

1. Transition and infrastructure in ECA

Scope of the study

This study reviews the status and performance of the physical infrastructure¹ in the transition economies of the Europe and Central Asia (ECA) region during the last 12 to 15 years and attempts to identify the challenges to ensure the sustainability of adequate infrastructural services at acceptable levels of quality and reliability. Given the ubiquitous role of governments in ensuring optimal and sustainable provision of infrastructural services to their economies, it highlights the experiences relating to the issues of the relative roles of the governments, the private sector and the international financial institutions, and the overriding importance of good governance in general.

Unlike in the case of other regions of the world, access to most infrastructure facilities is not a problem in the ECA region: nearly 100% of the population has access to electricity and water. The key problem here is one of *making functional once again* the existing massive stock of infrastructural assets to provide infrastructural services to the population and the economy at acceptable levels and quality, rather than one of massive capacity addition to the stock of infrastructure to increase access to the population. In fact, in many countries and in several sub-sectors the problem is also one of excessive idle capacity in relation to the shrunken demand and the income levels of the population, and of coping with over-dimensioning of the physical assets.

The ECA region of the World Bank Group (WBG) comprises 28 countries. Fifteen of them were part of the former Soviet Union (FSU). Twelve of them are East European states - formerly part of the CMEA arrangements with the Soviet Union. Together, these 27 countries are often referred to as the transition countries. The last is Turkey, which does not belong to either of the two groups. It is, however, a candidate for future accession to the European Union (EU). Unless specifically mentioned otherwise, the discussions in this study are essentially about the FSU and East European states, and data and experiences relating to Turkey are mentioned in passing to provide a comparative perspective.

With a population of about 475 million, the ECA region is vast, covering more than 10 time zones and stretching from Poland and Czech Republic in the west to the Bearing straits in the east and from the arctic regions in the north to the Pamir Mountains of Tajikistan in the south. Its diversity is such that generalizations and meaningful discussion of issues is possible not so much in terms of the region as a whole, as in terms of country groups. Discussions in this study are thus generally in terms of the grouping of countries given in Box 1.1.

The transition process

Though all these countries, except Turkey, shared the common history of facing major economic collapse in the context of the dissolution of the Soviet Union and the discontinuation of CMEA/COMECON arrangements in 1989-1990, they differed significantly in the duration and depth of gross domestic product (GDP) decline and in the rate and extent of economic recovery. Their responses to the challenges varied widely across the dimensions of policy, governance and consumer behavior resulting in remarkably different outcomes during the last 15 years.

¹ The term “physical infrastructure” is to be understood as distinct from social infrastructure such as education and public health. Also, the study is essentially written mostly from the perspective of the networked sub-sectors such as electricity, water supply, and railways, and to a lesser extent of natural gas and district heat. It refers to other physical infrastructure sub-sectors such as roads and sanitation to a very limited extent, generally in the context of discussion of certain common issues.

Box 1.1: Country Groups

A. Central and Eastern Europe (CEE): (8 countries) (all new EU members and often referred to as EU 8)
Czech Republic, Estonia, Hungary, Lithuania, Latvia, Poland, Slovak Republic, and Slovenia

B. South East Europe (SEE): (7 countries)

Bulgaria, Romania, (2 candidates ready for accession to EU), Albania, Bosnia-Herzegovina, Croatia, FYR Macedonia, and Serbia-Montenegro (5 candidates for possible EU accession at a later date)

C. Commonwealth of Independent States (CIS) (low income): (8 countries)

Armenia, Azerbaijan, Georgia, Moldova, Kyrgyz Republic, Tajikistan, Turkmenistan, and Uzbekistan

D. CIS (middle income): (4 countries)

Belarus, Kazakhstan, Russia, and Ukraine

E. Turkey: (a Candidate for EU accession at a future date)

Note: The WBG classifies countries with a per capita GDP lower than \$965 as low income countries and those with per capita GDP between \$965 and \$5685 as middle income countries.

The region is undergoing a unique process of transition, the understanding of which is necessary to comprehend fully the developments in its energy and infrastructure sectors and the challenges faced by them. The transition process, which commenced in 1990 and is still ongoing, comprises three closely related and intertwined elements, namely,

- A political transition from highly centralized and controlled single party political system to more decentralized, multiparty democratic forms of government. In some countries, this was accompanied by internal conflicts and political disintegration;
- An institutional transition from the framework of central planning to the institutions of a market economy as well as a fiscal decentralization from the national to sub-national and local governments to empower the latter to discharge their public responsibilities better; and
- An economic transition involving the disintegration of the highly integrated economic space of the FSU and CMEA arrangements, resulting in the disruption of trade, financial and labor market relationships.

The transition involved two stages. In the first stage, the economic turmoil was characterized by a steep decline in output and incomes, high unemployment and runaway inflation, as well as the disintegration of exiting political, institutional and economic relations. At this stage, countries aimed at stabilizing their economies and arresting further deterioration. This was followed by a second stage characterized by economic recovery, involving rebuilding, reform and integration with the world economy.

Map 1.1: Map of the ECA Region

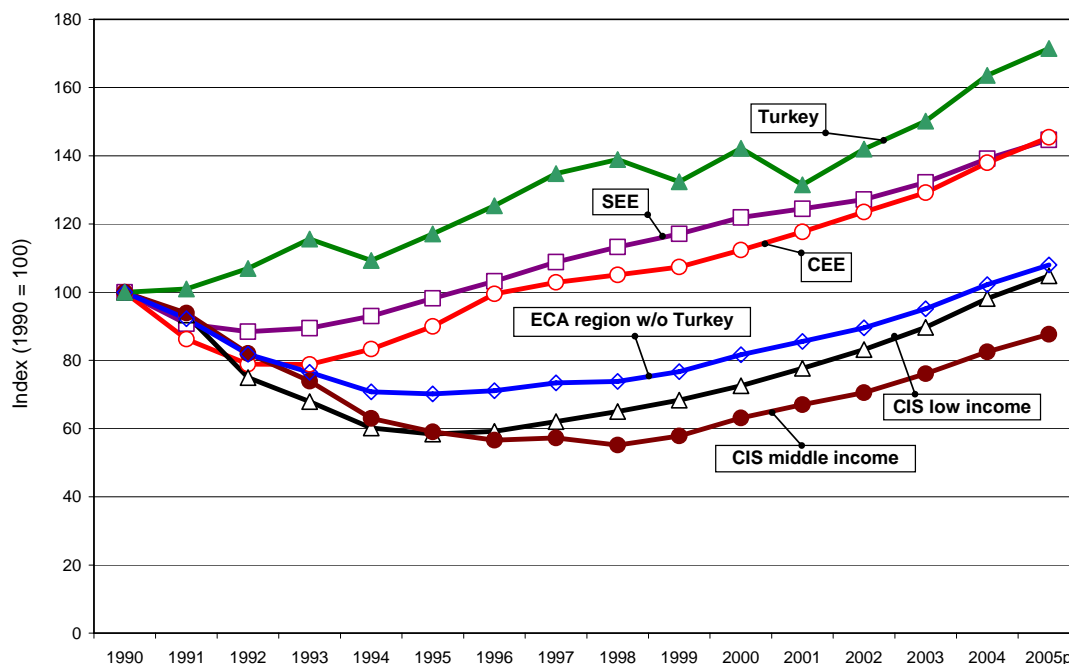


CEE	SEE	CIS (MI)	CIS (LI)
01 Czech Republic	09 Bulgaria	18 Belarus	16 Armenia
02 Estonia	10 Croatia	20 Kazakhstan	17 Azerbaijan
03 Hungary	11 Romania	23 Russia	19 Georgia
04 Latvia	12 Albania	26 Ukraine	21 Kyrgyz Republic
05 Lithuania	13 Bosnia-		22 Moldova
06 Poland	Herzegovina		24 Tajikistan
07 Slovak	14 FYR Macedonia		25 Turkmenistan
Republic	15 Serbia-Montenegro		27 Uzbekistan
08 Slovenia			

Source: EBRD Transition Report 2004

For the region as a whole, the first stage lasted about 6 years from 1990 and resulted in the loss of about a third of its measured GDP. This was followed by stagnation for about 3 years and disruption to recovery caused by the Russian currency crisis in 1998. Steady economic growth resumed from 1999, spurred significantly by rising prices and exports of oil and gas. The vigorous growth continued through 2004 and is expected to continue for the rest of the decade making it the most economically dynamic region in the world.

ECA (w/o Turkey): Index of Real GDP in 1990-2005



Source: ECA Regional Economics Database, World Bank

The depth and duration of recession in the first stage and their impact varied across country groups. In the 15 countries of CEE and SEE, the recession lasted only for 2 or 3 years and the GDP contraction was only about 15%, though the three to four digit inflation rates could be brought down to a single digit rate only by 1997/1998. In the 12 countries of CIS, the recession lasted for 6 to 7 years and GDP losses were about 44%. The duration was much longer in Russia (8 years) and in Ukraine and Moldova (9 years). The GDP losses were much more severe in Georgia (78%), Tajikistan (68%), and Moldova (65%). The three and four digit inflation rates experienced in CIS countries could be brought down to a single digit only by 2002. While Azerbaijan and Georgia could bring their inflation rates down to 4% and 7% by 1997, Belarus, Moldova, Russia, Tajikistan and Uzbekistan had inflation rates in the band of 10% to 28% even as late as in 2003.

Social impacts of the steep economic decline were dramatic.

- The percentage of the poor (with incomes lower than one dollar a day) in the population increased from 1.5 in 1990 to 5.1 in 1998. In Russia and Tajikistan poverty rates reached 30% and 70% respectively.
- Inequality increased substantially. In countries such as Armenia, Russia, Tajikistan and Ukraine, inequality as measured by Gini co-efficient nearly doubled.
- Living standards dropped steeply in most countries. In Russia, male life expectancy fell to 57 years, well below those in low income developing countries.
- Spending on social services and safety nets and their quality dropped dramatically. Per capita public expenditure on health and education was less than \$20 in low income CIS countries and less than \$100 in Russia compared to about \$350 in CEE countries and a multiple thereof in Western Europe.

The transition was more difficult and much slower in CIS than in CEE and SEE for the reasons:

- It had a longer history of tight political control. Its need for new political and sovereign institutions was greater. Many of the countries had a high potential for internal conflicts;
- It had relied on a more rigid form of central planning and had no history with a market system.
- Its economy was much more tightly integrated in FSU and was thus more negatively affected by the spatial break down of the Soviet economy.
- Low income CIS countries were especially hard hit, as they lost their subsidies from the Soviet Union and suffered from the disruption of the essential links of trade, transport, energy and water which existed before the dissolution of the Soviet Union. They also faced the loss of critical human resources as a result of the repatriation of Russian nationals.

In contrast, the economic links of CEE and SEE to the Soviet System were less close; their central planning was less rigid; and they had a more recent history with the market system and were exposed to Western trade and capital. The prospect of EU accession was a powerful influence in ensuring political consensus on the needed reforms. In addition, earlier and more systematic reforms (covering stabilization, price liberalization, privatization, property rights, legal and judicial reforms, financial sector reform and public administrative reforms) as well as the more favorable initial conditions are believed to have helped the CEE and SEE states to recover faster. The growth in the last few years of even countries lagging behind in systematic reform have been explained to some extent by the surging commodity prices such as oil and gas.

A key element of the reform process is the establishment of a healthy investment climate for domestic and foreign investors. The CEE countries, and to a lesser extent the SEE countries, managed to establish a better investment climate and a more disciplined and supportive environment for enterprises and were thus able to attract a greater share of the foreign direct investment (FDI) flow into the region and permit the creation of a rapidly increasing number of productive firms and small and medium enterprises. The CIS tended to lag behind in these areas with a correspondingly low share of the FDI flows (see Table 1.1).

Table 1.1: Cumulative net FDI Inflows into the Transition Economies 1989-2004

Country Group	Cumulative Net Inflow (\$ million)	Cumulative Net Inflow Per Capita (\$)
CEE	163,074	2,235
SEE	42,018	821
CIS	56,876	203
All Transition Economies	261,969	647

Source: EBRD Transition Report 2005

The prospect of accession to EU had been had been a powerful coordinating influence for reform in the CEE countries. It is also playing a similar role in the SEE countries and even in some of the CIS countries which aspire for such EU accession in the near future. For other CIS countries, the potential for expanded trade relations not only with EU but also with big and solvent neighbors to the East and the South (China, Iran, Turkey and South Asia) would serve a similar purpose.

Infrastructure restoration and the transition

In the transition economies, there is a strong positive correlation between the rate of economic recovery and growth and the rate of restoration of the infrastructure sectors to provide services at an acceptable level and quality. While the causal relationship between the two is not easy to discern, there is clearly a cyclic synergy among two at least till the economy matures. In economies that have recovered fast or are growing fast, the task of restoration of services becomes some what less difficult and more rapid. In countries where infrastructure reforms lag behind and services are inadequate or unreliable, growth is

seriously constrained. Business environment surveys carried out jointly by the World Bank and EBRD in 1999 highlighted shortfalls in the provision of key infrastructure services (such as reliable electricity supply) as a major constraint for economic development in the region. Subsequent surveys in 2002 and 2005 show a gradual easing of this constraint. It is therefore not surprising that developments in the transition process and those in the region's infrastructure sectors run parallel

At the time of the collapse of the Soviet Union, the region had a stock of infrastructural facilities, constructed to meet the perceived demands of the era of central planning and Soviet/ Soviet satellite style economy. Even without the sharp economic decline of the 1990s, the facilities (especially in the electricity, water and district heat sub-sectors) were arguably over-dimensioned and barely affordable. The economic collapse which ensued exacerbated this problem.

Under the central planning regime, price of the services was not a key determinant of demand and cost recovery was not a central concern. Provision of what everyone needed and what the economy (focused on heavy industries and military production complexes) called for (in the plan perspective) was the key objective. Also the choice of technology and designs were based on price levels of raw materials and energy (coal, oil and gas) substantially out of line with internationally traded prices, as well as an indifference to environmental concerns.² This favored a regime of low prices, high tolerance of technical losses, inefficient energy conversion choices. Under a philosophy of "to every one according to his needs and from everyone according to his ability" the pricing of the services was such that payment for the services was not a problem. It also favored very high levels of consumption (for example energy and water).³ All the facilities were owned and operated by public enterprises under the supervision of the government ministries and were routinely subsidized (especially in the FSU) from the state budget. There was thus a legacy of widespread expectation that the people are entitled to these services, which should be provided at little or no cost.

In the context of the dissolution of the Soviet Union and the CMEA/COMECON arrangements, the prices of commodities and fuels tended to rise sharply to traded levels and the marginal cost of the supply of the services rose. This was happening when GDP contracted sharply, fiscal deficits became unmanageable, inflation raged to three or four digit rates and people's income drastically diminished. At the same time there was a sharp decline in industrial production and the demand for energy, transport and other services dropped dramatically. The infrastructure supply entities could not collect the dues from the cash-strapped consumers and government budgets could no longer provide unlimited support as before. The governments could not, in fact, pay even for their own consumption. The service providers therefore accumulated wage arrears, tax arrears and arrears in payment to suppliers and were forced to defer not only fresh capital investment, but also the normal maintenance necessary to keep the services flowing. Ongoing construction of new facilities was suspended indefinitely, and the existing facilities were allowed to deteriorate. Widespread theft of supply facilities became common in certain countries. Thus the adequacy and quality of infrastructure services declined sharply throughout the region, and in several cases, the services were discontinued altogether. For example in countries like Armenia, Kyrgyz Republic and Tajikistan, district heating facilities which functioned in all cities earlier, were no longer operational in most cities except in the capital and one or two of the larger cities and that too serving a substantially reduced customer base.

In CEE states, where the recession was short and relatively shallow and where economic reforms were introduced earlier and more systematically, the deterioration in infrastructure facilities and services was

² The ECA region generates more than 20% of the world's carbon emissions, while procuring only less than 3% of the global GDP

³ The energy intensity of growth in CEE and SEE was four times, and that in CIS was 13 times of the average energy intensity in the OECD countries.

relatively limited. In these countries the critical elements of the reform process in the infrastructure sectors were the introduction of sufficient financial discipline to assure ongoing financial viability and the associated application of adequate governance procedures to support the introduction of the necessary disciplinary measures. Even in these countries, however, challenges remain to ensure that infrastructure services are brought up to levels comparable to the rest of the European Union.

Elsewhere, the challenges are rather more significant. The EU accession countries and other countries in South Eastern Europe have recognized the importance of implementing a financially sustainable model for the provision of infrastructure services, although, in doing so, several countries also face a key challenge regarding the affordability of these services. Several of the CIS countries have also taken critical steps towards assuring future financial sustainability of their infrastructure sectors. Interestingly, two of the poorer CIS countries, Armenia and Moldova have been in the vanguard in this effort. Other CIS countries, however, have been slower to recognize the importance of financial viability and, in some cases, have yet to take any significant action. As a consequence, they face a continuing deterioration in the quality of infrastructure services and an increasingly daunting challenge in attempting to restore services as and when the deterioration reaches the point where governments will feel compelled to respond.

This study, therefore, focuses on the following topics with the objective of informing the broader dialogue on the challenges to the infrastructure sectors in the context of the ongoing transition process in the region:

- i. The scope, legacy and the impact of transition;
- ii. Quality of Services and Consumers' Perspectives;
- iii. The financial viability of the provision of infrastructure services;
- iv. The affordability of infrastructure services both from consumers' point of view and from the Governments' point of view;
- v. The realignment of infrastructure services needed to support a more regional economy and regional trade;
- vi. The role of the private sector; and
- vii. Critical success factors for essential reform of the infrastructure sectors.