International Transport Forum

OECD

MEDIA RELEASE

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Global trade: International freight transport to quadruple by 2050

Shifting trade patterns increase transport distances by 12%, North Pacific surpasses North Atlantic as main trading route

In the face of shifting global trade patterns, international freight transport volumes will grow more than fourfold (factor 4.3) by 2050. Average transport distance across all modes will increase 12%.

- As a result, CO_2 emissions from freight transport will grow by 290% by 2050. Freight will replace passenger traffic as main source of CO_2 emissions from surface transport.
- The North Pacific route will surpass the North Atlantic as the world's most busy trading corridor in terms of freight volume (in tonne-km), growing 100 percentage points faster than the North Atlantic. The Indian Ocean corridor will see large growth, with freight volume quadrupling.
- Intra-African (+715%) and intra-Asian (+403%) freight volumes will see particularly strong growth to 2050. Road transport will dominate here due to lack of other modes.
- The share of domestic transport of international freight flows, identified here for the first time, accounts for 10% of trade-related international freight, but 30% of CO_2 emissions. This is important: Domestic transport is shaped by national policies, less by international agreements.

These are some of the key findings of the ITF Transport Outlook 2015, presented today at the OECD headquarters in Paris, France.

"The foreseeable increase in global freight represents an unprecedented challenge for the world's transport systems", said ITF Secretary-General José Viegas at the launch.

"Increasing capacity constraints in transport can act as a brake on economic growth."

"A quadrupling of freight emissions can seriously undermine climate change mitigation."

Viegas pointed to four action items that would help to avoid such a scenario:

1. **Improve capacity management:** Many freight facilities are underutilised

2. **Invest in missing links:** More alternative and multi-modal connections increase efficiency

3. **Prepare for mega-ships:** Adapt infrastructure to more and bigger vessels, including the port-hinterland connections

4. **Increase vehicle utilisation:** Improve load factors and reduce idle times across supply chains.

ITF projections for transport modes (road, rail, air, sea) and for 19 commodities and product groups are shown in the tables below (see appendix). Related topics will be discussed at ITF's summit on "Transport, Trade and Tourism" on 27-29 May 2015 in Leipzig, Germany (website).

The ITF Transport Outlook 2015 also contains a wealth of information on passenger transport. In particular, latest projections on CO_2 emissions and health impacts for car-based and public transport-based mobility scenarios for big cities in China, India and Latin America.

According to these projections, cities in these regions will generate more than a third (38%) of the growth in passenger transport emissions to 2050. Policies to avoid urban traffic and shift to public transport could reduce this growth by 30-40%. But these must look at both climate and health impacts, as some measures reduce CO_2 emissions, but increase other pollutants.

The press release on urban mobility scenarios for big cities in China, India and Latin America is available here (pdf).

Access the ITF Transport Outlook 2015 via the OECD iLibrary here

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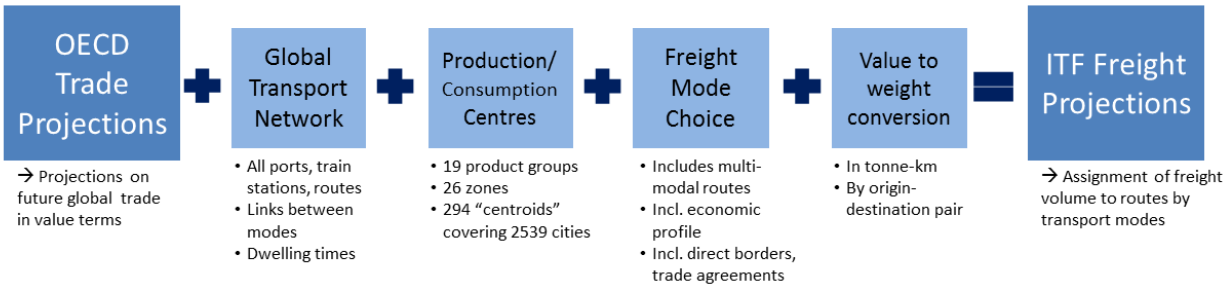
Note to Editors

How to quote us
Please quote "International Transport Forum at the OECD", not "OECD". The ITF is administratively integrated into OECD, but an intergovernmental organisation in its own right. More on ITF below.

About the ITF International Freight Model

- The new ITF Freight Model makes it possible to convert projections of future trade into flows of freight. It is able to express the value of trade (in monetary terms) in volume (the total distance all goods are moved, measured in in tonne-kilometres).
- The model allows the assignment of freight volume to routes by transport mode, and the calculation of related CO_2 emissions.
- For the first time, the model allows calculation of the domestic share of international trade and the CO_2 emissions associated with it.



- The starting point of the ITF freight model are OECD projections for international trade. To this are added four additional layers:
  - A global freight transport network model (based on 2010 data) encompassing all highways or main roads, rail stations and networks, sea ports and routes, airports and commercial flights) as well as links between modes and centroids (see below) including dwelling times and differential speeds.
  - A model of production and consumption centres around the globe. This includes 19 product groups, 26 zones and 2 539 cities which are modelled into 294 "centroids" between which trade takes place.
  - A model for modal choice for freight that includes multimodal nature of most freight, trade agreements between trading partners, land borders between trading partners.
  - A weight-to-value model, calibrated using Eurostat and Latin American data on value/weight ratios for different commodities.
- A paper setting out the ITF Trade Model won the 'Best Paper Award in Freight Modelling' at the Annual Transportation Research Board conference in January 2015. (download pdf)
- A detailed description of the ITF Freight Model can be found on p. 80 of the ITF Transport Outlook 2015.

ABOUT THE INTERNATIONAL TRANSPORT FORUM

Who we are:
The International Transport Forum at the OECD is an intergovernmental organisation with 54 member countries. It acts as a strategic think tank for transport policy and organises an Annual Summit of ministers. It is the only global body with a mandate for all transport modes.

What we work for:
Our goal is to help shape the transport policy agenda on a global level, and ensure that it contributes to economic growth, environmental protection, social inclusion and the preservation of human life and well-being.

How we do it:
Our work rests on three pillars: The ITF's **Annual Summit** unites ministers from around the globe with decision makers from business, civil society, international organisations and research. As a **Think Tank**, the ITF delivers impartial, evidence-based analyses of the highest quality for its member countries through its Research Centre. As an **intergovernmental organisation** the ITF is committed to multilateral dialogue and global knowledge-sharing. It also operates the ECMT system of Multilateral Licences for international road haulage.

What's coming up:
The ITF's next Annual Summit will take place in Leipzig, Germany, from 27-29 May 2015. The 2015 theme is "Transport, Trade and Tourism: Mobility for a Connected World"

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APPENDIX

Table 1

Growth of global trade-related freight and emissions to 2050, by transport mode

	Freight volume (in billion tonne-km)		Growth (in %)	CO_2 emission (in million tonnes)		Growth (in %)
	2010	**2050**		**2010**	**2050**	
Air	191	1 111	482	150	767	411
Road	6 388	30 945	384	1 118	4 519	304
Rail	4 262	19 126	349	62	217	250
Sea	60 053	256 433	327	779	2 630	238
	70 894	307 615	334	2 108	8 132	286

Source: International Transport Forum

Table 2

Projected shifts in global trade-related freight 2010-2050

	Freight volume (in billion tonne-km)			CO_2 emissions from freight (in million tonnes)		
Trade corridor	**2010**	**2050**	Growth %	**2010**	**2050**	Growth %
Africa	662	5 396	715	50	391	689
Indian Ocean	10 479	53 015	406	123	509	315
Asia	5 890	29 650	403	685	2 960	332
South Atlantic	1 872	9 368	400	24	99	310
North Pacific	15 832	75 022	374	215	801	273
North America	1 950	8 669	344	187	678	263
South America	271	1 127	316	25	81	225
Mediterranean and Caspian Sea	11 097	42 177	280	147	432	195
North Atlantic	17 596	65 094	270	233	676	191
South Pacific	1 839	6 785	269	21	62	194
Oceania	110	394	258	31	76	142
Europe	3 148	9 948	216	219	600	174

Source: International Transport Forum

Product group	… by value (in billion USD)		Growth (in %)
	2010	2050	
Other Metals	301	2 075	589
Other Mining	128	651	407
Electronic devices	1 380	6 854	397
Iron and Steel	305	1 506	394
Other Agriculture	34	163	385
Rice and crops	235	1 132	381
Livestock	37	163	338
Metal products	240	1 046	336
Other Manufacturing	1 913	8 317	335
Chemicals/rubber/plastic	1 469	6 154	319
Other Minerals	130	533	311
Transport Equipment	1 357	5 306	291
Textile	803	2 936	266
Paper and wood	430	1 551	261
Refined Oil	189	638	238
Gas	112	377	236
Food	574	1 876	227
Coal	30	81	169
Crude oil	410	1 066	160

Source: OECD (Trade patterns in the 2060 World Economy - link)

Product group	… by volume (in billion tonne-km)		Growth (in %)
	2010	2050	
Gas	3 370	24 974	641
Other Metals	604	4 040	569
Other Agriculture	202	1 264	524
Rice and crops	7 196	43 952	511
Other Mining	2 087	11 546	453
Iron and Steel	3 206	16 528	416
Livestock	226	1 139	405
Metal products	591	2 831	379
Electronic devices	3 598	16 439	357
Other Manufacturing	3 889	17 462	349
Other Minerals	3 131	13 582	334
Chemicals/rubber/plastic	10 370	44 533	329
Transport Equipment	2 582	10 335	300
Paper and wood	1 934		285
Food	8 486	31 759	274
Textile	5 050	18 208	261
Refined Oil	2 784	10 038	261
Coal	4 373	12 925	196
Crude oil	7 214	18 612	158

Source: International Transport Forum