Measuring Aspects of Container Shipping Supply

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Measuring Containership Supply

- What are we measuring - ship capacity or liner network carrying capacity?

Nominal vessel capacity
- Measure of maximum potential capacity of vessel

Vessel carrying capacity
- Measure of ‘effective’ trading capacity of vessel

Vessel running capacity
- Measure of provision of annual running capacity

Service / trade lane running capacity
- Aggregation of running capacity to compare to trade flow
- Construction of this metric in similar vein to dwt demand, tonne-mile etc.
### Capacity Example

<table>
<thead>
<tr>
<th>Description</th>
<th>Capacity (TEU)</th>
</tr>
</thead>
<tbody>
<tr>
<td>“OOCL SEOUL”</td>
<td></td>
</tr>
<tr>
<td>Nominal Capacity</td>
<td>8,063</td>
</tr>
<tr>
<td>Homogeneous Capacity</td>
<td>6,275</td>
</tr>
<tr>
<td>Far East-Europe Service – Weekly - 11 Ships</td>
<td></td>
</tr>
<tr>
<td>Running Capacity (nominal) pa</td>
<td>38,116</td>
</tr>
<tr>
<td>Service Trade Lane Capacity pa</td>
<td>523,734</td>
</tr>
</tbody>
</table>

Source: World Fleet Register, Clarkson Research; OOCL.
Vessel Carrying Capacity

- Significant agreement on standards.
- Nominal TEU used as standard measurement for describing vessels.
- Homogeneous TEU used as standard measurement of carrying capacity at 14t per TEU.
- Takes into account stability requirements.
- But also depends on cargo weight – trade lane specific (general range 8-14t per TEU but some outliers).
- Box issues: 20/40 split, hi-cube intake.

![Graph showing average homogenous/nominal capacity ratio for different vessel sizes.](source: Container Intelligence Monthly, Clarkson Research.)
Vessel Running Capacity

• Flow of annual capacity provided (at any given point in time)
• What’s the equation?
  • TEU capacity (nominal or homogeneous)
  • Frequency of service
  • Number of ships in service

Annual Running Capacity =
Vessel TEU Capacity x Service Frequency / No. of Ships in Service
Aggregate Trade Lane Capacity

• Why is this metric useful?
• To compare to trade flows for supply-demand analysis.
• Should be as simple as aggregate of vessel/service running capacity on a trade lane
• But significant problems:
  • ‘Effective’ vessel capacity (as previously)
  • What’s in the scope of the region and what’s out? (capacity and trade)
  • Example: Transpacific E/B 0.8m TEU difference re Canada (2012)
  • Capacity allocation - need to understand cargo (again)
  • Liner network increasingly complicated
Allocating Capacity

Example: Does Far East-ECSA via USWC provide a ship’s worth of TEU capacity on each leg, in total or some other combination?
Trade Lane Capacity – Other Problems

- Inclusion or otherwise of non-fully cellular containership capacity.
- Directional nature of non-FCC capacity.
- Differences in cargo weight on different directions.

Source: Container Intelligence Monthly, Clarkson Research.
Additional Analytical Problems

1) Aggregation
   • Aggregate world running capacity only relates to current pattern of deployment
   • Different fleet could generate same aggregate running capacity, but different on a trade lane basis
   • Same fleet could provide different running capacity if deployed differently

2) Utilization
   • Usually fine to make approximations, but assumptions on cargo and scope can lead to very significant differences
   • Example: 5% less cargo in scope, 10% more capacity turns 90% utilisation into 78%.
New Issues?

Three key issues in liner shipping today:

• Slow Steaming – Impacts on running capacity via no of vessels in service
• Idling – Impacts on level of capacity in/out of trade lane running capacity and/or charter market capacity
• Cascading – Frequent changes in deployment making capacity changes difficult to monitor

But one additional problem:

• Void sailings - More detailed analysis required to assess running capacity provision at any point in time

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Thankyou

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