



TRANSPORT FOR A GLOBAL ECONOMY: REFLECTIONS FROM THE SECRETARIAT

This note reflects the views of the International Transport Forum Secretariat, based on recent research and analysis, and should not be interpreted to represent the views of the Forum member countries.

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This note, prepared by the International Transport Forum Secretariat, provides background material on the topics of the 2009 Forum. It is based on the reports and studies carried out under the auspices of the Joint Transport Research Centre and on behalf of the Secretariat in preparation for the Forum, as well as on discussions during the Forum. A list of these reports and studies is attached.

The document is structured as follows:

- The Global Transport System;
- The Economic Downturn;
- Stimulus Packages;
- Keeping Markets Open;
- Sustainability;
- Financing Transport Infrastructure;
- Reliability and Security on International Supply Chains;
- International Co-operation.

The Global Transport System

- The value of world trade has increased more than 20-fold since 1950 and the share of manufactured products has increased from less than 40 percent to over 70 percent today. These facts underline the important role of transport in supporting globalisation. Some examples are:
 - Ocean shipping has grown four-fold since the 1970s, representing an annual average growth rate of 4%¹. Shipping still dominates international trade, accounting for 99% of combined air and ocean shipping tonne-miles. World container traffic quadrupled in the decade from 1995 to over 200 million TEUs annually. Air cargo volume has grown 9% annually since the 1970, reaching nearly 20 times higher than its level in 1970. Despite the low volumes, air cargo is responsible for at least a quarter of the value of world trade.
 - Nearly a third of world trade by value still takes place between neighbouring countries and this trade is dominated by road haulage. The compound annual growth rate for road freight (tonne-km) has been 3.5% since 1970. In rail, growth has been slower, with annual growth averaging 1.1% since 1970².

¹ Definitions and all data available from ITF Secretariat.

² These figures for road and rail are national data.

- On the passenger side, more people are travelling longer distances than ever before. Passenger-kilometres by air have grown nine-fold since 1970, with an annual growth rate averaging 6%
- Decisions on where to produce and where to ship are not driven by transport costs alone. However, lower transport costs contribute to the spatial fragmentation and transport-intensity of production. Transport costs depend on technology (e.g. containerization in maritime transport, jet engines in aviation), input prices (e.g. fuel and labour) and institutional factors (e.g. border crossing costs). Transport prices depend on costs and on the nature of competition in transport markets. Transport costs and prices have generally declined over a long period, with some striking examples. Air freight prices fell by 90% between 1960 and 2000. Shipping costs per tonne have declined steadily, although capacity constraints on some major trade lines drove up costs prior to the crisis.
- The bottom line is that transport is an important factor in successful globalization and that it has, generally speaking, performed well. However, major improvements are still required, as will be discussed below.

The Economic Downturn

- The financial and economic crisis currently playing out around the world is severe. The main macroeconomic indicators are expected to remain in the red through 2009. The contraction of trade volumes is larger than that of GDP, and transport volumes have shrunk by more than trade volumes. Very roughly, according to the IMF, global production in 2009 may fall by 1-2% and trade by 10%. Volume reductions in transport markets of 20% and more are no exception. Many transport firms are closing or are reducing staff, credit has dried up and investment decisions are postponed. There is overcapacity; one example is in international shipping, which has seen plummeting prices and the laying up of a large portion of the fleet as a consequence, while very large numbers of new ships are on order and already under construction. Demand for automobiles and, especially, trucks has shrunk considerably in many markets, also highlighting the pre-existing overcapacity in automobile manufacturing.
- The impacts of the downturn may not be transitory. A return to business-as-usual may not materialise, for at least two reasons. First, there is a risk that policies that lead to protectionism or excessive restrictions on financial intermediation prevent pre-crisis types of economic (as opposed to purely financial) interactions from returning. Second, the crisis reflects and may (partially) correct global imbalances, most notably – but not exclusively – between the US and China. Expectations for future growth probably need to be moderated; many companies are re-examining their logistic systems and chains in light of the new circumstances. In addition, restoring some balance may reduce the trade-intensity of growth, and this in turn will affect future transport volumes. Traffic volume expectations obviously affect infrastructure investment decisions. Clearly, bottlenecks remain on key existing networks, and other networks need to be extended, so investment remains essential.

However, in the present circumstances, investments that depend on rapid traffic growth due to trade seem less viable than before the crisis.

Stimulus Packages

- Many countries have responded to the crisis with stimulus packages designed to bolster economic activity and limit job loss. Most of these packages have significant transport components.
- To create jobs rapidly, projects with short lead times are required, suited particularly to maintenance and upgrading work. Public road, rail and waterway infrastructure is subject to chronic maintenance backlogs in many member countries. Accelerating maintenance schedules is a first priority in selecting “shovel ready” transport projects. This has the added benefit of improving the financial sustainability of infrastructure as under-spending on maintenance results in a decline in the quality and reliability of infrastructure and eventually a collapse in asset values and a need for very expensive emergency replacement.
- Bottlenecks are another focus for stimulus packages. Major benefits are often associated with relatively modest investments to relieve bottlenecks compared to the very large projects that account for the major part of public transport infrastructure investment programs. Their modest scale makes such bottleneck projects a better fit in stimulus packages than major new projects. Moreover, any risk of overinvestment in capacity because of the economic crisis is minimised by a focus on bottlenecks. Recession may have eased congestion on some bottlenecks, but recovery -- when it comes -- is likely to put the same links under strain. Major new projects are much more likely to run demand risks.
- Infrastructure development projects that are part of stimulus packages not only need relatively short lead times but should also contribute to mainstream transport policy priorities, including investment in strategic assets to serve trade. As with any transport investment, they need to score well on cost-benefit appraisal. It is advisable to streamline appraisal and planning approval procedures to avoid unnecessary delays, but effective planning and environmental screening procedures are an essential part of the project development process; bypassing them would increase the risks of unintended negative impacts and of disruption late in the day if projects are contested.
- Investments in long-lived infrastructure require long lead times and are not usually amenable to faster execution. Unless careful assessments exist, such projects do not belong in stimulus packages. This also implies that governments must have plans in place for capital investment and maintenance beyond the current stimulus plans.

- An important lesson from previous periods of accelerated investment in transport infrastructure is that governments need to devote sufficient resources to appraisal and develop sufficient in-house expertise for this to be done properly. This is essential if projects are to be implemented according to schedule.
- Some countries subsidize the replacement of old automobiles and this has had clear positive short-term effects on demand. However, in the medium term, vehicle demand will no doubt drop as a result of these schemes, and their environmental benefit – especially with regard to CO₂ – is not guaranteed.

Keeping Markets Open

- Experience shows that protectionism makes economies less efficient and hinders growth. Moreover, closing domestic markets risks exacerbating the recession.
- Liberalisation of transport services has stimulated economic growth and benefited economies and consumers. The evidence from international trucking and aviation markets – cited in background papers developed for the 2009 Forum ³ – illustrates this clearly. Further deregulation would serve as a permanent stimulus to the economy.
- Transport markets should therefore continue to be opened to international competition in the interests of efficiency and stimulating growth. There remain opportunities for liberalisation in all modes and in most regions. Aviation markets, particularly in Asia and between continents, could be further opened. Rail competition is only beginning to emerge in Europe and is largely absent in the world's major railways, with the notable exception of freight rail in North America. Shipping also retains restrictions that favour national carriers or employees. Here there are opportunities, for example, to improve coastal and short-sea shipping so that it can compete better with road transport. Road freight markets are still subject to quotas and restrictions in many parts of the world. In countries where ports and/or railways are owned by a single company, structural change and deregulation of tariffs would certainly bring improvements in efficiency.
- Moreover, global trade would benefit from the further liberalisation of transport services. At present, no single institution handles international competition and regulation issues in transport. The WTO has a role to play, but is mainly concerned with removing barriers to trade. The main agencies responsible for creating competition through structural change are the Transport Ministries. Transport authorities need to work together to advance the agenda on this topic. Here, the ITF can play an analytical and facilitation role.
- Along with opening markets it is necessary to adapt the regulation of safety, security, environmental protection and working conditions to ensure standards are maintained

³ Please see list in annex

and raised. Care needs to be taken, however, that this is not abused as a pretext for protectionism.

- Competition authorities need to remain vigilant that mergers between companies providing competing services do not give rise to abuse of market power. A key competition issue in ensuring that global transport and logistic services are efficient is access to essential facilities, such as terminals. There are benefits from exchanging information on the development of competition law and policy internationally to promote the development of a coherent multilateral framework for competition.
- Vertical integration between businesses in the supply chain (e.g. between a train operator and a logistics company) risks undermining economic efficiency only when one of the parties is in a position to abuse market power in one layer of the market. This can arise, for example, through agreements between airlines and airports in some circumstances. There is no general ex-ante regulatory approach for addressing the competition issues that might arise and it is important that a case-by-case approach be taken in determining if intervention is required; this begins by examining the markets in which the businesses operate.
- Discussions at the 2009 Forum in Leipzig showed that differences among modes in terms of their regulatory and fiscal framework, as well as charging and investment approaches remain a source of tension and debate. While levelling the playing field across modes is no doubt an optimistic, longer-term objective, there is a real need for sound, objective information on this topic.

Sustainability

- Sustainability in transport requires improvements in economic efficiency, safety, social impacts and environmental protection. Much remains to be achieved in all of these areas, but climate change is a key challenge, particularly in the context of the forthcoming Copenhagen Conference of the Parties to the Kyoto agreement, in December 2009.
- The Key Messages from the 2008 Forum on *Transport and Energy: the Challenge of Climate Change* provide strong guidance on this issue. In the 2009 Forum discussions in Leipzig, the development of measures to address emissions from international transport -- notably maritime shipping and aviation -- found particular focus.
- Incentives for technological advance are a major part of the policy package for meeting climate change commitments. Standards for fuel efficiency, for example, can provide the certainty manufacturers require to bring improved technology to the market. Design standards for ships are currently being developed by the International Maritime Organisation, and their impact would possibly be maximized if they became mandatory. Aircraft markets might also benefit from fuel efficiency

standards for engines and possibly other aspects of design to manage the commercial risks involved in introducing new technologies.

- Economic instruments can also play a role in providing the incentives for operators, industry and consumers to reduce emissions. Carbon taxes on fuels for shipping and aviation are a possibility, as is emissions trading. For aviation, emissions trading has been agreed in the EU and is scheduled to begin in 2012 for EU flights.
- Views on economic instruments and, in particular, on emissions trading are still divided globally across countries, however. One perspective is that emissions trading in shipping and aviation could provide an efficient approach to managing CO₂ emissions from these modes, particularly if some conditions are met:
 - First, an international agreement on emissions trading would require a framework for reconciling the equal treatment principles on which agreements governing aviation and shipping are based, with the common but differentiated responsibility principle fundamental to the Kyoto Protocol. Specifically, incentives (which could take the form of, for example, proceeds from permit auctioning) would be needed for non-participating countries to join such schemes.
 - Second, trading for aviation/shipping would need to be part of a wider industry scheme: a trading scheme for aviation or shipping alone would probably render unduly expensive the achievement of reductions in these sectors.
 - Third, permits should not be issued free of charge to avoid risks of market distortion and the creation of new barriers to entry.
- For global transportation industries such as aviation and shipping, global solutions are needed. Given the absence of global agreement, however, regional or national schemes are emerging. These will need to be flexible enough to allow convergence or adaptation into global systems.

Financing Transport Infrastructure

- Transport infrastructure capacity is not adequate everywhere, and very substantial funding requirements remain. In many countries, allocated public funds are insufficient for worthwhile projects.
- Governments are responding to the financial crisis by deficit spending, which will increase the future scarcity of public funds. What does this mean for transport infrastructure funding?
- First, funding will be more scarce and, when available at all, probably more expensive. This, in turn, means that projects, in order to be accepted, will need higher socio-economic rates of return. Moreover, since demand forecasts may need to be revised downwards, the number of eligible projects may also be reduced.

- Second, given the scarcity of funds, public authorities may be more inclined to rely on user charges to fund infrastructure. Increased user charges may offer an opportunity to employ pricing to induce more rational use of transport infrastructure. User charges increase financial rates of return, and can thus also facilitate attracting private or public funding.
- Third, with public funds more expensive, private financing potentially becomes more attractive. However, the financial and economic crisis not only makes future public funds scarcer, but it also affects private investors' attitudes towards risk, leading them to require higher expected returns. Turning to private money can thus come at an increased cost in terms of the degree of risk incurred by governments, and possibly in terms of the level of user charges and in constraints on the provision of competing infrastructure. Hence, increased reliance on private funding is not a panacea for all projects deemed socially desirable, although it may make sense for specific projects.
- Models for the engagement of private capital, resources and skill-sets in the provision of infrastructure range from design-build, to more complex public-private partnership (PPP) arrangements, to outright privatisation. The appropriate model depends on the particular project. For example, more mature assets may lend themselves to long-term concession agreements or privatisation, which do not include the risks associated with the initial design and construction.
- The success of public-private partnerships depends on the appropriate allocation of risk, and particular attention needs to be paid to demand risk. As indicated, higher risk-aversion in the private sector as a result of the crisis can increase the cost to government of private financing. Thus, more than ever, the real justification for private involvement in the provision of transport infrastructure must reside in cost-efficient project delivery and management, and innovation.

Reliability and Security on International Supply Chains

- Transport productivity has increased markedly over recent decades, yielding benefits for business through the specialisation of production on a global scale. The reduction in transit time has broadened the way in which firms interact, and global supply chains have experienced profound change as a result. In modern distribution systems, as timely delivery of components has replaced traditional stockholding, time has become the critical factor. The future development of supply chains will depend on the price of energy and the price attached to external costs such as CO₂, but also increasingly on the ability to provide reliable end-to-end services.
- Poor reliability is most likely to arise at interfaces – between countries, between ports and hinterland connections, at modal interchanges and between warehouse and carrier. In order to manage these interfaces, many agents along the supply chain have become engaged in horizontal and vertical integration of activities. Despite its importance, network and service reliability is not yet systematically incorporated in the transport planning process and rarely incorporated into cost-benefit analysis, the

core planning tool for transport networks. Techniques are now emerging to soundly evaluate reliability. .

- Security is a new key issue in trade and transport. The formidable challenge is simultaneously to enhance security and improve efficiency. Risk-based security regulation is one way to achieve this and means targeting resources to where they will have most benefit. In aviation, this could imply, for example, use of statistical profiling techniques to select passengers for different levels of screening, while ensuring the existence of safeguards against unintended discrimination.
- Improved security also requires monitoring the effectiveness of screening not just in terms of the proportion of passengers screened; this can be done partially through on site real time testing of security systems. Benchmarking and time-limit objectives for security at airports, as some countries have introduced are also needed.
- For freight, screening and scanning of containers, while complementary, are not the same. Whilst 100% screening of containers (assessing the security risk of the container based on available information) is possible, 100% container scanning (electronically scanning or manually inspecting the contents of a container) is not an efficient solution based on current technologies, and could potentially absorb almost all of the resources available for security while only covering part of the picture in achieving supply chain security. Screening and scanning in any case need to be deployed as part of a comprehensive framework for security that provides incentives for effective certified operator systems and covers all forms of shipping. In addition, multilateral approaches are likely to be more effective and more cost-effective than multiple unilateral requirements and bilateral arrangements.
- Border crossings remain a serious problem in international transport, causing delays and increasing costs. For example, each additional day that goods spend in crossing borders can contribute from 30% to 100% of direct transport costs. On some road trips, the waiting time at borders can account for a third of the total time taken and the road fleet is up to a third bigger than it needs to be to carry the trade. Railway trips still take a very long time; for example, moving goods from Moscow to Berlin still takes 7 days.
- The International Transport Forum, in conjunction with the World Bank and the United Nations Economic Commission for Europe (UN ECE), has drawn up a shared vision for the future that is built on an integrated and cooperative model for border management (see references). Instead of competition and adversarial relations between agencies, the aim is for a cooperative framework, with a better balance between control and facilitation. In addition, Transport Authorities can assist facilitation by minimising and streamlining the checks and controls for which they are responsible and by being much more proactive in working with border police, customs authorities and others in supporting simplification to streamline and accelerate border crossing processes.

International Cooperation

- Ministers of the International Transport Forum have underlined the importance of strengthened international cooperation. Some specific areas where improved cooperation among countries will be beneficial are:
 - *Data and analysis* - Statistical data on global transport are, compared to other sectors, weak. There is a great shortage of reliable, timely, policy relevant and comparable data on transport. The quality of international policy analysis and research suffers from this failure.
 - *Benchmarking and comparative review* – In many areas of policy, Governments do not use benchmarks to measure performance. Such comparative performance measures are a spur to progress. There are some examples which need to be supported and further developed, such as:
 - The Enabling Trade Index developed by the World Economic Forum;
 - The IRU Border Waiting Time Observatory (BWTO) which provides (including in real time) the waiting times at road borders;
 - Individual Country benchmarks, such as the UK objective to clear 95% of airport passengers through security in less than 15 minutes;
 - The Global Logistics Indicators developed by the World Bank; and
 - Handbooks on good practice, i.e. from the World Bank and the UNECE/Organisation for Security and Cooperation in Europe (OSCE).
- *Competition and regulation* issues in transport require more systematic and structured discussion. The ITF and especially its Joint Transport Research Centre can contribute to this.
- *Institutional Cooperation* - There are many actors with legitimate stakes in aspects of international transport policy. Their work and analysis frequently point to similar policy conclusions, but implementation is often extremely slow. In this respect, Governments will greatly benefit if the many institutional actors involved work together much more closely, including producing common positions and policy advice where possible. Related is the wider policy context affecting transport. In this respect, there are many cases where transport authorities need to be much more proactive with other authorities with regard to trade, economic or environment policy issues. The International Transport Forum can facilitate this cooperation and dialogue.

Concluding Remarks

- Transport and globalisation are inextricably linked. Globalisation is impossible without transport, and the better the international transport system the more globalisation is supported. In this sense, Transport is both an indicator and facilitator of globalisation.
- Beyond that, almost all global challenges and threats have strong, even central transport links and impacts. In addition to the trade and travel policies set out above, examples include major migrations, disasters and emergency relief, conflicts, piracy and health scares like H1N1. Whatever the trade consequences of the crisis, the transport system will remain at the forefront of most global challenges.
- Transport systems in general have never been as efficient, clean, safe and cheap as they are now. Yet on all of these fronts there are enormous challenges if the global system is to meet the demands of the 21st Century. Since the system is more linked up than ever, the need for international consultation, cooperation and coordination on policies and practices has never been greater.

BACKGROUND REPORTS, EVENTS

ITF Events/Publications

- Joint ITF/UNECE/World Bank Seminar on Border Crossings, 5-6 March 2009
<http://www.internationaltransportforum.org/Proceedings/Border2009/index.html>
- Port Competition and Hinterland Connections. Round Table 143, International Transport Forum, OECD 2009.
- Terrorism and International Transport: Towards Risk-Based Security Policy, Round Table 144, International Transport Forum, OECD 2009.
- Transport Infrastructure Investment. Options for Efficiency, International Transport Forum, OECD, February 2008,
<http://www.internationaltransportforum.org/Pub/pdf/08InfrInvest.pdf>
- Improving Reliability on Surface Transport Networks
<http://www.internationaltransportforum.org/2009/workshops/pdf/Networks.pdf>
- Container Transport Security Across Modes, ECMT, 2005,
<http://www.internationaltransportforum.org/europe/ecmt/pubpdf/05ContainerSec.pdf>

Forum 2009 Background Papers

Available at: <http://www.internationaltransportforum.org/2009/workshops/index.html>

- BERNADET, Maurice - Report on the construction and operation of the road freight transport market in Europe
- BONNAFOUS, Alain - The Programming and Optimal Pricing of Infrastructure in PPPs
- BROOKS Mary R - Liberalization in maritime transport
- COCHRANE Robert and MACKIE Peter - Planning, Appraisal and Funding for Strategic Transport Projects
- HUMMELS, David - Globalization and freight transport costs in maritime shipping and aviation
- KAGESON, Per – Making International Transport Pay its Climate Bill
- MUKHERJEE, Arpita - Social Impact of Globalising Transport Services: The Case of India

- NIEMEIER, Hans-Martin, Regulation of large airports – status quo and options for reform
- OUM, Tae Hoon - Air Transport Liberalization and its Impacts on Airline Competition and Air Passenger Traffic
- POOLE, Robert W. Jr - Towards Risk-Based Aviation Security Policy
- RAOUL, Jean-Claude - Freight Transportation
- REYNAUD, Christian – Globalisation and Impact on Inland and Intermodal Transport
- STOELZE, Wolfgang - Intermodal Transport and Supply Chains: Moving the Global Economy
- THOMSON, Lou – Liberalisation and Commercialisation of the World's Railways: Progress and Key Regulation Issues.
- VERNY, Jérôme - Container Shipping on the Northern Sea Route(Winner of the Young Researcher Award)
- WIDDOWSON, David and HOLLOWAY, Stephen – Maritime Transport Security Regulation: Policies, Probabilities and Practicalities.

Joint Transport Research Centre Discussion Papers

- Competitive Interaction between Airports, Airlines and High-Speed Rail, Summary and Conclusions of Round Table, 2-3 October 2008, Paris, JTRC Discussion Paper No.2009-7
http://www.internationaltransportforum.org/2009/workshops/pdf/Airports_E.pdf
- Integration and Competition between Transport and Logistics Businesses. Summary and Conclusions, JTRC Discussion Paper No.2009-8
<http://www.internationaltransportforum.org/2009/workshops/pdf/Integration.pdf>
- Transport Outlook 2009: Globalisation, Crisis and Transport, Joint Transport Research Centre of the OECD and the International Transport Forum, JTRC Discussion Paper No. 2009-12
<http://www.internationaltransportforum.org/jtrc/DiscussionPapers/jtrcpapers.html>
- Greenhouse Gas Emissions Reduction Potential from International Shipping, Philippe CRIST, Joint Transport Research Centre of the OECD and the International Transport Forum, JTRC Discussion Paper No.2009-11
<http://www.internationaltransportforum.org/2009/workshops/pdf/Emissions.pdf>

- Policy Instruments to Limit Negative Environmental Impacts from Increased International Transport. An Economic Perspective, Kurt VAN DENDER and Philippe CRIST, Joint Transport Research Centre of the OECD and the International Transport Forum, JTRC Discussion Paper No.2009-9,
<http://www.internationaltransportforum.org/2009/workshops/pdf/Environmental.pdf>
- The Airport Industry in a Competitive Environment: A United Kingdom Perspective David STARKIE, Economics-Plus Ltd, London, United Kingdom, JTRC Discussion Paper No.2008-15,
<http://www.internationaltransportforum.org/jtrc/DiscussionPapers/DP200815.pdf>
- Security, Risk Perception and Cost-Benefit Analysis. Summary and Conclusions of Round Table, 11-12 December 2008, Paris – JTRC Discussion Paper 2009-6
<http://www.internationaltransportforum.org/jtrc/DiscussionPapers/DP200906.pdf>
- Market Power and Vertical and Horizontal Integration in the Maritime Shipping and Port Industry. JTRC Discussion Paper 2009-02.
<http://www.internationaltransportforum.org/jtrc/DiscussionPapers/DP200902.pdf>
- Empirical Evidence for Integration and Disintegration of Maritime Shipping, Port and Logistics Activities. JTRC Discussion Paper 2009-01
<http://www.internationaltransportforum.org/jtrc/DiscussionPapers/DP200901.pdf>
- The Impact of Climate Change Policy on Competition in the Air Transport Industry, Peter FORSYTH, Department of Economics, Monash University, Clayton, Australia JTRC Discussion Paper No.2008-18,
<http://www.internationaltransportforum.org/jtrc/DiscussionPapers/DP200818.pdf>