Sustainable Transport and Supply Chains

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The Economics of the Supply Chain: How Sustainable is Sustainability?
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International Transport Forum at the OECD

- An inter-governmental organisation with 54 member countries, focusing on transport policy

- A think tank for global transport policy issues

- An annual summit of Ministers
Supply Chains and Sustainability Challenges

- **Economic growth**
  - Uncertainties (Volatility in oil prices, slack demand)
  - Congestion (on roads, but also at some intermodal nodes)

- **Societal improvements**
  - Supply chain contribution to cost of goods
  - Impacts on safety

- **Environmental carrying capacity**
  - Energy use/GHG and air pollution (land and sea)
Global freight volumes suggest continuous uncertainty

USA external trade by sea, total (tonnes)
(% change from pre-crisis peak)

EU27 external trade by sea, total (tonnes)
(% change from pre-crisis peak)
Global air freight as a lead indicator

USA external trade by air, total (tonnes) (% change from pre-crisis peak)

EU27 external trade by air, total (tonnes) (% change from pre-crisis peak)
Road Congestion

- Continued dependency on road freight
  - Options for shifting to other modes limited

- Infrastructure investments necessary but not sufficient

- Unmanaged road capacity no longer an option
  - Identify & target strategic bottlenecks
  - Regional planning key in port-hinterland networks

- Focus on managing networks for reliability, users’ needs
Responses (weak so far ?)

- **Regulatory**
  - E.g. mode-specific energy efficiency agreements and standards

- **Reorganization of supply chains**
  - Shifts in production composition
  - Relocating production (especially for low value goods where transport component is large)

- **Slow steaming**
  - Some impacts offset by oversupply > lower transport costs
Expectations and demand for reliability

- Increasingly complex scheduling, made possible through improved reliability, creates an ongoing need for reliability

- High supply of reliability → High demand for reliability → High reliability expected → High costs of unreliability

- ...but “reliable fast not reliable slow”
Reliability carries an premium

- Reliability may matter more than speed

- Users often face delays at interfaces

- In some cases, service level of infrastructure below minimum and not sufficient enough to provide reliable services

- Reliable but slow can be also greener
Importance of reliability is acknowledged

- Costs of unreliability may rival those of congestion induced low speed
- Shift in policy focus

Current focus in reducing average travel time

Future focus in reducing also variability
Transport speed vs process speed

- Transport is a component of process speed
- Easier to pay someone to move good faster than to change the procedures and habits with the company

“Own company actions” are the most important source of delays

PIMP your transport policy

- **Provision:** Increase physical capacity either through supplying extra capacity or improving the quality of existing infrastructure and associated services.

- **Information:** Informing users (diverse info requirements) enabling them to make smarter choices.

- **Manage:** Better management of existing infrastructure.

- **Price:** Charging to manage demand and ensure quality / reliability.
“Fluidity index” by Transport Canada

Evidence-based information leads to greater accountability and transparency in the supply chain and will benefit all gateway users.

Source: Transport Canada – Economic Analysis & Research
Price-reliability spectrum, with circle size illustrating traffic volume (USA)

Source: Derived from The Tioga Group (2003).
Conclusions

- Reliability needs to be recognized in current policy making
- Reducing variability can improve sustainability of supply chains
  - Improves efficiency
  - Reduces congestion, environmental footprint and cost of goods
- Focus on interfaces and better management
  - Governments may have a facilitation role
  - Enhanced interface coordination and corridor management
- Provide information for added efficiency and accountability by all agents
Thank you

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