

# **Infrastructure in Ports:**

## **Is private infrastructure investment an illusion?**

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# Every Industry is Special

There is no general methodology for solving problems

*The conventional view serves to protect us from the painful job of thinking.*

*(John Kenneth Galbraith)*



# Different Port Models

## Public, Private and Semi-Private Ports

Port Models	Port Infrastructure	Operator
Public	Public	Public
Semi-Private	Public	Private
Private	Private	Private



# Considering the top 100 container ports

## Semi-private port model is dominant

Port Models	Public	Semi-Private	Private
Number of Ports	7	88	5



# Considering the top 100 container ports

## The 5 private port models: all in UK

- Felixstowe
- Liverpool
- Thamesport
- Tilbury
- Southampton



# Analysing Infrastructure Investment

## The concept of sunk costs

- Sunk costs are costs that cannot be reversed.
- "Sunk costs are sunk".

### Example:

- expenditure on non-transportable, nonconvertible infrastructure, such as quays.



# Analysing Infrastructure Investment

## Fixed versus Sunk Costs

*People often confuse fixed and sunk costs!*

Keep in mind:

Fixed costs can be avoided if the firm goes out of business.

Sunk costs are costs that have been incurred and cannot be recovered.



# Analysing Infrastructure Investment

## Why are sunk costs important?

- Sunk costs generate entry barriers prior to the infrastructure investment.
- Investments with high sunk costs are extremely risky, because only a small part of the investment cost can be recaptured.
- Risky investments require a higher return on equity (ROE) for private investors.





# Container Terminal Investment

## Public Private Partnership & Leverage Effect

	Public	Private	Semi-Private (= Public Private Partnership)
<b>Total Investment</b>	1.000 €	1.000 €	1.000 €
Infrastructure	600 €	600 €	600 € (Public)
Superstructure	400 €	400 €	400 € (Private)
<b>Expected Annual Return</b>	100 €	100 €	100 €
Public	100 €	0 €	30 €
Private	0 €	100 €	70 €
<b>Return on Investment (ROI)</b>	10%	10%	10%
<b>Return on equity (ROE)</b>			
Public	10%	0%	5%
Private	0%	10%	17.5% → Higher ROE due to leverage effect.

↓  
ROE is not enough due to high sunk cost risk.



# Remember the top 100 container ports

Semi-private port model is dominant – we know why!

Port Models	Public	Semi-Private	Private
Number of Ports	7	88	5



# Container Terminal Investment Conclusion

Sunk costs are the main reason why private investors are reluctant to invest in completely new infrastructure!



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