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Working Party on Transport Trends and Economics

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TRANSPORT TRENDS AND CHALLENGES

Financing of transport infrastructure

Note by the secretariat

I. Mandate

1. The programme of work of the Inland Transport Committee (ITC) for the period 2008-2012 specifies that a report on transport infrastructure financing is to be submitted to the Working Party on Transport Trends and Economics (ECE/TRANS/WP.5/42, Annex I, activity F). The following report was drafted by the secretariat for the consideration of the Working Party that may wish to decide whether and how to address the matter at hand in its future work.

2. The paper is organized as follows. Section II reviews briefly previous ITC work in the area of infrastructure financing. Section III describes recent transport infrastructure investment trends in the Economic Commission for Europe (ECE) region. Section IV considers the financing needs and gaps in the context of subregional and interregional infrastructure planning projects that have been administered or supervised by the UNECE. Section V discusses infrastructure financing during the global economic crisis and in the post-crisis period. Section VI concludes.

II. Previous ITC work in the area of infrastructure financing

3. This section reviews briefly the previous ITC work in the area of infrastructure financing that took place in the years 2002-2003. Following the decision at the fifteenth session of WP.5 to include financing schemes of transport infrastructure in its 2003-2007 programme of work, the secretariat developed a questionnaire for member countries. At its sixteenth session in September 2003, the Working Party asked the secretariat to prepare a document summarizing national replies to questions on financing schemes of transport infrastructure, and submit it as the ITC contribution to the ECMT-EC-UNECE-EIB Seminar on “Transport Infrastructure Development for a Wider Europe” (27-28 November 2003, Paris).

4. The ITC report (UNECE, 2003) presented at the seminar mentioned above described trends in infrastructure financing in the pan-European region and developments in some EU member states, accession countries and candidate countries. The report also discussed various funding sources and financial arrangements, including public-private partnerships. It concluded that PPPs could provide a viable option for financing transport infrastructure in Europe, if some preconditions are met. Such preconditions include the public sector’s willingness to maintain a degree of control over strategic assets and contribute financially to make PPPs bankable.

5. At its seventeenth session in September 2004, the Working Party asked the secretariat to prepare for its next session a review of relevant work on PPP schemes with a view to organizing in the future a special session on financing of transport infrastructure. Subsequently, the Working Party decided at its eighteenth session in September 2005 that a special session on this topic would not be warranted. However, it decided to continue discussing the issues related to the financing of transport infrastructure, given the continued interest of some member states in this area of work.

III. Trends in transport infrastructure investment

6. Main trends in inland transport infrastructure investment over the period 1995-2007 were recently described by the International Transport Forum (ITF) on the basis of a targeted survey (ITF, 2009). The ITF database on transport infrastructure investment and maintenance includes entries for 35 countries from the ECE region and four non-ECE countries (Japan, Mexico, New Zealand and Republic of Korea).¹ Most of the EU-15 and EFTA countries and new members states of the EU are represented, as well as South-Eastern Europe (4 countries), Eastern Europe and the Caucasus (3 countries) and the United States of America.

7. According to ITF (2009), transport infrastructure investment accelerated strongly since 2003 in Central and Eastern Europe (CEE) and Russian Federation while its pace remained subdued in Western Europe and the United States. The share of GDP devoted to transport infrastructure investment in CEE countries and Russian Federation is approximately twice as high as in the United States and Western Europe. These findings are consistent with the logic of economic catch up of ECE emerging market economies to high income countries of Western Europe and North America.

¹ ITF data on infrastructure investment and maintenance at current prices and exchange rates are available at <http://www.internationaltransportforum.org/statistics/investment/data.htm>.

8. Private funds now finance a noteworthy portion of transport infrastructure investment, averaging some 15 per cent of such expenditure in Western Europe (ITF, 2008). Nevertheless, EU-wide infrastructure development programmes continue to be financed mainly by national governments and long-term lending by the European Investment Bank (EIB). The role of private financing has increased noticeably in new EU member states (NMS), South-Eastern Europe (SEE) and Eastern Europe, Caucasus and Central Asia (EECCA) where the cumulative value of all privately invested infrastructure projects monitored by the World Bank² amounted to \$230 billion over the 1993-2007 time period. However, the bulk of the investment took place in the telecom and energy utilities while transport projects accounted for only \$18 billion (Chart 1). Chart 2 shows the cyclical nature of PPP investments in the transport sector. Chart 3 compares cumulative PPP investment commitments over the period 1993-2007 in the three ECE emerging market sub-regions (EECCA, NMS, SEE) with the UK.

9. Although transport accounts for only 2 per cent of privately invested (PPP) infrastructure projects in EECCA, the corresponding share amounts to 16 per cent in South-Eastern Europe. Two countries, Hungary and Turkey, account for over 60 per cent of PPP-financed transport investment in all ECE emerging market economies. The underlying factors include the quality of legal environment, administrative skills and preferences of policy makers.

IV. Financing needs and gaps

10. The prioritization of planned transport infrastructure investments by Trans-European Motorway (TEM), Trans-European Railway (TER) and Euro-Asian Transport Links (EATL) projects, described in UNECE (2008), implies large financing gaps in participating countries. In case of the TEM-TER Master Plan, secured funding (€46 billion) accounts for 45 per cent of the total implementation cost. With respect to the projects submitted by 15 countries participating in the EATL project (EATL-15), secured funding amounts to \$21 billion, accounting for 49 per cent of planned investment. Assuming that one-half of such projects have no secured financing, the infrastructure investment gap by 2020 amounts to €36 billion (TEM-TER) and \$19 billion (EATL-15), respectively. There are some overlaps, especially between the TEM, TER and TEN-T investment plans, given the significant number of EU member states among the TEM and TER countries.³ Relative to the level of economic activity (GDP), financing shortfalls in the non-EU TEM, TER and EATL countries tend to be higher than in EU states.

11. The implementation of the trans-European transport network (TEN-T) implies investment spending of €389 billion over the period 2007-13, including €271 billion for priority projects. The TEN-T budget, cohesion and structural funds are projected to finance some 14 per cent of total investment funds while the EIB loans and guarantees account for another 14 per cent. The remaining 73 per cent of planned investment is to be provided by public budgets and private financing (European Commission, 2008b). Public-private partnerships could close the financing gap between the investment needs and available national and regional fiscal outlays, providing

² Private Participation in Infrastructure Database of the World Bank provides data for the following 26 ECE countries: Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Georgia, Hungary, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Montenegro, Poland, Republic of Moldova, Romania, Russian Federation, Serbia, Tajikistan, the former Yugoslav Republic of Macedonia, Turkey, Turkmenistan, Ukraine and Uzbekistan.

³ European Commission (2008a) estimates the cost of TEN-T priority projects at €271 billion over the time period 2007-2020. Community institutions and member states plan to provide €151 billion during the period 2007-2013.

that suitable risk-sharing schemes can be developed and effectively used in the trans-national context of TEN-T projects.

V. Recent challenges and opportunities

12. Governments in a number of ECE countries have responded to the current economic crisis by adopting fiscal stimulus packages, including transport infrastructure investment programmes. From the macroeconomic point of view, demand multiplier effects of public infrastructure investment are superior to those associated with other forms of expenditure or tax cuts, even in small open economies where import leakages reduce the impact of fiscal stimuli (Table 1). However, the fiscal consolidation expected to take place in the post-crisis period implies that the gap between planned investment and available public funds is bound to increase.⁴ Given the need to reduce the fiscal burden of transport infrastructure, authorities in most ECE member states are likely to consider public-private partnerships as an attractive option.⁵

13. Patterns of recurrent international financial crises over the last two decades suggest that the availability of private capital for PPP projects should improve in both mature and emerging markets during the post-crisis period (Estache, 2007). Since both demand for and supply of private finance for transport infrastructure projects tend to increase after each crisis, one can expect a growing number of such projects and rising volume of privately financed investment. The targeted rate of return on private infrastructure investment is more difficult to predict although it may well increase, given the extremely strong liquidity preference observed during the latest financial crisis.

14. Weak legal environment and unfinished market reforms in the transport sector continue to discourage PPP projects in many ECE emerging market economies. Some governments have pursued ambitious PPP projects that could create or upgrade important inland transport links. Nevertheless, the legislation governing concessions has been adopted only recently in a number of EECCA and SEE countries. Moreover, the quality of concession laws has remained inadequate, ranging from very low (3 countries) and low (6 countries) to medium (8 countries) and high (1 country).⁶ Closing the infrastructure gap and attracting more private investment, including FDI, to the transport sector are likely to remain major policy challenges in EECCA and SEE in the foreseeable future.

15. In Western Europe, the separation of transport infrastructure from services has become a norm, implemented fully in the road sector and increasingly in the rail sector. These institutional changes are reflected to some extent in financing models, including increasingly sophisticated PPP arrangements. The considerable tax revenues generated by road transport (e.g. excises on fuel) are typically not earmarked to be reinvested in the sector. In contrast, in North America the rail sector is dominated by vertically integrated private freight operators that own infrastructure and finance infrastructure investment on their own. Further, there is a statutory linkage between highway revenues and funding of the highway network in the United States.⁷

⁴ For an elaboration of this argument, see JTRC (2009), section 2.4.

⁵ According to Estache (2007) and a number of other observers, fiscal considerations are the main driving force behind PPPs in the transport sector.

⁶ For details, see transition development snapshots at <http://www.ebrd.com/country/sector/econo/stats/index.htm>.

⁷ For details, see ITF (2008), pp. 184-9.

16. Given the wide range of financing arrangements in advanced ECE economies, it is not obvious which model should be followed by their emerging market counterparts. New EU members and candidate countries are likely to adopt the financing models developed in Western Europe. Other countries with transition economies could emulate the North American approach to infrastructure financing or develop their own hybrid forms. Given the ultimate responsibility of governments for assuring provision of basic transport infrastructure, the choice of financing mode has to reflect policy priorities as well as the constraints imposed by medium-term public expenditure programmes and the degree of social acceptance of user charges. Since PPP projects create contingent liabilities for the general government and financial markets tend to reward fiscal prudence, there is no obvious shortcut that would eliminate infrastructure gaps in the national and pan-European transport networks rapidly.

VI. Conclusions

17. The principal conclusion is that ECE countries will be faced with an increasing gap between planned transport infrastructure investment and available government funding in the post-crisis period. This is the most probable scenario in both high income countries and emerging market economies in the ECE region.

18. The secondary conclusion is that the increasing involvement of the private sector in the planning as well as financing and management of transport infrastructures could help reduce the funding gap. To reap benefits of the private sector involvement in the provision of transport infrastructure it is, however, necessary to improve further the legal environment for doing business, especially in EECCA and SEE countries.

Table 1

Short-term fiscal multipliers

	<i>United States</i>		<i>Germany</i>		<i>Belgium</i>	
	<i>Year 1</i>	<i>Year 2</i>	<i>Year 1</i>	<i>Year 2</i>	<i>Year 1</i>	<i>Year 2</i>
Spending increases						
Infrastructure investment	0.9	1.2	0.8	1.1	0.7	1.0
Purchase of goods	0.7	0.95	0.4	0.65	0.3	0.55
Transfer to households	0.5	0.85	0.3	0.6	0.2	0.5
Tax cuts						
Personal income tax cuts	0.4	0.7	0.25	0.5	0.15	0.5
Indirect tax cuts	0.25	0.4	0.15	0.3	0.1	0.2

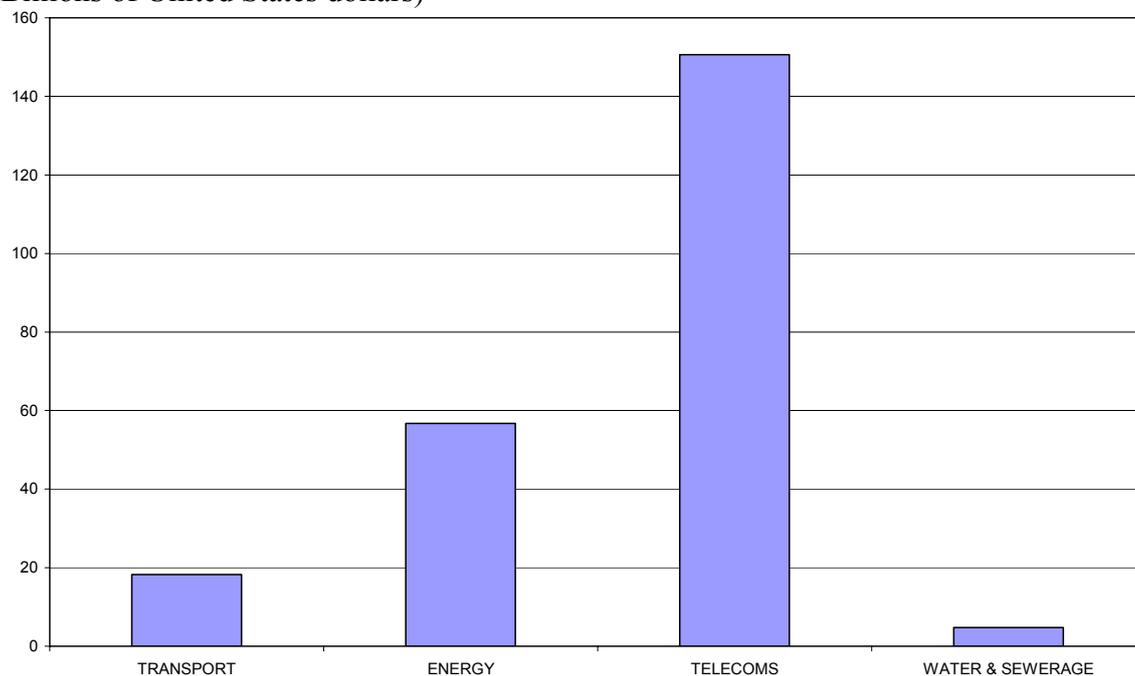
Source: OECD Economic Outlook, Interim Report, March 2009.

Chart 1

PPP infrastructure investment commitments, 1993 – 2007

ECE emerging market economies

(Billions of United States dollars)



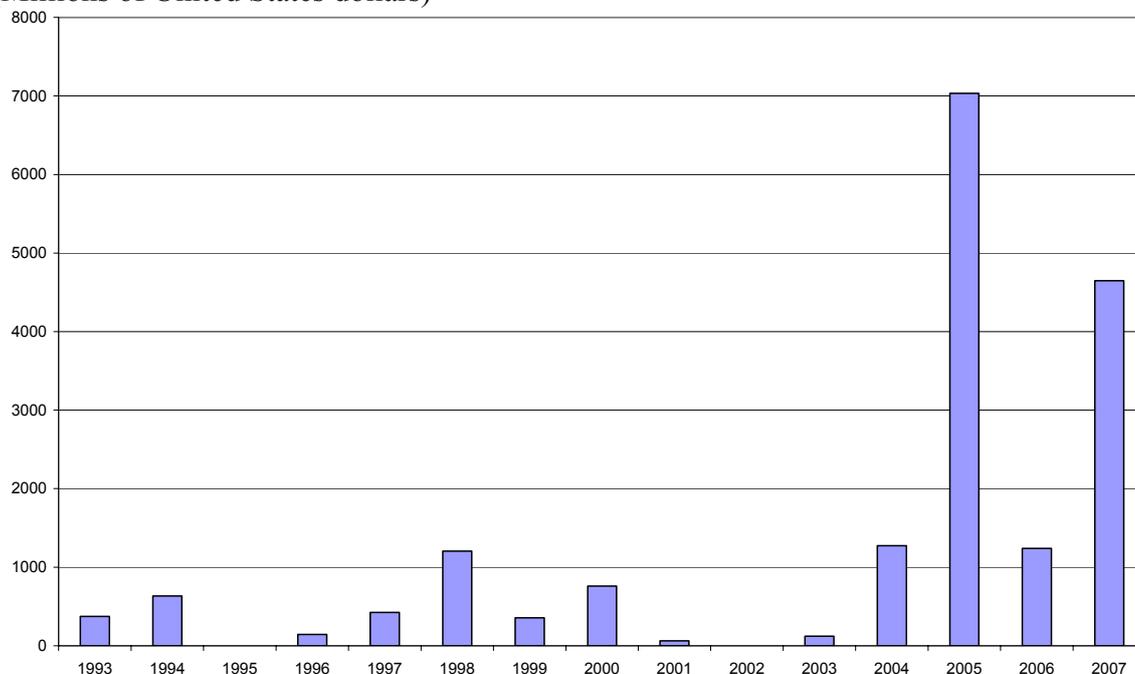
Source: PPI database, World Bank.

Chart 2

PPP transport infrastructure investment commitments, 1993 – 2007

ECE emerging market economies

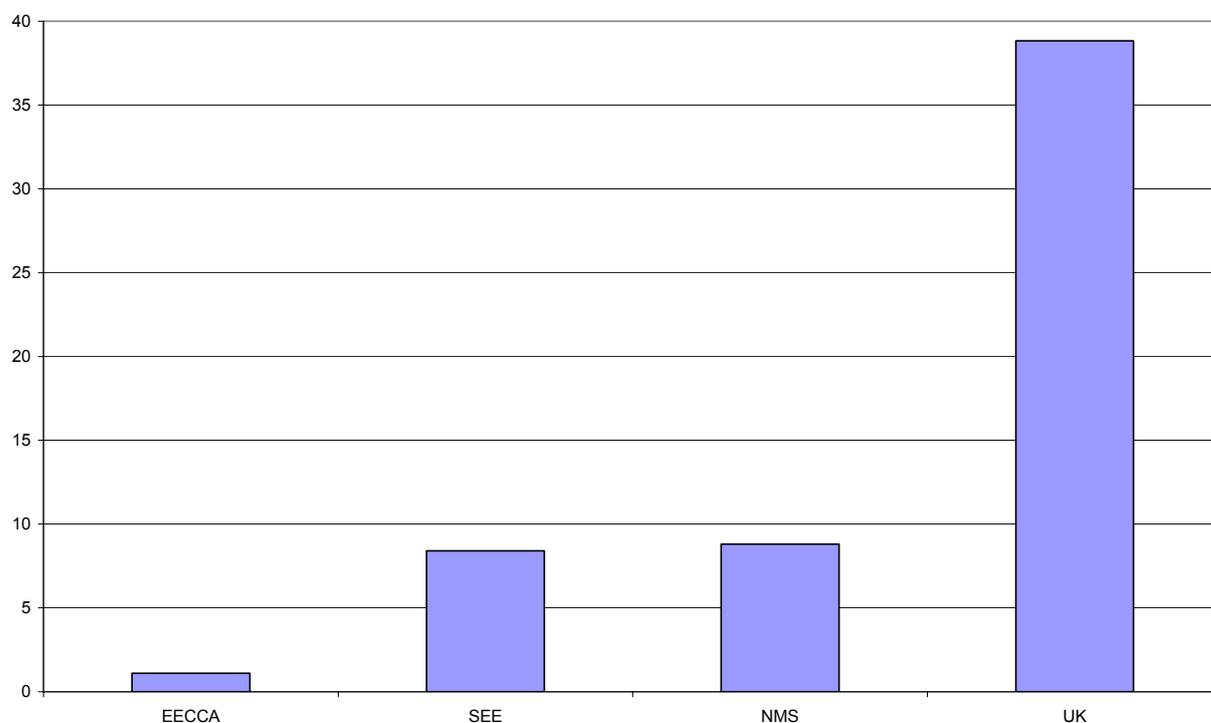
(Millions of United States dollars)



Source: PPI database, World Bank.

Chart 3

PPP transport infrastructure investment commitments, 1993 – 2007
ECE emerging market sub-regions and the UK
(Billions of United States dollars)



Source: PPI database, World Bank; PartnershipsUK.

Note: EECCA = Armenia, Georgia, Kazakhstan, Moldova, Russian Federation;
SEE = Albania, Bosnia and Herzegovina, Croatia, Serbia, the former Yugoslav
Republic of Macedonia, Turkey;
NMS = Bulgaria, Hungary, Latvia, Poland, Romania, Slovakia.

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