

Trade and growth. Some evidence from Russia for 2000-2012*

Irina Korgun

HK research professor

The Institute of Russian Studies

Hankuk University of Foreign Studies

I. Introduction

Rapid rise of BRIC economies in the first decade of 2000's has drawn a lot of attention internationally. Businesses were eyeing new opportunities to promote their products and services while scholars tried to explain reasons for the rapid growth. While all of the four economies in question – Brazil, Russia, India and China – share a lot in common in their patterns of development at the same time they show considerable difference in sources for growth of trade that lays at the core of their expansion. All the countries with lesser or bigger extent rely on exports natural resource. And this degree of dependence can become a major divide in approach that should be taken to explain their performance in 2000's.

For Russian one of the results of transition relates to that fact that its economy grew dependent on foreign sector for. Though in recent years we can witness that the share of export in GDP saw slight decrease. In 2012 export revenues made up 26% of GDP, and at the turn of 2000 it used to be more than 30% and in 2000 reached even 40% (UNCTADStat, 2013). More that 70% in export structure are accounted by natural resources of which minerals take the largest share. This feature brings it closer to other resource-dependent countries. Usually, states with abundant resources show many similarities in economic dynamics. Amongst them are: rapid economic growth (sometimes characterized as 'economic boom', when prices for resources increase or when new resource deposits are found); drop in long-term growth rates over time; contraction of manufacturing sector and increase in consumption of services; growing social inequalities, etc. All these factors have to become associated with low quality of economic growth in resource-dependent economies. There was even a term 'Dutch disease' coined to show that abundance in natural resources does not represent an ultimate good. However there are variations to which extent this tendencies develop in their economies.

There is a general consensus among scholars that positive and high growth rates sustained by Russia throughout 2000's until the financial crisis of 2008 and recession that ensued have close relation with high oil prices. However it is still hard to find an answer whether 'boom in prices' resulted in Dutch disease or not. It seems that Russia fitted into generalized pattern of Dutch disease for oil-rich countries but there were other factors as well that strongly influenced the economic situation domestically. Such factors as growth of domestic consumer market, negative growth rates of population, improvements in the functioning of institutions comparing to 1990's – all could play a role and contributed to positive growth of the Russian economy adding several percentage points to rates of economic growth. Also, this might make one want to look at the

* I would like to express words of gratitude to Hitotsubashi University and "Visiting Research Fellow program" that it provides for giving me an opportunity to accomplish this research. Especially I would like to thank Professor of the Russia Research center Kazuhiro Kumo who gave his invaluable comments. Also I appreciate efforts of the University administration who made a practical side of things very easy for me to deal with.

situation in Russian economy under a different angle and make further investigation into the problem.

In the given work we would like to check an assumption that resource export was an important but yet not the most significant factor behind dynamic development of the Russian economy in 2000-2012. In order to do that in our analysis we will focus on the nature of relations between economic growth defined as growth of GDP per economically active population and a) exports generally and b) exports of natural resources in particular. In our analysis we will also take into account a possible impact of decreasing population. The method applied in the paper will be OLS regression. Our first assumption is that during 2000-2007 high economic growth rates were a result of combination of forces and cannot be solely explained by growth in export volumes of natural resource. Our second assumption is that population dynamic also matters. OLS method is imperfect and has its limitations but still it still can provide informative estimates of relations between export and growth and resource abundance and growth.

II. Literature review

Classic works on Dutch-disease and resource-curse does not give a clear answer how resource-abundance might affect economic growth. Results of studies done by Sachs and Werner (1997), Corden and Neary (1982), Wijnbergen, S. van (1984), Torvik (2009), van Der Ploeg (2006) seem to agree that in the longer perspective resource abundance adversely affects economic growth. Calculations by Van Der Ploeg point out to negative correlation between long-term growth performance and the share of natural resources in merchandise exports (van Der Ploeg, 2006, p. 4). Sachs and Warner showed that GDP growth of OPEC countries was slowing down 1.3% each year starting from 1970's (Sachs and Warner, 1997). The biggest concern with regard to the so called resource curse relates to manufacturing sector that losses its export competitiveness over time. As a result it is unable to recover when natural resources run out (van Der Ploeg, 2006, p.9).

Scholars offer various explanations for poor performance of resource dependent economies. In some cases lower TFP growth is taken as a major reason (van Wijnbergen, 1984; Sach and Warner. 1995, Torvik, 2009), in others resource misallocation and rent-seeking are assigned responsibility for slowing down growth rates (Corden and J.P. Neary, 1982), in yet another studies political institutions seem to be the key (Robinson, Torvik, Verdier, 2006). But as Torvik (2009) points out 'available research rather shows correlation but not causality between endowment in natural resources and economic performance' and questions remains open. There is always room for doubts whether incremental increase in export of resources happens due to economic growth (since economic growth is associated with more available resources) or vice-a-versa economic growth is influenced by the former.

Some confusion could be attributed to varying experiences of resource-rich countries. Because 'resource-abundant countries constitute some of the richest and some of the poorest countries in the world' (Torvik, 2009). For example, Norway or Botswana managed to avoid many of the bad effects traditionally associated with intensive export of resources and keep sustainable growth over the long period.

In reality resource abundance could be a very important asset in pushing economic growth at the initial stage of development. Export of resources cause rapid economic expansion in the short-term during price booms or when resources (or new resource deposits) are discovered. Support for

this assumption was given by Baland and Francois (2000). Krugman (1987) also notes on the temporary economic expansion thanks to oil boom. Van Der Ploeg (2006), in his turn, writes that '[l]inkages and complementarities to the resource sectors were vital to the American economic success. Coal and iron ore deposits spurred industrial development of Germany and the UK as well during the late nineteenth century' (van Der Ploeg, 2006, p. 3). One of the most recent examples could China that in the early stage of growth exported resources to Japan. So, resources are often a stepping stone on the way to economic growth. After all, they increase wealth and purchasing power over imports and this can lead to higher investment ratios.

Partly ambiguity surrounding effect of resource exports on economy may be a consequence of an unresolved broader problem: how export generally influence economic growth. Earlier studies by Balassa (1977) for countries that have established an industrial base, Kavoussi (1984) and Michaely (1977) suggest that income in export-oriented countries grow faster than in those which rely on export-neutral or import-substituting policies. But those are classical works published nearly four decades ago. In one of the most recent studies Greenaway, Morgan and Wright (2013) also construct panel of 69 countries and generate results that suggest that there is a strong positive relationship between exports and growth. Yet, there are studies that reject export-based growth hypothesis for developed economies – USA, Japan, United Kingdom and Germany (Marin 1992).

Large part of works on economic performance in Russia and its relations to the foreign sector was produced starting from the second half of 1990's. Many of this research tried to find evidence on whether Russia is 'ailing Dutch-decease' (Algiery, 2011; Ahrend, de Rosa and Tompson, 2007; Roland, 2005; Covi, 2013, van der Marel, Dreyer, 2012, Borkó, 2007, Oomes, Kalcheva, 2007, Dobrynskaya, Turkisch, 2009). General attitude of this research is a cautious one, usually findings support the hypothesis that at least in some respect Russia goes in line with resource-abundance and Dutch-decease theory.

As a rule, scholars point out several major trends symptomatic of Dutch-decease. According to Hecksher-Ohlin theory labor will relocate from manufacturing to booming resource sector or nontradable sector because wages in these sectors tend to be higher. Exchange rates of the national currencies of resource-dependent countries demonstrate a tendency to increase due to inflow of export earnings. As a result import will become cheaper inducing population, whose income became large following various readjustments, to increase spending on it causing expansion in the service industry. As Corden and Neary wrote "[t]he boom in the energy sector raises the marginal products of the mobile factors employed there and so draws resources out of other sectors, giving rise to various adjustments in the rest of the economy. The higher real income resulting from the boom leads to extra spending on services which rises their price and thus leads to further adjustment" (Corden and Neary, 1982, p.827, p. 838).

Russia has exhibited some of these trends during the period under question (Algiery, 2011, Covi, 2013, Oomes, Kalcheva, 2007, Dobrynskaya, Turkisch, 2009). According to Federal State Statistical Service Russia experienced a serious drop in the order of 4% in the number of workforce employed in manufacturing. In 2010 19.7% of Russia's working population was employed by manufacturing industry while a decade ago this number was 23.7% (Промышленность России, 2012). Meanwhile, data for manufacturing production cannot prove a contraction of the manufacturing sector in general. Share of GDP produced by manufacturing fluctuated through 2000's: it was 31.4% in 2000, then increased to 32.7% in 2005 and then fell to 28.7% in 2010 affected by Great Recession that hit Russian, and by 2011 regained its pre-crises level of 30.5%

(Промышленность России, 2012, p. 19). One should also keep in mind that manufacturing production in Russia did not finished to readjust its heavy military orientation, the conversion is still in the process which could influence production in certain sectors.

Still, data on the share of manufacturing in GDP alone cannot support one of the major postulates of resource-abundance theory about de-industrialization. As Kuboniwa (2010, p.2) writes, 'in contrast to Dutch-decease the negative impact of oil price increases on manufacturing growth was not observed in Russia for the 1998-2008 period'. Instead, manufacturing production was growing: production volume denominated in ruble showed a steady growth from 2005 to 2011 only it increased 2.6 times. Volume of goods shipped in manufacturing was 8872 billion rubles in 2005 but it reached 16864 billion rubles by 2008 and 22 802 billion rubles in 2011 (Промышленность России 2012, p. 19). So did productivity which recorded an average annual increase of 6-8% before slowing down in 2008 (Промышленность России 2012, p. 37). Following Ahrend, de Rosa and Tompson we can conclude that 'rising commodity prices may have created problems for some Russian manufacturers, but the effect does not appear to have been very large during most of the period under study' (Ahrend, de Rosa and Tompson, 2007, p.26).

Two other signs that can speak in favor of Dutch-decease in Russian economy could be its servicization and appreciation of the national currency. Analysis of expenses structure of the Russian population provided by FSSS shows that spending on services grew 5-fold by 2010 comparing to 2003 while expenditures on food only 3 fold. The fastest growth of expenditures was recorded on transport (over 7%), communication and medical services (over 6%) and leisure (4.6%). Higher spending pushed national currency upward. During the pre-crisis years, ruble's exchange rate vis-a-vis US dollar grew from more than 30 rubles per 1 USD to 23-24 rubles per 1 USD (Central Bank of Russia). But Russia was not the only currency. Some other currencies worldwide also showed an upward movement. For example, Korean won also became stronger due to booming exports of manufacturers. In our opinion stronger ruble rather had more profound effect on disposable income of Russians who at the moment were able buy more imported products at lower prices.

Many works analyzing the period after financial crisis of 1998 started from the assumption that exports of resource was the most significant factor behind rapid economic growth in Russia. What many of the studies do not mention is the fact that throughout 2000's share of exports in GDP was actually decreasing. It used to be 40% in 2000, went down to 31% in 2002 and further down to 27% in 2007 and 26.7% in 2012 (UNCTAD Stat). It is true that rates of economic growth also slowed down from 7% in the mid-2000's to 3-4% in 2011-2012 (Federal State Statistical Service). But here increased scale of the economy should be considered. Russia started as an emergent economy in the beginning of 2000's. While it still can be viewed as emergent, size of the economy increased several times, this means that it becomes more and more difficult to sustain high growth rate.

In short we can say that evidences that are supposed to prove that economic growth in 2000's could be solely attributed to growing exports caused by increased shipments of resources are not enough. There exist some empirical evidences as well that show that between export and income there can be negative correlation. Algieri showed that with 'the demand for [Russian] exports is significantly linked to domestic disposable income. The value of exports increases by 15% when domestic income decreases by 10%, or in other words growth in income decreases exports and increases absorptive capacity of income' (Algieri, 2004, p. 187). Facts provided draw attention to other factors that were at play and had an impact on economic performance. One of the important

considerations here could be about possible influence of decreasing population on economic growth. As a result of this national income measured as GDP per capita could gain a little bit more than it otherwise would. There numerous works proving negative relations between population growth and general level o national income (See for example Canning, 2011). In countries with higher levels of population increase GDP per capita tend to be lower than in those with more moderate population growth. Considering that, it is impossible to completely disregard this factor in the Russian case. In the next session we are going to check how exports, exports of natural resources and negative population growth have influenced Russia's economic performance in the first decade of 2000's.

III. Method and data

For OLS regression we use the formula as

$$gr_gdpeap\ t = b0 + b1*gdpeap\ t + b2*sxp\ t + b3*pg\ t + b4*sx\ t$$

Logic of our paper starts from the work by Sachs and Warner (1997). Following them as an indicator for economic growth in Russia during 2000-2012 we use growth of GDP divided by the economically active population in each corresponding year *gr_gdpeap*. Number of economically active population remained relatively stable over the period while total population decreased. By measuring the growth not per capita but per capita of economically active population it is possible to verify how the performance was affected by negative rates of population growth. The nominal GDP data correspond to UNCTAD statistical data and are in current prices.

The economically active population is defined as a number of people between the ages 15-64. The source for population data is Russian Federal Statistical Service web-site.

Table 1. Descriptive Statistics. *gdpeap* is given in thousand dollars, other data are in percent.

Variable	Notation and unit	Average	Standard Deviation	Minimum	Maximum
growth of GDP per economically active population	<i>gr_gdpea</i> , %	1.20	0.16	0.74	1.36
GDP per economically active population	<i>gdpeap</i> , thousand US dollars	13457.11	7937.62	3528.73	25984.21
share of primary exports in GDP	<i>sxp</i> , %	0.21	0.02	0.18	0.26
pop gr	<i>pg</i> , %	-0.15	0.35	-0.52	0.40
share of exports in GDP	<i>sx</i> , %	0.30	0.04	0.25	0.41

Source: UNCTAD Stat, FSSS of Russian Federation, Data for 2000-2012.

Share of primary exports in GDP – *sxp* – are exports of primary products or natural resources from UNCTAD stat and include SITC categories agricultural raw materials, ores and metals, fuels corresponding to categories 0, 1, 2, 3, 4 and 68. Data for GDP is taken from the same source. Exports are also denominated in nominal dollars. In exploration how resource exports affect economic growth what matters is the share of the economy labor force employed in non-traceable

productions rather than tradable manufactures. According to Sachs and Warner (1997, 15) this share depends on level of demand for non-tradables which, in turn, depends on the wealth effect from natural resources. The size of this wealth effect is better captured by the share of resource exports in total GDP rather than just exports.

Share of exports in GDP – sx – represents a ratio of total nominal exports to GDP in current prices in the corresponding year. Data were obtained from UNCTAD Stat series as well.

Finally, population growth rate – pg – is annual average change in the number of Russian population for each year from 2000 to 2010 obtained from Russian Federal Statistical Service website. The descriptive statistics of the data that were used for series of OLS regressions are presented in Table 1.

IV Results

We start in table 2 with a regression to demonstrate an impact of all variables on growth of GDP per economically active population (gr_gdpeap) using OLS estimator. Results for this regression are 2.1. Neither variable obtained a significant coefficient. This also means that assumptions about a possible impact of negative growth in population over increase in income does not hold. But we can suppose that our choice of GDP per economically active population instead of using GDP per capita could have affected results. However, it seems that multicollinearity among variables critically affected on the coefficients and to obtain definite interpretation is difficult.

Table 2 Association between growth and exports, population growth, 2000-2012

dependent variable	$gr_gdpeap(2.1-2.6), \log(gr_gdpeap) (2.1a-2.6a)$									
	2000-2012									
	2.1	2.1a	2.2	2.2a	2.3	2.3a	2.4	2.4a	2.5	2.5a
$gdpeap$	0.00004 (1.61)	-	- 0.000004 (-0.73)	-	-	-	-	-	-	-
$\log(gdpeap)$	-	0.445 (1.55)	-	-0.047 (-0.7)	-	-	-	-	-	-
sxp	-4.855 (-0.62)	-3.463 (-0.81)	-	-	5.403 (2.46)*	2.294 (2.43)*	-	-	-	-
pg	-0.432 (-1.9)	-0.114 (-1.66)	-	-	-	-	-0.132 (-0.99)	-0.051 (-0.89)	-	-
sx	7.836 (1.43)	4.593 (1.43)	-	-	-	-	-	-	2.058 (1.96)	0.864 (1.91)
Constant	-0.671 (0.332)	-2.392 (0.102)	1.262 (0.000)	0.265 (0.346)	0.059 (0.13)	-0.10 (0.066)	1.184 (0.000)	0.068 (0.008)	0.582 (0.096)	-0.185 (0.206)
Adjusted R 2	0.336	0.302	-0.040	-0.044	0.296	0.290	-0.002	-0.018	0.191	0.181
Prob>F	0.124	0.147	0.479	0.500	0.032*	0.034*	0.343	0.394	0.076	0.083
No of observations	13	13	13	13	13	13	13	13	13	13

Data in parenthesis is t-statistic; * denotes significant at 5% level.

Reviewing all the results, the only variable get statistical significance at 5% level when we regress *gr_gdpeap* by each factor is the share of primary exports in GDP in specification 2.3 in Table 2. Durbin-Watson ratio for this regression (around 2.0) confirmed that there existed no serial correlation. In this case positive coefficient shows that growth in the share of primary resources exports in GDP results in higher rates of GDP per economically active population increase. Further evidences for possibility of such relations are provided with correlation matrix given in table 3: it has the highest correlation coefficient. We checked the robustness of the results obtained by running a regression by *log(gr_gdpeap)* as a dependent variable, and used *log(gdpeap)* as an explaining variable when necessary. Results are shown in table 2 as 2.1a, 2.2a, ...2.5a. Notwithstanding that the dependent variable takes logarithmic form or not, both 2.3 and 2.3a obtained significant coefficients. From this we could infer that the effect of percentage share of primary export in total GDP on GDP growth seems to be stable. At the same time adjusted R-squared which is lower than 0.30 shows that primary exports in GDP cannot fully explain economic growth in Russia. And although the regressions in Table 2 are exploratory which makes us hesitant to come to any definite conclusion, we do think the results are informative about this general point.

Table 3 Correlation Matrix

	<i>gr_gdpeap</i>	<i>gdpeap</i>	<i>sxp</i>	<i>pg</i>	<i>sx</i>
<i>gr_gdpeap</i>	1				
<i>gdpeap</i>	-0.216	1			
<i>sxp</i>	0.596	-0.30	1		
<i>pg</i>	-0.286	0.714	-0.091	1	
<i>sx</i>	0.509	-0.749	0.810	-0.333	1

Table 4 Association between growth and exports, population growth, 2000-2007

dependent variable	<i>gr_gdpeap</i>				
	2000-2007				
	4.1	4.2	4.3	4.4	4.5
<i>gdpeap</i>	0.0000219 (1.33)	5.48E-06 (0.93)	-	-	-
<i>sxp</i>	-2.868 (-0.59)	-	1.453 (0.97)	-	-
<i>pg</i>	-	-	-	0.035 (0.21)	-
<i>sx</i>	3.350 (0.99)	-	-	-	0.242 (0.3)
Constant	0.624 0.190	1.217 0.000	0.947 0.028	1.276 0.000	1.185 0.004
Adjusted R 2	0.036	-0.019	-0.010	-0.158	-0.149
F	0.451	0.387	0.371	0.843	0.773
No of observations	8	8	8	8	8

Data in parenthesis is t-statistic

In the analysis shown we used period from 2000 to 2012. But considering that years from 2008 to 2012 are associated with financial crisis and global recession it may be the case that economic performance in Russian differed before and after crises in terms of factor influence. We also know that the biggest gain in natural resource prices happened before the crisis while they sharply fell right after. Consequently, before the crisis dependence of economic growth on exports may be higher. In order to validate this we run regression for periods 2007-2012 and 2008-2012. In the second case number of years is too small to obtain any reliable results so we run only individual regressions. In case of 2007-2012 we take population growth out of the analysis. Data for these regressions are presented in table 4.

The idea that other factors influenced performance of the Russian economy gets further evidences. Even during boom years Russian export was not the most significant source of growth, as shown in the results in Table 4. Regression results for the period 2008-2012 in table 5 imply that exports of resources acquired more significance during Great Recession when impact of other possible sources of growth decreased.

Table 5 Association between growth and exports, population growth, 2008-2012

dependent variable	<i>gr_gdpeap</i>			
	2008-2012			
	3.1	3.2	3.3	3.4
<i>gdpeap</i>	0.0000331 (1.27)	-	-	-
<i>sxp</i>	-	15.139 (3.09)	-	-
<i>pg</i>	-	-	0.290 (0.59)	-
<i>sx</i>	-	-	-	14.890 (5.19)
Constant	0.394 0.540	-1.964 0.143	1.049 0.006	-2.913 0.033
Adjusted R 2	0.131	0.682	-0.194	0.867
F	0.295	0.054	0.595	0.014
No of observations	5	5	5	5

Data in parenthesis is t-statistic

V Possible explanation

By doing OLS regressions we could not receive enough evidences that export served as a major factor for economic growth in Russia in 2000's. In fact OLS regression showed that share of primary goods export in GDP obtained significant results but the adjusted R-squared of the specification was below 0.30. Considering that this is a time-series analysis, this R-squared is surprisingly low it becomes apparent that some other factor could have impact over economic growth. In terms of less dependence on exports and exports of natural resources impact on the Russian economy our findings support results Beck, Kamps and Mileva (2007), who show that after

2002 dependence of GDP on oils has somewhat diminished, or 'GDP growth de-coupled from oil prices' (Beck, Kamps and Mileva, 2007, p. 9). Several plausible explanations can be offered. It may be the case that likewise in USA, Japan, UK and Germany strong industrial sector in Russian economy may diminish an overall effect of exporting activity on economic growth (Marin 1992). Another factor could be influence of imports. Effect of 'delayed consumption' and underdeveloped consumer market increased a propensity to consume in Russian population. Because of downturn in 1990's and low level of income Russian could not enjoy benefits of the open market. But rising income in 2000's allowed them to spend more on imported and non-tradable goods. Moreover, rising level of globalization and increased market access caused changes in consumer demands many of which could not be satisfied by home businesses. This could be an additional source of growing imports and their increased impact on economic growth. Evidences obtained by Kuboniwa (2010) provide supportive argument in favor of the bigger role of imports.

One more thing that should be taken into account is the influence of trade openness on incomes of population. According to theory of international trade after countries open to trade wages at home will begin readjusting until they reach an international level. This aspect of economic growth was investigated in 1994 by Sala-i-Martin who wrote that 'economies with lower levels of per capita income tend to grow faster in per capita terms' (Sala-i-Martin, 1994, p. 9). He calls this process 'concept of convergence' (or β -convergence). Another convergence that was happening in Russia is convergence of regional labor markets leading fast growth of income in poor regions allowing them to grow out of 'poverty traps' (Gurieva, Vakulenko, 2013, p. 28).

Lastly, increased export of natural resources could have an impact on the Russian economy through other mechanism like increased technological complexity. Drilling in Russia demands advanced technologies due to more complex environment and weather conditions. Pressure to increase export production coupled with high level of outdated technologies that needed to be substituted induced companies to introduce new technologies. They also allowed to make the process less labor intensive which means that there were limits to gains in employment by the sector. Also, as Torvik points out, there is a room for doubt whether export of resources causes economic growth or on the contrary economic growth induced more resource exports. In 1985 Jung and Marshall in time series results for a sample of 37 countries exploring a question of causality between export growth and growth in GDP proposed a conclusion that 'statistical evidence in favor of export promotion is not as unanimous as was previously thought' (Jung and Marshall, 1985: 11).

In case of recourse abundance many things depend on institutions (Mehlum, Moene, Orvik, 2005). This aspect was hardly investigated for Russia. It is still unclear to what extent government redistributive mechanism influenced the general performance. It is important to find an 'optimal growth' path and 'optimal spending of resource wealth' (Matseny, Torvik, 2003) that does not make resource exports and possible lower growth rates a problem in itself. All these questions that are not easy to answer mean that more research is necessary to understand the nature of economic growth in contemporary Russia and its relations to foreign sector and exports of resources.

VI Conclusion

We could have found statistically significant relationship between natural resource export and economic growth in Russia for 2000-2012, but the explaining power of percentage share of resource

exports on growth is only limited. Regression results do not also support the assumption that high growth rates that exceeded 7% in before the crisis could be attributed to increased natural resource exports that was a result of growth in resource prices. Effect of resource exports did take place since share of primary exports in GDP obtained the biggest statistical significance among all the variables in regression. Empirical calculations in this work are of exploratory nature and need further verification. Nevertheless we can draw three possible inferences from the results obtained. First, it is possible that import played a bigger role in positive economic dynamics in Russia in 2000-2012 due to the effect of delayed consumption and increased level of liberalization of the Russia's domestic market.

Second it is also conceivable that high growth rates were possible thanks to convergence process that took a two-way path in Russia. There was a rapid conversion of average income of Russian population with average income in advanced countries. Also conversion was happening inside Russia due to closing the gap between poor and wealthy regions. Third, we cannot exclude the possibility that exports, especially natural resource exports, could have affected growth through other mechanism like introduction of new technologies and increased productivity in resource sector.

Of course, statistical relationships between exports and growth in Russia need further exploration because there are still untapped areas exploration of which will produce that could change our perception of this period in Russia's economic history. It still remains unclear to what extent government redistributive mechanism of gains from resource exports influenced economic performance. It could be the case that higher wages in government-related sectors induced workers to leave other sectors, for example manufacturing, thus hindering their development and adversely affecting foundations of sustainable growth.

References

- Ahrend, R., de Rosa, D. and Tompson, W. (2007) 'Russian manufacturing and the threat of 'Dutch Disease'. A comparison of competitiveness developments in Russian and Ukrainian industry.' OECD. Economics department working papers No.540 ECO/WKP68 25-Jan-2007
- Algieri, B. (2004) 'Price and Income Elasticities of Russian Exports.' *The European Journal of Comparative Economics*, Vol. 1, n. 2, pp. 175-193.
- Algieri, B. (2011) 'The Dutch Disease: evidences from Russia.' *Econ Change Restruct* 44, 243–277.
- Baland, J-M., Francois, P. (2000) 'Rent-Seeking and Resource Booms.' *Journal of Development Economics*, Volume 61, Issue 2.
- Balassa, B. (1978) 'Exports and economic growth: Farther evidence' *Journal of Development Economics* 5, 181 -189.
- Beck, R., Kamps, A., Mileva, E. 'Long-term growth prospects for the Russian economy.' European Central Bank NO 58, 2007.
- Borkó, T. (2007) 'The suspicion of Dutch disease in Russia and the ability of the government to counteract.' *ICEG European Center Working Paper Nr. 35*.
- Canning, D. (2011) 'The Causes and Consequences of the Demographic Transition.' PGDA Working Paper No. 79.
- Corden, W.M. and J.P. Neary (1982). Booming sector and de-industrialisation in a small open economy.
- Covi, G. (2013) 'A case study of an advanced Dutch disease: The Russian oil.' *MPRA Paper No. 46670*.
- Dobrynskaya, V., Turkisch, E. (2009) 'Is Russia sick with the Dutch disease?' *CEPII, WP No 2009-20* economy, *Economic Journal*, 92, 825-848.
- Greenaway, D., Morgan, W., Wright, P. (1999) 'Exports, export composition and growth.' *The Journal of International Trade & Economic Development: An International and Comparative Review*, Vol 8, n.1, 41-51.
- Guriev, S., Vakulenko, E. 'Internal migration and interregional convergence in Russia.' Working paper. Available at: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2200539
- Gylfason, T., Herbertsson, T.T., Zoega, G. (1999) 'A mixed blessing: natural resources and economic growth.' *Microeconomic Dynamics* 3, 204-225.
- Henriques, I., Sadorsky, P. (1996) 'Reviewed Export-Led Growth or Growth-Driven Exports? The Canadian Case.' *The Canadian Journal of Economics / Revue canadienne d'Economie*, Vol. 29, No. 3, pp. 540-555.
- Jung, W. and Marshall, P. (1985) 'Exports, growth and causality in developing countries'. *Journal of Development Economics* 18, 1-12.
- Kavoussi, R. (1984) 'export expansion and economic growth: further empirical evidence'. *Journal of Development Economics* 14, 241-250.
- Krugman, P. (1987) 'The narrow moving band, the Dutch Disease and the competitive consequences of Mrs. Thatcher on trade in the presence of dynamic scale economies.' *Journal of Development Economics*, 27, 41-55.
- Kuboniwa, M. (2010) 'Diagnosing the "Russian Disease". Growth and Structure of the Russian Economy Then and Now.' *RRC Working Paper Series No. 28*.
- Marin, D. (1992) 'Is the export-led growth hypothesis valid for industrialized countries?'

Review of Economics and Statistics 74, 678-688.

Matseny, E., Torvik, R. (2003) 'Optimal Dutch Disease.' Department of Economics, Norwegian Institute of Science and Technology, Working Paper Series No. 1/2003 Available at: <http://ntnu.diva-portal.org/smash/get/diva2:126114/FULLTEXT01>

Mehlum, H., Moene, K., Torvik, R. (2006) 'Institutions and the resource curse.' *The Economic Journal*, Volume 116, Issue 508, p. 1–20.

Michaely, M. (1977) 'Exports and growth: an empirical investigation.' *Journal of Development Economics* 40, 49-53.

Oomes, N., Kalcheva, K. (2007) 'Diagnosing Dutch Disease: Does Russia Have the Symptoms?' *IMF Working Paper WP/07/102*

Robinson, J., Torvik, R., Verdier, T. (2006) 'Political Foundations of the Resource Curse.' *Journal of Development Economics* 79, p. 447-468.

Roland, G. (2005) 'The Russian Economy in the Year 2005.' Mimeo. Berkeley:

Sachs, J., Warner, A. (1997) 'Natural resource abundance and economic growth.' Center for International Development and Harvard Institute for International Development Harvard University. Available at: http://www.cid.harvard.edu/ciddata/warner_files/natresf5.pdf

Sala-i-Martin, X. (1994) 'Cross-Sectional regressions and the empirics of economic growth'. NBER, Economics working paper 79.

Torvik, R. (2009) 'Why do some resource-abundant countries succeed while others do not?' *Oxford Review of Economic Policy*, Volume 25, Number 2, pp.241–256

University of California at Berkeley.

van der Marel, E. and Dreyer, I. (2012) 'Beyond Dutch Disease: When Deteriorating Rule of Law affects Russian Trade in High-Tech Goods and Services with Advanced Economies.' *European Centre for International Political Economy, Working paper*. Available at: <http://www.ecipe.org/publications/beyond-dutch-disease-when-deteriorating-rule-law-affects-russian-trade-high-tech-goods-and-services-advanced-economies/>

Wijnbergen, S. van (1984) 'The Dutch Disease: A disease after all?' *Economic Journal*, 94 (373), 41-55.

Other sources

Central Bank of Russia www.cbr.ru

Federal State Statistical Service of the Russian Federation www.gks.ru

Служба государственной статистики РФ. Промышленность России, 2012

UNCTADStat, 2013