<sup>①</sup> Our sample includes both joint-stock companies, where the state may have a stake and state enterprises in the form of federal or municipal unitary enterprises. Current regulations prevent foreign companies from obtaining a stake in fully government-owned firms, and to be completely correct, we should have considered only joint stock companies in the analysis. However, this would significantly reduce the number of observations and exclude fully government-owned companies from the analysis. Therefore, we chose the second-best option and analyzed firms with all available forms of ownership.

<sup>②</sup> Our sample may include enterprises that were established in the 1990s through the restructuring or bankruptcy of older Soviet entities. We do not have information on the full history of firms and rely on the date of establishment provided by the respondent.

### Methodology and econometric approach

The general form of proposed model for analyzing the hypothesis is as follows:

$$\text{Exp\_status}^T = F(LP^{T-1}, \text{Size}^{T-1}, \text{Comp}^{T-1}, \text{Foreign}^{T-1}, \text{State}^{T-1}, \text{Holding}^{T-1}, \text{age}, \text{Ind})$$

Where Exp\_status – reflects export activity in both rounds of the survey,

LP – an indicator of labor productivity

Size – the size of firms as measured by the number of employees

Comp05 – an indicator of competition pressure

Foreign – indicates a foreign shareholder

State – indicates a government share in the ownership structure

Holding – indicates that a firm is part of larger integrated group of companies

Age – period of establishment of a firm

Ind – dummy variable for 8 two-digit manufacturing industry codes

T-1 indexes show the lagged variables that we measure for the previous period of observation.

We measure the export status of a firm as a nominal variable of a firm belonging to one of the four groups. The first group consists of firms that were not engaged in export activity in both 2005 and 2009. The second group consists of firms that reported export activity in both rounds of the survey, i.e., they were exporting in both 2005 and 2009. The third group consists of the “new exporters”, which are firms that reported no exports for 2005 but reported exports for 2009. The last group consists of firms that stopped exporting between 2005 and 2009.

The indicator of labor productivity is a ratio of firms’ labor productivity (measured as value added per employee) and the sector average reported by the official statistics for all medium and large firms in the sector.

Size is included as logged yearly average number of employees; Comp05 is constructed as dummy that equals 1 if a firm reported significant competition with other domestic producers or with imported goods, 0 otherwise. The foreign and state variables are also dummies that equal 1 in cases where a foreign or state shareholder is present among the owners, 0 if otherwise. Holding takes a value 1 if a firm reports that it is part of larger group, 0 if a firm is an independent entity. Age dummies are for three categories of firms: established in 1992, between 1992 and 1998 or after 1998.

To test our hypothesis we estimate the baseline multinomial logistic model specification with the 2005 and 2009 panel survey data:

$$\text{Exp\_status}_i^T = a_1 * LP_i^{T-1} + a_2 * \text{Size}_i^{T-1} + a_3 * \text{Comp05}_i^{T-1} + a_4 * \text{Foreign}_i^{T-1} + a_5 * \text{State}_i^{T-1} + a_6 * \text{Holding}_i^{T-1} + \sum_{j=7}^{j=9} a_j * \text{age}_{j-6} + \sum_{j=10}^{j=16} a_{11-j} * \text{Ind}_{j-9} + e_i$$

**The results are reported in Table 4. По-моему, так нельзя представлять результат**

**Table 4. Difference between continuing new exporters and non-exporting firms**

Multinomial logistic regression

Number of obs	=	445		
Wald chi2(45)	=	13256.23		
Prob > chi2	=	0		
Pseudo R2	=	0.2432		
Log pseudo-likelihood	-390.55037			
<b>Export_status</b>	<b>Coef.</b>	<b>Std. Err.</b>	<b>z</b>	<b>P&gt;z</b>
<b>Continuing exporters</b>				
LP05	0.0023179	0.0008295	<b>2.79</b>	0.005
Size05	1.40261	0.1853505	<b>7.57</b>	0
Comp05	0.5439107	0.3582969	1.52	0.129
Foreign05	0.1800735	0.3694579	0.49	0.626
State05	-0.4411422	0.357004	-1.24	0.217
Holding05	0.1019595	0.3336045	0.31	0.76
age1	-0.3855605	0.3632594	-1.06	0.289
age3	0.0836364	0.6051261	0.14	0.89
_cons	-7.698372	1.146889	-6.71	0
<b>De-novo exporters</b>				
LP05	0.0022531	0.0008512	<b>2.65</b>	0.008
Size05	0.7722749	0.226842	3.4	0.001
GR_COMP1_05	-0.7876145	0.390815	<b>-2.02</b>	0.044
Foreign05	0.684382	0.4507121	1.52	0.129
State05	-1.036315	0.432303	<b>-2.4</b>	0.017
Holding05	-0.1527413	0.4110142	-0.37	0.71
age1	-0.8371086	0.4706291	<b>-1.78</b>	0.075
age3	-0.6076576	0.6697948	-0.91	0.364
_cons	-4.790615	1.419479	-3.37	0.001
<b>Former exporters</b>				
LP05	0.0011831	0.0009818	1.21	0.228
Size05	0.7992696	0.2962423	<b>2.7</b>	0.007
GR_COMP1_05	1.023485	0.7830577	1.31	0.191
Foreign05	-0.0232698	0.5543402	-0.04	0.967
State05	-0.2499825	0.5241251	-0.48	0.633
Holding05	-1.692581	0.7623963	-2.22	0.026
age1	-1.233602	0.5118806	<b>-2.41</b>	0.016
age3	-1.047524	0.8698766	-1.2	0.229
_cons	-5.09772	1.990102	-2.56	0.01

*Note: Base category is non-exporting firms. We do not report coefficients on industry dummies.*

The first finding from our analysis is that Russian exporting firms most probably self-select into the exporting markets prior to beginning exporting: both de-novo and continuing exporters are more productive than are non-exporters and firms that cease exporting. The estimated effects are larger for continuing exporters; this result most probably reflects the fact that continuing

exporters entered the international markets while more productive than non-exporters *and* they maintain this advantage while exporting. Contrary to our expectations, we do not find a significant impact from past competition on the propensity to export. Moreover, a high competition level has a significant and negative impact on the probability of a firm to enter foreign markets, i.e., to become an exporter. This may be evidence that domestic markets are too small for a majority of highly productive firms, which provides incentives to export. We find that, while the sign of foreign ownership is positive for de-novo exporters, it is insignificant. This result is probably due to the relatively small number of foreign-owned firms in our sample. Conversely, the presence of the state in the ownership structure has a significant negative impact on the probability for a firm to enter export markets. Being a member of a holding company does not compensate for the low-scale economy. This finding may be attributed to the fact that exporting functions in the holding companies are either delegated to the larger and more powerful members or to the entities that control the value added chain of the holding company.

The findings also show that scale effects are always significant, though new exporters are smaller in size and the scale factor is of a lower significance as compared to the group of continuing exporters. The time of a firm's establishment is significant only for de-novo exporters: these are generally firms that were established after the start of the economic transition during the 1990's. To summarize, our findings show that new exporters are likely to be larger, privately-owned and more productive prior to exporting than firms serving the domestic market. De-novo exporters are relatively smaller than continuing exporters, are more often foreign-owned and report lower competition pressure than continuing exporters and firms that never exported. The de-novo exporters were generally established between 1992 and 1999.

It should be noted that the group of former exporters is relatively small in our panel, and the results should be treated with caution. Still, those results are in line with expectations. We see that, while being large (larger than the de-novo exporters) those firms had been much less productive in 2005 than both continuing and de-novo-exporters. It may be that their previous exports were due to path-dependence, but this factor ceased to be relevant and, not being productive enough, they had to leave foreign markets and concentrate on the domestic one.

We have checked the consistency of our results by running pairwise regressions comparing de-novo exporters with each of other groups. While the significance of the coefficients fell considerably, due to the smaller number of observations, all of the central results remained: de-novo exporters are more productive than non-exporters prior to beginning exporting, though we do not find that they were more productive than continuing exporters.

To check our third hypothesis on the path-dependence character of Russian manufacturing exports, we try to see if it is "easier" for firms to enter the markets of CIS countries. To test this hypothesis, we break our sample in three groups: firms operating globally (i.e., exporting in 2009 outside of the CIS economic region), firms which operate exclusively in CIS markets and the group of non-exporting firms. The results of multinomial regression on those three groups are

reported in Table 5.

**Table 5. Difference between globally trading firms and exporters to CIS countries**

Multinomial logistic regression				
Number of obs	=		437	
LR chi2(30)	=		203.25	
Prob > chi2	=		0	
Pseudo R2	=		0.2142	
Log likelihood = -372.73621				
SNG_gr	Coef.	Std. Err.	z	P>z
Globally trading companies				
LP05	0.002267	0.0007211	3.14	0.002
Size05	1.369586	0.186699	7.34	0
Comp05	-0.1164931	0.3586309	-0.32	0.745
Foreign05	0.2166905	0.3791176	0.57	0.568
State05	-0.4515193	0.3716203	-1.22	0.224
Holding05	0.3174843	0.3196741	0.99	0.321
age1	-0.6340518	0.4761878	-1.33	0.183
age2	-0.4200957	0.5285843	-0.79	0.427
_cons	-8.305519	1.230423	-6.75	0
Firms exporting exclusively to CIS				
LP05	0.0020637	0.0007269	2.84	0.005
Size05	0.8209895	0.183539	4.47	0
Comp05	-0.1496581	0.3491717	-0.43	0.668
Foreign05	0.4323871	0.3761959	1.15	0.25
State05	-0.682853	0.3686492	-1.85	0.064
Holding05	-0.2093109	0.3303244	-0.63	0.526
age1	-0.1421373	0.4991783	-0.28	0.776
age2	-0.0830742	0.5582112	-0.15	0.882
_cons	-4.951573	1.168907	-4.24	0

*Note: Base category is non-exporting firms. We do not report industrial dummies.*

We did not find evidence for the path-dependence hypothesis: the timing of a firm's establishment is not significant for CIS-exporters. A higher productivity level is required for firms serving both types of foreign trade, and the path-dependence argument for those firms exporting to the CIS is no longer relevant. Other factors do not seem to be significant except for the negative sign of the state-ownership dummies for CIS exporters.

## 5. Conclusions

This paper was motivated on one hand by a rich theoretical and empirical literature regarding

the factors that allow firms to enter external markets and, on the other hand, by the fact that Russian manufacturing, even during the economic growth of the pre-crisis period, failed to significantly increase its exports. We analyzed the differences between continuing exporters, new exporters, and non-exporting firms and examined the drivers of exporting for firms exporting to CIS countries or to countries outside the CIS zone. We have found that Russian exporting firms (like firms in other countries) seem to self-select into the exporting markets prior to exporting: both de-novo and continuing exporters are more productive than are non-exporters and firms which withdraw from exporting. The presence of foreign co-owners is positive though insignificant influence, The scale is significant for both continuing and de-novo exporters, although it is less important for de-novo ones. Firms which entered external markets between 2005 and 2009, while being significantly larger than non-exporting firms, are smaller than continuing exporters. This finding may be due to the fact that barriers to exporting in Russia have been decreasing compared with the previous period.

While we were expecting to find that there would be a difference between older firms established prior to market reforms that traditionally exported to the former republics of the Soviet Union (CIS countries), we found that age is not as significant of a factor for exporting as self-selection is . Having analyzed the impacts of different destinations of export (to CIS and non-CIS countries) we found that a higher productivity level is required for firms serving both directions of foreign trade, and the path dependence argument for the firms exporting to the CIS seems to be irrelevant.

One rather unexpected result is the negative impact of competition level on the propensity for exporting among de-novo exporters. We presume that this effect is due to a high level of specialization (low product diversification) for many Russian manufacturing firms. This specialization makes the Russian domestic market too small for an efficient scale of production and creates incentives to move to new (external) markets. However, this hypothesis needs to be more thoroughly verified. Another possible direction for future work may be an estimation of how learning affects exporting for exporting Russian firms.

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## Appendix

**Table A1. Descriptive statistics for firms surveyed in two rounds of monitoring and percentages for responding firms**

	2005	2009	Panel
<b>Sectors</b>			
Food	24.8	24.6	21.8

Textiles and garments	9.2	9.3	10.6
Timber and woodworking	8.4	8.5	9.0
Chemicals	8.8	9.2	10.2
Metals and fabricated metal goods	10.3	10.2	8.4
Electrical, electronic and optical equipment	14.2	12.2	13.8
Transport vehicles and equipment	9.0	9.0	10.2
Machines and equipment	15.5	17.0	15.8
Total	100	100	100
<b>Size groups</b>			
Less than 250 persons	43.8	45.0	47.7
251—500	25.6	24.1	22.0
501—1000	15.9	16.5	15.4
More than 1000 persons	14.7	14.4	14.8
Total	100	100	100
Observations	1002	957	499