ETLA
ELINKEINOELÄMÄN TUTKIMUSLAITOS
THE RESEARCH INSTITUTE OF THE FINNISH ECONOMY
Lönnrotinkatu 4 B 00120 Helsinki Finland Tel. 358-9-609 900
Telefax 358-9-601 753 World Wide Web: http://www.etla.fi/

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Sergey Sutyrin – Vladimir Sherov

RUSSIAN REGIONS AND THEIR FOREIGN TRADE

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ABSTRACT: For large, sparse and heterogeneous Russia, regional aspects are of utmost importance. Russian economy is becoming more open, but this process goes unevenly, aggravating existing disparities among regions. The goal of this paper is to examine diversity of Russian regions and its relationship with regions' foreign trade. We start with the general overview of Russian regional structure, examine commodity structure and geography of foreign trade by federal districts of Russian Federation and discuss the factors influencing foreign trade patterns of specific regions. Regression analysis is used for explaining regional import per capita and for testing dependence of incomes on foreign trade. Significance of export incomes for regions, special role of Moscow, St. Petersburg and Kaliningrad in import flows and low correlation between regional export and import are among the main conclusions.

Keywords: Russia, regional diversity, import intensity, custom, price level, incomes and expenditures per capita.

1. General overview of Russian regions

Russian Federation currently consists of 88 administrative units of several types: 49 provinces, 21 republics, 9 autonomous districts, 6 krays, 1 autonomous province, and two cities of federal significance, namely Moscow and St. Petersburg. Starting from 2000 Russian regions are integrated into 7 federal districts (FD) according to geographical location (see Table 1). Being open to certain criticism this criterion still makes sense and can be adopted, since it is the geography that provides background for many differences, while neighboring regions are often more homogeneous than distant ones[1].

Table 1. **RUSSIAN ADMINISTRATIVE DIVISION: FEDERAL DISTRICTS**

	Federal district population, 2003		GRP[2] by federal district, %
	mln.	%	
Central	36.2	25.3	32.9
North-west	14.1	9.9	9.6
South	21.4	15.0	7.8
Volga	31.4	22.0	17.9
Ural	12.5	8.7	15.4
Siberia	20.4	14.3	11.3
Far East	7.0	4.9	5.0
Russian Federation	143.1	100.0	100.0

Source: *Regions of Russia. Social and economic indicators 2003. Moscow, 2003 (in Russian).*

FDs have neither own budgets, nor representative authorities. They have been introduced as an intermediate body of administration and control, alleviating interaction between federal center (President of Russian Federation) and 88 regions with their governors. Each federal district consists of several administrative units ("subjects of federation"), ranging from 6 in Ural FD to 18 in Central FD. One can hardly speak about different economic policy or institutional environment at the level of federal districts – their heads have limited power, largely transmitting to regional policymakers the policy of President Putin. Under the circumstances within the framework of our discussion FDs are mostly a comfortable way to present Russian regional variety in a nutshell.

In contrast to federal districts, regions are the real agents of fiscal, structural and social policy. They levy local taxes, invest in local infrastructure, provide subsidies to enterprises, legislate local social transfers, supplement federally mandated transfers, and provide housing and utility subsidies to the households. In addition to that, authorities in certain regions employ several quasi-legal methods of impeding free movement of capital, goods, services and labor (Yemtsov, 2002, p.10*).* Russian regions vary greatly indeed, sometimes even within the same FD. Examples below clearly illustrate the variety of Russian administrative units (see Table 2). Median territory of the region is 70 th.sq.km (similar to that of the Netherlands). At the same time, in case of specific "subjects of federation" it differs from 5-7 th.sq.km (small ethnic autonomies in Northern Caucasus – Ingushetiya, Adygeia, Northern Ossetia , not to mention Moscow and St.Petersburg) – up to 3.1 mln.sq.km (Saha – Yakutia): 500 times difference (see the map –

[1] Canadian geographers (Boots, 2002) tried to compare several numerical taxonomy approaches to group Russian regions. They used about 50 parameters, and their results were quite similar to existing administrative division with 7 federal districts.

[2] GRP – Gross Regional Product.

Annex 1). Almost the same is relevant to the difference in population density. Population *per se* also varies greatly. The least populated and the smallest "subject of federation" in economic terms, Evenkiya autonomous district, albeit being among the largest by its territory, is inhabited by 18 thousand people only and has GRP equal to less than 1 bln. RUR. In addition to that 32 units (most of them – ethnic) are populated by less than 1 mln. people each. At the other pole there are city of Moscow (officially 8.5 mln.) as well as Moscow province (6.5 mln.). 9 other provinces and city of St.Petersburg have 3-5 mln. inhabitants. The list of the most populated units more or less coincides with the list of the wealthiest ones. City of Moscow is the wealthiest region with 8.5 mln. official inhabitants and 1.6 trln. RUR GRP.

Provinces are less differentiated than regions as a whole. They, with few exceptions, are inhabited by 1 - 4 mln.people and their GRP varies from 16 to 260 bln. RUR. Republics, established in Soviet times according to the ethnic principle, show a greater dispersion of indicators. In general, they are smaller by population than the provinces, and their inhabitants have lower per capita income, with important exception of Tatarstan and Bashkortostan. Autonomous districts (AD) which formally belong to provinces or krays[3], occupy both opposite ends of Russian regions' scale. Six out of nine AD are the smallest and poorest among administrative units, but other three, namely Khanty-Mansijsky, Yamalo-Nenetsky and Nenetsky autonomous districts, belong to the richest. First two of them extract the main part of Russian oil and natural gas. Nevertheless we shall omit autonomous districts in further calculations in order to escape double counting: their data are included in statistics for provinces and krays, to which they belong[4]. Nowadays the process of AD integration into their mother-units "subjects of federations" is underway. In 2003 Komi-Permiatsky AD rejoined Perm' province, and in April, 2005 citizens of Evenkyia AD, Taimyrsky AD and Krasnoyarsk kray approved at the referendum their reunification in one administrative unit – Krasnoyarsk kray. Chechnia rep. is neither considered here because reliable statistics is unavailable. All in all, that leaves us with just 78 regional data for the analysis.

More than that, in some cases city of Moscow is also excluded from the calculations in order to get more adequate picture of the ordinary regions. The point is that the capital plays a very special role in Russian external economic relations. Substantial part of national export and import operations are arranged and registered in Moscow city. In case of export it is often just the matter of registration: nor oil is extracted there. Meanwhile giant oil extracting companies have their head-quarters in the city. In the case of import Moscow dominance looks more natural. Substantial part of deliveries from abroad is directed there, gets registration in Moscow or Moscow province customs and later on is distributed all around Russia by wholesale companies. To some extent it is also true in the case of St.Petersburg and several other sea ports: Kaliningrad, Murmansk, Vladivostok (Primorsky kray), Novorossiysk (Krasnodar kray). Import attributed to other regions reflects that part of import flows which is registered in local customs. It means that real scale of consumption of imported goods in regions is higher than official foreign trade statistics might suggest. Tyumen province is also excluded from some calculations to escape the bias.

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[3] Kray initially was introduced as a term for the provinces with ethnic autonomies inside. After the collapse of the USSR autonomies have gotten more legal rights and economic prerogatives, some of them raised their status and are listed separately from krays.

[4] The following example shows one more reason for excluding ADs from the data set. Export of Taimyrsky AD is 21 times larger than its GRP. Explanation is simple: Dudinka port (AD' capital) is the main transportation gate to Norilsky nickel giant plant, but the plant and the whole city of Norilsk is excluded from Taimyrsky AD statistics (though comprise a main source of its budget receipts).

Table 2. **DISPERSION OF RUSSIAN REGIONS' INDICATORS**

	Lowest	Highest	Average	Median	Standard deviation
Population, th.	18 (Evenkyia AO)	8533 (Moscow city)	1635.5	1233.2	1487.3
Territory, th.sq.km	7 (Adygeya rep.)	3103 (Yakutiya - Saha rep.)	232	69.5	460.6
GRP, bln. Rubles	0,9 (Evenkyia AO)	1622,6 (Moscow city)	97.8	43,9	200,9
Expenditures per cap, rubles	498 (Ust-Ordynsky AO)	17199 (Moscow city)	3057	2730	2053
Income per capita, rubles	1150 (Ingushetia rep.)	14906 (Moscow city)	30609	2893	2387

Calculations based on data from Regions of Russia. Social and economic indicators 2003. Moscow, 2003.

Comparison of the population number and GRP shows that more populated units tend to have larger GRP per capita. But it is not the result of economy of scale. The reason is that cities where large industrial plants have been constructed have become more populated, as well as their administrative units. It happened, e.g., in Ekaterinburg, Samara, Cheliabinsk, Nizhny Novgorod provinces, in Tatarstan and Bashkortostan republics.

Regions' classification and uniting in groups can be made by numerous criteria: administrative/ /geographic, demographic, by endowment with mineral resources, by GRP and per capita economic indicators, by deficit/surplus of regional budget and, hence, degree of dependence on federal subsidies, by growth rates and investments climate, by intensity of foreign trade relations. Here we touch some of these criteria, more relevant to the topic of the present paper.

Since internationally Russia is, first of all, an oil and natural gas supplier, it is worth to list main oil and gas producing regions of the country – they have meaningful similarities in different aspects, including foreign trade (Table 3). It is easy to notice that Tyumen region is the main producer of both kinds of hydrocarbon fuels: it extracts 2/3 of all oil and 90% of natural gas. Such unique position affects many indicators of this region, making it atypical; thus it has to be

Table 3. **MAIN OIL AND GAS PRODUCING REGIONS OF RUSSIA, %**

Oil (gas condensate included)		**Natural gas**	
Region	Production, %	Region	Production, %
Tyumen province, incl.	67,0	Tyumen province, incl.	90,8
Khanty-Mansiysky AO	55,3	Yamalo-Nenetsky AO	87,3
Yamalo-Nenetsky AO	11,4	Khanty-Mansiysky AO	3,5
Tatarstan rep.	7,6	Orenburg	4,0
Others	25,4	Others	5,2
Russia	100,0	Russia	100,0

Calculations based on data from: Regions of Russia. Social and economic indicators 2003. Moscow, 2003

excluded from statistical analysis in some cases. Natural gas production is very concentrated regionally. Among other regions only Orenburg and Astrakhan supply substantial (export significant) quantity of this fuel; in near future Sakhalin will also become important gas producer, and liquefied natural gas (LNG) from the newly built plant will be exported to Japan. In contrast to natural gas, oil production is more dispersed among regions. About 15 regions are extracting more than 1 million ton of oil a year and are engaged in its export. Some others (Leningrad, Irkutsk provinces) have refineries and export fuel as well.

Differences in *per capita indicators* across Russia are in a way similar to per capita difference among EU25 countries. The diagram (Fig.8) illustrates the situation clearly enough. Shocking six-fold gap between Moscow city and the rest of Russia is the first and main peculiarity. Tyumen is also high above the average, but here the gap is less shocking. In addition to that variation within the main group of regions is substantial: from 400 USD per capita incomes in Ingushetiya rep. and 600-700 USD in Kalmykiya, Dagestan (all – South), Mariy-El and Chuvash republics (Volga) and Ivanovo province up to 2000-2600 USD in some regions of North and far East: Sakha-Yakutiya rep., Magadan; Sakhalin, Murmansk, Komi rep. (all data without PPP-correction). To certain extent difference in per capita indicators could be explained by *price variation* among the regions (see Table 4). But even after adjustment[5] income dispersion remains immense (see Annex 4).

Table 4. **PRICE LEVELS VARIATION AMONG AND WITHIN FEDERAL DISTRICTS**

2003, end of the year	Consumer basket cost, USD /month	In per cent to average cost	Difference within district,% to district's average	
			Min	Max
North-west	134.0	105	84	161
Central	134.9	106	80	155
South	115.7	91	83	95
Volga	115.6	90	83	102
Ural	131.0	103	91	151
Siberia	125.2	98	84	164
Far East	170,4	133	105	219
Russia	127.8	100	**80**	**219**

Calculations based on data from Regions of Russia. Social and economic indicators 2003. Moscow, 2003 (in Russian).

Higher incomes induce higher prices – the so called Balassa-Samuelson effect (Juselius, 2003). There is positive correlation between price level and per capita GDP in OECD countries (OECD, 2000 - see Annex 2-3). Russian regions show similar relationship , though a less pronounced one. Correlation coefficient between consumer basket cost and GRP per capita is 0,57. But in specific conditions of Russia, distance explains a lot of price level variations, at least for Far East, Siberia and part of Ural federal districts. Expensive transportation of goods to remote regions increases the cost of consumer basket in these parts of Russian Federation. For European part of Russia Balassa-Samuelson effect is traced in a more pure way. It can be seen from linear regression, based on data for 56 regions of European part of Russian federation:

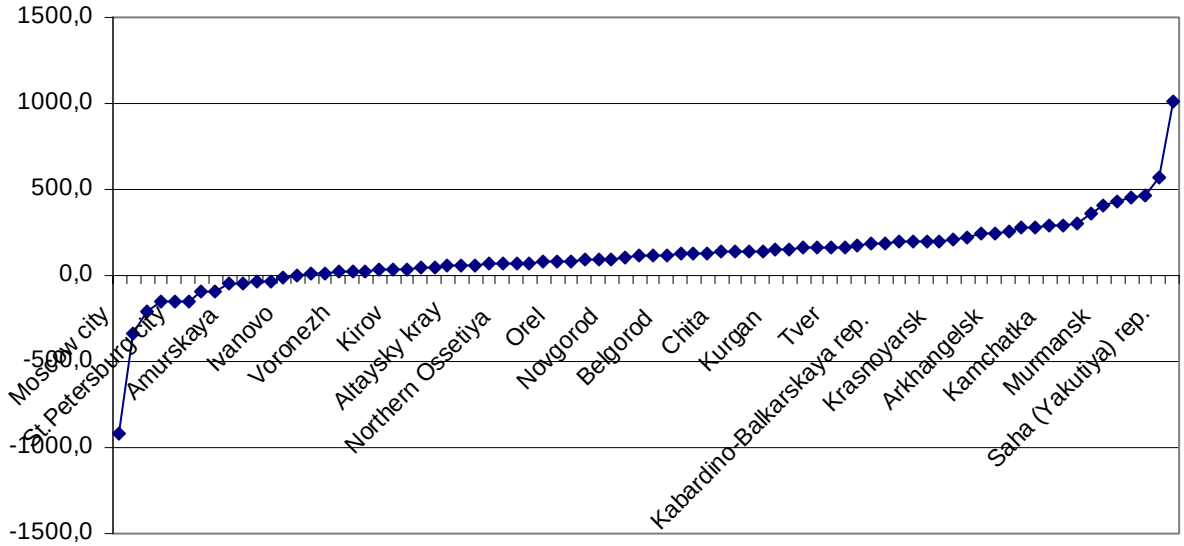
[5] Regional nominal incomes were deflated by relative levels of consumer basket cost.

PriceConsBasket = 1234.9 + 0.25*IncomePC
t-statistics *(38.1)* *(10.8)*
Fisher criterion *R2= 0.69* *F=117.0*

Where
PriceConsBasket is cost of consumer basket, USD per year,
IncomePC is incomes per capita, USD per year

One more interesting feature of Russian regions is *discrepancy between incomes and expenditures* (both nominal) (see Fig.1). If we arrange regions according to the incomes-expenditures balance ascending order, three groups of regions can be separated out. While in an average region of Russia incomes and expenditures plus savings do not differ from each other, there exist two groups of regions, where balance of these two variables is far from zero. On the one hand, expenditures exceed incomes in Moscow (15% difference or 1000 USD per year) and, to lesser extent, in Novosibirsk, St.Petersburg, Samara province, in Krasnodar, Stavropol, Primorsky krays (left side of the diagram – Fig.1). It is difficult to escape the temptation to look for hidden incomes in shadow sector of economy. But in fact there is one more explanation: many Russian citizens are shopping in capitals and big cities. Krasnodar and Stavropol krays are locations of the most preferred resorts, the similar role for inhabitants of North-East fulfill southern regions of Far East and Siberia; finally, a large number of people are coming to Samara region to buy cheaper Lada cars ex works in Toliatty. On the other hand, incomes far exceed expenditures in Tyumen, Magadan, Murmansk, Sakhalin regions, in Sakha (Yakutiya) republic, i.e. in remote regions of North and East of Russian Federation (right side of the diagram), where prices are much higher, and where many citizens tend to spend vacations in warmer southern parts of Russia and in capitals. Low income republics of North Caucasian region also show prevalence of incomes over expenditures, which look incredibly low. In this case high role of informal economy may be an explanation. Taking this into account, estimates of real incomes should be increased as well for this region.

Fig.1. BALANCE OF INCOMES AND EXPENDITURES PER CAPITA, USD/YEAR



Calculations based on data from Regions of Russia. Social and economic indicators 2004. Moscow, 2004

There are numerous explanations of incomes variation among regions of Russia by a set of researchers. Ruslan Yemtsov from the World Bank names groups of factors, explaining the regional trend in inequality: initial conditions, endowments of regions (determining production potential), policy frameworks, shocks and redistributive preferences. He also cites Fedorov (2002) who found that although regional inequality and polarization increased rapidly from 1991 to 1996, the increases leveled off in the late 1990s (Yemtsov, 2002). In this context endowment of natural resources is one of the main factors which occurred decades before transition. Its importance, however, increased in the situation of artificial openness in early 1990s, when private export of raw materials and intermediate goods became possible and highly profitable – at the cost of collapse of domestic production in many sectors.

The situation with divergence and polarization in Russia is the reflection of the more general trend of globalization period. Openness is beneficial for more competitive – firms, sectors, regions, countries, models of governance. It is not always a win-win game: quite often winner benefits at the cost of others. In the Russian case the above mentioned oil and gas producers were among relative winners (i.e. incomes of average people shrank not so drastically as in other regions), besides them regions where ferrous and non-ferrous metals producing plants and some of military plants were located to some extent also won: Vologda, Lipetsk, Tula, Cheliabinsk, Kemerovo, Krasnoyarsk, Irkutsk, Sverdlovsk provinces, Udmurtiya rep. among them. Losers included agrarian regions and regions with machine building and light industry prevalence. Ivanovo province may be the best example: famous for decades for its textile industry, it is now one of the poorest regions. The group of the poorest Russian regions also comprises South republics of Ingush, Karachaevo-Cherkessk and Dagestan, South Siberia (Chita province, Tyva and Altai republics) and several regions of the Volga Basin (Marii El, Chuvash and Mordova republics, Penza and Kirov province). Expected Russia's WTO accession can aggravate divergence trend. Experts of CEFIR group (Moscow), conducted a comprehensive analysis of probable consequences of Russia's WTO accession for different sectors and regions of the country. According to the study, the assumed one percentage point decrease of import tariffs for manufactured goods will lead to falling employment in manufacturing for 1% and more in Adygeya republic, Ivanovo, Kurgan and Jewish autonomous provinces, and fo 0 - 1% lose of workplaces in Karachaevo-Cherkessiya, Dagestan and Northern Ossetiya republics, Pskov, Kostroma and dozen more provinces and republics, most of them already belonging to poorest in Russia (Yudaeva, 2003).

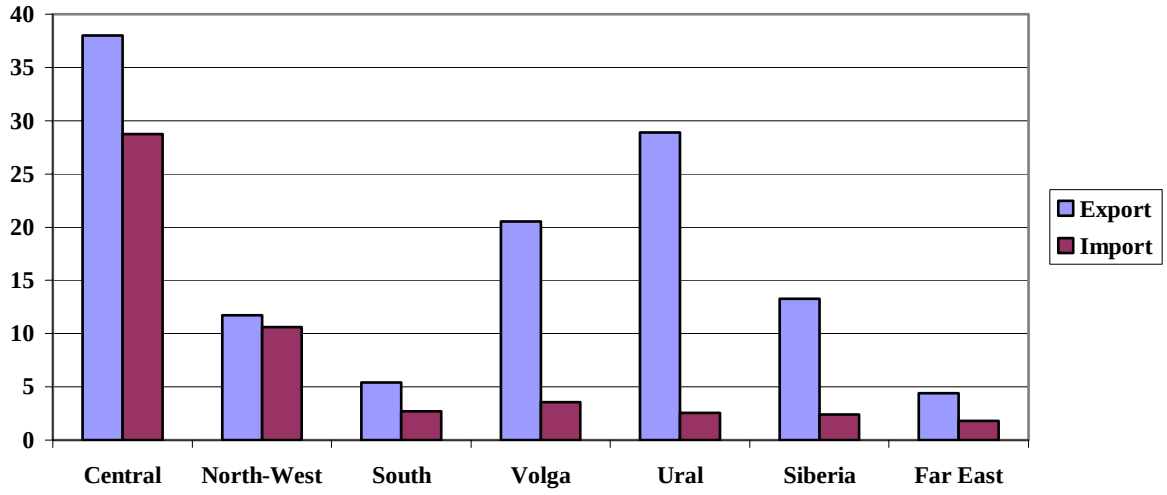
Of course, it would be wrong to accuse external factors and forces of aggravating all Russian problems. Russia has been a country of contrasts and contradictions for centuries: to see them today, one may compare wealth of Winter palace interiors in imperial capital St.Petersburg with lack of basic amenities in hundreds and thousands of rural places and bad roads all across Russia. Modern Moscow palaces and their owners repeat the tradition. Even in Soviet era famous for social orientation, in the 1970-s food stores in two capitals and in a handful of other privileged places were filled with goods while inhabitants of most of the cities and towns were getting meat and butter through card system of limited distribution. Older generation remembers so called "sausage" trains and buses, filled with those who came to Moscow or Leningrad to buy meat products for all relatives and neighbors. This situation is over, goods can be found everywhere, but income polarization emerged instead.

2. Regional dimension of foreign trade structure

In this part of the paper we examine regional distribution of Russia's foreign trade, factors affecting export and import intensity in regions of Russia and interaction between foreign trade and per capita incomes in regions.

Russian foreign trade is unequally distributed across federal districts and regions (see Fig.2 and Table 5 below). More than half of all export is attributed to Central and Ural federal districts. Nearly 28% of export is registered in Moscow and Moscow province. To some extent it is a statistical phenomena, because many big companies are registered in the Russian capital. The main exporting region within Ural district is Tyumen province (18% of Russian export) and more precisely, Hanty-Mansi (Jugra) autonomous district of Tyumen province – the main source of Russian oil (15%). Volga district with plenty of industrial enterprises and smaller oil fields gives 15% of the country export, it is followed by Siberian and North-west, accounting for about 10% and 9% correspondingly. South (4%).and Far East (3%) are lagging behind in this list.

Fig.2. EXPORT AND IMPORT BY FEDERAL DISTRICT IN 2003, USD bln.



Calculations based on data from *Regions of Russia. Social and economic indicators 2004. Moscow, 2004*

Regional break-up of import is also unequal, but somewhat different from export. Central Federal district attracts half of import flows, with Moscow accounting for 45%. The second largest (18%) is occupied by North-West, of which 14.1% is the share of St.Petersburg and Leningrad province). Other district's shares lay between 3 – 7%. Thus, concentration of import in capitals is evident.

Immense surplus is a striking feature of Russian foreign trade: export is more than twice larger, than import. Such difference exists in regions as well: Export is more than 5 times larger than import in Volga and Siberia districts and 11 (!) times larger – in Ural district (Table 5, Fig.3). Naturally, it means that main part of export earnings does not come back to the region of export: it is partly captured by export duties and taxes, partly remains abroad, staying on personal bank accounts or being used for purchasing real estate in Western Europe. Part of money, returning to the region of export is adding to local money base and put on USD or Euro bank accounts, part is sold at currency exchange and bought by Bank of Russia to increase hard currency reserves, part is used for payments in real estate market, which is still dollarized in Russia., What development might lead to increasing use of export incomes to imports? Answer may be the

following: overcoming dollarization via lower inflation rate, strengthening of the Rouble and of people's confidence in their national currency, WTO accession, and redistribution of incomes from oligarchs to average citizens through natural rent taxation. Improving investment climate for business in Russia is necessary to solve the problem of capital flight (though two last points are somewhat controversial).

Table 5. **EXPORT AND IMPORT STRUCTURE BY FEDERAL DISTRICT IN 2003**

Region	Export, %	Import, %	Export/Import, times
Russian Federation[6]	100,0	100,0	2,3
Central	28,5	50,0	1,3
Incl. Moscow - city and province	22,2	34,3	1,5
North-West	8,8	18,4	1,1
South	4,0	4,7	2,0
Volga	15,4	6,2	5,8
Ural	21,6	4,4	11,3
Siberia	10,0	4,1	5,6
Far East	3,3	3,1	2,5

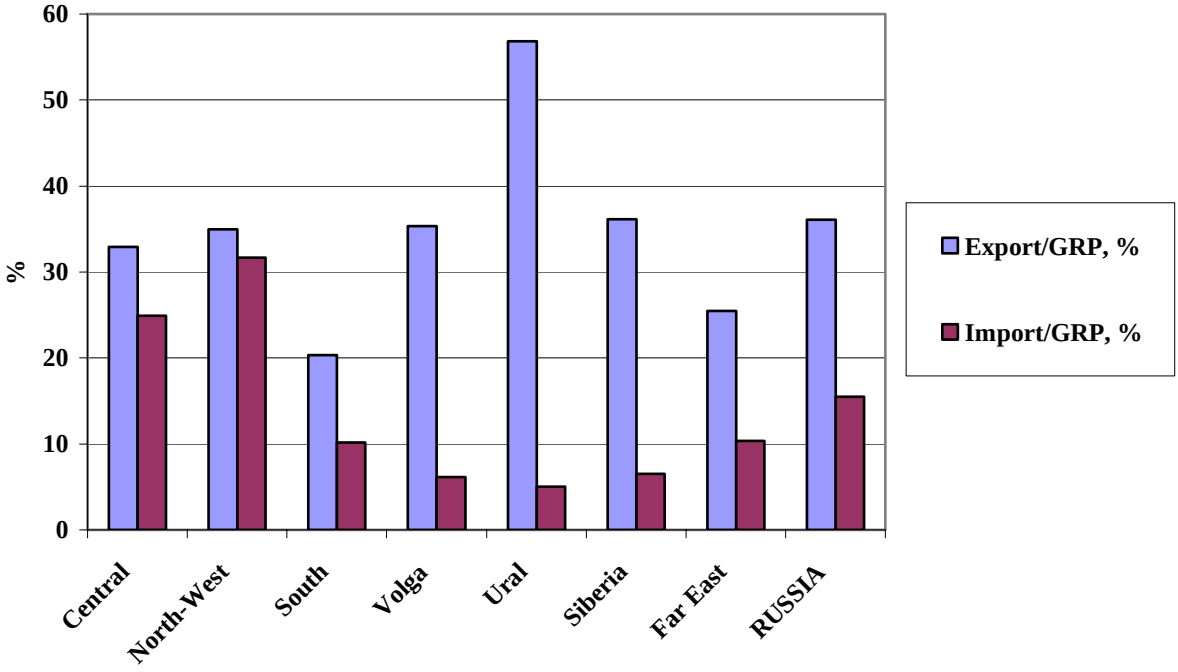
Calculations based on data from Regions of Russia. Social and economic indicators 2003. Moscow, 2003.

Import and export share in GDP is the most common measure of economic *openness* of a country. Similar indicators may be used for measuring regional dependence on foreign trade. We keep in mind natural limitations of such an approach, caused by low quality of regional statistics of foreign trade. Nevertheless, we assume that distortions do not affect general picture. Export and import openness can differ greatly on the regional level - there is no problem of balance of payments, and hard currency can be bought easily. The case of Russian regions proves this fact (Fig.3). The extent of export openness (export/GRP ratio) varies from 1% (Tyva rep., Kabardino-Balkariya rep.) to 81% (Leningrad province'); import openness (import/GRP ratio) varies from 0,1% (Ingushetiya rep.) to 151% (Kaliningrad). Correlation between these two indicators is close to zero (see Annex 5). On the level of federal districts we can say, that it is necessary to distinguish export openness and import openness. Ural is the most export oriented district (57% of GRP), South – the least one (20%). Import openness varies from 5-7% of GRP (Volga, Ural, Siberia) to 32% (North-West) (Fig.3).

Of course, difference in relative openness exists within districts. The OECD Economic Survey in 1995 described two kinds of economic orientations among the ***regions: extrovert and introvert***. Extrovert regions, according to the Survey authors include resource-rich regions in sparsely populated northern regions of European Russia and Siberia, and major commercial centers and major points of entry (Moscow, St. Petersburg, Arkhangelsk, Astrakhan, Kaliningrad, Khabarovsk, Murmansk, Nakhodka, Rostov, and Vladivostok). Introvert regions include those that are dominated by the military-industrial complex (parts of central European Russia and the Urals) and agro-industrial regions, which have both an industrial base and self-sufficiency in food production (parts of central European Russia and southern Siberia) (OECD, 1995, pp. 52-54). This grouping is still adequate 10 years since it has been made.

[6] Sum of Federal district's export and import is not equal to figures, related to Russian Federation total export and import from the same source (*Regions of Russia. Social and economic indicators 2003. Moscow, 2003*). The latter figures are 106154.3 for export from RF, 46153 for import to RF. Omission of $10 bln. might be explained by miscounting of foreign trade operations with Belarus (customs statistics on this direction does not exist since formation of customs union).

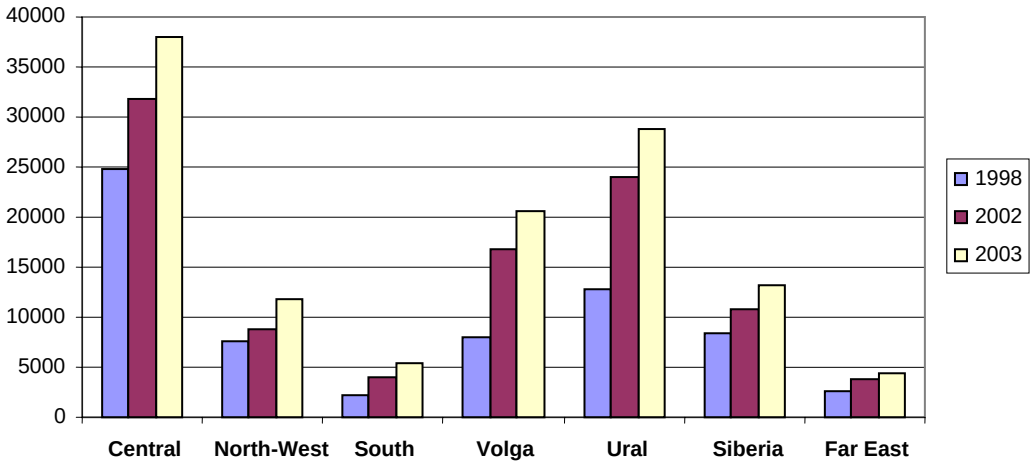
Fig. 3. OPENNESS OF RUSSIAN REGIONS, BY FEDERAL DISTRICT, 2003



Calculations based on data from Regions of Russia. Social and economic indicators 2004. Moscow, 2004

There is no clear relation between regional import and regional export in Russia: correlation of absolute figures is 0,77, but on a per capita basis it is only 0,35. For nearly all regions import does not exceed 40% of GRP, while export/GRP ratio in 19 cases lies between 40 and 85%. High export intensity is typical for regions with oil extraction or refining and for regions where metallurgy plants are located; wood plays similar role for republic of Karelia (see Table 5).

Fig. 4 . **VALUE OF EXPORT BY FEDERAL DISTRICTS OF RUSSIA, 1998-2003, USD mln.**



Calculations based on data from Regions of Russia. Social and economic indicators 2004. Moscow, 2004.

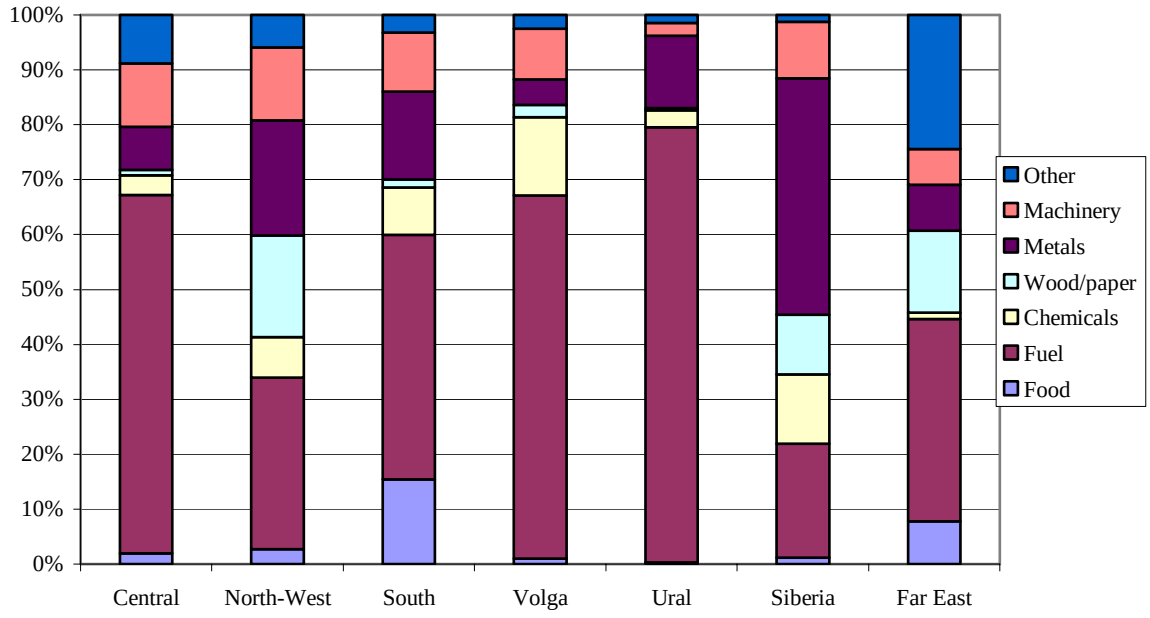
Analysis of regional break-up of export in general does not deserve complicated methods. Export intensity is explained by oil and gas extraction, ferrous and non-ferrous metals production. Regional export is highly correlated with the production intensity of joint ventures (correlation coefficient for 2002 is 0,81). Value of export is growing since 1998 in all federal districts, but it is predominantly explained by rising world oil prices. It is evident that the oil prices increase of 2004-2005, not reflected in the chart, only strengthened domination of Central, Ural and Volga districts in Russian export.

Table 6. **REGIONS WITH HIGH EXPORT/GRP RATIO AND THEIR SPECIALIZATION, AS IN 2002**

	Region	Export/GRP	Import/GRP	Sector share in region's export, %		
				Fuel	Metals	Wood & Paper
1	Leningrad	0,82	0,37	68,5	2,5	10,9
2	Lipetsk	0,71	0,15	1,3	95,1	0,0
3	Tyumen	0,69	0,03	99,3	0,0	0,1
4	Orenburg	0,68	0,14	77,3	13,6	0,1
5	Irkutsk	0,63	0,10	1,3	32,9	32,7
6	Vologda	0,56	0,08	0,8	69,3	9,4
7	Hakasia rep.	0,52	0,24	4,4	87,4	1,8
8	Samara	0,52	0,12	66,0	8,2	0,1
9	Moscow city	0,47	0,29	71,5	1,2	0,2
10	Karelia rep.	0,46	0,12	0,0	14,0	69,0

Calculations based on data from Regions of Russia. Social and economic indicators 2003. Moscow, 2003;

Fig.5. **EXPORT COMMODITY STRUCTURE BY FEDERAL DISTRICTS, 2003**

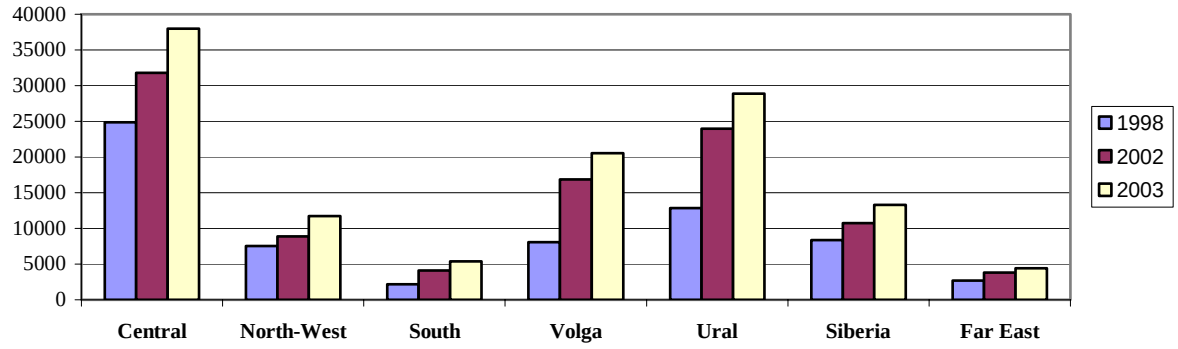


Calculations based on data from Regions of Russia. Social and economic indicators 2004. Moscow, 2004

Fuel is number one in export commodity *structure* of all federal districts, except Siberia, where metals (aluminium, nickel, etc.) constitute nearly half of export shipments. Chemicals are important part of export in Volga, South and Siberia, while wood and paper products are important items for North-West, Far East and Siberia. Food remains a visible item in the export from the Far East (fish); during last years it has become important also for the South (grain, oilseeds). Machinery represents 5-10% of export nearly in all districts, but its main amounts originate from Central, Volga and, to lesser extent, from North-West and Siberia.

Import, according to Russian official statistics, is distributed extremely unevenly among regions (Fig. 6, Table 5). Such disproportion deepens further: since 1998 import to Central district grew 44% and to North-West - 77%, while import to other districts remained constant or even decreased (in Siberia). Besides statistical reasons and increasing container traffic around Asia, making St.Petersburg a new gate for Chinese, Korean and Japanese goods, we should see other reasons of such controversial development. Stagnation of import to most of Russian regions reflects the import substitution effect of Ruble devaluation in 1998 and consecutive overcoming of excessive openness of the first period of market transformation (1992-1998). During that period Russian export and import grew instead of falling GDP and incomes. Now industrial production and incomes grow, and domestic production substitutes imported goods. But this process is not equally present throughout the country. Citizens of capitals tend to turn back to import again thanks to their higher incomes. It is reflected by maximum levels of computer and mobile phones penetration, higher density of imported cars, etc.

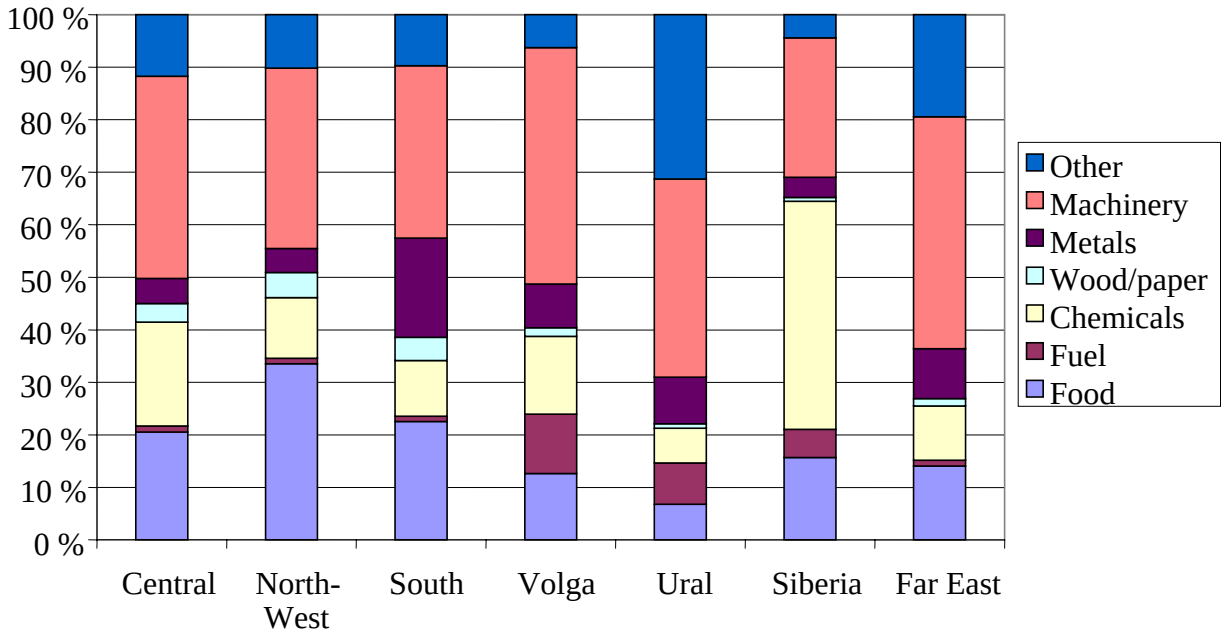
Fig. 6. VALUE OF IMPORT BY FEDERAL DISTRICTS OF RUSSIA, 1998-2003, USD mln.



Calculations based on data from Regions of Russia. Social and economic indicators 2004. Moscow, 2004

Russian import is much more complicated by structure than export, and so is regional export as well (Fig.7). But commodity structure of import does not vary greatly throughout Russia. Machinery for commercial and consumer purposes constitutes 35-45% of import volume in all regions, except Siberia, where chemicals (bauxites as a raw material for production of aluminum included) are ranking first. Thanks to slow, but constant recover of agriculture, share of food in import is decreasing by 1 percentage point a year down to 20% for Russia as a whole, but in North-West it comprises still one third of all import. Metal products, brought from neighboring Ukraine, cover about 20% of import of the South, while fuel constitutes up to 10% of import to Volga and Ural (mainly coal and oil from Kazakhstan and natural gas from Turkmenistan, transited through Russian pipelines to Ukraine. Both cases prove once again that import statistics reflects mostly inflow registered by local customs rather than final demand for imported goods in particular region.

Fig.7. IMPORT COMMODITY STRUCTURE BY FEDERAL DISTRICTS, 2003



Calculations based on data from Regions of Russia. Social and economic indicators 2004. Moscow, 2004

Analysis of **import** statistics region by region shows that geographical location and industrial potential are the main factors, explaining scale of import and import intensity. Not surprisingly, large industrial populated regions – both capitals and their provinces, Sverdlovsk, Rostov, Tyumen provinces, Krasnodar and Primorsky krays - are leading in the list of importers; Belgorod is also in the list due to its location on Ukrainian border (Table 7). The list of leading regions by per capita import indicator includes mainly the same titles, but also some others, mostly border regions and regions with good investment climate. Small and poor Altay republic stays on the main road from west China, Orenburg borders Kazakhstan, Karelia borders Finland, Pskov borders Baltic states. Altay rep. and Kaliningrad have one common feature: import exceeds incomes, because these border regions fulfill transit function**.**

Table 7. **LEADING IMPORTING REGIONS, 2002**

	Region	Import, mln.USD	Region	Import per cap., USD.
1	Moscow city	15893,6	Moscow city	1862,6
2	St.Petersburg	4934,9	Kaliningrad	1677,3
3	Moscow province	3144,2	St.Petersburg	1081,1
4	Kaliningrad	1577,3	Altay rep.	766,1
5	Leningrad province	981,4	Leningrad province	597,8
6	Krasnodar	954,8	Moscow province	491,5
7	Sverdlovsk	771	Belgorod	408,0
8	Primorsky kray	758,8	Sahalin	403,5
9	Tyumen	740,1	Primorsky kray	359,8

Calculations based on data from Regions of Russia. Social and economic indicators 2003. Moscow, 2003

3. A quantitative analysis of determinants of foreign trade and income disparities by region

We have carried out a regression analysis to identify factors, which exert highest influence on regional per capita import (import PC). Following factors were used (all data – in USD per year):

GRPperCap – gross regional product per capita, USD;
INCOMEPC – incomes per capita, USD;
EXPORTPC – regional export per capita, USD;
EXPSAVPC- Expenditures and savings per capita, USD;
CBASK- Consumer basket cost, USD.

The results, using just those variables were insufficient, which may be explained by all above mentioned. To capture the biasing effect of companies' registration and of customs procedures concentration in several regions, the following dummy variables were introduced:
KALININ - (=1 for Kaliningrad, =0 for other regions);
NONCIS - NonCIS border dummy (=1 for regions, bordering non-CIS countries, except Mongolia, =0 for other regions);
CIS - CIS border dummy (=1 for regions, bordering CIS countries or Mongolia, =0 for other regions);
CAPIT- CAPITALS dummy (=1 for Moscow city and St.Petersburg, =0 for other regions)
PORT – non-isolated seaport dummy (=1 for regions with sea ports, having convenient transportation with other regions of Russia, =0 for other regions).

The Table 8 below reflects relative explaining power of some factors and their groups.

Table 8. **DETERMINATION COEFFICIENTS FOR VARIOUS SETS OF PER CAPITA IMPORT EXPLAINING VARIABLES**

Set of parameters	R Square	Set of parameters	R Square
Consumer BasketCost	0.10	Capitals	0.42
IncomePerCapita	0.22	Kaliningrad	0.30
Capitals+ConsBasketCost	0.48	Capitals+Kaliningrad	0.78
Capitals+Income	0.54	Capitals+Kaliningrad+NonCISBorder	0.83
Capitals+Income+NonCISBorder	0.54	Capitals+Kaliningrad+NonCISBorder+Port	0.83

The final equation looks as following,

$$\hat{IMPORTPC}_i = 231 + 1350KALININ_i + 243NONCIS_i + 946CAPIT_i + 0.15EXPSAVPC_i - 1.96CBASK_i,$$

$t-st$.....(16).....(2.7).....(9.7).....(6.2).....(−3.1)

$n = 78, R^2 = 0.86, F = 95, DW = 1.98.$

The best explanatory power for import intensity in Russian regions is given not by incomes or expenditures per capita, but by the set of dummy variables, reflecting the special role of two capitals (Moscow and St.Petersburg) and the unique position of Kaliningrad – an exclave which has its legal status of free economic zone, providing miscellaneous privileges to locally registered companies and which is heavily dependent on the trade with EU member countries -

Poland, Germany and Lithuania. Higher foreign trade intensity in regions, bordering non-CIS countries is captured by the third dummy. Redundant variables test shows, that income per capita, GRP per cap., export per capita and port dummy can be removed as redundant. However, level of expenditures and savings per capita is significant: marginal propensity to import is about 0.15 (on average, this share of additional expenditures is directed to buy imported goods). Consumer basket cost is also significant, but with negative sign. The more expensive is life in the region, the less is per capita import. This strange looking fact might be interpreted as following: high prices in some regions of Russian Federation reflect rather their remoteness, than the level of incomes.

An attempt of estimating relative factor influence omitting Moscow, St.Petersburg and Kaliningrad from the data brings less statistically meaningful results:

$$\hat{IMPORTPC}_i = 138 + 218NONCIS_i + 0.08EXPORTPC_i + 0.15EXPSAVPC_i - 0.18INCOMEPC_i$$

$t-st$.....(5.5).....(3.0).....(1.7).....(–2.1).

$n = 75, R^2 = 0.36, F = 10, DW = 1.47.$

Existence of the border with non-CIS countries remains as an important explaining factor; influence of export is positive, but low; influence of expenditures and incomes is controversial: higher expenditures induce additional import, while higher incomes mean fewer propensities for import. This contradiction looks to be a consequence of above discussed discrepancy between incomes and expenditures in many regions of Russia.

One more aspect of foreign trade is its interaction with incomes. Dynamic aspects of this interaction were partly discussed above. Here we discuss spatial aspects. To find out which of factors, related to international integration, are affecting incomes, we used a regression analysis using the same set of variables, as in the case of explaining import per capita.

Multiple regression analysis shows that the influence of import per capita and of dummy variables (except one for Moscow) on per capita incomes is not statistically significant. Significant factors, explaining per capita incomes, are:
CBASK (consumer basket cost, USD),
EXPORTPC (export per capita, USD) and
MOSC (dummy, equal to 1 for Moscow city and equal to zero for other regions).

The final resulting equation looks as following.

INCOMEPC = -621 +12,7CBASK + 0,34EXPORTPC + 2903MOSC
t-stat. *(-4,4)* *(12,2)* *(9,4)* *(12,5)*
n=78, R2=0,92, F=284 .

Importance of consumer basket cost is explained by influence of transportation cost on the cost of living. Nominal income values depend on remoteness of particular regions: due to higher prices budget salaries and pensions as well as market-induced salaries are higher in northern and eastern parts of Russia. Correlation coefficient between per capita incomes and consumer basket cost is equal to 0,81. To eliminate influence of price differentiation due to remoteness, regional nominal incomes can be divided by relative levels of consumer basket cost:

INCOMEPC adj = INCOMEPC/(CBASKreg/CBASKRus ,where

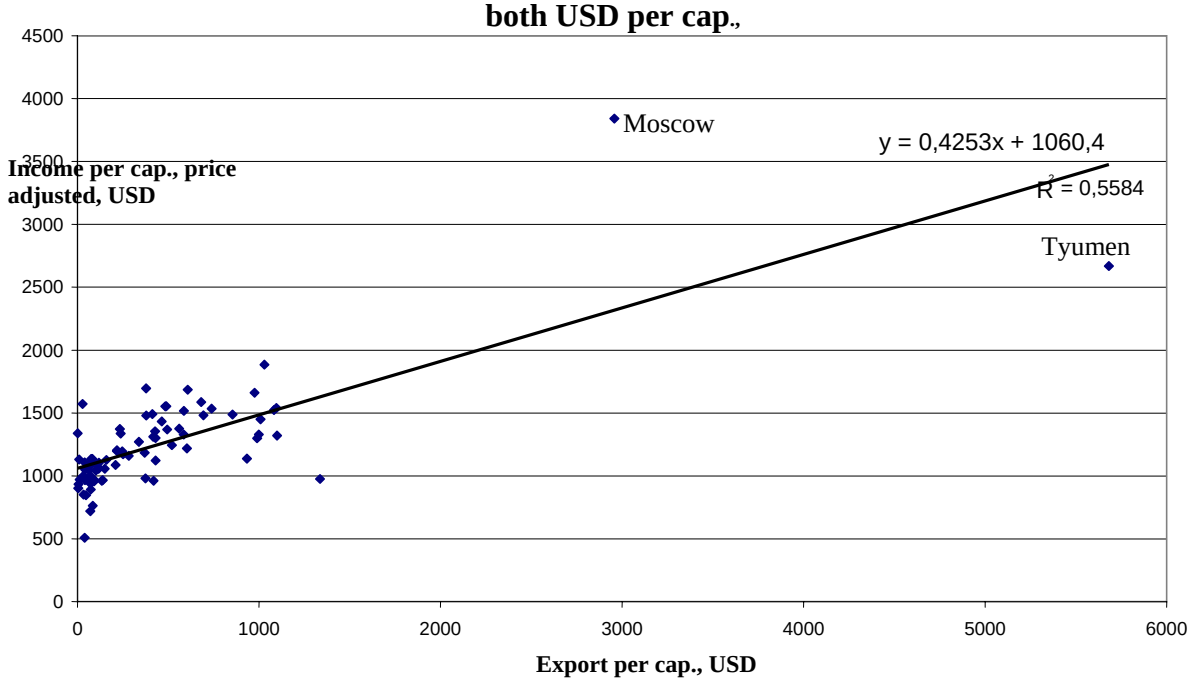
INCOMEPC adj – per capita income, adjusted by price level;
CBASKreg and CBASKRus – consumer basket cost by region and in Russia on average, correspondingly.

Regressing, we get the following equation.

INCOMEPC adj = 1086 + 0,32EXPORTPC + 1805MOSC
t-stat. *(37,8)* *(9,1)* *(7,8)*
n=78, R2-0,75, F=94,

In real life this means that regional per capita yearly income (price adjusted) (1585 USD for Russia on average in 2002) consists of invariable part of 1086 USD plus 0,36 of regional export per capita. Export per capita was equal to 742 USD for Russia on average in 2002, but corresponding regional figures vary from negligible 5-10 USD in some ethnic republics up to about 1000 USD in several regions, extracting oil and natural gas or producing a lot of metals for export.

Fig.8. INCOMES, PRICE ADJUSTED, DEPENDENCE ON EXPORT, both USD per cap.,



Calculations based on data from Regions of Russia. Social and economic indicators 2003. Moscow, 2003.

World prices for exported commodities and export duties, which are used in Russia for capturing natural rent are the main factors exerting influence on fluctuations of regional export and its influence on real incomes. Taxation is the main mechanism, transferring exporters' incomes into inhabitants' incomes. The location of company registration is important for that.

4. Geography of foreign trade of Russian regions

Table 11 gives some insight into country breakdown of Russian regions import. Data is presented in descending order, sorted by country share in Russian import in 2003. Tables 11 and Annex 5 allow to compare penetration levels of several trading countries into Russian regional markets. Before analyzing data, several remarks must be made. First, real penetration level may be higher than statistically registered due to the above mentioned fact of underestimation of goods, imported by companies, which are registered in other regions. Second, seven customs department, collecting data from relevant federal districts, do not follow unified standards in presenting information – by aggregation level, period, form and time of publication. Hence data on South and Ural regions are just unavailable, data for Siberia are available for all partner countries for 9 months of 2004, but without dividing trade to export and import, data for Central and Volga regions are available for 9 months of 2004, for Far East – only for year 2003 (but very detailed) and only for North-West data for the whole 2004 are at our disposal, at least for the trade with main partner countries. Third, federal district customs statistics of import does not include Belarus, while data for Russian Federation do include import from Belarus because of eliminated customs control on Russia – Belarus border (according to Goscomstat, Belarus' share in Russian import for 2003 was 8,5%).

Outcomes are the following. Germany is the leading partner for regions of European part of Russia, while China is the first for Siberia and Far East. Germany' leadership looks unchallenged for the Russia as a whole (14%) and especially in Volga region (22,5%). China, by now 4th main supplier to Russia, is naturally most visible in the Far East (27%) and Siberia (17% of trade turnover). Among CIS countries, import from Ukraine is the most important in Central and Volga federal districts (11%). Perhaps, it is even more important for the South, because this federal district is very actively trading with the CIS countries as a whole: in 2002-2004 their share of the total Southern FO import grew from 23% up to 38%. Kazakhstan, holding sixth rank in Russian import, is more important trading partner in adjacent Russian federal districts: Volga, Siberia and, probably, Ural. Ural is even more engaged in trade with CIS on import side: 41-47% of all imported goods are coming to Ural region from "near abroad" countries. Besides neighborhood, another explanation of so intensive trade with the CIS may lay in raw materials import from Kazakhstan to Ural industrial region.

Table 9. **MAIN IMPORT PARTNERS BY SOME FEDERAL DISTRICTS***

	Central	N-W	Volga	Siberia**	Far East
1	Germany	Germany	Germany	China	China
2	Ukraine	Finland	Kazakhstan	Kazakhstan	Japan
3	Japan	USA	Ukraine	Switzerland	Korea rep.
4	Italy	China	Italy	Japan	US
5	China	Brasil	Uzbekistan	Ukraine	Germany

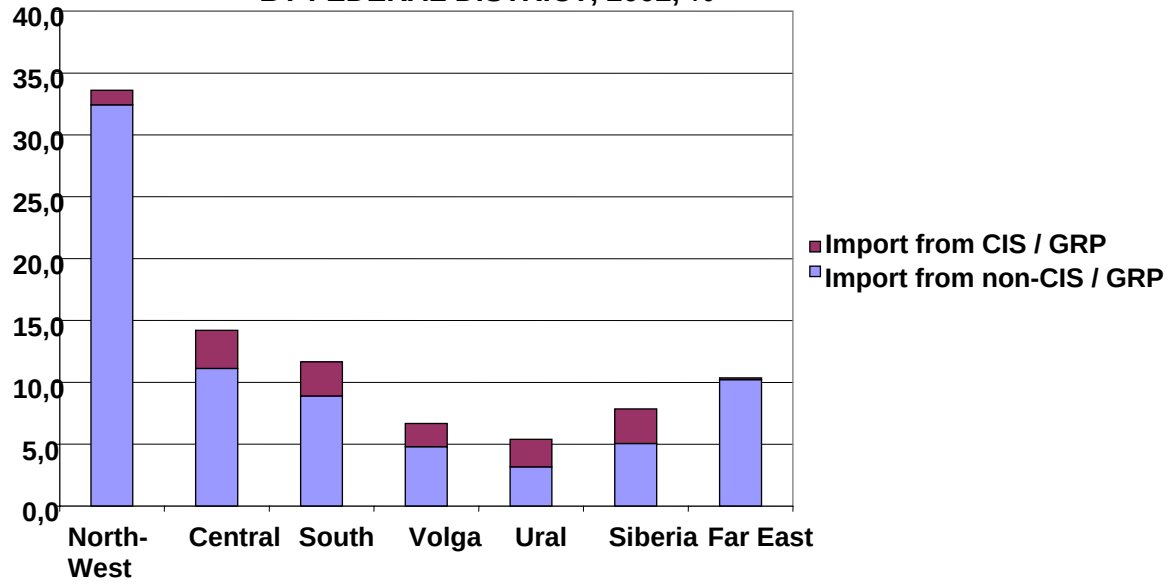
* Data on South and Ural regions unavailable.
**Export+import,

While Germany ranks first, other European countries with high penetration to Russian markets, Italy, France and Finland occupy ranks from 7 to 9, with 3-4% of total Russian import. Their presence is distributed in approximately the same proportion as Germany, with exception of Finland, for natural reasons ranking second in the North-West. It is interesting that Finland and Sweden are visible also in the Far East of Russia, holding together 2.5% of this regions' market,

dominated by China, Japan and Korea – 27, 25 and 17% of Russian Far East import respectively (see Annex, Table 5). Japan, supplying miscellaneous industrial and consumer goods in the Far East, is substantially present also in the Central region (with high-tech goods) and in Siberia. And United States, ranking 5th, are more appreciable in two opposite "corners" of Russia, in North-West and Far East, thanks to their ocean ports.

Ratio of CIS/non-CIS trade is more systematically documented and considered to be important in Russia. Situation in this field is complicated and contradictory, both in reality and in mentality. On microeconomic level decisions are taken on purely rational basis. And statistics reflects preference, revealed by buyers of consumer and industrial goods to non-CIS suppliers, more competitive in most sectors. On the level of mentality post-soviet nostalgia is present, and both political elites and ordinary citizen are grieving for great country and are in sorrow about low level of integration within the CIS. Indeed, mutual trade within the CIS has fallen from 60% of total foreign trade turnover in 1990 to less than 20% in 2002. But ending of economic collapse and beginning of sufficiently rapid economic growth in all CIS countries, together with the import substitution effect of financial crisis of 1998 in Russia and increased mutual confidence after Putin has become Russian president, stimulated improvement and intensification of inter-CIS economic links. Abolition of regulatory barriers and burgeoning financial wealth stimulated investments of Russian business in near abroad, especially in Ukraine and Uzbekistan. Mutual trade growth remains unsTable: in 2000 and 2003 import from the CIS grew faster, than trade with EU. Oil prices rise hides this trend on export side and also boosted consumer goods import from non-CIS in 2001-2002, so that import from CIS decreased, but in 2003 situation reversed again: Russian import growth was 34,1% from the CIS, and 19,7% from the EU (*www.cbr.ru, www.customs.ru*).

Fig.9. **IMPORT FROM CIS AND NON-CIS, RELATED TO GRP, BY FEDERAL DISTRICT, 2002, %**



But reintegration trend is not equally present in various Russian regions. "Middle", centrally located regions are mostly integrated with the CIS – or less integrated with the rest of the world, than boundary regions in the West (especially, North-West) and in the East. CIS countries' share of North-West federal district' import is only 3,4% and for the Far East this figure constitutes only 0,7% (Table 11). Following chart helps to answer his question (Fig.9).

North-West of Russia is the most internationally integrated region with 33% import/GRP ratio, while centrally located federal districts are less dependent on import (5-8%). Ural region is especially interesting in this aspect, remembering that Ural is the main source of export incomes for Russian economy.

5. Conclusions

Concluding remarks can be divided into two parts. The first one deals with the essence of topics under consideration, the second one concerns peculiarities of statistical data and possibilities of explaining relevant indicators. Both parts are united by one well known feature of Russian reality: there are a lot of contrasts within Russia, and Moscow is a very untypical region of this country.

- Russian regions vary greatly not only by scale and natural conditions, but also by prices and per capita economic indicators and by foreign trade intensity. Foreign trade is more intense in richer regions of Russia. Moscow and Tyumen province are the richest and most intensively exporting regions; Moscow and St.Petersburg are main importers. But even oil-exporting regions get access only to the small part of export revenues; hence their import does not correspond with their export. North Caucasian ethnic republics of Russian South show the lowest figures of incomes, price levels and of involvement in foreign trade.
- Artificial openness and unfair privatization of early 90s increased not only social but also regional polarization. Oil, gas and metals exporting regions gained bread crumbs from oligarchs' table, thus becoming wealthier than regions, not endowed with mineral resources and possessing no metallurgic plants.
- Centrally located regions are most integrated with the CIS – and less integrated with the rest of the world, at least by import, than boundary regions in the west (especially, North-West) and in the east. Germany is the leading partner for regions of European part of Russia, while China is the first partner for Siberia and Far East.

Statistics of regional foreign trade is based on customs data, which attributes trade flow to the region, where relevant company is registered. It gives biased picture of import to regions. Regional export and import are statistically independent. The best explanatory power for import intensity in Russian regions is given by the set of dummy variables, reflecting the special role of two capitals and the unique position of Kaliningrad, and by expenditures per capita and price levels. Per capita incomes in regions are sufficiently explained by regional export, with special dummy necessary to explain Moscow city per capita incomes.

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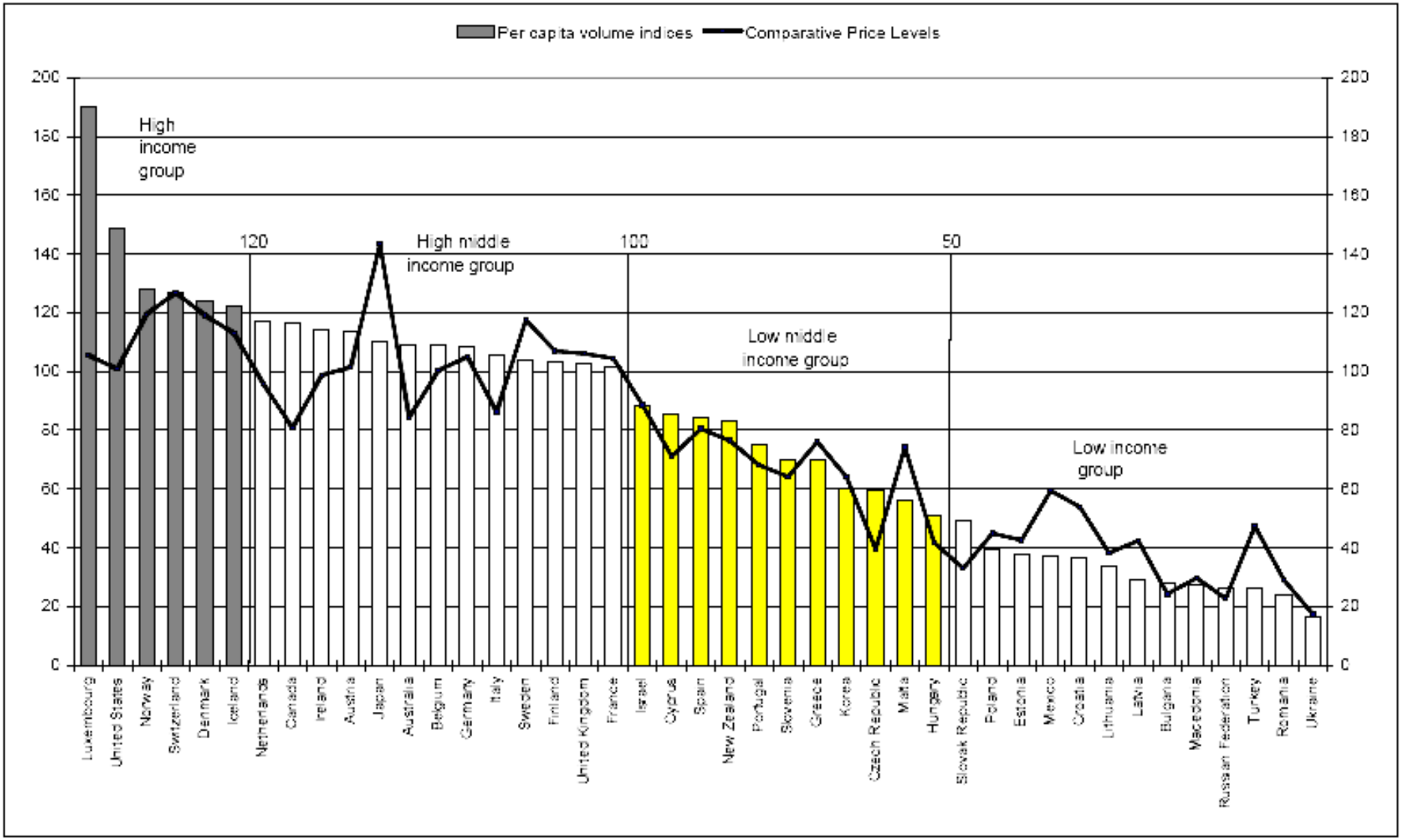
Annex 1. ADMINISTRATIVE DIVISION OF RUSSIAN FEDERATION

Provinces (oblast's)		19	Penza prov	39	Novosibirsk prov.		Autonomous provinces	71	Udmurt rep.
		20	Nizhny Novgorod prov.	40	Kemerovo prov.	56	Komi-Perm AD	72	Bashkortostan rep.
1	Pskov prov.	21	Kirov prov.	41	Irkutsk prov/	57	Nenesky AD	73	Adygey rep.
2	novgorod prov.	22	Rostov prov.	42	Chita prov	58	Taymyr AD	74	Karachai-Cherkess rep.
3	Smolensk prov.	23	Volgograd prov.	43	Amur prov.	59	Evenkiysky AD	75	Kabardino-Balkaria rep.
4	Tver prov.	24	Astrakhan prov.	44	Magadan prov.	60	Khanty-Mansi AD	76	North-Ossetian rep.
5	Bryansk prov.	25	Saratov prov.	45	Kamchatka prov.	61	Yamalo-Nenetski AD	77	Ingush rep.
6	Kaluga prov.	26	Ulyanovsk prov.	46	Sakhalin prov.	62	Ust-Orda Buryart AD	78	Chechen rep.
7	Yaroslavl prov.	27	Samara prov.	47	Kaliningrad prov.	63	Agin-Buryat AD	79	Dagestan rep.
8	Kursk prov.	28	Orenburg prov.	48	Leningrad prov.	64	Chukotsky AD	80	Kalmyk rep.
9	Orel prov.	29	Chelyabinsk prov.	49	Moscow prov.	65	Koryak AD	81	Khakassiya rep.
10	Tula prov.	30	Kurgan prov.					82	Karelia rep.
11	Ryazan prov.	31	Murmansk prov.	**Kray**s		**Autonomous prov.**		83	Komi rep.
12	Vladimir prov.	32	Arkhangelsk prov.	50	Krasnodar kray	66	Jewish AP	84	Altai rep.
13	Ivanovo prov.	33	Vologda prov.	51	Stavropol kray			85	Buryat rep.
14	Kostroma prov.	34	Perm prov.	52	Krasnoyarsk kray		**Republics**	86	Yakutiya-Sakha rep.
15	Belgorod prov.	35	Sverdlovsk prov.	53	Khabarovsk kray	67	Mordov rep.	87	Tuva rep.
16	Voronezh prov.	36	Tyumen prov.	54	Primporsky kray	68	Chuvash rep.	**Cities with federal status**	
17	Lipetsk prov.	37	Omsk prov.	55	Altay kray	69	Mariy-El rep.	88	St.Petersburg
18	Tambov prov.	38	Tomsk prov.			70	Tatarstan rep.	89	Moscow

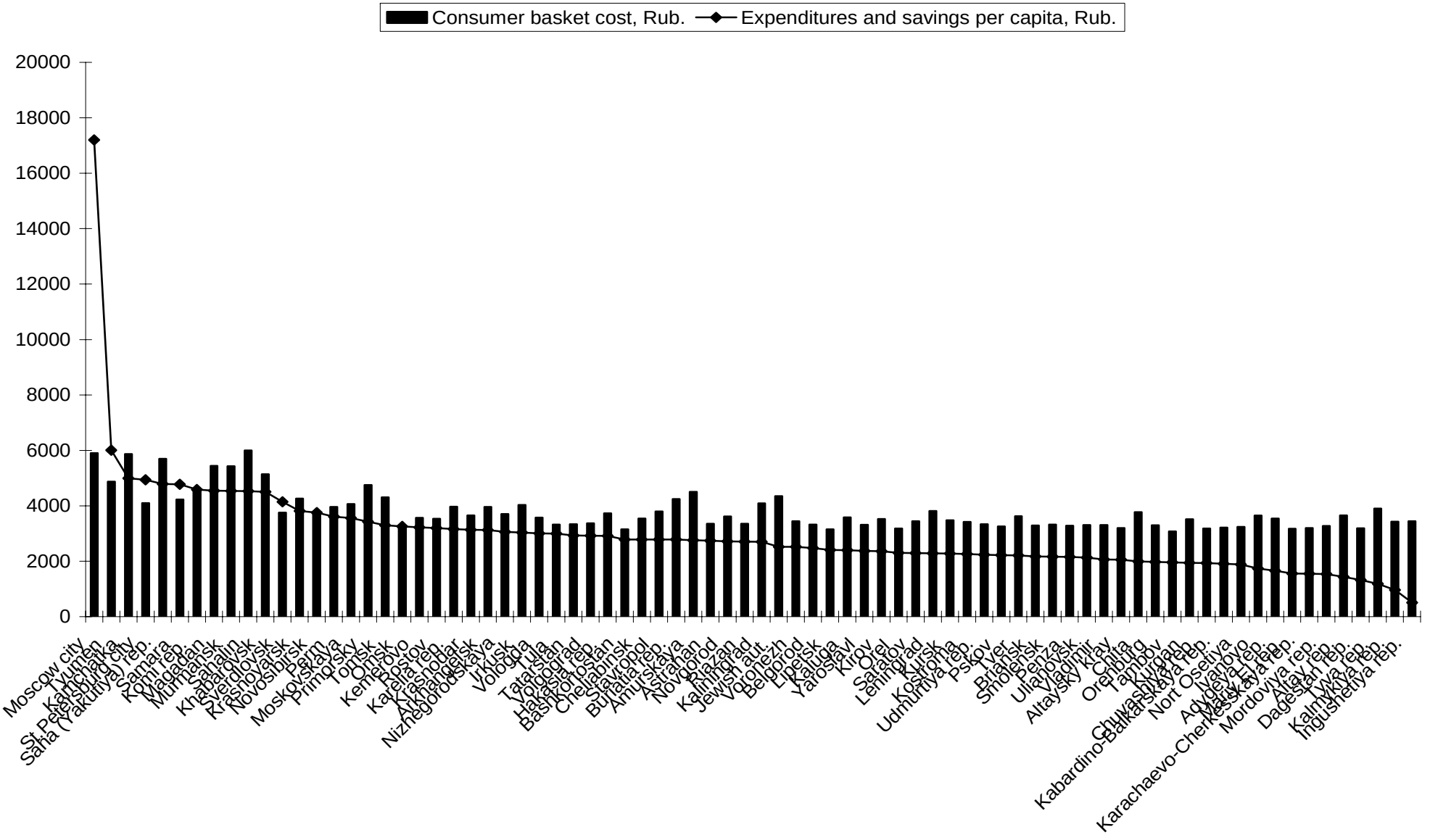
FEDERAL DISTRICTS OF RUSSIAN FEDERATION

2. COMPARATIVE PRICE LEVELS AND INDICES OF GDP PER CAPITA FOR OECD COUNTRIES AND SOME COUNTRIES OF EASTERN EUROPE AND THE CIS, 1999

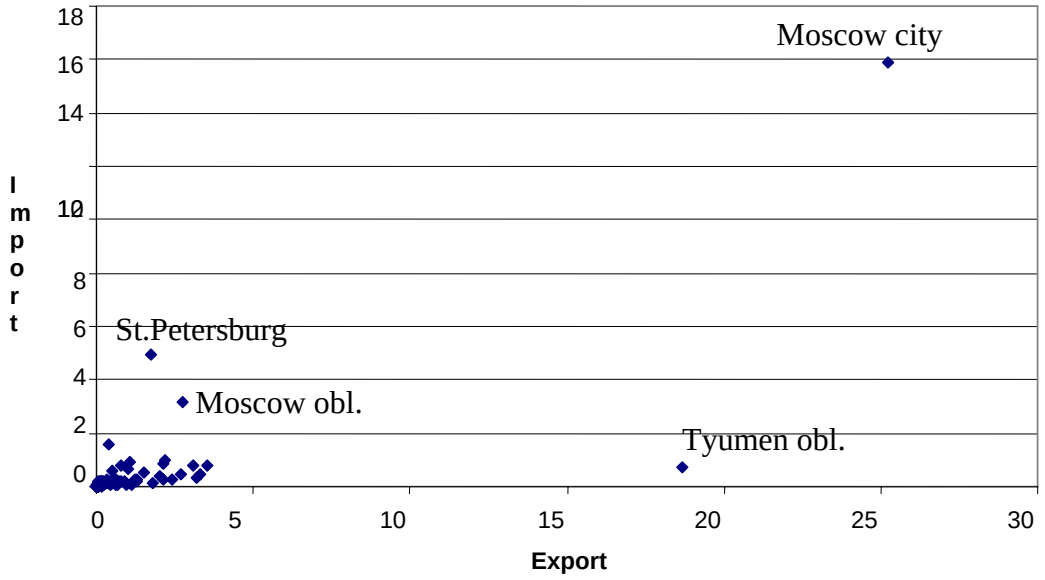
Figure 1: **Comparative price levels and indices of real GDP per head, 1999**



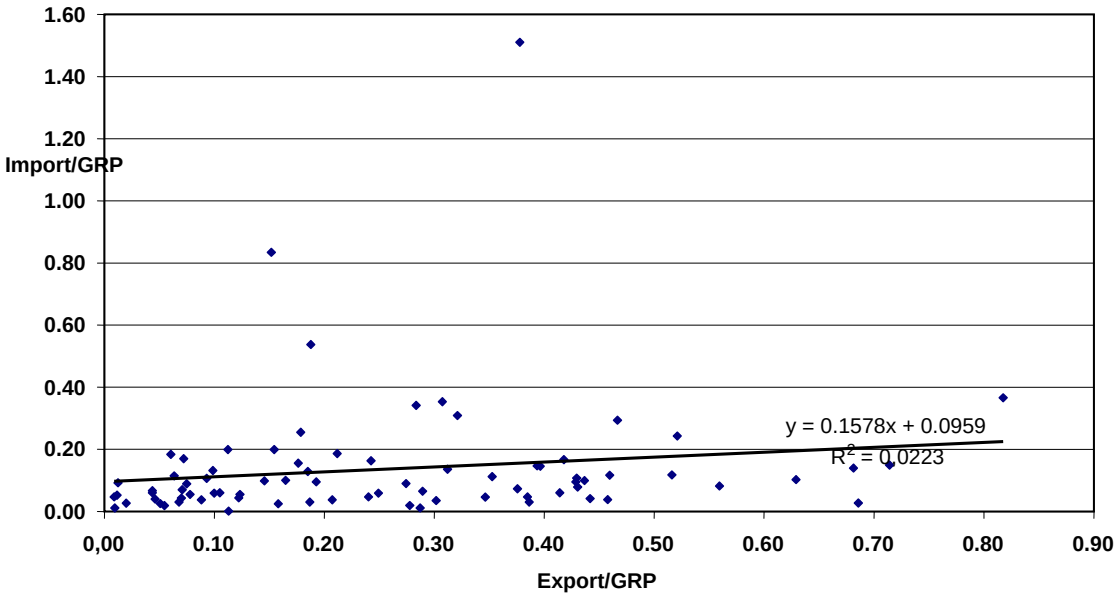
3. PRICE LEVELS AND PER CAPITA PERSONAL EXPENDITURES IN RUSSIAN REGIONS, 2002



4. **EXPORT AND IMPORT OF RUSSIAN REGIONS, USD BLN., 2002**



5. **IMPORT/GRP AND EXPORT/GRP SHARES**



6. MAIN RUSSIAN TRADING PARTNERS' SHARE IN FEDERAL OKRUG'S IMPORT. %

Rank in RF import		RF	Central	N-W	Volga	South	Ural	Siberia	Far East
	Available data	*2003*	*9m2004*	*2004*	*11m2004*	*n/a*	*n/a*	*Export+import. 9m2004*	*2003*
1	Germany	*14.0*	18.3	15.4	22.5	*n/a*	*n/a*	3.3	5.1
2	Belarus*	*8.5*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*
3	Ukraine	*7.7*	10.7	2.5	11.5	*n/a*	*n/a*	7.6	0.5
4	China	*5.7*	5.7	5.2	3.1	*n/a*	*n/a*	17.0	27.4
5	US	*5.1*	*n/a*	7.5	*n/a*	*n/a*	*n/a*	6.0	8.8
6	Kazakhstan	*5.1*	*n/a*	*n/a*	14.9	*n/a*	*n/a*	8.5	
7	Italy	*4.2*	5.7	4.0	4.4	*n/a*	*n/a*	0.7	
8	France	*4.0*	*n/a*	3.6	3.3	*n/a*	*n/a*	2.4	0.8
9	Finland	*3.2*	*n/a*	8.4	*n/a*	*n/a*	*n/a*	1.4	1.0
10	Japan	*3.2*	6.2		*n/a*	*n/a*	*n/a*	8.0	24.8
CIS 2003		*19.8****	12.3**	3.4**	29.0**	29.3**	47.4**	41.6**	0.7**
CIS 2004		n/a	14.2**	3.3	30.6**	38.8	*n/a*	*n/a*	*n/a*

**** Federal okrug customs statistics of import does not include Belarus. while data for Russian Federation do include import from Belarus (its share in 2003 was 8.5%).***

*** Data for 9 months.*

**** Data from Russian central bank. POB methodology used (www.cbr.ru). All other figures – from customs statistics (www.customs.ru).*

E L I N K E I N O E L Ä M Ä N T U T K I M U S L A I T O S (ETLA)
THE RESEARCH INSTITUTE OF THE FINNISH ECONOMY
LÖNNROTINKATU 4 B, FIN-00120 HELSINKI

Puh./Tel. (09) 609 900 Telefax (09) 601753
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