

# PGE- Issues on Project Structure, Financing and Risk Allocation-The Chile Case

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# Trends- Evolving Landlord Model

- **There was a trend observed worldwide, where ports in general were adopting the landlord model.**
- **Such arrangements have a long tradition in North America and West Europe. In this model port authorities keep the ownership of infrastructure in order to avoid the risk of monopolization of essential assets by private firms. These assets are then operated by the private sector. Since 1980 the organization of more than a hundred ports in developing and transitional countries has been changed in this way.**
- **Concession contracts between port authorities and private firms have been the most common instrument to allow private participation at ports. Yet that has been changing since the late 1990s (depends on Regions)**

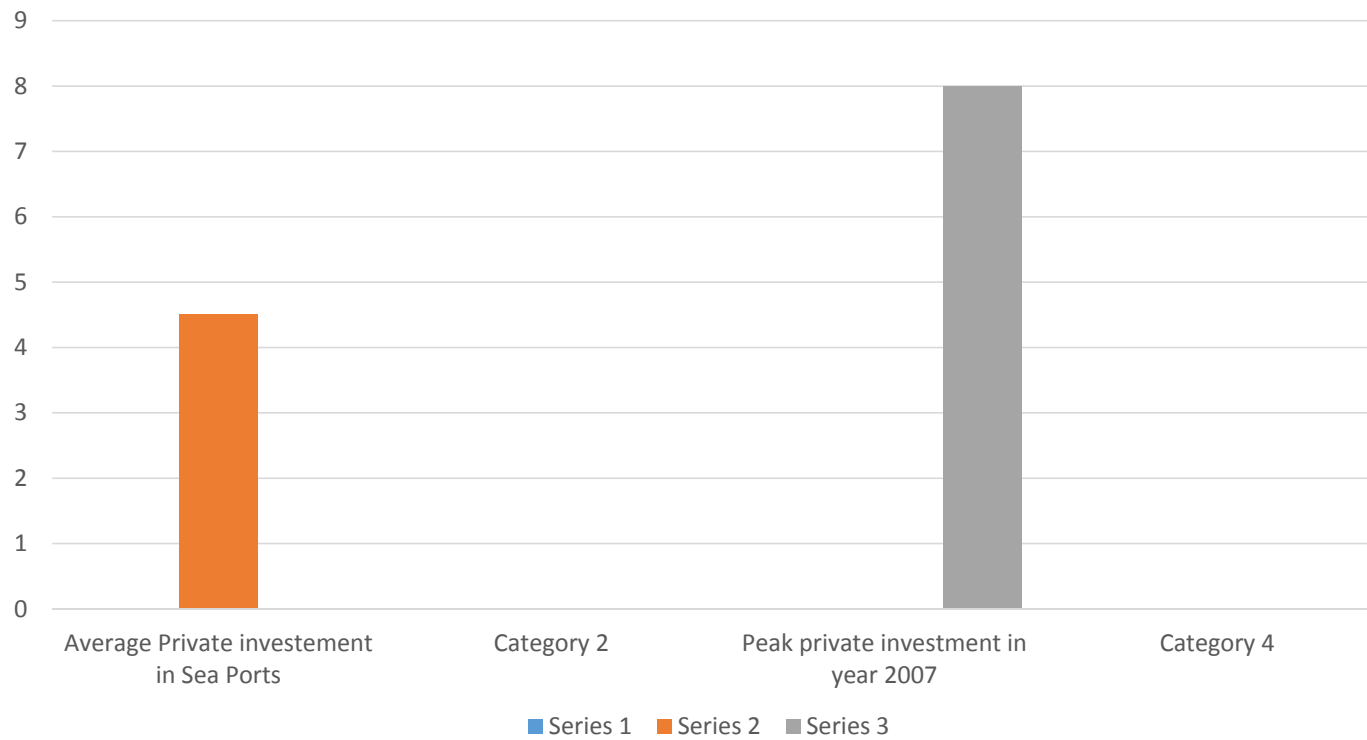
# Trends in the Development of Ports Structure in Low and Middle-High Income Developing Countries

- **From traditional landlord model to one of increased private participation in infrastructure investments**
- **Greenfields (new terminals and new ports) appear to dominate recent port development initiatives to respond to new needs and technological advances in ships and trade characteristics**
- **Increased role of the private sector: financing, operating and assuming risks,**
- **But public sector still involved (as part financing and or owning), less in LAC more in other regions**
- **Moving from regulation towards designing port structures to foster competition (in as much as is possible) within and outside country**

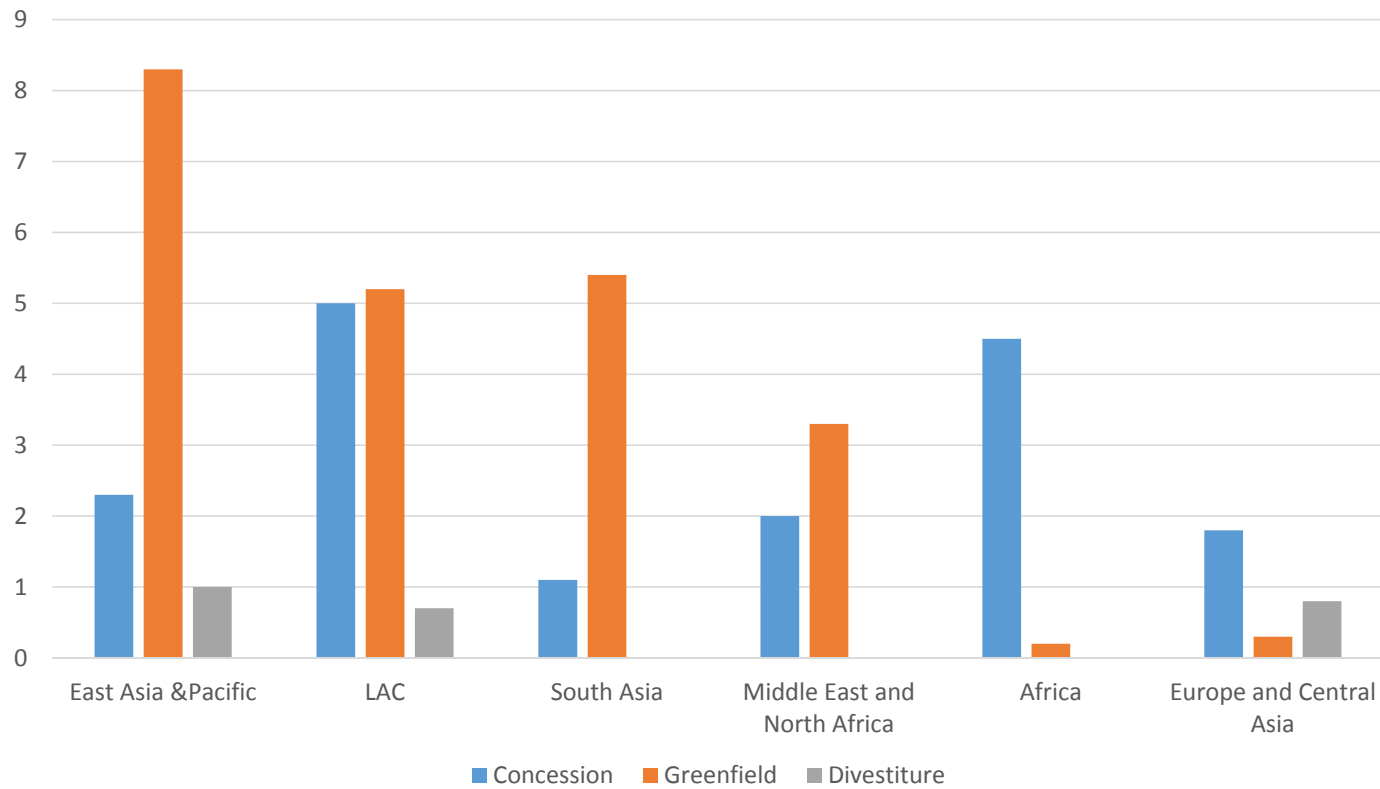
# Trend towards Mega Ports in Low and Middle-High Income Developing Countries

- In LAC, in different stages of preparation are MegaPorts in Chile, Cartagena (Colombia), San Lorenzo Island (Callao-Peru), Cuba, Balboa and Rodman (Panama , Pacific side), Punta Colonet (Baja California, Mexico) (and the failed one in Ecuador)
- Elsewhere, in the Gulf Countries (Dubai, Kuwait, Qatar Abu-Dabhi), Indonesia, Taiwan, Sri-Lanka. Lagos (Nigeria) etc.
- Two types of models, say the Asian model where most projects there have sizeable involvement of public sector, as financier, developer, operator, alone or in partnership with private sector. And the LAC, model, where most have very limited involvement by the government
- Sizable Investments, per port, 500 million US\$ to 7 billion US\$
- Increases in Capacity, per port, 2 to 15 million TEU (per port)
- Assorted port structure, operational, financing and ownership design
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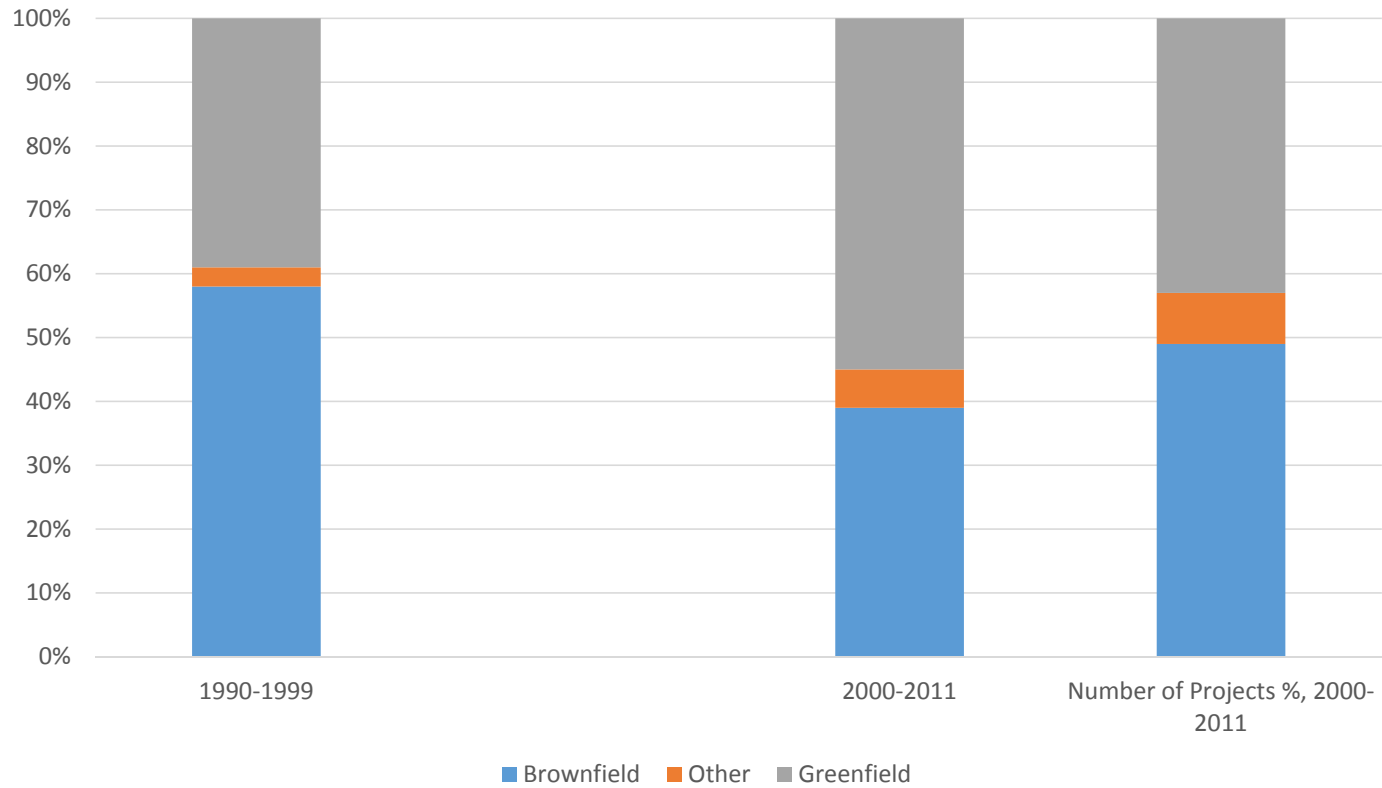
**Average Annual Private Investment in SeaPorts, 2000-2011 in Low and Middle-High Income Developing Countries in billions US\$ (Source: IFC and PPIAF Data Base 2012)**



### Private Investment in SeaPort Projects by Region and Modality 2000-2012, billions US\$



### Percentage of Greenfield and Brownfield Investments (in value terms) in two decades 1990-1999 and 2000-2011





# On the appropriate structure of the PGE

- Concessions contracts are the dominant modes to introduce private participation in the port services. However the concern is that possibly these very large and costly civil engineering works in building breakwaters for a port capable of handling 12000 or 18000 TEU ships could prove extremely costly and risky (unbankable) under current schemes.
- There are variants of the model that might make the project more bankable and attractive yet generating the benefits sought by the government
- In selecting the most appropriate structure for the tendering of the PGE, it is helpful to know what are the *objectives* in designing and implementing the port structure.
- Presumably the *objectives*, would be, in addition to securing the desired increased capacity, securing maximum competition in the provision of port services in the region, securing the lowest tariffs in port services (somehow linked to the previous objective), minimizing government financial contribution or operational contribution, or quality in the provision of the services, reduced transaction costs and delays in project implementation, government transfers, etc. ( Value for Money-VfM?)

# Issues to be considered to inform the decision of optimal structure I

- Chilean Concession/PPP Law (Ports): *the law establishes a general rule under which new pier infrastructure **can only be developed by private companies** and through public tendering. Can it do breakwaters? And can it provide subsidies?*
- Objectives and Priorities
- Basic Financial Model
- Bundling (unbundling) of breakwater and port construction
- Expected Operational Regime
- Antitrust and Competitive issues (horizontal concentration per type or overall?)
- Financing considerations
- Risks allocation
- Taste, Limits and Options for Government Support
- Award Criteria

# Issues to be considered to inform the decision of optimal structure II

- Yet to assist in the making of the selection it would be most useful to have some additional financing information, such as the costing of the breakwaters component of the project and the financial model of the options discussed. Particularly to assess tariffs levels (revenue) needed (and impact on demand/revenue) and cost recovery patterns assessing the investment-tariff conundrum to see the levels of support for cost recovery and effects on demand and revenues
- A simple value for money analysis might be useful to guide the discussion and to indicate the appropriate alternative

# Issues to be considered to inform the decision of optimal structure III

- On *bundling or unbundling port and breakwaters projects/task*:
- In considering that option the issues to be considered are the following. Are there any economies of scale or scope to be gained by bundling breakwater and port operations? In principle, if there are, they might not be too large since they are two very different types of activities and projects that require quite different sets of skills and know-how from the firms involved. And in consequence also the number of potential firms that could be interested in a bundled project might be limited, constraining the benefits of competitive bidding. Also to consider is whether there are complementary services to be added, assigned or provided by the breakwaters provided, for if not the salient decision would be to be provided as public works. Only and from a value for money angle if there were any ancillary or related services beyond construction and maintenance (and it appears that that is not the case), the possibility of issuing as a PPP/Concession or hybrid PFI model, could be considered. And if unbundling the tasks is selected then the issue is the breakwater project to be undertaken as a public works or as a concession/(PPP)
- A quick evaluation appears to point out as a salient mode the separation of breakwater component from the rest of the port project

# Issues to be considered to inform the decision of optimal structure IV

- -Second is the issue of level and extent of tariffs needed to support cost recovery and fitting with demand and competitive pressures.
- -Third is the issue of the financing implications and cost recovery limitations. Linked to the latter is tariff implications and its feasible limits. Financing, cost recovery, tariff levels, access fees, need to be assessed and minimum revenue guarantee might be expected and demanded by the private sector.

# Chilean Law

- The final element is to consider the need of modifying the current Chilean concession model to allow the inclusion of public sector at the time to underwrite the risk and to finance the breakwater if that option proves to be the salient one and indeed a case can be made for it.
- A possible scheme could be based on the fact that public sector assumes the development of the breakwater, due to its “public service” consideration of the port, which would be refund through taxes from different operators and user fees for access to the port by the ships. Public sector should not expect private companies to assume the cost of this kind of infrastructure, which does not allow them for direct incomes (and tariff levels that might lead to cost recovery would be unworkable).
- So as long as Chilean government wants to develop a large infrastructure like the PGE, its involvement in funding a part of this infrastructure (breakwaters) becomes necessary

# San Antonio or Valparaiso

- Regarding the choice (first selection) among the two identified locational options it appears that
- from the *logistics, extent of inducing competition, added capacity, cost basis (economies of scale) and back-up area standpoint,*
- San Antonio might have an edge to be the first mover, given its apparently better intermodal linkages particularly regarding railroad ones, larger capacity and backup area, and ability to put in place two competing operators (two competing port terminals) and likely lower cost basis

# Options for the Structure and Operationality of PGE

- I. Decision to separate breakwater component and if to do it as public works or as a concessions (PFI or fee cost recovery)
- II. One single private operator and integrated concession
- III. Two or more private operators, several options
- IV. Public plus private operators



# Private sector with one operator

- This is the integrated concession model
- In that case the private sector (one party) has to build and operate the whole port. In this options, the main advantages and disadvantages are the following.
- The main benefit is that the transactional costs, on tendering and coordination, will be lower
- Some of the disadvantages are, for example:
  - that the tendering process will be more complicated in the sense that it seems reasonable to assume a low number of tenders that could deal the huge initial investment;
  - that the financing structure would be more complicated; and that the tariffs alone are unlikely to support full cost recovery of investment. This will bring as a result i) some risk of monopoly power due to the duration of the concession (larger than usual due to the initial investment), although mitigated by the existence of the two neighbouring ports of Valparaiso and San Antonio, but nevertheless with a quasi capture of demand by the new generation large ships unable to dock at the neighbouring ports, although perhaps mitigated by the developments at the some how close port of El Callao/San Lorenzo in Peru and ii) the need of government financial support either direct (hybrid PFI) or through schemes like minimum revenue guarantees (MRG). Yet if a MRG is issued there is need to align the link between minimum revenue guarantee and tariff levels and award criteria if is LPV of revenues. Some other competition concerns such us the existence of collusion due to the low number of tender have also to be taken into consideration

# Private sector with at least two operators

Through this model/option, some of previous risks could be diminished due to the split of the different services.

In here, several private firms operating under licenses or concession contracts could provide all the ports services.

One of the operators could build one of the main infrastructures, the breakwater/terminals (or separate if feasible, recover costs as a PFI type project or through the other port operators paying fees for its use (either linked to traffic or a set-up fixed monthly fee) or a hybrid. The others the port infrastructure split by terminals

The main pro of this scheme is that the market power could be more measured by the regulator. Regarding to the cons, the transactional costs could be higher than previous model and the operator that builds the breakwater would assume a huge initial investment, making the securing of financing more complicated (clearly depending of the form of cost recovery). There likely would be a need for government financial support for the breakwater project, yet it would lessen the need of a MRG. A second possibility within this option, is, only when feasible (it appears to be so for the Valparaiso case, less clear for the San Antonio one) to separate the infrastructure component into two, one the construction of the breakwaters and the other the construction of the terminals. The latter then can or not be bundled with the terminal operations component. So there would be either two infrastructure projects and private firms and a third component and firm for port operations. Or there could just two firms one the breakwater construction one and the other and integrated port terminal construction and operations.

# Public sector with private operator(s)

- In here, the public sector builds and operates the infrastructure (total or partially) and the private sector runs all the port services, and might finance or construct the residual infrastructure.
- This is along the traditional landlord port model, the most common and extended worldwide for the case of mega ports.
- For the Chilean case, there could be two options: i) the government builds all the infrastructure and then concedes the operations and services to the private sector; and ii) (if feasible) the government build only the breakwater infrastructure and then concedes the terminal (s) and operations to the private sector
- The pros of this case are that the regulator could control the market power and the public sector would carry out the initial investment and then recovered from the fees to operator and shippers (or through taxes to facilitate bankability).
- The main disadvantage, as usual, is the opportunity cost of the public investment. Or if the breakwater component can be separated from the port terminal component, the public sector would take care of the breakwater component, as public works, and then could tender the remaining part of the project (integrated port terminal construction and port operations) to the private sector, or even separate the latter two tasks to be tendered to two separate firms
- This scheme also allows for the creation of an independent company, from the combination of efforts of two or more firms, that is, *joint-ventures*. This type of agreement is not exclusively signed between private firms. There are many examples of collaboration between PA and private firms. From this, the partnership between public and private sector would allow for the compensation of the initial investment through the collaboration between both firms.

**Table 4. Alternative models**

Source: Authors

## Options for Structure of Chile PGE

	<b>Private P – One tender</b>	<b>Private P – 2 or more tender</b>	<b>Public and – Private Participation</b>
Pros	Lower transactional and coordination costs	Competition for the market (more bidders)	Risk allocation Public sector provides public services (breakwater)
Cons	Huge initial investment/financing issues Monopoly risk	A complex bidding process Higher transactional costs among operators Breakwater contract	Chilean law?

# The Numbers, Antitrust/Regulation and Risks

- A rough calculation appears to show financial viability but critically depending on level of demand (sensitivity shows weak robustness)
- Antitrust and Regulation
- Risk Matrix

# NUMBERS

Flujos de caja por proyecto

	<b>Valparaiso</b>	<b>San Antonio</b>
Inversión	1420 millones	2700 millones
Movimientos (TEUs)	3 millones	6 millones
Nº Teus (round trip)	1,5 millones	3 millones
Flujo de caja por TEU	100,42	95,47

Se necesita un flujo de caja de 286 millones US\$ para amortizar la inversión con una tasa de descuento social del 10%,

Si se tiene en cuenta que el flujo de caja se define como los ingresos menos los gastos, se puede decir que lo que refleja la tabla 1 como flujo de caja por TEU es cercano al precio menos los costes operativos, por tanto el precio por contenedor es superior a 100,42 (Valparaiso) y a 95,47 (San Antonio), en cuanto mayor depende de los costes operativos.

Technical risk

Construction risk

Operating risk

Revenue risk

Financial risks

*Force majeure* risks

Regulatory/political risks

Environmental risks

Project default

# Risk Matrix : Mostly Private Sector Assigned (not the case under public works type project)

- Revenue Risk \*\*\*\*\* major risks (*high variance over predicted demand , and down side bias much more common*)
- Construction Risk \*\*\*\* major risks (*that is cost overruns (on average 75% of projects in Latin America experience cost overruns and the mean of the cost overruns is about 35%)*).
- Technical Risk \*\*\*
- Financial Risk \*\*\*
- Operational Risk \*\*
- Others depends, shared or ....



# Financing Issues: Facilitating Bankability of Projects

- Under private jurisdiction
  - PFI model, full or partial (hybrid)
  - CRPAOs-payments for advances in project completion
  - Minimum Revenue Guarantees (MRI)
  - Bond Issues w or w/o guarantees
  - Equity Position
  - Refinancing Issues
  - Renegotiation caveats
  
- Under public jurisdiction

# Award Criteria

- Might depend on the structure chosen and can vary by component
- Lowest composite transfer (tariff/fee) rate
- LPV of revenues, robust to competitive environment, without regulation? Profits versus revenues; and compatible with MRG?
- Minimum Subsidy ( or Largest Transfer)
- Revenue Sharing
- Max Tariffs? Compatible with competitive environment?

# For consideration...

- There are a number of options in the design of the structure of the projects, division of project components, number of firms , public versus private and so on. How to select among them is the issue. Here are some thoughts
  - Given the much different life of the asset (50 or more versus 30 years for port terminals) lack of complementarities since they are two very types of business and skills and to make the financing easier, it might be desirable to separate the construction of breakwaters from the port terminals. And then there are two options, the breakwaters works could be done by government as a public works or as a concession and financed by access fees (if feasible) or as PFI full or hybrid. That choice will depend on the financial model and extent of value for money
  - San Antonio appears as a better value than Valparaiso
  - If maximizing competition where the overriding issue, it appears that the San Antonio option with two terminal operators, one per front and a third for the infrastructure component might be the salient one (as the first project to be implemented).
  - If transactions costs and coordination issues are key issues, the salient choice would be an integrated concession to a single party, model one above, where many of the problems would be internalized, integrated tariffs, costs allocations and so on, are better handled.
  - If facilitating and ensuring financing is a critical factor, a PFI type of arrangement for the infrastructure component with separate concession for port terminal operations, might be the case
  - Granting MRG might be unavoidable