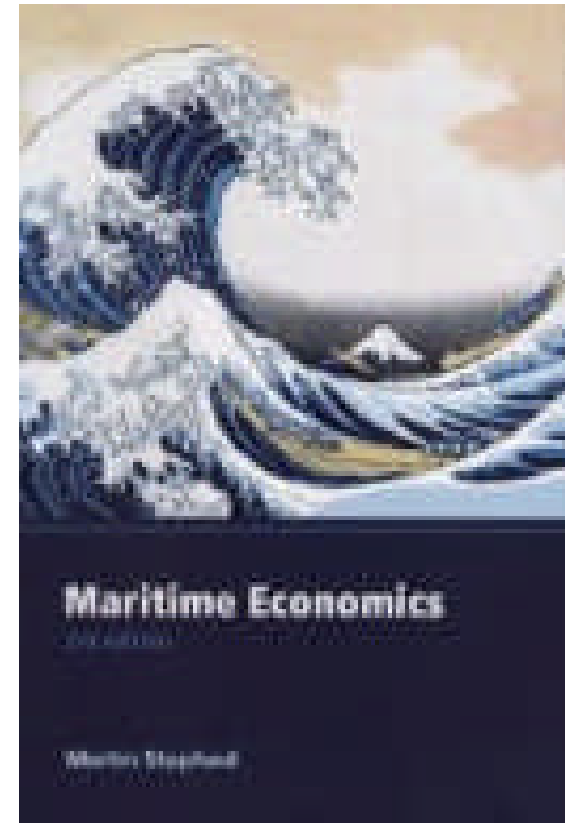


Maritime Economics 3rd Edition

*Wonders are many on earth,
and the greatest of these is man,
who rides the ocean and takes his way
through the deeps, through wind-swept
valleys of perilous seas
that surge and sway.*

*The chorus in Sophocles' Antigone
422BC Trans. R. C. Jebb*



Martin Stopford
President,
Clarkson Research

Overview of Shipping Markets

will Greek Shipping
Support Chinese yards?



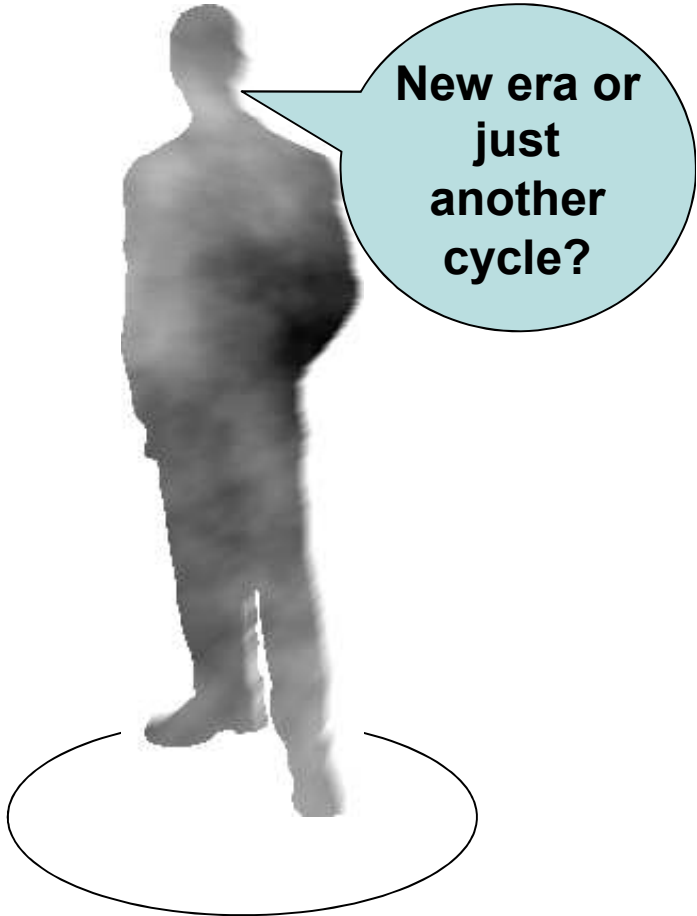
FIVE YEARS AGO TODAY

5th Hydra Shipping Conference
Maritime Greece in the Privatization Era
Saturday 14th September 2013



Five Key Issues

1. The Shipping Cycle
2. Global Dynamics
3. Changing Ownership
4. Energy & the Environment
5. Information & Communications



New era or
just
another
cycle?

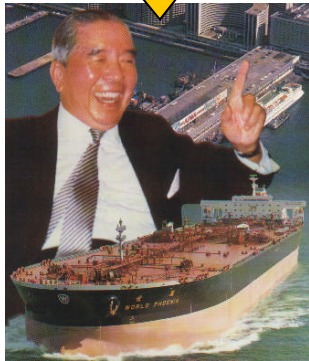
- *What makes the business climate so difficult today is that shipping investors must deal with several major changes taking place simultaneously. What are the challenges, how will they interact and where they might lead?*



Issue 1: The Shipping Cycle

5 Decades, 5 Markets....

I made
millions on
timecharters



1960s

Bankers
arrested
my ships



1970s & 1980s

I still don't
seem to be
making any
money



1990s

I LOVE
SHIPPING



2000's

I can only
pay the
interest, sir

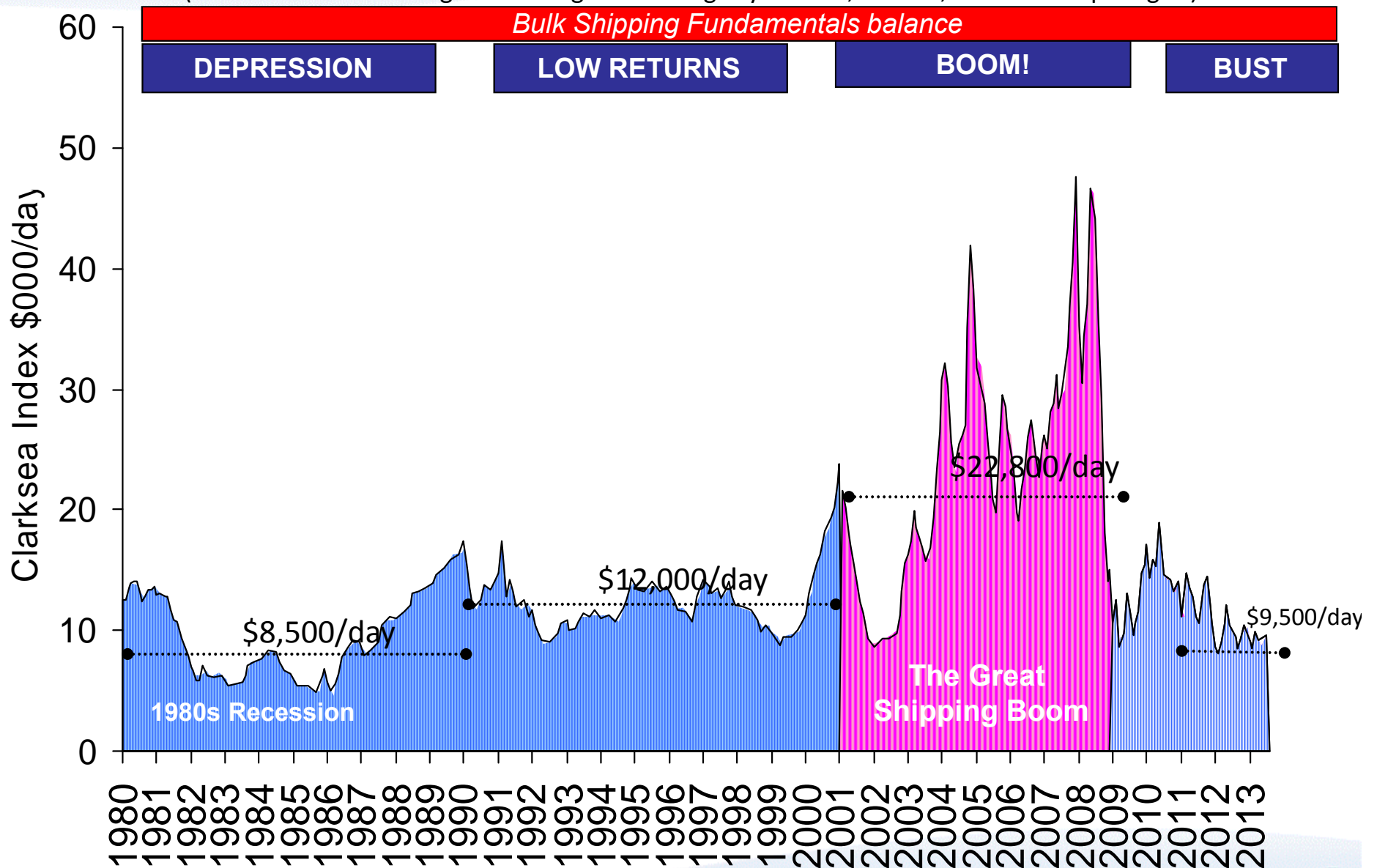


2010s



Ship Earnings Super-Cycle

(Clarksea Index is a weighted average of earnings by tankers, bulkers, containerships & gas.)



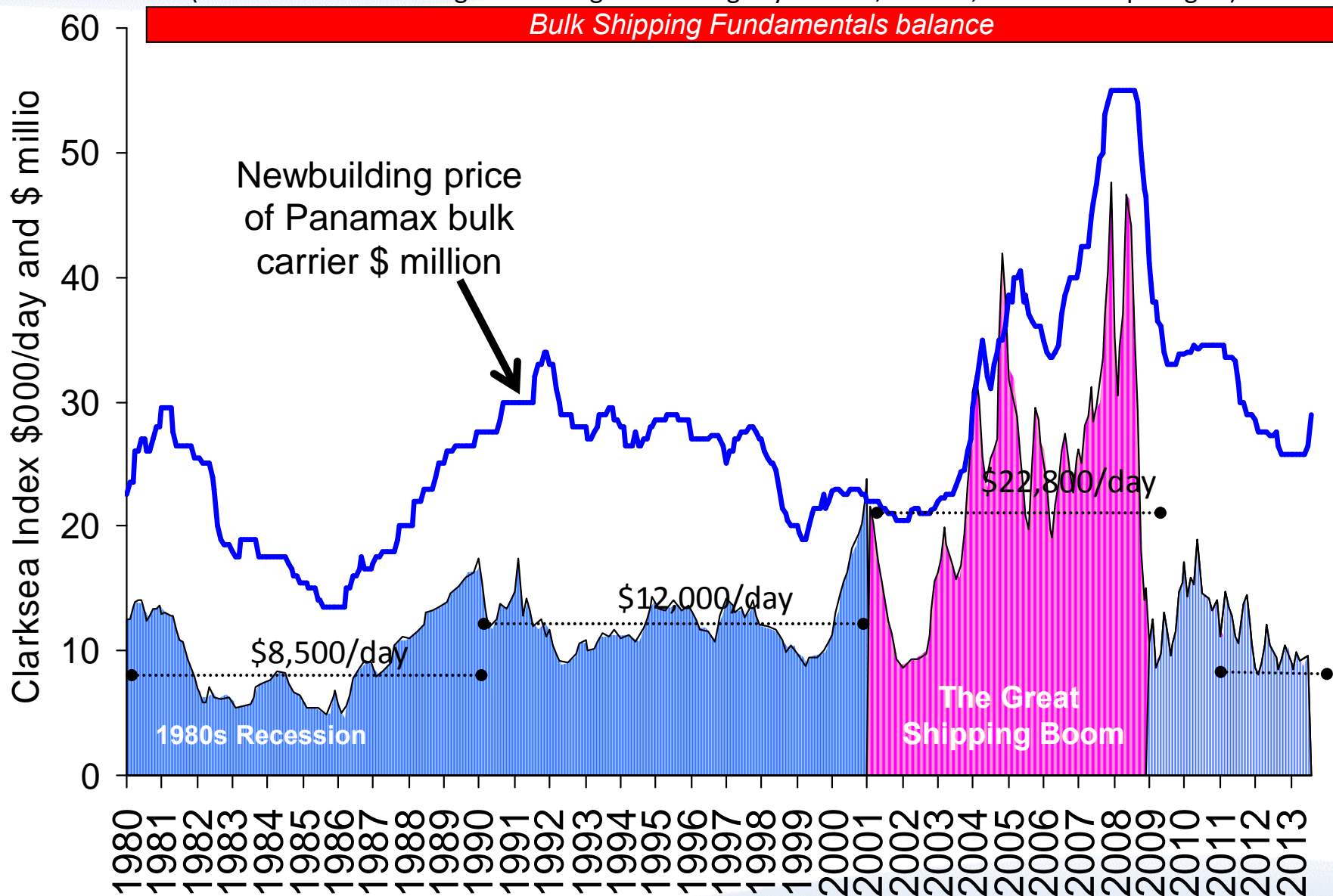
Source: Clarkson Research Services Ltd

CLARKSON RESEARCH SERVICES LTD



Ship Earnings Super-Cycle

(Clarksea Index is a weighted average of earnings by tankers, bulkers, containerships & gas.)



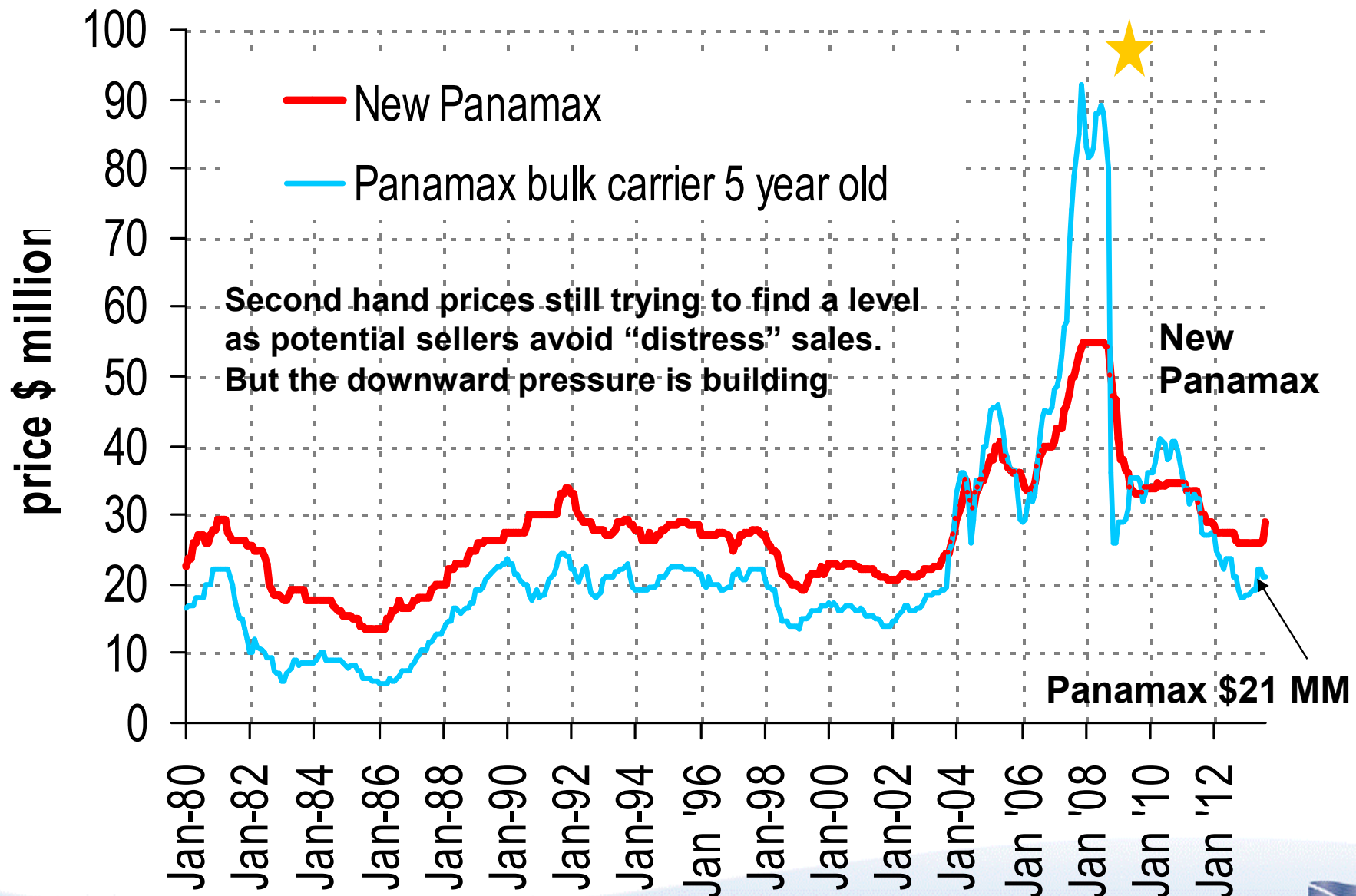
Source: Clarkson Research Services Ltd

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Market Prices Edging Down

Panamax peak
\$90MM
June 2008

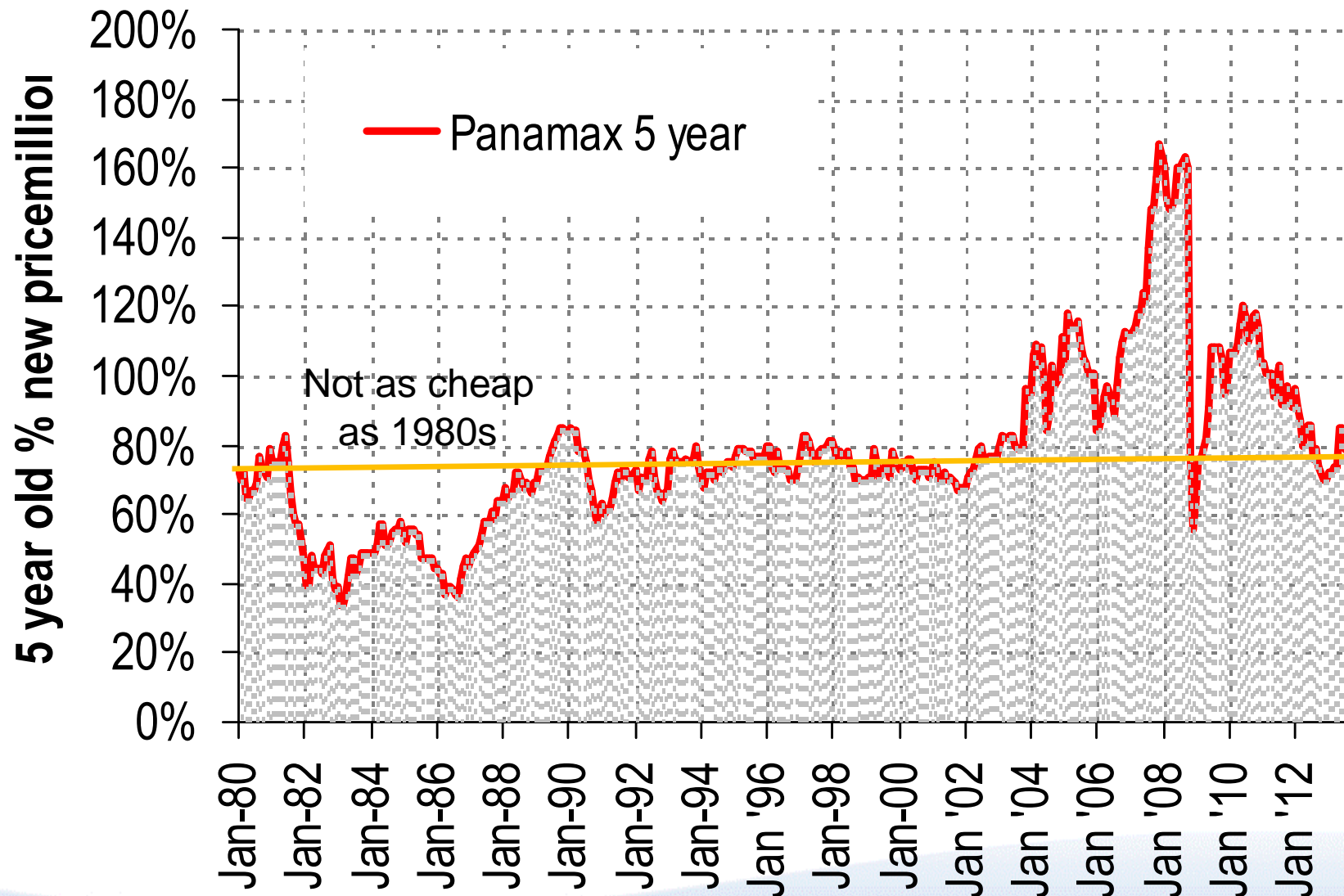


Source CRSL

CLARKSON RESEARCH SERVICES LTD



Panamax Bulker on Trend



Source CRSL

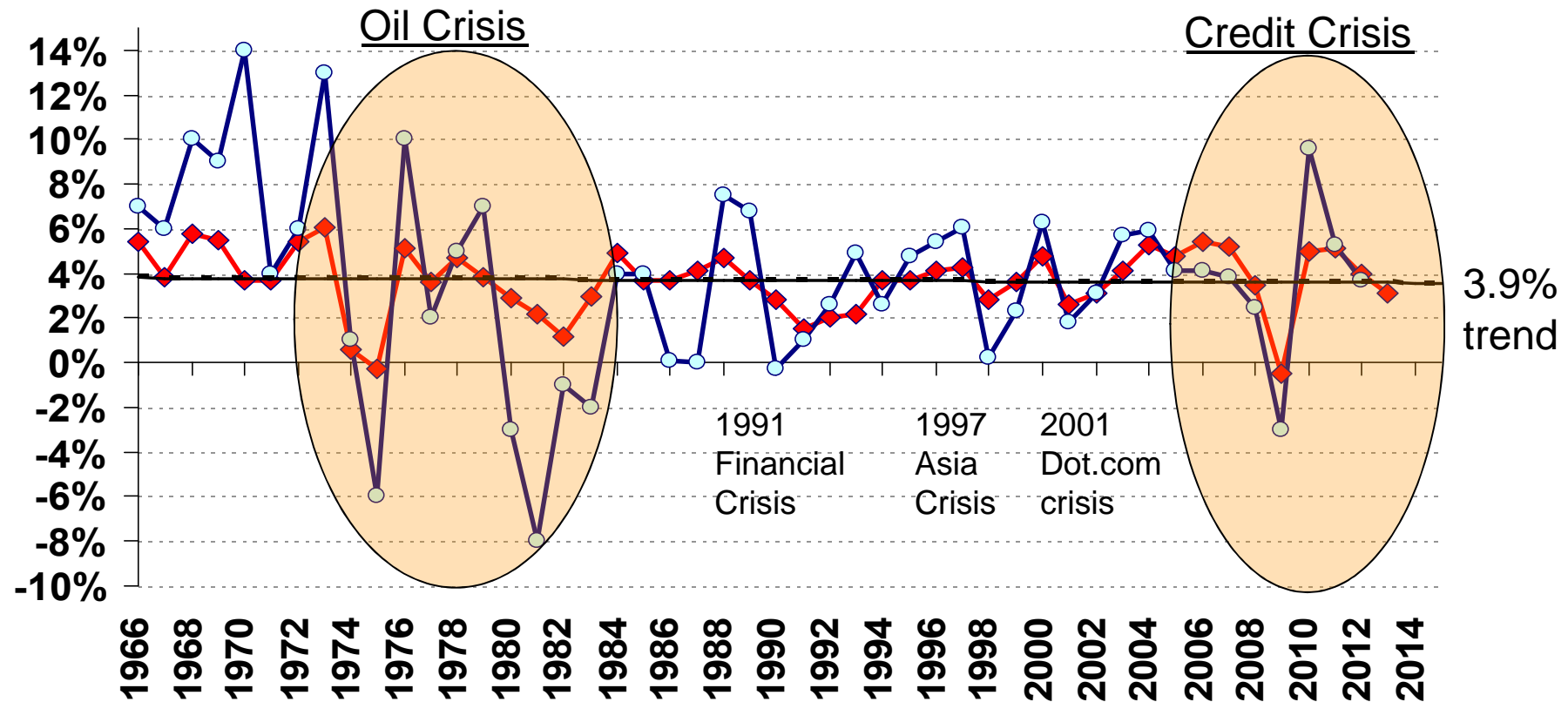
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Economic Cycles & Sea Trade

World GDP (red line) and sea trade (blue line)

% change



Crisis 1

1973

1st Oil

Crisis

Crisis 2

1979

2nd Oil

Crisis

Crisis 6

2007

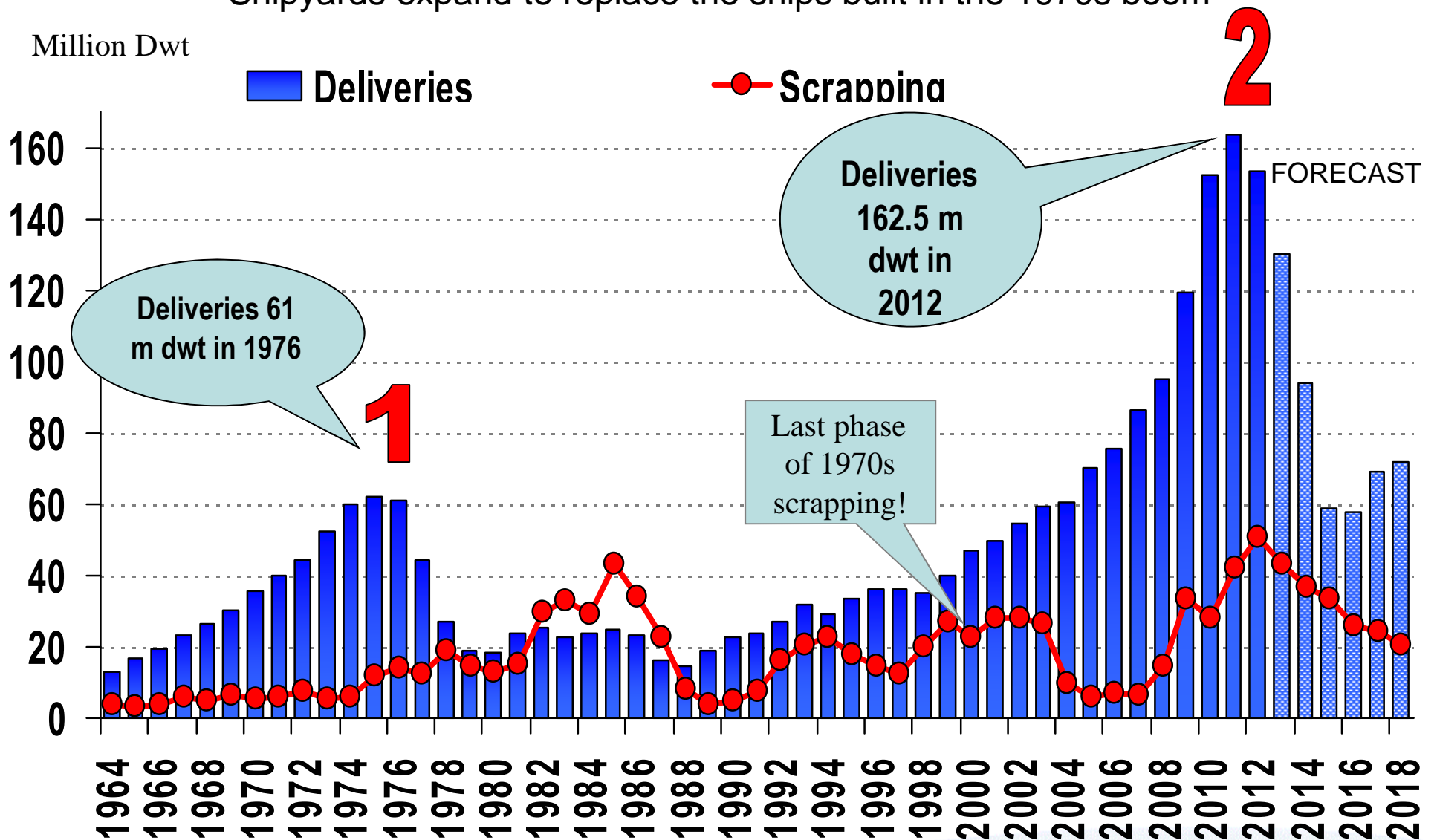
Credit

Crisis



The Shipbuilding Cycle

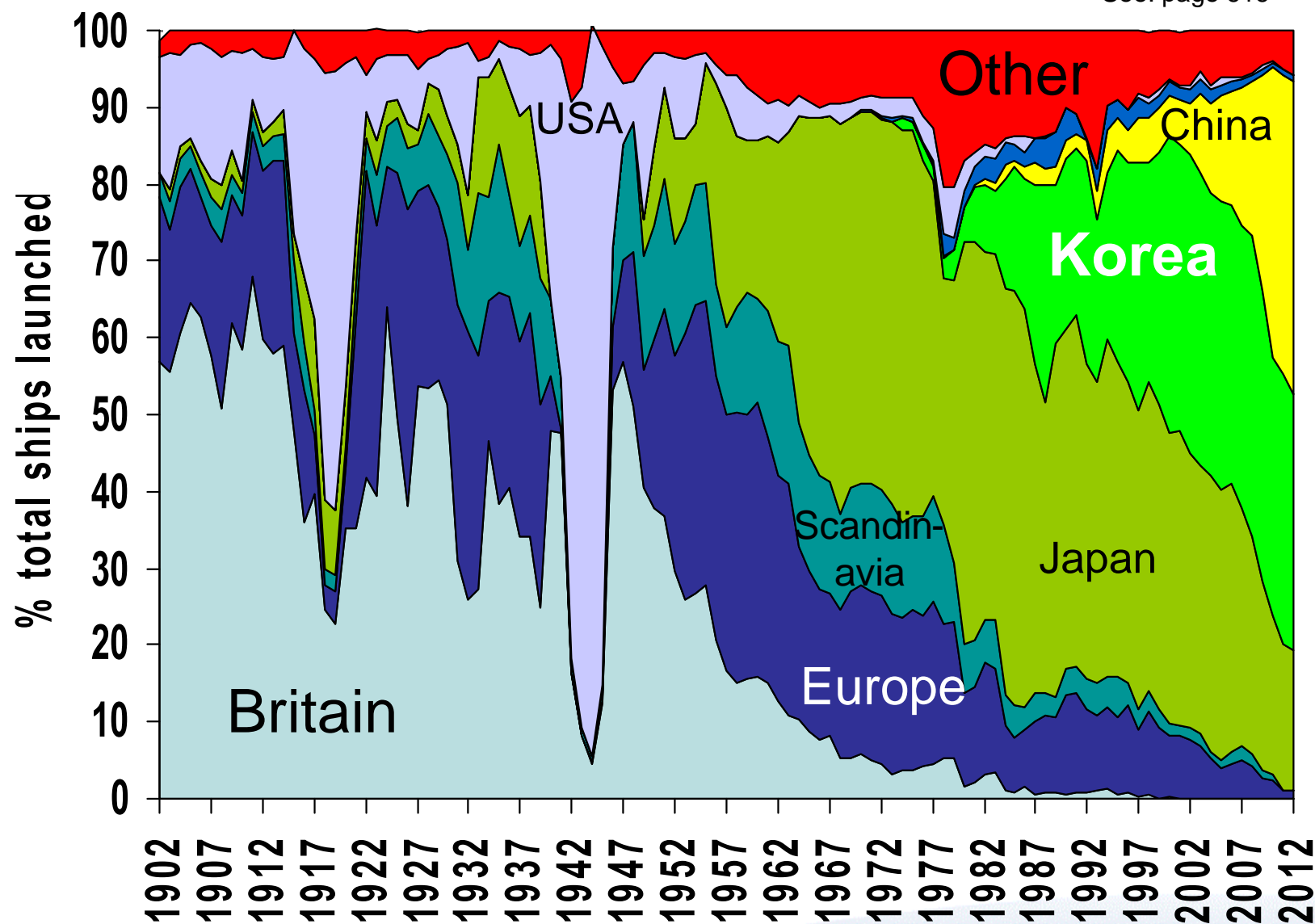
Shipyards expand to replace the ships built in the 1970s boom



23/09/2013

REGIONAL STRUCTURE OF WORLD SHIPBUILDING

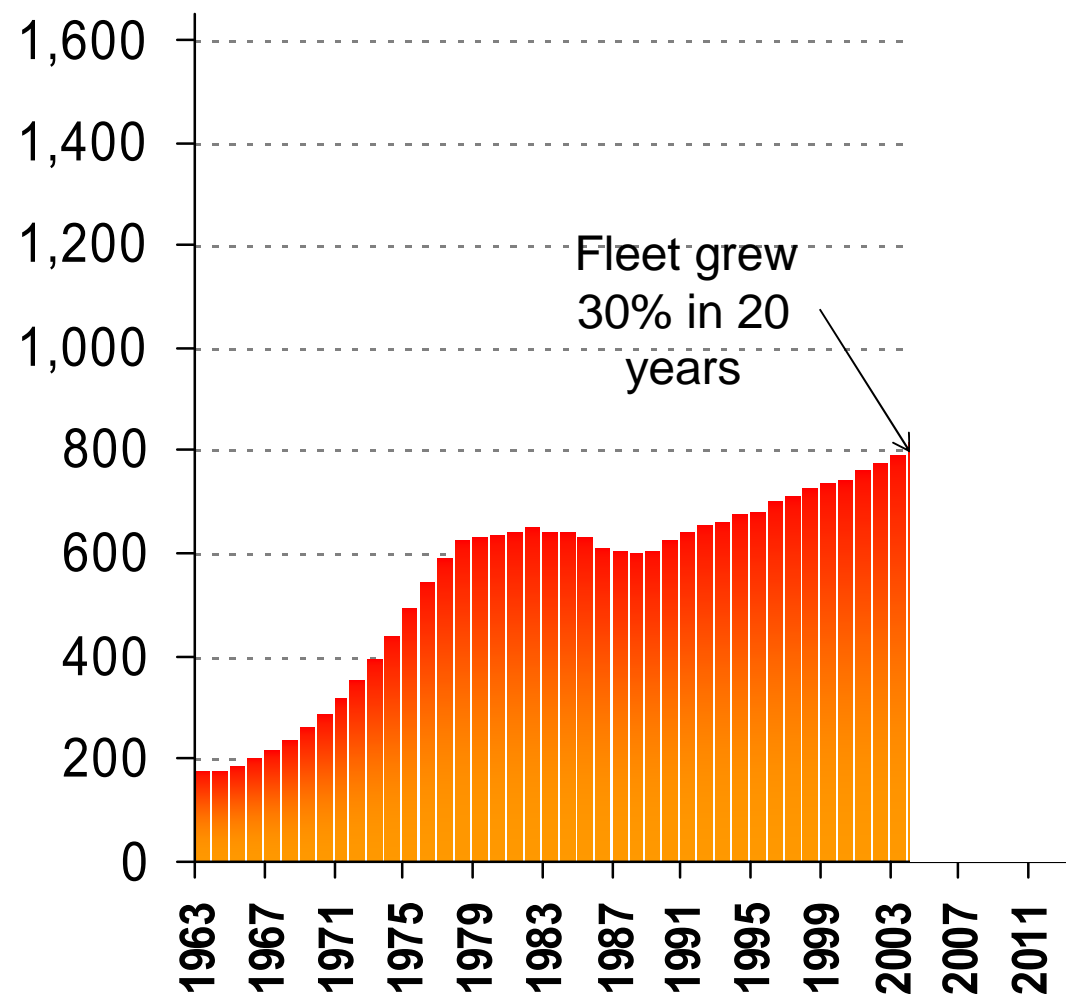
See: page 616



World Merchant Fleet Growth

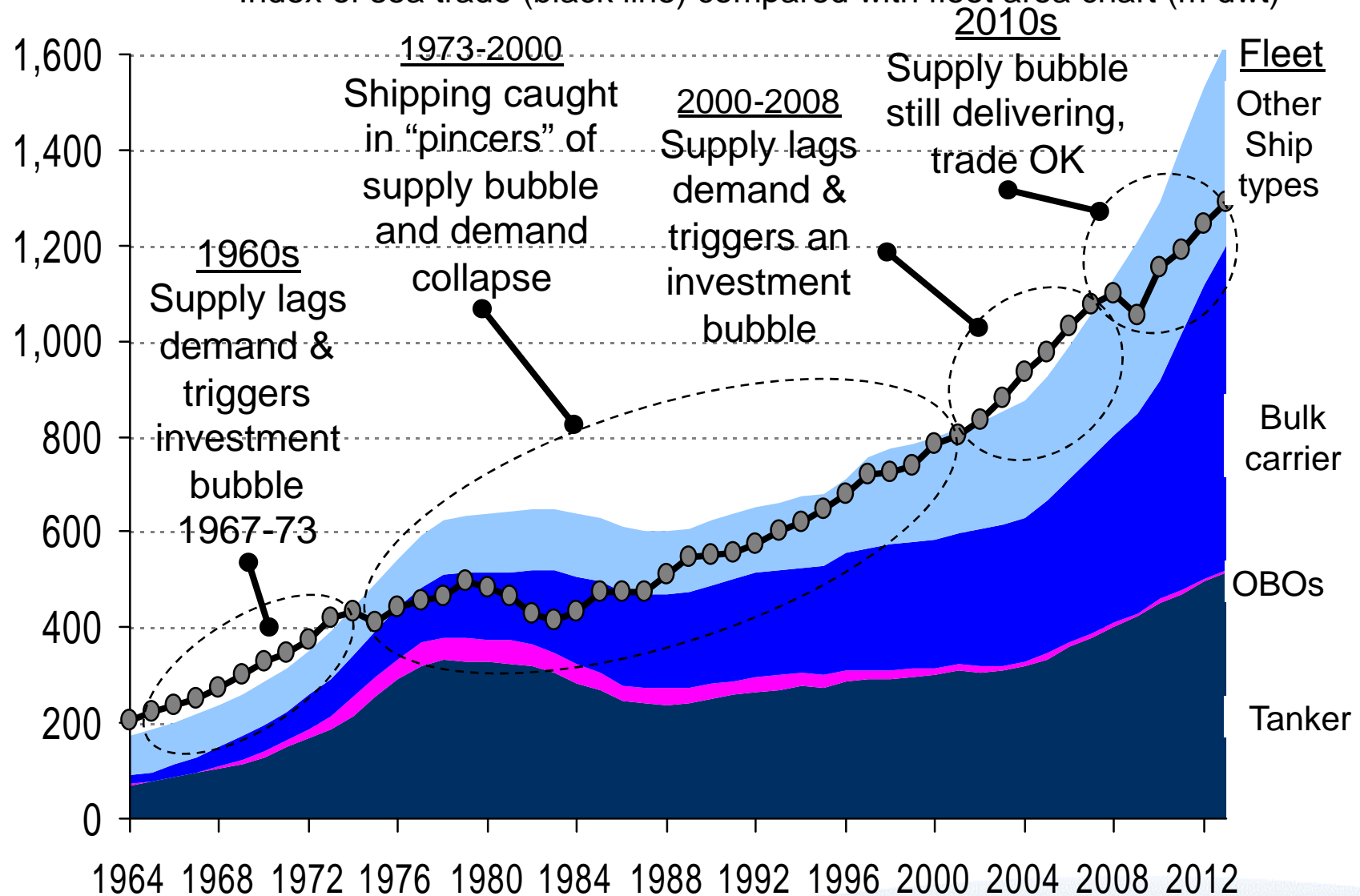
- Fleet Growth is speeding up
- Between 1990 and 2004 fleet growth averaged 2.2% per annum
- Between 2004 and 2012 the fleet doubled, most of the growth came after the market collapsed

Million dwt (year end)



Shipping Supply Crisis: Brief History

Fleet M dwt 1st Jan Index of sea trade (black line) compared with fleet area chart (m dwt)



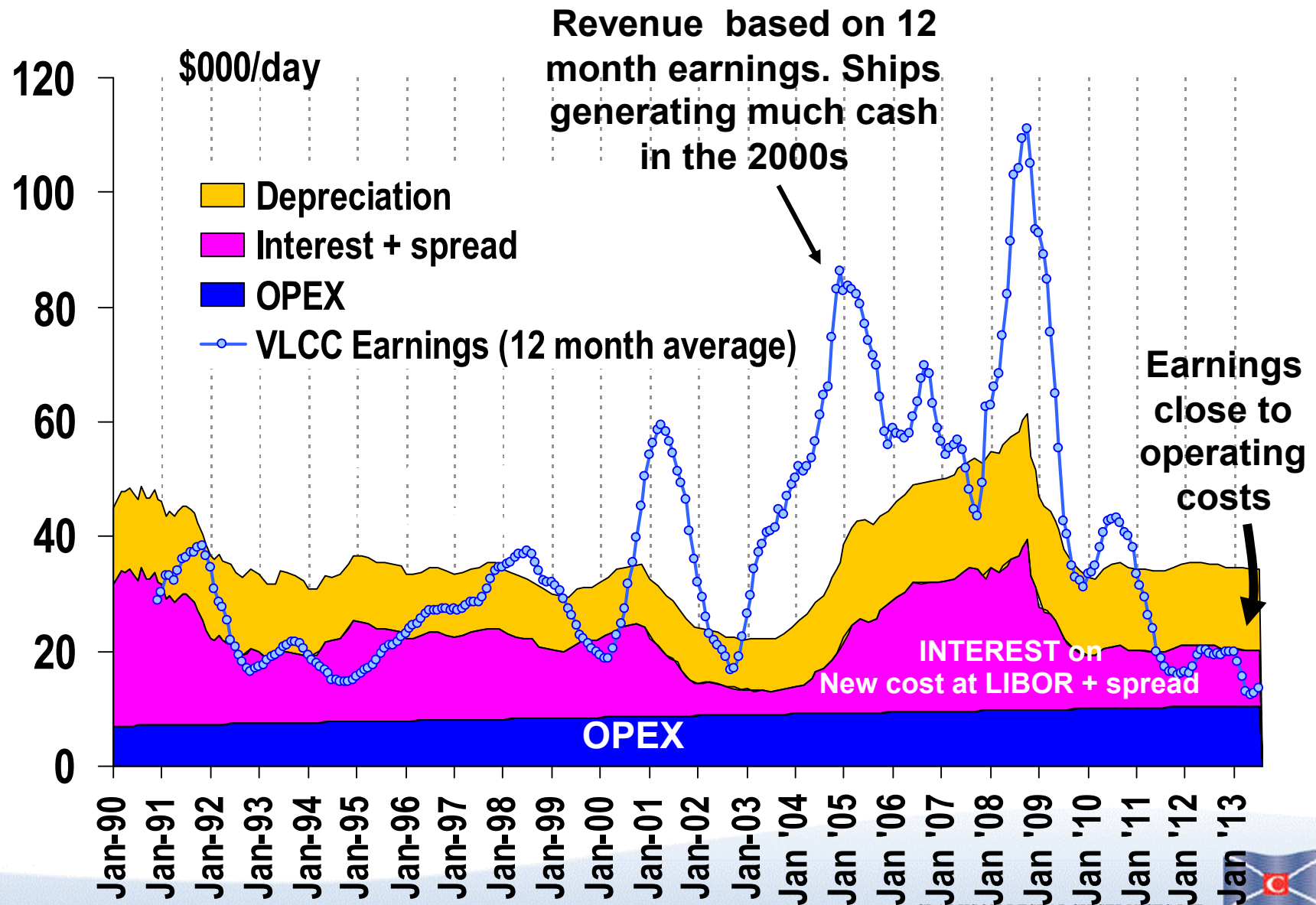
Source: Fearnleys Annual Review (cargo), CRSL (fleet)

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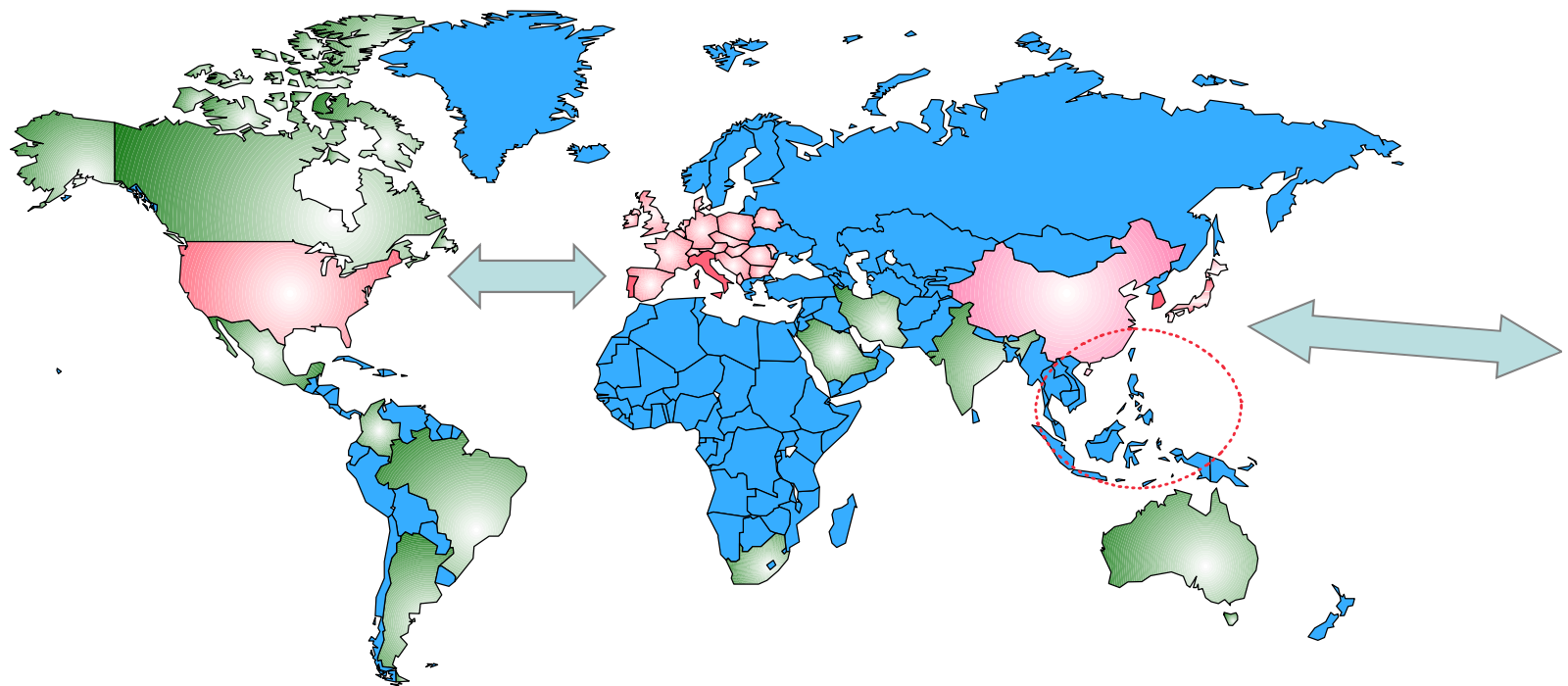


VLCC Cost & Revenue 1990-2013

Operating cost, plus interest at LIBOR + spread on new cost, plus depreciation



Issue 2: Global Dynamics



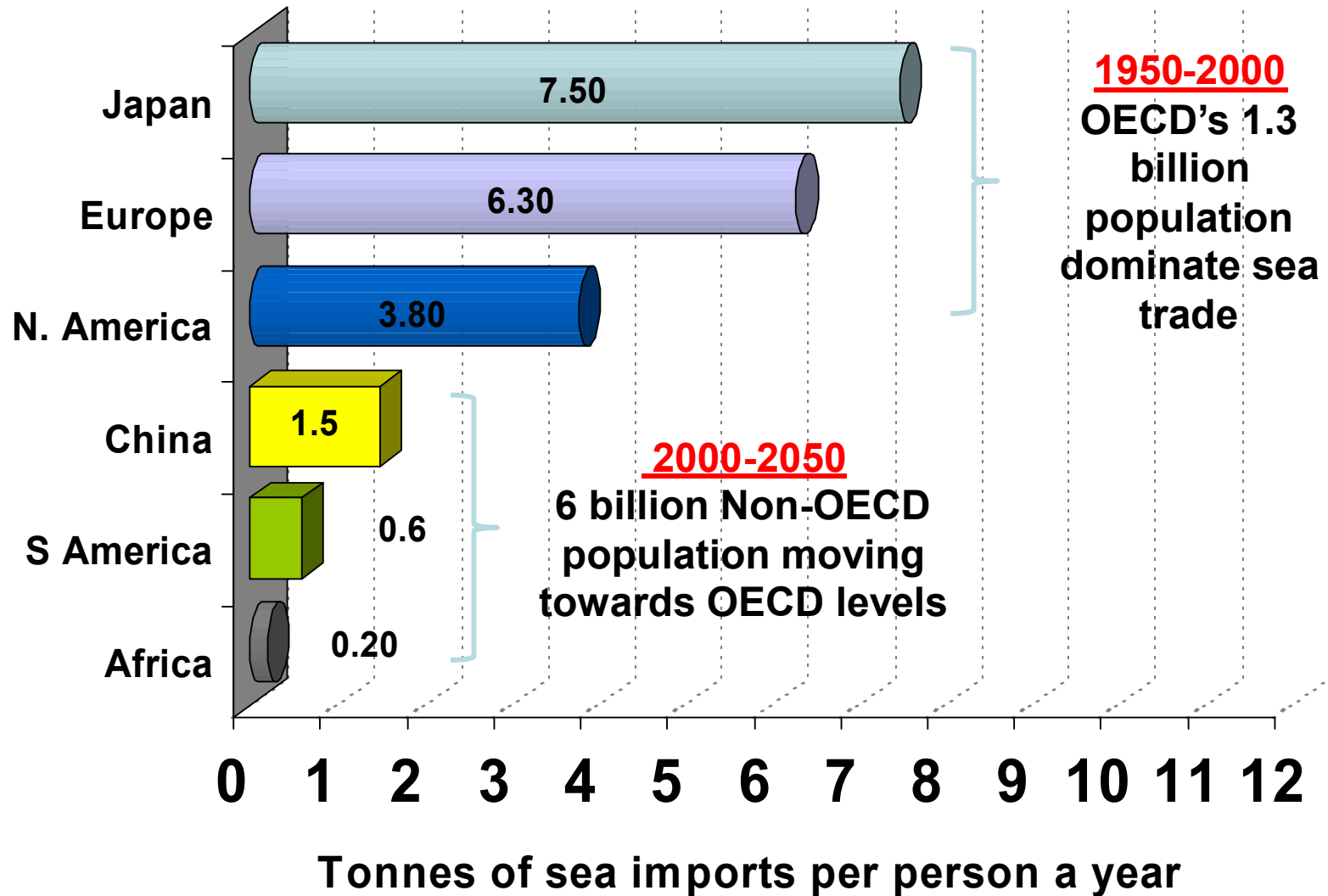
23/09/2013

©Martin Stopford

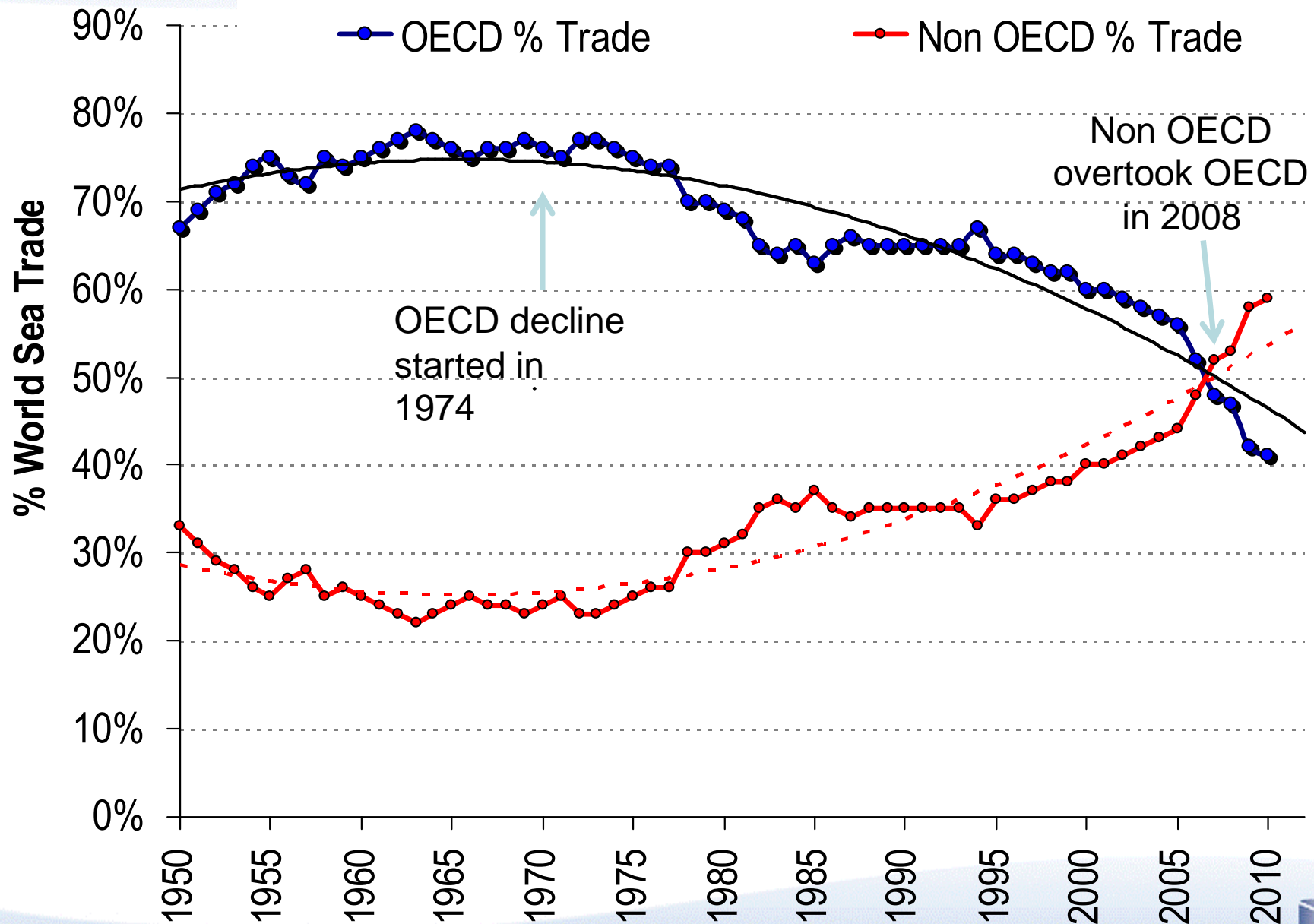
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Who Imports the Most Cargo By Sea?

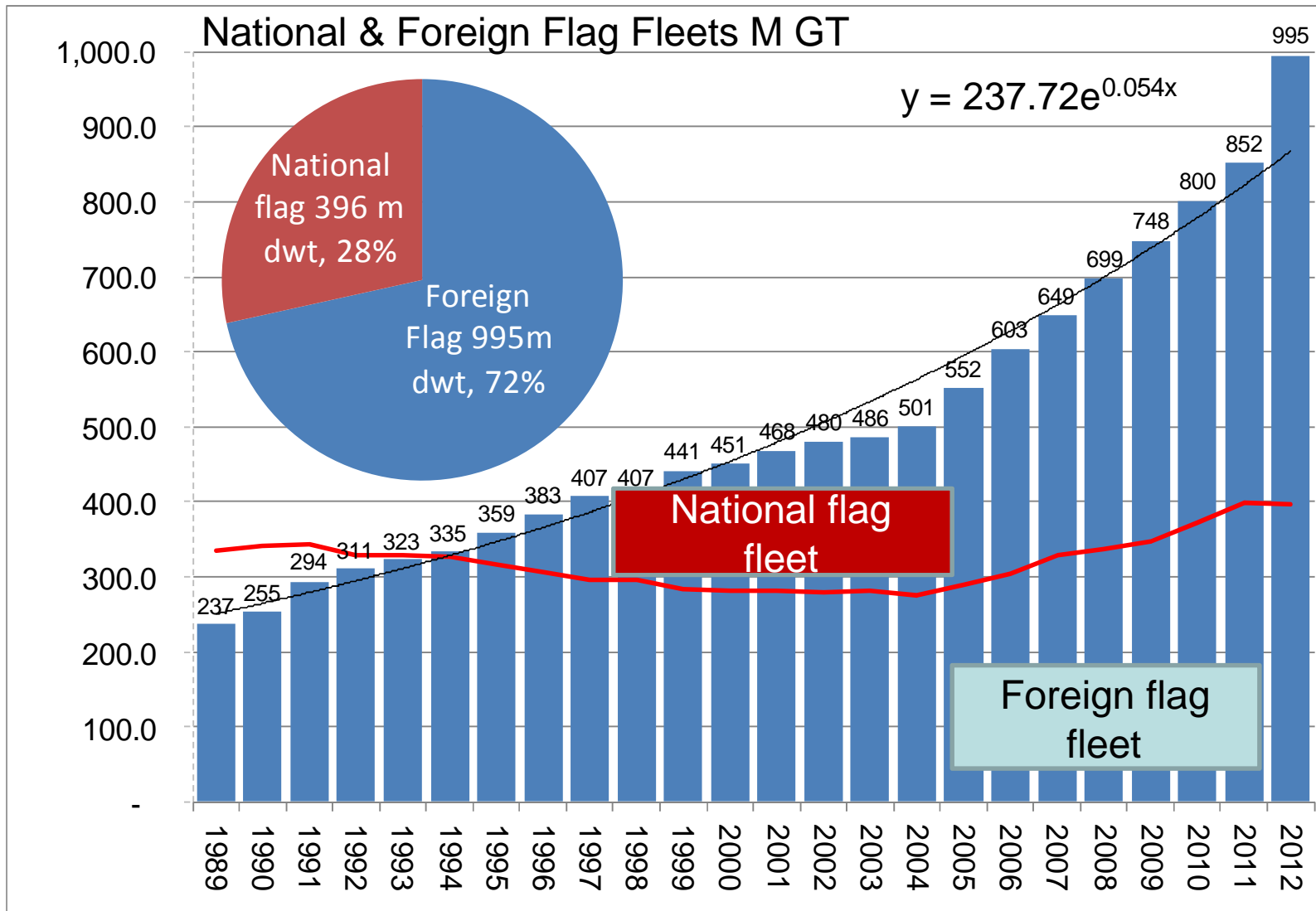


OECD & Non OECD Share of Sea Trade



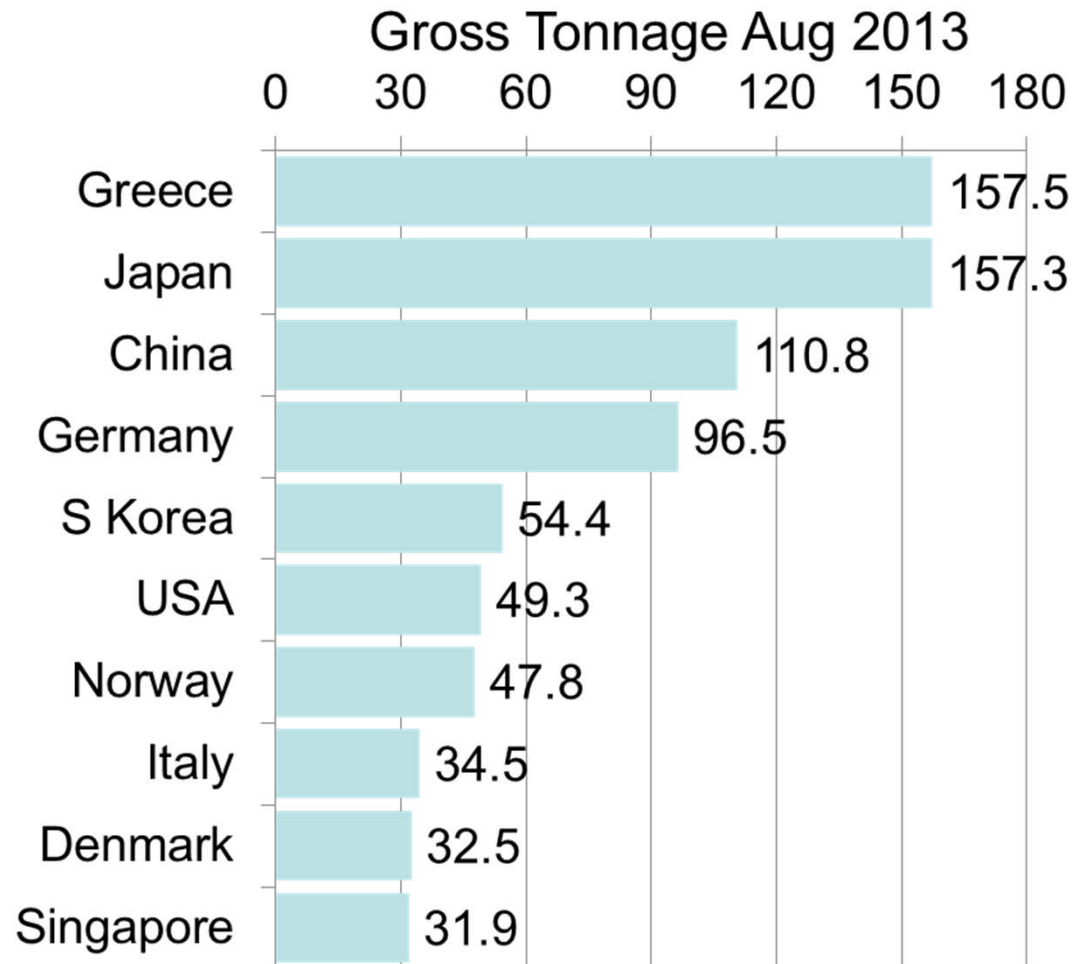
Issue 3: Ownership Patterns

72% OF THE WORLD FLEET FLAGGED ABROAD & GROWING



Top Ten Shipowning Nations

- Foreign Flag Tonnage Nudges 1 Billion GT
- 72% of the merchant fleet is now registered offshore
- Europe owns 32%
- Shipping is evolving into a truly global industry



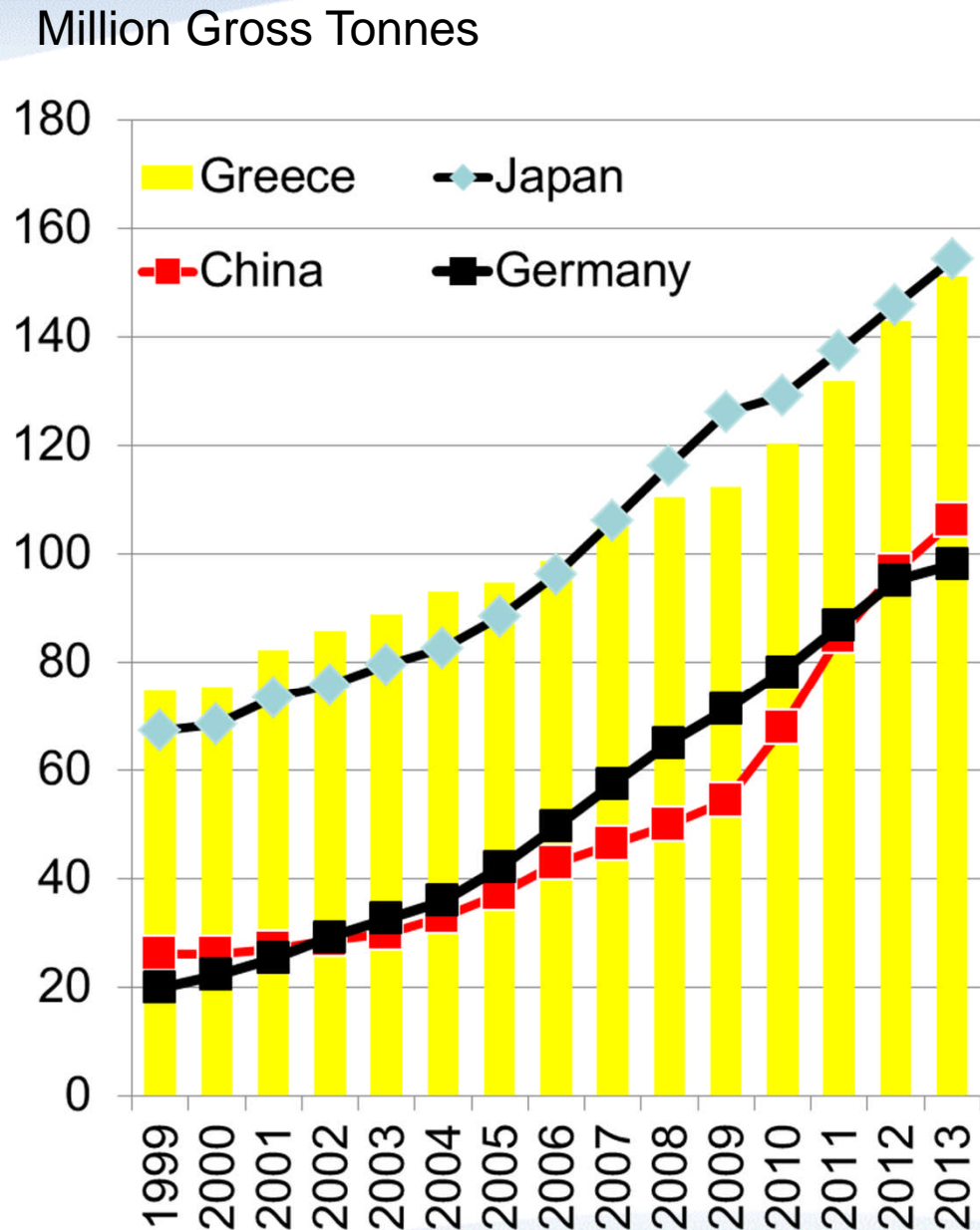
Top Shipping Fleets 1999-2013

The shipping fleet is changing.

Greece and Japan are the two biggest fleets “neck and neck”

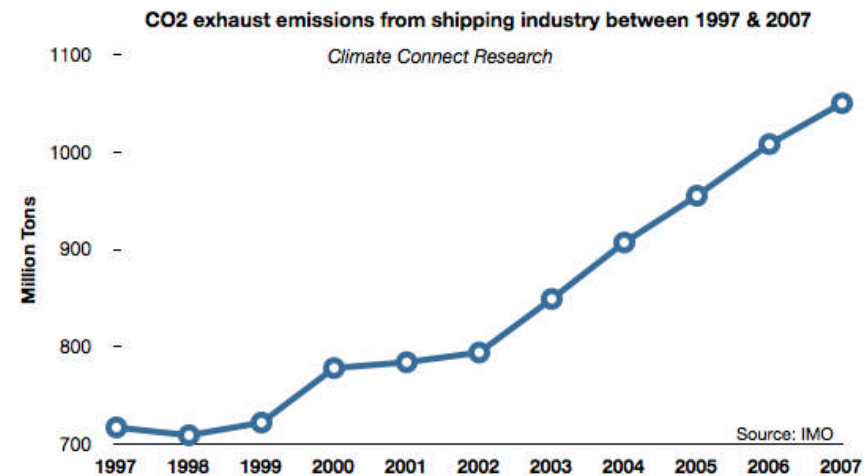
China has overtaken Germany to take the third position and the fleet is growing rapidly

German shipping faces the problems of the future of the KG system

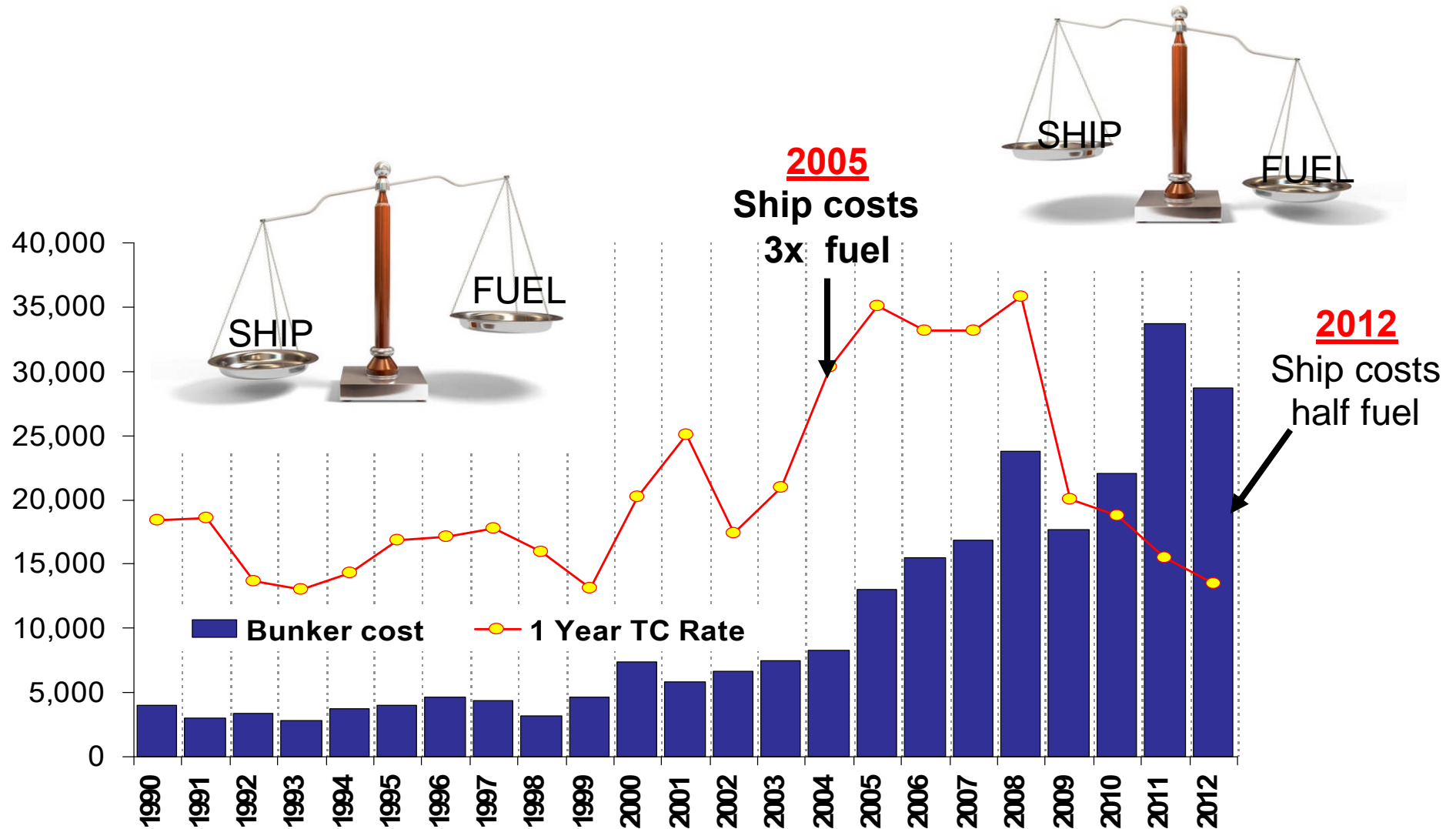


Regulatory Challenge

- IMO moving into areas involving technical design and operation of the ship
- EEDI; air emissions; ballast water; recycling; energy efficiency and carbon footprint raise technical issues and CHOICES.
- The industry lacks a coherent technical base to resolve these issue



Issue 4: Energy & the Environment

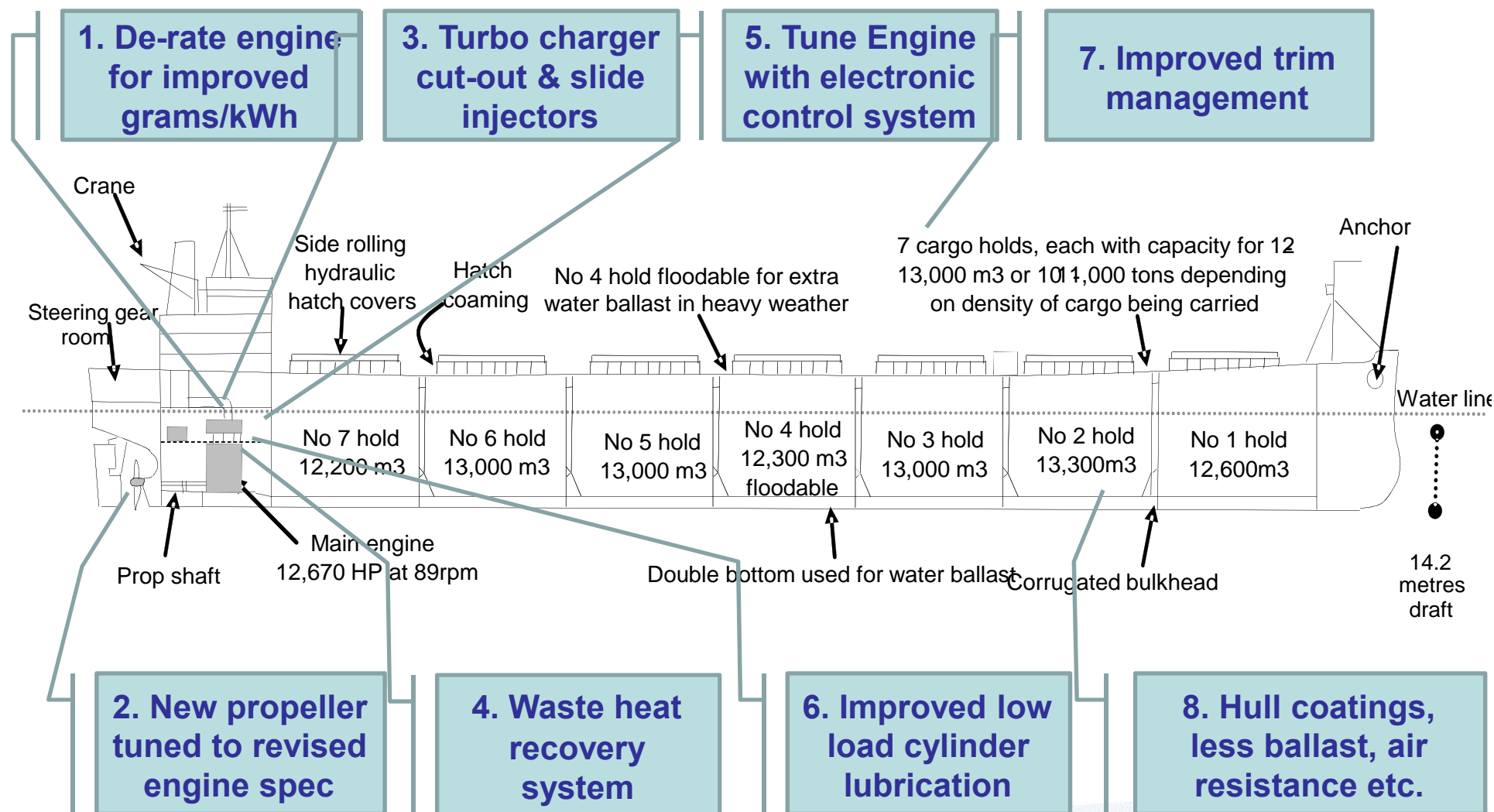


Based on Aframax tanker, 1 year TC rate and Rotterdam bunker price



The Future - Economical & Green Ships

77,000 Dwt Panamax Bulk Carrier

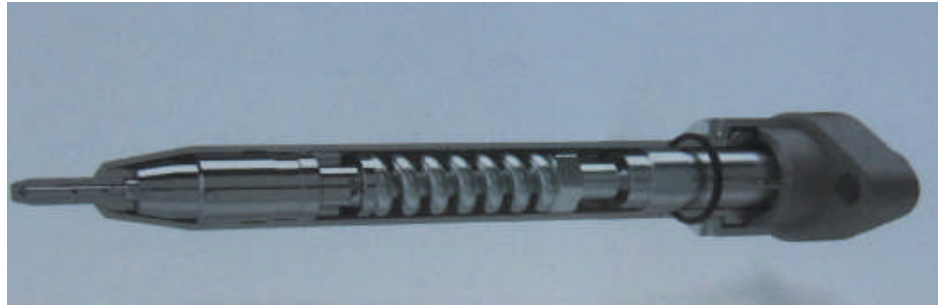


225 m LOA, 77,000 dwt

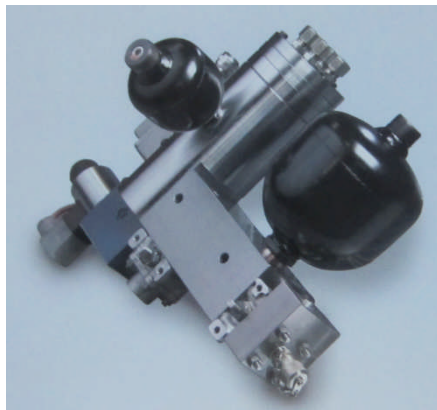
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Engine Upgrade Kit



1. **Slide fuel** valves cut exhaust valve deposits (see Photo below after 890 hours with new valves)

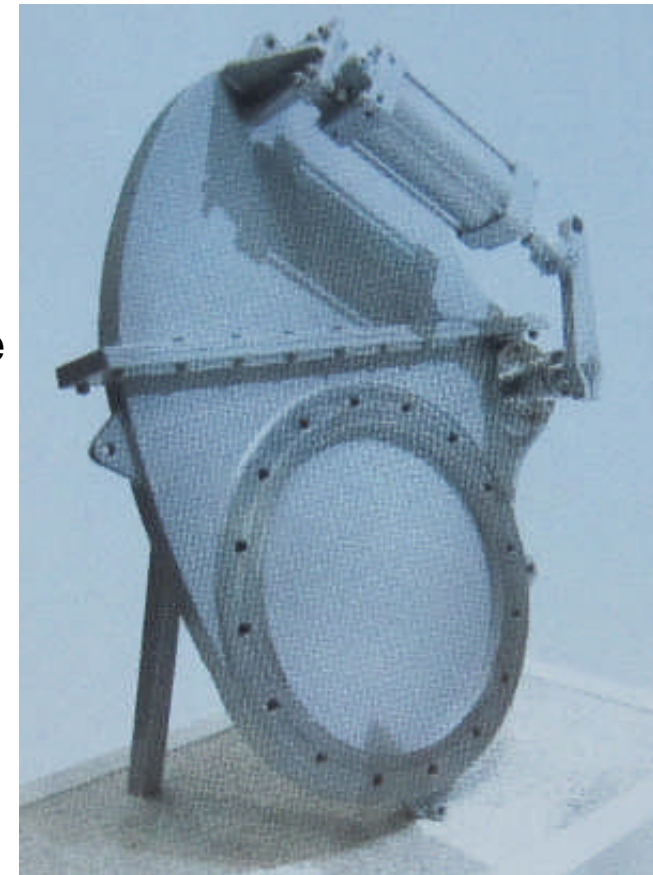


3. Lubricator Upgrade
Saves 140 lt/day
at 10%MCR



Old valve

Slide valve

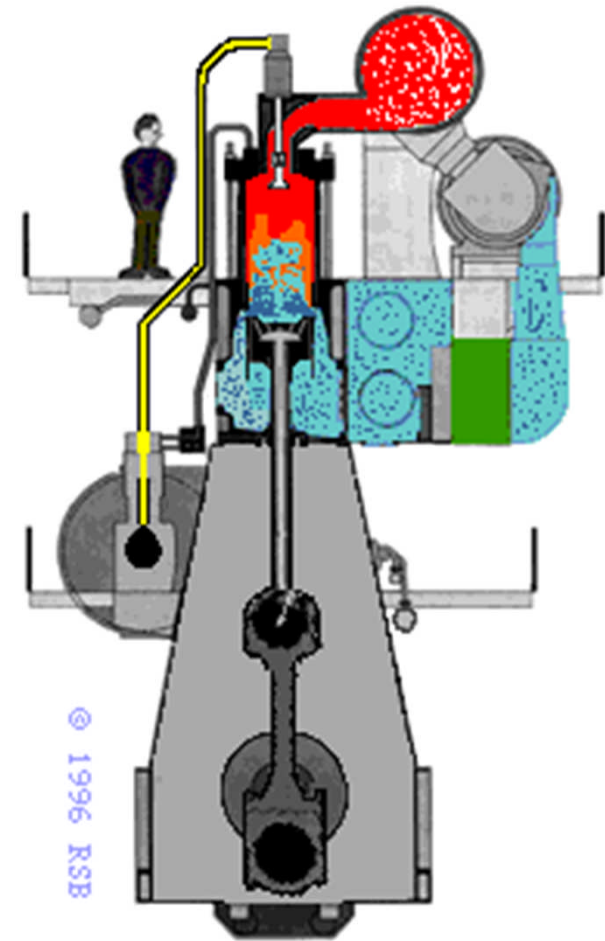


2. Turbo charger cut-out



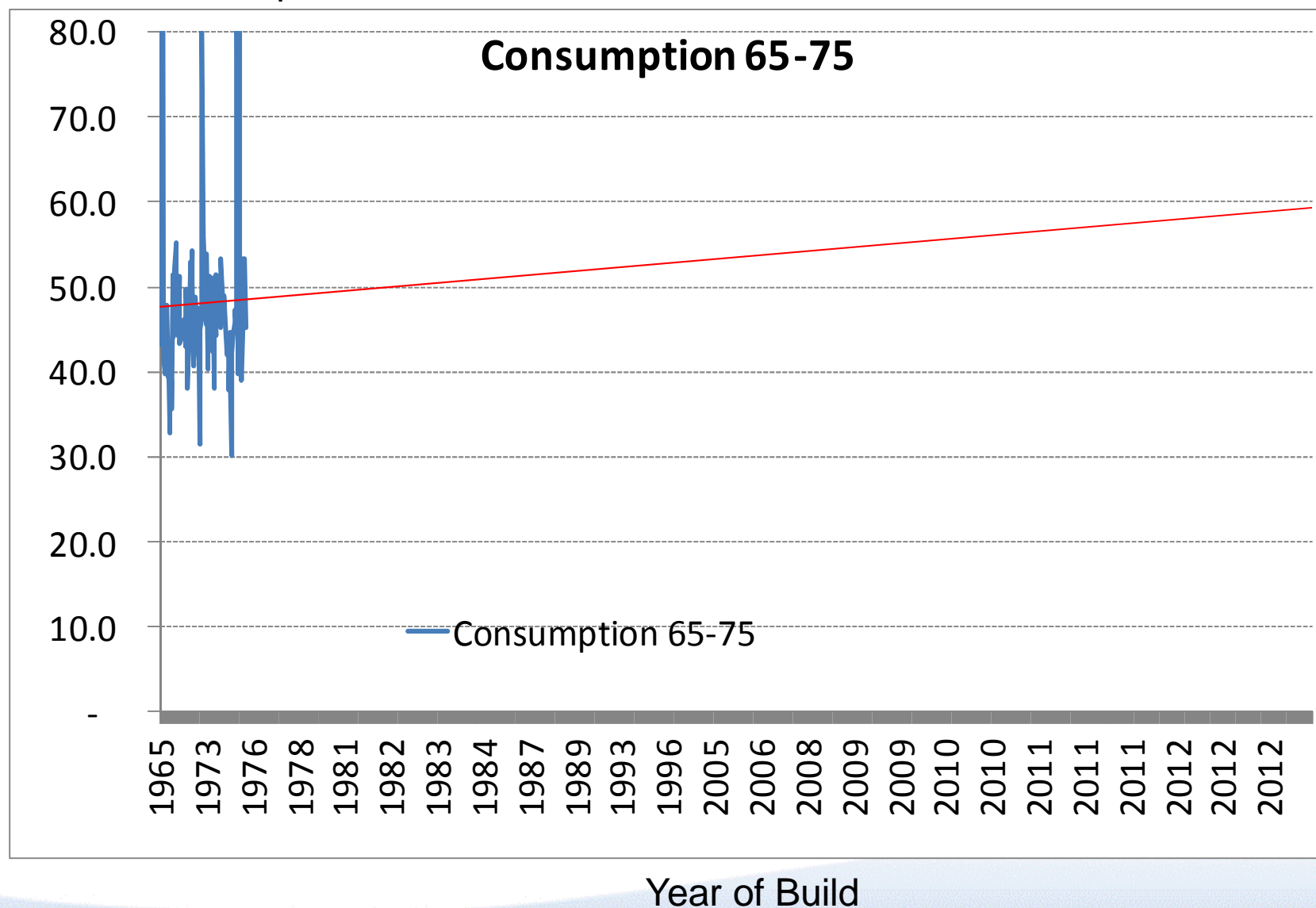
De-rating Engine

- Modify engine components:-
 1. Fuel & exhaust cam positions
 2. Fuel atomisers
 3. Fuel valves
 4. Height between x-head & piston rod
 5. Wave cut of cylinder liner
 6. Re-match turbochargers
 7. New technical file
 8. Propeller exchange
- The top end performance is lost, but better low output performance



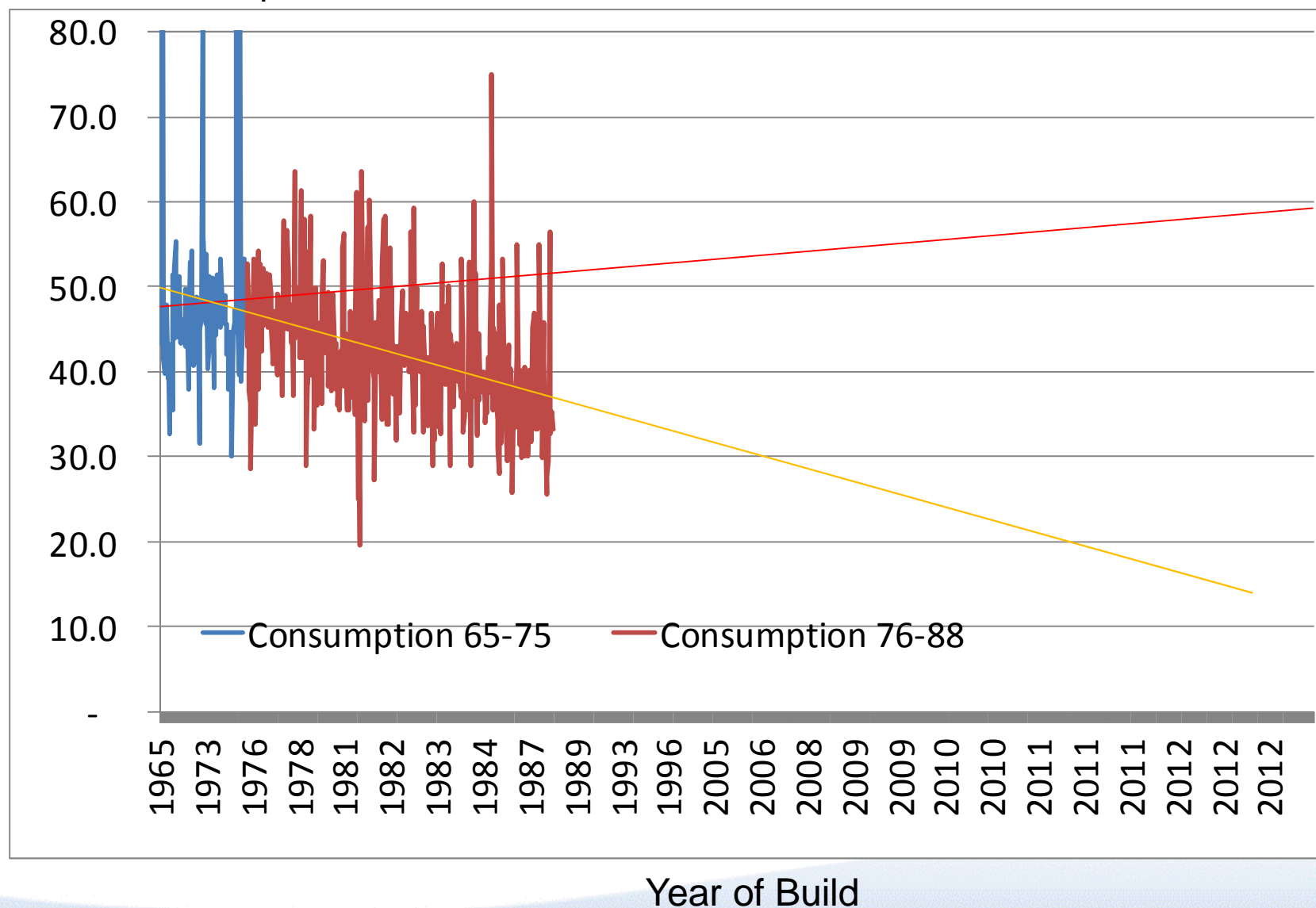
Fuel Consumption 60,000 dwt Bulkera

Fuel consumption TPD at 14.5 knots



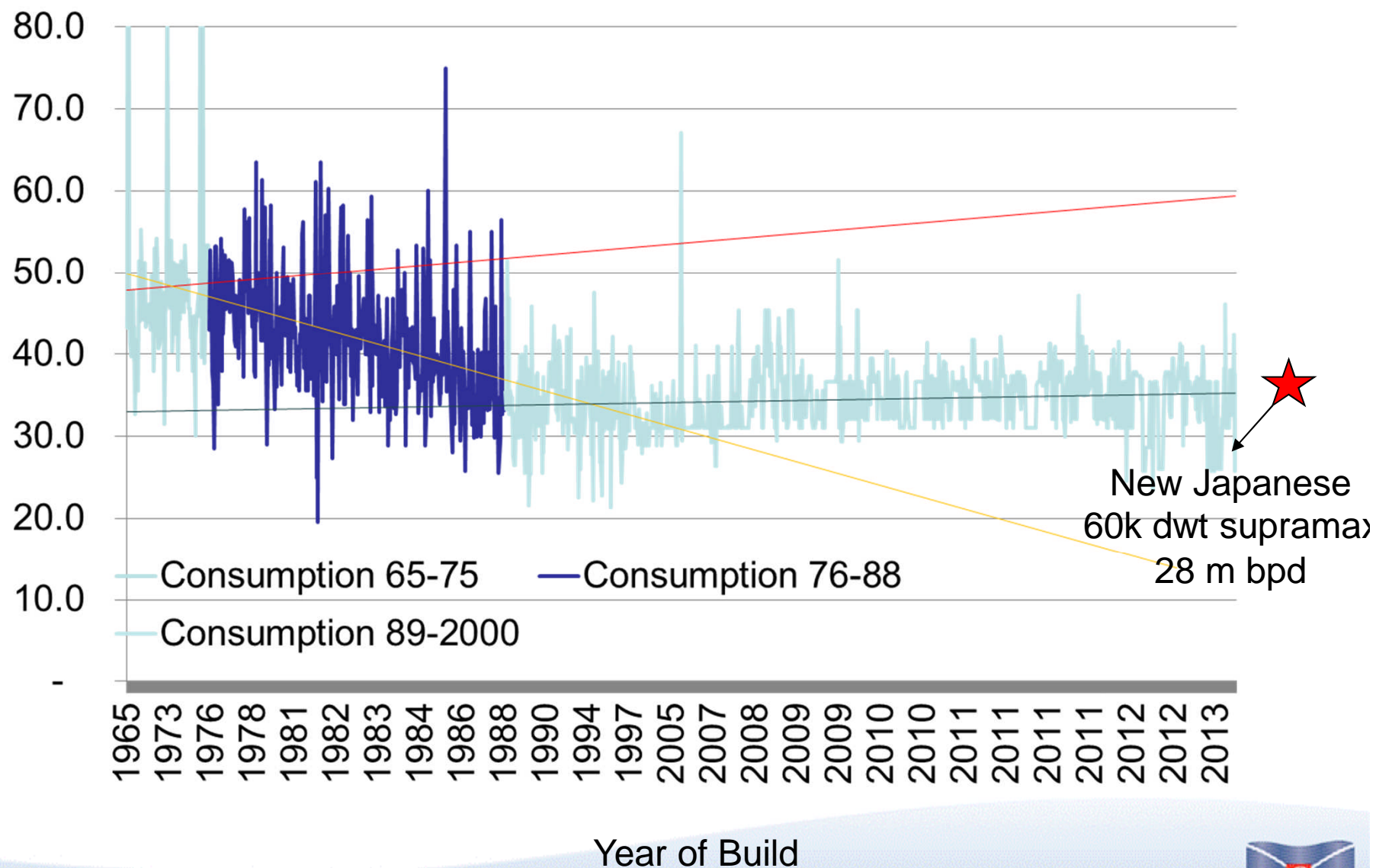
Fuel Consumption 60,000 dwt Bulkera

Fuel consumption TPD at 14.5 knots

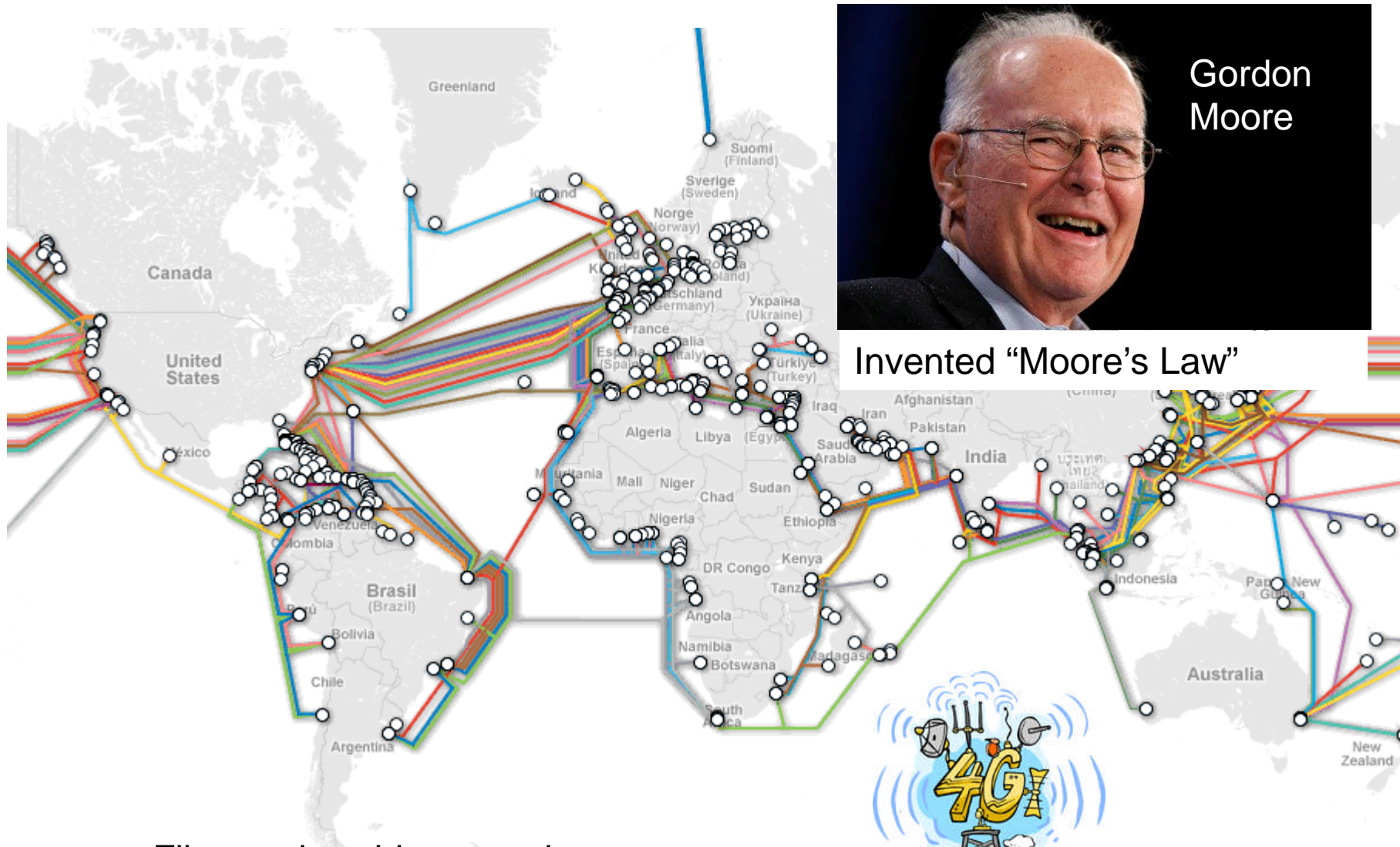


Fuel Consumption 60,000 dwt Bulkers

Fuel consumption TPD at 14.5 knots



Issue 5: Information & Communications



Fibre optic cable network



Has Shipping Learnt its Lesson?

1. This looks like being a long cycle which will change shipping. No magic solutions.
2. Ownership is moving offshore at a rate of 1% a year, and new financial structures emerging
3. Shipping is struggling with a strategy to deal with recession, fuel prices & regulatory issues.
4. Information technology massively important and the basis for major changes in shipping.
5. So plenty of new lessons!



Professional poker players soon learn that they make the big profits by winning from other players



Disclaimer

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