

Marine Shipping Sector

State of the industry

4 May 2015

SINGAPORE | TRANSPORT SERVICES | UPDATE

- Marine shipping sector is highly cyclical.
- Demand for shipping remains weak, as seen from freight rates.
- Bunker price has fallen about 40% from 2014 levels and is at 6-year lows.
- Unemployment within the Eurozone remains an impediment to recovery of the shipping sector.
- Container liners have been affected by port congestion on the US West Coast (California).

Characteristics of the Marine Shipping Industry

- **Sector is highly cyclical.** In a positive business environment, there is an overbuilding of vessels. However, when the sector slows, shipping companies are not able to react immediately to manage their vessel orders. This results in over capacity and weakens freight rates.
- **There are 3 sub-sectors within the Industry: cargo type is the key determinant to the vessel used.** Bulk carriers, tanker ships and container ships each have their own sub-sector dynamics.
- **Shipping competes with other forms of transport.** These include air, land (trucking or rail) and pipe-line (overland and subsea).
- **Cost, geography, time and cargo determine if freight is sent by sea.** Intercontinental freight is generally transported by air or sea. Air freight is more costly than sea freight, so the trade-off is between cost and time taken for the freight to be transported. Consequently, dry bulk is more likely to be shipped by sea.

Outlook for the sector

- **Overcapacity to persist.** Supply is expected to continue to exceed demand, putting pressure on freight rates.
- **Lower bunker prices a positive for the sector.** Reducing operating costs and thus improving margins.
- **California port congestion expected to ease.** Provided there are no new labour disputes.
- **Falling global unemployment is required for a recovery.** This will lead to demand for goods, which will in turn soak up excess capacity and lift shipping rates.
- **China's slowdown hurting dry-bulk shippers.** Bulk commodities affected include: coal, iron ore, nickel, bauxite, soybeans and wheat.

Investment themes to look out for

- **Bulk shipping companies.** Buy when China has strong demand for steel and coal. This would drive up bulk rates.
- **Container shipping companies.** Buy when America and Europe show sign of high consumer consumption and demand.
- **Tanker companies.** Crude tanker asset values depend on freight rates, which is a function of supply of vessels versus demand of tanker miles that depend on changing crude dynamics - which in turn may influence locations of production, and accompanying destinations. Cost structures would determine extent of companies' profitability. LPG tanker values, for the moment, depends critically on the direction of shale trade flows - made uncertain after drastic movement in crude oil prices.

Investment Actions

We do not have an official recommendation on the sector or any of the stocks within the sector. However, this report marks that we are monitoring the sector.

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Sector overview

Sector capacity by deadweight tonnage

1Q 2015 snapshot

The shipping sector is segmented into three categories of vessels:

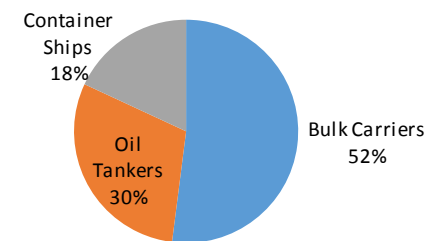
1. Bulk carriers: 52%
2. Oil tankers: 30%
3. Container ships: 18%

10-year history with last 5-year CAGR

5-year CAGR (Mar 2010 – Mar 2015) for each category of vessels:

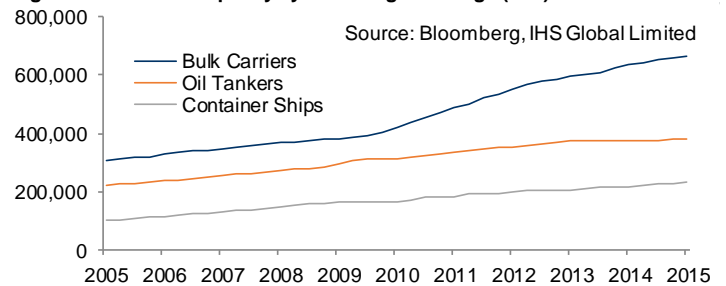
1. Bulk carriers: 9.7%
2. Oil tankers: 4.1%
3. Container ships: 6.6%

Figure 1. Capacity by deadweight tonnage (dwt), 1Q 2015



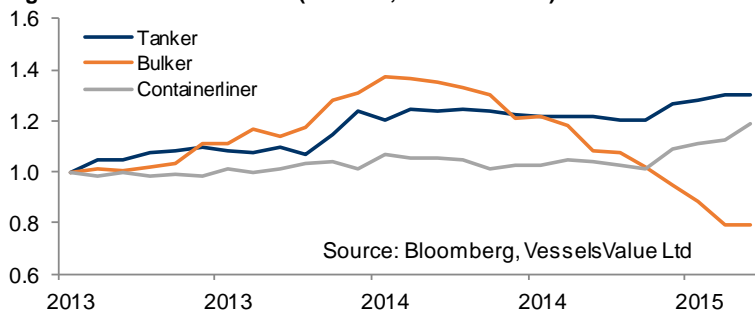
Source: Bloomberg, IHS Global Limited

Figure 2. Historical capacity by deadweight tonnage (dwt)



Comparison of vessel prices across the three segments – Bulker vessel the weakest

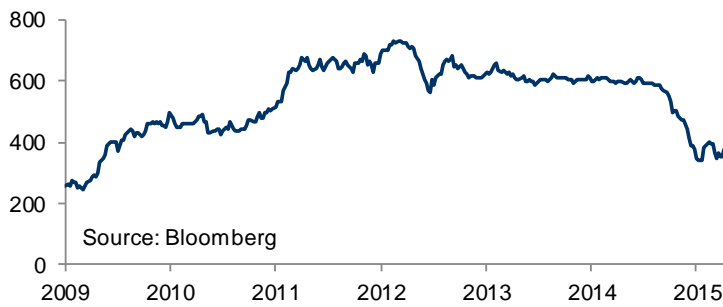
Figure 3. Vessel Price Index (rebased, Jan 2013 = 1.0)



- Tanker and container liner prices have been rising in 2015 due to improvement in demand.
- Container liner prices benefitted from demand for larger vessels.
- Excess capacity in the dry bulk segment has weighed on vessel prices.

Bunker has fallen about 40% from 2014 levels and is at 6-year lows

Figure 4. Historical Bunker Price (US\$ / metric tonne)



- Bunker is the fuel that is used aboard vessels. Bunker is the major cost component for shipping companies. Lower bunker fuel prices will result in better earnings for shipping companies.

10-year historical Index

Figure 5. Dow Jones Global Shipping Index



- The Dow Jones Global Shipping Index measures the stock performance of high dividend-paying companies in the global shipping industry.

Bulk Carriers

Use of bulk carriers

Bulk carriers transport dry unpackaged cargo in cargo holds. Examples of dry bulk include major cargoes such as iron ore, coal, grain, phosphates and bauxite; and minor cargoes such as cement, gypsum, steel products, non-ferrous metal ores, sugar, sulphur and forest products.

Bulk carriers are classified by size

Their sizes are measured by deadweight tonnage (dwt). The capacity of the bulk carrier is implicit from its size, which also typically dictates the type of cargo carried.

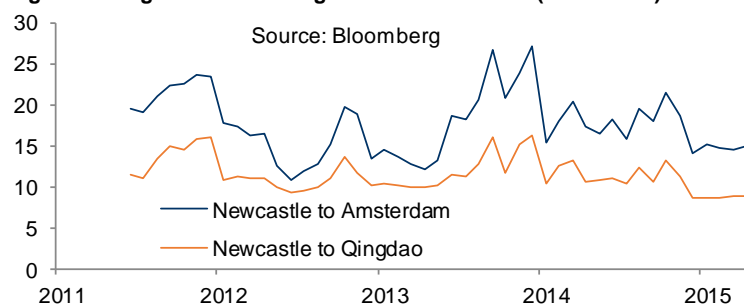
Bulk carrier size categories

Class	Size in DWT
Handysize	10,000 - 35,000
Handymax	35,000 - 59,000
Panamax	60,000 - 80,000
Capesize	80,000 and over

Cost per tonne decrease as the distance shipped increases

The benefit of shipping by sea increases as the distance shipped increases. This is observed from the decrease in average cost as the distance increases.

Figure 6. Freight Cost of Moving a Metric Ton of Coal (USD/ tonne)



Demand for bulk shipping is driven by Steel, Coal & Food

Steel

Dry bulk shipping is primarily driven by steel demand. China is the largest importer of iron ore (74% by tonnage); Australia and Brazil are expected to supply about 84% of China's imported iron ore in 2015.

Coal

China and Japan are the largest importers of coal. However, coal is expected to lose market share to other forms of cleaner or renewable energy sources.

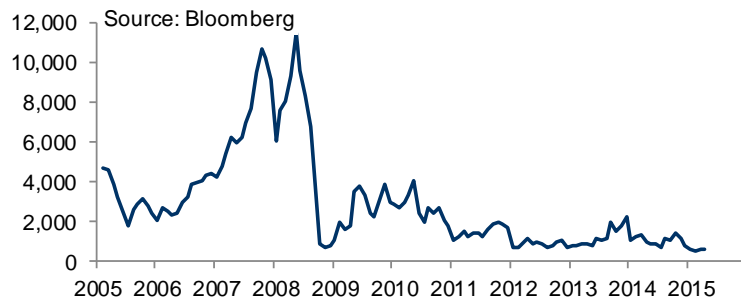
Food

Grain shipments account for about 10% of bulk trade. The US, Australia and Argentina are major exporters of grain. Other products such as wheat contribute to dry-bulk volumes.

Dry Bulk rate is measured by the Baltic Dry Index (BDI)

The BDI in USD is a measure of the price of transporting dry bulk cargo by sea. It is a composite of the Handysize, Supramax, Panamax and Capesize indices, taking 23 shipping routes measured on a time charter basis.

Figure 7. 10-years historical Baltic Dry Index



- BDI reached its all-time high of 11,793 in May 2008.
- BDI has fallen 23.1% to 601, since the start of 2015.

Peer valuations

Top ten global Dry Bulk Shipping Peers (arranged by country)

Company	Mkt. Cap. (US\$m)	P/E	P/B	EV/EBITDA
<u>Hong Kong</u>				
CHINA COSCO HOLDINGS-H	21,162	166.6x	2.47x	N/A
CHINA SHIPPING DEVELOPMENT-H	6,915	59.4x	0.86x	19.4x
PACIFIC BASIN SHIPPING LTD	744	N/A	0.74x	31.8x
<u>Japan</u>				
NIPPON YUSEN	5,195	18.6x	0.80x	10.0x
MITSUI OSK LINES LTD	4,323	9.7x	0.71x	15.0x
KAWASAKI KISEN KAISHA LTD	2,460	8.6x	0.66x	6.6x
<u>South Korea</u>				
HANJIN SHIPPING CO LTD	1,794	N/A	2.03x	16.2x
HYUNDAI MERCHANT MARINE	1,867	N/A	3.12x	165.8x
<u>China</u>				
COSCO SHIPPING CO LTD-A	3,416	45.6x	3.24x	N/A
<u>Denmark</u>				
D/S NORDEN	861	N/A	0.72x	N/A

Source: Bloomberg, Phillip Securities Research (Singapore) (Updated: 30 April 2015)

Oil Tankers

Use of oil tankers

Oil tankers are used to transport oil. There are two types of oil tankers:

- **crude tanker:** used to transport unrefined crude oil (dirty tanker)
- **product tanker:** used to transport refined products (clean tanker)

Oil tankers are classified by size

Size is measured by deadweight tonnage (dwt).

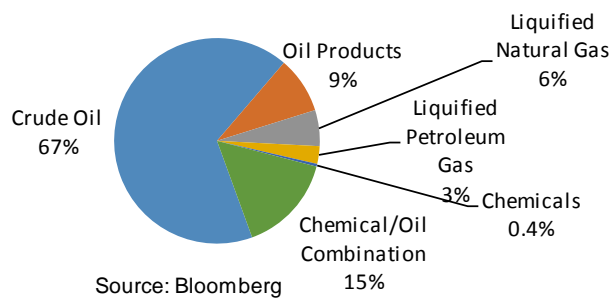
Oil tanker size categories

Class	Size in DWT
Product tanker	10,000 - 60,000
Panamax	60,000 - 80,000
Aframax	80,000 - 120,000
Suezmax	120,000 - 200,000
Very Large Crude Carrier (VLCC)	200,000 - 320,000
Ultra Large Crude Carrier (ULCC)	320,000 - 550,000

Global tanker fleet is mainly used for moving crude-oil

67% (by dwt) of global tanker fleet are crude-oil tankers, with the remaining tankers used to move chemicals, LPG, LNG and other oil products.

Figure 8. Segmentation of global tanker use



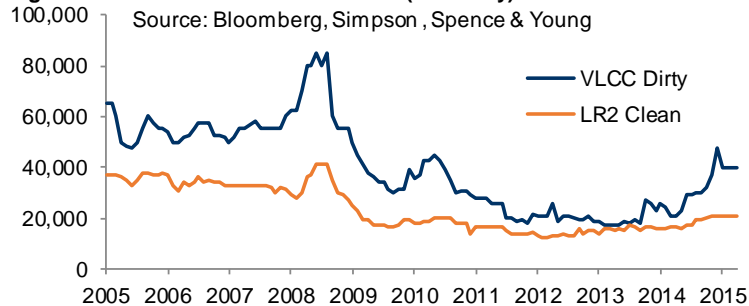
Demand and shipping rates are driven by Oil demand

As oil tankers are used exclusively to transport oil and oil-related products, demand is largely driven by global oil demand. This in turn drives dirty-tanker and clean-tanker rates. Other factors that can affect rates include tanker capacity utilisation rates and geopolitical risks.

Tanker time charter rates appear to have bottomed

Freight rates are measured by 12-month charter (lease) rates for dirty (crude oil) and clean (refined products).

Figure 9. Tanker Annual Time Charters (USD / day)



Peer valuations
Top ten global Tankers Peers (arranged by country)

<u>Company</u>	<u>Mkt. Cap. (US\$mn)</u>	<u>P/E</u>	<u>P/B</u>	<u>EV/EBITDA</u>
<u>Denmark</u>				
AP MOELLER-MAERSK A/S-B	44,354	20.3x	1.06x	4.2x
<u>Malaysia</u>				
MISC BHD	11,711	18.9x	1.50x	12.2x
<u>Hong Kong</u>				
CHINA SHIPPING DEVELOPMENT-H	6,915	59.4x	0.86x	19.4x
<u>Saudi Arabia</u>				
NATIONAL SHIPPING CO OF/THE	5,239	24.3x	2.39x	16.0x
<u>Japan</u>				
NIPPON YUSEN	5,195	18.6x	0.80x	10.0x
mitsui osk lines ltd	4,323	9.7x	0.71x	15.0x
<u>United States</u>				
TEEKAY CORP	3,625	N/A	3.30x	14.6x
<u>Qatar</u>				
QATAR GAS TRANSPORT(NAKILAT)	3,492	13.8x	4.32x	14.0x
<u>Belgium</u>				
EURONAV SA	2,219	N/A	1.51x	18.0x
<u>South Korea</u>				
HYUNDAI MERCHANT MARINE	1,867	N/A	3.12x	165.8x

Source: Bloomberg, Phillip Securities Research (Singapore) (Updated: 30 April 2015)

Container Ships

Use of Container ships

Container ships, as the name suggests, are cargo ships that carry containerized cargo. Containerized cargo is transported in intermodal containers, which are reusable steel boxes. The term intermodal is used because the containers can be transferred between various modes of transport (i.e. sea, rail, truck).

Container units of measurement

The unit of measurement for container freight is the twenty-foot equivalent unit (TEU). It is an inexact unit of measure based on the volume of a 20-foot-long intermodal container.

Four main types of containers in use

- twenty-foot-long
- forty-foot-long
- ISO tanks
- Refrigerated containers (known as reefer).

Container ships are classified by capacity

Capacity is measured by twenty-foot equivalent unit (TEU).

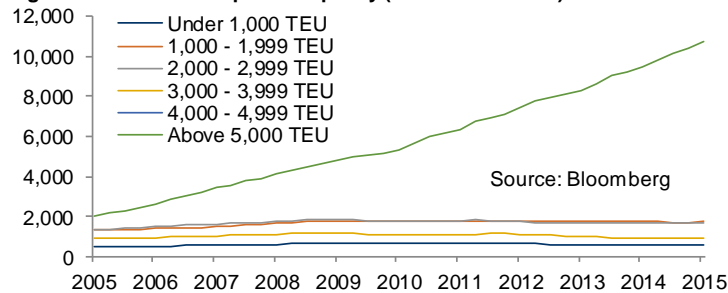
Container ship size categories

Class	Capacity (TEU)
Small feeder	up to 1,000
Feeder	1,001 - 2,000
Feedermax	2,001 - 3,000
Panamax	3,001 - 5,100
Post panamax	5,101 - 10,000
New Panamax	10,001 - 14,500
Ultra Large Container Vessel (ULVC)	14,501 and higher

Industry is evolving towards using larger ships

Larger ships have better economies of scale. Liners use larger ships aim to lower unit costs and improve fuel economy. Containership capacity has grown up to 18,000 TEUs.

Figure 10. Containership fleet capacity (in thousand TEUs)



Demand driven by Seasonal Consumer Pattern

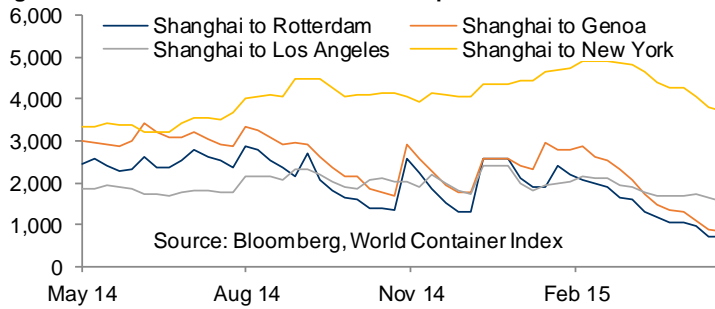
Containers carry high-value goods used by consumers. The majority of global flow of goods comes from Chinese and Asian factories to consumers in Europe and North America. Containerised goods include vehicle parts, furniture, appliances, kitchenware, apparel and textiles.

Container volumes follow the shopping periods in North America and Europe, driven by the Christmas season in December. Volumes tend to pick up during spring and summer, and the peak season is from June to August as stores prepare for Christmas. Container activity then goes quiet during the post-Christmas lull and closure of Chinese factories for the week-long Lunar New Year holiday.

Consumer demand in Europe has been weaker than consumer demand in the US

This resulted in weaker rates to Europe, compared to rates to the US. We looked at rates to the US West coast (Los Angeles) and East coast (New York), and compared with the rates to Northern Europe (Rotterdam, The Netherlands) and Southern Europe (Genoa, Italy).

Figure 11. Container rates from Asia to Europe and US



Change in rates over the last 12-months:

- Shanghai to Rotterdam - down 70.4%
- Shanghai to Genoa - down 71.2%
- Shanghai to Los Angeles - down 10.9%
- Shanghai to New York - up 14.6%

Shipping Alliances

Container liners have formed alliances for better capacity utilisation. Containerisation of freight has facilitated the various liners to cooperate.

Major Containerliner Alliances

Major Containerliner Alliances	
CKYHE	G6 Alliance
COSCO Group	Hapag-Lloyd
Hanjin Shipping	Mitsui OSK Line
Kawasaki Kisen Kaisha	Neptune Orient Lines
Yang Ming	Nippon Yusen Kaisha
Evergreen	Orent Overseas
	Hyundai Merchant Marine
Ocean 3	2M
CMA CGM	Maersk
China Shipping Container Lines	Mediterranean Shipping
United Arab Shipping	

Source: Bloomberg Intelligence

Peer valuations
Top ten global Container Shipping Peers (arranged by country)

Company	Mkt. Cap. (US\$mn)	P/E	P/B	EV/EBITDA
<u>Denmark</u>				
AP MOELLER-MAERSK A/S-B	44,354	20.3x	1.06x	4.2x
<u>Hong Kong</u>				
CHINA COSCO HOLDINGS-H	21,162	166.6x	2.47x	N/A
CHINA SHIPPING CONTAINER-H	16,337	39.1x	1.69x	34.5x
ORIENT OVERSEAS INTL LTD	3,880	14.3x	0.84x	10.1x
<u>Japan</u>				
NIPPON YUSEN	5,195	18.6x	0.80x	10.0x
MITSUI OSK LINES LTD	4,323	9.7x	0.71x	15.0x
KAWASAKI KISEN KAISHA LTD	2,460	8.6x	0.66x	6.6x
<u>Taiwan</u>				
WAN HAI LINES LTD	2,447	14.1x	2.09x	7.1x
EVERGREEN MARINE CORP LTD	2,358	61.5x	1.18x	15.5x
<u>Singapore</u>				
NEPTUNE ORIENT LINES LTD	2,271	N/A	1.30x	19.0x

Source: Bloomberg, Phillip Securities Research (Singapore) (Updated: 30 April 2015)

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