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AAPA – Planning for Shifting Trade: overview of port infrastructure finance; challenges and solutions (?). ©

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Port Property Advisers

Since 2003, Aegir Port Property Advisers are the pioneer consultancy engineered to meet the unique property challenges faced by the ports and maritime industries. Aegir's focus is to enhance a port's competitive position and financial value through the more strategic use of its largest asset - property.

In the last decade Aegir has undertaken complex port property lease, asset management, valuation, development feasibility, management consultancy and strategy instructions in Europe, the Middle East, Africa, the Americas and Asia with port asset values in the billions of US dollars.

Maritime Advisors

From our origins in 1970 London to a 21st century maritime and shipping consultancy, Drewry has established itself as one of the most widely used and respected sources of impartial market insight, industry analysis and advice. This in-depth understanding and objectivity provides our clients with the actionable advice and recommendations they need to achieve their ambitions and stay ahead of the market.

- Last 10 years - over 400 port assignments in 50 countries.
- Since 2010 - $20bn value in commercial and due diligence advice in port M&A and financing.
- Last 5 years - provided advice on vessel valuations on asset value of more than $180bn (combined).
- Last five years - advised on container shipping industry on investments totalling $6bn.

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Helping you navigate the world of ports by bridging the gap between the port and property sectors.

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Let’s get started…

TIME TO GET RID OF THE BOX…

…AND REALLY START THINKING OUTSIDE THE COMFORT ZONE!

Subjects to be covered:

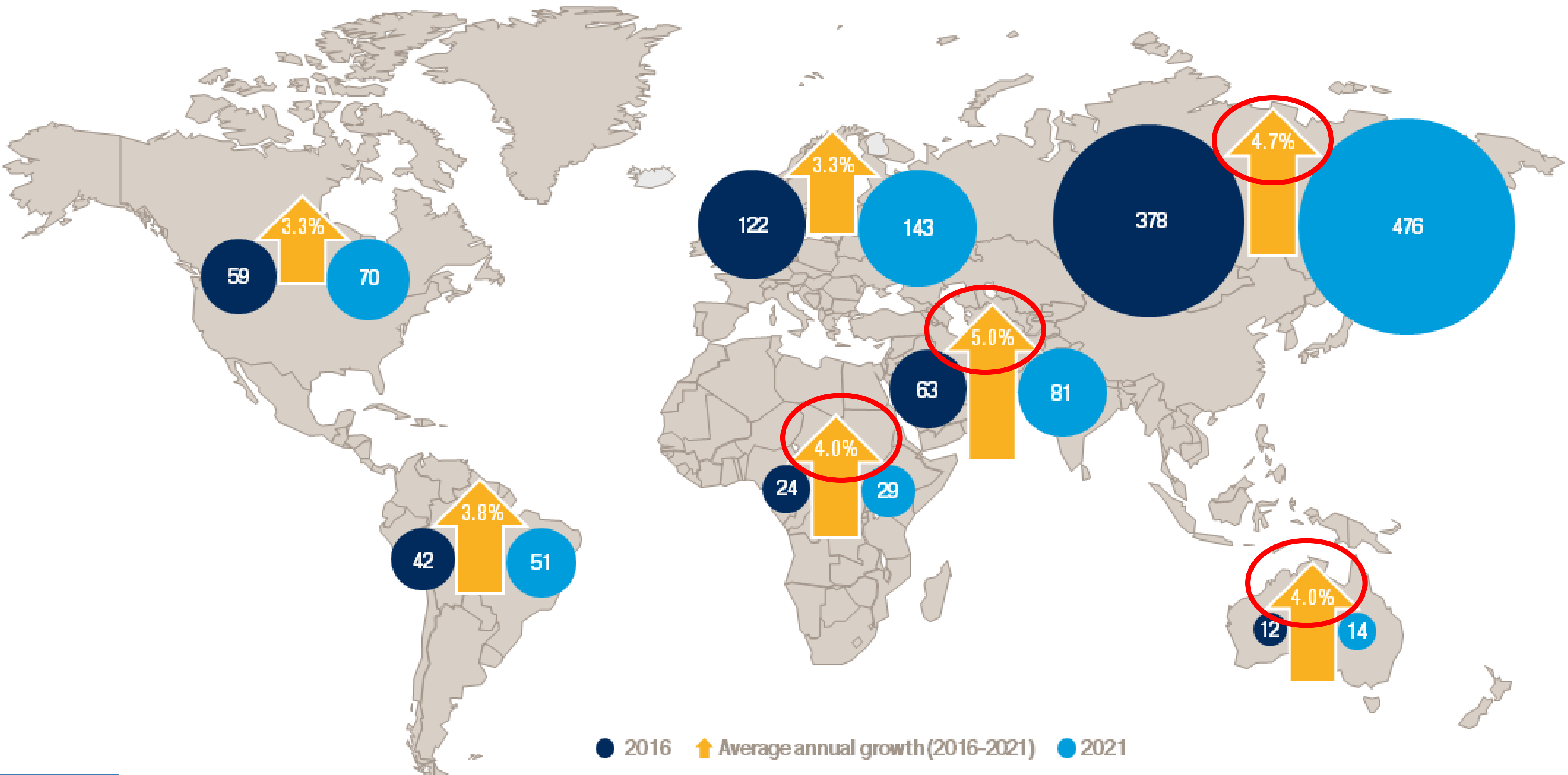
- Market environment
- Infrastructure & financial challenges
- Financing options
- Future directions
- Conclusions

Market environment

Five-year regional container port demand forecasts

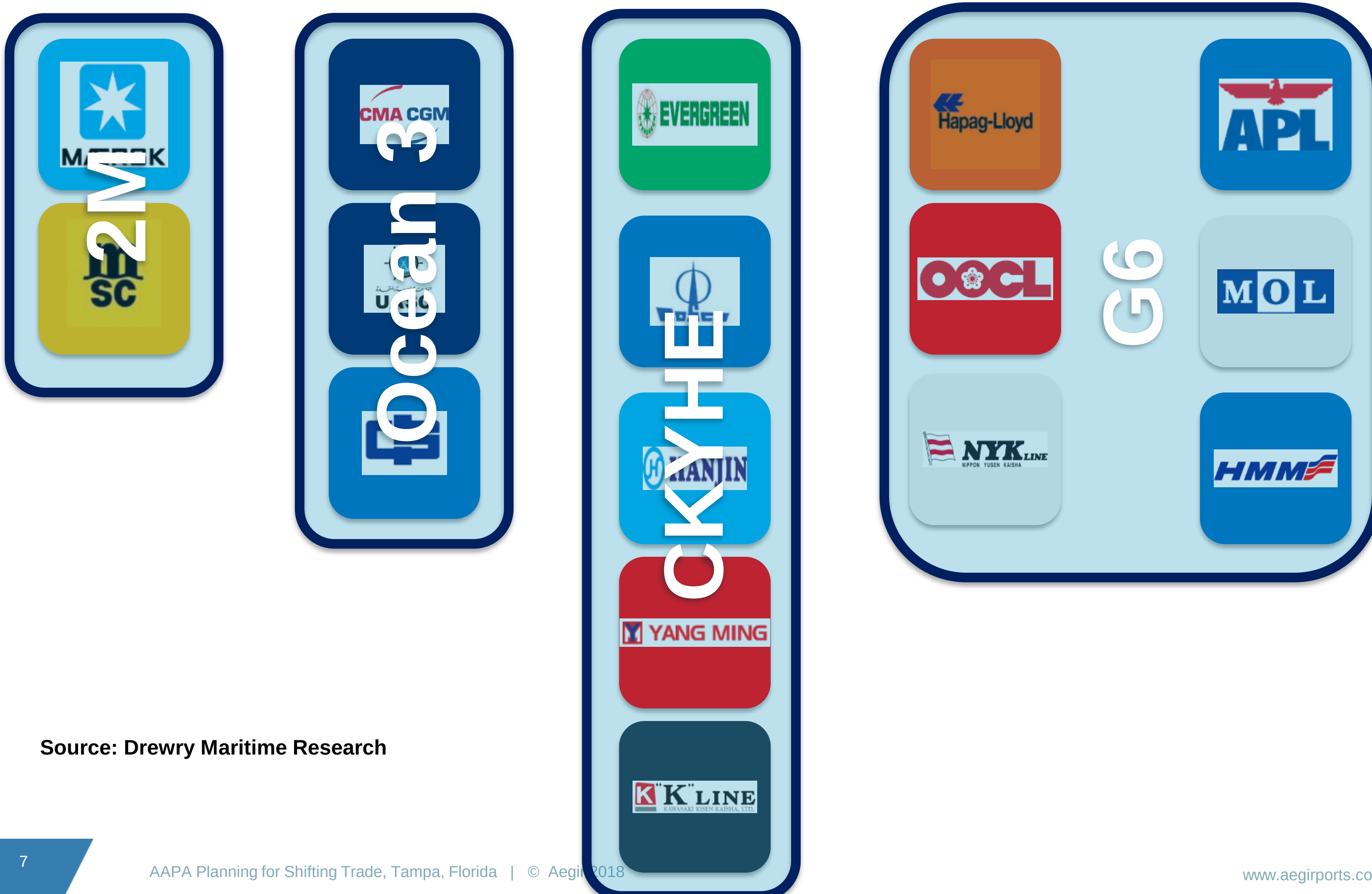
Pre recession, 11% average growth; average growth now: just over 4% per annum

Projected Container Port Volumes by World Region (million teu) and Average Annual Growth (%), 2016-2021



Alliances Consolidating…

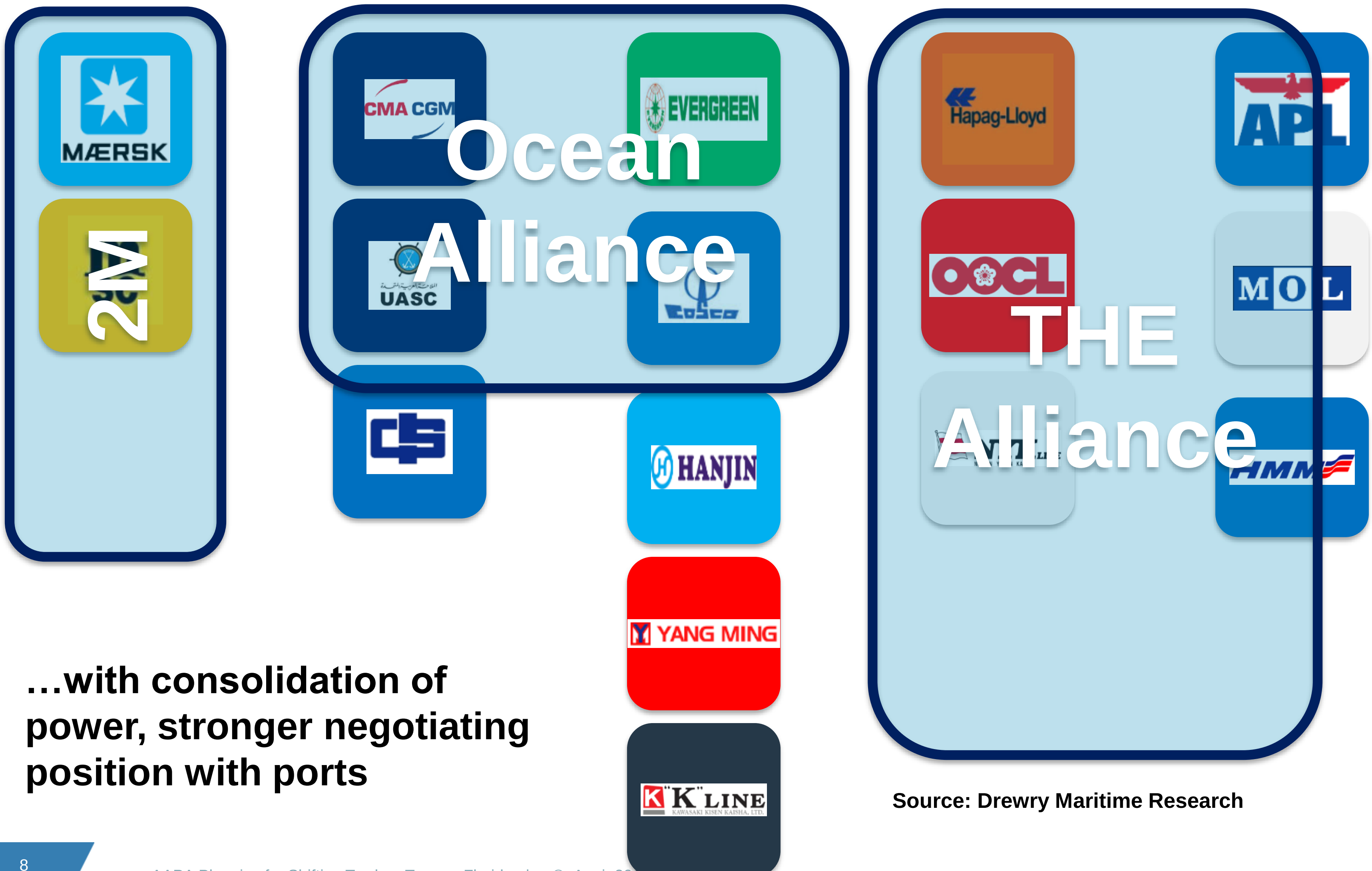
2015



Source: Drewry Maritime Research

Alliances Consolidating…

2017



…with consolidation of power, stronger negotiating position with ports

Source: Drewry Maritime Research

Infrastructure challenges

Vessel cascading will continue for a while yet…

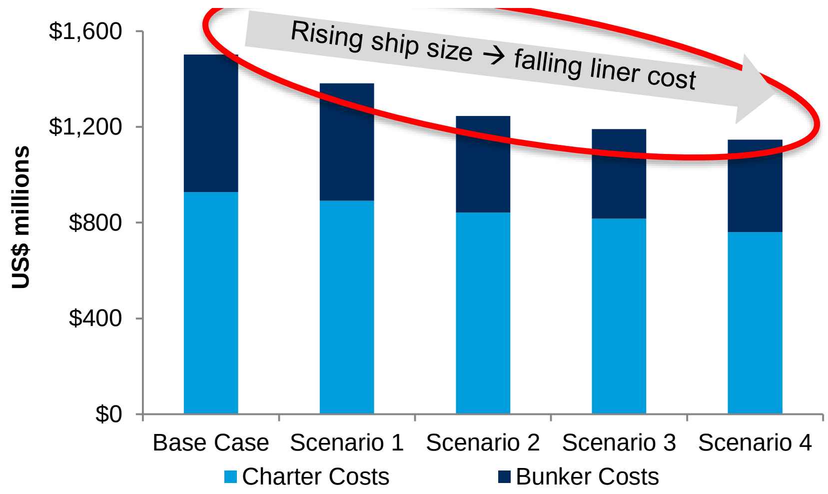
	2011	2013	2015	2017
Asia-North Europe	16,000	16,000	19,000	21,000
Asia-Med	14,000	14,000	16,000	16,000
Transpacific	10,000	13,000	14,000	14,000
Transatlantic	7,000	8,000	9,000	9,000
Asia-South America	9,000	10,000	11,000	13,000
Asia-W Africa	4,000	4,000	8,000	13,000

Impact of bigger ships on port infrastructure?

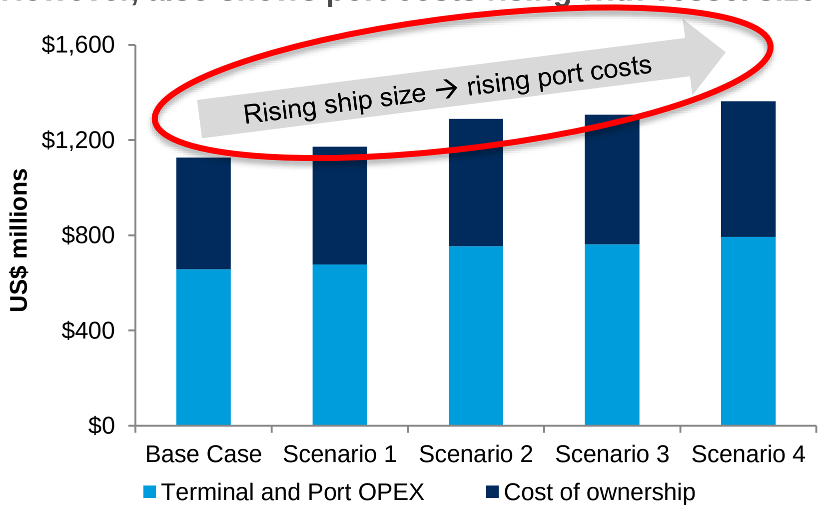
Container shipping - Findings from the Drewry study

Diminishing economies of scale from megaships?

Simulation shows liner costs fall as ships get bigger



However, also shows port costs rising with vessel size



- As vessel sizes increase:

  Shipping lines' network costs fall…….

  …….but the costs incurred by ports and terminals rise

  ….so overall system costs increase

- **Drewry believes optimum vessel size reached for foreseeable future (and may already been exceeded)**
- **Aegir believes ports not charging enough to cover true costs and profit on asset values**

Larger ships, major peak periods changing demand for ports/terminals…

…requiring more infrastructure, longer periods of underutilisation, lower revenues AND fewer, but larger terminals – MAJOR port challenge!

Before

3,000 boxes

MONDAY

3,000 boxes

THURSDAY

Shipping lines obtaining <u>cost savings</u> with bigger ships…

After

6,000 boxes

MONDAY

Are shipping lines prepared to pay for these enhanced requirements?

…but generating <u>higher investment needs</u> through supply chain infrastructure

Implications of liner industry development

Terminal costs now the largest spend item for carriers

% split of costs (AP Moller Maersk) 2012 and 2015

Costs	2012	2015
Vessel	26%	28%
Bunker	25%	13%
Terminal	24%	32%
Other	25%	27%

Pressure to reduce terminal handling costs (impact on port fees?)

Question of joint contracting by alliances (impact on port concession, rents?

Source: AP Moller Maersk Annual Reports
www.drewry.co.uk

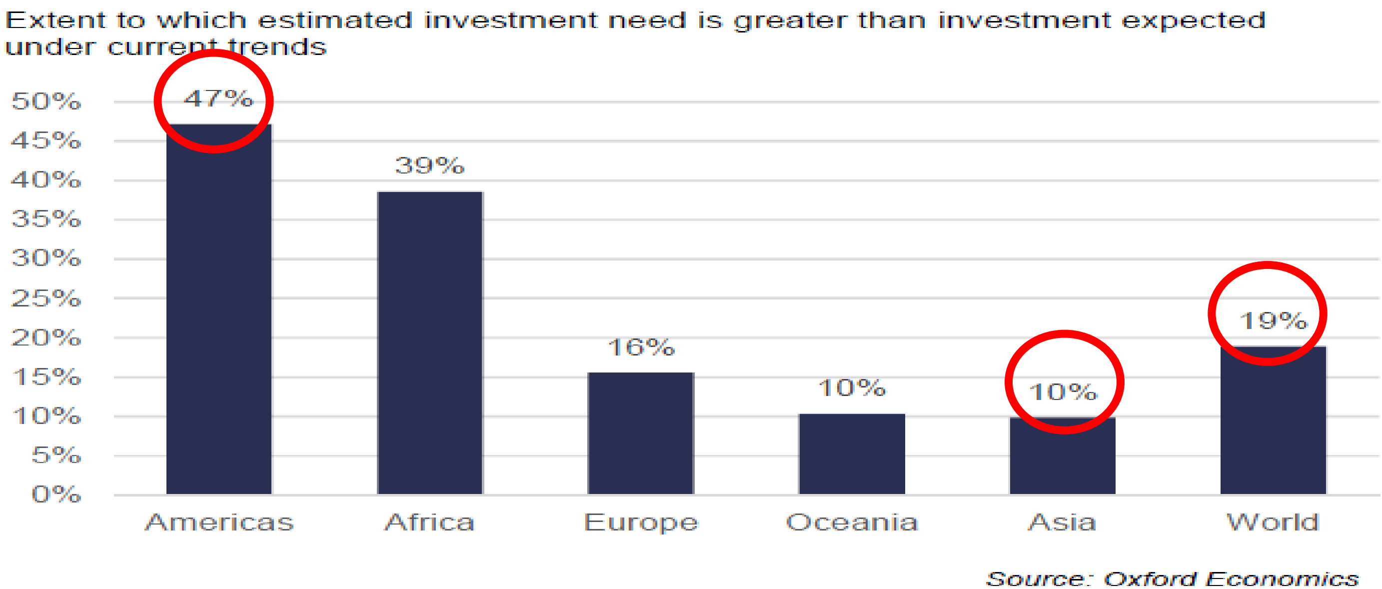
Call to action for the Americas…

- 1967 Servan-Schriver warns Europe to meet the ‘American Challenge’.
- Foresees ‘information age’; challenges Europeans to ‘let humans be creative’ instead of machines.
- Got many things right, some wrong, impacts European policy for decades.
- **Did Europe rise to the challenge? Not completely.**
- **‘The Americas’ today face an equally daunting challenge**.
- We have resources, labour and capital. BUT, will we create the **environment to free our ingenuity to meet our infrastructure challenge?**

The infrastructure challenge – why things are changing - quickly

- US$100 trillion in global infrastructure required to 2040, or $4 trillion pa (same as German GDP)
- $18 trillion shortfall during same period

- Port shortfall - $550 bn; $170 bn in the US alone
- US faces largest funding gap of 50 nations surveyed



Source: Global Infrastructure Hub/Oxford Economics

Financing options

Current port financing options:

- Port infrastructure is:
  - A long-term, capital intensive investment
  - Critical question: who pays for what?
- Port infrastructure types:
  - General (which benefits all)
  - Commercial (cargo throughput related)
- Current port funding paradigm:
  - Availability payments
  - Concessions
- Current funding options:
  - Bonds
  - Loans
  - Cash flow/retained earnings
  - Taxation
  - Superstructure leasing
  - Equity investment (third party)

Concession issues to note:

- Related Port Authority responsibilities:
  - Insure appropriate infrastructure development
  - Funding
  - Increase revenues from non-core assets and activities
  - Create investor friendly environments
  - Inevitably, develop PPP’s
  - Need to deal with funding gap

- Potential concession solutions, developments:
  - Deal with the funding gap
  - Concessions and privatisations will take on more of a funding role
  - Privatisations is where the capital is
  - Governments will increasingly focus on ‘recycling’ efforts ie, selling existing profitable assets to fund new asset requirements eg, Australian privatisation of port authorities
  - Infrastructure has been globalising; this will continue to occur (eg, the Miami Tunnel project with Bouygues – France)

Cross section of M&A deals

ANNOUNCED PORT SECTOR TRANSACTIONS MAY- JUNE 2017

Date	Target	Country	Acquirer	Seller	Stake	Deal size ($'m)	Valuation
May-17	Thessaloniki Port	Greece	Terminal Link, Deutsche Equity Partners and Belterra Investments	Thessaloniki Port Authority	67%	250.5	**14.5X EV/EBITDA ***
June-17	Embraport	Brazil	DP World	Odebrecht	66.6%	Undisclosed	**Undisclosed**
June-17	Sihanoukville Port	Cambodia	Japan International Cooperation Agency (JICA)	Sihanoukville Port Authority	13.5%	14.3	**4.7X EV/EBITDA**
June-17	Lekki Port	Nigeria	China Harbour Engineering	Nigeria Port Authority	20.0%	86.8	**Undisclosed**
June-17	Noatum Port Holdings	Spain	Cosco Shipping Ports	[illegible]	[illegible]	[illegible]	**14.9x EV/EBITDA**
June-17	Portonaves	Brazil	Terminal Investment Limite	[illegible]	[illegible]	396.0	**11x EV/EBITDA**
June-17	Fujairah Port	United Arab Emirates	Abu Dhabi Ports	[illegible]	[illegible]	isclosed	**Undisclosed**
July-17	Global Gateway South Terminal	U.S.A	EQT Infrastructure Fund	CMA CGM	90%	817.0	**Undisclosed**
July-17	Hambantota Port	Sri Lanka	China Merchants Port Holdings	Hambantota International Port Group	85%	974.0	**Undisclosed**

Stabilised, lower multiples from pre recession levels…

** We exclude additional capital commitments in the calculation of EV/EBITDA*

Source: Drewry Maritime Financial Research

Future directions

‘How Block Chain Technology Can End Poverty’.

Parallels: Blockchain potential ending poverty and port infrastructure funding

(Gramm, P, de Soto, H, *‘How Block Chain Technology Can End Poverty’*. The Wall Street Journal, 26 January 2018, p. A15. Mr Gramm, former chairman, Senate Banking Committee; Mr de Soto, former CEO of UEC, Switzerland’s largest consulting engineering group.)

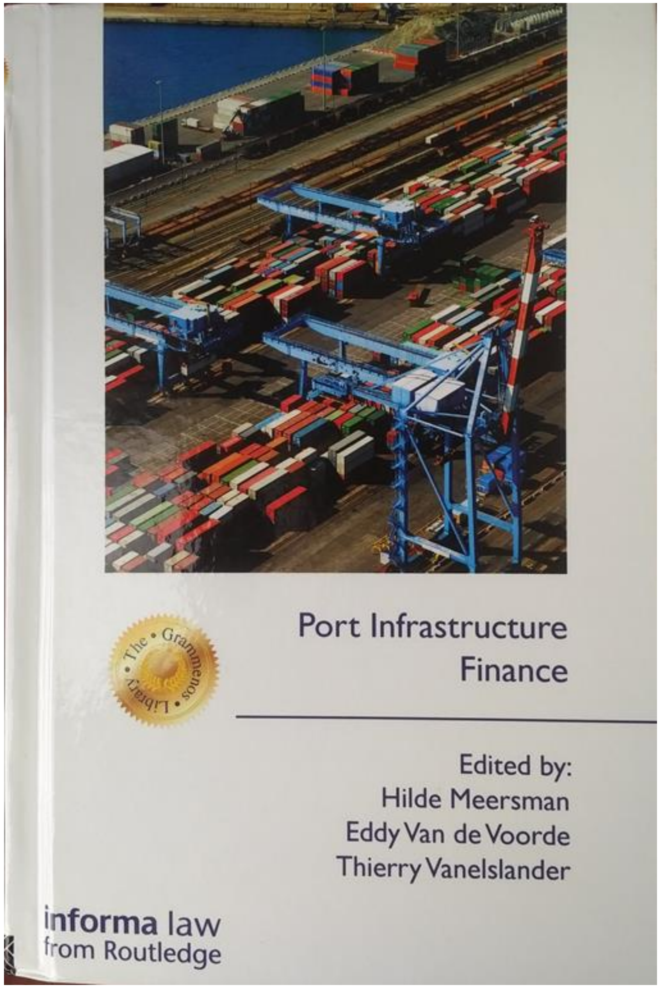
- Karl Marx saw property as the source of wealth; called for its elimination to promote equality.
- Common knowledge: a country without private property rights limits its economic development; prevents citizens from realizing their potential.
- Why?
  - Reduced values for private assets
  - Devalued wages for workers using these assets
  - Owners denied right to use assets as collateral (leverage)
  - Society loses: ‘highest and best use’ of assets not employed

- Relatively speaking, are ports any different?
  - Inability to maximise funding potential of property assets to finance expansion and modernization
  - Largest balance sheet asset - property - financially underperforms
  - Shareholders: lose as entity financially underperforms from a financial standpoint; cannot properly fund infrastructure requirements
  - Stakeholders (in the case of publicly owned port authorities) lose: PA does not generate as much revenue as it could to undertake economic development initiatives

Most radical solution evolving: privatising the Port Authority option

- Need for capital to expand/modernize major ports exceeds governments' ability to fund
- This will force changes in the PA structure (ie, corporatization, privatization)
- Statutes limiting securitization/collateralization of port property will change to release tied up equity
- Examples:
  - Port of Rotterdam corporatization resulting in significant short term financial performance increases
  - Port of Brisbane PA privatization – 2011, A$2.1 bn
  - Ports Kembla and Botany PA – 2012, A$5.07 bn
  - Port in Melbourne PA – 2016, A$9.7 bn (A$3 bn over selling price), to build motorways

(Source: Pigna, F, *'Port Authority corporatization: leading towards their privatization?'*, Chapter 4, p. 69, Port Infrastructure Finance, informa law from Routledge, London. 2014.)



Conclusions

Conclusions

- PA's pay for infrastructure, port clients use at subsidized prices. End consumer must choose: pay with taxes (ie, subsidies) or pay real cost of logistics at point of purchase; either way, they pay.
- Larger ships require more infrastructure, land (velocity, throughput); land needs to do more on same footprint (operationally and financially); automation increasingly critical.
- Larger, consolidated alliances = more formidable negotiators for port assets.
- How will infrastructure be paid for? Property portfolio to become increasingly important as a capital asset.
- PA's to continue facing increasingly challenging competitive environment/funding markets, forcing change on how they are structured.
- Balancing stake and share holder interests', environment and other issues to continue; but PA's will increasingly be structured and operated like private sector enterprises; ports' economic development goals will be addressed after 'bottom line' - not above.

THANK YOU