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
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
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?
I still don’t seem to be making any money.

Bankers arrested my ships.

I made millions on timecharters.

I can only pay the interest, sir.

I LOVE SHIPPING

Issue 1: The Shipping Cycle

5 Decades, 5 Markets....

1960s

1970s & 1980s

1990s

2000's

2010s
The Great Shipping Boom

1980s Recession

$8,500/day

$12,000/day

$22,800/day

Newbuilding price of Panamax bulk carrier $ million

The Great Shipping Boom

Source: Clarkson Research Services Ltd
Market Prices Edging Down

- New Panamax
- Panamax bulk carrier 5 year old

Second hand prices still trying to find a level as potential sellers avoid “distress” sales.
But the downward pressure is building

Panamax peak
$90MM
June 2008

Panamax $21 MM

Source CRSL
Panamax Bulker on Trend

Panamax 5 year

Not as cheap as 1980s

Source CRSL
Economic Cycles & Sea Trade

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

% change

Oil Crisis

Credit Crisis


Crisis 1 Crisis 2
1973 1979
1st Oil 2nd Oil
Crisis Crisis

1991 Financial Crisis
1997 Asia Crisis
2001 Dot.com crisis

2007 Credit Crisis

3.9% trend
The Shipbuilding Cycle
Shipyards expand to replace the ships built in the 1970s boom

Million Dwt

Deliveries
Scrapping

Deliveries 61 m dwt in 1976
Deliveries 162.5 m dwt in 2012
Last phase of 1970s scrapping!

2014 2016 2018

0 20 40 60 80 100 120 140 160

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
Shipping Supply Crisis: Brief History

1960s
Supply lags demand & triggers investment bubble

1967-73

1973-2000
Shipping caught in “pincers” of supply bubble and demand collapse

2000-2008
Supply lags demand & triggers an investment bubble

2010s
Supply bubble still delivering, trade OK

Source: Fearnleys Annual Review (cargo), CRSL (fleet)
VLCC Cost & Revenue 1990-2013

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

Revenue based on 12 month earnings. Ships generating much cash in the 2000s

Earnings close to operating costs

OPEX

Depreciation

Interest + spread

VLCC Earnings (12 month average)

Jan-90 Jan-91 Jan-92 Jan-93 Jan-94 Jan-95 Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11 Jan-12 Jan-13

$000/day
Who Imports the Most Cargo By Sea?

1950-2000
OECD’s 1.3 billion population dominate sea trade

2000-2050
6 billion Non-OECD population moving towards OECD levels

<table>
<thead>
<tr>
<th>Region</th>
<th>1950-2000</th>
<th>2000-2050</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan</td>
<td>1.5</td>
<td>7.50</td>
</tr>
<tr>
<td>Europe</td>
<td>3.80</td>
<td>6.30</td>
</tr>
<tr>
<td>N. America</td>
<td>0.6</td>
<td>0.20</td>
</tr>
<tr>
<td>China</td>
<td>0.6</td>
<td>0.20</td>
</tr>
<tr>
<td>S America</td>
<td>0.6</td>
<td>0.20</td>
</tr>
<tr>
<td>Africa</td>
<td>0.20</td>
<td>0.20</td>
</tr>
</tbody>
</table>

Tonnes of sea imports per person a year
OECD & Non OECD Share of Sea Trade


Non OECD % Trade

OECD % Trade

OECD decline started in 1974

Non OECD overtook OECD in 2008
Issue 3: Ownership Patterns

72% OF THE WORLD FLEET FLAGGED ABROAD & GROWING

National & Foreign Flag Fleets M GT

- National flag 396 m dwt, 28%
- Foreign Flag 995m dwt, 72%

$y = 237.72e^{0.054x}$

National flag fleet

Foreign flag fleet
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

<table>
<thead>
<tr>
<th>Country</th>
<th>Gross Tonnage Aug 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greece</td>
<td>157.5</td>
</tr>
<tr>
<td>Japan</td>
<td>157.3</td>
</tr>
<tr>
<td>China</td>
<td>110.8</td>
</tr>
<tr>
<td>Germany</td>
<td>96.5</td>
</tr>
<tr>
<td>S Korea</td>
<td>54.4</td>
</tr>
<tr>
<td>USA</td>
<td>49.3</td>
</tr>
<tr>
<td>Norway</td>
<td>47.8</td>
</tr>
<tr>
<td>Italy</td>
<td>34.5</td>
</tr>
<tr>
<td>Denmark</td>
<td>32.5</td>
</tr>
<tr>
<td>Singapore</td>
<td>31.9</td>
</tr>
</tbody>
</table>
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 issues.**
Based on Aframax tanker, 1 year TC rate and Rotterdam bunker price
The Future - Economical & Green Ships
77,000 Dwt Panamax Bulk Carrier

1. De-rate engine for improved grams/kWh
2. New propeller tuned to revised engine spec
3. Turbo charger cut-out & slide injectors
4. Waste heat recovery system
5. Tune Engine with electronic control system
6. Improved low load cylinder lubrication
7. Improved trim management
8. Hull coatings, less ballast, air resistance etc.

- 225 m LOA, 77,000 dwt
Engine Upgrade Kit

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

2. **Turbo charger** cut-out

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

Old valve   Slide valve
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 Bulkers

Fuel consumption TPD at 14.5 knots

Year of Build

Consumption 65-75
Fuel Consumption 60,000 dwt Bulkers

Fuel consumption TPD at 14.5 knots

Year of Build

Consumption 65-75
Consumption 76-88
Fuel Consumption 60,000 dwt Bulkers

Fuel consumption TPD at 14.5 knots

Year of Build

New Japanese 60k dwt supramax 28 m bpd
Issue 5: Information & Communications

Fibre optic cable network

Invented “Moore’s Law”

Gordon Moore
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.
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