Key trends in shipping markets
ESPO Conference, 2018
Content

• Trade patterns
  – How US shale is transforming oil and gas markets
  – Iron ore shifts East
  – Brakes on for Thermal Coal

• Service patterns
  – Alliances, ULCVs and liner network development
US transforms gas and oil markets
Overview of global LNG trade (2012)

Qatar was the biggest LNG exporter, export volume stood at 78.0 million tonnes, 32% of total LNG trade. LNG trade also gained momentum on the Russia to Asia trade lane.

Source: Drewry Research Database, BP Statistics
Qatar remains the biggest LNG exporter, challenged by Australia. US emerging strongly and is expected to be the third biggest exporter of LNG.

Source: Drewry Research Database, GIGNL report
US is expected to have total capacity of 105mtpa by 2022

Source: Drewry research database

Drewry Maritime Advisors – ESPO 2018
Overview of global LNG trade (2022)

The US is expected to become the largest LNG exporter, followed by Australia. Meanwhile, China will rise as a major LNG importer in the Asian market importing about 60 million tonnes of gas.

Source: Drewry Research Database
Overview of Global Trade – Crude Oil

The Middle East has been largest exporter of crude.

Cargo volumes based on 2016 trade data.
US crude production taking off

US crude oil production (kbpd)

- 2007: 9,243
- 2017: 12,133

Percentage change:
- 2007-2017: 45.6%
- 2017-2022: 41.3%
- 2007-2022: 15.0%
Crude oil trade on major routes

Source: Drewry Research Database, BP Statistics

*NE Asia: Japan, South Korea, China
Iron ore shifts East
Iron ore trade overview

Demand is growing fast and shifting East

Global iron ore trade (Million Tonnes)

- 2007: 771 (CAGR: 7.3%)
- 2012: 1,099 (CAGR: 6.6%)
- 2017: 1,511

Global iron ore imports (% share)

- 2007:
  - Asia: 71%
  - EU: 9%
  - Other: 7%

- 2012:
  - Asia: 84%
  - EU: 20%
  - Other: 9%

- 2017:
  - Asia: 85%
  - EU: 9%
  - Other: 7%

China accounted more than four-fifths of Asian imports in 2017

- China: 84%
- Japan: 9%
- South Korea: 5%
- Taiwan: 2%

Europe imports widespread

- Netherlands: 25%
- France: 15%
- Germany: 16%
- UK: 7%
- Italy: 6%
- Spain: 6%
- Others: 24%

Source: GTIS, Drewry
Iron ore exports (million tonnes)

Australia and Brazil are the top iron ore exporters and contribute 80% of global trade. Very rapid growth.

Source: GTIS, Drewry
Brakes on for Thermal Coal
Thermal coal trade overview

Sharp slowdown in coal volume growth

Global coal trade (million tonnes)

<table>
<thead>
<tr>
<th>Year</th>
<th>2007</th>
<th>2012</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>562</td>
<td>786</td>
<td>829</td>
</tr>
<tr>
<td>CAGR</td>
<td>6.9%</td>
<td>1.1%</td>
<td></td>
</tr>
</tbody>
</table>

Global coal imports (% share)

<table>
<thead>
<tr>
<th>Year</th>
<th>EU</th>
<th>Major Asian importers</th>
<th>Minor Asian importers</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>23%</td>
<td>10%</td>
<td>15%</td>
<td>12%</td>
</tr>
<tr>
<td>2012</td>
<td>52%</td>
<td>10%</td>
<td>16%</td>
<td>15%</td>
</tr>
<tr>
<td>2017</td>
<td>66%</td>
<td>12%</td>
<td>9%</td>
<td>10%</td>
</tr>
</tbody>
</table>

Asia coal imports, 2017 (% share)

- **Major Asian importers, 2017**
  - China: 18%
  - South Korea: 20%
  - Japan: 25%
  - India: 27%
  - Vietnam: 10%

- **Minor Asian importers, 2017**
  - Malaysia: 32%
  - Thailand: 24%
  - Philippines: 22%
  - Pakistan: 12%

Share of the EU in coal imports is declining steeply. During 2007-12 the share was taken by the rising imports of major Asian importers. However, 2012 onwards minor Asian importers and Turkey is taking up the share.

Source: GTIS, Drewry
Thermal coal imports (million tonnes)

Major importers decline or slow; minor players grow

Coal imports (million tonnes), CAGR (in %)

  - CAGR: 2007-2012 - 1.4%, 2012-2017 - 4.7%

  - CAGR: 2007-2012 - 7.7%

  - CAGR: 2007-2012 - 12.0%, 2012-2017 - 0.3%

  - CAGR: 2007-2012 - 7.3%

- EU: CAGR below world’s average
- Turkey: CAGR above world’s average

Source: GTIS, Drewry
EU thermal coal imports sources

Colombia and Russia are the EU’s major sources of coal

<table>
<thead>
<tr>
<th>Source: GTIS, Drewry</th>
<th>2007</th>
<th>2012</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td>8</td>
<td>31</td>
<td>36</td>
</tr>
<tr>
<td>Colombia</td>
<td>25</td>
<td>38</td>
<td>27</td>
</tr>
<tr>
<td>South Africa</td>
<td>7</td>
<td>9</td>
<td>7</td>
</tr>
<tr>
<td>EU</td>
<td>24</td>
<td>26</td>
<td>27</td>
</tr>
<tr>
<td>Russia</td>
<td>2007</td>
<td>2012</td>
<td>2017</td>
</tr>
<tr>
<td>Colombia</td>
<td>38%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Russia</td>
<td>28%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>United States</td>
<td>13%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EU</td>
<td>7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>South Africa</td>
<td>7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>7%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Share in EU imports, 2017
Alliances, ULCVs and liner networks
Containership sizes double on most trades

Evolution of average ship sizes on major trade routes

<table>
<thead>
<tr>
<th>Trade Route (TEU)</th>
<th>1Q09</th>
<th>1Q12</th>
<th>1Q15</th>
<th>1Q18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Far East/N Europe</td>
<td>7,779</td>
<td>9,552</td>
<td>12,235</td>
<td>15,291</td>
</tr>
<tr>
<td>Far East/Mediterranean (direct)</td>
<td>5,488</td>
<td>6,848</td>
<td>8,625</td>
<td>10,998</td>
</tr>
<tr>
<td>Transpacific headhaul</td>
<td>5,079</td>
<td>5,869</td>
<td>6,740</td>
<td>7,828</td>
</tr>
<tr>
<td>Transatlantic headhaul</td>
<td>3,609</td>
<td>3,872</td>
<td>4,458</td>
<td>4,703</td>
</tr>
<tr>
<td>ECSA/Far East</td>
<td>5,074</td>
<td>3,240</td>
<td>8,314</td>
<td>9,236</td>
</tr>
<tr>
<td>WCSA/F East</td>
<td>5,100</td>
<td>2,681</td>
<td>7,207</td>
<td>7,751</td>
</tr>
<tr>
<td>Eur/S Africa</td>
<td>3,301</td>
<td>3,116</td>
<td>7,657</td>
<td>8,096</td>
</tr>
<tr>
<td>Far East/S Africa (direct)</td>
<td>5,255</td>
<td>3,651</td>
<td>7,061</td>
<td>5,068</td>
</tr>
<tr>
<td>Eur/W Africa (direct)</td>
<td>1,965</td>
<td>1,636</td>
<td>2,578</td>
<td>2,965</td>
</tr>
<tr>
<td>Far East/W Africa (Direct)</td>
<td>2,755</td>
<td>2,220</td>
<td>4,846</td>
<td>5,490</td>
</tr>
<tr>
<td>Asia/Mid-East and South Asia (direct)</td>
<td>2,926</td>
<td>3,692</td>
<td>5,594</td>
<td>5,409</td>
</tr>
</tbody>
</table>

Source: Drewry Maritime Research
Consolidation and alliances

Major industry consolidation among companies and alliances

- **2016**
  - CMA-CGM + APL → CMA-CGM acquires APL
  - COSCO + CSCL → COSCO merges with CSCL
  - CMA-CGM + OOCL

- **2017**
  - Hapag-Lloyd + UASC → HL merges with UASC
  - Maersk + Hamburg-Sud → Maersk acquires Hamburg Sud
  - CMA-CGM + OOCL

- **2018 (Container Operations Only)**
  - MOL + NYK + K-Line → Ocean Network Express

**Alliances**

- **2M**
  - Mediterranean Shipping Company (MSC) + Maersk Line + Hyundai Merchant Marine (HMM)

- **Ocean**
  - CMA CGM + COSCO Shipping + Evergreen + OOCL

- **THE**
  - Hapag-Lloyd + UASC + MOL + NYK Line + Yang Ming
Vessel sizes and service frequency

Vessel sizes rise and service frequency declines. Volume is being concentrated...

![Average vessel size (TEU)](image1)

![Number of services (per week)](image2)
Port coverage: Asia – North Europe

…but extended port coverage is being maintained…
Direct calls: Asia – North Europe

…with direct calls; received wisdom about large vessels = transhipment was wrong
Volatility

Concentration of volume creates new risks

Antwerp and Rotterdam volume share (%)
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