Liner shipping markets, networks and strategies.

The implications for port development on the West Coast of South America

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To create opportunities we need to be able to differentiate

• symptom/ˈsɪmpəm/  
  a feature which indicates a condition of “disease”, an indication of an undesirable situation.

• cause/ˈkɔːz/  
  a thing that gives rise to an action, phenomenon, or condition.

Real opportunities are those who tackle the cause of the current challenges. Curing symptoms and not eliminating the cause of the challenge will only provide short term relieve.
Objective

• Analyse the evolution of symptoms of change in the liner shipping industry

• Identify causes and drivers of change

• Discuss direct drivers for port infrastructure and port system development

• Reflect on habitual and perceived challenges for port development in Chile
Outline

- Liner shipping network evolution
- Critical moments in port development
- LAC and WCSA port system development
- Liner shipping technological change
- Liner shipping market structures
- Discussion topics
Network evolution

LINER SHIPPING
Relevant factors in liner network configurations

- Accessibility (water and hinterland)
- Infrastructure endowment
- Costs
- Productivity
- Competition
- Etc.

- Regional maritime policies
- Ease of border crossing
- Policies regarding externalities
  - Intermodal policies
  - Port policies

- Port Policies

- Port devolution and operator model
- Vertical integration with port operators
- Horizontal integration strategies
- Market strategy

- Organisationa/Institutional

- Land accessibility
- Cargo dispersion
- Market size and development
- Quality of hinterland transport system
- Hinterland transport costs

Hinterland specific
Evolutionary patterns of liner shipping network configuration (1)

- **Captive Phase:** One of few main ports per country. Safe captive markets
- **Reforming Phase:** As a response to market requirements, port reforms become necessary to increase efficiency and productivity
- **Internationalisation Phase:** Entering of global port operator groups into medium size markets to sharpen global profiles

- Determinants of container liner shipping network development
  - Ports
  - Shipping Lines
  - Demand for Container Liner Services

- Reduction of state intervention
- Vertical Integration: between shipping lines and terminal operators
- Increasing competition in medium and small markets
- Increasing tendency towards collusive behaviour and potential threat of market power

Source: Wilmsmeier and Notteboom 2009
Evolutionary patterns of liner shipping network configuration (2)

**Determinants of container liner shipping network development**

- **Penetration Phase:** Spread of direct regular container liner services from main shipping companies into medium and small markets that were traditionally served by niche carriers, in the surge for new markets.

- **Consolidation Phase:** Creation of various types of alliances to operate efficiently and effects from mergers and acquisitions between shipping lines.

- **Concentration Phase:** Competition among few shipping lines. Tendency towards oligopolistic market structures and further effects from mergers and acquisition at global level.

**Reduction of state intervention**

**Vertical Integration:** between shipping lines and terminal operators

**Increasing competition in medium and small markets**

**Increasing tendency towards collusive behaviour and potential threat of market power**

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Evolutionary patterns of liner shipping network configuration (3)
Critical moments

PORT SYSTEM
Critical Moments in LAC Port Development between 1990 and 2013

- **Economic Growth**: Container volumes, a changing geography of trade, change in the structure of cargoes
- **Port Devolution**: Port reform, influx of international private operators, inter-terminal competition, renegotiation of concession contracts
- **Port Function**: Gateway ports, hybrid ports, transhipment ports
- **Port System**: One main port, new terminal development - inter-terminal competition, diversification - emergence of secondary ports, geographical shift - emergence of new ports
- **Technological Change**: Ship size, automatisation of superstructures, logistics information systems
- **Network Strategy**: Direct services, transhipment strategies, liner specific transhipment hub
- **Liner Shipping Market Structures**: Establishing market presence (competition), mergers and acquisitions, co-opetition and collusive behaviour

Source: Based on Wilmsmeier, Monios and Pérez 2013
Latin America & the Caribbean

PORT SYSTEM
LAC container market

- Port throughput:
  - 1997 - 10.4 million TEUs
  - 2012 - 42.8 million TEUs
  - equivalent to just above 7% of all global port movements.

- 5 top countries in container throughput:
  - One fifth of all containers in LAC are moved in Brazil
  - Panama (16%)
  - Mexico (10%)
  - Chile (8%)
  - Colombia (5%)

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Comparison top 10 container ports and LAC regions, 2012
Sub-regions’ shares in container throughput in LAC, 1997 to 2011

Source: Wilmsmeier, Monios and Pérez 2013
Comparison top 10 container ports and LAC regions, 2012
WCSA and WCCA growth rates of container ports, 2000 to 2011

Source: Wilmsmeier, Monios and Pérez 2013
The usual questions

• What happens after the Panama Canal expansion?

• Will Callao be the hub port on the WCSA?

• Will Chile be served only by feeder services in the future?

• The more important question is:

What is the future development of the Chilean port system?
Shares in container throughput in Chile, 1997 to 2011

(Source Authors, based on ECLAC)
Technological change

LINER SHIPPING
Evolution of vessel capacity on South American and other main trade routes, 2000-2012

Note: main trade routes include transpacific, transatlantic and Europe-Asia.
Source: Wilmsmeier, based on CompairData, Lloyds List and Marine Traffic various years
Evolution of vessel capacity on West Coast South America main trade routes, 2000-2012

Source: Wilmsmeier, based on CompairData, Lloyds List and Marine Traffic various years
Evolution of vessel draft on South American and other main trade routes, 2000-2012

Note: main trade routes include transpacific, transatlantic and Europe-Asia.
Source: Wilmsmeier, based on CompairData, Lloyds List and Marine Traffic various years
Vessel breadth on South American and other main trade routes, 2000-2012

Note: main trade routes include transpacific, transatlantic and Europe-Asia.
Source: Wilmsmeier, based on CompairData, Lloyds List and Marine Traffic various years
Evolution of vessel length on South American and other main trade routes, 2000-2012

Note: main trade routes include transpacific, transatlantic and Europe-Asia.
Source: Wilmsmeier, based on CompairData, Lloyds List and Marine Traffic various years
Structural change

LINER SHIPPING
West Coast South America Reefer export evolution 1995-2011

Source: Vagle, based on (BADECEL 2012)

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Reefer capacity on vessels deployed in WCSA main routes, 2000-2012

Source: Wilmsmeier, based on CompairData, Lloyds List and Marine Traffic various years
Market structure

LINER SHIPPING
evolution of weekly capacity supply on WCSA main routes, 2009-2012

Source: Author based on ComPairData various years
Growth rates container throughput and capacity, base year 2000

Source: Wilmsmeier and Guidry based on ComPairData and ECLAC maritime profile, various years
WCSA – Asia changes in market structure, 2000-2012

Source: Wilmsmeier and Parushev 2013
Market share in nominal TEU capacity by service WCSA-Asia, 2000-2012

Source: Wilmsmeier based on ComPairData, various years
Discussion points

Integration in logistics chains

Strategies of market players

Sustainable and systemic vision of port development

Proactive and integrated policies and regulatory frameworks
Questions?

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port system changes

- Changes in the port system occur in an almost completely discrete manner
  - port infrastructure
  - superstructure,
  - organizational changes
- port development is very often dependent upon and determined by the degree to which a specific port in question is embedded within local and regional institutional considerations.
- the conditions under which any port system interacts with other subsystems of the wider transport system – in particular, the local port access infrastructure – are very often locally and regionally defined and, therefore, beyond the direct sphere of influence of the port system itself.
- Critical: not only to the port but also to the economy, as it is this which ultimately defines the degree of connectivity enjoyed by the economic system which prevails within a port’s hinterland.
port development

- port development is a “discontinuous, cumulative process, which develops and appears as a series of innovations”
- differentiate between ‘growth’ and ‘structural transformation’.
- ‘location splitting’ is a means to extend the port lifecycle when limitations in feasible rationalisation, investment and access are reached.
- the creation of such a subsidiary location in the hinterland provides a potential solution that avoids an inevitable decline, invoked either through
  - the inappropriateness of the actual port location or
  - a newly emergent competitive regime
  - shift in requirements from basic port facilities to logistics facilities