

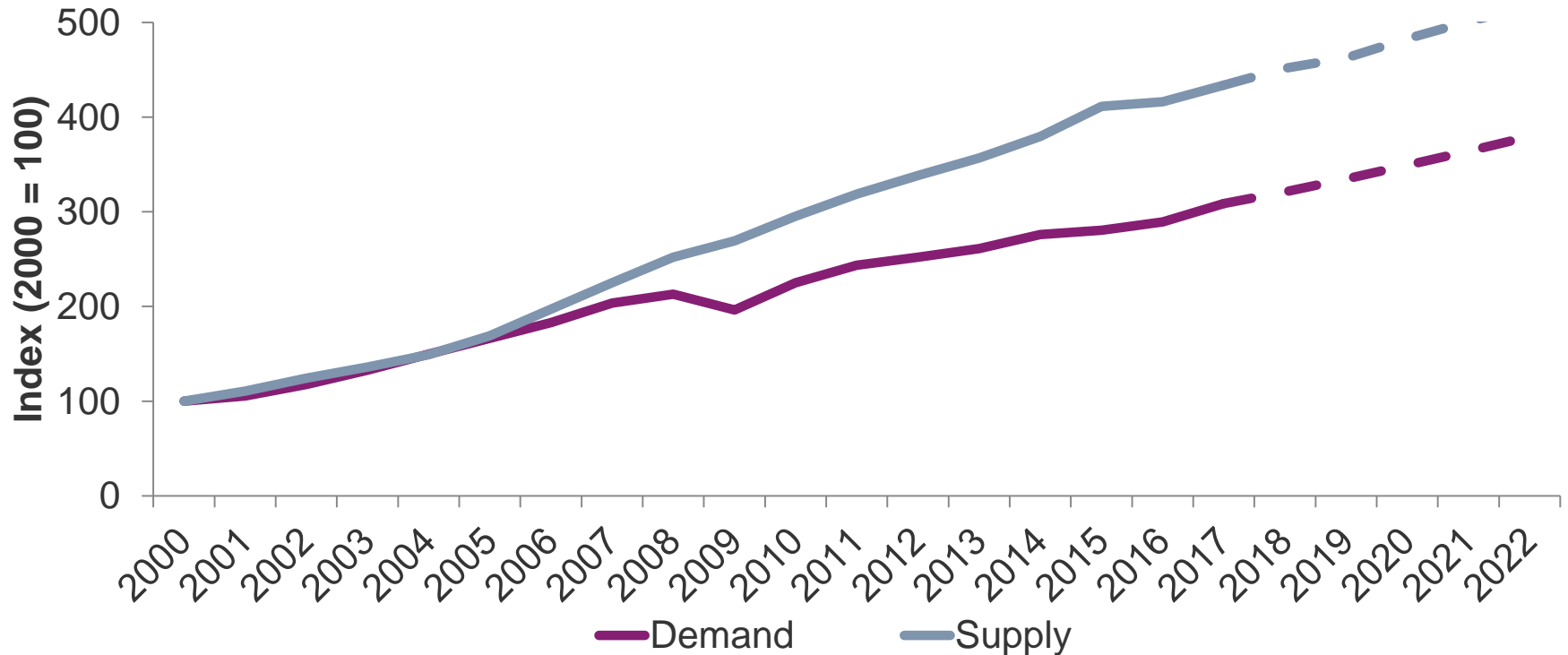
Future developments in the containers market and how this impacts Mediterranean ports

18th April 2018

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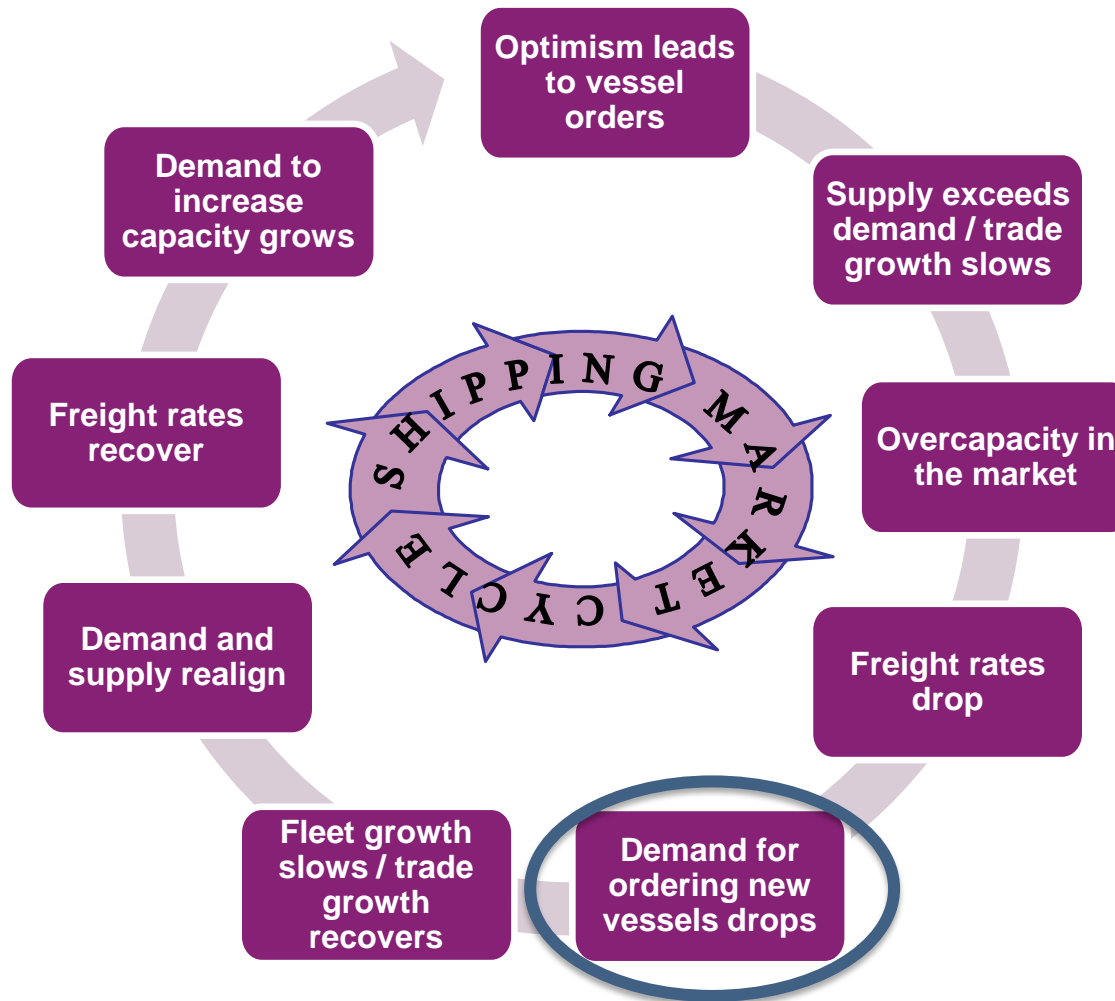
www.drewry.co.uk

Since 2008 the global containers shipping market has seen a significant gap between demand and supply growth



	2001-2008	2010-2017	2017-2021
Demand growth	+10%	+4%	+4%
Supply growth	+11%	+6%	+4%

The container shipping industry follows a cyclical trend that impacts the financial health of the industry.



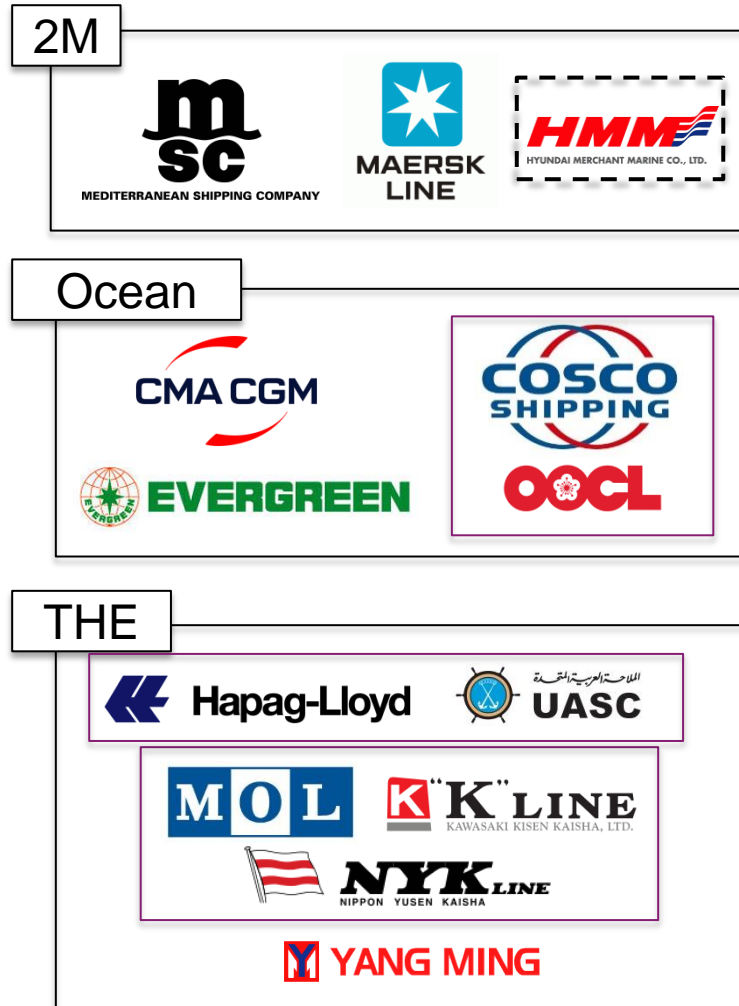
Vessel economies of scale

Will container ships keep getting bigger?

	TEU capacity	Length (M)	Beam (M)	Draft (M)	Container rows across
<u>2019</u> MSC/CMA CGM	23,500?	400	61	16.5	24
<u>2017</u> OOCL Hong Kong	21,413	400	59	16	23
<u>2017</u> Madrid Maersk	20,568	399	59	16.5	23
<u>2016</u> MSC Oscar	19,224	400	59	16	23
<u>2013</u> Triple E Class	18,270	400	59	16	23
<u>2006</u> Emma Maersk	15,550	397	56	16	22

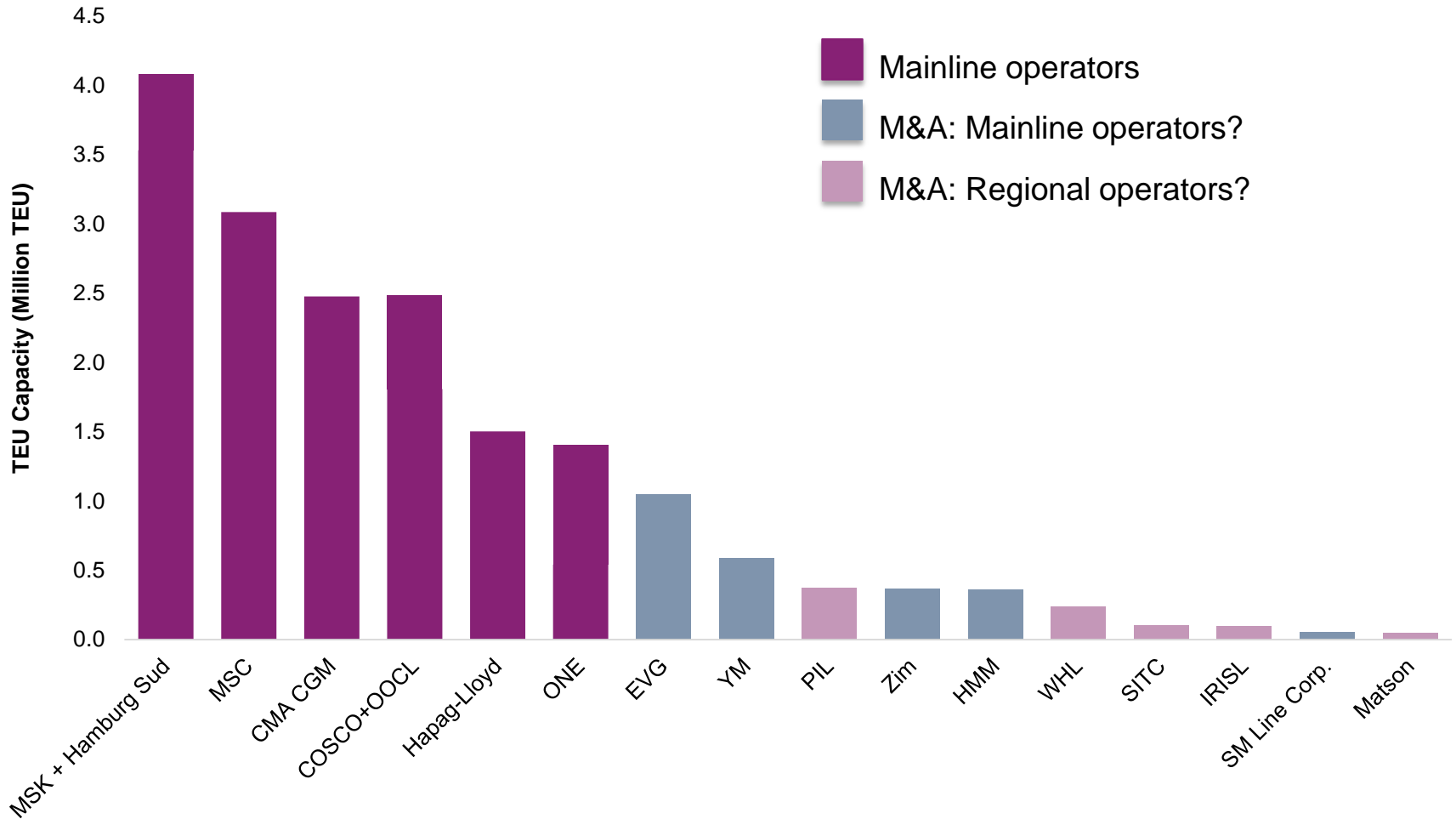
Container shipping

Alliances have also consolidated



Changing drivers of M&A

Who's next? Who's left?



Challenges In The Market: Cascading

	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

Causes

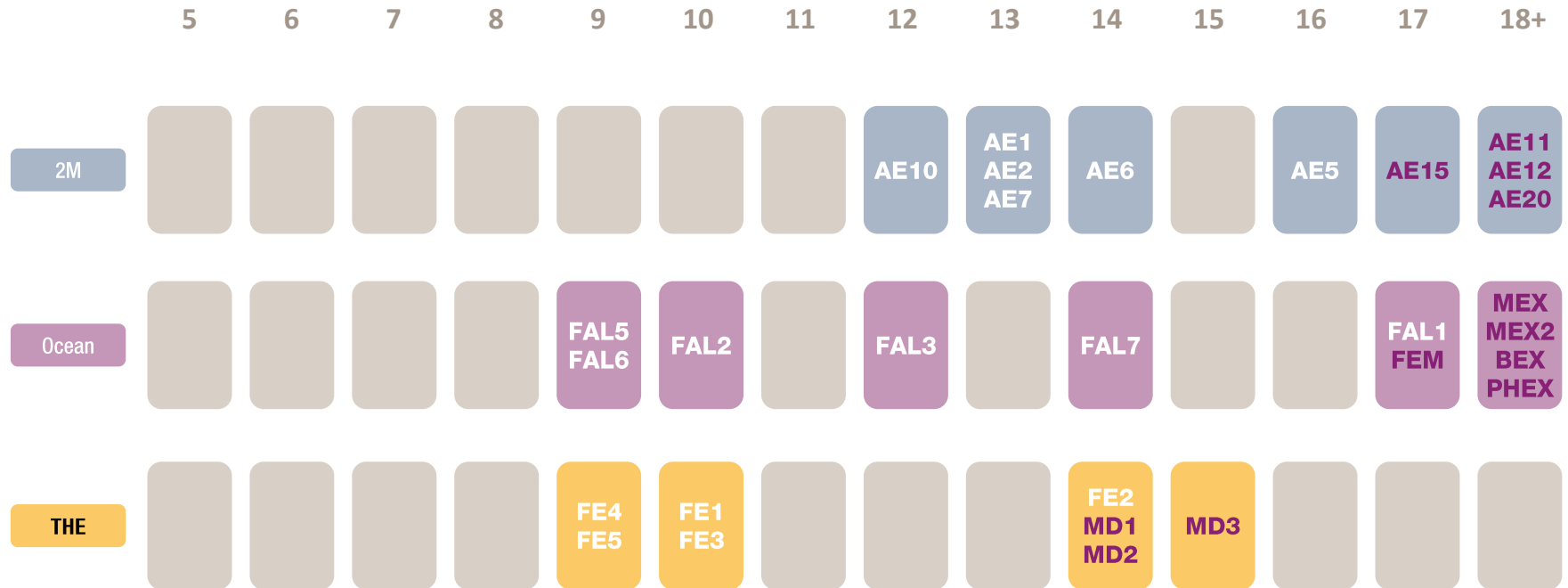
- Economies of Scale
- New deliveries of ULCVs

Effects

- Carrier consolidation
- Service withdrawal
- Increase in hub and spoke system
- Decline in new orders and chartering activities

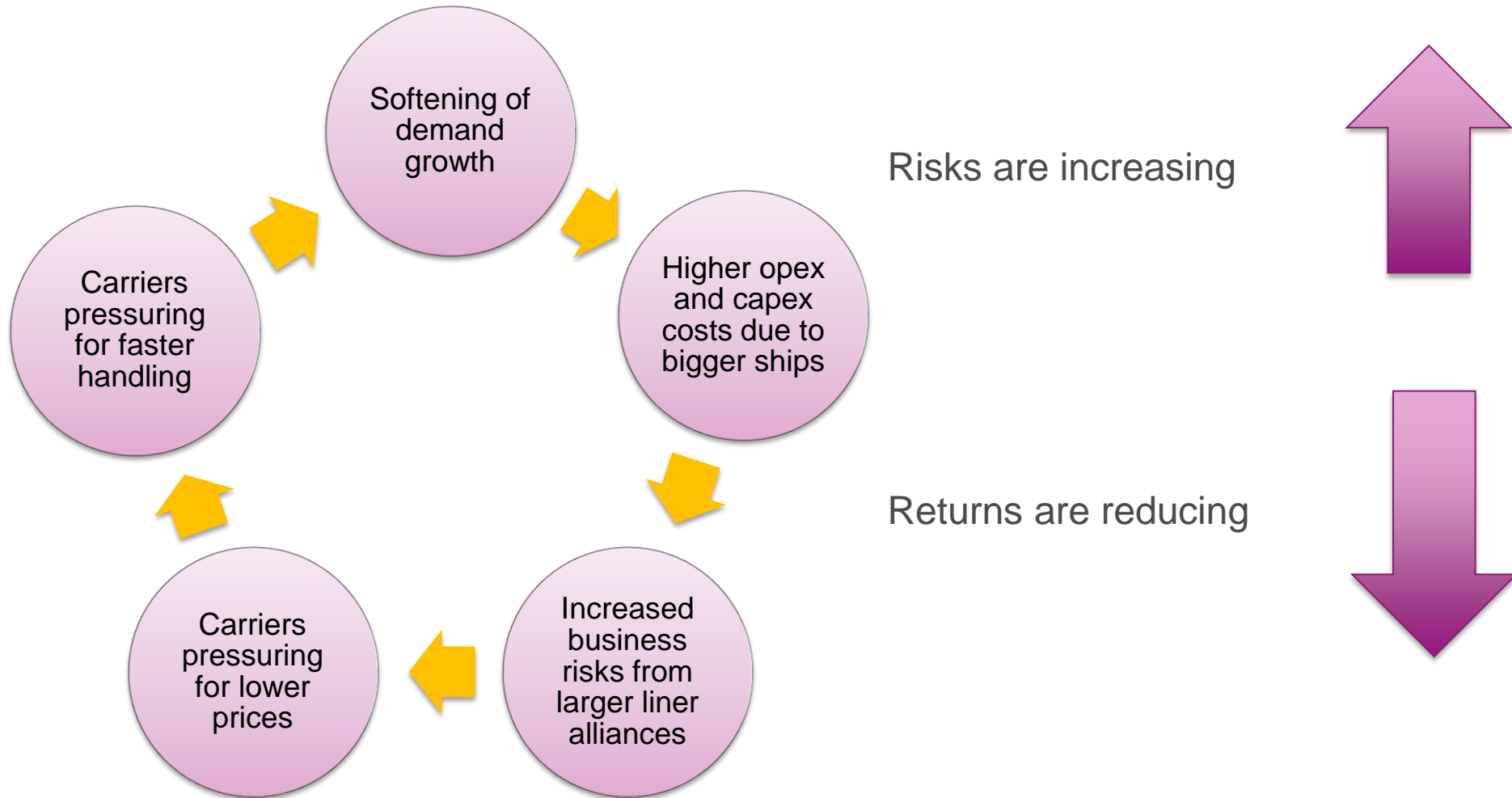
Multi-port calling still the norm

Number of ports called by service string (Asia-North Europe/Med services)



Close correlation between average ship size (by alliance) and number of ports of call: Bigger ships = more ports called (especially on the Asia-North Europe services).

Container terminal operators are also experiencing changes that are impacting business returns and risks.



Implications of liner industry development

Terminal costs now the largest spend item for carriers

**% split of costs (Maersk Line)
2012, 2015 & 2016**

Costs	2012	2015	2016
Vessel	26%	28%	27%
Bunker	25%	13%	10%
Terminal	24%	32%	35%
Other	25%	27%	28%

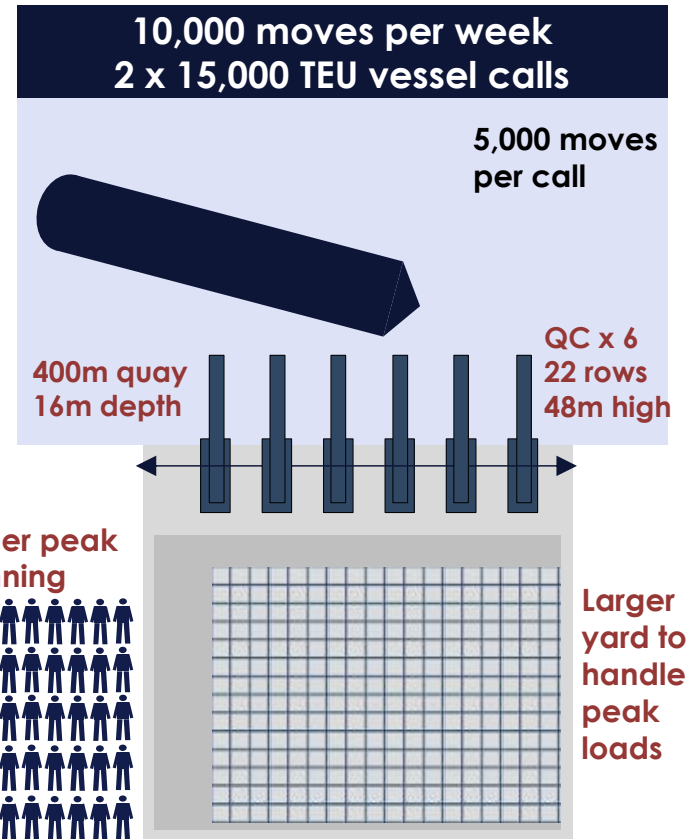
Pressure to reduce terminal handling costs

Question of joint contracting by alliances

Implications of liner industry development

Changing demands from the terminals

- Larger (and more) cranes.
- Longer and deeper berths.
- Deeper approach channels.
- Greater air draft.
- Higher crane and berth productivity.
- Larger or more densely stacked yard.
- Enhanced inland transport links.

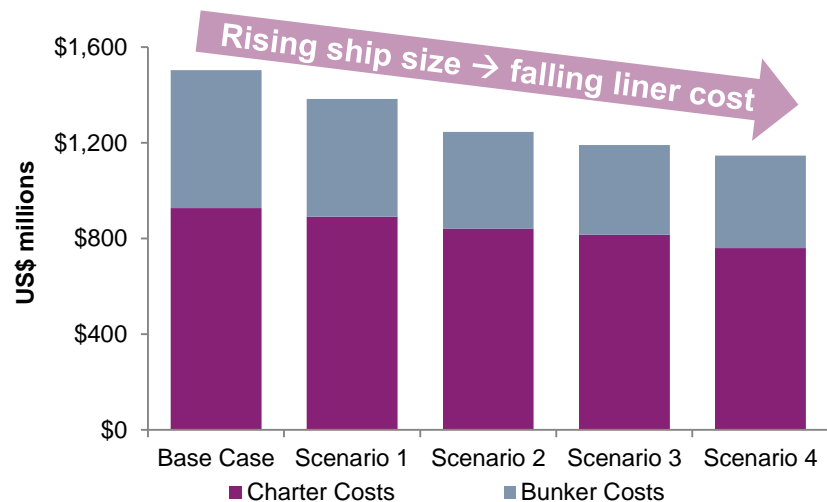


More rapid obsolescence of existing terminal capacity

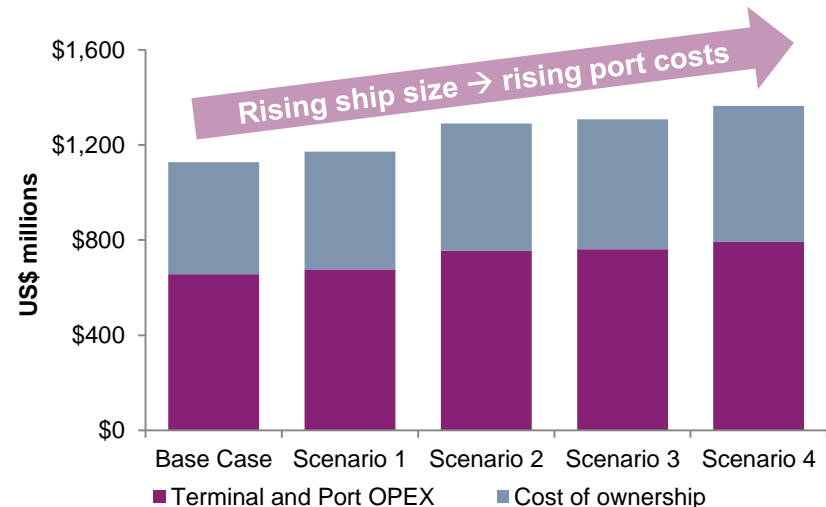
Container shipping – Findings from the Drewry study

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

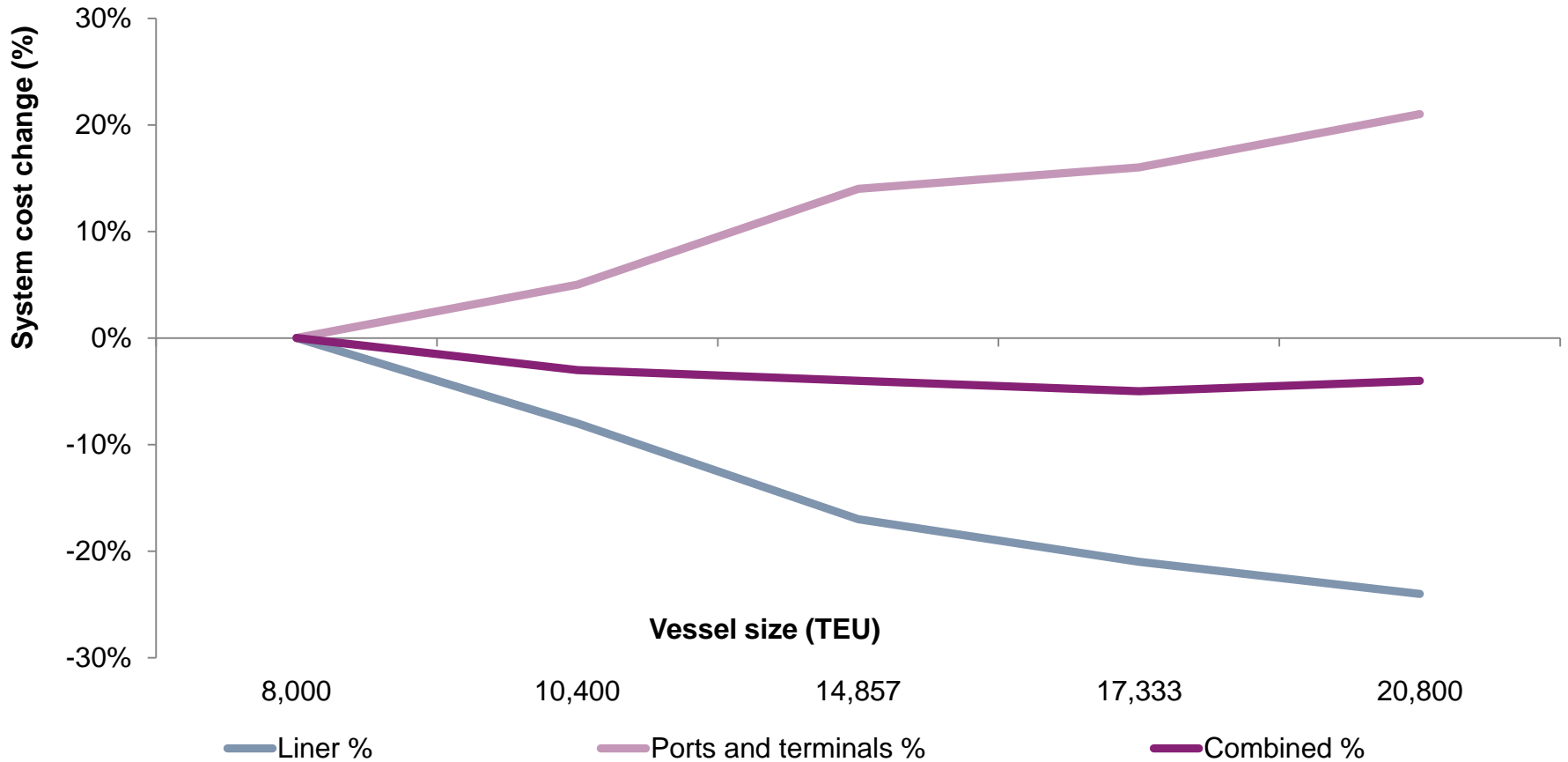
....so overall system costs increase

- **Drewry believes that the optimum vessel size has been reached for the foreseeable future.**

Container shipping – Findings from the Drewry study

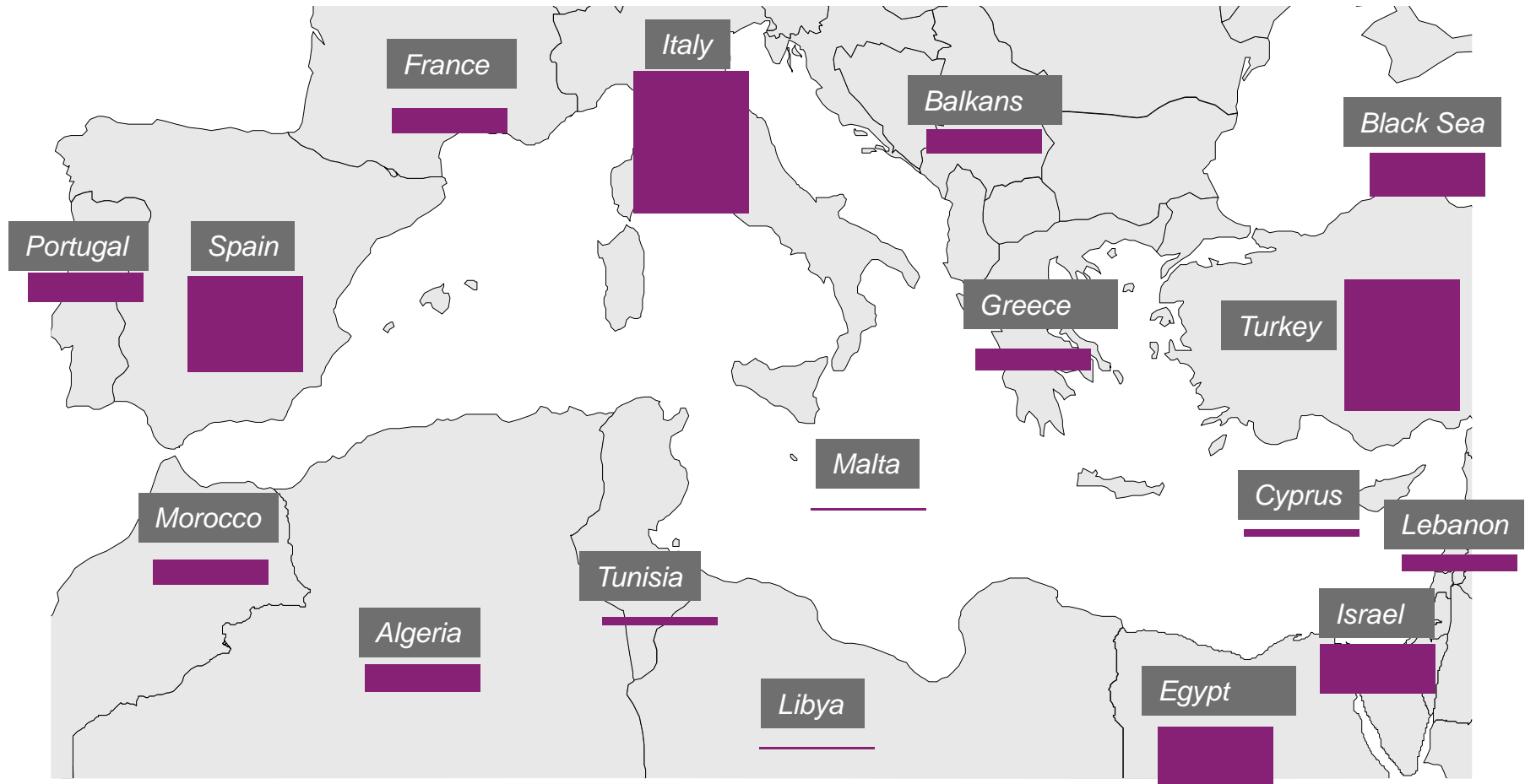
Diminishing economies of scale from megaships?

Total system cost by different ship size

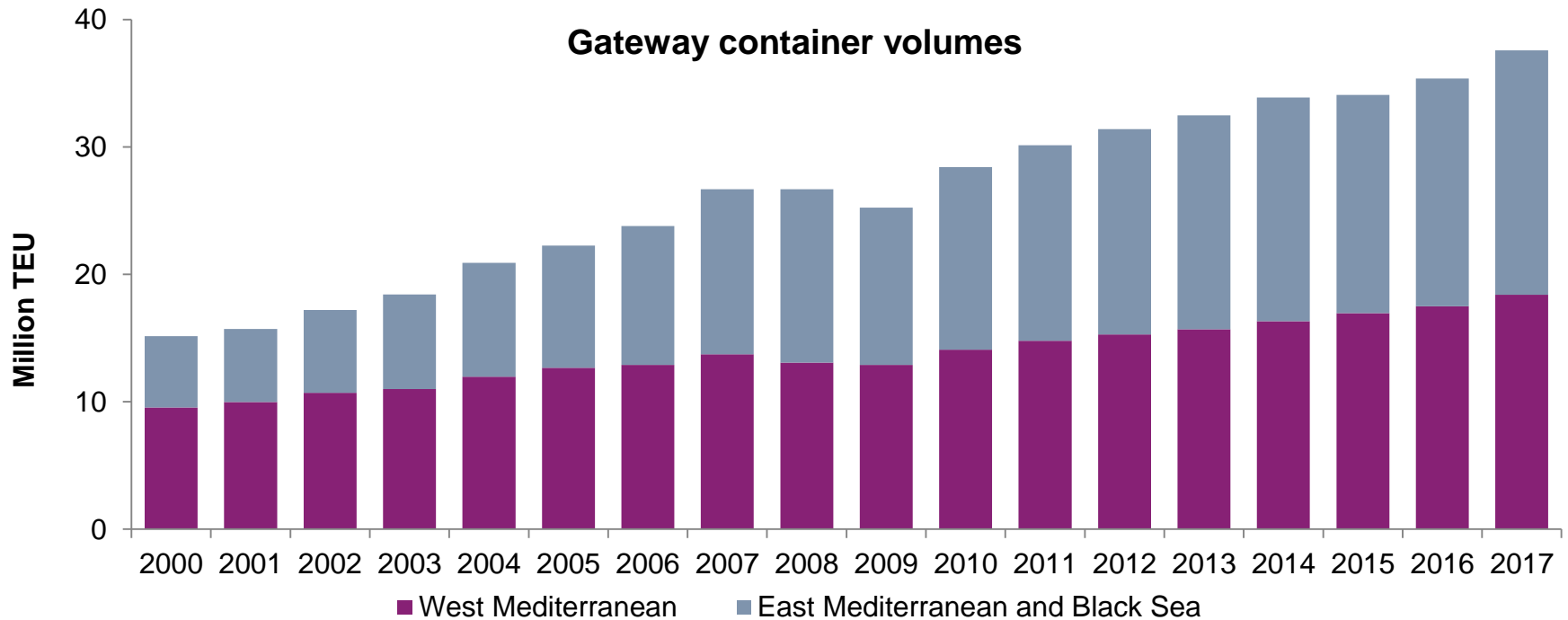


Source: Drewry Maritime Advisors

In 2017 the Mediterranean market represented 37.6m TEU volumes originating from / destined to the region.

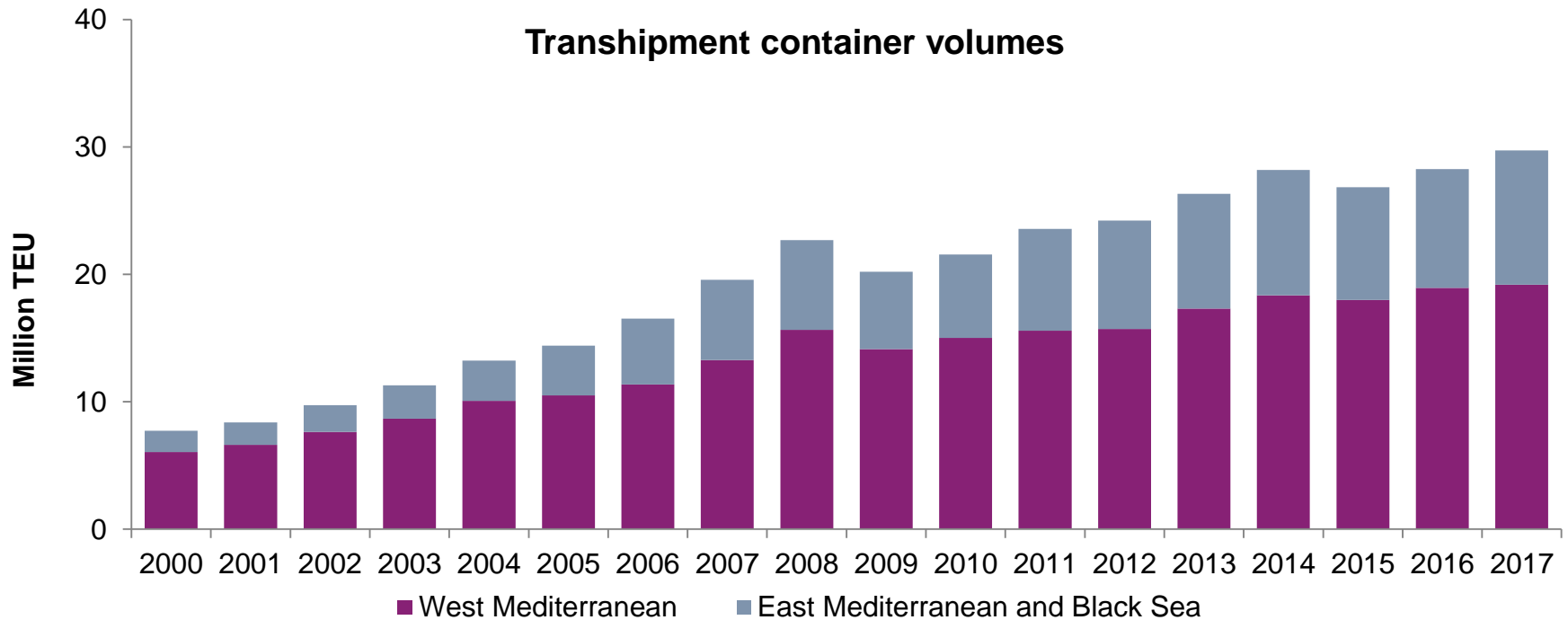


The Mediterranean markets represent over 7% of global gateway container volumes.



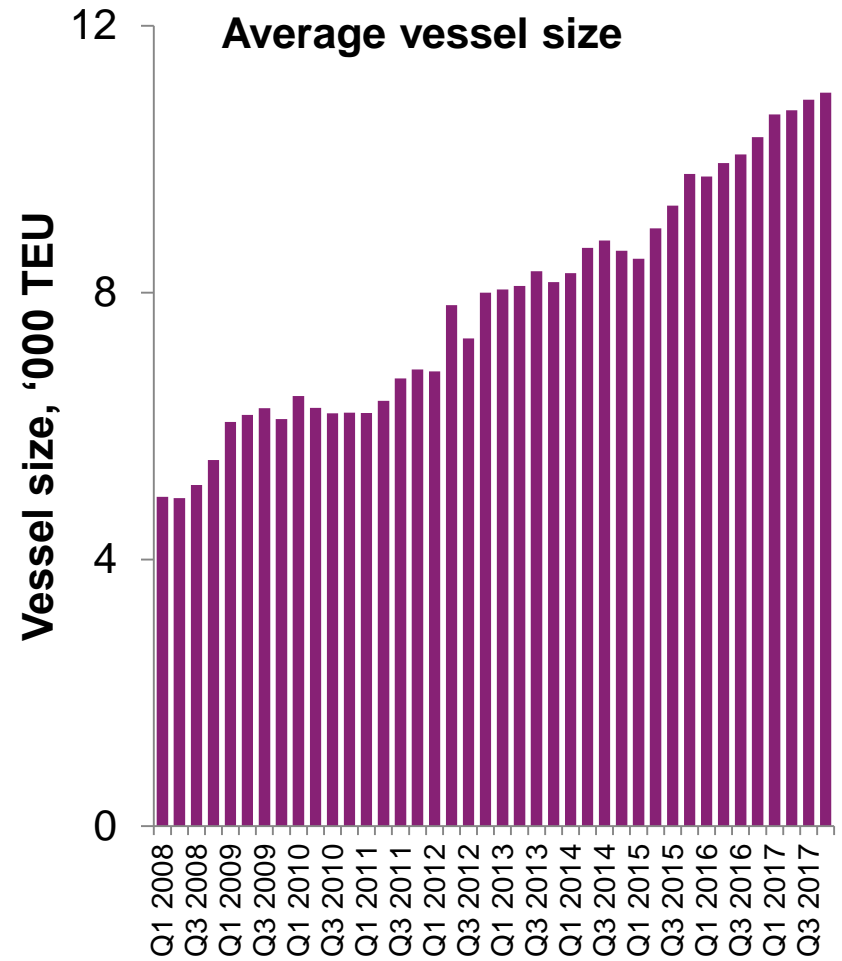
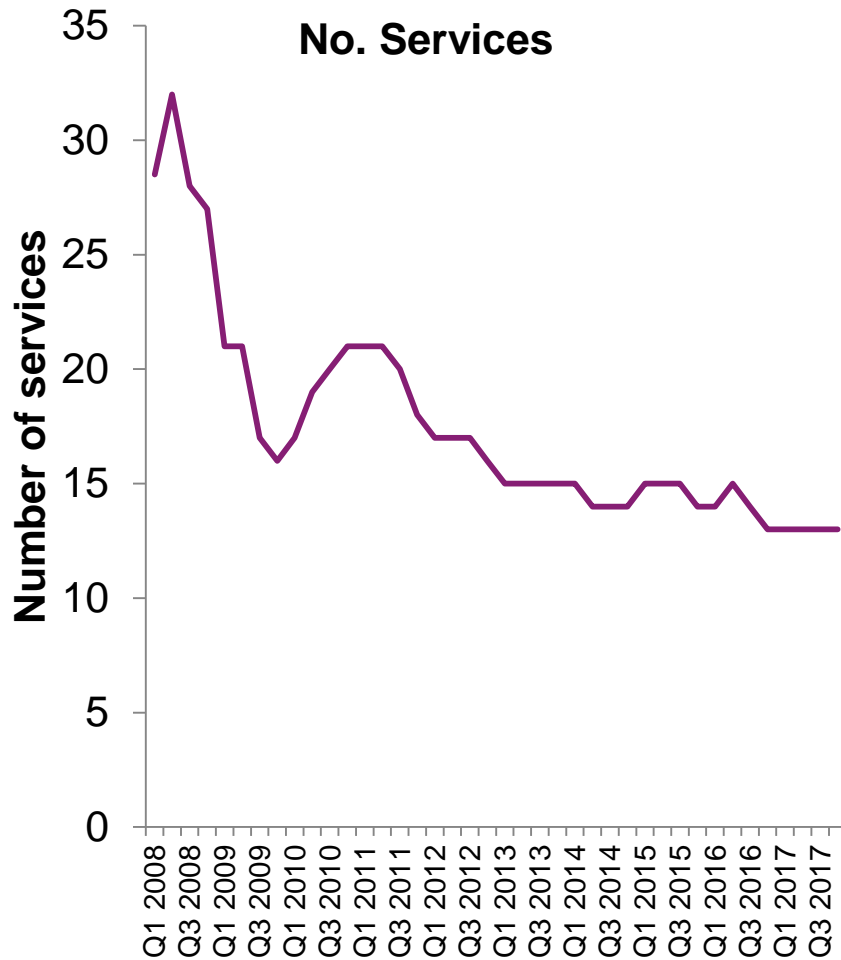
CAGR	2000-2008	2010-2017
West Mediterranean	+4.0%	+3.9%
East Mediterranean	+11.8%	+4.3%
World	+10.1%	+4.6%

The Mediterranean markets represent 18% of global transshipment container volumes.

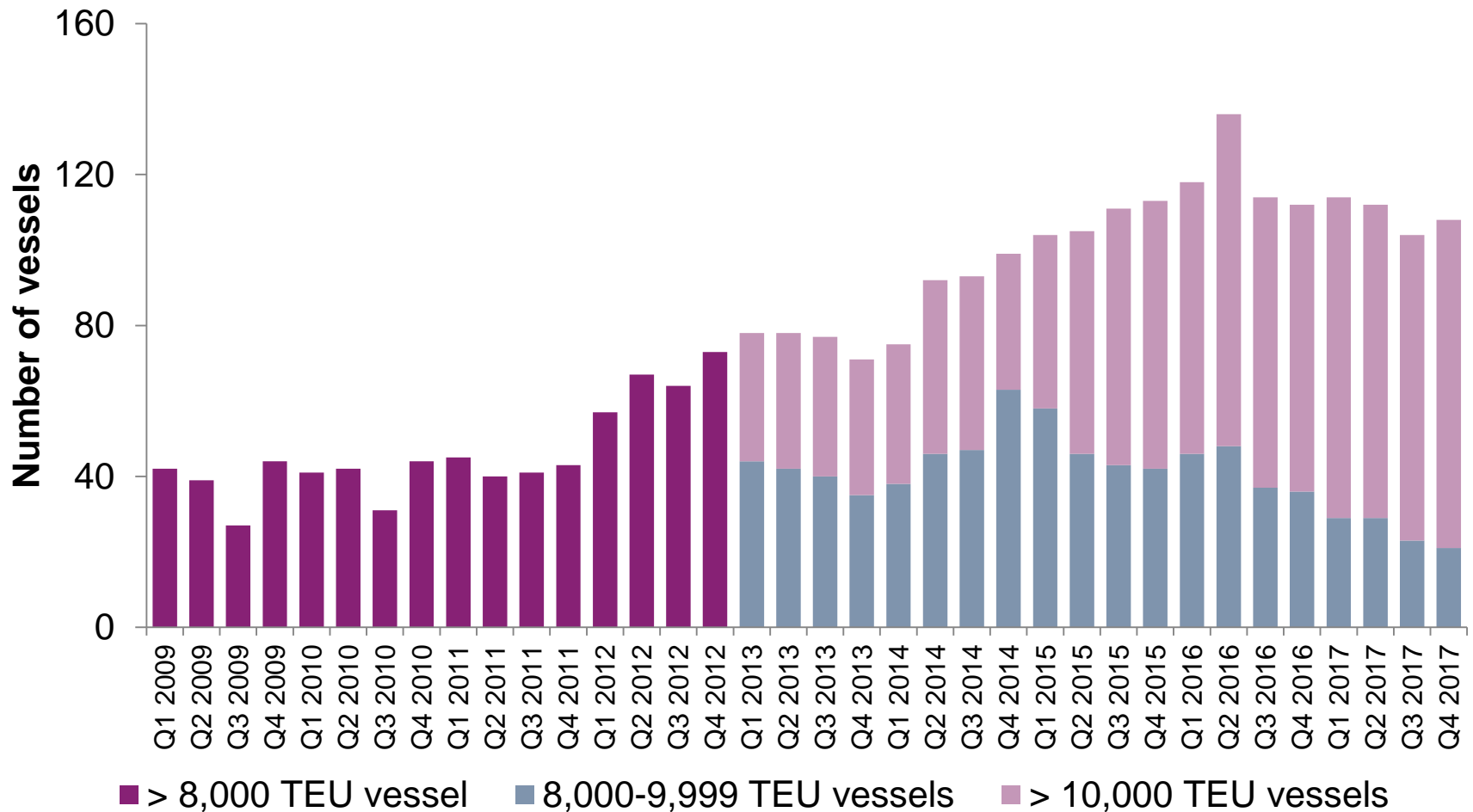


CAGR	2000-2008	2010-2017
West Mediterranean	+12.6%	+3.6%
East Mediterranean	+19.7%	+7.1%
World	+12.5%	+4.2%

The Asia-Mediterranean trade route has seen the number of services decline by half and vessel sizes nearly triple.

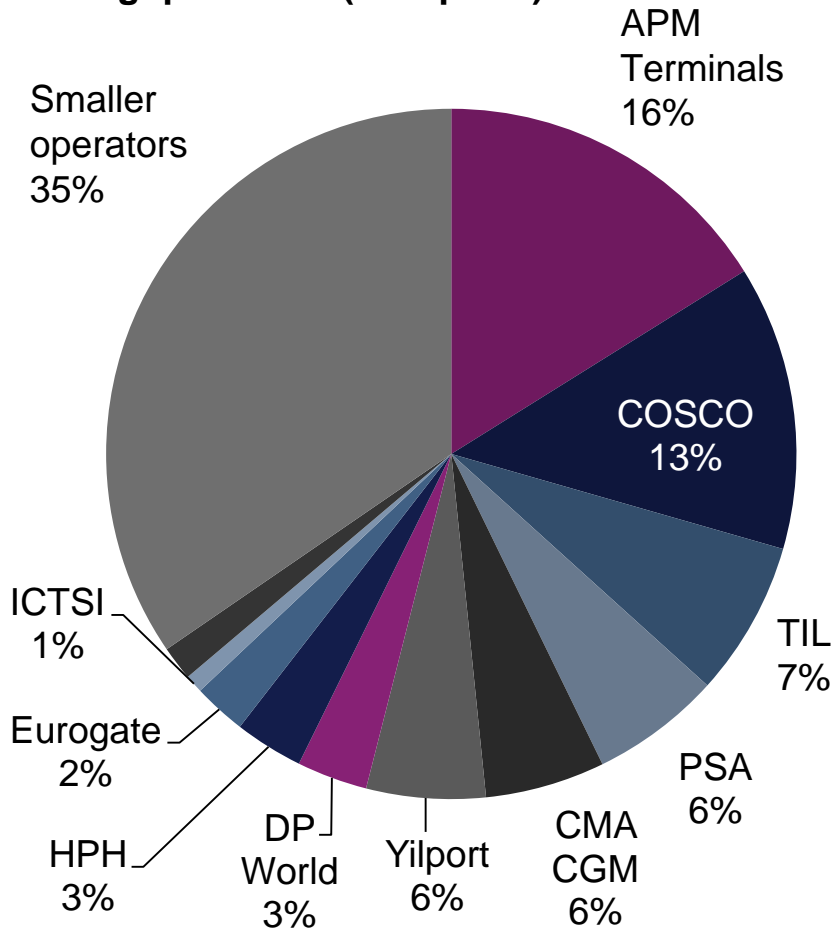


Larger vessels are being cascaded into the Asia-Med trade route, moving from 8-9k TEU vessels to 10k+ TEU vessels.

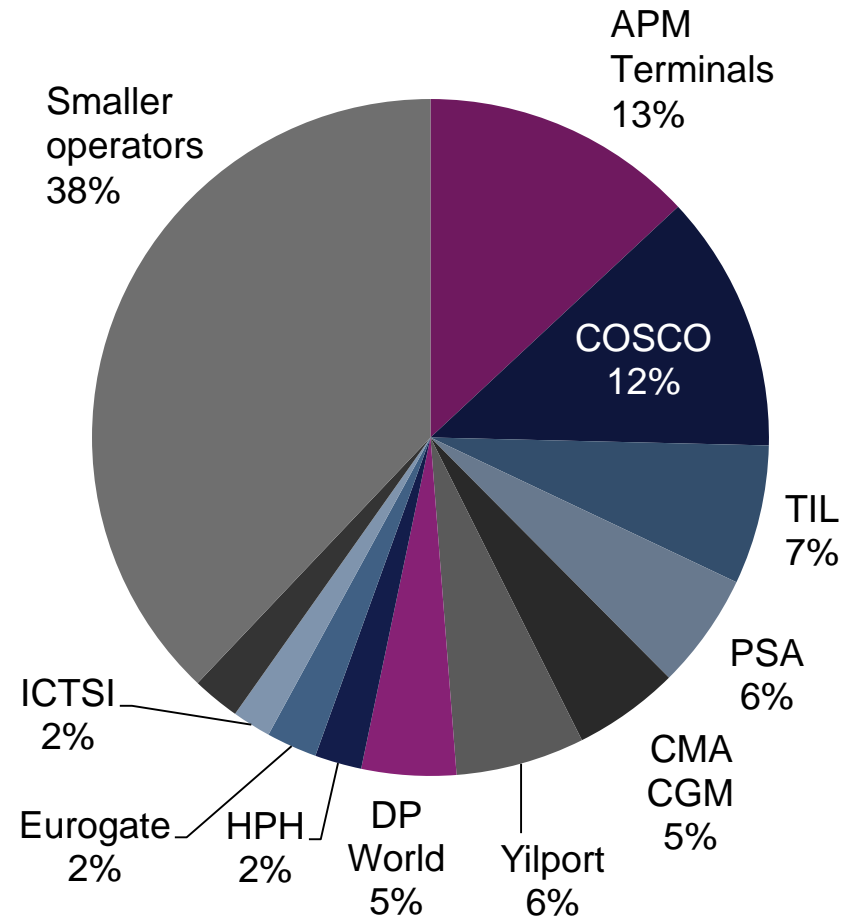


Major terminal operators need to secure partnership with Lines to ensure that they can retain their volumes.

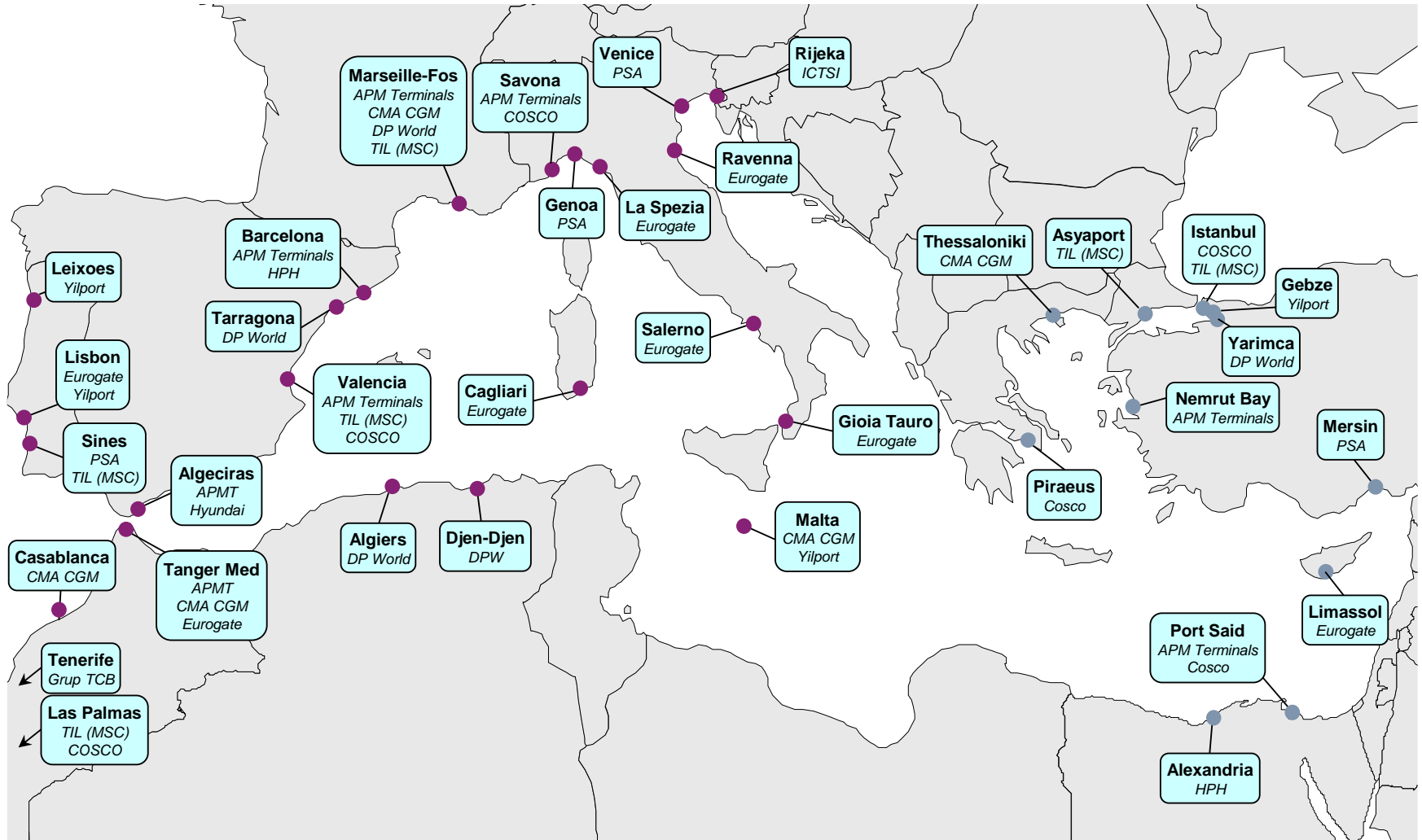
Throughput share (Med ports)



Capacity share (Med ports)



Map of main container terminals in the Mediterranean by operator



The challenge of provide sufficient terminal infrastructure to meets the needs of the Lines across the Mediterranean.

- Across 30 ports in the Mediterranean that collectively handled 75% of the region's container traffic (with a minimum volume of 500k TEU):
 - Only half of the ports could accept a vessel with a draft of 16.0m.
- In these 30 ports there are 81 terminals in operation or planned to be built.
 - Only 37% of terminals could accept a vessel with a draft of 16.0m.
- Draft is not the only challenge/constraint facing terminals:
 - Sufficient quay length – berths with sufficient draft and length.
 - Cranes with the sufficient outreach.

Conclusions

- Demand growth is expected to continue at the rates we have observed since 2010 in the next five years.
- Lines will continue to push for economies of scale through vessel upsizing. The three-alliance structure is expected to continue, with vessel sizes not exceeding 24,000 TEU in the foreseeable future.
- Mediterranean ports will continue to see vessels being cascaded from the Asia-North Europe trade, and will have to deal with the challenge of accepting the largest vessels in the market today.

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