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FINANCING OF TRANSPORT INFRASTRUCTURE

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TRENDS IN INFRASTRUCTURE FINANCING IN EUROPE

Transport infrastructure investment ***in the European Union*** increased steadily (13 %) between 1990 and 1992, but fell by around 12 % between 1992 and 1995. The rise from 1990 to 1992 resulted from a number of major developments, including the Channel Tunnel, high-speed rail programmes in Germany, Spain and France, and the launching of major infrastructure programmes by Spain and Portugal. The decline from 1993 occurred because economic growth slowed after 1990 and affected all investments; concern about environmental impacts led to higher costs, which in turn led to a switch of expenditure, and the completion of some major projects.

Investment trends in infrastructure after 1993 varied across the EU Member States. There was a severe decline in Germany, Italy, Finland and the United Kingdom, but an increase in Belgium, Portugal and Sweden. Belgium's investment was dominated by construction of the high-speed railway, and Portugal's by investment projects associated with the World exhibition in 1998.

In 1995, investment in transport infrastructure (road, rail, inland waterway, airports and maritime ports) was around EUR 60 billion and share by modes was: 62 % roads, 20 % rail, 7 % urban rail (urban/suburban railway, metro and tram), 5 % airports, 4 % maritime and 1 % inland waterways.

The share of GDP used for investments in transport infrastructure generally decreased between 1990 and 1996. Italy, Portugal and Spain invested more on average than other Member States.

TEN investments have focused on rail and roads (39 % and 38 % respectively of total investment in 1996/97), with airports taking nearly 16 % and seaports and inland waterways only 7 %. In 1996/97, 55 % of total Community TEN funding was for road infrastructure.

The *principal source of financing of most infrastructure projects is national budgets*. In the less developed regions, the European Regional Development Fund, the Cohesion Fund and the European Investment Bank (EIB) were also major suppliers of resources. The TEN budget line (for 2000–2006 totals € 4.17 billion) and the European Investment Fund have a marginal but increasingly important participation. Decisions about investments in TEN infrastructure projects are taken at national level and financing from national budgets accounts for the majority of TEN investments. EU financial contributions to projects of common interest in the framework of TEN

are important stimulants. The European Commission is also encouraging public–private partnerships in these projects.

The European Investment Bank (EIB) is an important financier of transport infrastructure. For example, in 1997 it lent € 6 879 millions for projects in the transport sector alone. Roads and motorways received 43 % of the investment, while 28 % went to the railway network and 29 % to air transport and shipping. In 2002 the EIB borrowed about € 9,230 million (30 % roads and motorways, 26 % railways and the rest to urban, maritime and air traffic). Until May 2003, the EIB lent another € 3,000 million for transport projects.

In ***Central and Eastern European countries***, the limited data on investments show that the greatest part of investments in new infrastructure was allocated to roads. Rail takes the second largest share. Considering expenditures devoted to infrastructure maintenance, the largest share is also devoted to railways. Most accession countries have identified as key priorities in infrastructure development the upgrading and rehabilitation of their existing network to EU standards and the construction of missing links in the network in order to complete the Pan-European transport infrastructure .

Statistics on transport infrastructure investments show that between 1993-1995 47 % of infrastructure spending in Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, and Slovak Republic went to roads and 42 % to railways. Maintenance budgets are allocated mainly to railways in the eight central and Eastern European countries (54 %) and to roads in the European Union (72 %).

The PHARE programme, set up in 1989 to support economic and political transition, was once the main channel for financial and technical cooperation between the EU and the accession countries. The programme has supported investments in transport infrastructure totalling approximately € 737 million up to and including 1997, excluding expenditure on pre-feasibility studies and excluding Cyprus, Malta and Turkey. Between 1998-2000, the PHARE programme funding went to 52 transport infrastructure projects in CEEC (for a total of € 120 million a year), 60 % of which were road projects.

PHARE played an important role in supporting the development of major infrastructure networks in the candidate countries, through grant support and co-financing with the candidate countries (national PHARE programmes) and the IFIs. In conjunction with the European Investment Bank (EIB), the European Bank for Reconstruction and Development (EBRD) and the World Bank, PHARE provided co-financing for major investment projects that aimed particularly at the development of transport infrastructure along the pan-European transport corridors.

For the period 1995–99, the total PHARE budget amounted to € 6 693 billion. In July 1997, the European Commission published ‘Agenda 2000 for a stronger and wider Union’, which includes a strategy for extending the Union’s borders through enlargement. It furthermore contains the future financial framework beyond 2000, of which the ‘Instrument for structural policies for pre-accession’ (ISPA) is one of the elements. At the Luxembourg European Council of December 1997, the financial framework was confirmed, providing three pre-accession instruments for a period of seven years (2000–06): Sapard (for agriculture), PHARE (for institution building) and ISPA (for supporting projects in the field of transport or environment).The ISPA (instrument for structural policies for pre-accession) is the European Community’s financial instrument designed to assist 10 accession countries to meet EU requirements in the fields of environment and transport. ISPA funding in the transport sector focuses on the extension and improvement of the

TINA network. An initial estimate of the costs of construction and completion of this network up to 2015 was € 91.5 billion, 48 % for the road network and 40.5 % for rail. In 2000 and 2001, the Commission approved € 6 billion ISPA funding, with 61 % going to transport projects, equally shared between rail and road.

From 2000 onwards, ISPA has taken over from PHARE financing of transport network components, which had belonged to TINA network. The ISPA fund will provide around € 7.28 billion (2000 prices) for spending exclusively on transport or environment infrastructure projects during the period 2000–06. The European Commission has approved a total of 169 ISPA projects so far, amounting to € 6 billion, of which the EU will finance almost € 4 billion (64.4 %). Of these projects, 64 correspond to transport projects, (61.4 %), equally shared between rail and road. ISPA projects on transport mainly contribute to funding projects providing connection between the trans-European transport network (TEN-T) and the pan-European transport corridors and interconnections between national networks and their links with the TEN-T. Additionally, a small part of the budget will be allocated to fund preparatory studies and technical assistance directly related to projects being funded. All investment projects assisted by ISPA have a national contribution. The projects must be financially sustainable to cover future operating and maintenance costs.

The main financing sources for infrastructure in central and Eastern Europe are the *national budgets and loans from international financial institutions* (IFIs) and other banks. The European Union adds a small part only to the total infrastructure expenditure.

The EIB signed infrastructure loans with accession countries for € 8 871 million between 1990 and June 2002 for financing of the transport infrastructure network. Overall investments from the EBRD total € 1 456 million since 1991, 55 % of which is allocated to roads.

According to the statistics from the EIB, the largest part (55 %) of the loans signed by 10 accession countries (excluding Cyprus, Malta and Turkey) is allocated to road. The EBRD signed loans of which 52 % were related to road infrastructure. The favour for road in investments corresponds with the EIB estimations on investments needed in transport infrastructure for upgrading and completing existing networks, which are part of the TENT-T, to EU quality standards. The whole process of upgrading and completing existing networks will cost at least € 90 billion, of which more than half is foreseen for road networks, and some € 30 billion for rail networks.

By the end of 1996, the World Bank had committed US$ 2 108 million to 22 transport projects in 14 countries in eastern Europe, the Baltics and the former Soviet Union countries; the EIB had provided € 1685 million for 35 transport infrastructure projects in 12 Eastern European countries; and the EBRD another € 1291 million for 38 transport infrastructure projects in its countries of operations. Additional funds were mobilised by other financiers such as the Asian Development Bank (ADB), Kreditanstalt für Wiederaufbau (KfW), the Overseas Economic Co-operation Fund (OECF) and commercial banks.

International financial institutions will need to continue to coordinate and collaborate closely with each other where a project requires financial commitments in excess of the capacity of a single institution or where the presence of more than one IFI can encourage a government to take difficult decisions with respect to transition (notably for railway restructuring). In other cases, IFIs need to seek an efficient division of labour. For example, there is agreement that in Russia, the World Bank will concentrate on highways, bridges and urban transport, while EBRD will focus on

aviation and railways. Recognizing that the EIB has a specific mandate to finance TENs infrastructure, whereas EBRD's mandate focuses primarily on transition, the two institutions are developing closer cooperation, particularly in the railway sector. EBRD also expects to cooperate with EIB and the European Investment Fund (EIF) in co-financing PPPs for toll motorways in the pre-accession countries.

The aim of the latest TEN-guidelines revision is to focus investments more on eliminating bottlenecks, mainly in the frontier region of the EU and the accession countries. With the proposed amendment of the financial regulation, the Commission aims at increasing the Community's contribution rate from 10 % to 20 % for 'critical' projects with a high value added for the trans-European network but lower socio-economic return at national level (e.g. network connection in the frontier region of EU-15 and the accession countries). Finally, the Commission plans to come forward with proposals that enable the use of 'income' from charges on competing routes in a certain transport corridor to make up shortfall in funds needed to complete other infrastructure projects in the same corridor.

COUNTRY-SPECIFIC POLICIES

Most accession countries (Bulgaria, Czech Republic, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia) have identified upgrading of their current infrastructure that is part of the TEN-T extension (TINA network) to EU standards as key priorities in transport infrastructure development. Additionally, some countries have set objectives in their national transport plans or policies that are broader than, or not directly linked with, improvement of the TINA elements of their national transport networks.

In the Czech Republic transport policy, the build-up of infrastructures take into account traffic requirements like, for example, the high capacity rail connection enabling the linking with the European transport network, the Elbe waterway, etc. Furthermore, a minor part of the investments is directed towards the modernisation of international navigable waterways.

In the Estonian transport policy, the first strategic objective is to provide the population and the national economy with transport services of a sufficient volume and quality, safe and environmentally friendly at minimal costs for the society. The second strategic objective relates to profits generated in the transport sector, which could be partly used to tackle the continuous problem of under financing of the infrastructure.

The major goal of the Hungarian transport policy is to facilitate integration into the EU. Hungarian transport policy concerning infrastructure aims to improve cooperation with the neighbouring countries and to create a more balanced regional development of the country.

Latvia wishes to expand international transport operations (transit) that could increase the social welfare and economic development.

In Slovenia, transport investments aim at the gradual improvement of the quality and level of transport infrastructure services towards the EU level. Other areas of attention in infrastructure investments are: construction of pedestrian infrastructure, elimination of "black spots", improving technical elements of the road infrastructure and providing for its regular and effective maintenance.

The Turkish transport plan has as its main target the modernisation of transport networks and operations and the introduction of commercial measures to make certain modes more attractive.

In the accession countries, roads have traditionally received a high share of new investments (new construction, extension, reconstruction, renewal and major repairs), whereas rail received the higher share of maintenance expenditure. Expenditure on railway maintenance in the accession countries is high when compared with investments in new railways.

Road maintenance is relatively low compared with investments in new road infrastructure, in particular for motorways. Railway, urban rail and inland waterway maintenance expenditure is high compared with investments in new railways, urban railways and inland waterways.

In Estonia and Latvia, maintenance expenditure forms the largest part of investments and maintenance expenditure on roads (68 % and 65 % respectively). In both countries, the total length of all roads remained stable between 1993 and 1998. In Latvia, maintenance expenditure on rail is also high compared with investments, corresponding to stable rail length.

Investments in new infrastructure (in all modes) in the accession countries were insufficient to improve their inadequate infrastructure endowment. Lack of sufficient resources hampers higher investments in infrastructure. As a percentage of GDP, the share of spending on transport infrastructure in the accession countries has grown from around 0.7 % in 1993 to 1 % in 1995 and went up in some countries to 1.5 % in later years. During the same period, this share decreased in all EU Member States, except Portugal and Sweden. In 1995, spending on transport investments as a share of GDP was somewhat higher in the accession countries than in west European countries. This percentage is modest and at the lower end of the scale of financial resources that the accession countries were recommended to commit (1–2 % of GDP) by the European Conference of Ministers of Transport in Berlin.

There are significant variations in investment levels as a percentage of GDP between countries. The Baltic States and Romania had the lowest investments in the period 1993–95, with 0.2–0.6 % of GDP and the highest shares of investments as a percentage of GDP can be found in Hungary, Czech Republic, Slovakia, Slovenia and Turkey, having investments as a percentage of GDP higher than the recommended 1-2 %.

The largest share of investments in the TEN-T network is allocated to road, followed by rail and airports. Between 1993 and 1995, the parts of the transport network that will become the TEN-T network in the accession countries took up a significant part of infrastructure investments. Investments in inland waterways and airports in the Czech Republic, Hungary, Poland and Slovakia concern TEN-T investments only. On the contrary, investments in rail infrastructure which will form part of the TEN-T forms a relatively small part of total investments in rail infrastructure.

The bias of TEN-T investments towards roads can be partly explained by the state-of-play of the infrastructure at the beginning of the 1990s and the need to upgrade infrastructure. Roads and railways were both in a generally bad condition at the beginning of the 1990s, with the demand for rail transport collapsing between 1990 and 1999, whereas that of road transport recovered in the second half of the 1990s. The need for better and safer roads was therefore more prominently present for road than for rail. Consequently, public and private financing could have probably been found easier for road than for rail projects.

INVESTMENT FUNDING SOURCES AND INSTRUMENTS

Aside from the technical details and issues related to selection, ranking of infrastructure investment projects and their prioritization, the fundamental questions every government faces is – who pays and over what period.

Different funding techniques are primarily used to defer maturity dates by manoeuvring time needed to adjust the imbalance that usually exist between the large volume of funds necessary in the short term, and resources available in the same period. When private funds are used, it is ultimately the user who has to cover the total cost, whereas in the case of public funding it is the taxpayer who usually takes over directly or indirectly from the user through subsidies, loans or guarantees. This is the general pattern in the funding of infrastructure investment of the transport system in most of European countries, although it could be supplemented by additional financing when costs are born not only by national users and taxpayers but also by the international community through variety of channels.

Sources of finance

There are many different sources of finance, but it is important to differentiate between *national and international funds*. This distinction is particularly important in view of the monetary system in use. Funding procedures could be considerably complicated if the high levels of inflation and problems of convertibility prevail in particular country. These problems were particularly important in CEECs before the 1990 an in early stages of transition before their currencies became convertible and when the rates of exchange were adjusting frequently. This distinction has became less relevant for accession countries as they progressed toward full integration in the EU, but are still relevant for other UNECE member countries which have not yet been able to achieve a long-term stability of their monetary system.

International funding is of a particular interest and can play an important developmental and dynamic role. The sources could be very different, but the most commonly used could be grouped in the following categories:

- loans from consortium of banks;
- international capital markets (shares, bonds, etc);
- assistance and (soft) loans from other governments;
- (soft) loans, grants and guarantees from international institutions (EIB, EBRD, etc.);
- assistance provided by international organisations (various UN and EU funds);

Large majority of funds for investments in transport systems and infrastructure traditionally came from national budgets, but in recent years these have been considerably cut back. At the same time, establishment of national financial markets in CEEC and booming years in financial markets of developed economies offered new possibilities for calling on bank loans and public savings. During the previous years, financial markets in CEEC have been steadily developing as a result of the privatisation of many state enterprises and industries, especially in the banking and financial sector, and a significant influx of foreign direct investments.

This tendency was combined with the decentralization of functions with an expanding role assigned to local and regional authorities being now able to compete for limited funds available from national sources of funding. However, the growth and importance of domestic financial

markets as the source for funding was to a large extent limited due to the persistent economic difficulties in transition economies where recession was combined with relatively high rate of inflation.

Funding of transport infrastructure projects in Poland varies from one mode to another. Almost all new investments are financed with the assistance of EU grants and IFIs loans. Infrastructure of national importance is funded by approximately 50 % national and 50 % international sources. Loans from IFIs are considered to offer more flexibility in providing the counterpart financing to EU grants and whenever the EU assistance is not available. The constraint, however, is the capacity of the state/regional budget to match funds with international funding.

In Turkey, most of maritime ports projects were funded from the national budget, but insufficient sources caused delays in timely completion of projects. Other projects are financed by soft loans, grants and guarantees from international financial institutions.

In EU member countries the situation regarding the sources of finance, has been different to some extent compared to that in CEEC. In Denmark, for example, approximately 33 %of expenditure in road infrastructure is covered by the central government budget and 66 % by regional authorities. Approximately 11 % of road maintenance costs are covered by the central government budget and 89 % by regional authorities. Rail infrastructure investments are funded by the central government budget, while maintenance expenses are partly covered by the infrastructure charges charged from rail operators (transport system users). Upgrade of the rolling stock can partly be funded by the government budget.

National funding in Finland originates mainly from the central government budget. Roads and railways are financed from the central government and municipal governments finance streets in municipalities. International funding (EIB loans) is used as additional source of funding for some major investment projects, such as TEN-T projects.

In the Netherlands, the main source of national funding is the central government budget, and contracts with private sector (PPP). Funding from EIB loans and from the TEN-budget represent the most important international funding sources.

Public funding by central government budget and local municipality budgets are the dominant funding sources for road and railway infrastructure in Sweden. The national financial market has gained growing importance in recent years as a funding source for both roads and railways.

Railtrack plc is responsible for investments, modernisation, repair and maintenance of the railway network in the United Kingdom. Various funding sources are utilized, including: national financial market, transport system users, regional authorities, as well as international sources of funding.

Two main types of international funds could be distinguished: *funds from international financial institutions and funds from international governmental organisations*. Funding by

international governmental organisations, such as from EU funds (the European Regional Development Fund, the Cohesion Fund, the TEN-T budget, PHARE, ISPA, etc.) was mentioned earlier. It is important to note that these funds, established to serve strictly selected purposes in member states, are not themselves sufficient to finance an extensive and ambitious infrastructure development in the enlarged Union. The member states are also expected to contribute a very important amount towards the total budget for financing every transport infrastructure project. Financing by international financial institutions (mostly EIB, EBRD and the World Bank) has also been mentioned earlier. EIB can only grant funds for projects whose technical, economic and financial viability has been established.. Due to the fact that the EU Member States are the EIB's shareholders the Bank can borrow on the international financial market on excellent terms. Maturity dates are particularly important for transport sector, especially in the case of large-scale infrastructure investments.

The EBRD has been actively involved in borrowing to both EU and non-EU countries. The EBRD signed first transport sector operation in March 1992 and its support for transport sector includes projects covering roads and urban transport, railways, aviation and ports. As of the end of 2002, the Bank had signed projects in this sector totalling € 2.8 billion. The EBRD has committed significant financing to improve the road infrastructure in its countries of operations. Projects include, for example, a loan to finance the upgrading of the M1/E30 motorway in Belarus, which links Moscow, Minsk, Warsaw and Berlin. About 230 km of the road are being repaired, and road user tolls have been introduced. In Bulgaria the Bank has funded a major road reconstruction project involving completion of a 32 km section of the Trans-European Motorway and improvements to some 800 km of primary roads serving regional and long-distance traffic. In the railways sector the EBRD's major projects include a public sector loan of for Slovenia Railways to improve its core rail network serving both domestic and international traffic. More recently the Bank signed five new railway projects totalling some € 170 million. These included large-scale operations in Kazakhstan (€ 64.8 million) and Ukraine (€ 51.7 million), both of which involve the establishment of modern track maintenance and renewal systems, which are vital for improving the efficiency of railway operations.

Funding techniques

In practice, a full range of funding techniques exists. Funding techniques ranging from 100 per cent public funding to wholly private financing could be found in various countries and sectors. However, two traditional basic techniques are (i) traditional public funding, and (ii) wholly private funding, while in the more recent past a whole range of (iii) intermediate techniques has been created.

Because of the high capital-intensive nature of the transport sector and the fact that some major infrastructure investments (tunnels, bridges, etc.) cannot be split into separate parts, policy makers usually adopt the financing of transport infrastructure out of public funds..

Very often, the scope for public funding, irrespective of the underlying transport and economic policy choices becomes considerably reduced by the financial constraints on central and local governments. The opportunity of using public funding have been reduced in the last several years because of reduced budgetary resources as a result of the persistent economic recession and, in some countries, high levels of indebtedness, which makes it impossible for governments to bear any further large increase in public debt or financial commitments. The scope for significant increases in capital expenditures by governments for transport infrastructure would appear to be

limited, without recourse to tax increases (which would deter other types of investment) or to larger fiscal deficits (which would weaken confidence in macroeconomic stabilisation).

Another problem with public funding was related to the fact that governments have tended to allocate funds globally - resources were not earmarked or allocated to specific use – resulting in the lack of transparency. This has led many governments to create specific funds, budgetary lines or ancillary budgets financed out of specific taxes.

In practice, public funding usually finances transport projects by a combination of funds allocated directly out of the budget and by borrowing (the cost of borrowing, both interest and capital, are paid out of the national budget usually over a fairly long period of time).

Private funding is a technique of project financing where costs are ultimately borne by the user. Cash flow is generated by levying a toll, or a charge that user can clearly identify. The toll or charge must be sufficient to cover operating costs, repayment of the loans incurred to finance the project, and the return on the investment. Projects are thoroughly appraised and the risks have to be shared out on a clear-cut-basis.

Due to long project lead times (5 – 10 years for infrastructure), high technical risks, very long project life and shorter loan repayment periods than the life of the project, the use of private funding in transport sector is more difficult than in the industry. In addition to technical and financial risks, there may also be economic and political risks. Private funding will be possible only if investor is sure that the policies will not change and if he is able to estimate future effective demand with some accuracy. He must also have full freedom to set tolls and fares. The size and number of risks involved explains why there have been very few privately-funded projects in European countries so far.

Certain success of privately financed transport infrastructure projects worldwide has generated high aspirations within Eastern Europe. Nevertheless, there are diverging views concerning the desirability of privately financed transport infrastructure. At one end of the spectrum, some decision-makers have high expectations (often fuelled by contractors) that the private sector will bring money, construct infrastructure and bring operating efficiencies, at no cost or risk to the government At the other extreme, some decision-makers point to the high returns on equity demanded by investors, the high interest rates charged in the financial markets (compared to sovereign borrowing), administrative complications, social impacts and high transaction costs, and question whether it is all worthwhile. Determining policy is further complicated by the fact that private concessions involve redefinition of the public sector’s role, which poses threats to existing power structures. Irrespective of the divergent views, the continuing fiscal squeeze in many countries will force governments to seek private investment to finance the transport and other infrastructure needed to support economic development.

Privately financed infrastructure projects are expected to grow rapidly, mainly due to governments’ budgetary constraints and their recognition of private sector capabilities with respect to project implementation and management. The World Bank has identified nearly 2,000 proposed BOT projects worldwide that would cost over US$ 1,300 billion excluding privatization projects. In the transport sector, there are around 400 proposed projects.

Experience with privately financed transport projects has been mixed. The Mexican toll motorway programme ran into difficulties because of inadequate traffic and revenue forecasts, underestimation of costs, and debt maturities that were ill adapted to projects’ needs. Dulles

Greenway in the United States and Orly VAL in France face problems because of lower than expected revenues. Poor initial project evaluation, resulting in cost overruns, delays and lower than expected revenues had necessitated financial restructuring of the Channel Tunnel project.

Several projects in central Europe have stalled (for example, the Szekszard Bridge in Hungary); or concession tenders cancelled (D5 Motorway, Czech Republic; M3 Motorway, Hungary); or market-priced limited-recourse financing rejected in favour of other options for various financial and legal reasons (Ruzyne Airport, Prague, Czech Republic; Ferihegy Airport, Budapest, Hungary). The reasons vary from project to project, but the most important factors seem to be:

- poor financial viability (particularly for motorway projects);
- public affordability and political acceptability;
- level and equitable allocation of risks;
- lack of equity;
- lack of local funding;
- regulatory and legal constraints; and
- lack of convincing examples in western Europe

Despite a large success with syndication of infrastructure projects worldwide, lenders remain wary of the risks involved, especially for road and bridge projects. Investors and lenders are asked to take a variety of risks, including: market risks (traffic and revenue), construction cost, programme slippage, environmental liabilities, interest rates, exchange rates and political risks. Difficulty in forecasting traffic demand and revenue is notorious, especially where there is little history of market response to prices and services.

Even if experience to date with privately financed transport projects is mixed, the rationale for private participation in infrastructure projects remains strong. Privately financed projects aim to achieve commercial discipline, harness private management skills, shelter infrastructure from excessive political intervention, and relieve government budgets and sovereign borrowing by attracting additional capital. By emphasising financial criteria and service quality rather than engineering, private financing focuses attention on cost-effectiveness and the importance of good management. The challenge remains to allocate project risks adequately to those parties best able to manage them and to allow the public sector to play a role as financial supporter of projects which are economically but not financially viable through Public-Private Partnerships (PPPs).

Several governments have adopted ambitious motorway development plans, which they hope can be financed largely by private capital (for example, Croatia, Poland and Romania). However, since motorway capital and operating costs are broadly in line with those in the EU, and traffic volumes tend to be lower, either tolls have to be higher than in the EU or public sector financial support will be required to keep tolls at levels affordable by local users *and* enable a project to be supported by banks. Since high tolls tend to be unacceptable to local users (especially for motorway sections that were formerly toll-free), there are likely to be few financially viable motorway concessions in the region in the near future, without substantial public sector financial support. Furthermore, governments usually insist on there being a toll-free alternative road (a free alternative would be unthinkable for a telecommunications or a power project). Where a proposed toll motorway project cannot attract sufficient public sector financial support, it is advisable to downsize or postpone the project. Where support is available, it is recommended that public-private partnership should be structured for economically viable projects by blending private risk capital and management skills with public sector financial and political support.

Between the traditional public funding and wholly private funding technique, there exist in practice a whole range of mixed public - private funding techniques. The non-exhaustive list of possible options includes:

- special funds financed with the revenue from specific taxes;
- semi-public companies or state-controlled public bodies using private capital;
- infrastructure is built and financed entirely by private sector but is operated by a public body;
- infrastructure is built and operated by a private undertaking, but the owner is public and funding is private but is guaranteed by the state;

Each of these techniques has advantages and certain drawbacks. Special funds make it possible to identify more clearly the amount of expenditure and the uses to which revenue is put, provided that the budget is in overall balance and that revenue increases in line with expenditure. Special funds are considered as an effective way of managing, maintaining and modernizing an existing transport network.

Another way of combining public and private capital is to set up entities that are legally independent of the state or local authorities and that have their own corporate status. This method has been widely used in Western Europe for various transport modes. It makes it possible to mobilize large amounts of public and private capital, often with a state guarantee for loans. A wide variety of funding arrangements is compatible with this type of legal and organizational structure. The effectiveness of such structures and funding arrangements will depend on whether or not the company is free or not to operate without interference from the state. These structures are also compatible with concessions and Build-Operate-Transfer (BOT) arrangements. An example of such an arrangement is the French system of tolled motorways run by semi-public companies which are controlled by a holding company – "Autoroutes de France".

Another type of the arrangement involves the concession to private enterprise to operate infrastructure under the control of a public owner. The relationship between the owner and operator are specified by contract. The funding is usually private, but some public funding in the form of contributions in kind, subsidies, loans or loan guarantees, is frequent. The BOT technique is often used for this kind of project. The key elements of the concession contract relate to: duration of the contract, freedom to set charges, operating constraints, maintenance of the infrastructure by the concession holder and contributions by the authority granting the concession (direct subsidies, provision of existing infrastructure, back-up investments, etc.).

If the profitability of the project is below the rates of return that can be earned on savings, private investors will clearly hesitate to invest in projects that are very risky and that offer a poor return. Therefore, the authorities granting concession must carry out prior appraisals very carefully with a view to calculating as precisely as possible any public contributions that would help to facilitate implementation of the project. If the authority granting the concession considers that the project is viable, it is thus preferable that it provides, if necessary, a loan guarantee rather than subsidize part of the project.

Another variant of the previous technique is the project built entirely by a private investor with private capital but operated by a public body. This solution is particularly appropriate when the project involves a transfer of technology. Often this type of solution stipulates that contracts, which do not involve advanced technology – such as certain type of surface works and civil

engineering – must be placed with local suppliers, and this question of "local preference" is frequently a subject of controversy.

In conclusion, there is thus a very wide range of funding techniques, and each basic technique may have several variants. For example, the Build-Own-Transfer technique has the following variants: Build-Own-Operate-Transfer (BOOT), Build-Own-Operate (BOO), Build-Own-Operate-Subsidize-Transfer (BOOST), and Build-Lease-Transfer (BLT).

The key distinguishing features of a PPP compared to a classic BOT are that: (a) equity in a PPP will usually be held by both private and public interests, and (b) a PPP is more flexible with regard to phased project implementation. A PPP requires recognition of market realities and an ability to blend sovereign and risk capital with an equitable risk allocation.

A PPP may be appropriate in various instances: (a) where the public sector wishes to maintain a degree of control over a strategic asset; (b) where the public sector must make a substantial financial contribution to a project to render it "bankable"; (c) where only the initial stage of a project can be implemented and the timing of future stages is uncertain; or (d) where a publicly owned, commercially oriented entity (such as a railway company) wishes to participate for commercial reasons (for example in an intermodal terminal).

The EBRD-supported Hungarian M5 Toll Motorway Project for example, exhibits some essential PPP characteristics. The government is contributing existing motorway assets, a new link road, land for new construction and a cash-flow deficiency guarantee in the form of a stand-by facility. In return the government is participating in a profit-sharing arrangement with the concession company. This project blends sovereign support with risk capital in a way that is acceptable to the government, equity investors and lenders.

OUTLOOK FOR THE FUTURE

In its recent Communication[1], the European Commission presented its proposals regarding innovative funding solutions for further developing the trans-European transport network.

The document notes that the European transport infrastructure is still under-financed, for lack of adequate funds and the absence of framework conducive to investment. The Commission further stress that the budget, which Member States put aside for developing transport infrastructure and the funds made available by the EU are insufficient, creating the mismatch between the declared objectives of the White Paper and the financial means. Bearing in mind effects of the current economic slowdown and budgetary constraints there seems to be little possibility at present of a significant increase in the public funding allocated to infrastructure projects, in view of the Commission.

Use of public-private partnerships to supplement public financing may be envisaged for some type of projects, but there are still too many uncertainties regarding projects. The private sector has insufficient confidence to commit to financing them. Moreover, PPPs almost always require major public financial support in the form of subsidies or guarantees.

1 Communication from the Commission, Developing the trans-European transport network: Innovative funding solutions, Interoperability of electronic toll collection systems, COM(2003) 132 final, 2003/0081(COD).

When further assessing the current situation, the document notes that one of the most striking aspects raised by implementation of TEN major projects is the *lack of coordination between the different sources of public funds*. This coordination is a problem since it is necessary to establish a delicate balance between different priorities, which do not necessarily coincide, at regional, national and Community and level.

Regarding the possibilities for application of various sources of funds in the future, the Commission's document declares that:

- In view of the severe budgetary constraints on the Member States and severe need for new infrastructure – particularly with enlargement on the horizon – fully public funding of such infrastructure in the medium term appears increasingly Utopian. To rely *solely* on funding of this type would pose a risk of delays in completing these networks – with unacceptable consequences.

- Exclusively private funding of transport infrastructure is not the best option for bringing large-scale projects to fruition. One of the rare recent examples of any significance is the Channel tunnel, which – leaving aside its undeniable technical success – is in financial terms no model for investors wishing to venture into building infrastructure of this type. Because of the nature of the constraints involved, investment in major transport infrastructure does not lend itself to funding by the private sector alone. Apart from the substantial sums involved, the operating risks plus those inherent in the construction phase, the payback period on the infrastructure, the uncertainty surrounding both the returns and the long term all militate against fully private funding of such infrastructure. Consequently, the public authorities tend not to look for mixed (public-private) financing solutions. This traditional view therefore discourages private investors.

- Though budgetary constraints thus weigh very heavily on the capacity for public funding, there are nevertheless means of strengthening the leverage exerted by public money to attract private capital, such as the concession system, which has proved its worth and is continuing to do so. Public private partnerships (PPPs) are today still a viable option for financing transport infrastructure in Europe, but they face major economic, legal and, in some cases, political obstacles. The Commission believes that good practice needs to be spread and that, in the medium term, the existing regulatory framework needs to be updated to make PPP schemes even more attractive, particularly for private investors.

Transport network is characterised by the wide range of projects with their service life sometimes spanning several centuries, and entailed financial, technical, environmental and political risks thus resulting in the highly uncertain rate of return. Consequently, notes the Commission, there is no single answer to the question of infrastructure funding. Solutions must be sought through a variety of instruments which must be used in combination and which need to be adapted to each category of project.