

Microeconomics of Competitiveness
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2006 MOC Team Country Project

Russian Transportation (Moscow)

I. Russia's Competitiveness

Brief Overview of Russia

Russia is located between Europe and Asia and has the largest land mass in the world. Its population is almost 143 MM people, 8th largest in the world. Russians' life expectancy is 67 years old. The literacy rate in Russia is 99.6%. Its economy is richly endowed with oil, natural gas, coal, timber, and other minerals.

As a federal state, Russia has seven federal districts. Russia's central government, however, is very strong. Russia's President Vladimir Putin has centralized the power in Kremlin by stifling political opposition/freedom of speech and canceling direct elections of the regional governors (who are now appointed by the President.)

Russia's history has been very tumultuous. In 1917, the Bolsheviks under the leadership of Lenin overthrew the Russian monarchy, and Tsarist Russia was replaced by the Russian Soviet Federative Socialist Republic. Russia embraced communism as its main ideology. Private property was confiscated and the state became the central actor in economic planning. Seventy years of central planning brought the economy to stagnation, and in 1991, following Gorbachev's policies of 'glasnost' and 'perestroika', the USSR disintegrated. Russia lost its control over the former 14 Soviet republics and set itself on the road to market economy.

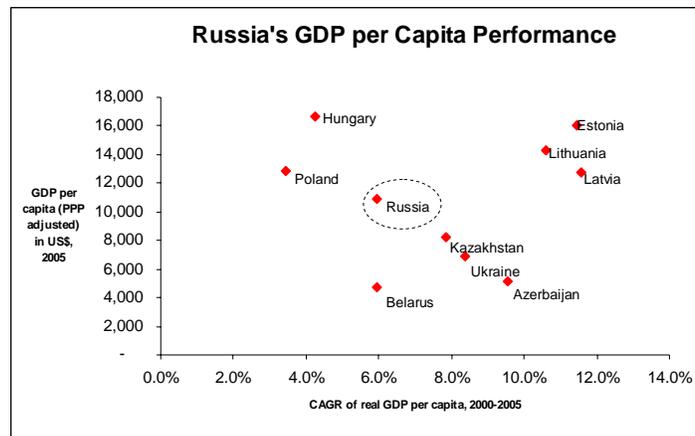
Economic Performance

After the break-up of the Soviet Union, Russia adopted a standard set of IMF policies (i.e. price liberalization, privatization, openness to trade, tight fiscal and monetary policies); however, the country still experienced a major economic crisis in 1991-1998. During those years, Russian GDP and investment decreased by 46% and 81%, respectively.¹ The crisis led to the ruble devaluation, which

¹ "The Role of the State in Economic Transformation: Comparing the Transition Experience of Russia and China" by David M. Kotz, September 2005

helped to boost exports. At the same time, the world oil prices increased. So in 1999, economy recovered and has been growing robustly ever since despite the fact that the Russian government does not appear to have an integrated economic strategy for the country. The government has a number of worthy goals such as doubling GDP by 2013, providing economic stability for its people, and improving business environment; however, it does not have a comprehensive strategic economic plan. In 2005, Russia's GDP per capita (PPP adjusted) was almost \$11,000 and has been growing at the average compound rate of 6% per year for the last five years². Yet, Russian growth lags growth of Baltics and some CIS countries.

Russia's economic growth is robust...

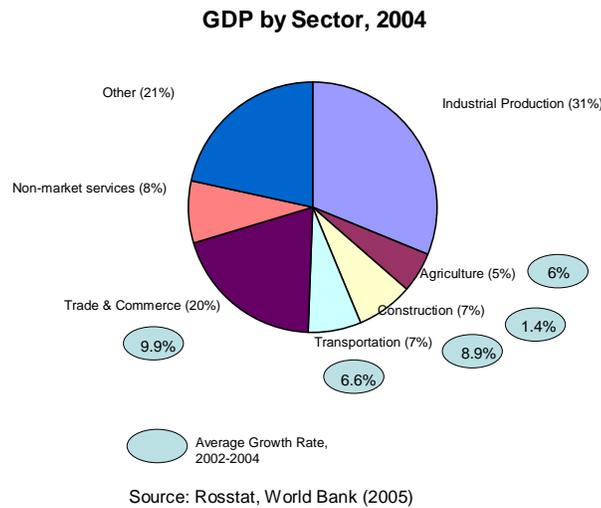


Source: EIU (2005)

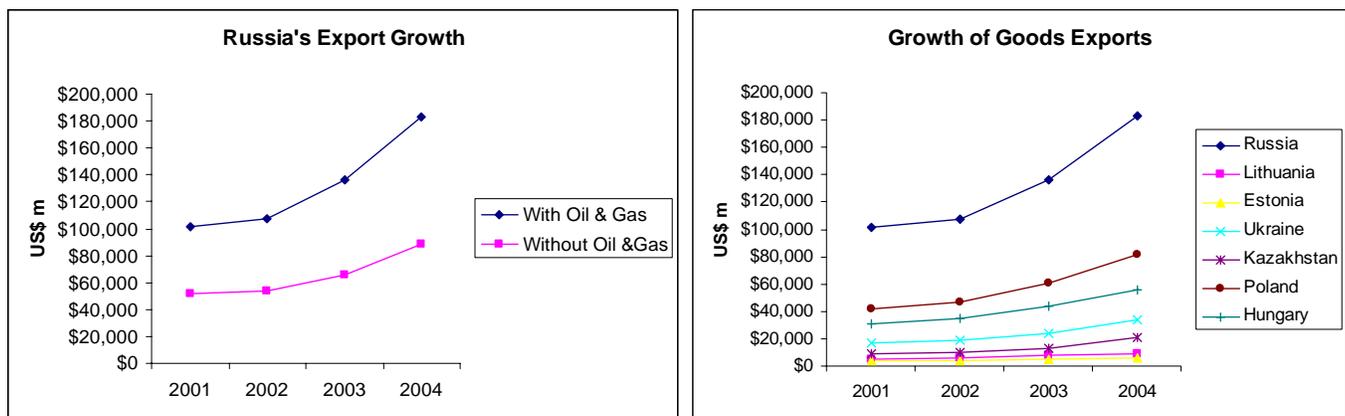
Russia's economic growth has been driven mainly by high world oil prices as well as increasing domestic consumption. Raising personal incomes (real wages increased by an average of 15.8% per annum in 2000-2004³) and increasing availability of consumer credit have fueled the domestic consumption. Trade and commerce grew by 9.9% per annum over the last three years, followed by construction and transportation.

² EIU Russia Country Report December 2005

³ IMF Russia Federation: Statistical Appendix, October 2005



Russia’s exports increased dramatically and outpaced its neighbors mainly due to the growing oil and gas exports. As Standard & Poors notes in its report on Russian country risks: “Russia's economy remains very concentrated in terms of its dependence on oil and gas and a few other natural resources... The dependence on oil and gas can be seen in the fact that those sectors accounted for 58% of exports and an estimated 23% of GDP in 2003.”⁴

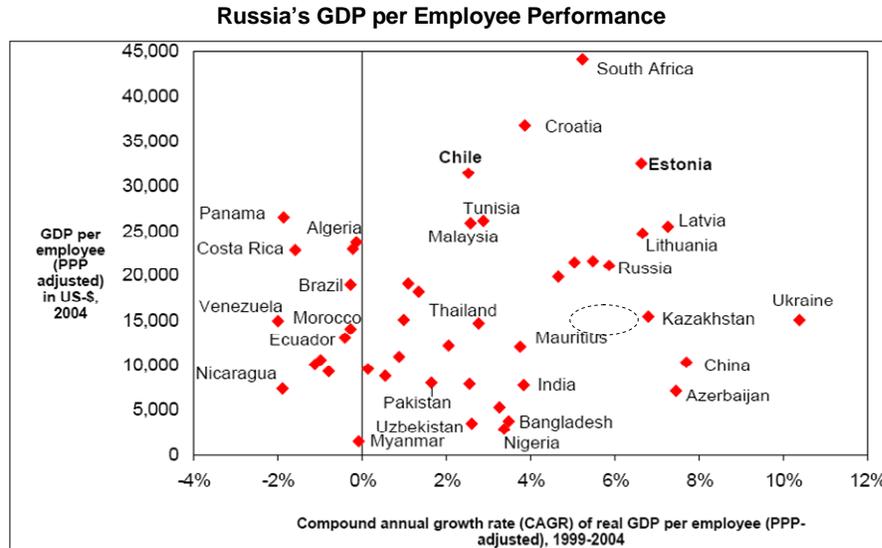


Source: EIU (2005)

Russia has been lagging Baltics and some CIS neighbors in labor productivity growth. Wages have been increasing faster than labor productivity throughout various industries (in oil extraction, food

⁴ Standard & Poors, *Country Risks Cloud Future Prospects for Russian Corporates*, May 9, 2004.

processing, and transport equipment, wages outpaced labor productivity by 10-16%, in chemical industry by 18%⁵.)



Source: MOC Session 5 "The Diamond Model in Developing/Transition Economies", EIU (2005)

Russia's economy is also dominated by a few large financial industrial groups known as "oligarchs." Oligarchs emerged after the breakup of the Soviet Union. As a result of the voucher privatization undertaken in early 1990s, a select group of people was able to buy out worker's vouchers in addition to participating in "loan for shares" schemes, thus gaining control of the former state-owned enterprises in such critical industries as oil & gas, metallurgy, banking, etc. Oligarchs have built large vertically integrated companies in most of resource-based industries. The risk of such concentration of economic activity in a few hands is such that if one business group experiences problems, it can have an adverse effect on the entire economy. President Putin has fought a covert war with oligarchs who gained political power, which culminated in the arrest of the richest man in Russia, head of Yukos oil & gas company, Mikhail Khodorkovsky.

⁵ EIU Russia Country Report December 2005

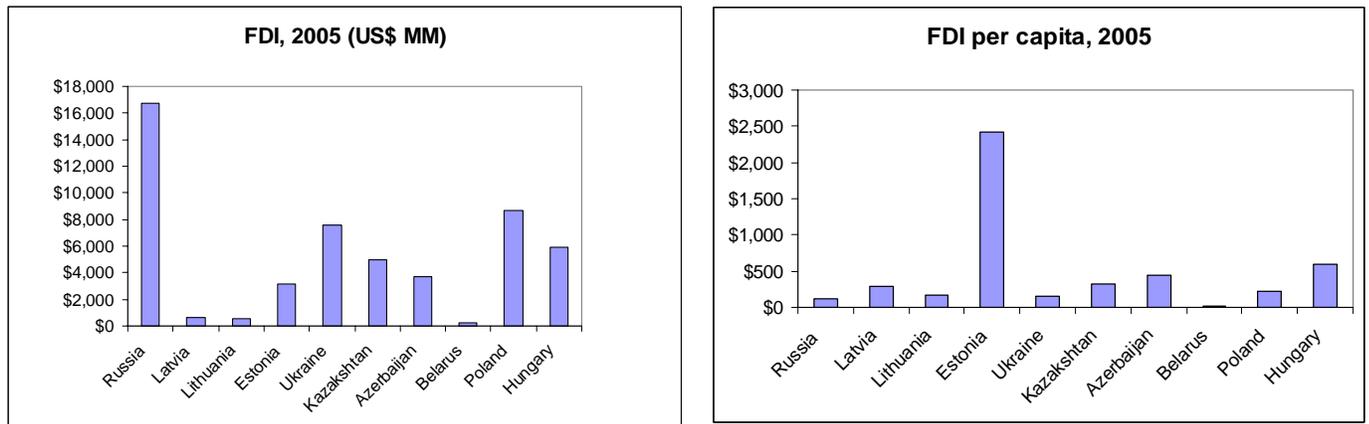
Role of Government in Russian Economy

In recent years, government has pursued a dual strategy where it tries to improve business environment and at the same time place a number of restrictions on the foreign direct investment in certain industries. FDI is restricted in power, energy, defense and aviation, banking, insurance, mass media (foreigners can own up to 35% of Gazprom, 25% of United Energy Systems, in civil aviation - 25%, in insurance - 15%, in diamond mining - 25%). The government also tries to develop linkages with local suppliers and develop local talent by placing local content requirements on foreign companies. For example, if a foreign firm wins a contract with the state, it has to transfer at least 30% of the work to local subcontractors. For foreign banks 75% of workforce must be Russian, and 50% of corporate boards must be Russian, if a foreigner holds the position of CEO⁶.

The government tries to improve country's business environment. Many of the reforms legislated or documented during 2001-2003 were supposed to serve as the basis for progress (tax reform; fiscal reform; the new bankruptcy law; electricity sector reform; changes to the corporate law; currency control liberalization; deregulation of small businesses; and more transparent tariff-setting framework for the electricity sector). As a result, Russian tax burden was substantially lowered (VAT decreased from 20% to 18% and could further go to 13%, corporate tax 24%, sales tax abolished, flat personal income tax of 13%). The government has also adopted a New Customs Code to expedite shipments and make the customs more accountable. However, companies cite that little progress in customs operations has been seen so far. Further, such persistent government practices as widespread corruption, political favoritism, and extensive bureaucracy remain as barriers for successful business development. The big remaining question is whether the government culture shifts toward serving the public, including private enterprises, or it is geared towards maximizing the power of the state and often its employees and their beneficiaries.

⁶ EIU Russia Country Commerce Report, November 2005.

Even though, FDI in Russia is the biggest in the absolute value compared to its neighbors, it is much smaller on a per capita basis. Russia's 5-year GAGR (2000-2005) in FDI was 44%, trailing such countries as Ukraine (with 5-year CAGR 66%), Azerbaijan (95%), Estonia (52%).



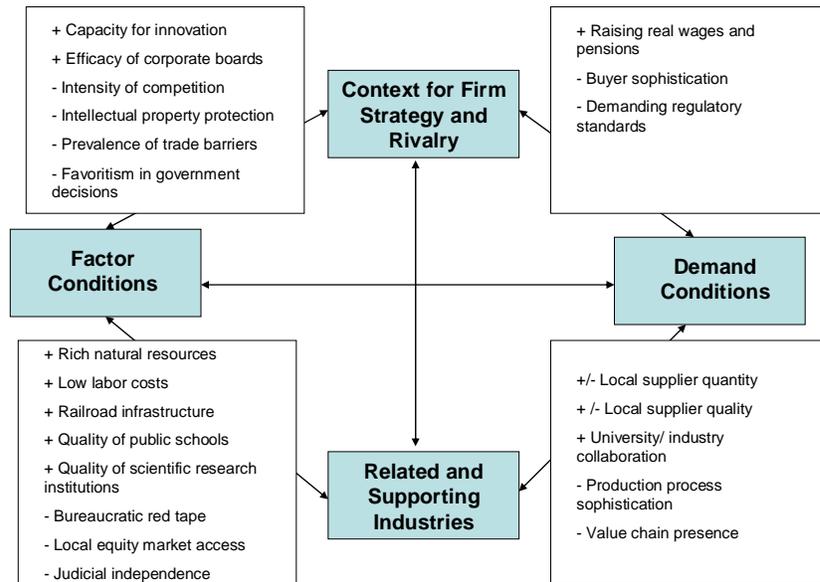
Source: EIU (2005)

In terms of BCI rankings, Russia is more competitive than most of its CIS neighbors except for Kazakhstan. In particular, Russia has inherited very good railroad infrastructure and high-quality school and university education from the Soviet Union. On the negative side, Russia suffers from poor port infrastructure because in the past the Soviet government invested primarily in Baltic ports due to good weather conditions there. Air transportation is not of good quality either mainly because during Soviet times people used rail transportation primarily due to its affordability. As a result, air transportation did not develop as well as the railroads. Finally, cumbersome government regulations and extensive bureaucratic red tape impact the country's competitiveness negatively.

National Diamond Summary

Russia's national diamond should be viewed in the context of the legacy of the Soviet Union. Russia inherited a lot of favorable factor conditions from the Soviet Union (such as high-quality public schools), making its national diamond strongest in factor conditions. Demand conditions are also beginning to improve.

Russia's national diamond



Factor Conditions

Russia's factor conditions are very strong. Russia is rich in natural resources (oil, gas, coal, minerals, etc.) The Soviet education system was strongly developed in technical subjects (math, chemistry, physics). As a result, highly educated workforce is available in Russia. However, the country lacks people with good business management skills. The universities have started to offer Western-type degrees (MBA programs) to fill this gap. Russia also has cheap labor, though the nominal and real wages have been steadily increasing over the last five years.

Demand Conditions

Russia's demand conditions are slowly improving. Consumers are becoming more sophisticated in their tastes and preferences. After the breakup of the Soviet Union, many people have traveled to the U.S. and Western Europe and have been introduced to the new shopping and service standards. Raising real personal incomes (real income per capita has increased by an average of 11.5% per annum in 2000-2004) and increasing availability of consumer financing have contributed to increasing consumer spending, thus improving the overall sophistication of buyers.

Context for Firm Strategy and Rivalry

The role of government in Russian economy is mixed. On the one hand, it implements a set of reforms to ease existence of business in the country (discussed earlier on page 5), but on the other hand, the government plays *an intrusive and destructive role*. Businesses in Russia are subjected to government pressure through selective implementation of regulations and legislation that is either politically motivated or triggered by competing business groups. For large businesses, particularly in the resource sector, the growing concentration of power in the presidential administration creates new uncertainties. Without effective checks or balances from the legislative or judicial branches, and with a civil service in need of drastic reform, this concentration of power threatens to increase the already personalized relationships between business and government.

Russia has many state-owned monopolies (Gazprom, United Energy Systems, Russian Railways, Transneft, etc.), while Russian small and medium enterprises have not yet developed into the powerful constituency and most of the large firms are controlled by the “oligarchs”. Instead of institutional frameworks serving as the foundation for fair and efficient economic activity, as well as raising the general standard of living for the population, the governmental often applies power, being driven by personal agendas, resulting in a widespread practice of kickbacks and favoritism. Such "rent-seeking" bureaucracies put a significant burden on businesses in Russia and impede the country's economic development.

Related & Supporting Industries

Related and supporting industries historically have been weakly developed in Russia because of the legacy of the prevailing Soviet Union philosophy that emphasized the importance of building links between the countries rather than links between industries due to political reasons. The quantity and quality of local suppliers have been negatively impacting the national diamond; however, with the government's local content requirements, supporting industries are likely to improve in the future.

II. Moscow and its Place in Russian Economy

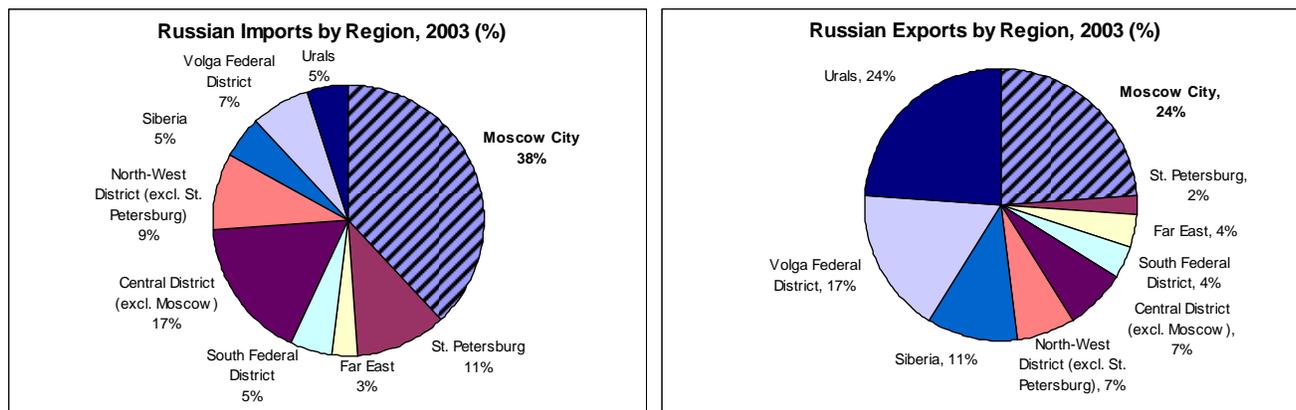
Strong Legacy of Country's Capital

Since its foundation in the 12th century, Moscow has been a center of Russia. It is the capital of Russia and the country's principal political, economic, financial, educational and transportation center. The city constitutes about 7% of the Russian population or 10.4 million inhabitants within city boundaries and is the most populous city in Europe.

The city belongs to the Central Federal District located in the west part of the Russian Federation. Historically, its position was central in the Russian homeland. It was the capital of the former Soviet Union and inherited the most developed economic, educational, transportation and social infrastructure of that time.

Center of International Trade

Moscow has dominated Russia's international trading activity. The charts below demonstrate Moscow's place in the overall national context.

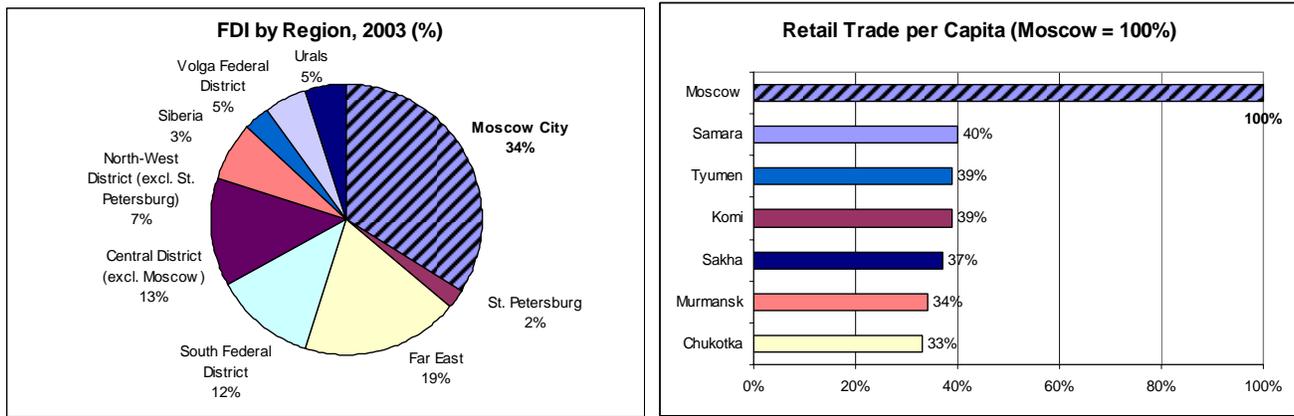


Moscow serves as a hub for Russian imports: around 38% of imports go through Moscow City⁷. Such a disproportionately large number is explained, first of all, by high concentration of financial institutions in Moscow that tend to do business of providing trade financing with Moscow-registered trading

⁷ Rosstat (Russian Statistics Agency), Deutsche Bank

companies. The imports that flow to and via Moscow represent mostly non-energy products that require ground transportation.

Secondly, Moscow with its 10.4 MM people represents a significant consumer spending power on a standalone basis. The chart below compares Moscow vs. other large and wealthy Russian regions in terms of retail trade per capita – Moscow leads the comparison with more than 2.5x advantage over other regions.



As far as exports concerned, place of Moscow City in the national picture is less significant: 24% of Russian exports flow from or via Moscow⁸, while more than half of Russian exports come from the regions, where resource-based production is concentrated.

In 2004, Russian imports experienced a tremendous growth on the back of high oil prices: US dollar value of imports attributable to Moscow City has increased by 95% to \$24Bn⁹, while exports grew up by 68% to \$9.3Bn.

Moscow City Diamond

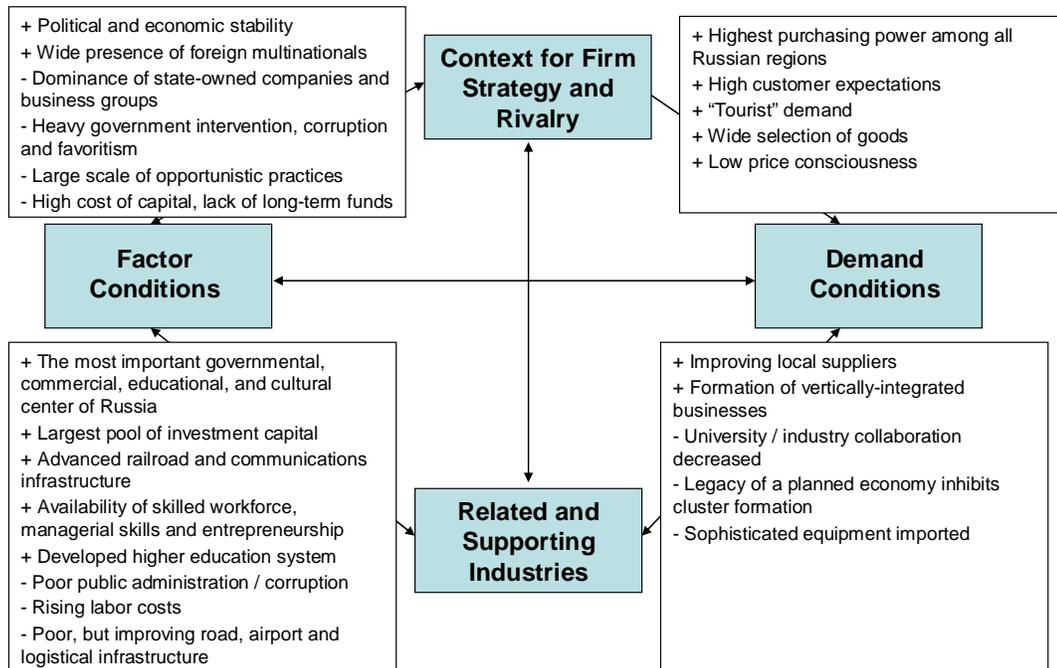
Context for analysis of the Moscow City diamond is set by the legacy of Soviet centrally planned economy – the economy in which geographic location of many related economic and social activities, relationships between suppliers and buyers were planned from a national perspective that was

⁸ Rosstat (Russian Statistics Agency), Deutsche Bank

⁹ Government of Moscow (accessed from www.mos.ru on April 26, 2006)

determined by political and security considerations rather than economic logic. As a result, Moscow as a capital of Russia enjoys strong factor conditions set by the legacy of Soviet times. However, given the recent strong economic performance of the country, demand conditions appear to improve as well.

Moscow City Diamond



Factor Conditions

Key factor condition that Moscow benefits from (that is in line with a typical starting point for most of developing countries) is its geographic location in the center of western part of Russia and in relatively close proximity to Europe. The city has inherited relatively developed transportation and communications infrastructure from the Soviet times: it has five airports and historically has been a major rail hub for Russia.

However, in contrast to most of the developing economies, Moscow is a Russian financial center and doesn't experience any large-scale lack of capital. Availability of long-term funding remains a problem up to now, but mostly relates to large infrastructure projects.

Unlike a typical developing economy, Moscow enjoys availability of highly-skilled workforce. Historically, the city has been the center of Russian education: more than 220 higher educational establishments are located in Moscow, including 63 universities. In addition, two of the most active Russian equity trading places are located in Moscow.

Negative side of factor conditions, specific to Moscow, includes rising labor costs (in 2002-2004 real salaries and wages in Moscow increased at a rate of approx. 14% per annum)¹⁰ and poor, but improving road and logistical infrastructure. In addition, Moscow as many other developing economies could be considered to have an inefficient public administration and regulatory processes filled with corruption. While the City of Moscow tries to present itself as an “open-for-business” institution, bribes would be the most efficient way to do business with City officials.

Demand Conditions

Demand conditions specific to Moscow are not typical of a developing country. Moscow contains the highest purchasing power among all Russian regions. In December of 2004, nominal income per capita in Moscow was around \$1175¹¹. Recent development and popularization of consumer finance has led to a more sophisticated customer bases that is not entirely focused on price and has high customer expectations, related to quality, selection and information about goods.

Context for Firm Strategy and Rivalry

Moscow is politically and economically stable city. Its Mayor has been keeping his post for more than ten years and has contributed a lot of efforts to strengthening Moscow dominant position as a financial, economic and trading center of Russia. Dozens of large multinational corporations has established its presence in the Russian market by opening offices in Moscow.

¹⁰ Mosstat (Moscow Statistics Agency)

¹¹ Ibid., Mosstat

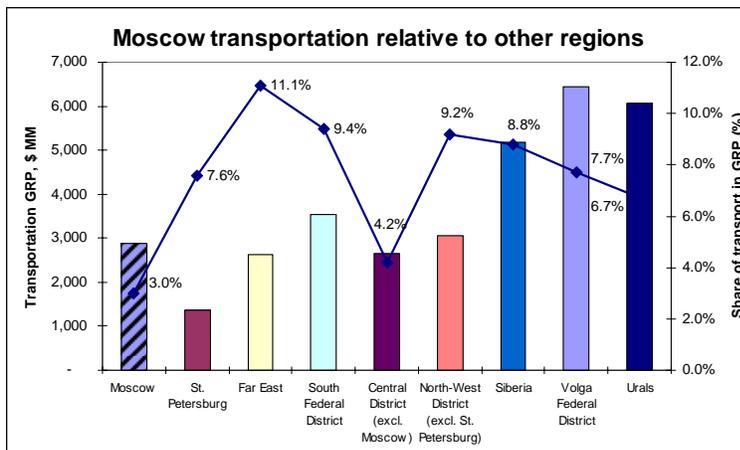
However, the city is also home to many large Russian state-owned monopolies, including Gazprom (the largest gas company in the world and Russian gas monopoly), RAO United Energy Systems (power monopoly in Russia), JSC Russian Railways (Russian railroad monopoly), Transneft (Russian pipeline transport monopoly) and others. Those companies contribute a significant portion of Russian GDP (only Gazprom is accountable for around 5%) and are subject to heavy government intervention, corruption practices and favoritism. The government often uses such monopolies to achieve its own political objectives. The most recent example is the conflict around gas transit of Russian natural gas to Europe via Ukraine. Such practices lead to a strong negative impact on competitiveness of Russia in general and Moscow as home city to Russian state-owned monopolies.

Related and Supporting Industries

Moscow has not yet experienced active cluster formation as the legacy of a centrally-planned economy inhibited cluster formation in the city. With the Soviet Union was dissolved, many historical linkages between industries and academic and research institutions were broken. However, in the recent years Russian economy has seen active formation of vertically-integrated businesses, headquartered in Moscow. One of the examples includes formation of Severstal Group – a diversified holding, which flagship company – the leading Russian steel producer Severstal – supplies its products to other manufacturing companies of the holding.

III. Transportation Cluster Analysis

As Russia is a large country by size, Russian transportation is a very large industry itself. For the purpose of this particular paper, we decided to focus our attention on transportation cluster in Moscow and further limit our scope to several roles played by Moscow as a transportation hub (discussed later).

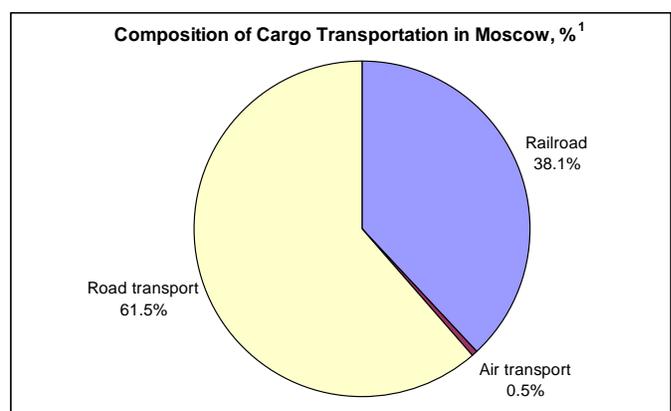
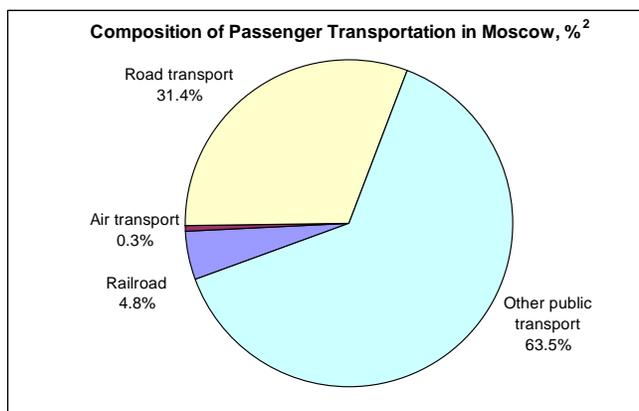


Source: Rosstat

Despite the fact that Moscow is the largest and central city in Russia, transportation is not a big contributor to the gross regional product of Moscow, relative to other regions in Russia. Transportation provides only 3% of Moscow's GRP, which is explained by the

fact that energy and raw materials are not transported through Moscow and the city has other developed clusters (trade and financial services).

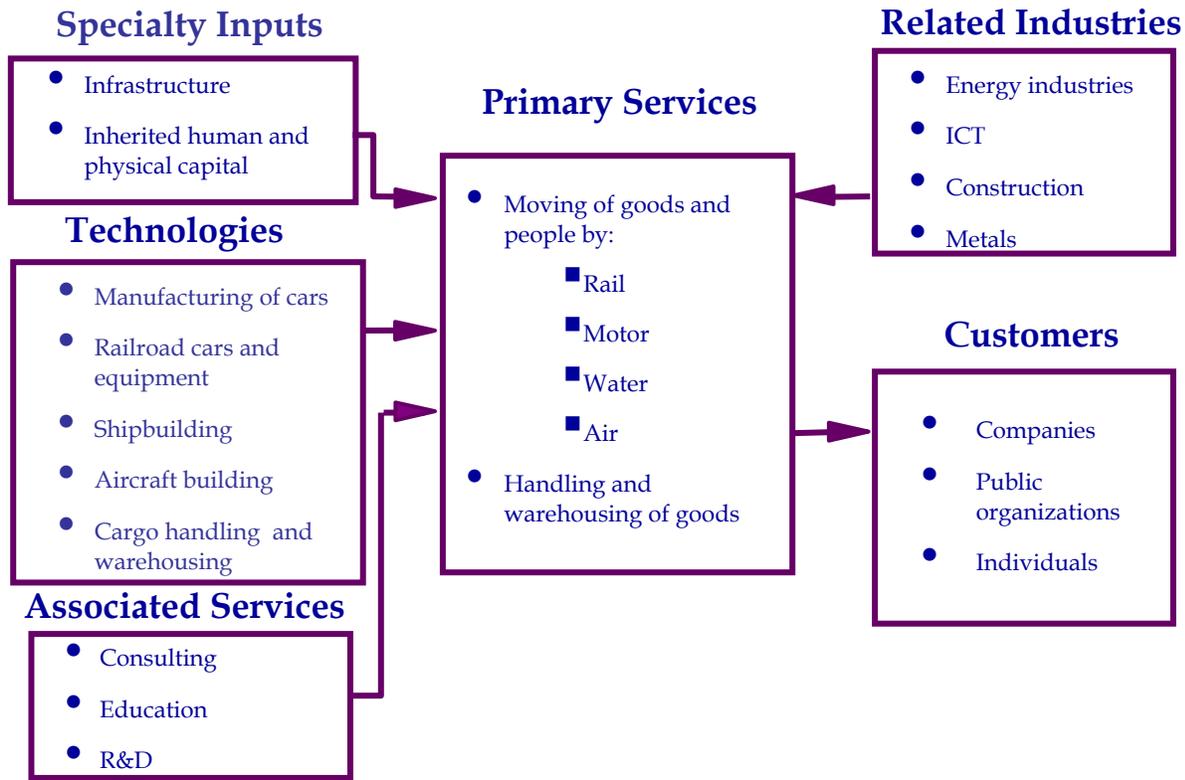
Road and railroad transport dominate Moscow transportation cluster. Due to the fact that Moscow is one of the largest urban agglomerations in Europe, public transportation is of high social importance.



Source: Mosgorstat

1. Based on MM tons of freight transportation in 2004
 2. Based on MM passengers transported in 2004

Cluster Map



Cluster Scope by Services Line and Geography

There are several distinctive cluster activities that are part of the Moscow transportation cluster.

Moscow acts as a:

- Hub for imported goods for Russian regions;
- Hub for Russian exports of non-commodities products & services;
- Air & Railroad Hub for passenger traffic;
- Air & Railroad Hub for container and air cargo transit shipments between EU and Asia.

In our project we are not focusing our attention on the role of Moscow Hub for Russian exports of non-commodities products & services as we found insufficient evidence that this particular cluster activity is well developed and have further doubts that it will be developed in the future, because of the

high dependency of Russian export-led economy on oil & gas and other commodities exports and also lack of sufficient government and private sector efforts to develop non-oil & commodities exports.

Instead, we will focus our analysis on the role of Moscow as a significant transportation Hub for the imports of Russian consumer goods that flow into Russia and get distributed in the regions via Moscow – Russian largest city that naturally plays the role of a transportation hub due to its legacy of being Russian capital and also because of the historical development of banking, customs, warehousing and other services in Moscow – all the necessary conditions that allow Moscow-based firms to act as important intermediaries in directing imports towards Russian regions. We believe that this function has been the most developed activity in the Moscow transportation cluster so far. However, we will also discuss the role that Moscow starts to play as an important emerging Air and Railroad Hub, attracting both intra-Russian and transit passenger and cargo traffic. We will attempt to explain what conditions, legacy- and factor-wise, currently exist that will help to develop further this function of the cluster.

Role of Moscow as a Hub for Imported Goods for Russian Regions

Historically, Moscow served as a political and financial capital of Soviet Union and then of the Russian Federation. With the Soviet and then Russian elite as well as the headquarters of the biggest companies and conglomerates heavily concentrated in the capital, the environment became conducive to an accelerated capital formation and concentration. With the state budget playing an important role in the economy and close to 100% of the government agencies, banks and ministries located in Moscow, most of the money channeled into Russian economy end up originating in Moscow and most of the capital is concentrated in Moscow banks. With three dominant Russian state-owned banks – Sberbank, Vneshtorgbank (VTB) and Vnesheconombank (VEB) – also headquartered in Moscow, the capital concentration is even more evident.

Financial sector plays an important role in import operations by acting as an intermediary between Russian firm-importer and foreign exporter. Therefore, historically, it was much easier for a

Moscow based firm to obtain Letter of Credit (LC) or an accreditive confirmation from a bank given the concentration of the capital and its availability at the cheaper interest rates. Due to that factor, Moscow based firms played an important role of the prime importer/distributors of foreign goods into Russia and found regional sub-dealers that were short on capital, but had regional presence and contacts and sold the products to them on consignment.

Also another factor is the origin of Russian imports – historically a significant portion of products imported into Russia came from EU. EU was Russian biggest trading partner in 2005, accounting for over 50% of total trade, while Russia was EU's fifth largest trading partner. Due to proximity of Moscow to the border to EU and availability of legacy road and railroad infrastructure it was easier to import goods from EU into Moscow, store at the warehousing facilities there and then distribute them to other Russian regions.

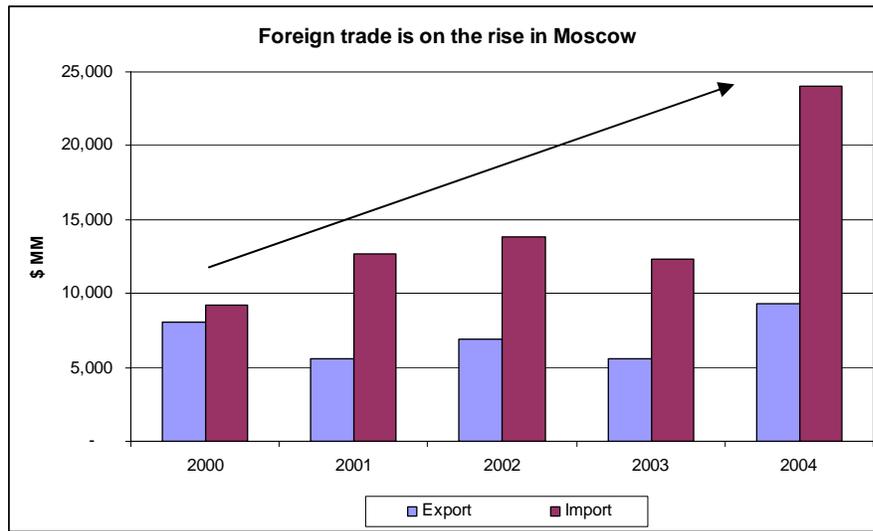
Russia-EU transport corridor: Alternative transport routes between EU and Russia



Another factor that played an important role in establishing Moscow as a Hub for imported products was the size and sophistication of the local Moscow demand. With the population of 10MM people and incomes per capita at more than triple the average Russian level, Moscow consumers created an important and predictable demand for goods. For foreign brands it was the foremost important to

establish presence in Moscow in the first place and then start distributing the products in other Russian regions. Moreover, until 2000 there was a common misperception among many foreign companies that outside of Moscow there might be no demand for modern and sophisticated products and services due to the low levels of income (one example is mobile telephony or washing machines).

As the chart below demonstrates, foreign trade is on the rise in Moscow. Moscow is a center of Russian trade: more than 50% of its gross regional product comes from trading activity.

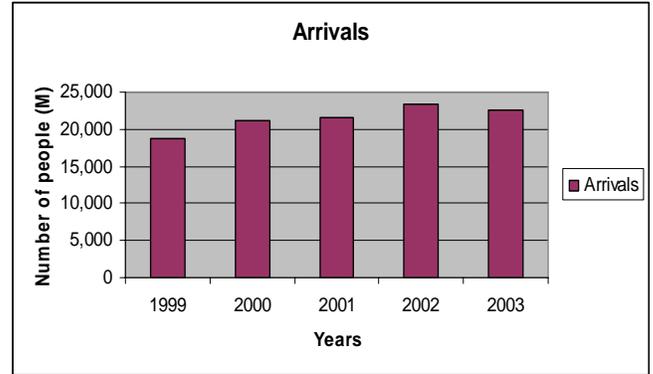
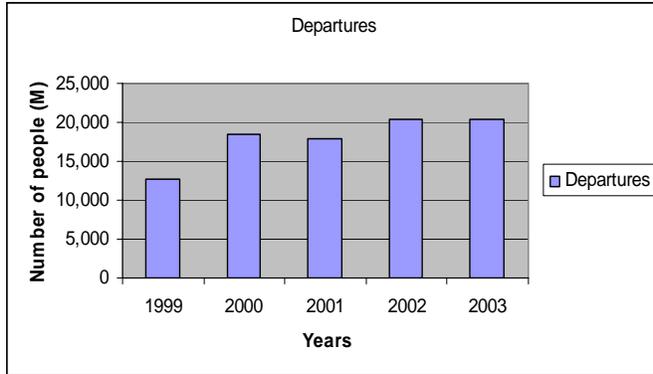


Source: City of Moscow

Role of Moscow as the Air & Railroad Hub for Passenger Traffic

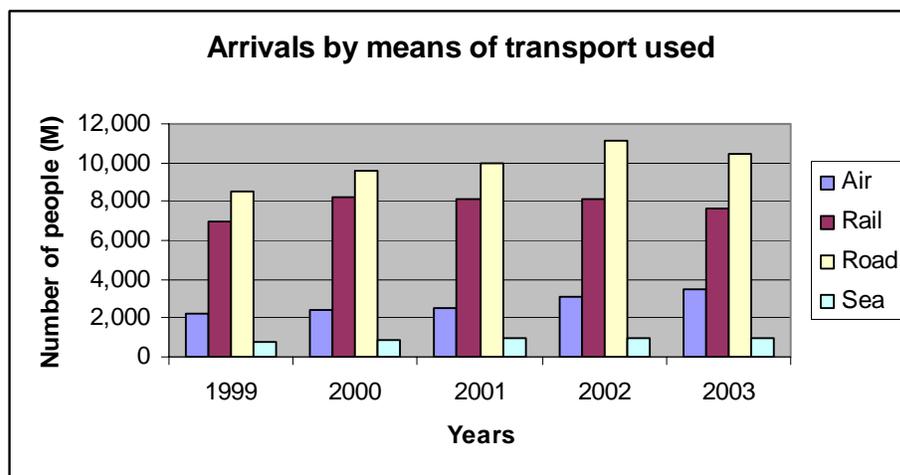
Historically, Moscow had one of the most developed infrastructures for air and rail transportation. Moscow region has four important airports, three of which are international airports (Sheremetyevo, Domodedovo and Bykovo) and nine passenger rail terminals (Belorusskiy, Kazanskiy, Leningradskiy, Yaroslavskiy, Kurskiy, Kievskiy, Paveleckiy, Savelovskiy and Rijskiy). Russia has a very limited number of direct routes between pairs of regional cities – historically almost 100% of all intra-Russian passenger air traffic went through Moscow. Also Russia has a significant number of outgoing tourists – in 2003 more than 20 MM people have participated in the outbound tourism compared to 12.6MM in 1999. Due to its high income per capita levels, Moscow residents represent

more than 50% of Russian tourists. Vast majority of tourists from regions also travel abroad via Moscow.



Additionally, close to 100% of tourists visiting Russia, enter the country via Moscow. In 2003, more than 22 MM people have visited Russia. In terms of arrivals, 90% of people visiting Russia were from Europe, of which 83% or 64% of the total number came from 11 CIS countries, which highlights the importance of Soviet legacy for the development of Moscow transportation cluster.

In terms of the means of transport used, road is the most commonly used transportation, railroads is the second most popular mode of transportation, while air is becoming increasingly more popular with the number of people using air services to arrive in Russia nearly doubling in 1999-2003 years.



Role of Moscow as Air & Railroad Hub for Container and Air Cargo Transit Shipments between EU and Asia

According to the Russian transportation strategy document issued by the Russian government in 2003 and further revised in 2005, Russia aims to become a major transit country for EU-Asia container and air cargo as well as for passenger traffic by 2010. If this vision is indeed realized, it will have a certain effect on the Moscow Hub as well. There are two ways how Moscow transportation and logistics Hub will benefit from the transit trade:

1. In terms of air cargo and passenger transit traffic, Moscow Hub will benefit from airplane stopovers at one of the three international airports, provision of aircraft maintenance, food services as well as refueling of the aircraft.
2. In terms of railways container transshipments via Russian Railway system, while the overall Russian logistics cluster will benefit, most of the benefits will most likely accrue to other regions of Russia, in particularly EU-bordering regions, where containers will need to be put on different trains (Russia has a different rail dimensions vs. EU) or different modes of transportation (ex., sea cargo).

As far as becoming an air cargo and passenger transit Hub, Moscow airports have significant advantages and disadvantage vs. other airports.

In terms of *advantages*, Russia and Moscow, in particular, are located along the shortest flight route from EU to various Asian markets. Right now, many foreign passenger airlines use Russian air corridors for those flights, although not many of them make a stopover at Moscow airports – mostly they make nonstop flights. Indeed annual fees levied at foreign airlines total around \$300MM a year. Currently those fees are being transferred from the budget directly into Russian majority state-owned airline – Aeroflot, which has become one the major obstacles in Russia-EU WTO accession negotiations.

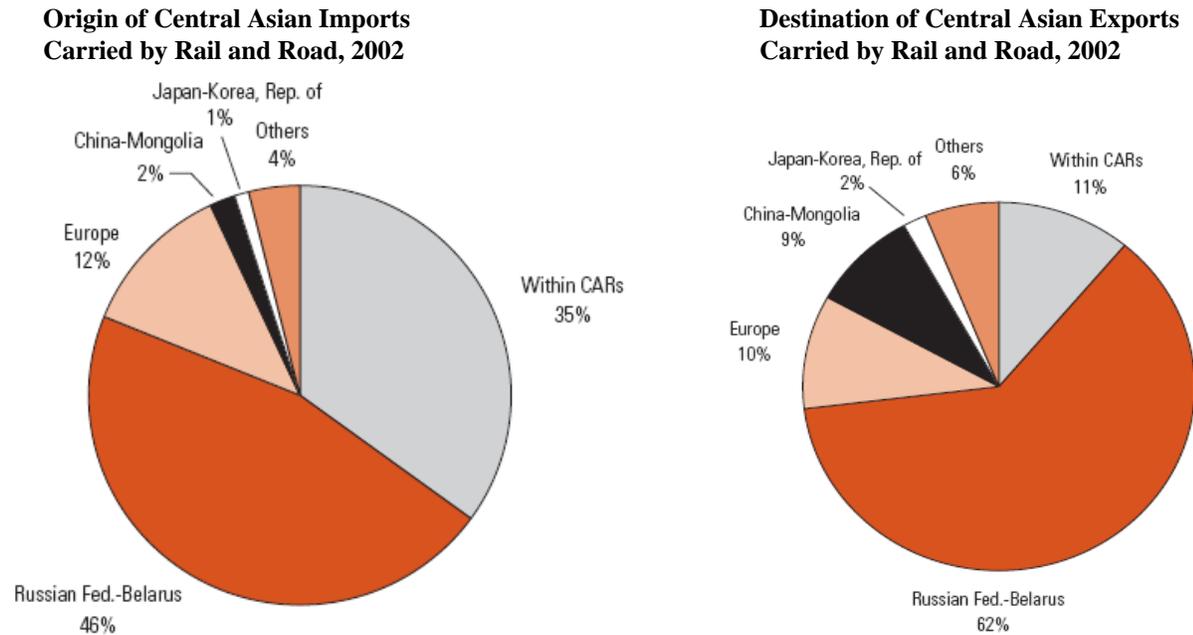
However, many cargo airlines, given the high air kerosene prices make stopovers at Moscow airports, saving the weight allocated for fuel for cargo load increase. Another advantage of Moscow airports is a relative underdevelopment of other Russian airports in terms of runways, airport infrastructure and instrument flight equipment for bad weather/bad visibility flights. Sheremetyevo is the only Russian airport certified at the top level by ICAO. So, Moscow airports face relatively limited competition from other Russian airports.

In terms of *disadvantages*, Moscow airports have significant limitations in terms of availability of runways/terminals to sustain rapid traffic growth. For example, state-owned Sheremetyevo airport's expansion of its third terminal has been planned for several years, while the condition of its first and second terminals have steadily deteriorated. In contrast, development of the privately managed Domodedovo airport and Moscow government-managed Vnukovo airport has been more robust. Domodedovo has managed to increase its passenger traffic by 250% in the last 5 years and last year overcame Sheremetyevo as Russia's largest airport. It has continued rapid expansion of both runway and terminal capacity since then. Vnukovo airport was in 2003 transferred from federal control under Moscow local government control and since then has been dramatically renovated and expanded. Its growth rates in 2005 have exceeded that of both Sheremetyevo and Domodedovo, however, the airport lags a mile in terms of passenger traffic.

Another potential hurdle for Moscow air transportation development is a rapid growth of the CIS airports, which are becoming a competitive threat to Moscow's historical predominance of the traffic. The growth in Kiev, Tashkent and Almaty airports have been mainly driven by the growth in passenger traffic of the local airlines. This trend is especially evident in Tashkent (Uzbekistan) airport, where local Uzbekiston Hava Yollari (UHY) has been one of the fastest growing airlines in Asia, while in Kiev airport (Ukraine) Aerosvit airline has been able to establish important transit connections to India, China

and the US, which combined with sensitive pricing has brought a steep increase in India-US and China-US transit traffic via Kiev.

Due to the legacy of Soviet Union, Moscow transportation Hub has also played an important role in serving trade between the Central Asian Republics and its foreign partners. The following data shows that about 50%-60% of the exports & imports, carried by rail and roads in Central Asian Republics, are transported via Russia and then Belarus further to Europe.

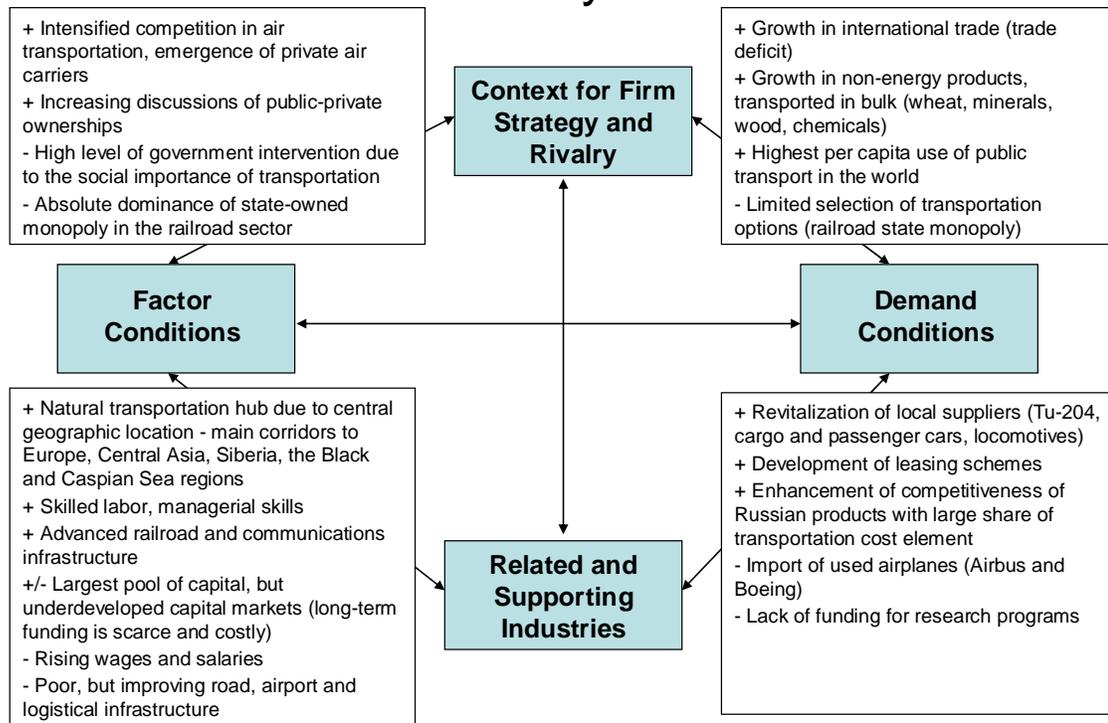


Source: The World Bank

Transportation Cluster Diamond

Summary of the competitive analysis for the Moscow transportation cluster is presented in a diamond below.

Moscow Transportation Cluster Competitive Analysis



We did not focus further on describing the diamond components in detail at this point of our paper as we believe that many of its statements have been discussed earlier and further discussion would be repetitive.

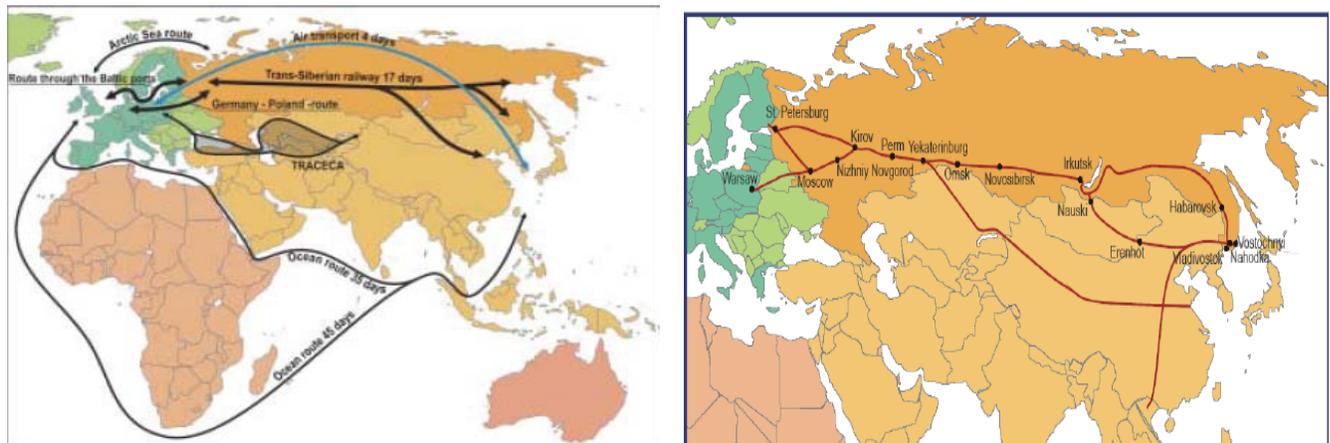
Transportation Cluster Challenges

Russian transportation cluster is facing many challenges, including extreme unevenness and fragmentation of transport routes, relatively long distances and isolation from most of the world's main transport networks, low density of road network, obsolete stock of locomotives, rail cars, aircraft and ship fleet, etc. Those challenges are also applicable to the transportation cluster in Moscow, however, we would like to focus further on few Moscow-specific problems.

Moscow is experiencing problems in many of the components of an efficient transport and transit facilitation system. For instance, three Moscow area international airports are not interconnected and due to the road traffic in Moscow, it is extremely difficult to make a quick connection between the airports. Domodedovo and Vnukovo airports are located in the South area outside of Moscow, while Sheremetyevo airport is located in the North region. The length of the road trip between the Sheremetyevo and Domodedovo or Vnukovo is 2-4 hours and might cost more than \$100 (taxi), while public transportation options are very limited.

In terms of Russia becoming a transit country for railroad/inter-modal container trade between EU and Asia, Moscow region stands for limited gains. The charts below show the major transportation routes available to interconnect EU and Asia:

Russian transportation cluster in the context of global trade: transportation routes between Asia & Europe



Due to high concentration of the Russian transportation and logistics firms in Moscow and the existence of Russian Railroads state-owned monopoly that owns the tracks and most of the infrastructure as well as the railcars, locomotives and services centers, Moscow will partially benefit from such a development: for instance, all of the actual rail tracks pass through the city. However, there is limited additional value that can be added in Moscow region specifically, although EU-bordering regions as well as Russian ports will most likely benefit by providing ancillary services.

Summary Recommendations

The government of Russian Federation has developed the Transportation Strategy of Russian Federation to solve the deficiencies of the Russian transport system. In particular, the document underlines the importance of taking the following measures at a national level:

- Increase the use of Russian ports vs. Baltics ports in Russian exports shipments (to 90% by 2010).
- The total amount of reinvestment capital required by the industry is estimated around \$20Bn till 2010.
- The government supports launch of 12 transportation megaprojects.
- The government will promote large scale investment to develop infrastructure in Central region of Russia to unlock opportunities for EU-Russia and EU-Russia-Asia trade.
- Improve transparency of railroad tariff setting process. Currently, the tariff setting process is arbitrary and the prices are set not according to a clear transparent formulae, but depend of many variables which breeds corruption by bureaucrats.
- Improve efficiency and speed of customs-related procedures.

At the level of Moscow transportation, we believe that the following steps would help to expedite development of the cluster:

- Seek new ways to generate revenue to maintain and expand the road network (consider funding from the private sector, increase in the fee rates for vehicle licenses, surcharge per liter of gas).
- Open up to public-private partnership in building
 - a new high-speed highway and railroad route between Moscow and St. Petersburg;
 - transportation link between major Moscow airports.

- More aggressive privatization of railroads and airlines should be considered to increase efficiency and bring in foreign investment/strategic partners.
- open the sector to independent train-operating companies that would compete with Russian Railways for the business of hauling commodities over the Russian Railways track as well as passenger transportation.
- involve large shippers (oil, steel, timber, or coal companies) in the process of creation of independent train operating.

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