Developments in International Seaborne Trade:
An overview

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The views expressed are those of the author and do not necessarily reflect the views of UNCTAD.
Key trends in international transport and implications for development:

Developments in international seaborne trade: an overview

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Outline

I. Derived demand

II. Seaborne trade: some figures and trends

III. Some issues to monitor
Shipping is the lifeblood of world trade and much more...

Key drivers

Economic growth and merchandise trade
World GDP and merchandise trade

UNCTADStat, June 2013, UNCTAD preliminary data and WTO Trade Statistics, April 2013

Seaborne trade, GDP, merchandise trade, and industrial production
Trade grows faster than GDP

Source: Review of Maritime Transport 2012
International seaborne trade

Some figures

Seaborne trade by commodity sector

**Tanker (liquid bulks):** Crude oil, refined petroleum, gas

**Dry Bulk:** Iron ore, coal, grain, phosphate/rock, bauxite/alumina, metals and minerals

**Containerized:** Manufactures, intermediate goods

**Other:** Break-bulk, Ro-Ro
The composition of international seaborne trade, 2012

- Other Dry: 29%
- Coal: 11.05%
- Iron Ore: 11.72%
- Petroleum Products: 9.36%
- Gas: 3.06%
- Crude Oil: 19.60%
- Container: 15.63%

UNCTAD Review of Maritime Transport 2013 (forthcoming). Based on data from various issues, and Clarkson Research Services data.

International seaborne trade (metric tons), 1980-2013

UNCTAD Review of Maritime Transport 2013 (forthcoming). Based on data from various issues, and Clarkson Research Services data.
Global containerised trade, 1996-2013 (TEUs & annual % change)

Some issues to consider/monitor
Some key issues currently affecting shipping and seaborne trade, include:

- Uncertainty and downside risks
- Supply-demand imbalance
- Piracy
- New routes/infrastructural developments: Panama Canal 2015
- Northern sea routes (NWP)
- Geopolitical developments/political unrest
- Natural disasters/disruptions

But, the interconnected issues of energy and climate change call for particular attention ➔ have the potential to deeply transform shipping and trade

"Globalization, climate change, and escalating energy costs are a strategic nightmare for shipping companies and they all have one thing in common – fossil fuels." Martin Stopford,Clarksons

Maritime transport and the climate change debate

Two sides of the "climate change coin": causes (mitigation) – effects (adaptation)

Mitigation

- International shipping estimated to contribute about 3% of the global CO2 emissions. (IMO GHG Study, 2009) – Set to grow by a factor of 3 by 2050
- Oil dependency! High carbon intensity!
- Yet, emissions from international shipping not covered by Kyoto Protocol: negotiations on future emissions regime underway at IMO and UNFCCC
- IMO: package of technical/operational measures adopted in July 2011 (not by consensus) - amendments to MARPOL, Annex VI; In force January 2013
- Market-based instruments: way forward not uncontroversial
Impacts and adaptation

- Much of international debate/policy action focuses on climate change mitigation

- Relatively little focus on study of impacts and development of adaptation policies/actions

- Climate change/extreme events likely to have direct (infrastructure, equipment, operations, networks, etc.) and indirect impacts (change in demand) on maritime transport and related infrastructure (ports!!)

- Open new arctic sea-lanes due to polar ice melting

- Require a better understanding of impacts (which vary by type of extreme event, region, environment, sector) and assessment of vulnerabilities (ports particularly exposed and vulnerable – location, asset value, strategic value)

- Design and adoption of adequate and effective adaptive measures are key

The special case of ports

OECD study (Nicholls et. al, 2007)

✓ Exposure of 136 port megacities to coastal flooding (population/assets) in 2005
✓ Estimated asset exposure: USD 3 trillion

Allianz/WWF study (Lenton et. al, 2009) http://knowledge.allianz.com

✓ Assuming SLR of 0.5 m by 2050 (tipping scenario)...
✓ Estimated asset exposure in same 136 port megacities: USD 28 trillion
### Top 20 port cities with highest increase in exposed assets under tipping scenario (US$ billion) by 2050

<table>
<thead>
<tr>
<th>City</th>
<th>Increase in asset exposure (US$Bn)</th>
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<tbody>
<tr>
<td>Guangzhou Guangdong</td>
<td>$3,000</td>
</tr>
<tr>
<td>Mami</td>
<td>$2,500</td>
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<tr>
<td>Kolkata (Calcutta)</td>
<td>$2,000</td>
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<tr>
<td>Shanghai</td>
<td>$1,500</td>
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<tr>
<td>New York-Newark</td>
<td>$1,000</td>
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<tr>
<td>Mumbai (Bombay)</td>
<td>$500</td>
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<tr>
<td>Ningbo</td>
<td>$500</td>
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<tr>
<td>Tianjin</td>
<td>$500</td>
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<tr>
<td>Krung Thep (Bangkok)</td>
<td>$500</td>
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<tr>
<td>Tokyo</td>
<td>$500</td>
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<tr>
<td>Hong Kong</td>
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<td>Osaka-Kobe</td>
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<td>New Orleans</td>
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<td>Rotterdam</td>
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<td>Amsterdam</td>
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<td>Dhaka</td>
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<tr>
<td>Qingdao</td>
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<tr>
<td>Thanh-Pho-Ho-Chi-</td>
<td>$500</td>
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<tr>
<td>Virginia Beach</td>
<td>$500</td>
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<tr>
<td>Nagoya</td>
<td>$500</td>
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</tbody>
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Source: Lenton et al. 2009

### Example: The US Gulf Coast

A relative sea level rise of ~1.2 m (4 feet) could permanently inundate more than:

- 2400 miles of roads
- Over 70% of the existing port facilities
- 9% of the railway lines
- 3 airports

In the case of a ~5.4-7 m storm surge:

- More than 50% of interstate and arterial roads
- 98% of port facilities
- 33% of railways
- 22 airports in the US Gulf coast would be affected (CCSP, 2008)

Ports and other infrastructure assets at risk along the US Gulf coast (US Gulf Coast Study, Savonis 2009).
Summary of key points (1)

- Maritime transport is a strategic economic sector, a trade enabler and a driver of globalization
- Volumes expanded more than three-folds since 1970s
- Growth fueled by containerized trade and major dry bulks (China factor)
- Containerized trade accounts for the largest share in value terms (over 50%)
- Developing countries contribute larger shares and growth to world GDP and merchandise trade; growth in SS links \(\rightarrow\) multipolar world economy
- Seaborne trade patterns are changing with: shifting economic influence, growth in intra-regional trade, deepening in South-South cooperation (investment, trade, finance, mining, energy)

Source(s): MapAction, United Nations Office for the Coordination of Humanitarian Affairs (OCHA)
From: Pascal Peduzzi, UNEP GRID Europe (2010), UNECE-UNCTAD Workshop presentation.
Summary of key points (2)

Challenges:

✓ Economic uncertainty/other downturn?
✓ Trade protectionism; shortage in trade finance
✓ Supply-side pressures and excess ship supply capacity – profitability?
✓ Ability to effectively meet the demands arising from projected growth (infrastructure investment)
✓ Vulnerability to external shocks/natural disasters
✓ Climate change concerns (mitigation and adaptation), growing sustainability imperatives and energy (costs, access and sustainability)
✓ Rising oil prices entail important implications for transport costs and trade

Summary of key points (3)

Opportunities:

✓ Arising in connection with greater South-South cooperation
✓ Diversified sources of supply – enabled by transport and technology
✓ New trading partners/access to new markets (e.g. trade and cooperation deals)
✓ New routes: e.g. Panama Canal 2015, northern sea routes
✓ Move up the value Chain (China/other Asian economies)
✓ Projected growth: population, middle class; development process; boom in dry bulk trade (in 2025)
Summary of key points (4)

Energy and climate change challenge: an opportunity to

✓ Move away from existing unsustainable patterns of production, consumption and transportation

✓ Reduce dependency on finite fossil fuels through inter alia, energy efficiency, technology, operational measures and economic instruments

✓ Keep down transport costs as rising oil prices can have significant impact on freight costs (Oil Prices and Maritime Freight Rates: An Empirical Investigation (UNCTAD/DTL/TLB/2009/2)

✓ Build the resilience to climate change-induced disruptions and preserve the integrity of transport infrastructure and systems through adaptation action – relevant to all countries developed and developing alike in view, in particular, of the global interconnectedness and interdependency

Summary of key points (5)

✓ Developing countries have an advantage: as they embark on the development path, climate change considerations could be incorporated at early stages of the planning and design process of transport infrastructure

→ Meet sustainability targets while reducing retro-fitting and maintenance costs

✓ Action (energy efficiency/green energy, climate change mitigation and adaptation) requires, among other things: financial resources and investments, technology, innovation, information, data, cooperation, ... while not undermining growth

Timely action is key!

Taking action now = good returns on investment in the long run
References and additional information

• See www.unctad.org/ttl/legal for information/documentation/presentations re:
  • UNCTAD Expert Meeting 2009 Summary of the proceedings (UNCTAD/DTL/TLB/2009/1)
  • UNECE-UNCTAD Workshop 2010 Background note by UNECE and UNCTAD secretariats
  • ECE/TRANS/WP.5/2010/3
  • UNCTAD Ad Hoc Expert Meeting 2011 Main outcomes and Summary of Discussions
    (UNCTAD/DTL/TLB/2011/3)
  • UNCTAD (ed.) Maritime Transport and the Climate Change Challenge, Earthscan
  • On UNECE Expert Group on CC Impacts and Adaptation for International Transport
    Networks, see http://www.unece.org/trans/main/wp5/wp5_gec_02.html
Thank you for your attention

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