Container freight rates and the shaping of global economic space

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Measuring Distance

- Distance is a basic metric of spatial relationships
- Most common are absolute measures
- Relative measures are used less frequently, but may be more important: time in commuting and supply chains
- Freight rates are a measure of economic distance
- We know a great deal about their theoretical importance
- We know much less about their actual spatial patterns and impacts
Goals of the paper

- To explore the spatial structure of economic space as defined by container freight rates
- To establish the positioning of container markets in relative space
- To demonstrate how the relative locations have shifted during a period of considerable economic turmoil
- To seek explanations for the changing spatial patterns revealed in relative space
Container freight rates

• Container rates are quoted as the price per box, and not what is in them

• Rates for different customers vary even for the same destination

• We employed a data set of rates negotiated with the largest customers of a major global carrier

• The rates employed here apply to imports into ports of the European Northern Range, for the months of June 2007, 2008 and 2009
## Freight rates for imports by Northern Range ports (in Euros)

<table>
<thead>
<tr>
<th>Region</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>East Coast South America (ECSA)</td>
<td>1,325</td>
<td>1,425</td>
<td>1,225</td>
</tr>
<tr>
<td>West Coast South America (WCSA)</td>
<td>1,267</td>
<td>1,166</td>
<td>2,500</td>
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<tr>
<td>China</td>
<td>2,235</td>
<td>1,287</td>
<td>212</td>
</tr>
<tr>
<td>South East Asia (SEAsia)</td>
<td>2,235</td>
<td>826</td>
<td>588</td>
</tr>
<tr>
<td>Japan</td>
<td>1,788</td>
<td>1,288</td>
<td>353</td>
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<tr>
<td>Korea</td>
<td>2,086</td>
<td>547</td>
<td>565</td>
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<tr>
<td>Eastern Mediterranean (EMed)</td>
<td>683</td>
<td>383</td>
<td>300</td>
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<tr>
<td>Middle East (MEast)</td>
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<td>South Asia (SAsia)</td>
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<td>Mexico</td>
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<tr>
<td>Australia</td>
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<td>1,095</td>
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<tr>
<td>West Africa (WAf)</td>
<td>1,260</td>
<td>1,209</td>
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</tbody>
</table>
European Imports
2008

European Imports, 2008
- North Europe Range
- Ranges exporting to Europe
- Flow direction
- Ports

Data Source: Major Shipping Line
World Equidistant Conic. WGS1984

Drawn by Pamela Soto Abasolo, Université de Montréal 2010
Temporal and spatial variability
Explaining the changes

• Distance:
  • 2007 r= 0.705*; 2008 r= 0.166; 2009 r= -0.216

• Markets: traffic (annual container traffic by range)
  • 2007 r= 0.716*; 2008 r= 0.161; 2009 r= -0.34

• Vessel size (size of largest vessel on the service)
  • 2009 r= -0.614*

* Significant at .05
## Round trip rates

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
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<th>2008</th>
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<th>2009</th>
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<td>212</td>
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<tr>
<td>Japan</td>
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<td>1,288</td>
<td>193</td>
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</tr>
</tbody>
</table>
Conclusions

- Two sets of markets with different rate features and with different relative spatial characteristics:
  - MAIN MARKETS – during boom periods carriers seek to maximise profits; in relative space they are distant. During recessions rates collapse and in relative space are drawn inward.
  - LESSER MARKETS – more stable rates in general with less variability, except in a few cases. In relative space their locations are more constant.

- During recessions traditional explanatory variables of freight rates are no longer valid. Only vessel size appears to be a good predictor.
Thank you for your attention

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