

NEW MOTORWAYS BY NEW MEANS CONNECTING EASTERN EUROPE TO THE WEST

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INTRODUCTION

Opportunities created by fundamental political and economic changes in the early nineties in Eastern-Central Europe might be undermined by the lack of a really European transport infrastructure. Access to new markets, free flow of passengers and goods will be limited by missing links, poor quality services, capacity constraints and operational problems at borders. This applies particularly to road transport, assuming that the most spectacular development in the transport sector of Eastern-Central European countries will be a rapid increase of road transport output.

Economic growth and transportation modal split are strongly dependent upon the productivity of the economy and changes accompanying technological progress. Expected transformation of former planned economies into market economies (the management of "economies in transition") needs to increase the share of highly manufactured products with high value/weight parameters in the production and consumption as well as in foreign trade. All these involves steadily increasing demand for road transport, because this mode can more readily adapt to the requirements of a really modern economy integrated into Europe.

The expected increase of road traffic as a result of growth of the vehicle fleet and daily use of cars, greater share of road haulage in the modal split, reorientation of international trade and tourism is restricted effectively by the limited capacity of the existing road network. Congestion has already become a regular feature in most cities and on the main roads usually carrying international traffic too. A vital problem is therefore for Governments to accelerate road construction and mobilize funds necessary to finance new roads.

To meet one considerable part of the expected demand for road transport, minimally 1300-1800 kilometres of new motorways have to be built by the end of the century only in Poland, Tchechoslovakia and Hungary, first of all linking the already existing stretches with Western Europe's 46000 kilometer long motorway network in operation. The estimated total cost of these investments is nearing 7 billion ECU (1992 terms).

1. TRADITIONAL FINANCING

In spite of their importance, road networks in Eastern Central European countries are generally badly maintained and underfunded. Consistently with the general rule of planned economies (i.e. the redistribution of centralized resources), all road expenditures on road construction, maintenance and operation are financed from the State budget, through general taxation. Roads are treated as public goods, road users are taxed, the proceeds are credited to general revenues and road expenditures are financed from general revenues determined as part of the annual budgetary process. The absence of any linkage between revenues and expenditures means that

governments does not know how much revenue they collect from road users. Road users and road agencies likewise have every incentive to press for increased spending on roads, because they know it is financed from general revenues and has no direct impact on road taxation. General revenue finance furthermore provides no incentives to reduce costs.

While countries generally use a variety of charging instruments to collect revenues directly from road users, fuel taxes are usually the main charging instrument, because they bear some relationship to road use, are cheap and easy to administer and have desirable impacts on fuel efficiency. In the case of trucks, fuel taxes are usually complemented by other charging instruments to ensure they properly account for differences in axle weights and the other characteristics which affect road use costs. Other charging instruments include payments related to vehicle ownership (registration fees, vehicle inspection fees and vehicle transfer taxes) and payments related to vehicle acquisition (import duties, excise taxes and sales taxes).

All these user charging policies were not satisfactory to cover technically and economically justified, necessary but neglected road expenditures in the eighties, so the road deficit is a considerably heavy burden on public budgets actually in Eastern Central Europe. In other sectors of the economies in transition the emphasis is on commercializing major economic assets, corporatizing them and, where possible, privatizing them. This means subjecting them, wherever and whenever possible, to some form of market discipline, imposing on them a hard budget constraint and giving management the autonomy to run them in a business-like way. Maintaining traditional financing systems became therefore an anachronism and should be modernized as well, in all Eastern Central European countries.

First of all a political conditioning process is required to convince road users, that even if they are already as a whole "paying their way", improved road conditions will be possible only with increased contributions from road users. To promote acceptance of this idea, it must be demonstrated quantitatively that road users will be better off under this arrangement than if the improvements are not carried out at all. However, taking into consideration the steadily decreasing personal income, rising unemployment and high inflation rate in Eastern Central Europe, it is highly improbable that motorists and road haulers could accept any further considerable increase of their already overburdening tax and financial charges. On the other hand, any attempts aiming at a modification of the redistribution driven taxation system might cause undesirable distortions and social tensions on the fields from where the resources would be drained out (education, health, social services, etc.) So the only and perhaps best way to mobilize additional resources, seems to be to attract domestic and foreign private capital to participate in the financing of road expenditure.

A traditional way of attracting private or foreign capital to finance road expenditures is to seek for loans by the Government or directly by road administrations. To accept these loans, assuring reimbursement, associated risks should be kept at a level acceptable by the lenders, so the legal and financial conditions accomodating them have to be created in due time. International financial institutions, like IBRD, IFC, EIB and EBRD are involved already, or being prepared to be involved in the financing of road infrastructure in Eastern Central Europe. Acceptance of these loans necessitates however the availability of a huge domestic public fund contribution, while they could not cover more than 30-40% of the expected investment costs, and must be secured by State or central bank guarantees to preserve their better than usual conditions.

Most countries in Eastern Central Europe (especially Poland and Hungary) are heavily indebted already externally as well as internally, annual debt service is consuming a very high amount of convertible currency earnings. The mobilization of new loans for infrastructural purposes - among them for road improvements - has not high priority in economic policy aiming at quick recovery and transition towards market economy or seems to be quite unattractive, even unacceptable for finance administrations. Road administrations are seeking therefore for new forms of financing and management of roads - first of all motorways - of international interests. There are attempts in several countries to implement non-recourse financing of toll motorway and toll bridge concessions, as a specialized new form of project financing.

2. BOT APPROACH AND CONCESSION

Concession structures as a form of privatization have typically been applied in several market economies to secure private sector capital and operating resources without surrendering public ownership of strategic assets. Concessions have been widely used in the development of natural resources and railways and more recently have been rediscovered to cater to road, bridge and tunnel projects. In a concession, the assets in question continue to be owned by the Government. The private sector concessionaire is, however, delegated a reasonably wide degree of control over the management of such assets. Such control is, however, nevertheless only for a specified period of time and is subject to a certain degree of technical and regulatory oversight.

Liabilities associated with the assets underpinning the concession are typically assumed by the concessionaire as is the responsibility to finance new capital expenditures during the concession period. As most concessions involve the development of new public works projects such as toll motorways, bridges or tunnels, there are a few, if any existing liabilities to be assumed: though major capital expenditures are required to realize the potential economic benefit of the concession. In the area of public works, these types of concession have come to be known as Build-Operate-Transfer projects.

Because a concession has a finite time period, from the perspective of an investor it must, of necessity, be regarded as a wasting asset. Provided the economics of the initial investment prove successful, future cash flow should allow for upside gains in the initial phase of the concession, with the investment becoming more of an annuity, (like a bond) in its mature phase. For this reasons investors tend to prefer commitment to major expenditures of capital only at the outset of the concession period, with an accelerating build-up of cash flow as a result of this investment providing their eventual return. Toll motorways clearly fit this model.

The concession is documented in a concession agreement which specifies the rights and responsibilities of the sponsoring government entity and the concessionaire. Principal components include investment undertakings, the regulatory/tariff structure, specified maximum rates of return, penalties for non-performance (including provisions for termination) and concession time period. In public works, it is unusual to pay an up-front purchase price (concession fee) to the government for the concession, given the high capital costs required to fund the works in question.

There are several issues, however, specific to Eastern Central Europe, which may present serious difficulties to the financing of new toll motorways with foreign capital, introducing concession framework. Clearly these issues needs to be

considered carefully, but according to international experience it is generally possible to tailor the financial plan to suit the circumstances and requirements of each individual project. Some issues that have been identified already and initial thoughts on how these might be resolved are outlined as follows.

- **Missing regulatory framework** - It is both common and understandable in privatizations of public works for the government side to view the private sector as a mere substitute for traditional government funding. If the privatization is viewed principally as a funding substitute rather than the creation of an enduring public/private partnership, it is unlikely to be successful. It is necessary therefore to create appropriate legal, financial, technical-environmental and administrative regulatory background for that specific type of privatisation.

- **Low traffic volumes** - In most cases current traffic volumes, although far exceeding the capacity of existing roads, will fall below the ideal volumes required for privately financed toll motorways. Whilst it is clearly desirable to have high enough volumes of traffic, the most important criteria when financing a project is predictability. If the traffic flows can be predicted with reasonable certainty, the traffic risk will be well contained and so lenders will not demand a large premium for risk. For well known reasons rooted in the economic and social transition, detailed and reliable traffic forecasts based on economic pronostics are not available for Eastern Central Europe, and it seems to be very difficult, even impossible to elaborate them soon. This issue underlines the need for risk sharing within the government and the concessionaire, i.e. for a minimal governmental financial support (30-40 % of total project cost) accepted by the investors and the lenders.

- **Public acceptability of tolls and commercial freedom** - Toll collection for the use of roads, bridges and tunnels is generally unknown in Eastern Central Europe and sporadic attempts to introduce sticker-type tolls failed recently in Hungary. Implementation of tolls on motorways, even on those built by a concessionaire needs careful preparation among the public. In case there is a freely accessible ordinary road parallelly with the new motorway, a freedom awarded to the concessionaire to set up tariffs can contribute to the efforts aiming at a minimization of government support. Revenue optimization as determined by the tariff structure can however result in a tariff schedule which is felt to be overly onerous to the user public, so an agreed methodology of toll calculation and implementation is strongly recommended.

- **High inflation and non-convertibility of local currencies** - The level of inflation in most Eastern Central European countries exceeds by large that observed in Western Europe, although according to tough monetary policies applied already, this should decrease over time (3-7 years?) down to an acceptable rate. Sensitivity analyses performed on similar public works projects showed that high inflation is in fact beneficial where the revenues are linked to inflation and exchange rate modification. Obviously a drawback of very high inflation is the possibility that it may restrict consumer spending, mobility and tourism and hence suppress traffic growth, thereby reducing expected revenues. The non-convertibility of local currency is likely a serious problem in attracting foreign capital. The project revenues will be in local currency but some if not most of the liabilities for interest and debt repayment will be in other currency. Collecting tolls in hard currency is imaginable but undesirable to avoid any kind of discrimination. Some special government guarantees (transfer guarantee, exchange rate guarantee, etc.) and the acceleration of making local currencies convertible can contribute to an equitable risk-sharing between the interested parties.

3.EVALUATION METHODOLOGY

Under the BOT scheme of limited-recourse financing, the government usually requires the registration of a special purpose concession company to implement and operate the project with a relatively low equity investment (usually from 15-25% of the total project cost) while the remaining capital requirement is sourced as debt without an external financial guarantee for repayment.

Because a BOT project is essentially a public/private partnership, a high degree of co-operation needs to be engendered between the various parties to the project in order to make it successful. This is not always easy to achieve given the potentially conflicting objectives of the two sides. Typically the host government will want to insure that the project is constructed to the highest possible design standards and that toll/tariff policy is fair and will not draw undue criticism from the user public. The concessionaire, on the other hand, will need to insure that the project will be an attractive investment and can be financed.

Establishing whether or not a particular project can be financed on a limited-recourse basis flows from an assessment of its technical feasibility and financial viability. In order to be viewed as technically feasible, the project in question should be based on a known technology and the sponsors/contractors must possess the technical and managerial experience to both implement and operate it successfully. Most motorway projects prepared already in Eastern Central Europe easily fit this parameter and the evaluation methodology is well known.

Financial viability entails establishing a reasonable degree of comfort that the project can generate sufficient revenues, both to meet its scheduled debt payments and earn an acceptable return on equity investments of its sponsors. This exercise is a function of assessing the cost of implementing the project, e.g. construction cost, within the context of the level of forecast cash flow arising from anticipated future usage.

Based on usage forecasts, forecasting models are created usually to predict project revenues. These forecasting models are complex and the results cannot be viewed as definitive. Their sensitivity to macro and micro economic inputs makes the result highly subjects to the relative degree of confidence in the underlying economic assumptions. Nevertheless, lenders/investors and governments are increasingly coming to rely on forecasting models in structuring and implementing BOT projects. The use of most appropriate evaluation techniques based on the results of forecasting models and structured in a feasibility study can facilitate that the project will be adopted by sources of finance in their assessment of a project. It is generally accepted that traffic flows in future will depend upon the performance of the economy, however forecasting economic trends is extremely difficult given the restructuring currently underway.

The most important evaluation criteria for the equity investors (shareholders of a concession company) are those listed below.

- **Internal Rate of Return (IRR)**- Many investors use this measure as an evaluation technique, being the rate of discount at which the investment made and the returns received have a net present value of zero. It is measured either in nominal or real terms, the latter removing the effects of general price inflation. Investors often have a basic hurdle rate that has to be achieved before any investment will be made and will add to this any risk premium that they may require. For private investors this

basic limit is certainly higher than for public ones, while they do not consider, calculate and monetize any externalities, even in the narrowest sense.

- **Net Present Value (NPV)** - This uses the same cash flows as the IRR, but discounts them to calculate the net present value. The discount rate selected is usually the investor's weighted average cost of capital. A theoretically stronger measure than the IRR and some investors like to use it.

- **Payback time period** - This is measured as the time taken to repay the original investment. This is important to investors because it enables them to assess the timing of the cash flows which will be important when analysing the impact of a project on their profitability which the discounted NPV and IRR ignore.

Despite the theoretical weakness of the IRR calculation, this is the technique now often used to set target returns. In trying to assess these in the context of a project, it is important to distinguish the requirements of those investors whose involvement is purely financial, i.e. market investors, and those whose involvement includes other commercial involvement such as construction or operation of the project, i.e. commercial investors. Similarly international financial institutions or bilateral institutional investors may have broader development aims which will allow them to accept a lower rate of return than a market investor.

Market investors will in theory establish their desired rate of return for any investment from the addition of a risk premium to a risk free rate. Normally, the risk free rate of return for an investor would be that which it would earn from investing in government securities of similar maturity to the proposed investment, in their domestic market. For non Eastern Central European investors (from the EC, USA or Japan e.g.) the range of long term government securities in issue makes establishment of this benchmark relatively easy. Identification of a similar benchmark for domestic institutions would be more difficult if not impossible under current circumstances. The risk premium for limited recourse financing projects is usually quite significant. Investments in these projects are, with rare exceptions, long term and relatively illiquid. This being the case, it can be normally expected that market investors will apply a hurdle rate of a minimum of 15-20% real return per annum to an investment in a motorway project of whose risks are relatively well controlled and allocated. They will also look for an early cash yield. Any motorway project with inherent unhedged traffic risks will attract a premium over this floor. The particular difficulties surrounding the forecasting of traffic for the motorways in Eastern Central Europe are likely to make this premium significant, perhaps of the order of a minimum of 5% per annum.

The position in respect of the commercial investors or international financial institutions is less capable of determination because of the confusion of interest each has between its role as investor and its commercial or development interests. In general terms, commercial investors can be expected, subject to their particular commercial investment return criteria, to require a lower rate of return than market investors, but often seek to recover at least a part of their investment from their commercial involvement.

For potential lenders other evaluation techniques are needed, because their interests are also different from those characterizing the investors. Some measures to be considered and applied are the following.

- **Annual debt service cover ratios (ADSCR)**- These are normally calculated as cash available for debt service in a given year related to debt service for that year. The cash available is usually taken as the post-tax operating cash flow. In order that debt service is covered in each year, the ADSCR should never fall below 1. Although

a useful measure of short-term solvency it does not offer assistance to lenders in assessing the overall viability of a project.

- **Net present value loan life cover ratios (NPV-LLCR)** - These are calculated as NPV of post-tax operating cash flows arising over the life of the loan related to the amount of outstanding debt. They can be calculated at any moment during the life of the project's loans although the critical one is that which occurs at the point of maximum indebtedness, usually at project completion. The discount rate used is the loan interest rate including the margin over cost of funds, or a weighted average thereof if more than one loan is being used.

- **Net present value project life cover ratio (NPV-PLCR)** - This is derived in the same manner as the comparable NPV-LLCR but uses the cash flows arising over the entire life of the project, (i.e. to the end of the term of the concession). Whilst the NPV-LLCR gives a picture of the basic ability of the project to service its debts, the NPV-PLCR gives a feel for the "margin for error" by showing how much cash would be available were the maturity of the debt to be extended.

It is impossible to formulate rigorous rules that will define the banks approach to determination of their requirements in respect of minimum cover ratios, not least because individual institutions adopt differing approaches. The existence of un-hedged traffic or foreign exchange risk would lead however to a higher level for the minimum NPV-LLCR than might be the case for a similar project with a guaranteed fixed price offtake arrangement or for a project whose debt was raised in the same currency as its revenues. The banks will also look for a fairly wide spread between the NPV-LLCR and the equivalent NPV-PLCR.

4. EARLY EXPERIENCES GAINED IN HUNGARY

Experts engaged by the Ministry of Transport, Communication and Water Management of Hungarian Republic elaborated a "Long Term Development Program of the National Road Network" in 1991. The Program was discussed and approved by the Government and intended to be presented to the Parliament soon. To eliminate development delays accumulated during recent years, approximately 320 billion HUF (about 4 billion USD, 1991 terms) should be invested during the next 10-12 years.

Investment cost of motorways needed to be built up to the year 2000, to meet expected demand for road transport raising with necessary economic and foreign trade development represents about half of that sum. It is obvious that recently established Road Fund feeded by earmarked tax revenues (expenditures on the 30.000 km long National Road Network neared only 12 billion HUF in 1991), will be unable to finance all investments and maintenance/operation costs. Nevertheless, to award concessions to finance, build, operate and transfer new toll motorways opens new opportunity to attire private capital completing public funds available for road and bridge investments. A new Law on Concessions enacted by the Hungarian Parliament in May 1991 made possible to try this opportunity too.

According to the regulation the Government is empowered to award concessions under the terms and conditions agreed upon in a concession contract for a fixed period (up to 35 years) to private companies, through international public tendering. The winner of the tendering procedure, the concessionaire has to establish a shareholding Concession Company registered in Hungary. Domestic and foreign competitors have got equal chances in tendering

On behalf and in the name of the Ministry, the Motorway Directorate issued an "Invitation for Prequalification", the first of that kind, in September 1991. The

purpose of this procedure was to select organisations, consortia and companies which are able using their own funds, by way of a concession to finance, build and operate sections of M1 and M15 toll motorways and connected secondary developments (about 60 km, estimated project cost around 200 million USD, 1991 terms). Altogether 41 interested parties bought the documentation containing preliminary information about the conditions of the tendering procedure leading to the signature of the concession contract. The information was based on preliminary design approved already by the interested local inhabitants and appropriate authorities, as well as on the results of a feasibility study elaborated by appropriate consultants. As the most important evaluation criterium of requests for qualification, the document emphasized that applicants must finance, design, build, maintain and operate these toll motorways in Hungary without using State budget funds or any kind of State financial guarantee. Until mid November 1991 deadline the Bureau for Motorways in Concession at the Motorway Directorate received 10 requests for qualification. An Assessment Expert Committee composed from Hungarian experts of civil engineering and finance has been appointed to evaluate the requests and foreign experts were invited to support this work. After a thoroughful study of all documents presented by the applicants, the Committee declared the prequalification procedure very successful and effective. Five international consortia were selected onto the "short list" by the end of January 1992, all composed from internationally acknowledged, well experienced, financially strong road building companies, toll road operators and banks.

The Hungarian Government approved the terms and conditions of the tender documentation, including the form of the Hungarian contribution to the financing of the project at the end of February 1992. The main points of this decision were to finance land acquisition from the Road Fund and to allow free tariff policy to the concessionaire (in accordance with a methodology mutually agreed and fixed in the concession contract). The tender documentation finalized by the co-operation of Morgan Grenfell and Co.Ltd, recently engaged principal financial advisor of the Ministry, was distributed among the selected tenderers in mid March. They have 150 days to elaborate and present their final tenders, which will be evaluated against a set of criteria announced in the tender documentation, in the autumn 1992. According to the schedule, the concession contract between the Ministry and the Concession Company might be signed early 1993, allowing to start construction in spring 1993 and to put into operation the M1 toll motorway - the last section of the 260 km Vienna-Budapest motorway - not later than end of June 1995, just before the Budapest World Exposition planned in 1996.

Depending upon the success of the tendering procedure aiming at the award of a concession for the M1/M15 toll motorways, several other projects are under preparation. An invitation for prequalification related to a concession concerning a new toll Danube bridge and 20 km expressways in Southern Hungary was issued in December 1991, and the assessment of the four request is under way. Tender documentation will be distributed for selected tenderers presumably in April 1992. Similar two phases tendering procedure is prepared to award concessions concerning M5 motorway (130 km), M3 motorway (210 km), M7 motorway (140 km) and a second Danube bridge.

The concession seems to be a promising form of privatisation of certain type of toll road and bridge construction and operation in Eastern Central Europe. The Hungarian experience would be followed surely by other countries in the region as well. Build, operate and transfer projects are however highly complex and costly from both a legal and financial point of view. Taking into consideration the financial

difficulties of Eastern Central European governments, it is understandable that they are in fact unable to offer similar to traditionally required financial support or guarantee for potential investors and lenders of a concessionary company charged with motorway project financing. The assistance of international financial institutions in this respect is vital for success.

International financial institutions might play a key role in assisting Eastern Central European governments planning to award concessions for tolled transport facilities and in supporting their efforts. Contribution of these institutions - depending upon the requirements, opportunities and restrictions prescribed by their statutes - could be considered as follows.

- offering loans to the concession companies with longer than usual (up to 15 years e.g.) maturity and grace periods and with attractively low interest rates, and preferably without State guarantee;
- bying shares and/or bonds issued by the concessionary companies;
- organizing corporate bond issues on the international financial market for the concessionary companies;
- offering loans under advantageous conditions to governments, to allow them a redistribution of public road expenditures necessary to support any successful award of toll road or bridge concession;
- supporting guarantees agreed upon by appropriate interested banks, related to project financing activities of concession companies.

The European Bank for Reconstruction and Development plays already a pioneering role in assisting the Hungarian government's efforts to award the first motorway concession. The experiences gained through the tendering procedure will be certainly useful for other countries too. In conclusion it has to be emphasized, that the East-West European relations, economic recovery of Eastern Central Europe as well as Western European economic integration will be hampered seriously unless travellers, transporters, companies, institutions and banks of more developed nations, governmental and non-governmental international organisations assist peoples and administrations of Eastern Central Europe to construct and operate an adequate transport infrastructure facilitating free flows of passengers and goods across the whole old continent.

