Looking for collaboration in a new research stream

Francesco Parola
Theo Notteboom
Thanos Pallis
Jean-Paul Rodrigue
Enrico Musso
Giovanni Satta
Finance in Ports: the evolution of the background

- Traditional sources of finance in the industry (retained earnings, government support and corporate bank loans)
- Market trends in the port sector and need for additional financial instruments:
  - Upgrading extant infrastructures;
  - Developing new (greenfield) megaproject;
  - Fuelling private terminal operators’ overseas expansion
- New financial sources (equity & debt capital markets)
- New financial players (“dual” role).
Potential theoretical perspectives...

The complexity in investigating port finance predominantly originates from the coexistence of different (private/public) actors:

- Port Authorities & Port Companies
- Terminal Operators
- Central and Local Governments
- Financial players ("dual" role).

Consequently the topic should be addressed applying the conceptual contracts developed within various academic disciplines:

- Public Management (NPM, public private partnership, etc.)
- Corporate governance (agency theory, information asymmetries, etc.)
- Strategic management (RBV, financial slack, etc.)
- International Business (IB) theories
- Finance (IPO, financial markets, investor perspectives, etc.).
... only a few contributions from the academia


- **Musso, Parola & Satta** (under review). “The financialization of the container port industry: Drivers, new actors and upcoming trends” (book chapter).

- **Satta** (under review) “Initial public offerings in the port industry: Exploring the determinants of the underpricing” (journal).
The financialization of the port industry

- Development of greenfield mega-projects
- Support of ITOS' overseas expansion
- Acceleration in M&A activity

Greater financial resources supplied by international financial markets

- Increase in Initial Public Offerings
- Significant bond issuing activity

New sources of capital

Financialization of the port industry

Entry of financial investors in the industry
- Pension funds and insurance companies
- Sovereign wealth funds
- Investment banks and private equity funds
- Investment holding companies
- Multilateral financial institutions

Risk (mis-)perception and risk management
- Appetite for risk and increase in asset prices
- Reduction of beta parameter and weighted average cost of capital (WACC)
- Financial derivatives and other hedging instruments
## Greater financial resources

### Greenfield mega-projects in container terminals in developing countries (2000-2014)

<table>
<thead>
<tr>
<th>Project name</th>
<th>Country</th>
<th>Private investments (in USD mm)</th>
<th>Financial closure year</th>
<th>Contractual arrangement</th>
<th>Project status</th>
<th>Contract Period</th>
<th>Private commitment (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Onne port expansion, phase 4B</td>
<td>Nigeria</td>
<td>2,900,00</td>
<td>2013</td>
<td>BOO</td>
<td>Construction</td>
<td>25</td>
<td>100</td>
</tr>
<tr>
<td>Lekki Deep Seaport</td>
<td>Nigeria</td>
<td>1,500,00</td>
<td>2013</td>
<td>BOT</td>
<td>Construction</td>
<td>45</td>
<td>62</td>
</tr>
<tr>
<td>Pakistan Deep Water Container</td>
<td>Pakistan</td>
<td>1,200,00</td>
<td>2010</td>
<td>BOT</td>
<td>Construction</td>
<td>25</td>
<td>100</td>
</tr>
<tr>
<td>Qingdao New Qianwan CT Joint Venture</td>
<td>China</td>
<td>1,000,00</td>
<td>2007</td>
<td>BOT</td>
<td>Construction</td>
<td>50</td>
<td>59</td>
</tr>
<tr>
<td>APM Terminals Lazaro Cardenas</td>
<td>Mexico</td>
<td>900,00</td>
<td>2013</td>
<td>BOT</td>
<td>Construction</td>
<td>32</td>
<td>100</td>
</tr>
<tr>
<td>Shenzhen Dachan Bay Container Terminals</td>
<td>China</td>
<td>858,00</td>
<td>2005</td>
<td>BOT</td>
<td>Construction</td>
<td>50</td>
<td>65</td>
</tr>
<tr>
<td>Yantian International CT Phase III</td>
<td>China</td>
<td>845,00</td>
<td>2002</td>
<td>BOT</td>
<td>Construction</td>
<td>50</td>
<td>65</td>
</tr>
<tr>
<td>Brasil Terminal Portuario</td>
<td>Brazil</td>
<td>845,00</td>
<td>2011</td>
<td>BLT</td>
<td>Operational</td>
<td>NA</td>
<td>100</td>
</tr>
<tr>
<td>Tianjin Port North Gangchi CT Phase III</td>
<td>China</td>
<td>825,72</td>
<td>2007</td>
<td>BOT</td>
<td>Operational</td>
<td>50</td>
<td>49</td>
</tr>
<tr>
<td>Embraport</td>
<td>Brazil</td>
<td>800,00</td>
<td>2011</td>
<td>BOO</td>
<td>Operational</td>
<td>NA</td>
<td>67</td>
</tr>
<tr>
<td>Super Port Acu LLX Acu</td>
<td>Brazil</td>
<td>700,00</td>
<td>2012</td>
<td>BOO</td>
<td>Construction</td>
<td>25</td>
<td>100</td>
</tr>
<tr>
<td>Damietta port</td>
<td>Egypt, Arab Rep.</td>
<td>640,00</td>
<td>2008</td>
<td>BOT</td>
<td>Construction</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>Dhamra Port Project Phase - I</td>
<td>India</td>
<td>600,00</td>
<td>2007</td>
<td>BOT</td>
<td>Operational</td>
<td>34</td>
<td>100</td>
</tr>
<tr>
<td>Colombo South Container Terminal</td>
<td>Sri Lanka</td>
<td>500,00</td>
<td>2011</td>
<td>BOT</td>
<td>Construction</td>
<td>35</td>
<td>55</td>
</tr>
</tbody>
</table>

Source: our elaboration from PPI database.
New sources of capital

Port sector: the growing resort to equity capital markets

Source: our elaboration from Capital IQ.
Risk and cost of capital in the maritime and port industry: beta parameter for investing in the sector in the USA financial markets (2000-2014)

Source: our elaboration from Damodaran (2015).
Entry of financial investors

**Pension funds & Insurance companies**

- Ontario Teaching Pension Plan (OTPP); Borealis Infrastructure; AIG Highstar Capital (Ports America); ECT Employees Pension Fund; Gestão de Fundos (Angolan pension fund); etc.

**SWF & SOEs**

- Temasek Holdings (PSA International); Dubai World (DP World); Government of Singapore Investment Corporation (GIC); Abu Dhabi Investment Authority; China International Trust & Investment Corporation; Oman Investment Fund; etc.

**Multilateral financial institutions & Development banks**

- Asian Development Bank; Commonwealth Development Co.; Investment fund for Developing Countries; International Finance Corporation (World Bank Group); etc.

**Investment banks & PE funds**

- **Investment banks:** Citi Infrastructure Investors; Goldman Sachs; Macquaire; Morgan Stanley; Deutsche Bank (RREEF); Bank of China; JP Morgan Chase (Noatum); etc.
- **Independent PE firms:** Brookfield Asset Management; Babcock and Brown Infrastructure (BBI) (liquidated in August 2009); Global Infrastructure Partners (IPH); Latin America Infrastructure Fund; etc.

**Investment holding companies**

- China Merchants Holdings International (CMHI); Wharf Holdings (Modern Terminal Limited, MTL); NWS Holdings; Hong Kong Land Infrastructure Ltd.; Tumas Group; etc.

Source: Musso, Parola & Satta (forthcoming).
Some relevant issues to be investigated (1)

- The implications of port strategy on port investments
- Financial sources and financial requirements
- Public and private commitment in port financing (Public-private-partnerships; project financing; bond financing, etc.)
- Capital expenditures and working capital requirements
- Port and terminal industry financialization
Some relevant issues to be investigated (2)

- Equity and debt capital markets for financing port infrastructures
- Entry of financial investors
- Investments and risk perception (implications on costs of finance)
- Port-related Initial Public Offerings
- Finance of Port Authorities (autonomy, source of revenues, current and capital expenditures).