

OECD/ITF International Study on Truck Productivity, Safety, and Sustainability

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Workshop Introduction

The Limits, Scope and Context of the Study

Jorgen Christensen, Counsellor to OECD/ITF JTRC

Stephen Perkins, Head, OECD/ITF Joint Transport Research Centre

Véronique Feypell-de la Beaumelle, Administrator, OECD/ITF JTRC

OECD

Analyses of Heavy Vehicle issues

- Impacts of Heavy Freight Vehicles [1983]
- Dynamic Loading of Pavements [1992]
- Dynamic Interaction between Vehicles and Infrastructure Experiment (DIVINE), Technical Report, [1998]
- Dynamic Interaction between Vehicles and Infrastructure Experiment (DIVINE), Policy Implications, [1999]
- Performance-based Standards for the Road Sector [2005]

Why this project?

- Increasing road freight transport on capacity-limited infrastructure.
- “Massing-out” of loads in fast growing freight markets.
- Urgent need to increase efficiency of freight transport.
- DIVINE project showed potential for heavier loads on “road-friendly” trucks.
- Implications of technological development for truck productivity and safety.
- Improving truck compliance with rules and regulations.
- Conditions necessary for obtaining added societal value from larger road freight vehicles.

Membership

- Australia (4)
- Belgium(1)
- Canada (2)
- Czech Rep. (1)
- Denmark (2)
- EU-Commission (1)
- France (2)
- Germany (1)
- Hungary (1)
- Latvia (1)
- Mexico (1)
- Netherlands (3)
- Norway (1)
- Poland (2)
- Russia (1)
- Republic of South Africa(1)
- Spain (1)
- Switzerland (1)
- Sweden (1)
- Ukraine (1)
- UK (1)
- USA (2)

The "TRB 2010-party"

- Jorgen Christensen, RTR Facilitation, Denmark
- Véronique Feypell-de la Beaumelle, OECD/ITF JTRC
- Anthony Germanchev, ARRB, Australia
- Bernard Jacob, LCPC, France
- Barry Moore, OneMooreConsultancy, Australia
- Paul Nordengen, CSIR, South Africa
- Jeff Potter, NTC, Australia
- Stephen Perkins, OECD/ITF JTRC
- Terry Shelton, FMCSA, United States
- John Woodrooffe, UMTRI, United States

The purpose of the study is to

- **provide insights** into heavy road transport to facilitate development of policies to improve its productivity and social and environmental sustainability;
- **document** the current situation and identify realistic short-to-medium term opportunities for improving performance;
- **examine** how the safety and environmental performance and productivity of this industry can benefit from new technologies;
- **highlight** how a modern regulatory framework can improve compliance, provide for better safety and environmental performance and deter operators from gaining competitive advantages through non-compliance.

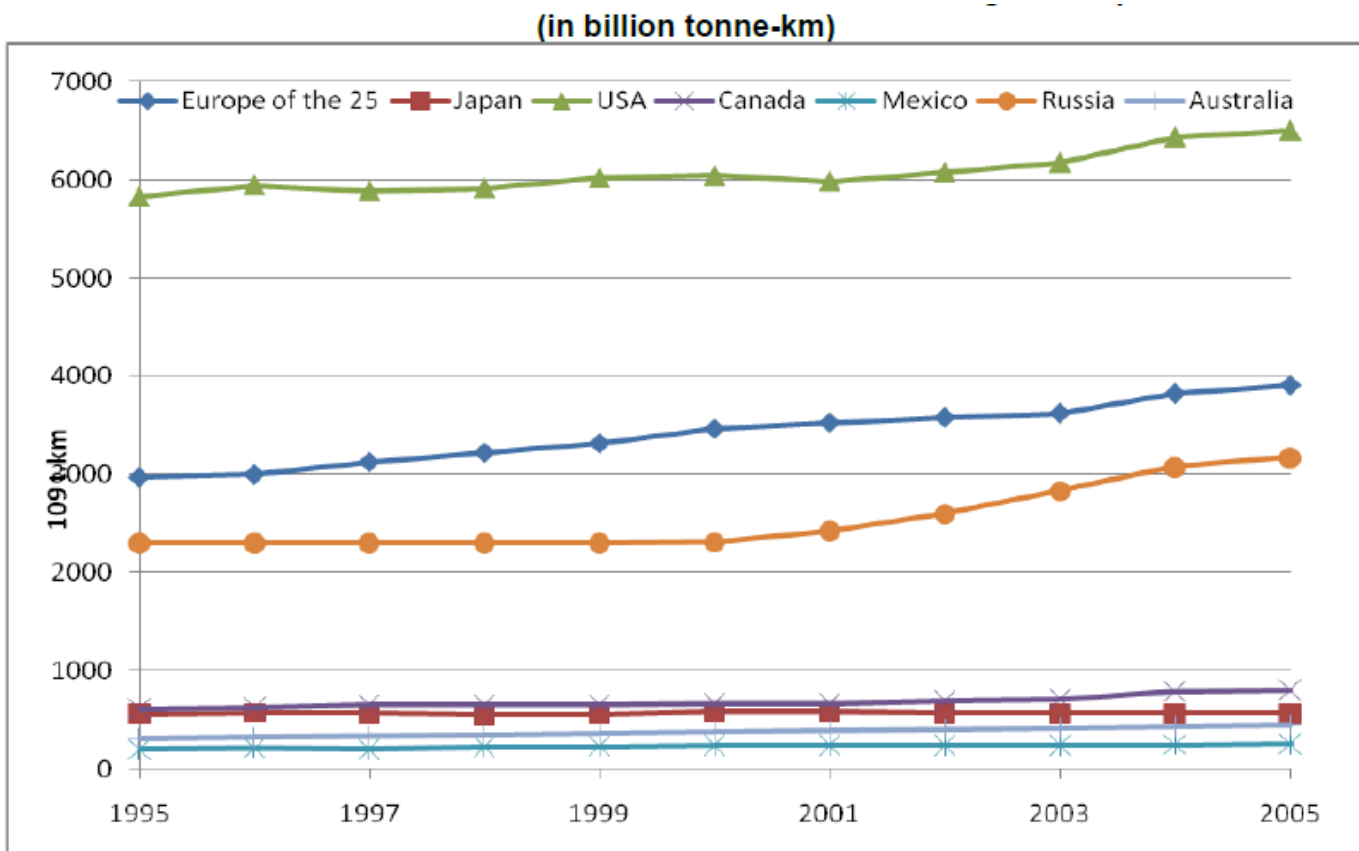
Factors driving road transport

- Door-to-door collection and delivery, shorter transport times and more flexibility than any other surface transport mode.
- Rapid expansion of road networks, largely to provide for cars.
- By 1995 largely liberalized with reductions in transport prices.
- Jurisdictional borders softened in many economic regions, leading to greater efficiency for long-distance transport.
- Technological improvements have further helped to increase efficiency, and so the supply of transport services has improved.
- Globalisation increases distances to the market and demand has concentrated on links used for moving containers to and from ports.
- Falling transport costs have driven logistics changes with stock centralization in fewer, larger warehouses and longer transports.

Vehicles and time perspective considered

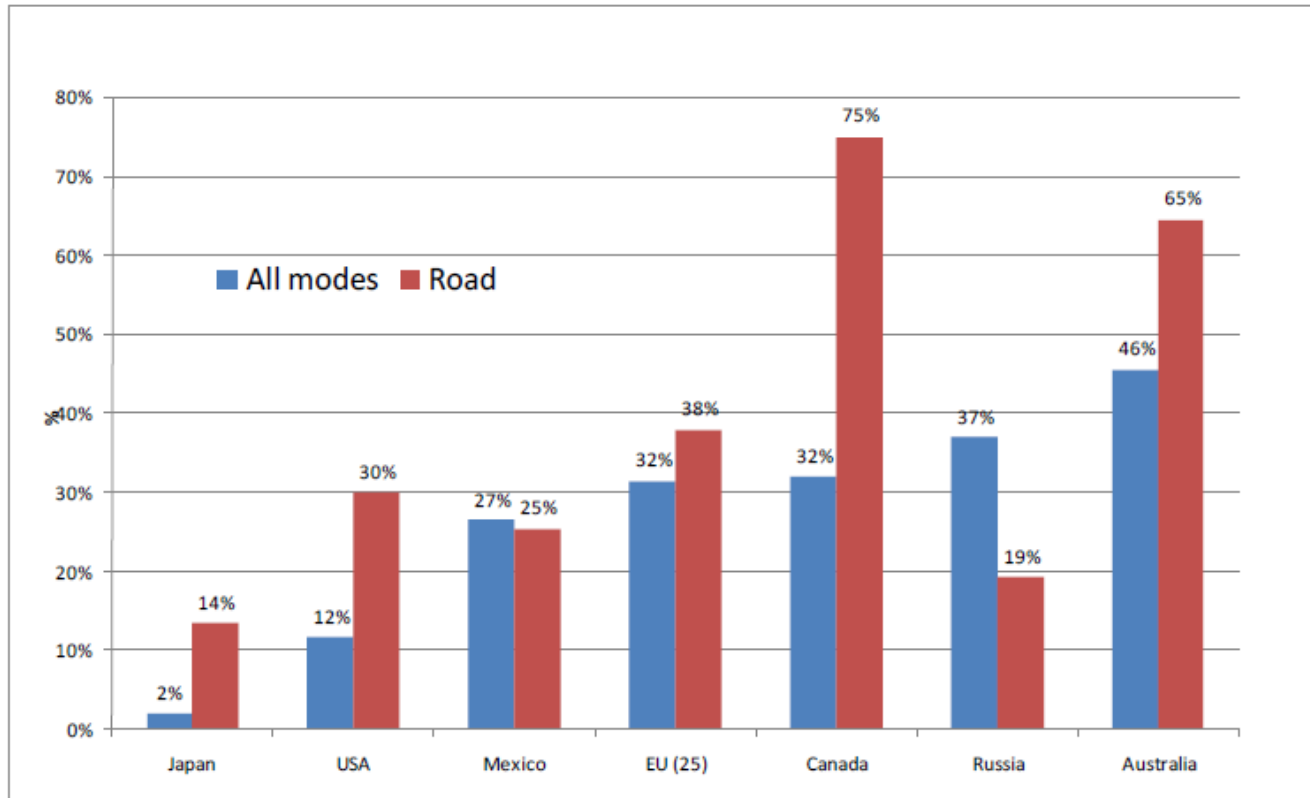
- Much of the discussion and analysis includes all “heavy freight vehicles” but main findings focus on “trucks”.
- “Trucks” are “heavy freight vehicles” with a permissible mass greater than 12 t and trailers with a mass greater than 10 t (UNECE Classes N3 and O4 or Classes 7 and 8 trucks in North America).
- “Heavy freight vehicles” with a permissible maximum mass below 12 t, typically used in urban areas, are not considered, although they present many of the same policy challenges.
- The report is aimed at the situation in the developed, industrialised economies of the OECD/ITF member countries, although many observations apply also in countries with developing economies.
- The time perspective of the report is the short to medium term future, i.e. the 10 years to 2020

OECD/ITF country growth in domestic freight transport



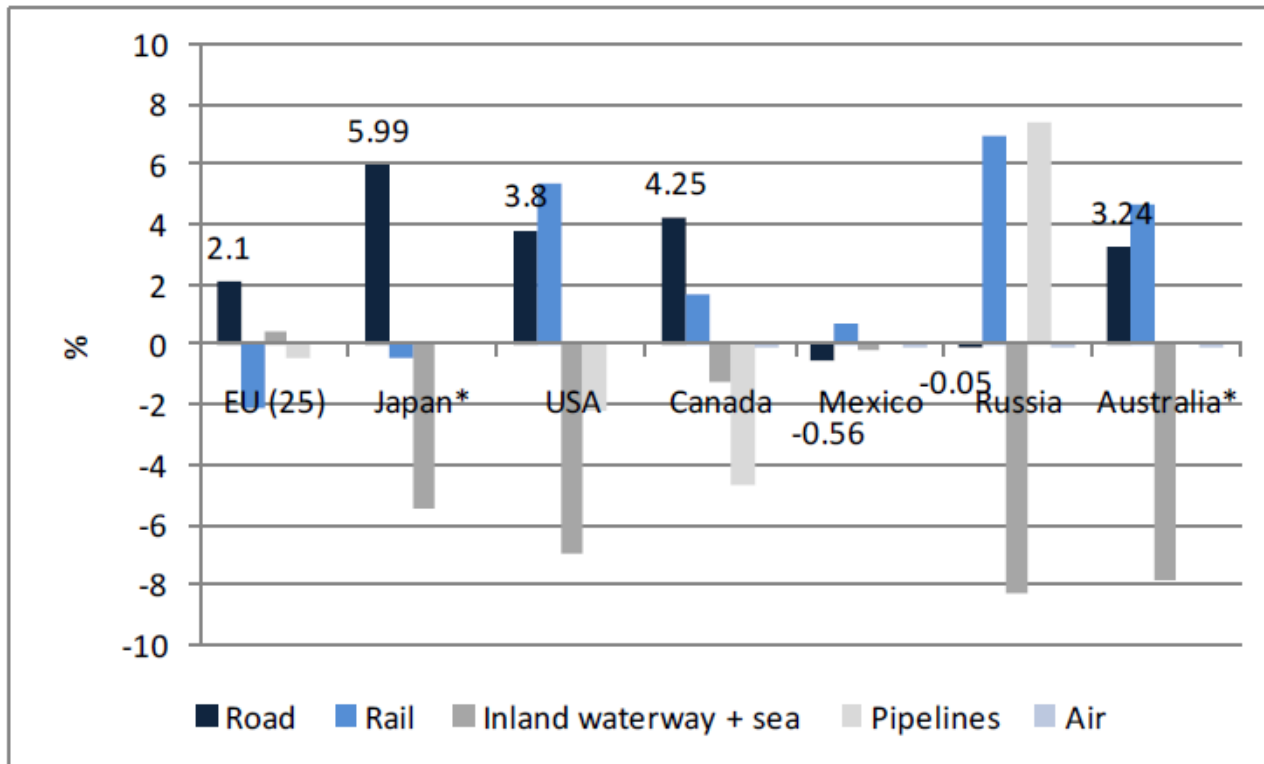
Sources: European Commission, Directorate-General Energy and Transport, Japan Statistics Bureau, Transport statistics in North America, Federal State Statistics Service (Russia), ITF, Bureau of Transport and Regional Economics (Australia)

Volume growth for domestic freight transport by road and all modes between 1995 and 2005



Sources: Calculation based on European Commission, Directorate-General Energy and Transport, Japan Statistics Bureau, Transport statistics in North America, Federal State Statistics Service (Russia), International Transport Forum, Bureau of Transport and Regional Economics (Australia.)

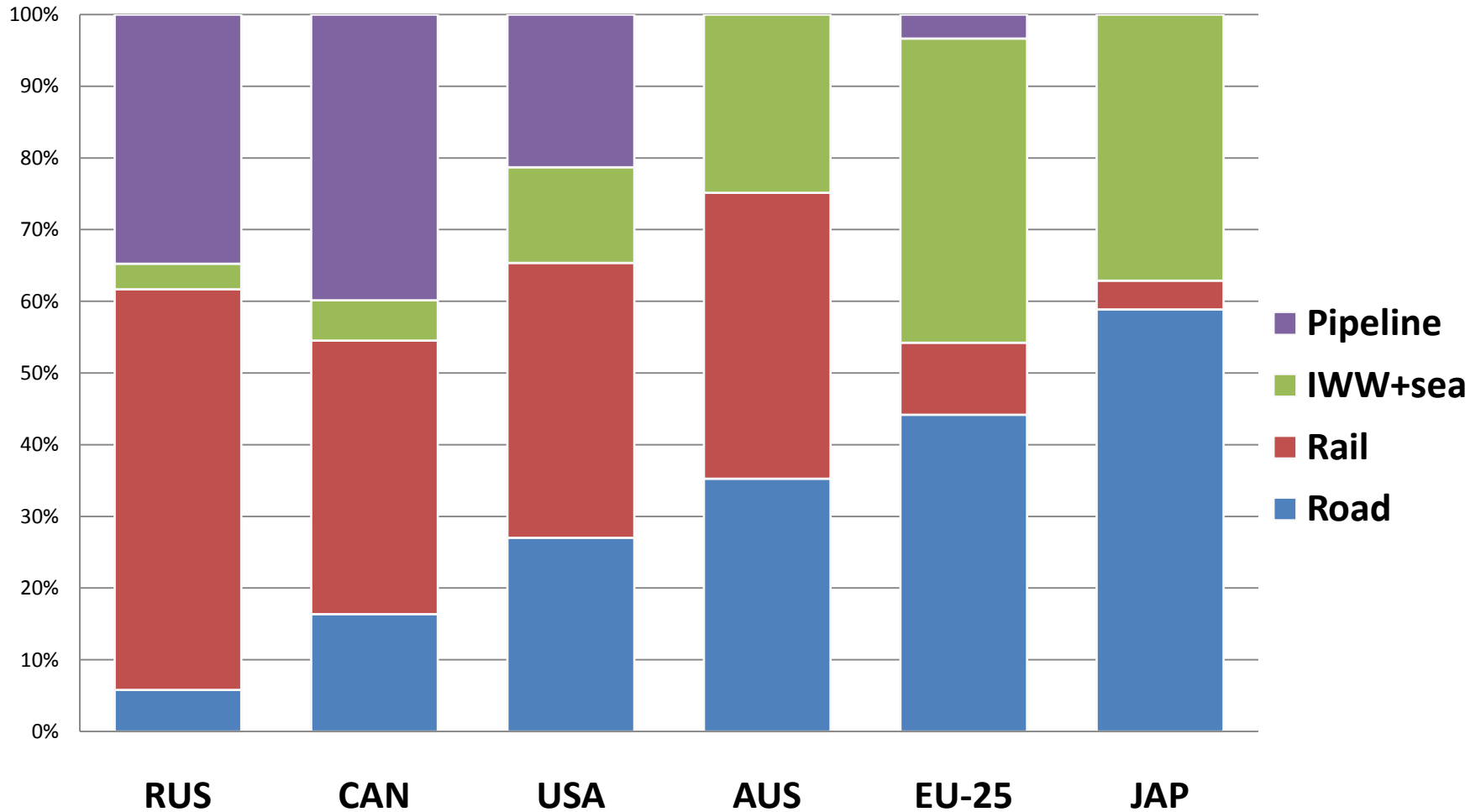
Evolution between 1995 and 2005 of the modal share for freight transport



* Data on pipeline transport are not available

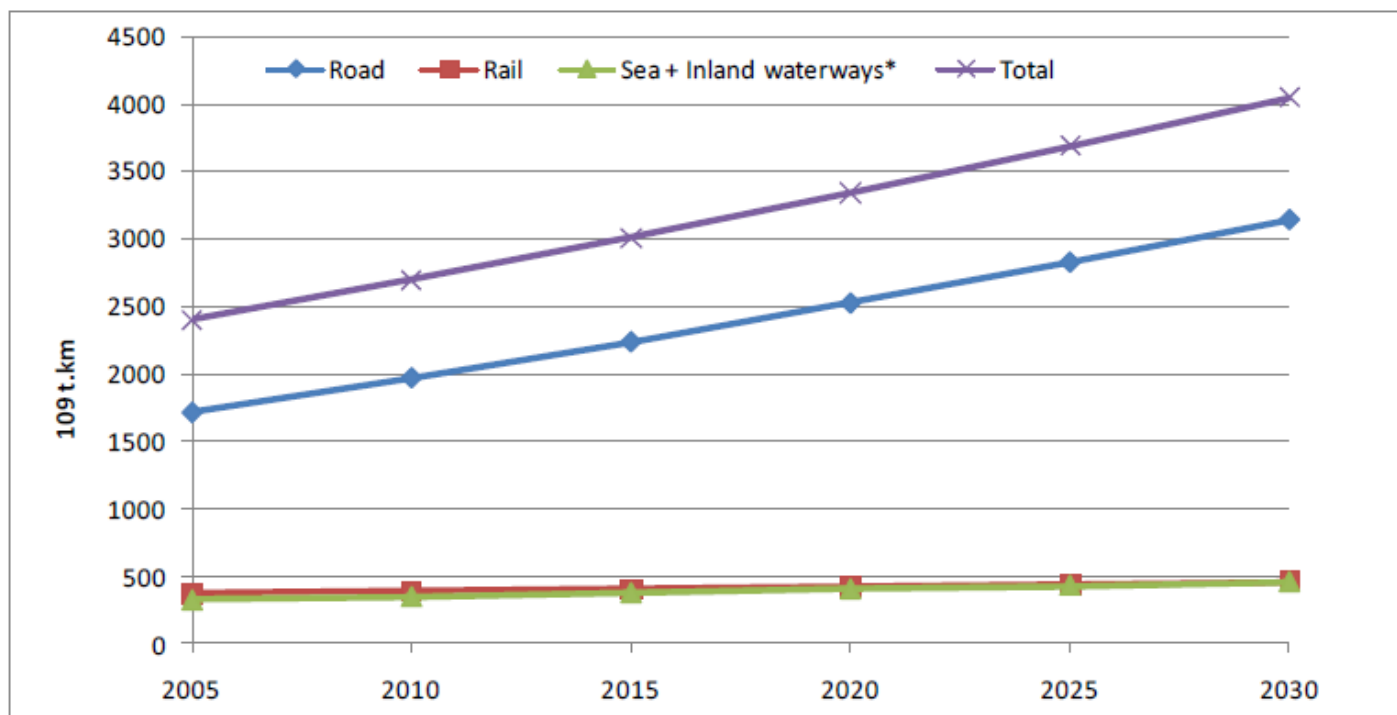
Sources : Calculation based on European Commission, Directorate-General Energy and Transport, Japan Statistics Bureau, Transport statistics in North America, Federal State Statistics Service (Russia), International Transport Forum, Bureau of Transport and Regional Economics (Australia)

Modal distribution of surface freight transport 2005



Projections for volume of freight transport in the EU-25 by 2030

billion tonne-km



*: inland waterway and sea transport at the national level only.

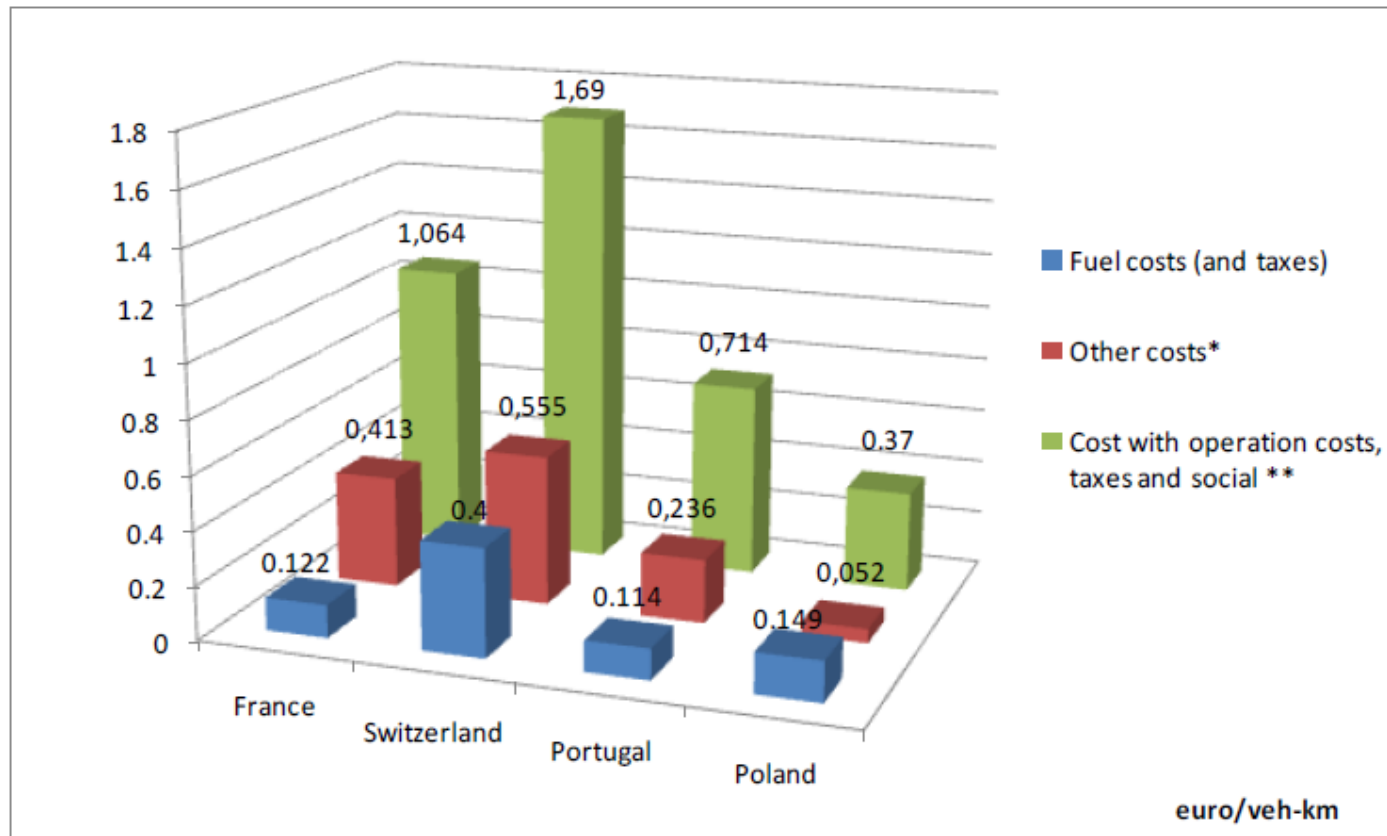
Source: European Commission, Directorate-General Energy and Transport.

Crude Oil Prices 1987-2009



Source: US EIA, <http://tonto.eia.doe.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=RBRTE&f=D>

Fuel costs, Road taxes and Operating costs for European road freight transport in 2003



Sources: Chevroulet, ITF (2008-2).

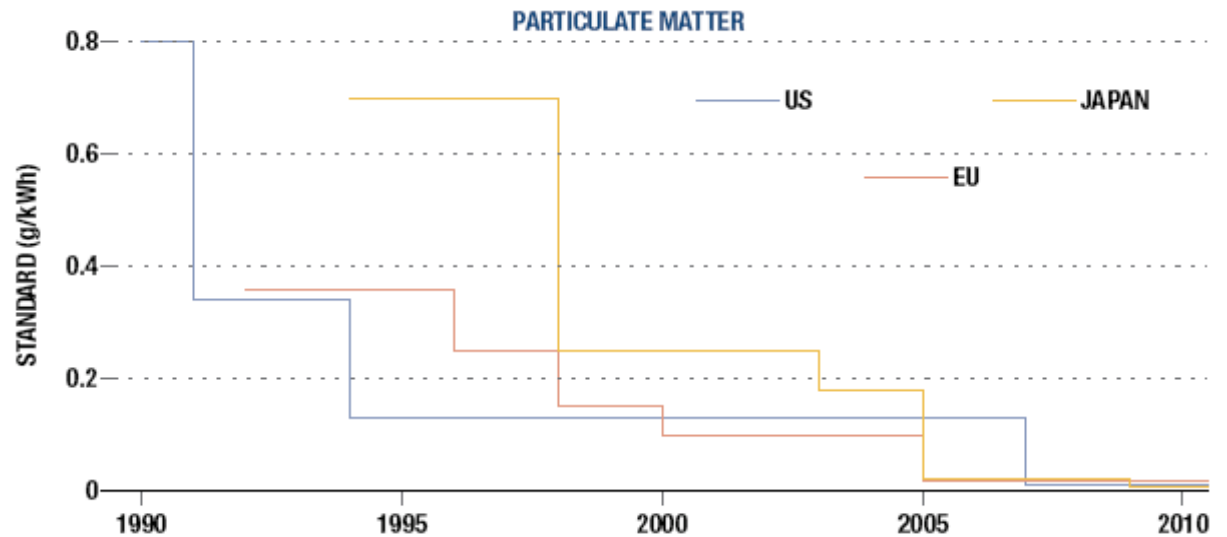
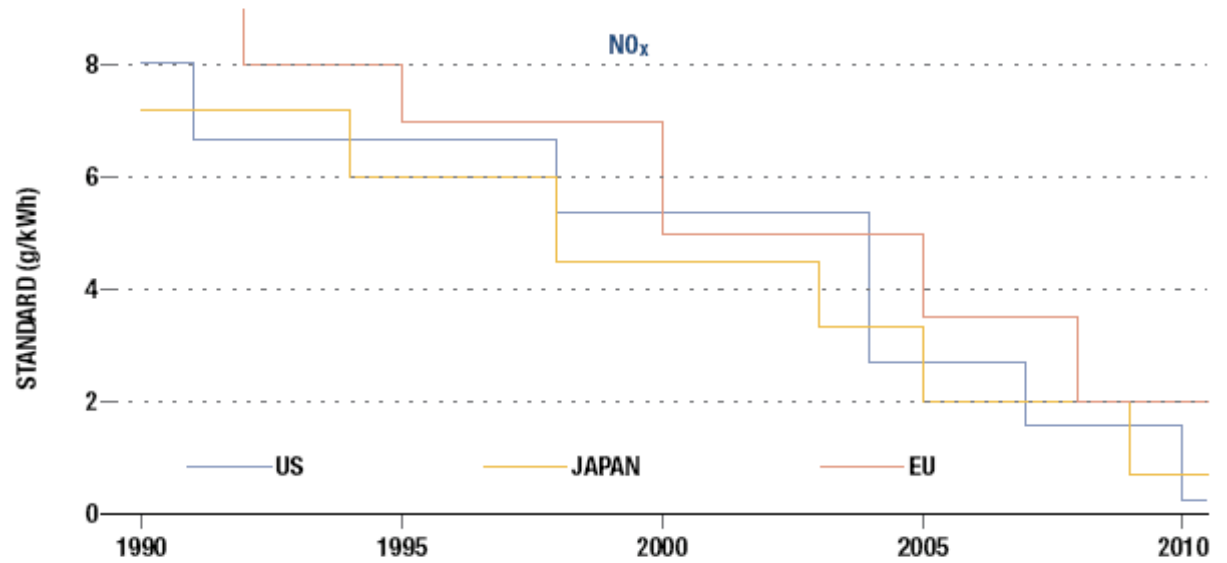
* Includes: VAT, road taxes, vignette, performance-related heavy vehicle fee.

** Includes: wages, vehicle depreciation or leasing, servicing, repairs, tyres.

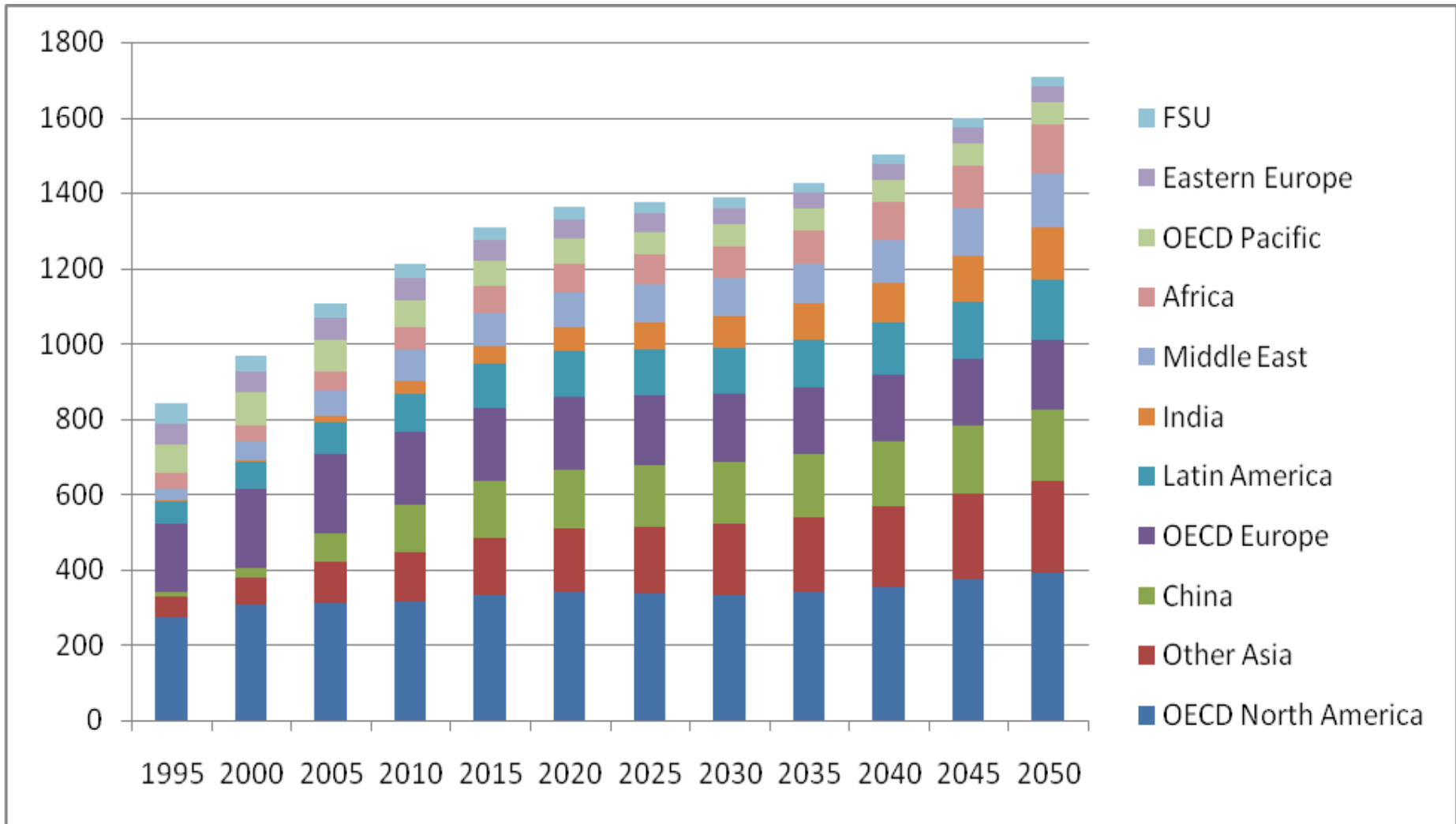
Price sensitivity of road freight demand and its cross-modal implications

- Few studies of price sensitivity of road freight demand exist.
- Responses range from near zero to 80 %.
- Very large variations in road-rail cross-elasticities.
- Differences between European, Japanese, North American and Australian markets are pronounced and results of these kinds of study are not easily transferable.
- More basic research on this topic is badly needed.
- Relevant to environmental and safety impacts of HCVs.

Emission Standards



Projection of CO₂ emissions by heavy trucks (MT)



- **Introduction** *Jorgen Christensen, Stephen Perkins*
- **Truck safety** *Jeff Potter*
- **Dynamic stability: results of a benchmarking study**
Anthony Germanchev
- **Pavements and bridges** *Bernard Jacob*
- *Break*
- **Comparing truck productivity and efficiency**
John Woodrooffe and Paul Nordengen
- **Compliance** Barry Moore and *Bernard Jacob*
- **Regulatory approaches of trucking** *Barry Moore*
- **Key messages** *Jorgen Christensen*