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Abstract

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JEL : F14, R1
Keywords: export performance, economic growth, intensive margin, extensive margin, export survival, Russian regions

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EXPORT PERFORMANCE AND SURVIVAL IN RUSSIA: WHY SOME REGIONS GROW FAST AND OTHERS DON'T

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ABSTRACT

In this paper, we investigate the relationship between export performance and economic growth in Russian regions. We propose a methodology for decomposition of export growth into intensive and extensive margins and distinguish between product- and geographic extensive components within extensive margin. An empirical analysis suggests that higher growth rates in Russian regions are associated with higher intensive margin. We reveal significant differences in export survival of differentiated and homogeneous flows and find evidence of strong effects of distance and institutions on export survival. We argue that Russian regions would experience higher economic growth if they were able to improve their export performance at the intensive margin by providing lower transport costs to the business and by enhancing higher quality of institutions.

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INTRODUCTION

Empirical studies of economic development suggest that export diversification is an important factor of economic growth. Theoretical and empirical literature on the study of this phenomenon mainly focuses on the determination and assessment of the effects of export performance on economic development. For instance, if export of a country is heavily dependent on a few usually resource-intensive sectors, a country is likely to experience a strong income volatility effects. Thus, export diversification enhances the stability of income and, consequently, economic growth. As another example, export diversification can foster the speed of structural transformation (Hausmann, Klinger, 2007). Naude et al. (2010) among others provides an overiview of arguments why export diversification is seen as particularly desirable for developing countries.

However, the examination of a stationary state of export structure or the examination of exports at the aggregate level may not be sufficient for realistic results. An analysis of the dynamics of exports with respect to the components of export growth fosters deepening the understanding of types of export diversification and the relative efficiency of resource usage and reallocation. Indeed, on the one hand, high dynamics of birth and failures of trade flows may reflect the redistribution of resources from less efficient to more efficient sectors due to changes in the set of conditions for the private sector. However, on the other hand, any rapid change in the industry's export basket of the country may indicate high risks of doing export business, short life expectancy of new trade flows and failures in the derivation of new export products on the market (Das et al., 2007). Thus, depending on the prevailing component of export growth structure (extensive or intensive margin) different results on the role of export performance in economic growth could be derived.

This paper is devoted to analysis of the relationship between the dynamics and structure of exports and economic development of Russian regions. It draws special attention to the factors that contribute to the expansion of those export components that have the greatest impact on economic growth. We conduct a multi-stage analysis that allows us not only to assess the impact of the dynamics and structure of exports to the economic development of the regions of Russia, which in itself is an important research issue, but also to propose a set of factors determining growth at those export margins which are contribute to economic growth.

DECOMPOSITION OF EXPORT STRUCTURE

Recent empirical results on the effects of export structure and its dynamics on economic development come to different conclusions about the significance and sign of the effect. Indeed, the relationship between economic openness, trade liberalization and economic growth is not obvious. As it is pointed in the literature, traditional trade theory alone is not able to determine the effects of trade on economic growth (Krueger, 1980; Bhagwati, 2002). Several studies reveal that the relationship between trade and growth essentially depends on institutional factors (Arezki, van der Ploeg, 2010). Studies show that the impact of trade liberalization on economic growth varies considerably between countries (Foster, 2008; Dufrenot et. Al., 2009). Although the results emphasize the heterogeneity of the effects of trade and trade liberalization, the underlying causes of the effects are still unclear.

In the analysis of export dynamics researchers usually distinguish between two components of export growth: extensive and intensive margins. Again, there is no clear conclusion about the role of extensive and intensive margins in gross exports. For example, some studies note that the growth rate of exports are explained mostly by extensive margin (Evenett, Venables, 2002; Hummels and Klenow, 2005). At the same time, a number of other works argue that export growth is primarily explained by intensive margin (Felbermayr, Kohler, 2006; Helpman, Melitz, Rubinstein, 2008). Moreover, papers employ different measures of extensive and intensive margins, that itself may cause the divergent results (Besedes, Prusa, 2011).

We propose an approach to the decomposition of export growth and investigate the influence of the components of growth in the economic development of the regions of Russia. The proposed model is based on Felbermayr, Kohler (2006) and extended by Besedes, Prusa (2011) who decompose export growth into three distinct channels: entry, survival, and deepening. Amurgo-Pacheco, Pierola (2008) show that there are should be distinguished the following three components within the extensive margin: (1) export of old products to new markets - geographic extensive margin; (2) export of new products to old markets – product extensive margin; (3) export of new products to new markets – product and geographic extensive margin. Thus, we introduce the idea of Amurgo-Pacheco, Pierola (2008) into the approach Besedes, Prusa (2011).

The Value of export at any time t can be written as:

$$V_t = Z_t \cdot G_t \cdot v_t \qquad (1)$$

where Vt is the value of exports in year t, Zt is the number of products exported by the region in year t, Gt is the number of export markets, vt is the average value per relationship. The number of products exported consists of those that survive from t-1 to t, denoted s_t^Z and new products, denoted x_t^Z. So that we can write:

$$Z_t = s_t^z + x_t^z \qquad (2)$$

Similarly, s_t^G is the total number of export markets that survive from t-1 to t and x_t^G is the number of new export markets at year t.

$$G_t = s_t^G + x_t^G \qquad (3)$$

Then, using the above notation, the growth of exports from t to t+1 can be written as:

$$V_{t+1} - V_t = (s_{t+1}^Z + x_{t+1}^Z)(s_{t+1}^G + x_{t+1}^G)v_{t+1} - (s_t^Z + x_t^Z)(s_t^G + x_t^G)v_t, \qquad (4)$$

While the following condition holds for the dynamics of products and markets:

$$s_{t+1}v_t = s_t v_t + x_t v_t - d_t v_t, \qquad (5)$$

Where s_{t+1} is the number of products (markets) survived, d_t is the number of products (markets) that end in t. We divide both sides of (4) on V_t and taking into account (5) yields:

$$\frac{V_{t+1}-V_t}{V_t} = \underbrace{\frac{x_{t+1}^Z \cdot s_{t+1}^G}{Z_t \cdot G_t} \cdot \frac{v_{t+1}}{v_t}}_{(1)} + \underbrace{\frac{x_{t+1}^Z \cdot x_{t+1}^G}{Z_t \cdot G_t} \cdot \frac{v_{t+1}}{v_t}}_{(2)} + \underbrace{\frac{s_{t+1}^Z \cdot x_{t+1}^G}{Z_t \cdot G_t} \cdot \frac{v_{t+1}}{v_t}}_{(3)} + \underbrace{\frac{s_{t+1}^Z s_{t+1}^G}{Z_t \cdot G_t} \cdot \frac{v_{t+1}-v_t}{v_t}}_{(4)} - f(d), \qquad (6)$$

where $\frac{x_{t+1}^Z \cdot s_{t+1}^G}{Z_t \cdot G_t}$ is a share (probability) of emergence of new products on old markets, $\frac{x_{t+1}^Z \cdot x_{t+1}^G}{Z_t \cdot G_t}$ is a share (probability) of emergence of new products on new markets, $\frac{s_{t+1}^Z \cdot x_{t+1}^G}{Z_t \cdot G_t}$ is a share (probability) of emergence of old products on new markets, $\frac{s_{t+1}^Z s_{t+1}^G}{Z_t \cdot G_t}$ is a share (probability) of products and markets survival from t to t+1. Finally, $f(d)$ is a hazard function (probability of a trade relationship to fail).

Thus, the resulting formula allows us to analyze the contribution of intensive and product- and geographic- extensive margins into export growth. Denote the coefficients of the formula (6), respectively, (1) – product extensive margin, (2) – product and geographic extensive margin, (3) geographic extensive margin, (4) – intensive margin.

Our data come from the database of the Federal Custom Service of the Russian Federation, representing electronic copies of customs declarations 2002-2010. We use 4-digit level data of the commodity nomenclature, which corresponds to HS 4-digit classification. We consider the data for 30 Russian regions (which have export quota more than 10%) to 220 countries in more than 1,200 industries during 2002-2010. The structure of the available data consists of 132995 export flows.

EXTENSIVE AND INTENSIVE MARGINS OF RUSSIAN REGIONS 2003-2010

As can be seen in Figure 1, there is a strong positive relationship between annual GRP per capita and export growth. It allows us to discover the relationship between export and economic growth at a deeper level by accounting for the role of export margins.

Figure 1: Export and GRP per capita growth in Russian regions 2003-2010

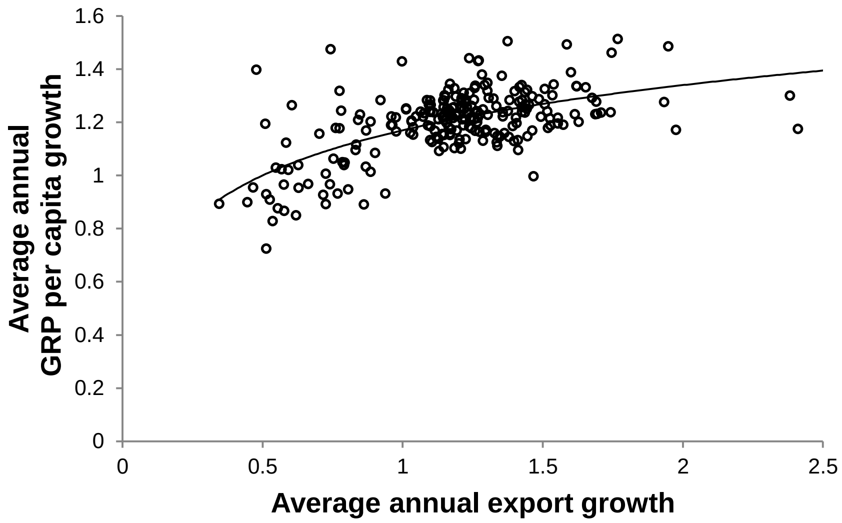
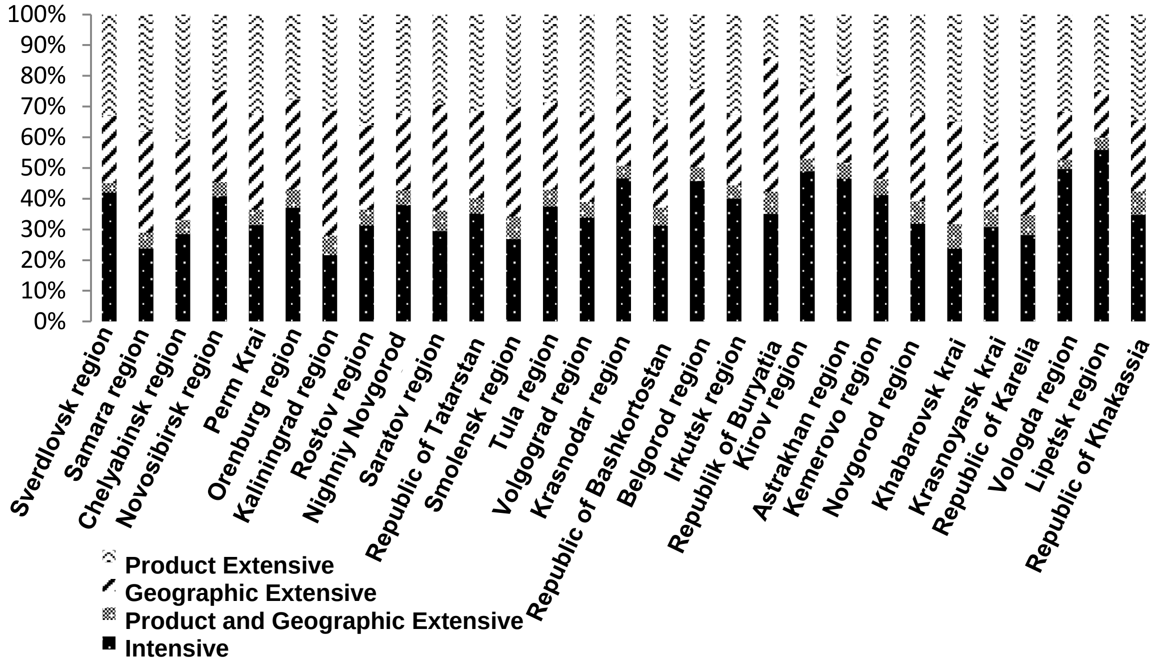


Figure 2 represents the results of decomposition of export growth into components according to methodology proposed above. Horizontal axis represents Russian regions located from the left to the right according to the increasing share of product extensive margin in export growth.

As can be seen from the figure, Russian regions are highly heterogeneous in terms of the structure of export growth, which is dominated by extensive margins for some regions and by intensive margin for the others. Thus, it is reasonable to hypothesize that the structure of export growth significantly effects economic growth rates, or, in the other words, only a certain kind of export margin enhances economic growth. In the next section we estimate a simple augmented Solow growth model and investigate the relationship between export margins and per capita growth.

Figure 2: Export margins in Russian regions, 2002-2010



Econometric model is based on the Solow growth framework that provides an intuitive and theory-based strategy for testing the relationship between different factors, for instance foreign direct investment intensity as in Elsadig (2008) or export performance as in Elsadig (2011), and GDP per capita growth.

Let the production function of the economy be given in the following form:

$$GRP_{i,t} = F\left(K_{i,t}, L_{i,t}, EXP_{i,t}\right) \quad (7)$$

where GRP is the gross regional product, K - physical capital, L - the number of employed in the economy, EXP - spillovers from exports in region *i* in year *t*. Taking the logarithm and first differences yields:

$$\Delta \ln(GRP/L)_{i,t} = b + \alpha\, \Delta \ln(K/L)_{i,t} + \lambda\, \Delta \ln(EXP/L)_{i,t} + \varepsilon_{i,t}\ . \quad (8)$$

We use proposed extensive and intensive margins as proxy variables for export spillovers, thus, the equation takes the following form:

$$\Delta \ln(GRP/L)_{i,t} = b + \gamma \Delta \ln(GRP/L)_{i,t-1} + \alpha\, \Delta \ln(K/L)_{i,t} + \lambda_1 EPM_{i,t} + \lambda_2 EGM_{i,t} +$$
$$+ \lambda_3 EPGM_{i,t} + \lambda_4 IM_{i,t} + \varepsilon_{i,t} \quad (9)$$

where EPM – product extensive margin, EGM – geographic extensive margin, EPGM – product and geographic extensive margin, IM – intensive margin in region *i* at time *t*.

We estimate the equation (9) with generalized method of moments for linear dynamic panel regression. Table 1 shows the results of the estimation.

In all specifications, the coefficient of intensive margin is positive and statistically significant at the 1% level, while the coefficient of product and geographic extensive margin is negative and statistically significant at the 5% and 10% levels. These results hold after controlling for export structure dynamics. Indeed, it is important to control for product and market specialization, since it could be argued that in case of high product of market specialization in export sectors some market distortions, which prevent development of the other sectors, can be identified.

Table 1. Export Margins and Economic Growth in Russian regions 2002-2010

	(1)	(2)	(3)	(4)	(5)
∆ log lagged GRP per capita	0.088 (0.162)	0.120 (0.165)	0.122 (0.161)	0.117 (0.160)	0.079 (0.162)
∆ log K/L	0.383*** (0.038)	0.372*** (0.039)	0.359*** (0.039)	0.358*** (0.039)	0.357*** (0.039)
EPM	-0.328** (0.128)	-0.334* (0.129)	-0.376*** (0.129)	-0.372*** (0.128)	-0.407*** (0.131)
EGM	-0.235*** (0.079)	-0.257*** (0.081)	-0.266*** (0.079)	-0.276*** (0.079)	-0.261*** (0.080)
EPGM	0.996** (0.505)	1.111** (0.517)	1.254** (0.515)	1.271** (0.510)	1.272** (0.512)
IM	0.089*** (0.021)	0.086*** (0.022)	0.086*** (0.021)	0.085*** (0.021)	0.088*** (0.021)
Dummy for the predominance of product diversification (against product specialization)	No	Yes	No	No	Yes
Dummy for the predominance of geographic diversification (against geographic specialization)	No	No	Yes	No	Yes
Dummy for the predominance of product and geographic diversification (against specialization)	Yes	No	No	Yes	Yes
Cons	0.143*** (0.043)	0.153*** (0.044)	0.170*** (0.045)	0.174*** (0.045)	0.181*** (0.045)
Obs	150	150	150	150	150
Number of groups	30	30	30	30	30
Number of instruments	21	22	22	22	24

Source: Own calculations.
Notes: Dependent variable is GDP per capita growth.
Robust p values in parentheses; * significant at 10%; ** significant at 5%; *** significant at 1%.

In general, analysis suggests that Russian regions with higher rates of intensive margin grow faster. At the same time, those regions, which diversify export structure in product and geographic dimensions grow with lower rates. However, an important question arises here. Are survival rates of all export relationships equal? And if survival rates of export relationship varies, what factors contribute to the higher survival of export goods? These are two fundamental questions, the answers to which will contribute to the development of effective policies to ensure sustainable expansion of export activities and economic growth of the Russian regions.

The answer to the first question can be found in the theoretical and empirical approaches to the analysis of international trade. The first model of monopolistic competition, (Krugman, 1979, Helpman, Krugman, 1985) suggest that consumers in equilibrium acquire every kind of differentiated goods. Expanding the analysis of the model, we can assume that trade flows of differentiated products should live longer and should not be terminated, since they became exported. If we assume that the type of goods also differ between export markets, the results of the models of monopolistic competition will testify in favor of the fact that trade flows of differentiated products are usually more stable and last more years, which, in turn, that has empirical support (Besedes, Prusa, 2006a; Nitsch, 2009). Second, assuming that exports of differentiated goods requires a higher initial investment, survival analysis can be carried out on the basis of models with heterogeneous firms (Melitz, 2003), where export occurs when the manufacturer of a certain level of productivity covers fixed costs. Then, export relationship, since having arisen, is stable and does not stop.

One can identify a number of empirical studies, the results of which implicitly suggest the relationship between type of goods exported and its survival rate. Indeed, it was shown, that the stability of trade relationships between developed countries (importers) and least developed countries (exporters) positively depends on the size of the original transaction (Rauch, Watson, 2003). A number of other studies found higher duration of trade flows of differentiated goods compared with homogeneous (Besedes, Prusa, 2006a; Besedes, Prusa, 2006b). Accounting for the level of development allows identifying higher survival rates of export flows from developed and foremost developing countries (Besedes, Prusa, 2007; Nitsch, 2009; Fugazza, Molina, 2011).

The arguments presented above allow us to go to the answer to the second question and empirically estimated determinants of export survival from Russian regions while distinguishing between homogeneous and differentiated goods.

SURVIVAL OF EXPORT IN RUSSIAN REGIONS: AN EMPIRICAL ESTIMATION

Once we begin to think of data in terms of single export relationships (or spells) it becomes apparent we need to account for several issues. First of all, there is a problem of censoring. It is often unknown whether a trade relationship ends because of a failure or for some other reasons. Consequently, there is an uncertainty regarding either the beginning or the ending date (or both) for some trade relationships (Besedes, Prusa, 2006a). In our case we apply left censoring procedure since for spells starting in 2002 it is unknown, whether they started in 2002 or earlier. Thus, we cut the data and leave only those trade flows which have arisen since 2003. Such an operation reduces the sample to 31.4% and allows for 91262 spells. Right censoring procedure arises when we do not know whether the trade flows fails in 2010 or continues to exist in 2011. In contrast to the left censoring this problem is solved by survival analysis methods applied further.

The second issue is attributed to the problem of goods classification, which is related to the fact that Russian Federal Custom Service periodically revises product definition, sometimes splitting a single code into multiple codes and other times combining multiple codes into fewer codes. Unfortunately, there is no information to allow us to map old product codes into new ones. We recognize that such changes may affect trade flows, but due to the large amount of data, it has not possible to watch for potential problems.

Third, the problem of interrupting the trade flows. On the one hand, the trade flow may be suspended and then resumed after one or more years for some economic or other reasons. In the database, we have 18% of the trading flows which are interrupted one or more times. On the other hand, the observation of the trade flow interruption can be attributed to errors (omissions) in the database. Moreover, the probability of error when the interruption period is only one year is quite high. In order to control for such errors we will check the stability of the results for the case where the export flows with 1-year interruption period will be considered as continuous.

Fourth, one of the major problems is that the classification of goods. We follow the approach of Rauch (1999) and distinguish the following three product groups: homogeneous (traded on organized markets), reference priced and differentiated (all the rest).

Figure 7 shows the dynamics of the number of export flows in Russian regions. In general, the results of survival estimations show that after 1 year of existence persists 28.34% of reference priced products, 25.53% of homogenous products and 25.46% of differentiated product spells. The median duration of the export flow is 1.49 years.

Figure 3. Export flows dynamics in Russian regions, 2003-2010

In order to analyze the factors of export survival we use a semi-parametric approach of risk assessment proposed by Cox (Cox, 1972) and employ the following basic specification:

$$h(t, x, \beta) = h_0(t)\exp(x'\beta), \quad (10)$$

where x is the vector of independent variables, β is the vector of estimated coefficients. Baseline hazard h0(t) is characterized as a function of time. A particular advantage of the Cox model is that the baseline hazard is left unspecified and is not estimated (Besedes, Prusa, 2006a).

We use several groups of factors in the regression. First, we employ gravitation variables since the Russian regions are substantially less differ in cultural characteristics than in comparison with the countries of the world economy. Thus, we include geographical distance to the export market and the distance to the three major ports - St. Petersburg, Nahodka and Novorossiysk. Second, product characteristics. We follow Rauch (1999) and employ dummy variables for homogeneous and differentiated products. Third, we include in the regression a set of variables reflecting the level of ease of doing business in the region: general level of development proxied by gross regional product in logs, availability of human capital proxied by number of students per 10,000, in logs, quality of infrastructure proxied by the volume of cargo operations in logs, the rating of the capital city in the list of best cities for business by Forbes, as well as the sub-index rating of Forbes, reflecting the level of development of a common infrastructure.

Additionally, we add a variable reflecting the logarithm of the minimum volume of exports, which are supposed to reflect the level of uncertainty for export spell, that is in line with Albornoz et al., 2010; Fugazza, Molina, 2011. To control for possible omissions of the data we add a dummy variable for those export flows, which are interrupted and resumed again. In addition, we include regional, annual and sectoral dummies.

Table 2. Cox proportional hazard estimates for Russian regions 2003-2010.

	Differentiated	Homogenous	Reference priced	Differentiated	Homogenous	Reference priced
	(1)	(2)	(3)	(4)	(5)	(6)
Log GRP	1,070*** (0,009)	1,026 (0,043)	1,086*** (0,019)	1,222*** (0,014)	1,184*** (0,065)	1,254*** (0,030)
Best City for Business, Forbes (0,04 -max;1)	1,152*** (0,027)	1,321*** (0,134)	1,291*** (0,058)	1,825*** (0,014)	2,182*** (0,569)	2,290*** (0,253)
Log Distance to Market	1,083*** (0,007)	1,069** (0,036)	1,058*** (0,015)	1,085*** (0,008)	1,084** (0,039)	1,063*** (0,016)
Log Distance to Nahodka	0,800*** (0,015)	0,730*** (0,061)	0,780*** (0,030)	0,745*** (0,030)	0,045*** (0,093)	0,695*** (0,064)
Log Distance to St.Petersburg	1,050*** (0,009)	1,113*** (0,043)	1,149*** (0,017)	1,048*** (0,010)	1,069 (0,050)	1,166*** (0,022)
Log Distance to Novorossiysk	0,895*** (0,018)	0,866 (0,083)	0,812*** (0,032)	0,825*** (0,046)	1,320 (0,393)	0,720*** (0,084)
Border region	1,005 (0,012)	0,910* (0,050)	1,132*** (0,029)	0,969* (0,017)	0,764*** (0,068)	1,126*** (0,046)
Obs.	42031	1938	10059	42031	1938	10059
Dummy for Multiple Entrance	Yes	Yes	Yes	Yes	Yes	Yes
Dummy for Europe/Asia	Yes	Yes	Yes	Yes	Yes	Yes
Dummy for regions	No	No	No	Yes	Yes	Yes
Dummy for Industries	No	No	No	Yes	Yes	Yes

A special note about the interpretation of the regression results should be made. Since all the coefficients of the model (10) represented in the exponential form, value of the coefficient lesser than 1 indicates a negative effect on the hazard rate: higher values will reduce the risk and, therefore, imply a higher duration of export flow. Similarly, the value of the coefficient greater than 1 means a positive effect on the level of risk, respectively, the higher value of the variable will increase the risk of an abyss trade flows.

Table 3. Cox proportional hazard estimates for Russian regions 2003-2010 with doing business variables

	Differentiated	Homogenous	Reference priced	Differentiated	Homogenous	Reference priced
Log GRP	1,220*** (0,014)	1,170*** (0,062)	1,251*** (0,030)	1,225*** (0,014)	1,185*** (0,065)	1,261*** (0,030)
Log Students per 10,000	0,826** (0,068)	2,098* (0,837)	1,333* (0,213)	0,828** (0,069)	2,374** (0,980)	1,436** (0,233)
Log Freight	0,742*** (0,018)	0,772** (0,097)	0,660*** (0,032)	0,738*** (0,018)	0,750** (0,097)	0,663*** (0,033)
Forbes Infrastructure, (0,02 max;1)	1,225*** (0,066)	0,903 (0,247)	1,812*** (0,202)	1,208*** (0,065)	0,919 (0,260)	1,738*** (0,196)
Border region (dum=1)	0,898*** (0,017)	0,809** (0,076)	0,924** (0,034)	0,903*** (0,017)	0,804** (0,079)	0,935* (0,036)
Obs.	42031	1938	10059	42031	1938	10059
Dummy for Multiple Entrance	Yes	Yes	Yes	Yes	Yes	Yes
Dummy for Europe/Asia	Yes	Yes	Yes	Yes	Yes	Yes
Dummy for regions	Yes	Yes	Yes	Yes	Yes	Yes
Dummy for Industries	No	No	No	Yes	Yes	Yes
Obs.	Yes	Yes	Yes	Yes	Yes	Yes

Table 2 presents the results of econometric estimation for the whole sample. Columns (1) - (3) show the results of the hazard function estimation with conservative classification of goods by Rauch (1999), columns (4) - (6) with a liberal classification. Results allow to draw several important conclusions. First, the distance to the market is negatively associated with trade flows survival: export flows to shorter distances lasts longer. Second, doing business conditions in the city are positively associated with export survival: higher position in the ranking of the best cities for business is associated with higher survival rate of export flows. The latter result allows us to test the significance of individual components of the business climate for export flows survival.

In general, the econometric estimates are in line with previous results. First, higher proportion of students in the region, reflecting the level of human capital and research and innovation potential, is related to higher survival of export flows of differentiated goods. Second, higher quality of business infrastructure (indicated by the time needed to get a permission for contstruction, costs of tariffs and costs for getting connected to the power grid) and higher quality of road infrastructure in a region is associated with higher survival rate of export flows for differentiated and reference priced products.

CONCLUSION

In this paper we investigate the relationship between the dynamics and structure of export of Russian regions and their economic growth. We expand existing literature in two directions. Firstly, we propose a methodology for the decomposition of export margins, allowing for product- and geographic dimensions of extensive margin. Empirical results can be summarized as follows.

First, during the 2002-2010 period export growth in Russian regions is characterized by significant heterogeneity: export of one group of regions is associated with increasing volumes of existing trade flows, while export of other regions is associated with diversification into product and geographic dimensions. Second, export growth in fast growing regions is accompanied with an increase in the volume of trade of old goods to old markets, i.e. with intensive margin. Third, export growth in slow growting regions is accompanied by growth at the extensive margin.

Further, the finding that high rates of economic growth can be achieved through sustainable expansion of existing export flows, allows deepening an analysis and determining factors influencing higher survival of export flows. We show that export survival for differentiated and referent priced goods are determined by different factors. Thus, we continue to formulate the main results. Fourth, export flows from the European part of Russia to less remote export markets from regions with good doing business conditions has higher survival rates. Fifth, education is an important factor for export survival. Regions with more people involved in university education are more successful in exporting of differentiated goods, which can be seen as an evidence of higher human capital and innovation potential. Finally, infrastructure is important for export survival. Higher export survival rates are associated with higher quality of infrastructure and lower costs of opening and doing business in a region.

REFERENCES

Albornoz, F., H. Calvo-Pardo, G. Corcos and E. Ornelas 2010. Sequential Exporting. CEP Discussion Papers dp0974, Centre for Economic Performance, LSE.

Amurgo-Pacheco A., Pierola M.D. 2008. Patterns of Export Diversification in Developing Countries: Intensive and Extensive Margins. World Bank, Washington, DC.

Arezki R., van der Ploeg F. 2010. Trade Policies, Institutions and the Natural Resource Curse. Applied Economics Letters, Vol. 17, pp. 1443–1451.

Besedes T., Prusa T.J. 2011. The role of extensive and intensive margins and export growth. Journal of Development Economics, Vol. 96(2), pp. 371-379.

Besedes T., Prusa T.J. 2007. The role of extensive and intensive margins and export growth. NBER Working Paper 13628.

Besedes T., Prusa T.J. 2006a. Ins, Outs, and the Duration of Trade. Canadian Journal of Economics 39(1), pp. 266-295.

Besedes T., Prusa T.J., 2006b. Product Differentiation and Duration of U.S. Import Trade? Journal of International Economics 70(2), pp. 339-58.

Bhagwati, J. N. 2002. Free Trade Today, Princeton and Oxford: Princeton University Press.

Cox, D. R. 1972. Regression Models and Life Tables (with Discussion). Journal of the Royal Statistical Society, Series B 34:187—220.

Das, S., Roberts, M.J., Tybout, J.R., 2007. Market entry costs, producer heterogeneity and export dynamics. Econometrica 75, 837–873.

Dufrenot G., Mignon V., Tsangarides C. 2009. The Trade Growth Nexus in the Developing Countries: a Quantile Regression Approach. CEPII Working Paper, 2009-4, Paris.

Elsadig M. 2008. Foreign Direct Investment Intensity Effects on TFP Intensity of ASEAN 5 Plus 2. Journal of Economic Development, Vol. 33 (2), pp. 155- 166.

Elsadig M. 2011. Trade Intensity Spillover Effects on East Asian Sustainable Economic Growth. Modern Economy, Vol. 2, pp. 447-454.

Evenett S.J., Venables A.J. 2002. Export Growth in Developing Countries: Market Entry and Bilateral Trade Flows. University of Bern working paper, mimeo.

Felbermayr G.J., Kohler W. 2006. Exploring the Intensive and Extensive Margins of World Trade. Review of World Economics, Vol. 142(4), pp. 642-674.

Foster N. 2008. The Impact of Trade Liberalization on Economic Growth. Kyklos, Vol. 61, pp. 543–567.

Fugazza M. and A.C. Molina, 2011. On The Determinants Of Exports Survival. UNCTAD Blue Series Papers 46, United Nations Conference on Trade and Development.

Fugazza M., Molina A.C., 2011. On The Determinants Of Exports Survival. UNCTAD Blue Series Papers 46, United Nations Conference on Trade and Development.

Hausmann R., Klinger B. 2007. The Structure of the Product Space and the Evolution of Comparative Advantage. Harvard University Center for Economic Development Working Paper 146, Cambridge, MA

Helpman E., Melitz M., Rubinstein Y. 2008. Estimating Trade Flows: Trading Partners and Trading Volumes. Quarterly Journal of Economics, Vol. 123(2), pp. 441-487.

Helpman, E., Krugman, P.R., 1985. Market Structure and Foreign Trade. MIT Press, Cambridge.

Hummels D., Klenow P.L. 2005. The Variety and Quality of a Nation's Exports. American Economic Review, Vol. 95(3), pp. 704-723.

Krueger A.O. 1980. Trade Policy as an Input to Development. American Economic Review, Vol. 70, pp. 288-292.

Krugman, P.R. 1979. Increasing returns, monopolistic competition, and international trade. Journal of International Economics 9, pp. 469–479.

Melitz, M., 2003. The impact of trade on intra-industry reallocations and aggregate industry productivity. Econometrica 71, pp. 1695–1725.

Naudé, W., Bosker, M., & Matthee, M. (2010). Export Specialisation and Local Economic Growth. The World Economy, 33(4), pp. 552-572.

Nitsch, V. 2009. Die Another Day: Duration in German Import Trade. Review of World Economics 145, pp. 133-154.

Rauch, J.E. 1999. Networks versus markets in international trade. Journal of International Economics 48, pp. 7–35.

Rauch, J.E., Watson, J. 2003. Starting small in an unfamiliar environment. International Journal of Industrial Organization 21, 1021–1042.