Russia: The Transport Sector

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Summary

The long-term strategy of the Government of the Russian Federation, as articulated in the Modernization of the Transport System 2002–2010 (MTS) and in the newly adopted Transport Strategy of the Russian Federation (TSRF), considers transport to be the most important component of a productive infrastructure, and its continued development to be a priority of the State. Thus, the TSRF recognizes that future development of the transport system must focus more on the overall coordination among different transport modes, and help reduce imbalances among regions. This will be accomplished through improving the legal framework, monitoring compliance with new rules of competition and access to infrastructure, developing safety and environmental standards, providing for safety against terrorism and crime, and ensuring the provision of minimum transportation services to all the population and regions of the country.

I. Overview of the Transport Sector

International Trade

Russia’s trade exports are heavily concentrated in the energy sector, which accounts for around 40 percent of total exports by value, and in particular in oil, which accounts for almost a third of all exports. To expand into new markets and increase competitiveness in current markets, the current relatively high cost of exporting manufactured goods, through outdated land and port infrastructure and with an inadequate merchant fleet, needs to be reduced by new investment and increased efficiency of operations.

Manufactured goods account for less than 10 percent of total export value. Improved transport infrastructure, combined with more efficient and better-integrated transport services, will play a vital role in increasing Russia’s competitive advantages in the export of non-energy products. In the short term, it is in wheat, basic manufacturing, minerals, wood products, and chemicals in which Russia is likely to be most successful, while in the longer term the export of high-value-added industrial and electronic products could also be successful.

Most agricultural, mineral, and basic industrial products need bulk transport facilities, and these are best provided by rail transport. Chemicals are also mostly transported in bulk, but are increasingly transported in specialized containers that can often be transported by road as efficiently as by rail. The longer-term prospects will require timely and reliable rather than low-cost transport, and this can be competitively provided by road as well as by rail.
Markets in which Russian products are likely to be most competitive are those of the European Union (EU) and Central Asia, while industries in Siberia could find markets in China and the Republic of Korea. To be competitive in EU countries, Russian products will need to minimize the disadvantage of higher transport costs compared with the new EU members, so that transport costs do not outweigh Russia’s advantages of lower labor and raw material costs.

There has recently been a large increase in Russia’s grain production and exports. Until very recently most of the increase in grain exports has been to the EU, in competition with Ukrainian exports. Both countries are, however, now facing the imposition of quota limits by the EU. Therefore, future grain exports are likely to be oriented to Russia’s more traditional markets, Algeria, Egypt, Israel, Lebanon, Morocco, Syria, and Tunisia, and perhaps to new markets, such as the Republic of Korea.

These considerations indicate a need to develop and improve rail and road transport links to the EU, particularly from existing industrial zones in western Russia, and rail links to China and the Republic of Korea from industrial cities in eastern Russia. They also indicate a growing trade significance of Russia’s Black Sea ports (and access links to them) for increased grain exports to Mediterranean countries.

**Domestic Trade**

*With the changing pattern of manufacturing since the era of the planned economy, the demands on the transport sector to facilitate domestic trade have dramatically modified. The transport intensity of the economy (the number of freight tons per kilometer needed to produce a given value of gross domestic product [GDP]) has fallen to less than half its previous value, with the greatest impact being on the railways. As the structures of Russia’s agricultural and industrial sectors conform more closely to those of a market-oriented economy, the average size of consignments will decline, while the diversity of freight origins and destinations will increase. These changes, which are being reinforced by an increasing demand for timely and reliable transport services, will produce conditions that favor road rather than rail transport. Rail transport will still have a vital role in the transport of interurban freight.*
and passengers, but its competitive advantages indicate a more specific role in the transport of bulk freight and in high-density passenger corridors than in the past.

These changed conditions mean that road infrastructure and services are now facing demands they were not designed to cope with. Satisfying these demands will require significant updating of the quantity and quality of road infrastructure, and a dramatic improvement in the quality of road transport services. The most efficient transport services to meet many of the new demands will require coordination between competing road and rail services. While rail will maintain a competitive advantage in many situations, since few of the new freight generators will be directly connected to the rail, this advantage will only be realized through provision of multimodal and integrated logistics services.

Passengers

The TSRF recognizes that the ability of people to travel is an important part of quality of life, and that until now, Russians have traveled less than half as much as their European counterparts. While rail services will continue to supply most interurban passenger services, more use will be made of other transport modes as they become more competitive.

Air services are likely to compete strongly for the upper end of the market and for the longer distances. Once the interurban road network is upgraded, express bus service is likely to be more competitive at the lower end of the market, at least for the shorter distances. While there is great potential for rail to increase its total passengers, particularly for intermediate distances and in mid-level markets, the financial structure under which rail passenger services are operated will change, because the subsidies that currently make them viable will be eroded by competing demands on public revenue (for direct subsidies) and lower competitive tariffs for freight services (for cross-subsidies).

Russian cities have the highest recorded per capita use of public transport in the world.\(^1\) There is a risk of this changing, however, with rapidly increasing car ownership and traffic congestion, and deteriorating quality of urban public transport services. Even with better traffic management, more improvements will be necessary to public transport services for them to retain or increase their market share, and this will require restructuring the way they are provided.

As with interurban transport, the financial basis of urban passenger transport is already changing, because the revenue sources for subsidies are not expanding with the demand for them. In light of this ongoing change, it is of critical importance that systems be implemented that make more effective and efficient use of the subsidies that are

\(^{1}\) Millennium Cities Database, International Association of Public Transport (UITP 2001).
available, and evolve new structures that will ensure the continuation of viable and affordable urban public transport.

**Logistics**

*The low participation of industrialized products in Russia’s exports is part of the explanation for the slow evolution of logistics services, such that there are still few export-processing zones associated with ports. If manufactured goods are to figure more prominently in exports, their production and distribution will need to become more efficient.*

As manufacturing exporters strive to become more competitive, logistics, and particularly transportation, are playing an increasingly important part in the distribution systems of both their inputs and products. In addition to the requirements of its own domestic and international trade, there is a significant demand for transit trade between East Asia and Central Asia and Europe that can be satisfied by Russian logistics companies, provided that the institutional and bureaucratic impediments to such trade can be overcome.

Logistics also have an important role to play in reducing the cost of domestic trade. Not only are there great advantages to be gained from improved trade facilitation, but also from the better coordination of services among transport modes.

Many port and freight terminals are located in downtown areas, and the same increasing traffic congestion will make their access more difficult and expensive, prejudicing cost of domestic trade and the comparative advantage of Russian foreign trade. It is likely that many freight terminals and the non-maritime logistics activities associated with ports will need to move out of their present sites to those better located on the peripheries of the metropolitan areas, but linked to the ports with dedicated access links.

II. The Road Sector

**Demand for Road Transport since 1990**

The economy of the Russian Federation is growing faster than those of most industrialized countries, and there are strong expectations that high, if somewhat lower, growth will continue. While much of the growth will occur in the services sector, and therefore contribute little to the demand for road transport, the manufacturing sector is expected to grow at least at the average growth rate, and so make a significant contribution to an increased demand for road transport. Also, the government is
stimulating the growth of small- and medium-size enterprises (SMEs) in the expectation that they will be more dynamic than the large companies in fostering economic growth. It is the SMEs in the manufacturing sector that are more likely to make use of road transport than of rail transport.

With the expected changes in the structure of domestic industry, road transport is likely to increase its market share, perhaps by as much as 50 percent within 20 years. Within this average there are expected to be significant variations, with highest growth coming in the large metropolitan areas of European Russia, and the main corridors leading from them to their EU neighbors, and the lowest growth coming in the vast agricultural areas of Central Asia and Siberia. However, achieving this growth will depend on providing the road capacity and quality for the increased freight to be transported reliably and quickly. The conditions under which reform can be achieved are outlined in this Policy Note.

There has been such a rapid change from being a rail-dominated, state-managed system, to being one with a rapidly emerging road transport sector that is driven by commercial interests, with at least the beginnings of a competitive environment, that many policy issues are still to be resolved. The issues that need to be addressed to assure the future development of the roads sector, as identified in the Public Expenditure Review Highway Sector 2002, include:

- Planning, funding, and implementing expansion and improvement of the road network to make it more compatible with the demands made on it;
- Planning, financing, and executing the urgent rehabilitation and maintenance of that network;
- Adapting the institutional structure of management and funding of the network, and allocating institutional responsibility among the different levels of government;
- Developing a method of contracting civil works that makes best use of the limited available funds;
- Updating road design standards; and
- Reducing the high road accident rate, particularly the excessive number of fatalities.

**Funding of Network Expansion and Maintenance**

The most urgent issue in the road sector is funding. Investment in road infrastructure has been falling in the last few years, both as a percentage of GDP (0.51 percent of GDP in 2002) and as an absolute amount (about US$1.8 billion equivalent in 2002), despite increasing revenues from the taxes that were supposedly earmarked for that purpose. In addition, the share of that investment used for the federal road network, which accounts for about 80 percent of road vehicle travel, has declined from 80 percent to less than 60 percent. Thus, investment in the federal roads has declined even further, so that in 2002 the share of GDP allocated to federal roads was less than 0.3 percent of GDP.
Initial estimates of the amount of finance needed to maintain the existing road network, so it does not deteriorate any further, are in excess of 1 percent of GDP (about US$3 billion per year). Supporting an economic growth rate of 5 percent is estimated to require a further 1.25 percent of GDP (another US$4 billion per year). That still leaves investment to make up for previous deterred construction and maintenance. Together these two would require by far the largest expenditure, amounting to more than US$150 billion in total (including most of that for expansion of the network indicated above). Spread over 25 years, this would represent about another 2.0 percent of GDP (US$6 billion per year). The sum of these three components implies an investment of about US$13 billion per year. This compares with the current expenditure of less than US$2 billion. Therefore, unless there is a dramatic increase in investment in roads, it will be impossible for the network to fulfill its economic and social role.

What potential sources are there for that investment? A combination of revenue from several potential sources will be needed to generate this volume of funding. None of the six considered here is by itself likely to generate more than about 30 percent of the total.

Budget allocations: Most of the funding for investment in expansion of the road network will continue to come from federal budget allocations. The method of allocating these funds between federal and territorial roads, both of which need more than they are allocated to satisfy rapidly growing demand, has been arbitrary and subject to intense political maneuvering. While this can be a sign of strength of the democratic process, the uncertainties in allocations that result can inhibit the long-term planning of network development and can result in an underutilization of the scarce financial resources available.

These have not exceeded about 0.5 percent of GDP over the last few years, but EU countries are now allocating close to 2 percent of GDP, and many middle-income countries have recognized the need to invest up to 3 percent of GDP. If the Federal Government were to allocate increased funding equivalent to 2 percent of GDP to federal roads, this would provide up to US$4 billion per year.

Private investors: There is potential for the private sector to be the second major contributor to road network expansion and maintenance. Construction of new high-capacity roads, or even the expansion of existing roads to high-capacity standards, is very expensive and beyond the resources of the road agencies of most developing countries. To speed up the building of such roads many countries have sought ways to attract private funding. The usual approach is to concession the building and operation of the road to a private company (or consortium of companies) in return for allowing them to retain the revenue from tolls for a fixed period of time, after which responsibility for the road reverts to the road agency. A less-used alternative is for the road agency to retain responsibility for high-capacity roads through a subsidiary agency, which operates them as toll roads. The subsidiary agency can attract equity or debt finance because it has a secured (but not necessarily guaranteed) source of revenue.
Either approach could be used in Russia and could attract significant private funding to expand the road network. For a new road to generate sufficient revenue to cover the full investment cost, it needs a level of traffic in excess of about 15,000 vehicles per day. Because there are few roads in Russia that have this volume of traffic, it is probable that use of the concession approach would require significant public funding to supplement private sector funding. In the second approach, revenue might be generated from existing high-capacity roads for which little new investment is needed, so more roads could be built with less public contribution to their funding.

Preliminary analyses indicate that it might be possible to construct or upgrade up to 10,000 kilometers (kms) of four-lane, limited-access roads using this method of funding, and that of this, about 2,000 kms might be new construction, the remainder being upgrades of existing roads. If innovative schemes for joint public–private funding could be implemented, the potential for private funding could be increased by 50 percent, and if spread over five years they would generate a total of about US$4 billion of investment per year.

**Fuel surcharges:** As recognized in the TSRF, users must pay for all road investment except that which comes from the Ministry of Finance, and that part must come from taxpayers. The most widespread form of charging users throughout the world is through a surcharge on the consumption of fuel. A surcharge equivalent to US$0.10 per liter (about 3 Rubles) would raise only about US$2.25 billion per year, about 17 percent of the total needed. Even this amount would be difficult to implement given that it represents an increase of almost 30 percent on the present retail price of gasoline of about US$0.35 per liter. As with many other countries, a fuel surcharge of this level generates revenue sufficient to finance only maintenance of the network, and not its expansion, which will have to be funded from other sources.

Many countries make use of fuel surcharges to fund maintenance and/or expansion of their road network. The United States uses revenues from a US$0.05-per-liter “gas tax” as the main revenue source of a Highway Trust Fund that covers the federal contribution to new road construction and maintenance and urban mass transit development. Many of the states add their own “gas tax” on top of the federal tax for similar purposes.

**Vehicle licenses and other user charges:** There are numerous charges to users of roads, including but not limited to fees for issuing driver and vehicle licenses, and additional duties and taxes on road vehicles and equipment. While the first two of these are often collected by and applied by local governments for maintenance of their local roads, the duties and taxes are usually collected by the national government and contribute to their general revenue. With a fleet of about 21 million private cars and 0.3 million trucks, vehicle licenses are a potential significant source of revenue. If the average fee for a license is US$100, the total revenues could amount to about US$2.0 billion. The distribution of the average fee among the different categories of vehicle should reflect the costs that they impose on the road network and the benefits that their
operators derive from it. This would indicate that the fee for large trucks should be about four to five times higher than for private cars.

**International financial institutions:** Multilateral lending agencies have not so far funded much of the development of Russia’s road network, but the differences that made them slow to get started have largely been resolved, and they have the potential and the interest to make a substantial contribution over the next decade. Perhaps half of a program for the transport sector of about US$1 billion per year could be allocated to national roads, with the balance being for urban transport, railways, and ports.

**Total revenue:** All these revenue sources should be used to their maximum, so they could generate the US$13 billion of funding for road investment needed each year. The three most important of these would provide almost three-quarters of the total, the federal budget would contribute about 31 percent, private investment slightly less at about 30 percent, and the fuel surcharge about 17 percent (and this would be allocated to maintenance activities). Vehicle licenses could contribute about 19 percent, and the multilateral agencies only about 4 percent of the total (Table 1).

Although these estimates are only approximate, they highlight the important conclusion that the federal budget will continue to be the most important funding source for road network expansion and maintenance for the foreseeable future. Russia’s road needs lead to the following recommendations.

**Recommendations**
- Thought should be given to levying a surcharge of about 3 Rubles per liter to generate enough revenue to maintain the road network.
- Substantial funding from the private sector should be sought to supplement funding available from the national budget.
- A significant increase in the fee rates for vehicle licenses should be sought to make a sizeable contribution to road network expansion.

**Table 1. World Bank Estimates of Potential Annual Revenue for Road Investment**

<table>
<thead>
<tr>
<th>Source</th>
<th>Revenue</th>
<th>% of total</th>
</tr>
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<tbody>
<tr>
<td>Fuel surcharge of US$0.10/liter</td>
<td>US$2.2 billion</td>
<td>17</td>
</tr>
<tr>
<td>Private investment in 400 kms of toll roads</td>
<td>US$1.5 billion</td>
<td>12</td>
</tr>
<tr>
<td>Private investment in upgrading 800 kms of Class 1 roads</td>
<td>US$1.0 billion</td>
<td>8</td>
</tr>
<tr>
<td>Private investment in public–private funding of new investment</td>
<td>US$1.2 billion</td>
<td>10</td>
</tr>
<tr>
<td>Federal budget: 0.5% of GDP</td>
<td>US$4.0 billion</td>
<td>31</td>
</tr>
<tr>
<td>International Financial Institutions</td>
<td>US$0.5 billion</td>
<td>4</td>
</tr>
<tr>
<td>Vehicle licenses</td>
<td>US$2.5 billion</td>
<td>19</td>
</tr>
<tr>
<td>Total</td>
<td>US$13.0 billion</td>
<td>100</td>
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**Expansion of the Road Network**
Despite an increase of over 35 percent in the last decade, from about 23 kilometers per 1,000 square kilometers in 1990 to 31.2 kilometers per 1,000 square kilometers in 2001, the density of the road network remains exceptionally low. In the European part of Russia, particularly, where there is a greater justification for a higher network density, it is only one-sixth that of Latvia, one-fifth that of Estonia, and one-third that of Ukraine (Figure 1).

**Figure 1. Road Density by Country, Kilometers per Square Kilometers**

While the 1990 road network had some spare capacity, when taking into account the increase in the fleet size, and in the use made of that fleet and the more demanding characteristics of modern commercial vehicles, any spare capacity has been mostly taken up. The major corridors, such as those between Moscow and the European border and the Black and Caspian Sea regions, are now so heavily congested that they have become barriers to further economic and social development of the regions they serve. Some major roads that have a design capacity of about 5,000 vehicles per day are now trying to accommodate demand in excess of 15,000 vehicles per day.

Outside of the major corridors, development of the territorial and rural road network has been even more neglected. According to data for 2001, 151 out of 1,846 regional centers (almost 20 percent) and 1,688 out of 25,186 central, collective, and state farms (almost 7 percent) had no paved road connection to the rest of the road network. Without such connections, integration of these centers and farms into a market economy is next to impossible.

**Recommendations**

A major reform objective could be to remedy these deficiencies in the extent and characteristics of the network. This could be accomplished by:

- Linking all cities with a population of more than 1 million to a network of four-lane highways. Most of these highways would be built by upgrading
existing roads, but some of them, in the more densely trafficked corridors, could be built as new roads.

- Linking all towns with a population of more than 50,000 to a road network of paved roads at least 10 meters wide. Again, expanding and improving existing roads would achieve this.
- Linking all communities with a population of more than 1,000 to a road network of all-weather paved roads.
- Upgrading trade corridors to international standards.
- Requiring the construction of up to 10,000 kms of four-lane highways, and upgrading some 25,000 kms of roads to a width of 10 meters, and improving 250,000 kms of roads to all-weather paved status. Such a program would cost between US$100 billion and US$150 billion.

Institutional Arrangements

The main functions of systems of categorization of roads are to ensure that design and maintenance standards are appropriate to the volume and type of traffic that is using the road network, and to ensure that adequate funding is available to the agency responsible for the construction and maintenance of the roads. The current system of categorization by design could go far in achieving the first objective, if it were more consistently applied. The system of funding development and maintenance of the road network is undergoing major revision, but the methods of ensuring financial sustainability of the agencies and levels of government responsible for different categories of road do not appear to function well.

There is inadequate information on which to plan the maintenance of most of the road network (the federal network is an exception to this generality), so it is difficult to develop a financing mechanism since the financing needs are not known.

There are a number of international models that Russia could adapt in devising a sustainable financing system. All of them would require the Federal Government to persuade the other levels of government that currently depend on federal financing for part of their road investment needs to provide the information on which the system would be based. The initial data collection and its subsequent updating would require a higher level of professional and technical ability in the agencies responsible for roads outside the federal network. Similarly, the implementing and operating systems of budget planning that are widely used in other federal countries require a high level of technical ability at subnational levels. Establishing and implementing such systems and training staff in their use is a specialization of most International Financial Institutions, and they would respond favorably to requests for help.

Management of the federal road network: Restructuring of the management of federal or national road networks is under way throughout the world. It varies from mild restructuring in Australia and Zambia, to radical restructuring in Colombia, Finland, New Zealand, South Africa, and Sweden. The objective is nearly always the same: to introduce a more commercial approach to management of roads by creating: (a) more autonomous
and accountable management, (b) a more market-based approach to setting priorities, (c) better staff incentives, (d) a more flexible staffing structure, and (e) better accounting systems combined with tighter financial discipline.

Management boards are becoming increasingly common for national road agencies. The best examples have independent chairmen and include members representing road users and the business community. The board may perform an advisory role (as with the Japan Road Council and the Highways Agency Advisory Board in the UK), or they may be nonexecutive boards having full “control of the management, property, business, funds and any other matters relating to the [highway authority]” (as in Finland, Ghana, New Zealand, and South Africa).

The boards normally delegate day-to-day management of the road agency to a chief executive, who is assisted by several line managers responsible for functions such as maintenance, development, finance, and administration. The road agency and its Board still report to a parent ministry, as do other transport enterprises (the airline, railways, and so forth). Complementary reforms generally focus on financing arrangements, introduction of modern management information systems, commercial accounting systems (including a balance sheet to record assets), and independent technical and financial auditing.

**Recommendation**

- Apply an appropriately designed road management system based on one of these models to facilitate better planning and budget allocation (although full evolution to an independent management board with user representation could be seen as a medium- to long-term objective).

**Contracting Road Maintenance and Construction**

One of the basic ways to increase the efficiency of use of road sector expenditures is to update the system of the government procurement of goods, works, and services, the organization of which is an integral part of the activities of state authorities. Experience with procurement of civil works in other countries indicates a number of procurement mechanisms that could be successfully used in Russia.

The most important of these is that the contracting, performance, and assessment of works should be based on openness, transparency, and equality for all the parties involved. This requires that a system of legal acts and rules be developed and adopted at the Federal Government level, taking account of the terms of government procurement established at regional and local levels. Although the present system of contracting is already based on some of these concepts, they are not rigorously applied and are largely ineffective. The current legislation on government procurement has a number of shortcomings, including an extensive list of reasons to hold a closed instead of an open bidding process, absence of a clear list of reasons allowing for deviations from the competitive government procurement procedure, vague legislative criteria for choosing a successful bidder, no rules for nullifying the results of a competition, the existence of
extrajudicial procedures for appealing a government action, and insufficient regulations stipulating bidder liability.

**Recommendations**

- Make procurement procedures more open, transparent, and open to competition, and contract out road maintenance through Performance Specified Road Maintenance Contracts. This would improve the quality and reduce the costs of road maintenance and construction.
- Instead of making contracts for specific maintenance activities, under these contracts the road agency would outsource both the management and production of the maintenance work to a single contractor, using the resulting quality of the road network as the basis of payment under the contract.

**Design Standards**

The low design standards used for the construction of most of the national road network were an indication of the limited role allocated to road transport under the planned economic system. Most of the roads that were built in that period have a width of up to 10 meters, a tight radius that avoided high construction costs, and were suitable for maximum axle loads of six or eight tons per axle.

Many of these roads now sustain traffic from a much higher number of much larger trucks with European dimensions. While they can do this for a short time, as traffic volume increases, the inappropriateness of these designs for the new demands being made on them is restraining economic and social growth. The present design standards are still based on maximum axle loads of six tons, whereas the European designs of many trucks operating in Russia have axle loads of 11 tons to 16 tons on double axles. When the EU countries accepted increases in vehicle axle loads and maximum vehicle weights, they were forced to invest heavily in upgrading their road networks to new design standards to avoid the heavy damage to roads and bridges that would otherwise result.

**Recommendations**

- A full review should be made of vehicle and road design standards in Russia, taking into account the types of vehicles that are expected to be in operation over the next decade.
- On the basis of that review, by the end of 2008 there should be new standards for vehicles and road design, both compatible with the characteristics of vehicles that will be in operation.

**Road Accidents**

Russia, like other transition countries, has an increasing number of road fatalities, now more than 38,000 per year. Most developed countries have adopted measures in the last two decades that have significantly reduced their total fatalities, as well as their fatality rates. In recognition of the importance of road accidents, the World Health Organization has announced that World Health Day 2004 will be dedicated to “Safe Roads.”
To measure trends in road accident rates and to make comparisons among countries, two measures of fatality rates are commonly used—fatalities per 1,000 people, and fatalities per 10,000 motor vehicles. The severity of accidents is measured by a third index, the proportion of fatalities to serious injuries.

By the first measure, Russia’s accident rate is relatively high at 21.8, but not exceptionally so, being similar to that of Greece, Portugal, and the Republic of Korea. However, these countries have much higher levels of vehicle ownership than Russia, so the fatalities result from a higher number of vehicles on the road.

By the second, more realistic measure, however, Russia’s rate of 12.2 is exceptionally high. It is 50 percent higher than the second highest among the reporting countries (the Republic of Korea at 8.2). By the third measure, Russia is similar to the other transition countries, with an index of 0.12 (that is, for every eight people injured in road accidents, one is killed). But this index is 5 to 10 times higher than in most developed countries.

However it is measured, Russia has a serious problem of road crashes and fatalities. This is recognized in the TSRF, in which developing safety standards for transport operations is seen as one of the principal spheres of government responsibility. The World Bank welcomes an initiative recently taken by the Russian government to invite the Organisation for Economic Co-operation and Development (OECD) and the World Bank to prepare a joint review of road safety, and Russia looks forward to working together with the government and other international agencies to bring about a dramatic reduction in the number of road fatalities.

**Recommendations**

- The main recommendations for dealing with road safety should await the outcome of the proposed comprehensive multisectoral and multidimensional review of the sources of the problem and the most effective measures for dealing with them.
- These road measures, as will be recommended in the review, should be implemented in addition to the relatively simple and straightforward measures such as improving and strengthening of road design and the road environment, speed management, enforcement of laws on the use of safety-belts and against drunk-driving, driver training, more effective implementation of driver and vehicle regulations, and more social education.
- All these cost-effective, short- and medium-term interventions are likely to include clearer institutional responsibility for reducing accident rates. Russia can learn a lot from experiences elsewhere in the world, and it is recommended that Russia follow the structured directions and incremental approach formulated in the World Bank Note, “Implementing the Recommendations of the World Report on Road Traffic Injury Prevention.”

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The main recommendations for dealing with road safety should await the outcome of the proposed review of the sources of the problem and the most effective measures for dealing with them. In addition to the relatively simple measures such as improving road design and driver training, more effective implementation of driver and vehicle regulations, and more social education, these are likely to include clearer institutional responsibility for reducing accident rates.

III. The Railway Sector

There is now in place a well-formulated reform plan developed by the railway in conjunction with all relevant government agencies. The future role of the rail sector is now established well enough to give confidence that a critical investment program will be justified. Railway enterprise and the Ministry of Railways (MPS) have been separated, and their roles defined. The policies needed to eliminate cross-subsidies between freight and the various passenger services are in place, though implementation will be difficult politically. The first steps in the implementation – the law to monetize a wide range of social services – are also in the process of final passage.

Recommendation

- Though some aspects of the reform program remain to be implemented, the basic message of a recent OECD review of the rail sector and the plans for regulation concluded that the real need is to “keep going,” because the danger of inaction is greater than the problems that remain to be resolved.\(^3\)

The rail sector has undergone a long period of limited earnings and restricted investment, beginning with the collapse of the planned economy and the transition to an emerging market economy in Russia. With the reforms in place, the railway sector will be well placed to respond, if it can obtain the financing it needs to rehabilitate the infrastructure (track, signals, and electrification), wagons, locomotives, and coaches that it will need in the future. It is clearly not going to be possible to generate the required investment from railway earnings except over a period of time far longer than the national economy can accept if growth targets are to be met. The rail sector will need to draw on all resources, internal and external, if it is to support the economy.

Railway Performance in Perspective

The Russian rail system is one of the largest and most intensively operated in the world. It is the second largest in network size, and only the U.S. Class I railroad system\(^4\) in total is larger. It is second in ton-km (after the United States),\(^5\) fourth in passenger-km (after China, India, and Japan), second highest in traffic density\(^6\) (after China), and second


\(^4\) “Class I” U.S. railroads are the nine largest railroad companies. These companies have annual revenues of more than US$250 million. There are also about 500 smaller, Class II or Class III U.S. railroad companies.

\(^5\) MPS was the largest freight railway (ton-km) in the world prior to the loss of Belarus, Ukraine, and Kazakhstan traffic, and the transition of the Russian economy.

\(^6\) “Traffic density” is defined as (ton-km + passenger-km)/line-km.
highest in average length of freight movement\textsuperscript{7} (after the U.S. and equal to Canada). Russian railways have the highest modal share of surface freight transport of any major railway (about 80 percent of surface ton-km in Russia go by rail). Nearly half of the Russian rail lines are electrified. The share of passengers as opposed to freight\textsuperscript{8} in Russian rail traffic is low (U.S. 1 percent, Russia 10 percent, China 20 percent, and the EU railways average around 50 percent). The Russian rail system is world class by any measure of size, intensity of use, or managerial and technical capability. It is clearly an asset of enormous importance to the economy of Russia, a fact that is reinforced by Russia’s geography (cities and industries separated by long distances) and the harsh climate that makes all-weather highway connections difficult over large parts of the territory. Population density and settlement patterns make the European and Asian parts of the system very different. Unlike European Russia, competition from road transport is unlikely to become significant for traffic on the Asian part of the system.\textsuperscript{9}

From a peak in traffic in 1988, rail freight volume had halved by 1994. Economic instability in the mid-1990s saw rail freight volumes fall further through 1998 to about 40 percent of their 1988 levels, before starting to grow with the expansion of GDP that began in 1999. Rail freight volumes are now around 60 percent of their historical peak, but are strongly headed upward. As a result, much of the system currently has spare infrastructure capacity, though undermaintenance of tracks, locomotives, and wagons calls into question the ability to operate the system sustainably at anything near its former intensity. Rail passenger traffic followed a similar trend, though the declines, and the recent turnaround, are less marked than for freight, due perhaps to the fact that changes in employment tended to lag behind changes in the industrial economy, and to the more recent rapid growth in automobile traffic (Figure 2).

\textbf{Figure 2. Rail Traffic Trends in Russia}

\begin{figure}
\centering
\includegraphics[width=\textwidth]{rail_traffic_trends_russia.png}
\caption{Rail Traffic Trends in Russia}
\end{figure}

\textsuperscript{7} Average length of freight movement (length of haul, or “lead”) is total ton-km handled/total tons originated.
\textsuperscript{8} Share of passenger traffic is passenger-km/(passenger-km + ton-km) expressed as a percentage.
\textsuperscript{9} The Russian Ministry of Transport (Kolik speech) estimates that trucks have a 40 percent share of ton-km in European Russia.
The MPS has traditionally reported “profits,” with freight income offsetting passenger losses. It is likely that the financial “losses” of the future long-haul passenger companies will be strongly related to the infrastructure access fees they are charged, in addition to the free or reduced fare burden they bear.

**Recommendation**

- Implement a combination of carefully designed track access fees for passenger trains based on marginal cost, combined with fare deregulation (particularly if the passenger companies are structured to permit competition) and direct compensation for any imposed fare privileges,\(^{10}\) to enable long-haul passenger companies to operate without major budgetary support. (Some might be fully commercially viable).

Suburban services in Russia, as in all EU countries and the United States, operate at a loss because tariffs have been kept low for social and environmental reasons. The current Russian model in which income from freight subsidizes social passenger services\(^{11}\) will not survive the advent of intrarail competition and growing competition from road transport. This model is actually prohibited by EU regulation. Suburban/regional services are concentrated in relatively few regional railways, with Moscow and St. Petersburg together accounting for almost half the suburban activity and losses. The total suburban losses (estimated at roughly RUR16 billion in 2001, though all estimates of “losses” should be understood as approximate and probably calculated on a basis inconsistent with international accounting standards), constitute a significant burden on the rail system,\(^{12}\) and they are clearly absorbing earnings that could otherwise be generating badly needed investment resources. The Government’s plan to monetize social support services should be helpful in reducing losses on suburban services.

**The Government’s Railway Reform Program**

The Government of the Russian Federation has embarked on a determined program of regulatory reform and restructuring of its railways. The decrees and laws already adopted provide clear direction while leaving room to adjust the path chosen for restructuring in light of experience in implementing reforms. Great care has been taken to minimize the risks of disruption to the economy.

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\(^{10}\) A typical and effective way of accomplishing this is for the railway company to sell full-fare tickets to the government, and then the government can sell the tickets to privileged groups at whatever fare is considered appropriate for the group.

\(^{11}\) Social passenger services are services for fare-exempted passengers such as veterans and the disabled. These services are provided at no cost to the privileged passengers, and these services are being cross-financed out of the still profitable freight operations. However, if intrarail competition and competition from road transport emerges, the freight operations will make less money, or even no money at all, and as a consequence, social passenger services will be rapidly phased out.

\(^{12}\) By one measure, the operating profit for 2001 was about RUR51 billion—see Russian Institute for Railway management, *The Railway System of the Russian Federation in 2001*, Moscow (2002:27). If true, then the commuter/suburban losses of RUR16.1 billion, combined with the long-haul passenger losses of RUR29.7, are a major burden on apparent freight earnings of RUR96.8 billion. In other words, 47 percent of the freight earnings are immediately consumed by passenger losses.
MPS together with the Federal Government Railway Commission drove the development of the reform program. The Commission is made up of senior representatives of the Ministry of Economic Development and Trade, the Antimonopoly Ministry, the Ministry of Transport, and the MPS, together with representatives from among the independent rail operators and shippers. Implementation of the reforms to date, and the detailed design of the reform program, has been led by the MPS and Russian Railways (RZhD, the successor to MPS in rail operations and infrastructure provision).

The government has concluded that railways face a number of serious problems the consequences of which will become evident in the coming 5 to 10 years unless action is taken. Investment generation is threatened by losses in the system as a whole (an RUR7 billion loss in 1999 according to an audit to international accounting standards), transfer of resources from profitable freight transport to loss-making passenger services, and lack of legal frameworks and financial incentives for investment by the private sector. Recent low rates of investment have seen a rapid deterioration in the availability of serviceable locomotives and wagons. The government is approaching the potential for improving cost-effectiveness through administrative reform, but without structural reforms to stimulate efficiency and market responsiveness, there is a danger that rail performance will restrict economic growth.

Recommendation

- Invest at least RUR700 billion to maintain the existing stock of fixed assets.

The approach for restructuring is centered on separating the operation of the rail infrastructure (tracks, signaling, electrification, other fixed facilities including stations) from operation of freight and passenger services. The infrastructure will in principle be open for new, privately owned carriers to compete with the RZhD freight operator through nondiscriminatory access to the infrastructure. The Plan seeks to create competition in the freight sector primarily through competing carriers on RZhD infrastructure, although it also discusses the possibility of competition between integrated (freight with infrastructure) entities in European Russia as a potential outcome of the third phase. The Plan also seeks to encourage a rapid increase in the private ownership of freight wagons and locomotives, and calls for the termination of cross-subsidy from freight to passengers through adoption of Public Service Obligations arrangements. It also discusses eliminating differences between the tariffs for domestic and international cargo en route to and from ports or land border-crossing points.

The advantages and disadvantages of the approach outlined in the Plan have been thoroughly and professionally debated. There is solid justification for the approach as a starting point, and it appears to be well formulated at this stage in the reform process.

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13 Railway Sector Restructuring Priorities, MPS (November 2002).
14 Russian Government Order No. 384, May 18, 2001, “A Program for Structural Reform of Railway Transport.” This Order is referred to as “the Plan” in this Policy Note.
Decree 384 of 2001 turns the earlier legislation into a three-step program of reform, and sets out the following objectives:

- Stabilizing rail quality of service and safety performance
- Preserving a single economic space across the Russian Federation and ensuring development of the national economy
- Ensuring national interoperability of the transport system
- Cutting the cost of the rail system
- Meeting the growing demand for transport services.

The key step in the first of the three stages of reform set out in the plan is the establishment of the joint stock company, Russian Railways (RZhD), to take over management of day-to-day running of the railways from the MPS. Following a Decree from the Federal Government in July 2003 on establishment of the Russian Railways Joint Stock Company (RZhD JSC), and approval of the company’s Charter on September 18 (Government Decision No. 585), the company was listed on the state registry of commerce on September 23. It officially began operations on October 1, 2003. Russian Railways is fully state owned, retaining the entire railway infrastructure owned by the MPS, and maintains centralized supervision of train dispatching.

Stage One of the Plan will result in phasing out of cross-subsidies from freight to passenger services, and in differences in tariffs between export–import traffic and domestic freight traffic. It will also lead to competition in freight train operations, and rolling stock maintenance and in passenger services. Providing for nondiscriminatory access to railway infrastructure will encourage this. Railway finances will be simplified by separating non-core social services (such as schools and hospitals) from the railway infrastructure and operations, while productivity will be enhanced through improving financial incentives and social security guarantees for railway employees.

Stage Two of the reforms, scheduled for 2003–05, envisions federal, regional, and municipal government budgets taking over the funding of loss-making passenger rail services, and railway expenditures related to national security. Freight train operations will remain integrated with infrastructure management in RZhD, but independent train operators and shippers are envisioned to own half of the wagon fleet and some locomotives. A number of subsidiaries will be established in the Russian Railways holding company for suburban passenger services, some long-distance services, rolling stock and track maintenance and construction, freight transit operations, intermodal operations, refrigerated containers, and some other businesses. In the third stage of reform, from 2006, these subsidiary companies could be privatized. Possible establishment of a wholly owned subsidiary within Russian Railways for freight train operations is also to be considered at that stage.

Stage Three, scheduled for 2006–10, focuses on gradual development of competition. The objectives are to encourage competition in freight and long-distance passenger train operations and in some commuter services, and to enable competition in rolling stock maintenance. There is a target for over 60 percent of freight wagons to be
owned independently from RZhD, and for a growing share of locomotives to be owned privately.

This is a credible plan of reform. Separation of infrastructure is becoming the norm in European practice. Accounting separation of the freight operator will highlight the performance in the freight sector while making competition on the infrastructure possible. The program of moving quickly toward separating the intercity and suburban–regional passenger operations financially and, as soon as feasible, operationally, deserves high priority. The program to stimulate private investment in the rolling stock fleet also appears to be well designed. It is not clear whether the program to stimulate competition from new operators will work, but this is an issue that can be addressed only as the reforms proceed.

**Regulatory Challenges**

The main goals of the reform program are increasing the efficiency of the railways, cutting costs, and improving quality of service. They are to be pursued through two main routes: reform of the existing tariff system, and promoting competition in the railway sector. The initial approach is to separate infrastructure management from train operations, and encourage new train operators to run trains on the infrastructure of Russian Railways. RZhD will own the infrastructure and operate the majority of freight trains, although passenger operations will be separated into subsidiaries that might eventually be spun off to regional or local governments, or even privatized. The reform program also identifies the possibility of creating competition between or among vertically integrated railways.

**Recommendations**

- However the system structure evolves during the reforms, regulation will be required, partly to ensure the development of competition (which is particularly important given rail’s high share of transport), and partly to ensure overall efficiency.
- Areas needing regulation will be competitive structure (especially nondiscriminatory and competitive access to the infrastructure), and freight tariffs where market power exists (a direct trade-off with competitive structure).

The required regulatory arrangements depend on the structure that is chosen for the industry, especially the relationship between the organization responsible for infrastructure management and those responsible for freight operations. Until now, access issues have been regulated by the railway agency (wherever it resides), and the Federal Energy Commission regulates freight tariffs. However the newly introduced structure of the Russian Government might change this regulatory structure.

**Railway Reforms and Private Investment**
One of the primary objectives of Russian railway reform has been to address the serious problem of the deteriorating condition of the system by attracting large and sustainable volumes of new, at least partly private, investment. Even this early in the process, the reforms have shown some success in that regard. Private investors in rolling stock are already very much in evidence. A second potential early area for private investment is in the geographically delimited industrial railways that serve particular production complexes. These industrial railways serve two primary functions: they shunt materials among mining, processing, and manufacturing facilities in a given production complex, and they carry outputs from the production complex to the main RZhD lines, where they hand over the outputs for haulage on RZhD trains. The third area for potential private investment is independent train-operating companies that would compete with RZhD trains for the business of hauling commodities over the RZhD track. Such independent train operating companies could presumably be either subsidiaries or other affiliates of large shippers like oil, steel, timber, or coal companies, or they could be unaffiliated carriers or logistics companies. Independent operating companies that begin as specialists in one commodity for one shipper face no legal or regulatory obstacles to expanding into more general freight haulage. The last of the four categories of potential areas of private investment is competing vertically integrated railway companies.

While the reform program envisions many well-targeted, potentially effective reforms, three issues remain to be resolved.

First, the stated objective of the government—of developing rail-versus-rail freight competition through open and nondiscriminatory access to the RZhD infrastructure—may not materialize to the degree expected. The linkage between the RZhD freight operator and the RZhD infrastructure provider is not going to give RZhD any incentive to encourage competition. The tariff structure (as discussed below) sets up access charges to infrastructure that appear to be biased toward ensuring adequate earnings for the infrastructure operation, and not toward ensuring truly open access for new and competing freight operators. Although the reform program creates the possibility in the third stage of reorganizing the system in European Russia to create competing, vertically integrated freight companies, RZhD JSC has no incentive to support this, and no other government agency appears to have the interest or the resources to do the kind of structural planning needed to create such a structure.

Second, the tariff system (Price List 10-01) is at best a transitional stage between the nominal prices of the command and control approach and the type of open and flexible system that will be required if the new railway(s) are to compete with each other and with trucks and barges. The system is too complex to be transparent, too constrained to recognize market realities (it has only three tariff categories), still burdened by social distortions if not cross-subsidies (the explicit objective of “moving” Siberia to Moscow means that coal tariffs from Siberia to Western Russia are below market levels), does not permit volume- or quality-based contract tariffs (in order to limit corruption), and is not supported by adequate data to analyze the relationship between individual tariffs and costs of service. In addition, the tariff regulator—the Federal Energy Commission—has
an inherent conflict of interest in regulating railway energy tariffs, and coal is the largest commodity group for the rail system and for the energy generation system.

Third, the resource implications of these policies are not resolved. Specifically, for example, devolution of suburban passenger services to local authorities implies that the deficits will have to be paid at the local level, or at least shared between federal (but non-rail) sources and local sources. Though this was successfully done in the case of the Metro systems (operated by MPS until 1992), it is not clear that the local authorities will be able to handle the entire burden themselves, nor has explicit provision been made for defining and funding the federal share (if any).

**Recommendations**

- Give RZhD greater incentives to make access to its infrastructure more transparent and open and less discriminatory. One way to do this will be to increase the separation between the freight operator and the infrastructure company.
- Remove the conflict of interest in regulating rail freight tariffs by creating an independent regulator, and allow freight tariffs adjust more closely to actual market competitive conditions.
- Resolve the funding issue for suburban passenger services by shifting more control over planning and funding to local authorities.

The ultimate policy objective is the creation of a commercially motivated and privatized railway operations sector, with many differentiated and competing businesses using a publicly owned basic infrastructure. The first phase of the reform, already formally achieved by the creation of RZhD JSC, was to separate the regulatory functions and the operating functions by the establishment of a quasi-independent operating company structured into discrete product-related lines of business. In the second phase of the reform, these lines of business would be legally and institutionally separated, opened for competition and, where appropriate, transferred to the private sector. In the third phase, competition, and where possible, privatization, would be encouraged in all operational sectors.

**IV. Urban Transport**

Approximately 75 percent of all Russians reside in urban areas, and approximately 85 percent of all their motorized trips are made on public transport systems, compared to about 20 percent for Western Europe and 3 percent for the United States. About 106 million urban dwellers make about 36 billion surface transport trips each year. The Russian Urban Passenger Transport (UPT) system serving the urban traveling public is one of the largest in the world, incorporating over 78,000 surface transport vehicles (buses, trams, and trolley buses) serving over 11,000 routes.\(^{15}\)

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\(^{15}\) This statistic includes all public operators and all private operators with seven or more vehicles. The number of total vehicles would be significantly higher if small private operator vehicles were included.
Unfortunately, these systems are in marked decline or under severe stress in most Russian cities, both in terms of levels of service being provided, and in terms of aging fleets and investment in vehicles not meeting demand. The ratio between newly procured vehicles and those considered beyond their economic life has been constantly decreasing, with only 25 percent of the annual new fleet requirements being met.

This deterioration in the condition of the UPT fleets and service to the urban public has been caused by a combination of factors, including a very high percentage of exempted passengers, low fare levels, poor fare collections, and overall inefficient service provision. During Soviet times these deficiencies were offset by generous public subsidies to operating companies. Subsidies at those levels are no longer possible under current market economy conditions. Nevertheless, the total amount of subsidies provided to urban and suburban passenger transport operators from all government budgets is significant, amounting to an estimated RUR13.6 billion (approximately US$450 million) during 2000, and more recent indications are that those levels of subsidies are increasing. Moreover, it is estimated by local transport officials that the subsidies provided are only about two-thirds of what is needed to cover operational losses, much less capital replacement of the rolling stock.

As a direct result of the decline in public urban passenger services, private sector operators have emerged in many Russian cities, and in some they provide most services. While this phenomenon has helped offset the overall decline in urban passenger services, the introduction of private operators has resulted in an associated host of problems, including haphazard competition with established publicly owned operators, large numbers of small vehicles with questionable safety features, erratic and unsafe driving practices, emergence of criminal elements, disregard for the needs of exempted passengers, and overall poor regulation of the sector by public authorities.

There is an urgent need to mobilize and regulate the potential of the private sector more effectively. This could be done through the widespread introduction of competitive tendering or operating franchises in urban areas. To facilitate this reform it will be important to develop new skills and practices at the municipal government level to be able to competently manage the introduction of such competitively provided services. This would need to be accomplished in a careful stepwise fashion that would ensure adequate public sector service provision during the transition period to more market-oriented provision of urban passenger services.

Beyond the problems in urban passenger services, street networks are deteriorating in many Russian cities, and urban traffic management is either poorly understood or nonexistent. The poor condition of urban roads has been caused principally by the lack of adequate municipal funding of road maintenance and rehabilitation. The rapid increase in private vehicle ownership has accentuated the problem by causing increased wear and tear on these urban road networks, and in some cities, the emergence

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16 It is estimated that in 10 to 15 percent of Russian cities with a population over 100,000, about 30 to 40 percent of total urban passenger trips are being provided by the private sector. (See Urban Transport Sector Reform Study, Task #1 Technical Paper.)
of traffic congestion. During 1990–99, the motor vehicle fleet in Russia increased at an average annual rate of 7.6 percent per year (from 11.9 million to 22.9 million vehicles), with most of the increase occurring within urban areas.\(^{17}\) The deterioration of road networks has, in turn, had an adverse impact on the public transport fleet and the general operating conditions for all motorized vehicles.

While the Russian Federation Government is addressing the needs of the general population with programs to improve national-level infrastructure and services, little attention has been directed to assisting the ability of municipal levels of government—where most of the population resides—to cope with this challenge. While recent Federal Government efforts are being directed at assisting the oblasts and other Subjects of the Federation, as exemplified by the World Bank-financed Fiscal Decentralization Project, this assistance generally does not extend in a targeted fashion to the municipalities, which are the governments most directly related to the needs of the dominant proportion of the total national population and the dominant proportion of the poor.\(^{18}\)

The Federal Government should become more proactive in providing assistance to municipalities both in terms of disseminating and encouraging the implementation of technical best practices in several sectors, including urban transport, and in assisting cities to become more competent in financial matters through providing incentives to implement cost-saving reforms.\(^{19}\) So far the interventions from the Federal Government have been weak or even nonexistent. The reason for the lack of involvement is that the prime responsibility of urban transport (UT) lies with the local government, but in light of the importance and miserable situation of UT in Russia, the Russian government should consider a more active facilitating role. In the Transport Strategy a first indication of a more active approach can be identified. The reforms in UT should be focused on three priority areas.

**Improved Quality and Financial Sustainability of Urban Public Transport Services**

This is to be achieved principally through implementing reforms in those cities that are willing to provide core urban public transport services on a well-managed, competitive basis. More specifically, the competition would be for the market, that is, for exclusive provision of urban public transport services on selected routes or sections of the participating city, under contracts of sufficient length to attract serious bidders. Based on similar reforms undertaken in several countries, it is expected that government subsidies can be substantially reduced, with no reduction in quality of service. For example, in

\(^{17}\) The ownership of private cars increased even faster than the overall motor vehicle fleet, from 9 million in 1990 to 19.6 million in 1999, at an average annual rate of about 9 percent per year.

\(^{18}\) Oblast-level governments are predominantly concerned about rural and oblast-wide concerns, and that level of government may have priorities that are not consistent with those of municipal governments. Approximately 70 percent (23 million people) of those living below the poverty line in Russia reside in urban areas.

\(^{19}\) This type of Federal-level intervention has performed an important role in other large federated republics where responsibility for urban public transport is primarily at the municipal or conurbation level. The *Empresa Brasileira dos Transportes Urbanos* (the Brazilian Urban Transit Authority) in Brazil and the Federal Transit Administration in the United States are good examples.
London the cost per vehicle-kilometer of urban passenger transport services was reduced by 35 to 40 percent in the 1990s, with no loss in quality of service, by introducing competitive provision of services, and over a 10-year implementation period public subsidies for urban public transport services were reduced to near zero. In Stockholm, by introducing competition, the cost per vehicle-kilometer dropped about 20 percent, with no loss in quality of service. In several Australian and New Zealand cities, government subsidies were reduced 10 to 40 percent with either the same or improved service quality, under competitive service regimes. Taking these examples into account, advancing reforms in cities and in setting good examples for other cities could easily result in significantly reducing central and local government subsidies.

**Recommendation**

- Starting in reform-oriented cities, provide core urban public transport services through long-term contracts for selected routes or in sections of the city.

**Improved Passenger Transport Operations and Overall Traffic Conditions through Selective Urban Street and Traffic Management Investments**

A second reform issue, and one that could materially improve (and reward) the willingness of cities to introduce urban public transport reforms, would be the selective improvement of urban road infrastructure and associated traffic management measures. These targeted investments would be made with the principal aim of improving public transport operations, and with the secondary objective of improving overall traffic conditions.20

**Recommendation**

- Invest in urban road infrastructure and implement traffic management measures that would make public transport more efficient and improve traffic flow.

**Strengthened Urban Transport Institutions at the National and Local Government Levels**

Beyond implementing reforms aimed at improving urban public transport services, it is clear that the current institutional ability and capability of the Ministry of Transport to advance urban transport reforms and best practices in Russian cities is falling short and urgently needs to be improved. More specifically, what is needed is to strengthen the abilities of the Ministry to, first, advance urban passenger transport reforms, and second, advance best practices in urban transport planning and traffic engineering. Part of this capability is expected to develop within the Ministry, and part in educational institutions that could be contracted by the Ministry to conduct training programs for city officials in urban transport.21 It is also expected that, as a result of this approach, cities would attain an improved institutional ability and practical knowledge to plan, design, budget, and

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20 Provision of exclusive bus priority facilities would be a high-priority investment.
21 Four training institutes working with the Ministry of Transport are already being trained in urban public transport reforms under a World Bank-administered Dutch government grant.
implement urban public transport services and urban transport infrastructure and traffic management on a sustainable basis.

**Recommendations**

- Make improved training within the Ministry of Transport and within educational institutions a priority.
- Contract for training of city officials in urban transport operations, planning, and management.

V. Ports and Logistics

The main challenge in ports and logistics is to make up for a long period of underinvestment and failure to update technology, through a combination of public and private investment, while at the same time, reducing the institutional and bureaucratic barriers to the efficient movement of goods into and out of the country. This is essential if Russia is to regain a role in the global trading of manufactured goods as a way of reducing reliance on a narrow range of raw materials and energy exports.

**Ports**

Despite a collaborative study in 1996 of the prospects for restructuring Russia’s national ports, and based on this, a concerted effort in the late 1990s to implement World Bank support for expansion and modernization of the ports of St. Petersburg and Novorossiysk, there has been no active intervention of the World Bank in Russia’s ports or logistics subsectors. Now attention is being drawn as much to the land access to these and other ports and to the logistics activities that can be developed with them, as to the ports’ maritime facilities themselves.

St. Petersburg is one of Russia’s most important transportation hubs, but its basic transportation infrastructure is in need of modernization and improvement, negatively impacting its economic and social development, and inhibiting private investment. New infrastructure projects will remove transit traffic and transport flows from the residential areas of the city, and improve access to the various port facilities. Reduction of urban traffic associated with port activities, development of new freight terminals, construction of bypass roads and junctions, and modernization and expansion of port facilities outside the city’s center are the key issues that have to be resolved to ensure that the city’s economy will be put on the path of long-term growth, while ensuring efficient functioning of transportation corridors. Together with planned massive investments in current and new ports, these changes in the industrial locations and traffic patterns should ensure that St. Petersburg will be well positioned to handle growing volumes of Russia’s international trade. Public investments in port infrastructure must be linked with much-needed port reforms, that is, clear separation of public and private responsibilities in port operations and oversight.

A similar situation pertains at Novorossiysk, where the location of the port in relation to the urban area and transport corridors is an impediment to its expansion and
efficient operation. It is also in need of massive investments in its port facilities, so that they will have the capacity to deal with the new demands being made on them.

With the prospects of rapidly increasing oil exports to the United States and expanding commercial links with East Asia, including China and Japan, attention is also being drawn to modernization of the ports in the far east of Russia.

Development of the economy of Russia’s far west depends on improved land access to the principal ports, and improvement to the available port facilities themselves. While container traffic through Voschotny remained at high levels during the early 1990s, the deteriorating security situation in the region, combined with the collapse of shipping tariffs for containers from the Far East to Europe, resulted in a significant reduction in the number of containers moved on the Trans-Siberian railway between the port and Moscow and onward to western Europe, at a time when the total container traffic between the Far East and Europe was increasing. Voschotny and the other ports of the region will have a significant role to play in the transit movement of containers once the security situation is normalized, but they will also be important in development of Siberia’s trade with China, Japan, and other East Asian countries. In addition, they will have a role in the development of oil exports to North America. The port of Vladivostock is even contemplating an expansion to handle traffic from northeastern China to North America, for which it could have a competitive advantage compared with Chinese ports in the region, if its land access routes can be improved.

**Recommendations**

- In key ports, facilitate the removal of non-maritime, port-associated activities out of downtown urban areas.
- Improve the long-distance land access to ports.

**Logistics**

Russian freight forwarders are still largely focused on their traditional activities of arranging transport and storage. The move to third-party logistics and to integrated container terminals that incorporate assembly and packaging facilities is still in its infancy in Russia. Even newly built terminals are still called warehouses, and at best have auxiliary facilities such as parking lots, vehicle repair shops, and restaurant and hotel services. Several European logistics companies have established logistics centers in Finland to serve Russia. These include value-added services such as labeling, attaching manuals, and converting electronics to Russian standards. Although access to Russia by rail through Finland is deterred by a higher rail tariff for international than domestic transport, the advantage is that congestion at Russian ports can be avoided.

With the implementation of just some of the many proposed investments and organizational changes in the ports, this congestion will be reduced and again make Russian ports the most efficient gateway to Russia. This in turn will give an added impetus to the development of third-party logistics and port-associated merchandizing and distribution services that are currently lacking.
Many of the advantages of globalization could be reduced if security considerations result in significant delays in the physical movement of goods between producers and consumers. Pre-loading examination and certification of containers is now becoming a standard requirement for exports to the United States, and the EU countries are demanding increased security requirements.

**Recommendations**

- Continue to simplify trade facilitation procedures.
- Encourage the development of multiuse logistics centers to include value-added, export-processing activities.