ANNUAL REVIEW

2017

BRS GROUP

SHIPPING AND SHIPBUILDING MARKETS

Contents

Shipbuilding
Decomposition before recomposition 05

Dry bulk
Is the worst behind us? 31

Tanker
The Good, the Bad and the Ugly 43

Chemicals & small tankers
Timing is everything 57

LPG
Back to reality 63

LNG
A year of consolidation 69

Offshore
How long must we wait? 75

Cruise
Full steam ahead! 83

Yachting
Cautious optimism 89

Containerships
Another lost year 93

Ro-Ro
A good year 103

Car carrier
Down we go 109

Finance
A struggle of lions and foxes 115

An online version of this
Annual Review is available
in English, Chinese and French.

www.brsbrokers.com

In figures

425
Employees
worldwide

200
Shipbrokers

100
Assets transactions
per year

3,500
Chartering transactions
per year

Profile

The BRS Group is a diversified global shipping services group offering a range of maritime activities which complement its core shipbroking business. In addition to Shipbroking and Yacht Brokerage, the Group's activities include Freight Futures (FFA's), Software Technology and Market Intelligence.

Finally!

The most significant step towards a healthier market was arguably the decline in global shipbuilding capacity

In our 2015 review we called for 'elimination' not 'consolidation' – and it is finally happening. Hanjin Shipping capped a long list of competitors 'rationalised', and we counted more than 15 liquidations or closures in 2016 compared to just a handful in 2015 when restructuring was the name of the game. Meanwhile vessel ordering activity was the lowest since 2009 as owners retrenched.

However, the most significant and important step towards a healthier market was arguably the decline in global shipbuilding capacity, from an estimated 1,150 active yards in 2000 to around 630 yards in 2016. This represents a 35% decline to an estimated 45 million Compensated Gross Tons (CGT). The trend continues with an estimated 3 million CGT set to disappear in 2017.

BRS would argue that effective yard capacity is much lower, however, as only savvy well-experienced owners would venture new orders today, and they know the danger of making down payments to bankrupt or non-performing yards. The effective supply of reliable yard capacity is clearly being rationalised. BRS research leads us to believe that up to 50% of South Korean capacity, 20-30% of Chinese and 10-20% of Japanese capacity will disappear by 2018.

Another key rationalisation is in the maritime financial sector, both in the public and private finance markets. The supply has shrunk dramatically and most of the remaining financial institutions are concentrating on saving themselves rather than helping their clients buy more vessels. Many have announced their exit from shipping finance, or the sale (at serious discounts) of their portfolios. The barriers to entry have gotten steeper and it will lead to less supply of tonnage over the coming years.

Much more expensive financing is, of course, available through the capital markets but forecasted returns have served, at least this year, to restrict these sources. Debt and equity capital markets raised around $5 billion for maritime transport in 2016, versus more than $10 billion in 2015. New banking regulations with Basle 3 ratios and compliance obligations have essentially made access to funds impossible unless, ironically, you don't need them. This is a huge brake on supply which will continue over the foreseeable future.

Meanwhile, the recent flood of Chinese capital seems to be aimed at re-financing existing fleets. The Chinese are taking advantage of today's prices and using their foreign currency surpluses to invest heavily in the key component of their party's goal of creating "one belt, one road". There is an element of nationalisation as the Chinese take more and more control of their supply chains. As an example, state-owned ICBC Financial Leasing, which will back the construction of 10 VLOCs for Vale, says it is investing between $3bn to $4bn per year in shipping. Taken together with the other emergent Chinese lenders, this is not far off the total amount provided by the capital markets in 2016.

Speed levels are another complicating factor in the effort to achieve a sustained recovery. Changing operational speeds can have a profound impact on supply. Since January 2015, the standard Capesize fleet has sped up by 1 knot; this may not sound much but it represents the equivalent of 7% more supply being added to the fleet (see graph on page 34 of the dry bulk chapter).

The new clean water ballast restrictions coming into force and the ensuing costs are already leading to the elimination of uneconomical vessels. New Sulphur Emission Control Area (SECA) zones and navigational speed limits are also contributing to balancing supply. Traditionally, the supply of carrying capacity has been easier for us to follow than demand, but as we have seen during the course of this year, small adjustments in speed, trades, weather delays, and repair and maintenance times can make for significant shifts in supply-demand balances, highlighted by the freight spikes seen at the end of the year. These are clear indicators to us that the bottom is behind us but it does not mean that there is a sustained recovery in the near future.

Demand in the major bulk and tanker markets has remained strong with some surprises and some evolving trades that have been positive and which should continue to absorb oversupply. Due mainly to environmental pressures but also pricing, imports of the key seaborne steel making commodities (iron ore, coking coal etc, which represent as much as 20% of world seaborne trade) grew, as coal and iron ore mining around the world was rationalised. Despite geopolitical uncertainties, ton miles grew in dry and wet markets. The container and offshore markets have been the worst in class, but it seems they are now also 'rationalising' through mergers and bankruptcies. Scrapping and lay up and rationalisation are set to accelerate in these sectors.

On the back of complicated geopolitical trade issues and a growing anti-trade nationalism, the industry is trying to come to terms with disruptive technology that could change supply chains and 'rationalise' intermediaries. Logistics companies, major freight buyers, container companies and many newcomers are exploring ways to harness efficiencies with electronic platforms, blockchain, and technology. It will be a complicated few years as the industry works out what is most efficient.

Commodity houses, freight traders and brokers, all experts in anticipating inefficiencies, will be under pressure to find other revenue models in order to participate in the steady growth of world trade and the corresponding world fleet.

Tim JONES
President

PALANCA MIAMI, high-heat bitumen tanker, 36,681 dwt, delivered by South Korean shipyard Hyundai Mipo to Wisby Tankers in February 2017

SHIPBUILDING

Decomposition before recomposition

2016 will be remembered for the quasi-extinction of newbuilding orders, and the free fall in newbuilding prices for those very few orders which were nonetheless placed. The entire shipping market is under pressure and large swathes of the shipbuilding industry are now under threat from contraction or elimination, while a number of shipowners are also fighting for survival. There are many parallels with the shipping market in the mid-1980s, as if we are now going through a 30-year super-cycle. Interestingly, after the Asian shipbuilding industry brought the European shipbuilding industry to its knees in the late 1980s, the latter is now thriving on the back of demand for cruiseships, and European yards have orders stretching into the mid-2020s.

GIANCARLO D, stainless steel chemical tanker, 19,801 dwt, delivered by Chinese shipyard Ningbo Xinle in 2016 to De Poli Tankers

KEY POINTS OF 2016

		2015	2016
Orders	Ships	1,537	509
	m dwt	107.7	34.1
Deliveries	Ships	1,406	1,389
	m dwt	94.1	98.6
Orderbook	Ships	4,013	2,901
	m dwt	290.2	211.7
Active Fleet	Ships	37,098	37,635
	m dwt	1,689.2	1,743.2
Orderbook/Active Fleet	Ships	10%	8%
	m dwt	17%	12%

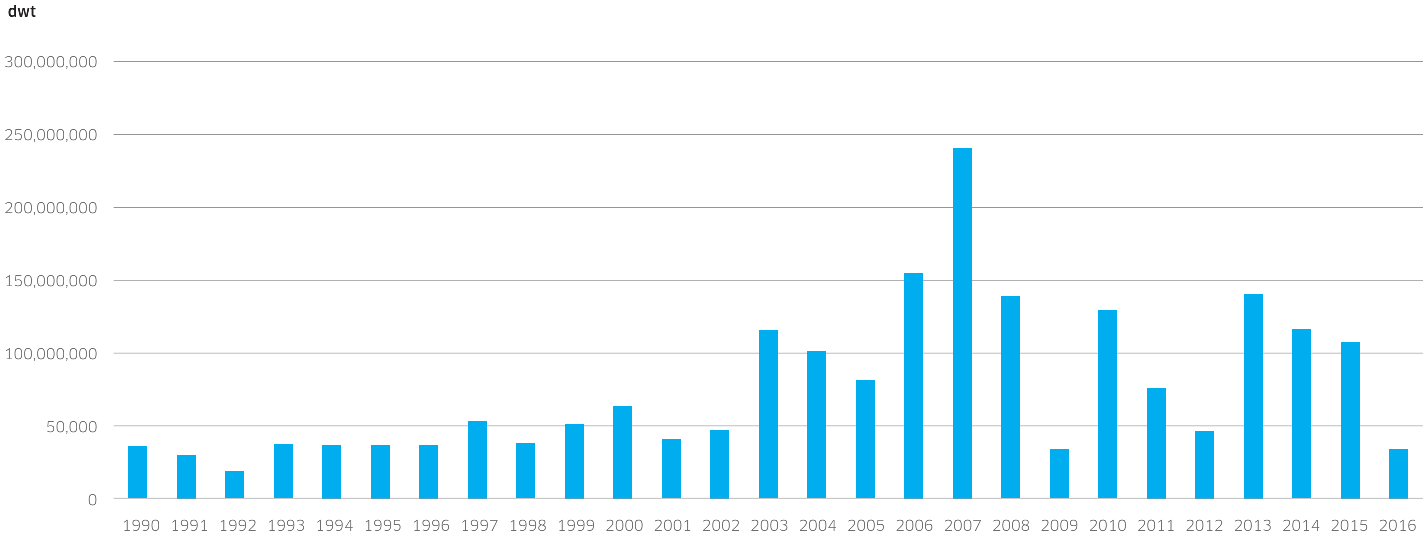
In 2016, the strains on the industry successfully disrupted the relative ranking of the five major shipbuilding groups: China remained on top with a 43.9% market share, but Japan and Korea swapped positions with Japan taking second place (25.7%) and Korea third place (23.5%). This is a game changer between two fierce competitors, as Korea had occupied second place since 2000. The Rest of the World (RoW) and Europe follow with respectively 4.7% and 2.2%.

Individual orderbooks declined significantly across the board, with the noticeable exception of Europe which has been able to maintain or increase its orderbook by number of ships for the fourth consecutive year, reaching 250 units at the end of 2016.

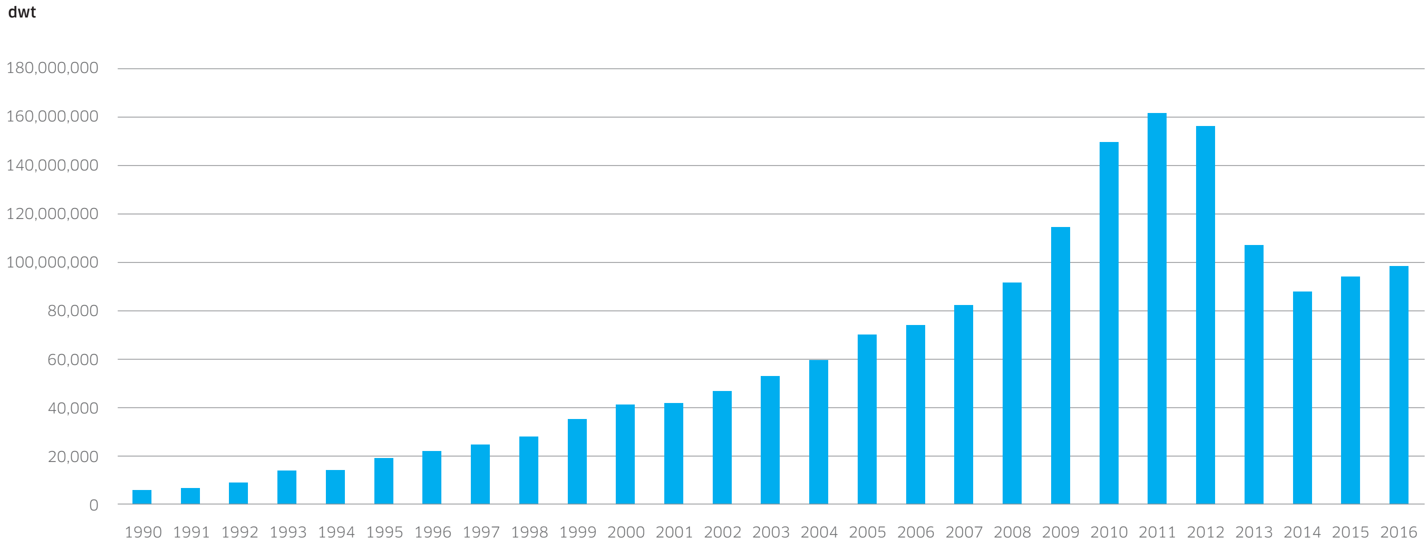
Owners are fighting for survival in a market plagued with very low freights and earnings. The two large Japanese shipowing companies, United Ocean and Daiichi Chuo Kisen, and one very large Korean shipowing company, Hanjin Shipping, went into receivership in 2016. In that environment, owners have very little appetite for newbuildings in spite of substantial incentives from shipbuilders, including large price discounts of between 10% to 20% and very attractive payment terms. But the newbuilding market has also had to compete with the second hand market which offered many opportunities in 2016. As a matter of fact, about 88m dwt was bought or sold on the second hand market versus a total 34m dwt in newbuilding orders. Shipyards' difficulties were heightened by reduced support from banks, which are gradually trying to leave the shipping industry. Renegotiations, postponements of contractual deliveries, and cancellations remained a very hot topic throughout 2016.

ORDERBOOK		2015	2016
China	Market Share	41%	43.9%
	Ships	1,670	1,197
	m dwt	119.8	92.9
Japan	Market Share	23.8%	25.7%
	Ships	1,065	803
	m dwt	69	54.4
Korea	Market Share	28.2%	23.5%
	Ships	758	451
	m dwt	82	49.8
ROW	Market Share	4.7%	4.7%
	Ships	273	204
	m dwt	13.6	10.0
Europe	Market Share	2.0%	2.2%
	Ships	249	250
	m dwt	5.8	4.6

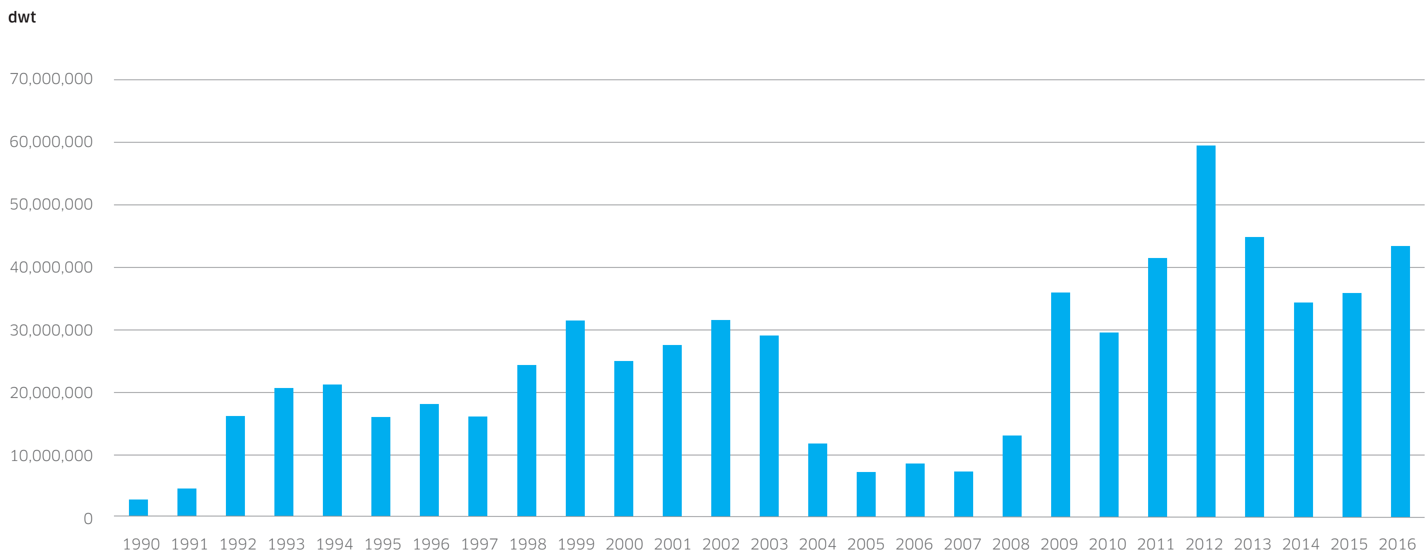
Orders



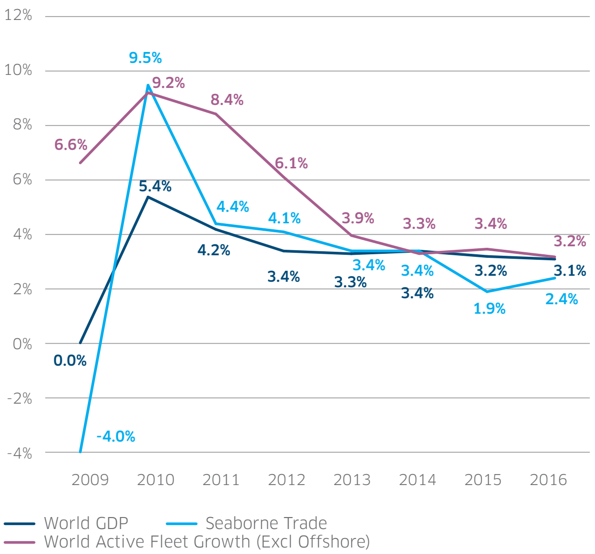
Deliveries



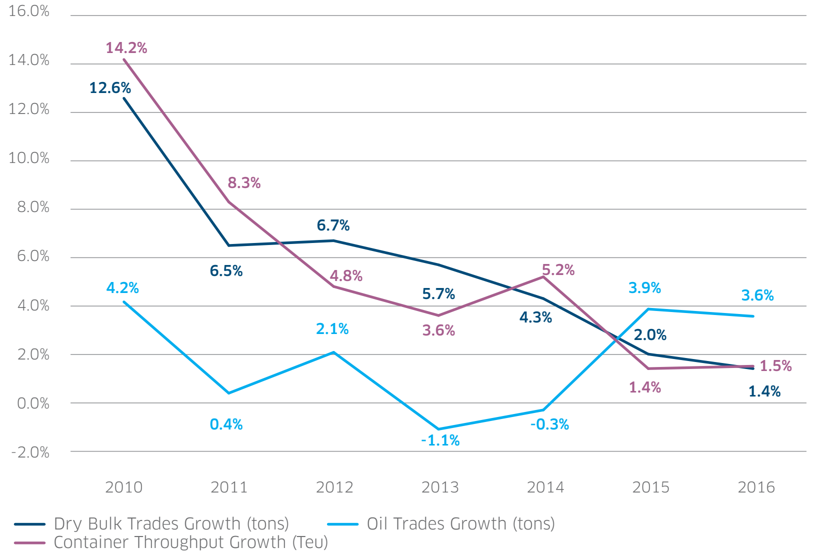
Demolitions



Global Trade, World GDP and Active Fleet Growth



Maritime Trade growth



WORLD ECONOMY, MARITIME TRADE AND FREIGHT RATES

World Economy

Global economic growth remained largely flat at about 3.1% in 2016, while world seaborne trade growth finally rebounded from 1.9% in 2015 to 2.4% in 2016, following seven years of constant decline (9.5% in 2010). The market is still struggling to absorb the new tonnage coming in, even if there are signs of a reduction in fleet growth (about 3.2% in 2016 against 3.4% in 2015). One of the key questions in 2016 was whether the world might be returning to de-globalization, a trend that could already have started in 2014, characterized by lower growth in seaborne trade than GDP. This could be augmented by new policy trends in some countries giving priority to domestic production. More recently, the former US President Obama declared that “the next wave of economic dislocation will not come from overseas, it will come from the relentless pace of automation”, which in turn might favour production relocation.

Maritime Trade

Growth in dry bulk trade has been decelerating and reached just 1.4% in 2016, the slowest pace since 2010.

After several years of volatility, oil trade growth stabilized around 3.6% in 2016, reflecting the impact of low oil prices and the switch away from coal.

Container throughput growth is at one of its lowest levels since 2010, reaching 1.5% in 2016.

FREIGHT RATES

Dry bulk

Dry bulk freight rates saw their lowest point in February 2016 with the Baltic Dry Index (BDI) logging a new record low of 290, the lowest since the BDI started in 1985. Since then, the dry bulk market has rebounded and the BDI steadily rose to finish the year at 961. Progressively, bulkers are starting to trade above their operating expenses. But the surplus of ship capacity, together with a stagnant growth in cargoes, is still a brake on a strong recovery.

Tanker

Tanker freight rates decreased steadily over 2016 from 688 (Baltic Crude Tanker Index) and 1065 (Baltic Dirty Tanker Index) at the beginning of the year, to 678 (BCTI) and 919 (BDTI) at the end. But tankers are trading well above their operating expenses.

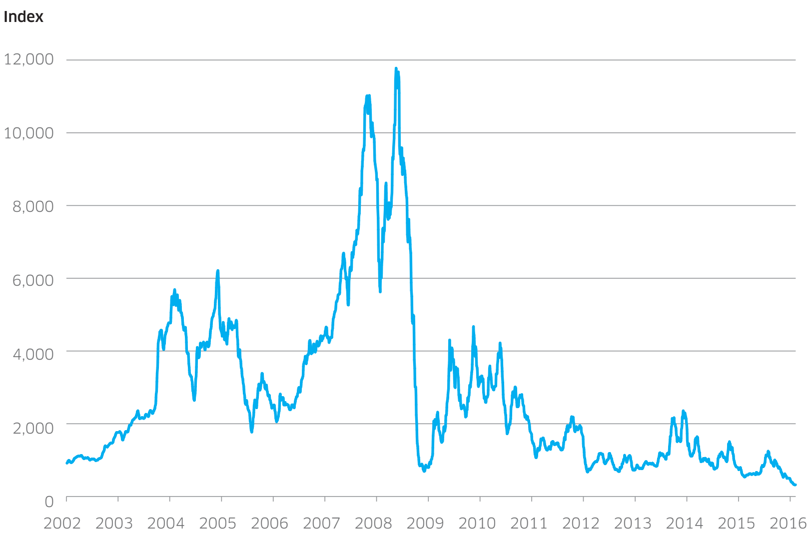
Container

Spot freight rates touched record lows in the first half of the year, albeit improving in the second half. April 2016 saw a record low in the China Containerized Index (CCFI) which, at 632 points, broke the previous record of 713 points recorded in June 2015. It recovered somewhat to pass the 800 mark in December 2016.

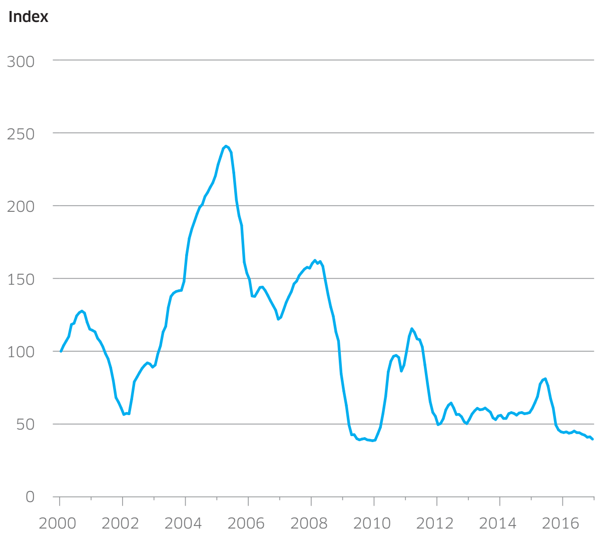
The slump was sufficiently serious to trigger the demise of Hanjin Shipping, while also forcing a wave of consolidations. Fuel oil prices also rose, prompting carriers to step up their fuel-saving efforts.

Charter rates for containerships remained stuck at low levels throughout 2016. The classic Panamax of 4,000–5,100 teu fared the worst, with rates falling to $4,000 in December 2016. Paradoxically 1,000-2,000 teu vessels traded at rates higher than the 2,500–5,000 teu ships. The idle or unemployed containership pool remained very high at an average 1.27m teu in 2016, a big increase on the 0.55m teu seen in 2015.

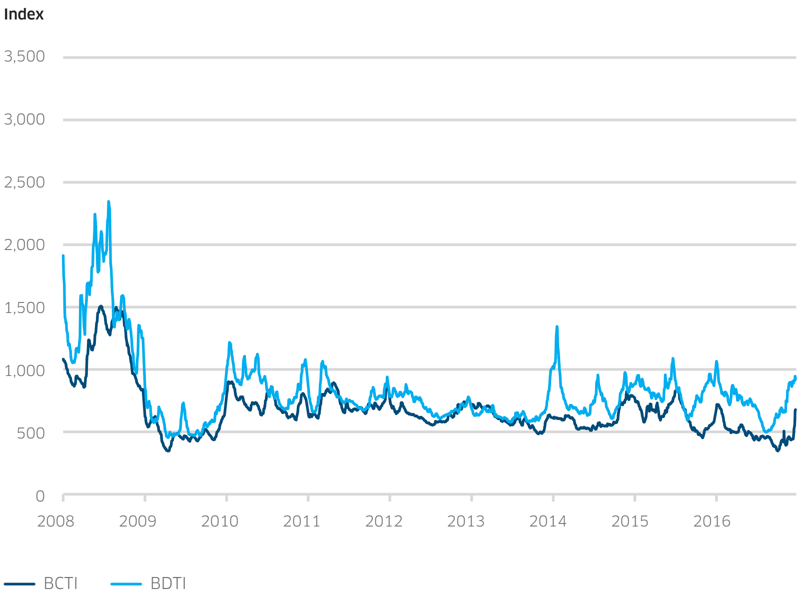
Baltic Dry Index since 2002



Alphaliner Charter Index since 2000



Baltic Clean Tanker Index & Baltic Dirty Tanker Index



3.1%
global economic growth in 2016

The BDI logged a record low of 290 in February 2016

ORDERS AND ORDERBOOKS

Orders and orderbooks for standard vessels

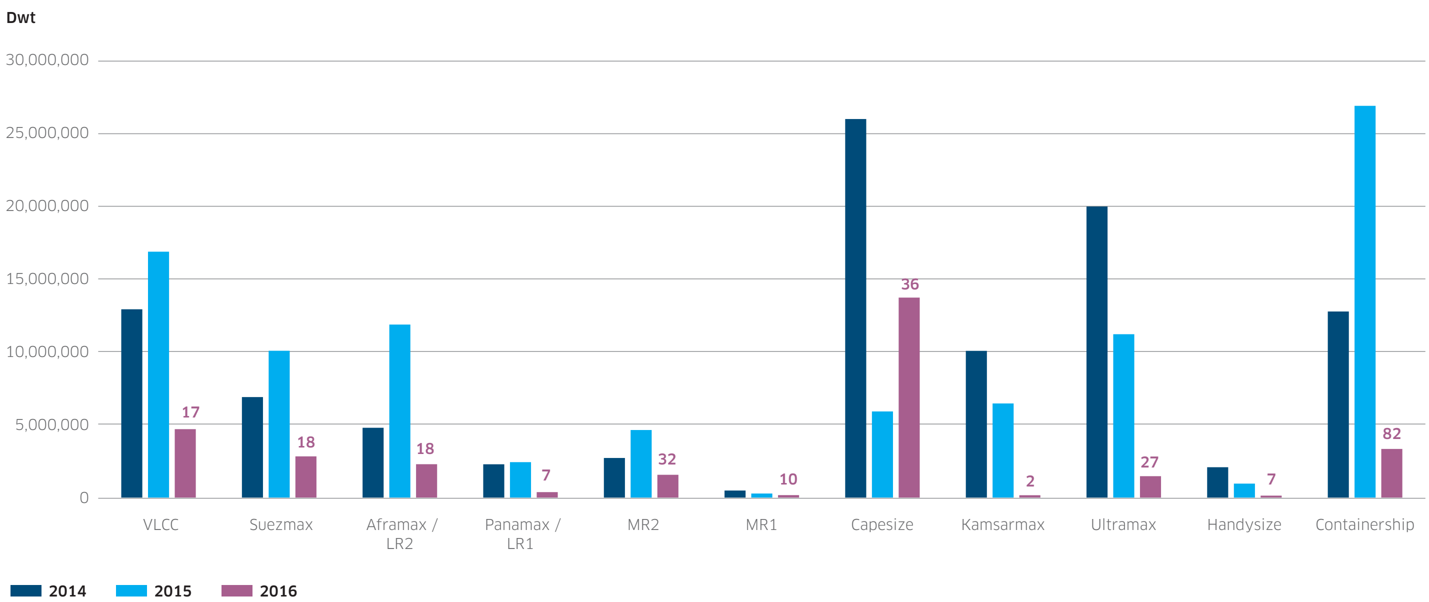
With only 34.1m dwt in newbuilding orders during 2016, the year was very much on par with 2009's record low after the world was hit by the worst economic crisis since 1929.

It was also an abrupt reversal on 2015! While newbuilding orders for bulkers were low in 2015, orders for containerships reached their second highest level since 2000, and the fourth highest level for tankers in this period.

But in 2016, none of the three main shipbuilding segments - bulker, tanker, containership - was spared.

Overall, newbuilding orders were cut by two-thirds in 2016, with tanker orders at less than a quarter of 2015 levels and containerships at less than a tenth. Bulker orders fell by 50%, which might seem a better outcome, but this figure conceals a unique order of thirty 400,000 dwt VLOCs placed by Chinese owners for long-term charter to Brazilian iron ore giant Vale. Without doubt, except for this special 'political contract', bulk orders would have dropped to 3.5m dwt, corresponding to one-eighth of 2015 levels.

New Orders for Standard Vessels per Year



New orders per year 2000-2016

M Dwt	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
TANKER	34.5	21.8	19.2	50.0	39.1	29.8	77.6	48.5	35.8	8.9	29.4	8.6	13.1	33.4	32.8	48.9	13.2
BULK	14.2	9.1	19.1	34.0	31.7	23.7	47.6	142.9	85.4	23.4	88.4	39.6	24.0	75.6	58.1	24.5	15.5
CONTAINER	10.4	6.3	5.3	26.7	19.8	17.8	19.2	35.4	11.6	0.3	7.3	20.7	3.5	22.5	12.8	26.9	3.3
OTHER SHIPS	4.1	3.6	3.3	5.1	10.7	10.2	10.4	14.3	6.3	1.3	4.4	6.7	5.9	8.7	12.3	7.4	2.0
TOTAL	**63.3**	**40.8**	**46.8**	**115.8**	**101.3**	**81.4**	**154.8**	**241.1**	**139.1**	**33.9**	**129.5**	**75.6**	**46.6**	**140.3**	**116.0**	**107.7**	**34.1**

We should remember that, in spite of the low prevailing freights, many dry bulk orders were supported in 2015 by owners wishing to avoid the extra costs related to several new sets of rules: the change from Common Structural Rules (CSR) to Harmonized Common Structural Rules (H-CSR) as of 1 July 2015, and the adoption of new IMO Tier III requirements related to NOx emissions as of 1 Jan 2016. These requirements prompted some shipowners to bring forward planned orders in order to reduce building costs and benefit from better performance (deadweight, consumption). The weaker yen versus the dollar also had a favourable effect. But there was no equivalent factor in 2016 and the long-awaited implementation of the ballast water treatment regulations, which come into effect in September 2017, should not have any impact. In spite of the circumstances, the dry bulk active fleet continued to grow from 775m dwt to 792m dwt (+2.2%).

Chinese shipbuilders again increased their dry bulk market share, this time from 54% to 61%, while Japan's inched down from 35% to 32%. Korean shipbuilders have been gradually forced out of this market due to prevailing low prices, and their market share finished the year at just 3%.

34m
Deadweight ordered in 2016

61%
China's share of the dry bulk orderbook

Japanese shipbuilders gradually shifted production from bulkers to tankers

BULK		2015	2016
Orders	m DWT	24.5	15.5
Delivery	m DWT	48.6	47.2
Orderbook	m DWT	118.1	78.3
Active Fleet	m DWT	775.5	792.8
Orderbook/active fleet		**15.23%**	**9.88%**
China orderbook	Market Share	54%	61%
	m DWT	64.2	47.7
Korea orderbook	Market Share	6%	3%
	m DWT	7.6	2.3
Japan orderbook	Market Share	35%	32%
	m DWT	41.4	25.4

HAFNIA HENRIETTE, 49,999 dwt product chemical (IMO3) tanker, built by China's Guangzhou Shipyard and delivered to Hafnia Tankers in 2016

Tanker orders, including chemical tankers, declined significantly in 2016 from 48.8m dwt the previous year to 13.2m dwt. Korea still leads this segment with a 38% market share but its stake has been eroded to the benefit of China (33%) and Japan (21%). Chinese shipyards are continuously improving their reputation for building tankers, and several leading western tanker players have placed their confidence in these yards. Meanwhile Japanese shipbuilders, which have traditionally built bulkers, switched production for lack of demand. The active tanker fleet grew from 532m dwt at end 2015 to 561 m dwt at end 2016 (a rise of 5.6%).

TANKER		2015	2016
Orders	m DWT	48.8	13.2
Delivery	m DWT	19.2	33.1
Orderbook	m DWT	102.5	78.1
Active Fleet	m DWT	532.1	561.8
Orderbook/active fleet		**19.26%**	**13.90%**
China orderbook	Market Share	31%	33%
	m DWT	32.0	25.8
Korea orderbook	Market Share	46%	38%
	m DWT	47.0	29.4
Japan orderbook	Market Share	15%	21%
	m DWT	15.4	16.6

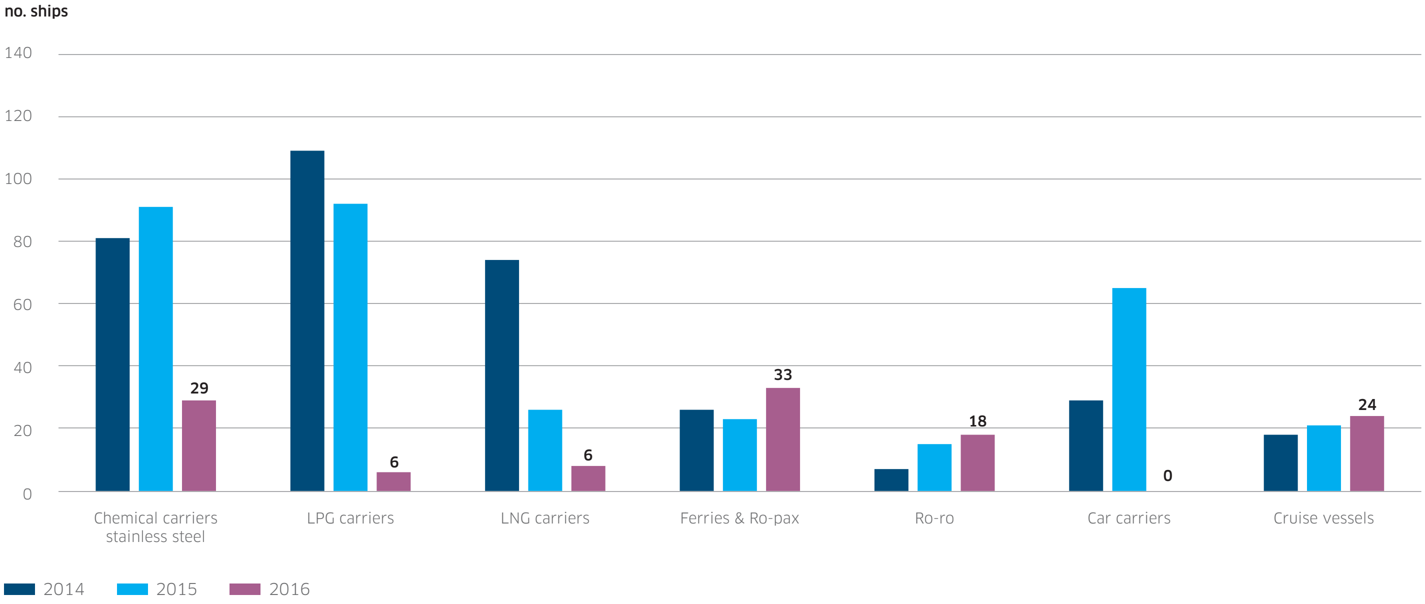
Containerships orders completely collapsed in 2016 in line with the further deterioration in freight rates, although this had not deterred shipowners from ordering several large containerships back in 2015 in search of economies of scale and market share. For the first time ever, the active containership fleet seems to have stalled.

China is leading this segment with a 43% market share. Meanwhile Japan increased its market share to 23% from 17% during the year, to the detriment of Korea which receded from 32 % to 24%.

CONTAINER		2015	2016
Orders	m DWT	26.8	3.3
Delivery	m DWT	19	10.1
Orderbook	m DWT	42.9	35.4
Active Fleet	m DWT	244.3	245.7
Orderbook/active fleet		**17.56%**	**14.41%**
China	Market Share	41%	43%
	m DWT	17.5	15.2
Korea	Market Share	32%	24%
	m DWT	13.7	8.6
Japan	Market Share	17%	23%
	m DWT	7.2	8.2

Containership orders collapsed in 2016

New Orders for Specialised Vessels per Year



Orders and orderbooks for Specialised vessels

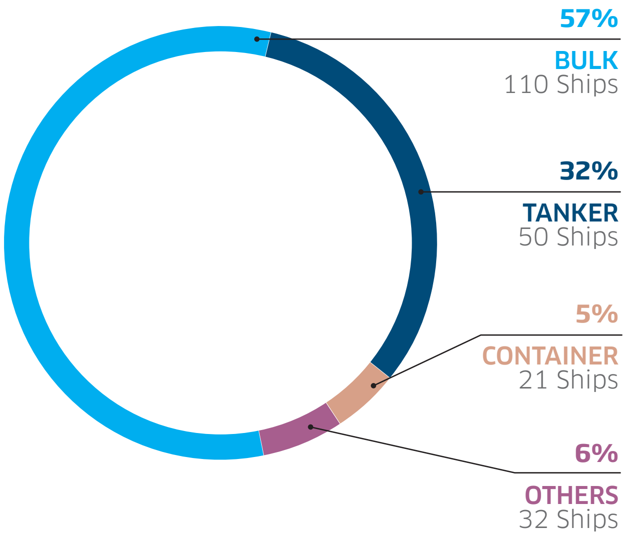
Because of their relative high price and the fact the ships are usually traded cradle-to-grave, specialized vessels are often contracted when newbuilding prices are at their lowest. That has very much been the case for stainless steel chemical tankers, LPG tankers, LNG carriers and car carriers in recent years but it was not the case in 2016; it seems that the trend stopped, with the noticeable exception of ro-ros, ro-pax, ferries and cruise vessels.


GISELA OLDENDORFF, Kamsarmax bulk carrier, 80,839 dwt, built at China's Jinling yard and delivered to Oldendorff Carriers in 2015, sistership to the Gebe Oldendorff and Gertrude Oldendorff delivered in 2016

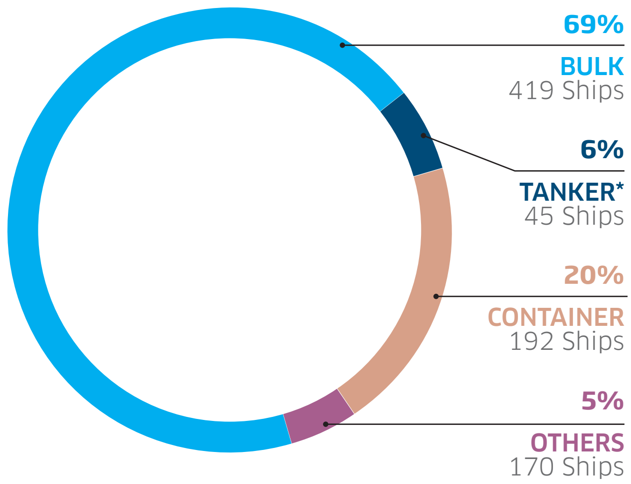
Orders for specialised vessels

	2009	2010	2011	2012	2013	2014	2015	2016
Chemical carriers stainless steel (dwt)	136,947	265,064	201,844	369,932	938,377	2,206,695	2,137,631	737,166
LPG carriers (cbm)	76,433	932,747	691,746	1,424,213	5,095,385	5,360,053	5,121,407	200,032
LNG carriers (cbm)	312,741	2,262,441	7,874,577	6,294,419	5,530,799	11,856,600	4,089,800	1,077,500
Ferries & Ro-pax (gt)	123,570	567,744	56,808	214,367	182,659	299,292	301,046	558,672
Ro-ro (dwt)	197,641	40,660	246,226	658,879	152,163	40,653	150,624	283,533
Car carriers (cars)	1,750	133,081	57,502	192,948	287,781	168,342	447,151	-
Cruise vessels (gt)	130,000	1,068,805	819,277	1,510,312	732,923	2,241,393	2,485,296	1,863,860

Cancellations in 2016



Demolitions in 2016



* incl chemical tankers

CANCELLATIONS AND DEMOLITIONS

Order cancellations in 2016

Cancellations of orders are very difficult to trace and news often surfaces well after they have taken place. Sometimes, newbuildings are first postponed before being cancelled. Indeed, the 9m dwt cited for 2015 in our previous annual report needs to be adjusted up to 13.2m dwt. In 2016, preliminary figures suggest cancellations of about 13.1 m dwt, still the lowest since 2008, though it is likely this will also be reviewed upward in due time. The bulk segment was again the most affected, with 57% of total cancellations but tankers followed with 32%.

These low levels of cancellation do not reveal the many price renegotiations, vessel postponements, and conversions from one ship type to another. Most of the cancellations arise from yards running into difficulties and being late with orders, allowing owners to exercise their rights under shipbuilding contracts. But some have also been effected by mutual agreement between the parties, especially in cases where a series of vessels was originally contracted. Finally, we saw also situations where owners could not arrange financing for the tail-heavy delivery instalment (60% to 80% of the contract price) of the vessel, with either there being no bank available to finance the instalment, or if there was one, the bank was only able to finance a percentage of the 'fair market value' of the vessel, unfortunately well below the contract price in many instances.

m DWT	2008	2009	2010	2011	2012	2013	2014	2015	2016
Cancellations	19.2	36.6	38.6	23.3	16.6	31.6	15.3	13.2	13.1
Orders	139.1	33.9	129.5	75.6	46.6	140.3	116.0	107.7	34.1

Demolitions in 2016

If the tonnage sent for demolition in 2016 (43.4m dwt) represented an increase of 21% compared to 2015 (35.9m dwt), it was still well below expectations and our own forecasts in January 2016 of a minimum 60m dwt. The final amount also lagged behind the 2011-2012-2013 average of 48.6m dwt. Bulker demolition inched up from 28.8m dwt to 29.9m dwt, while tanker demolition of 2.5m dwt was on par with the 2015 figure of 2.7m dwt. The exception was containership demolition, which jumped from 2.6m dwt to 8.8m dwt. Prices for demolition hovered between $250 and $330 per lightweight ton, similar to 2015.

We see from time to time very young tonnage going for demolition: for example, in early 2017 a containership built in 2010 was reported sold for scrap, and therefore we may have the feeling that the average age for demolition is well below 20 years.

The reality is very different.

The average age of demolition remains high at about 24 years for bulkers (down from 26 in 2015) and about 27 years for tankers (up from 26 in 2015). And only in 2016 did we reach an average age of 19 years for the demolition of container carriers (down from 2015's 23 years). We can expect however that the 2016 IMO decision to finally implement the Ballast Water Treatment System (BWTS) regulations in September 2017 will have an impact on the rate of scrapping as it will also concern second-hand units.

STENAWECO IMPULSE, IMO2 product chemical tanker, 49,762 dwt, delivered by China's Guangzhou Shipyard to Concordia Maritime in 2016

	BULK (> 15,000 dwt)			TANKER (>25,000 dwt)			CONTAINER (> 300 teu)		
	Dwt scrapped	Ave Age of scrap	Scrap price range	Dwt scrapped	Ave Age of scrap	Scrap price range	Dwt scrapped	Ave Age of scrap	Scrap price range
2008	4,700,473	31	[205 -700]	4,404,847	27	[205 -750]	1,459,259	29	[220-660]
2009	13,658,909	31	[240-330]	8,873,727	26	[280-390]	6,037,153	27	[240-330]
2010	7,612,665	32	[350-450]	14,338,632	26	[400-500]	2,171,355	27	[350-450]
2011	24,984,356	31	[450-535]	9,365,308	26	[480-545]	1,214,599	29	[460-535]
2012	35,358,976	28	[375-485]	14,166,065	24	[400-510]	4,831,048	24	[395-510]
2013	23,044,160	28	[360-425]	11,503,217	24	[390-445]	6,148,826	23	[390-445]
2014	16,625,533	28	[410-455]	8,387,400	24	[435-485]	5,789,141	23	[450-500]
2015	28,836,861	26	[270-390]	2,700,065	26	[300-415]	2,692,250	23	[310-445]
2016	**29,996,004**	**24**	**[222-282]**	**2,516,099**	**27**	**[252-307]**	**8,806,278**	**19**	**[260-310]**

m DWT	2008	2009	2010	2011	2012	2013	2014	2015	2016
Demolitions	12.9	35.9	29.5	41.5	59.5	44.8	34.4	35.9	43.4
Deliveries	96.1	117.2	150.4	162.2	152.4	107.3	87.9	94.2	98.6

DELIVERY AND WORLDWIDE SHIPBUILDING CAPACITY IN 2016

Deliveries increased slightly and logically from 94.2m dwt in 2015 to 98.6m dwt in 2016. They were split into 47.3m dwt of bulk carriers (down from 48.6 m dwt), 33.1m dwt of tankers (up from 19.2 m dwt) and 10.1 m dwt of containerships (down from 19m dwt).

In China, annual production (which had previously increased sevenfold between 2006 and 2011 from 10m dwt to 69m dwt) fell again, from 38.1m dwt to 35.7m dwt in 2016.

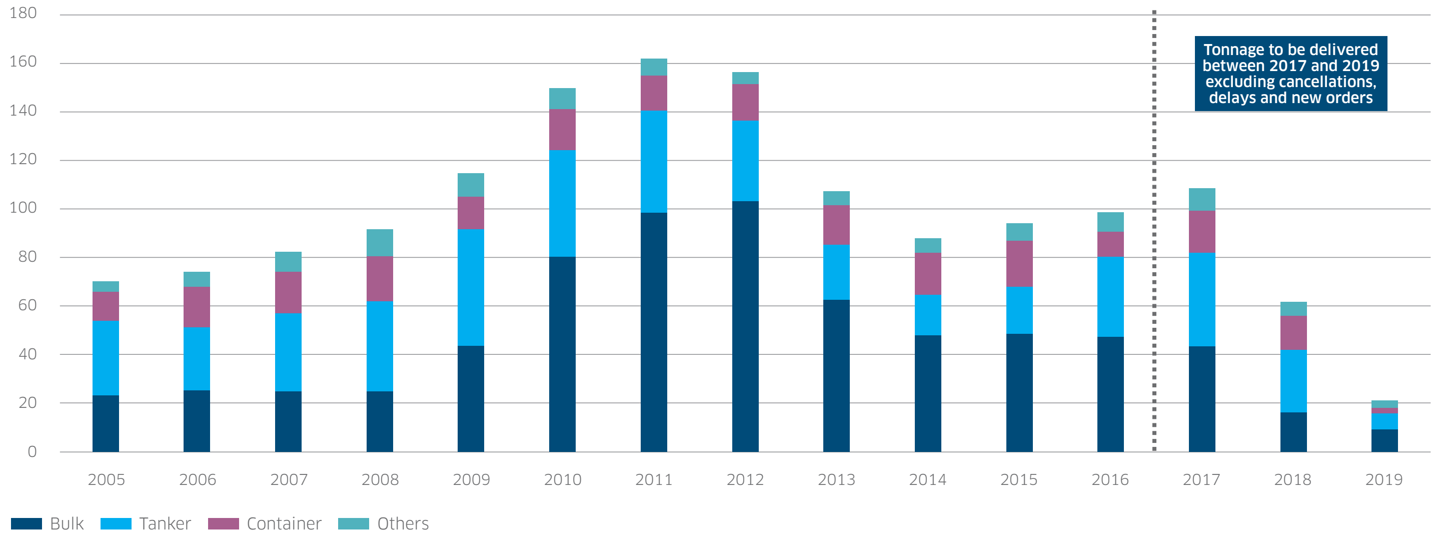
In Japan, annual output (which rose from 28m dwt to 33m dwt between 2008 and 2010) returned to around 21.6m dwt in 2016.

And in South Korea, annual production (which had previously doubled from 25m dwt to 53m dwt between 2006 and 2011) declined to 35.8m dwt in 2016.

Ship deliveries in China, Korea & Japan (2008 - 2016)

Deliveries million dwt	2008	2011	2012	2013	2014	2015	2016
China	22.0	68.7	69.1	43.1	35.7	38.1	35.7
South Korea	33.6	53.4	49.1	33.3	24.4	29.2	35.8
Japan	27.6	31.7	29.2	25.0	22.4	21.1	21.6

Tonnage delivered by shipyards 2005-2016 and tonnage to be delivered between 2017 and 2019 excluding cancellations, delays and new orders



NEWBUILDING PRICES IN 2016

Back in 2015, newbuilding prices for bulkers fell by about 10% due to the abrupt lack of demand whereas tanker and containership prices fell by a moderate 5% thanks to firmer demand for these two types of ships. Still, there had been some 107m dwt of newbuilding orders, more than the amount of deliveries (94m dwt).

But in 2016, we were faced with a completely new situation: the quasi-disappearance of orders plus the intensification of competition from the second hand market. This sent prices below what had previously been thought of as the ‘bottom’. As mentioned above, 88m dwt of tonnage was bought and sold on the second hand market in 2016 (including 47m dwt of bulkers, 23m dwt of tankers, 12m dwt of containerships) versus a total 34m dwt of newbuilding orders. In 2015, 98m dwt changed hands on the secondhand market versus 107m dwt in newbuilding orders.

Prices thus fell further in 2016 by between 10% and 25%, depending on the type and size of ship. To some extent, owners could dictate their own price to the yards, the remote reference being the level reached in yard re-sales.

It is interesting to note that the efforts of some buyers to avoid the additional costs from the Harmonized Common Structural Rules (H-CSR) and Tier III requirements by ordering in 2015 did not ultimately pay off.

The situation today at the shipyards is critical: first, because most yards accepted very low prices in recent years together with tail-heavy payment terms, and now they realize that most of these contracts are not profitable; secondly, because most of the shipyards are faced with renegotiations or cancellations, which are exerting additional pressure on their finances; and thirdly, because yards now have to accept further price reductions if they need to win new orders to keep up a minimum production.

However, shipbuilders have found some small solace in improved terms and conditions from equipment makers, and while steel prices rose sharply in 2016, this has been somewhat alleviated by more favorable exchange rates (Europe, China).

AFRICAN MAGNOLIA, B.Delta 28,000 dwt bulk carrier, last unit delivered in 2016 out of a series of four ordered by Seaboard at Guangzhou Wenchong Shipyard

There was increased pressure from the second hand market

10%-25%
Fall in newbuilding prices in 2016

The situation today at the shipyards is critical

Newbuilding Prices (million USD)

	1993	Low 4Q 2002	Peak 2Q 2008	End 2014 China	End 2014 South Korea	End 2015 China	End 2015 SK/Japan	End 2016 China 1st tier**	End 2016 SK/Japan
TANKERS									
VLCC	100	64	140/155	90/95	95/100	85/88	90	75-77	81-83
Suezmax	63	44	90/100	58/63	65/70	53/57	64	50-52	56-58
Aframax / LR2	45 (A)	34 (A)	70/75 (A)	50/52	55/58	45 (A) / 48 (LR2)	51 (A) / 55 (LR2)	40-42(A) / 42-44 (LR2)	45-47 (A)/ 47-49 (LR2)
MR2 IMO 3 (12+2)	32,5	27	48/51	34/36	36/37	34	36	31-33	34-35
BULKERS									
Newcastle (205k dwt)	N/A	N/A	N/A	55/60	62/65	50/55	58/60*	40-42	50-55*
Capesize (180k dwt)	48	36	90/101	50/55	55/58	47/50	55/57*	37-38	47-52*
Panamax (P) / Kansarmax (K)	29 (P)	21,5 (P)	53/60 (K)	28/30 (K)	33/34 (K)	25/26 (K)	26 (K)*	23-24	24-25*
Handymax (H) / Supramax (S) / Ultramax (U)	25 (H)	20 (S)	47/50 (S)	26,5/27,5 (U)	31/32 (U)	23/24(U)	24(U)*	22-23(U) 19-20(H)	23-24(U)* 21-22(H)*

* Japan only
* * China 2nd tier yards are expected to offer lower prices around 5% less.

Second hand price evolution for 5 year old vessels (Million USD)

	01-janv-16	High		Low		19-dec-16	Variation high/low	Variation Jan- Dec
VLCC	79.50	80	*18/01/2016*	59.4	*19/12/2016*	59.40	-6.3%	-25.3%
AFRAMAX	45.00	45	*04/01/2016*	27.5	*19/12/2016*	27.50	-15.6%	-38.9%
MR TANKER	27.50	27.5	*11/01/2016*	20.45	*19/12/2016*	20.45	-5.5%	-25.6%
CAPESIZE	26.00	26	*04/01/2016*	20	*11/04/2016*	22.15	-23.1%	-14.8%
PANAMAX	14.25	14.2	*04/01/2016*	11.2	*11/04/2016*	13.90	-21.1%	-2.5%
SUPRA	12.50	13.5	*19/12/2016*	9.5	*11/04/2016*	13.55	-24.0%	8.4%

AFRICAN HHB, B.Delta 28,000 dwt bulk carrier, the first unit delivered in 2016 out of a series of four ordered by Seaboard at Guangzhou Wenchong Shipyard

$38m
Price of a standard Capesize newbuilding in China

70%
fall in newbuilding orders in 2016

China succeeded in attracting 50% of all orders in 2016

ST-CERQUE, Supramax bulk carrier, 60,696 dwt, built by Japanese shipyard Japan Marine United, and delivered to Suisse-Atlantique in January 2017

SHIPBUILDING IN THE WORLD

Shipbuilding in China

		2015		2016	
		m Dwt	N°	m Dwt	N°
Orderbook	Market share	41%	1,670	43.9%	1,197
	Bulk	64.2	759	47.7	431
	Tanker	32.0	377	25.8	332
	Container	17.5	283	15.2	251
	All ships	**119.8**	**1,670**	**92.9**	**1,197**
Orders	Bulk	4.8	90	12.5	41
	Tanker	16.5	187	3.0	69
	Container	11.7	175	1.0	51
	All ships	**34.7**	**543**	**17.1**	**210**
Delivery	Bulk	23.8	331	22.3	274
	Tanker	6.6	62	8.8	101
	Container	5.7	83	2.6	64
	All ships	**38.1**	**537**	**35.7**	**529**

In spite of a brutal fall of about 70% in global newbuilding orders, China outperformed the market and succeeded in attracting about half of the total orders in 2016, thanks to a combination of domestic deals, aggressive pricing, and financing arrangements which have become increasingly scarce elsewhere. In these conditions, its market share inched up from 41% to 43.9% and China remained the world shipbuilding leader in 2016.

Still, the country's newbuilding orders were halved from 34.7m dwt in 2015 to 17.1m dwt in 2016. Many shipyards did not take any contracts during the year and their situation is now critical as their final orders will be delivered in 2017.

Orders placed for bulk carriers in China declined sharply in 2015, going from 32.8m dwt in 2014 to 4.8m dwt. It could have been worse in 2016 without the exceptional order of 30 VLOCs of 400,000 dwt, amounting to 12m dwt and bringing the total of these new bulk carrier orders to 12.5m dwt for the year. Tanker and containership orders, which had jumped in 2015, plunged respectively from 16.5m dwt to 3m dwt (-82%) and from 11.7m dwt to 1m dwt (-92%) in 2016.

Contrary to the overall trend, deliveries from Chinese shipyards decreased in 2016 from 38.1m to 35.7m dwt (-7%). This is partly a reflection of the distribution of the Chinese orderbook, with its high percentage of bulkers which were more prone to cancellations and postponements due to the poor freight market. In addition, the fall in their market values versus the original contract price made it very difficult for owners to finalize financing for their potential acquisitions. There were also many offshore vessels ordered speculatively, which could not be delivered due to a lack of employment and, as a consequence, financing.

Some newsworthy events of the year

Restructurings and Consolidation

In his New Year speech, the president of the China Association of the National Shipbuilding Industry (CANSI) said China's shipbuilding capacity should be reduced from 85m dwt to 65m dwt. He stressed the need for the Chinese shipbuilding industry to restructure and cut excess capacity to survive the prolonged downturn, with the whole industry needing to make an effort under the central and provincial authorities' leadership.

Pressure on newbuilding prices, a lack of newbuilding orders, shipyard and bank losses, and shipyard closures

are all pushing the industry towards further downsizing and consolidation. This integration also forms part of the central government's latest "supply side reform" policy relating to several major industries, aimed at dealing with overcapacity and preventing layoffs.

CSSC and CSIC:
There are rumours that China Shipbuilding and Shipping Corporation (CSSC) and China Shipbuilding Industry Corporation (CSIC), the two largest state-owned shipbuilding groups, could merge within the next two years but no official announcement has been made.

CSIC internal restructuring:
In May 2016, CSIC decided to merge Wuchang Shipbuilding and Qingdao Beihai Shipbuilding Heavy Industry Co., Ltd. (BSIC). The new set-up will be capable of producing not only military ships, including the next-generation frigates and amphibious warfare ships, but a wide range of commercial ships such as chemical tankers, mega-container ships and bulkers.
In June 2016, CSIC completed the internal integration of two subsidiary yards, Dalian Shipbuilding Industry (DSIC) and Shanhaiguan Shipbuilding Industry (SSIC).

COSCO and China Shipping:
Cosco Group and China Shipping Group have now merged into a new company called China Cosco Shipping Group, becoming in the process the third-largest shipbuilding conglomerate in China (after state-owned China Shipbuilding Corp (CSSC) and China Shipbuilding Industry Co (CSIC)). The Group owns 13 shipyards (Cosco Dalian, Cosco Nantong, Cosco Qidong, Cosco Shanghai, Cosco Zhoushan, Cosco Guangdong, NACKS, DACKS, CIC Jiangsu, CIC Changxing, CIC Lixin, CIC Boluomiao and Afai Southern), some specialized in ship repairs, some being only shipbuilders and some involved in both ship repairs and shipbuilding. The capacity of its commercial shipbuilding will be reduced in 2017 from about 12m dwt to 10.6m dwt, and reduced further down to 9.60m dwt by 2020. The old facility of CIC Jiangsu shall be closed. The offshore capacity will be reduced from 5 shipyards to 2 shipyards with Qidong Offshore and Dalian Offshore remaining.

China Merchant Group (CMG and Sinotrans):
In December 2015, it was announced that China Merchants Group (CMG) would acquire Sinotrans and CSC Holdings. One year later, the impact on the shipbuilding activity of the new group has not been seen. The new group consists of 4 shipyards from CMG (Yiu Lian Dockyards, Yiu Lian Dockyards, China Merchants Heavy Industry and Yiu Lian Dockyards) and 3 shipyards from Sinotrans (Jinling with Jiangdong now under its control, Qingshan, and Damen-Yichang). No plan for reduction of the building capacity has been unveiled. It is likely however that CSC Sinotrans will concentrate its shipbuilding activities at Jinling's shipyards and that Qingshan will close after the delivery of its last vessel.

CIMC and Nantong Sinopacific Offshore and Engineering (SOE):
In August 2015, it was announced that Chinese state-owned manufacturer CIMC Enric would take over Sinopacific Offshore & Engineering (SOE). Finally, the acquisition will not go ahead as several pre-conditions were not fulfilled. SOE will now be restructured.

China Offshore Deepsea Industry Alliance:
The first seven shipyards in the White List of offshore shipyards published in 2015 have together established a China Offshore Deepsea Industry Alliance. These seven offshore shipyards are Yantai CIMC Raffles, Shanghai ZPMC, COSCO Qidong Shipyard, SWS, China Merchants Heavy Industry Shenzhen (CMHI), Dalian Heavy Industry Offshore Shipyard, and COSCO Nantong.

Chinese shipbuilders downsizing payrolls
Several Chinese shipbuilders have downsized their payrolls amid a lack of newbuilding orders. Yangzijiang, China's largest privately owned shipyard, for instance, has laid-off more than 6,000 workers over the last two years.

White List

Contrary to 2015, there was no addition in 2016 to the "White List" of Chinese shipbuilders. This list gives guidance to outsiders (shipowners, banks) on the ability of Chinese shipyards to take on and perform shipbuilding contracts. However, since its inception in September 2014, up to ten of the seventy-one white-listed shipyards have experienced setbacks or financial difficulties, and among them the following yards have filed for protection from creditors, or bankruptcy, or the like:

- Rongsheng
- Mingde
- Sainty
- Jiangsu Eastern
- Zhejiang Zhenghe
- Sinopacific Dayang
- Sinopacific Zhejiang
- Nantong Sinopacific Offshore and Engineering (SOE)
- Qingdao Yangfan
- Yuexin Ocean Engineering

Some significant orders and deliveries in 2016

Despite the overall reduction in newbuilding orders, there were some noteworthy contracts and letters of intent placed with Chinese shipbuilders in terms of numbers or types of ships:

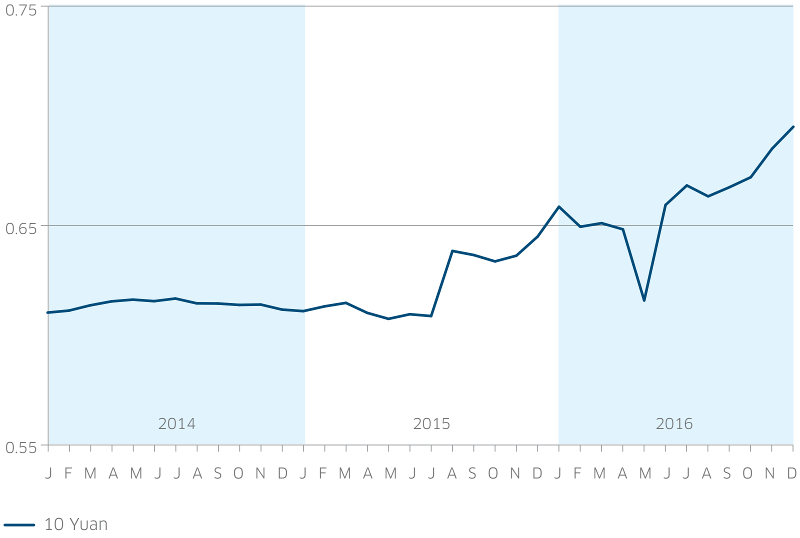
- 30 VLOCs. This giant deal was split between different shipowners and shipyards. ICBC Leasing ordered 10 units, 6 with Yangzijiang and 4 with Beihai. COSCO ordered 10 units with SWS. China Merchant Group ordered 10 vessels, 4 with SWS, 4 with Beihai and 2 with CMHI Jiangsu. Price levels are reported to be around $85m each. All these bulkers will be chartered out to the Brazilian mining giant Vale.
- 4+2+2 RoPax of 3,100 lanemeters and 1,000 passengers for Stena Roro at AVIC Weihai.
- 2+1+1+1+1 RoRo with 6,700 lanemeters for DFDS and 2 ro-ro of 4,000 lanemeters for Toll at Jinling.
- 4+2+2 stainless steel chemical tankers of 49,000 dwt for Odfjell Chemical Tankers AS at Hudong Zhonghua.
- Xiamen Shipbuilding Industry Co., Ltd. signed a letter of intent with Viking Line for 1+1 large ferries of 218 m length, 2,800 passengers and 1,500 lanemeters in November 2016. The ships will run on liquefied natural gas. Final shipbuilding contracts are scheduled to be signed in spring 2017.
- SWS will build China's first homemade luxury cruiseship. Carnival Corporation's cruise joint venture in China signed an agreement to order the industry's first cruiseships built in China for the Chinese market by a newly formed China-based shipbuilding joint venture between CSSC and Fincantieri at Shanghai Waigaoqiao Shipbuilding (SWS). The agreement also grants the owners the option to order two additional China-built cruiseships. The owners will operate the new ships as part of a plan to launch the first multi-ship domestic cruise brand in China.

DAMIA DESGAGNES, bitumen tanker, 15,100 dwt, built by Turkish shipyard Besiktas, to be delivered in 2017 to Transport Desgagnes Inc

Currency

The Chinese currency continued to depreciate in 2016, reversing the strengthening seen up until July 2015: the Yuan went from about 6.5 to the dollar at the start of 2016 to 6.95 to the dollar at the end of the year. There is no doubt that the weaker Yuan brings some relief to the Chinese shipbuilding industry and offsets part of the reduction in newbuilding prices they had to accept.

Exchange rate of Chinese Yuan versus the US dollar



Ship financing and the rise of Chinese leasing companies

With the piling up of bad debts and losses, lower fair market values than contract prices and the reluctance of banks to provide high-leverage financing, traditional bank ship finance has become incredibly difficult to arrange for owners contracting newbuildings. In this environment, finance from Chinese Leasing Companies has taken a prominent role.

These Chinese Leasing Companies can be divided into three main categories:

- Those connected to the main Chinese banks, as we see in the table below:
- Those connected to shipbuilding groups such as:
  - CSSC (Hong Kong) Shipping Company Limited
  - CSIC Leasing
  - AVIC Leasing
- Those connected to Chinese Trading houses such as:
  - CIMC Leasing
  - Far Eastern Leasing

Top 5 Shipping Lessors in China

COMPANY	RMB M	USD M	No. of Vessels	DWT M
ICBC Leasing	50,000	7,692	309	400
Minsheng Financial Leasing	27,500	4,231	325	600
Bank Of Communication Leasing	19,000	2,923	173	–
CMB Financial Leasing	12,300	1,892	130	220
CDB Leasing	10,100	1,554	45	–

(Shipping Portfolio by end of 2015 including merchant ships, offshore, port facility and yard finance)

SILKEBORG, multipurpose vessel, 11,815 dwt,
built by Chinese shipyard Taizhou Sanfu in 2016 for Dannebrog,
sold to CNAN-Med and renamed Titteri

Shipbuilding in South Korea

		2015		2016	
		m Dwt	N°	m Dwt	N°
Orderbook	Market share	28.2%	758	23.5%	451
	Bulk	7.6	48	2.3	13
	Tanker	47.0	378	29.4	228
	Container	13.7	101	8.6	58
	All ships	**82.0**	**758**	**49.8**	**451**
Orders	Bulk	0.0	0	0.1	5
	Tanker	19.5	138	5.3	52
	Container	8.8	61	0.5	4
	Gas	2.6	53	0.6	7
	RoRo	0.7	32	0.0	0
	All ships	**31.0**	**284**	**7.6**	**70**
Delivery	Bulk	4.7	27	5.8	34
	Tanker	10.0	148	19.6	177
	Container	10.0	75	5.6	47
	All ships	**29.2**	**328**	**35.8**	**338**

Korea's market share tumbled dramatically in 2016 from 28.2% to 23.5% and Korea slipped back to third place among the worldwide shipbuilding nations. This new ranking is the result of the fall in newbuilding orders, which dropped 75% from 31m dwt to 7.6m dwt and also, ironically, from the country's increased output (35.8m dwt in 2016 versus 29.2m dwt in 2015). The country's total orderbook of 49.8m dwt, compared to 2016 output of 35.8m dwt, underlines the short-term cover and dangerous imbalance between Korean yards' building capacity and their current orderbook.

Korean shipbuilders have nonetheless remained strong on tankers, securing the highest tonnage with 5.3m dwt, against 4.4m dwt for Japan and 3m dwt for China. Out of the five large LNG carriers contracted in 2016, all of them went to Korea's Big 3 shipyards: HHI, DSME, SHI. None went to Japan or China. In addition, one 7,500 cbm bunker LNG carrier was awarded to HMD, while two special bulkers with gas propulsion were placed, also at HMD, for the domestic market. South Korean authorities announced that they would support the construction of more than 60 vessels as part of a stimulus package for the troubled shipbuilding industry.

Most newsworthy events of the year

Heavy losses - Massive cost cutting - Restructurings – Consolidation - Closures

In 2016, the Korean shipbuilding industry continued to go through drastic reorganizations, with debt for equity swaps, non-core assets sales, spin-offs, capacity reductions, labour cost cutting, and lay-offs. South Korea's Big 3 shipbuilders were hit hard by the 2014 oil shock: too many speculative orders for drillships and offshore plants were either cancelled or postponed, due to the lack of employment or financing. The yards have all embarked on intensive downsizing in order to survive but also under the pressure of the authorities and banks.

Hyundai H.I (HHI) decided to reorganize their business into six separate new entities: shipbuilding, offshore platforms and vessel engines, electrics and electronics, construction equipment, renewable energy, robotics and services. HHI will sell non-core assets and reduce headcount to bring its debt to equity ratio below 100% by 2018. They will close 2 docks to reduce building capacity and shut down the Gunsan facilities, which were opened in the boom years for the construction of Capesizes and Newcastlemax bulkers. That said, local politicians may appeal to HHI to keep the Gunsan premises in operation in order to save several thousand jobs (direct and indirect).

Samsung H.I (SHI) has already cut 1,500 positions in 2016 and plans to continue the reduction of its work force. The group, on top of divesting non-core assets as part of restructuring measures, is looking to raise around about $1 billion in proceeds from a share sale to shore up its liquidity. It also intends to sell one floating dock and reduce its building capacity by 10%.

Daewoo (DSME) plan to lay off around 2,000 workers in 2017 after having laid off about the same number in 2016. The group is looking to offload around half a billion dollars in assets in 2017 and has enacted a month-long unpaid leave scheme for around 200 employees as part of cost reduction measures. It plans to sell two existing floating docks to reduce its building capacity. At the end of 2016, DSME became a subsidiary of Korean Development Bank (KDB) after the latter increased its stake from a bit less than 50% to about 80%. DSME faced a further financial crisis after an alleged accounting fraud was uncovered. The fraud caused DSME to incur a $ 2.8 billion loss for 2015, as both costs and losses relating to offshore plant orders were under-declared. DSME was rumoured on several occasions to be passing under the control of HHI or SHI, but no final decision was taken. It is interesting also to note that DSME delivered in 2017 its first ice breaking Arc 7 LNG carrier of 174,000 cbm in relation to the Yamal project.

Hyundai Mipo Dockyard (HMD), which dominates the mid-size segment, secured 25 orders in 2016 representing about 35% of its current building capacity. It is a major achievement in view of the difficult market, but still not sufficient to fill a yard which can build and deliver up to 100 vessels a year. Thanks to its Vietnam joint venture, Hyundai Vinashin Shipyard (HVS), HMD is still able to offer attractive prices which allows it to compete against the Chinese shipyards. HMD secured a unique ship during the year, the 7,500 cbm LNG bunkering ship ordered by Bernhard Schulte and has become a reference in the small LNG segment.

Insolvent STX Offshore & Shipbuilding (STX), as recently as 2012 the fourth largest shipbuilding group in the world, has been given the green light to rehabilitate under the Seoul Central District Court's guidance. The court's decision came after STX reached an agreement with its labour union to reduce or suspend bonus payments and implement no-pay leave. STX, currently in receivership, was told by the court that it had to cut personnel expenses by 50% or its rehabilitation plan might not be approved. The company went into receivership in June 2016 after three years of voluntary restructuring and Korean Won 4 trillion ($3.76 billion) of cash injections from its banks failed to restore profits. The banks had hoped that STX could recover with more orders, but the subsequent downturn in the shipping market destroyed those hopes. Currently STX is in talks to cancel some orders deemed non-profitable, while some customers have already terminated contracts.

Hanjin Heavy Industries & Construction (HHIC), which is under the management of its main creditor KDB, is considering selling its block factory in Dadaepo. HHIC's Yeongdo shipyard should focus on special vessels (Military, LNG, ...) while HHIC will concentrate on the construction of commercial ships at its Subic Bay shipyard in the Philippines, due to the lower labour costs. HHIC and KDB continue their efforts and are aiming to complete the normalisation process by the end of 2018.

Sungdong Shipbuilding & Marine Engineering, whose main creditor is the Export-Import Bank of Korea, secured only two contracts in 2016 for two LR1 tankers from Tsakos Energy Navigation. As well as manufacturing blocks for SHI, the yard is counting on assistance from SHI's sale network to secure more orders. At the same time, Sungdong is planning a reduction of its building capacity by 50%.

Dae Sun Shipbuilding, which specialises in constructing small chemical tankers and feeder boxships, has been struggling for several years. In June 2016, it was obliged to produce a self-rescue plan. Dae Sun began experiencing financial difficulties in May 2010, when it made an agreement with its banks to execute self-help plans, including lay-offs and capacity reductions. In 2013, it was among several South Korean shipbuilders that were rescued through debt-for-equity swaps with their creditor banks. Its main creditor, the Export-Import Bank of Korea (Korea EXIM), swapped Korean Won 190 billion ($181 million) of debt for equity, resulting in the bank becoming Dae Sun's largest shareholder with a 67% stake. Since then, Korea EXIM and Dae Sun's other creditor banks have been working with the shipbuilder to restructure its debt. Dae Sun expects to achieve an operating profit from 2016, and its latest self-rescue plan aims to cut expenditure, revamp its compensation system, and reduce work hours and benefits. It is interesting to note that Daesun successfully secured more than 10 newbuilding orders in 2016, including a domestic ferry for 1,200 passengers.

Daehan Shipbuilding, which exited receivership in October 2015 after repaying its debts, remains under the management of Daewoo Shipbuilding & Marine Engineering through an agreement arranged by its main creditor, Korea Development Bank (KDB). They managed to win a handful of newbuilding orders in 2016.

SPP Shipbuilding is expected to close down after delivering its last vessel sometime in mid-2017. SPP has not won a new contract since mid 2013. SPP's creditors, led by Woori Bank, failed to find a buyer. Construction firm SM Group, which also acquired Korea Line Corporation, had signed a memorandum of understanding to buy SPP, seeing synergies between owning a shipping line and a shipbuilder. However, disagreements over the sale price caused SM Group to pull out of the purchase. SPP Shipbuilding has been under the control of its creditors since May 2010, after incurring huge losses. Earlier attempts by Woori Bank to sell SPP fell through, and the bank has begun to break up the shipbuilder in another sale attempt. SPP's shipbuilding work will be concentrated at its Sacheon yard, while its Goseong and Tongyeong yards will be put up for auction.

Interesting to note that Samkang M&T, a shipyard known primarily for manufacturing ship blocks, has forayed into newbuilding construction with compatriot chemical tanker operator Woomin Shipping, a subsidiary of Woolim Shipping, having ordered three 6,600 dwt chemical tankers

23.5%
Korea's shipbuilding market share

Out of the five large LNG carriers contracted in 2016, all of them went to Korea

Shipbuilding in Japan

		2015		2016	
		Dwt	N°	Dwt	N°
Orderbook	Market share	23.8%	1,065	25.7%	803
	Bulk	41.4	592	25.4	365
	Tanker	15.4	254	16.6	244
	Container	7.2	55	8.2	66
	All ships	**69.0**	**1,065**	**54.4**	**803**
Orders	Bulk	18.6	265	1.8	23
	Tanker	10.5	163	4.4	58
	Container	4.5	35	1.6	18
	All ships	**36.4**	**551**	**8.0**	**116**
Delivery	Bulk	18.5	271	17.0	241
	Tanker	1.1	48	2.9	66
	Container	0.8	10	0.5	7
	All ships	**21.1**	**385**	**21.6**	**366**

Back in 2015, Japanese shipyards outperformed their two main competitors and saw newbuilding orders increase by 27% from 28.5m dwt to 36.4m dwt. In the same period, orders in China and Korea declined respectively by 26% from 47m dwt to 34.7m dwt and by 8% from 33.8m dwt to 31m dwt.

This surge had been fueled by an aggressive pricing policy, supported by a weaker national currency, and by a commercial push to convince customers that ordering now would be significantly cheaper than after the implementation of new rules such as H-CSR and Tier III. As a result, at the end of 2015, most Japanese yards were fully booked until end 2019, and Japan could take a more relaxed attitude in the face of declining demand. Still, if newbuilding orders fell by 75% from 36.4m dwt to 8m dwt in 2016, Japan's market share (which had already increased from 17% to 23.8% in 2015) rose again to 25.7% in 2016. Japan is back, and for the first time since 2000, the country has become again the second largest global shipbuilder.

Japan's orderbook now stands at 54.4m dwt, down from 69m dwt. This compares to an output of 21.6m dwt in 2016, and underlines the healthy margin between yards' building capacity and their current orderbook.

While Japanese shipyards had taken 35% of the newbuilding bulker orders in 2015, they had to concede supremacy to China in 2016 with only 1.8m dwt out of 15.5m dwt. Still they fared relatively well on tankers.

The Yen continuously strengthened against the US dollar during the first ten months of 2016, from 118 to 100, before weakening again to finish around 117 Yen/USD.

Some newsworthy events of the year

Mitsubishi H.I. (MHI) finally delivered in March 2016 the first 125,000 gt cruiseship AIDA Prima after a one-year delay, while the second unit AIDA Perla is set for delivery in 2017. MHI announced however that in light of heavy losses of about $1.6 billion on the two-ship project, its shipbuilding division would no longer accept cruise orders. Going forward, the only passenger ships that MHI will construct will be ferries, probably for the domestic market. MHI plan, however, to devote more resources towards winning orders for LNG carriers, as Japan remains the world's largest LNG importer, although they did not win any LNG carrier order in 2016. Amid a prolonged downturn in shipping that has seen shipbuilders worldwide suffer a drought of new orders, MHI began talks to form alliances with three compatriot shipbuilders: Imabari Shipbuilding, Oshima Shipbuilding, and Namura Shipbuilding. The alliances aim to strengthen the shipbuilders' competitiveness. Imabari, Oshima, and Namura specialise in building bulk carriers, and allying with MHI would create a shipbuilding entity second only to South Korea's Hyundai Heavy Industries. MHI and Imabari established a joint venture, MI LNG, in 2013 to market LNG carriers, in response to growing competition from South Korean and Chinese shipbuilders. There was also consolidation in the Japanese shipbuilding industry, with Universal Shipbuilding merging with IHI Marine to form Japan Marine United Corporation in 2012, and Namura Shipbuilding acquiring Sasebo Heavy Industries in 2014.

Kawasaki Heavy Industries (KHI), which called off plans to merge with Mitsui Engineering & Shipbuilding in 2012, is now reviewing its future in the shipbuilding business. They are considering whether it is worth staying in shipbuilding. A decision should be taken at the end of March 2017 after the publication of its 2016 results.

Should KHI decide to stop building ships, the impact on its joint ventures with the China COSCO group is uncertain. KHI has two shipbuilding ventures with the latter: Dalian-COSCO KHI Ship Engineering (DACKS) and Nantong-COSCO KHI Ship Engineering (NACKS). KHI also suffered from its investment in Brazilian shipbuilding, running up major losses when the country's oil industry was hit by the oil price collapse and a bribery scandal. In 2012, in order to enter the Brazilian market and to accumulate technical expertise and know-how in the offshore sector, KHI invested 30% in a joint venture with Brazilian construction groups Odebrecht Organization, OAS, and UTC.

KHI is designing the first Liquid Hydrogen Carrier. The project is part of a drive to build a CO_2-free hydrogen energy supply chain, using Australian brown coal to produce hydrogen, which would then be converted into liquid for transport. Liquid hydrogen shipments from Australia to Japan could start in 2020. Currently, the carriage of liquefied hydrogen is prohibited under the IGC Code. Only an agreement between the flag state of the ship and the ports of loading and unloading, plus IMO approval for changes to the code could allow this kind of transportation.

Japan's second-largest shipbuilder, **Japan Marine United** (JMU), has finally entered into the medium-range (MR) tanker market after securing six 50,000-dwt newbuildings from domestic owners. The vessels will be built at JMU's Maizuru yard for delivery in 2018 and 2019 and the design will be provided by Onomichi and improved by adding the latest technical requirements such as NOx Tier-III standards. The company previously concentrated on larger tankers. The shortage of early delivery slots for tanker newbuildings in Japan is one reason that allowed JMU to break into the MR products carrier segment.

HUPEH, 39,800 dwt B.Delta Box logger grabber bulk carrier ordered by CNCo at China's Chengxi Shipyard, delivered in June 2016 and operated by Swire Bulk

Shipbuilding in Europe

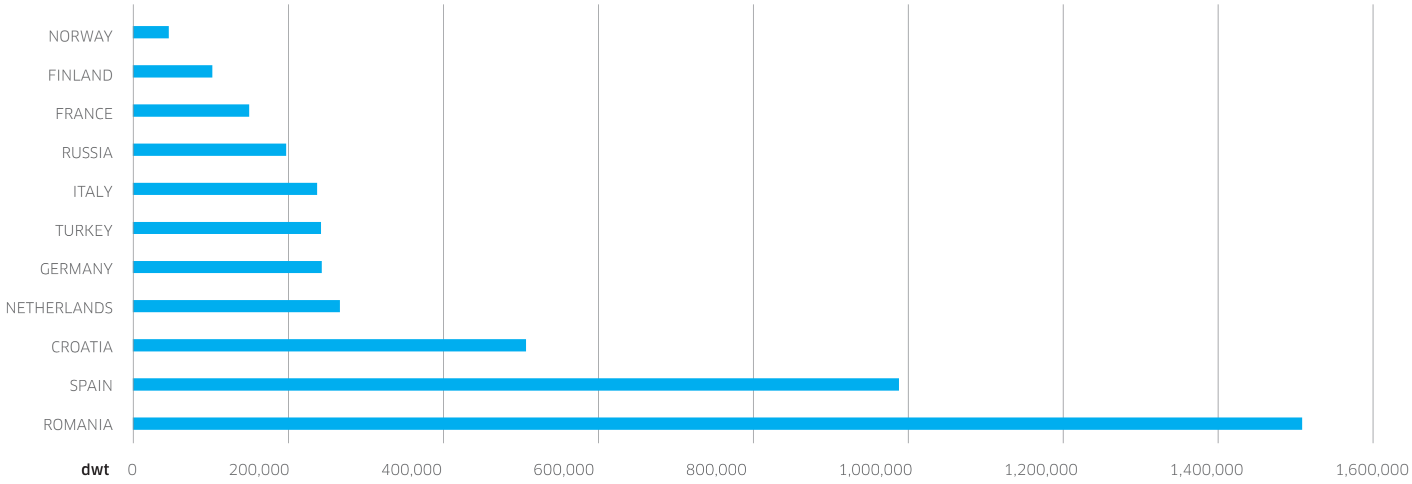
		2015		2016	
		Dwt	N°	Dwt	N°
Orderbook	Market share	2%	249	2.2%	250
	Bulk	0.7	12	0.2	9
	Tanker	3.6	74	3.0	68
	Container	0.2	6	0.02	2
	All ships	**5.8**	**249**	**4.6**	**250**
Orders	Bulk	0.2	6	0.07	3
	Tanker	1.2	28	0.17	17
	Container	0.0	0	0.0	0
	Cruise	0.2	21	0.16	24
	All ships	**1.5**	**74**	**0.7**	**82**
Delivery	Bulk	0.0	0	0.6	6
	Tanker	0.5	20	0.7	21
	Container	0.2	2	0.2	2
	Cruise	0.1	7	0.1	10
	All ships	**1.0**	**55**	**1.8**	**73**

Contrary to their Asian competitors, European shipbuilders have been thriving on the back of heavy demand for cruiseships and ferries, and have been able to maintain or increase their orderbooks by number of ships for the fourth consecutive year. The total orderbook reached 250 units in 2016, even if it inched down in deadweight from 5.8m dwt to 4.6m dwt. Globally, Europe increased its market share slightly from 2% to 2.2%.

The cruise industry has embarked on a newbuilding program unlike anything seen before, with a total orderbook of nearly 70 vessels. A total of 24 cruiseships were contracted in 2016, mainly with the three major shipbuilders, Meyerwerft, Fincantieri and STX France, but also with new yards like Vard and Kleven in Norway or Uljanik/3Maj and Brodosplit in Croatia, which together managed to win 10 orders. This was a record year, after a total of 21 cruiseships in 2015, 18 in 2014, 10 in 2013 and 6 in 2012. The orderbook of the three major shipbuilders now stretches well into the 2020s. As slots at Meyerwerft, Fincantieri and STX France have become increasingly difficult to obtain, Genting Hong Kong group, which owns 3 cruiseship companies (Crystal Cruises, Dream Cruises and Star Cruises), decided to build cruiseships at its own shipyards, MV Werften in Germany. Most of the orders are for large cruiseships between 180,000 to 200,000 gt. But a number of expedition cruise ships with gross tonnage between 10,000 and 25,000 gt were also ordered in 2016.

The depreciation of the euro versus the dollar, which started in summer 2014 and brought the euro/dollar rate of exchange from 1.35 $/euro during the first half of 2014 to an average of 1.10 $/euro during 2015 and 2016, proved helpful in reducing price gaps with Asian shipyards, though Asian prices probably still remained cheaper. This may have allowed several European shipyards to capture some cargo ships contracts in 2015, for instance, Meyerwerft (Germany) won a contract for an ice class 18,000 cbm LNG carrier, Besiktas (Turkey) for ice class 15,000 dwt product chemical tankers with dual fuel propulsion, and Uljanik/3maj for a series of self-unloader lakers, which otherwise probably would have been awarded to yards in Korea or China. However, conversely, in 2016 some typical 'European' orders such as ferries and ropax went this time to Chinese shipbuilders, for instance Stena's Ropax at Avic Weihai, the DFDS roro at Jinling, and possibly the Viking Line ferry at Xiamen.

Orderbook of European shipyards 2016



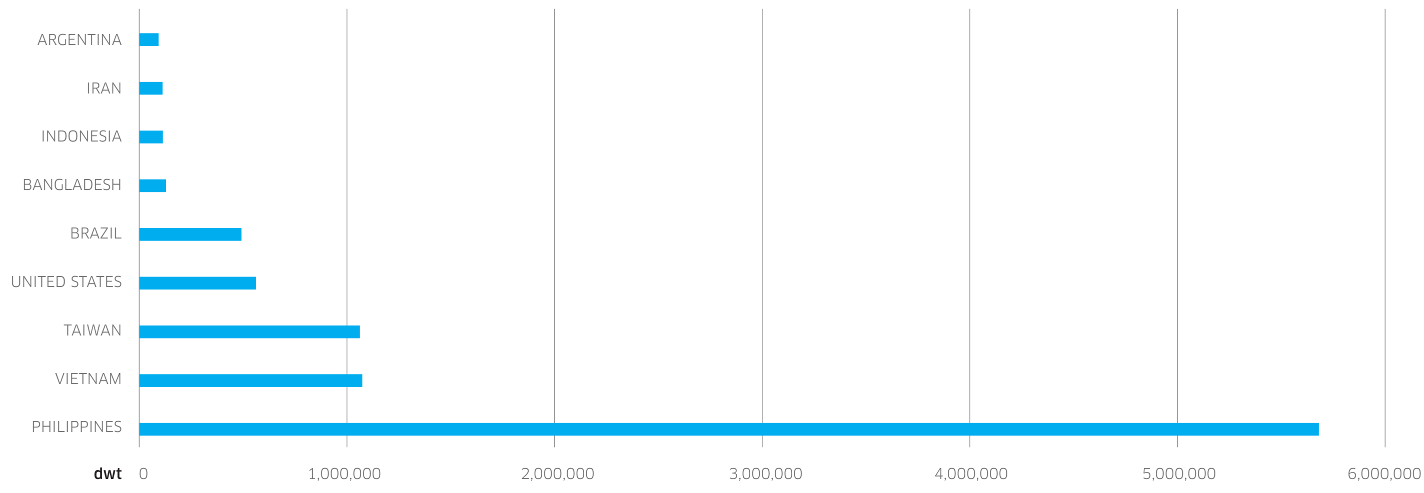
Most newsworthy events of the year

- By deadweight ranking, Romania remains the leading yard in Europe, although DMHI's orderbook has been reduced to 10 ships, all to be delivered in 2017. DHMI is still for sale and its future is uncertain, in view of its parent company DSME's own difficulties. However Romania can count on other shipyards, such as Constanta, Vard Tulcea, Vard Braila, Damen Galatz.
- Spain took over the second position in 2016 from Croatia, thanks to the 6 Suezmax tankers ordered by Spanish shipowner Ibaizabal for delivery in 2018/2019.
- Croatia, which relies on the three yards Uljanik/3Maj, Trogir and Brodosplit, managed to secure several orders, including ro-ros, ferries and a cruiseship. Croatia's Brodosplit Shipyard has been chosen to build a new polar expedition cruise vessel for Polar Expedition Inc, with delivery scheduled for the fourth quarter of 2018. The luxury 6,300 gt vessel will host 196 passengers in 95 cabins on 8 decks and will be the first ever to sail under the high ice-class notation LR PC6 (Polar class 6).
- Dutch yards have maintained their fourth ranking. Ferus Smit secured 4 tankers with LNG propulsion for Thun.
- The Turkish shipbuilding industry has been able to maintain its fifth ranking, but the political uncertainty which prevails since the failed coup in July 2016 may have an impact on export orders.
- Norwegian yards Vard and Kleven managed to secure several small cruiseships, while Ulstein Verft broke into the luxury yacht market.
- The 8 largest shipbuilders in Europe (ranking in GT)
  Ranking the European shipyards on the basis of Gross Tonnage (gt) instead of Deadweight (dwt) is more appropriate in order to highlight the high value of certain classes of vessel. This includes large cruiseships which have small deadweights but large gross tonnages.

Orderbook of European Shipyards - Gross Tonnage		
MEYERWERFT (Papenburg+Neptun+Turku)	2,204,395	18
FINCANTIERI	2,026,378	20
STX France	1,699,154	11
DMHI	698,774	10
ULJANIK + 3 MAJ	594,089	20
NAVANTIA	492,000	6
VARD	150,800	20
FERUS SMIT	124,888	22

- In 2016, STX Korea decided to sell its share in STX France, and several candidates were earmarked as potential buyers including Fincantieri, Damen, Genting, DSME and CSSC. But at the beginning of 2017, STX France was still not sold. It seems that Fincantieri may be retained as the preferred bidder by the Korean court for the 66.66% stake in STX, while the remaining 33.33% remains held by the French government. It is also reported that DCNS, the French Navy builder, could take an equity stake in STX France as the yard also builds navy ships. The French Authorities are particularly concerned at the risk of a possible dismantling of the Saint-Nazaire premises in favour of Fincantieri's Italian sites, plus the recent joint venture between Fincantieri and Chinese shipbuilders, CSSC. STX France enjoys a strong orderbook until 2022.
- After Noryards Fosen's bankruptcy in October 2015, Noryards BMV also filed for bankruptcy in April 2016 following the inability of the owner to inject additional funds into the yard. Noryards As is the former Bergen Group's Shipbuilding Division, and became a subsidiary of Calexco after the Bergen Group decided to exit the shipbuilding business in favor of a more dedicated focus on offshore-related activities.

Orderbook rest of the world 2016



- The three Nordic yards shipyards based in Warnemünde, Wismar and Stralsund were acquired by the Malaysian conglomerate Genting Group in April 2016. The new company named "MV Werften" will be dedicated to the construction of cruiseships, mainly for Star Cruises, Dream Cruises and Crystal Cruises, the luxury cruise companies also owned by Genting Group. Lloyd Werft, based in Bremerhaven, was also bought by Genting Group in 2015 and will remain as a ship repair and conversion yard while trying to enter the large yacht market. The new group will form the fourth largest cruiseship builder in the world.

Shipbuilding in the rest of the world

		2015		2016	
		Dwt	N°	Dwt	N°
Orderbook	Market share	4.7%	273	4.7%	204
	Bulk	4.1	66	2.7	44
	Tanker	4.6	88	3.4	55
	Container	4.0	52	3.0	55
	All ships	13.6	273	10.0	204
Orders	Bulk	0.8	13	0.0	0
	Tanker	0.8	21	0.3	6
	Container	1.7	21	0.04	3
	All ships	3.5	80	0.5	26
Delivery	Bulk	1.4	21	1.4	22
	Tanker	1.0	27	0.9	27
	Container	2.2	34	1.0	11
	All ships	4.8	95	3.5	81

Thanks to the mini-boom in containership ordering back in 2015, with for example the ten 2,800 teu units contracted by Evergreen at CSBC (Taiwan) and the ten neo-Panamax containerships of 11,000 teu placed by various owners at Hanjin Subic (Philippines), newbuilding orders in the Rest of the World (RoW) were sustained in 2015 at about 3.5 m dwt. But in 2016 they were largely in retreat, falling back down to 0.5m dwt.

As a consequence, the orderbook decreased from 13.6m dwt to 10m dwt but RoW succeeded in maintaining its market share at about 4.7%. That total orderbook of 10m dwt compares to an output of 3.5m dwt, implying a good coverage between building capacity and current orderbook.

Most newsworthy events of the year

- The Philippines remains the leader of the Rest of the World shipbuilding area with 30% of the total orderbook, a drop however from 50% in 2015.
- Vietnam overtook Taiwan to claim the second ranking, not thanks this year to Hyundai Vinashin (HVS) which secured only a single order (a MR tanker for a Greek owner) but thanks to Vard Vung Tau, which received 6 of a 15-unit module carrier vessel order from Topaz Energy and Marine. The remaining 9 units will be built by Vard Braila (5 units) and Vard Tulcea (4 units) in Romania.
- The Taiwanese orderbook shrunk in 2016, with just two small containerships secured by CSBC.
- Brazil abandoned its third ranking, falling to fifth position, as no new orders were reported in 2016. Brazilian yards are still experiencing difficulties as a result of the Petrobras bribery scandal.
- Jones Act operator Matson signed a $511 million contract with Nassco shipyard to build two combination container and ro-ro vessels that will serve Hawaii. The purchase continues the trend of the US orderbook embracing LNG as a fuel source. Other American

CIELO DI TAMPA, 39,200 dwt B.Delta open-hatch bulk carrier, delivered by Chinese shipyard Yangfan in 2016 to d'Amico

shipowners such as Crowley, Tote and Pasha, as well as Matson, placed containership and tanker contracts that can accommodate LNG, and which are being built at US shipyards Nassco, Aker Philadelphia and VT Halter Marine. The emphasis on national security and increasing domestic jobs by the new US President could be positive for US-flagged shipping and shipbuilding, according to industry insiders. The Jones Act, which requires ships moving cargo between US ports to be built in the US and crewed by American citizens, has been a target for those who contend that the law inflates transportation rates and raises the cost of the goods being transported. US shipping has undergone something of a resurgence over the last five years, as cheap shale gas and tighter environmental regulations have increased demand for domestic tanker newbuildings, as well as ships capable of being fueled by cleaner-burning LNG. It is interesting to note that the Daewoo Ship Engineering Company (DSEC) won the contract to design the two container-ro-ro vessels to be built at NASSCO.

- The demise of offshore-related contracts continues to affect Singaporean shipyards, even if they are trying to find substitutes.
- It is also interesting to note a number of projects related to the installation of new shipyard facilities in different countries such as Russia, Dubai and Saudi Arabia, under the patronage of experienced shipbuilding groups:
  - HHI signed a deal with Russian oil company Rosneft to create an engineering and project management joint venture, with a view to developing a shipbuilding cluster in the Russian Far East. The deal was inked just two days after Rosneft ordered two multipurpose supply vessels at FESRC, for delivery between the end of 2019 and the first half of 2020.
  - In a separate development, DSME, despite its highly publicized financial troubles, signed an agreement with Zvezda Shipyard to create a joint venture to provide technical expertise, ship design, and technical education.
  - DSME also signed a heads of agreement with the Industrial Development and Renovation Organization of Iran to develop the nation's shipbuilding industry and establish a shipyard in Iran with DSME providing the necessary engineering and manufacturing expertise for vessel types needed by the nation.
  - Iranian shipbuilder, Azim Gostaresh Hormoz Shipbuilding Industry (AGH), signed a framework agreement with Fincantieri to collaborate on building new merchant vessels and offshore units, carrying out ship repair and conversion projects as well as refitting activities of vessels already in operation.
  - Saudi Arabian owner Bahri and energy giant Saudi Aramco are pushing a domestic shipyard project alongside with Lamprell and Hyundai Heavy Industries. A joint development agreement for a yard at Ras Al Khair was signed in February 2016. The planned facility in eastern Saudi Arabia should build and repair both merchant ships and offshore rigs and vessels.

PERSPECTIVES FOR 2017

The newbuilding market is at a new historical low and it is hard to believe that newbuilding prices can fall any further.

Readers might object that the feeling was pretty much the same back in 2012. The market was indeed at the time at a very low level, and newbuilding prices were to rise by about 10% to 20% between the bottom in 2012 and the second half of 2014, before receding again by about 5% to 10% in 2015 and by another 10% to 20% in 2016 to reach our current low.

This rebound in prices was driven largely by several financial investors who took advantage of the low market to contract a large amount of tonnage, often on a very speculative basis. (In total, 140m dwt was ordered in 2013, 116m dwt in 2014 and 107m dwt in 2015). As a consequence prices fell again, and what had been the bottom of the market in 2012 thus fell another 'floor' and arguably leaves us today in the 'foundations' of the building.

STOLT PRIDE, stainless steel chemical tanker, 38,961 dwt, built by Chinese shipbuilder Hudong-Zhonghua in 2016 for Stolt-Nielsen

The shipbuilding industry is now in its eighth year of crisis following the collapse of Lehman Brothers in 2008. This is a very long period of time both by historical standards, and in a world which has become used to faster cycles.

It is perhaps a weakness of human nature to believe that the situation at any given time represents the 'new normal'. But even a crisis cannot last forever, and there could be there an element of hope beginning in 2017, in what is an otherwise gloomy situation.

The question is very much how will the market fare in the coming years:
- Will the market ever return to pre-2009 conditions?
- Will there be a future equilibrium?
- What is going to be the 'new normal'?

Efforts are now underway to push for an organized consolidation and reduction in worldwide shipping and shipbuilding capacity.

This may not be obvious when we still see continued fleet growth in various segments, and of course there is no such thing as an immediate and truly voluntary rationalisation. Rather, it comes from outside constraints and increased pressure along the whole of the chain, starting with the international and national authorities who wish to preserve their banks and employment; from the banks who can no longer absorb shipowners' and shipyards' losses; from the shipowners who can no longer subsidize their charterers; and from the shipyards who can no longer accept loss-making contracts.

Heavier than expected credit losses add to the pressure on ship lenders to exit the business. With fewer banks active in shipping, access to debt capital for the top tier shipping companies looks assured, albeit on a conservative basis, while access for smaller shipowners looks extremely challenging.

In addition, the latest consultation process by the Basel Committee on Banking Supervision presents a major threat to the future of ship financing: first, by rejecting the advanced internal credit rating models used so far by European banks; and second, by advocating a punishingly high risk weighting treatment to 'Object Financing' businesses like shipping, aircraft, and infrastructure. If the initial Basel guidelines are confirmed and then endorsed by the European Central Bank, the likely consequences for banks will be less capital allocated for shipping finance, a smaller number of shipping loans, and ship loan prices substantially higher than today.

In 2016, the combined effect of additional demolition and the quasi halt in newbuilding activities worked well to partially curb fleet growth. For the first time since the mid-1980s, the shipbuilding industry is restructuring: either through massive capacity reductions on a voluntary basis (consolidation and restructuring), or on a forced basis (closure for lack of newbuilding orders or bankruptcies).

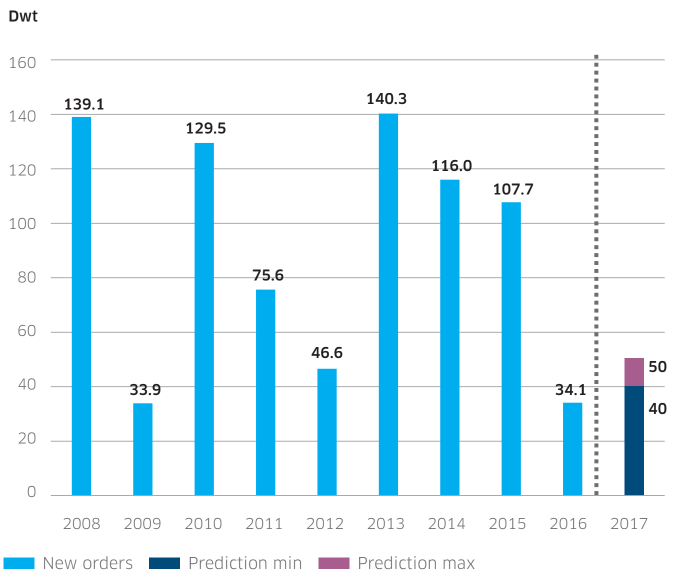
We estimate that capacity reductions in the three main shipbuilding areas could reach up to 50% in Korea, 20% in Japan and 30% in China.

Back in the mid 1980s, a similar pattern had developed. After almost eight years of crisis in the shipbuilding industry, European yards, which at the time were providing about 50% of global newbuilding tonnage, could not continue anymore because of the prevailing low prices and the growing reluctance of national authorities to pursue subsidies schemes. A number of yards closed in several major European shipbuilding countries. In France alone, four out of the five major existing shipyards were closed overnight in 1987.

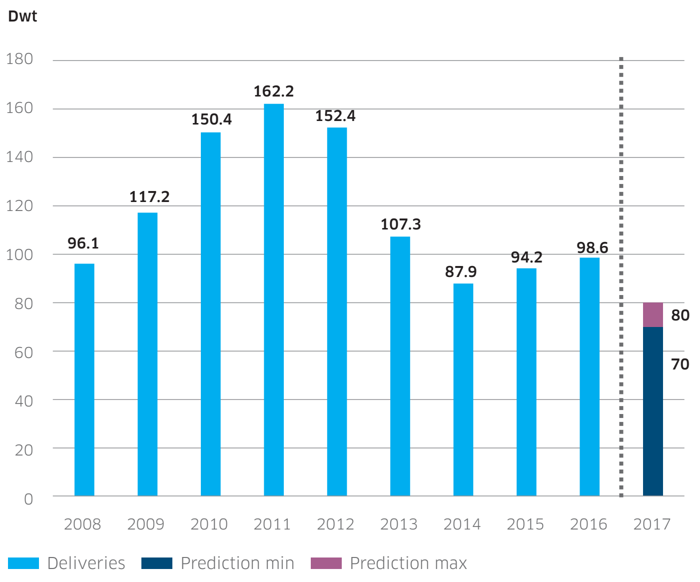
The impact was dramatic: in 1987, a VLCC newbuilding could be purchased for less than $40m; just four years later, the same VLCC cost $100m.

That price hike was not fueled by a demand boom, as we saw in the 2000s with the rise of China, but rather by a lack of supply following the massive reduction of global shipbuilding capacity: the European shipbuilding industry essentially gave up the construction of large merchant vessels, while Japan shrunk as well. At that time, Korea was only starting and China was not there.

New orders



Deliveries



In 2016, there was approximately 34m dwt of newbuilding tonnage contracted, including a unique order of thirty 400,000 dwt VLOCs at Chinese yards for Chinese owners against long term employment from Vale, equaling 12m dwt in total. As newbuilding prices come down to new historically low levels, the temptation to invest will be great. But we estimate that in 2017 the tonnage to be contracted will not be sufficient to fill all the yards; as such, shipbuilding capacity reduction will continue.

Trade growth may remain insufficient to generate 'full' or even 'healthy' employment of the global fleet. The IMF forecasts global growth of 3.4% and 3.6% for 2017 and 2018. China and India are expected to show the highest year-on-year growth rates, while Russia and Brazil will finally return to (moderate) positive growth. The Euro Zone remains sluggish, while the US economy will pick up some speed. But overall growth no longer automatically generates growth in shipping. A demand growth scenario that easily absorbs the expected net fleet growth market still needs to come.

We believe there are a number of factors suggesting the market will recover sometime in 2018-2019, after which newbuilding prices will rise… but we are not yet there.

New orders

New orders in 2017 are likely to be on par or slightly more than in 2016, given the general poor freight markets; the increased difficulty in arranging debt financing and also raising equity; the consolidation through take-overs or alliances; the prevailing price gap between newbuilding and second-hand tonnage; and finally owners' price expectations which cannot be fulfilled by shipyards. The unique order of 30 VLOCs in 2016 is unlikely to be repeated. However, as prices on the second-hand bulker market have risen throughout 2016, and newbuilding bulker prices have come down to new historical levels, we will see new players determined to take advantage of these new prevailing market conditions. There might also be some additional domestic transactions as part of stimulus packages. The expansion of the Panama Canal completed in 2016 could encourage new types of ships. We have already seen a relegation of the 'old' Panamax container carriers (about 5,000 teu) in favour of the so-called 'neo' Panamax container carriers (9,000-11,000 teu). We estimate that not more than about 40m to 50m dwt should be ordered in 2017.

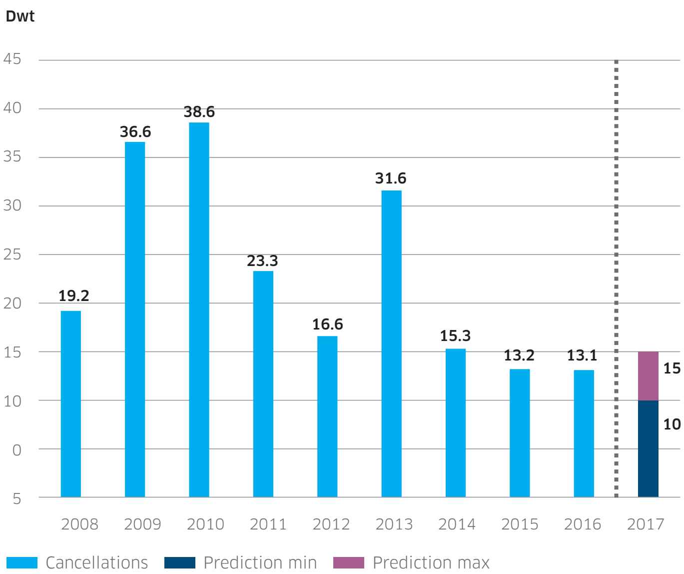
Deliveries

Theoretically, deliveries should reach about 127m dwt in 2017 given the active level of contracting in 2013, 2014 and 2015. However, cancellations and slippage will continue and we believe that actual deliveries in 2017 could reach a figure between 70m and 80m dwt.

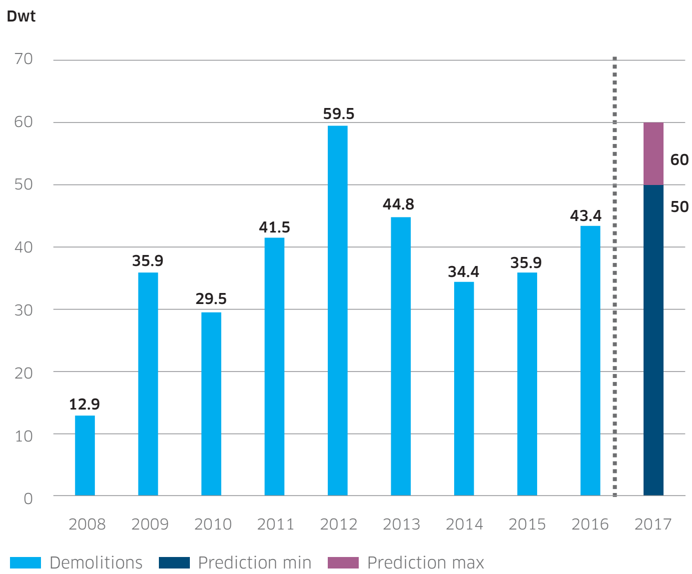
3.4%
forecast global economic growth in 2017

19
Average age of containership scrapped

Cancellations



Demolitions



Cancellations

In view of the figures in 2014, 2015 and 2016, we expect cancellations to amount to anything between 10m and 15m dwt in 2017.

Demolitions

Several factors could favour a stronger demolition market in 2017 than in 2016, including the poor freight market, combined with reasonably high scrap prices of between $270 and $320 per lightweight ton. There is also the possibility that some owners will face additional operating costs or off-hires on ships, which have suffered from less attention and care after eight long years of poor freight markets and earnings. Besides, at a time when the value of many ships reaching fifteen years hovers between 100% and 200% of the scrap price, the cost of a special survey to which owners will have to add the cost of a Ballast Water Treatment System (BWTS) retrofit, should have a positive impact on scrapping.

Finally, while the tonnage sent to demolition in 2016 (43.4m dwt) rose by about 21% compared to 2015 (35.9m dwt), it remained well below expectations. In particular, there is room for additional bulker and tanker demolition, which barely increased in 2016. The average age of demolition in these two segments remains high, at about 24 years for bulkers (down from 26 in 2015) and about 27 years for tankers (up from 26 last year). This compares to an average of just 19 years for the containership market. Therefore, we estimate that between 50m and 60m dwt of demolition could take place in 2017.

Newbuilding prices

As a consequence of lower demand, increased competition between shipbuilders, and the greater price differential with second hand assets, newbuilding prices in 2017 will continue to remain under extreme pressure. In a market where the number of transactions has reduced, it is now difficult to say there is one single market price for each class of ship. But those shipyards which absolutely need to take a minimum of new orders to run their production lines will face in 2017 the lowest levels proposed in 2016 by the most aggressive of their competitors, and may be forced to give further incentives, not necessarily in the form of price reductions.

Much will also depend on the strength of the dollar versus the currencies of the main shipbuilding nations. The American currency appreciated against most of the currencies in 2016 and this helped the yards reduce prices in 2016. This situation may change in 2017.

New orders in 2017 are likely to be on par or slightly higher than 2016

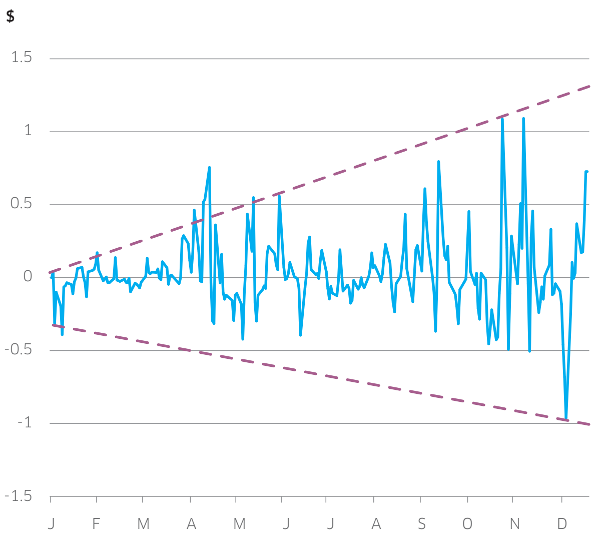
MARINE PRINCESS, bulk carrier, 35,501 dwt,
delivered in 2012 by Chinese shipyard Cosco Guangdong,
operated by Sohtorik Deniz

DRY BULK

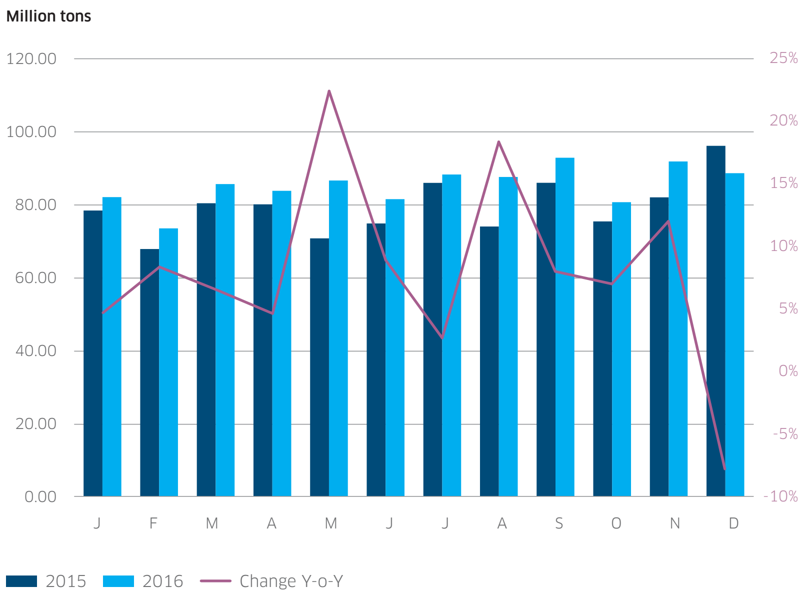
Is the worst behind us?

Another difficult year with record-low indices in the dry bulk sector, however with limited fleet growth and rising Chinese imports, expectations are for markets to start improving slowly from here.

Daily dollar changes in Baltic C3 route
in 2016



Chinese Iron Ore Imports



CHARTERING

Capesize (>120,000 dwt)

2016 was another difficult year in the dry bulk sector as chronic oversupply persisted and the Baltic Dry Index logged its weakest year since its inception in 1985. With a number of newbuildings hitting the water in first-quarter 2016 the Capesize market took an unprecedented plunge as the Capesize 4 Time Charter Average recorded an all-time low of $485 per day.

Spot and even short period rates remained below operating costs for a prolonged period of time which resulted in many owners laying their ships up. The number of idle Capesizes peaked at 70 vessels (4.2% of the total fleet) at the end of March. At this point, freight futures for the 5 Time Charter Average (5TC) for Q4 2016 were trading in the high $8,000s, painting a gloomy picture for the rest of the year.

From April onwards, however, we saw the market improve gradually, supported by a fresh round of restocking at Chinese steel mills and power plants. Furthermore, cheap voyage rates encouraged new long-haul trades such as coal from Colombia to India and Korea. Volatility picked up in the second and third quarters, driven by occasional spikes in Brazilian iron ore shipments and tightness in the North Atlantic.

Market sentiment turned more positive and as a result the 5TC averaged $12,182 for the final quarter, with the index peaking at $19,515 in mid-November. Simultaneously, Transatlantic rates pushed up to $25,000 per day, propelled by an increased amount of fronthaul cargo out of Canada, steady Colombian volumes, and a booming Panamax market. Owners of modern economical tonnage enjoyed one-year period rates of up to $12,000 per day. Despite levels dropping in December, there remained an underlying feeling that fundamentals had moved closer to an equilibrium.

Demand

Capesize demand continued to be heavily influenced by commodity markets and macroeconomic factors. This was clearly visible in 2016 as China implemented new stimulus measures in order to maintain GDP growth targets. Infrastructure investments started to take effect in the second quarter, as increased steel demand lifted prices and steel mills were once again making positive margins. Consequently, Chinese steel production defied bearish forecasts and expanded by 3.7% to 807 million tons.

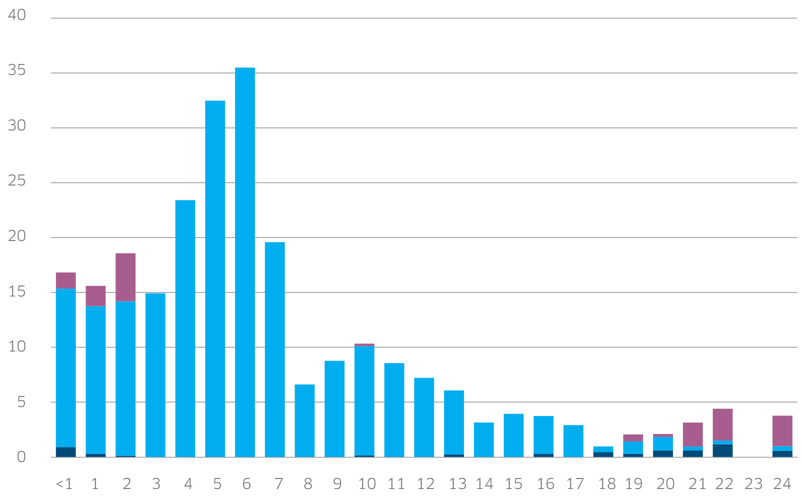
On the other hand, China took decisive actions to tackle pollution, as well as oversupply in its domestic steel and mining industries. Closure of up to 150 million tons of steelmaking capacity was on the way and although this could reduce overall production, it pushed steel prices upwards. Furthermore, closures and a reduction of output at Chinese iron ore and coal mines resulted in a spike in foreign imports.

As a result we saw a strong rally in international commodity prices, supported later also by expectations of increased infrastructure spending in the USA under President Trump. Chinese iron ore and coal imports rose 7.5% year-on-year to 1.024 billion tons and 25.2% year-on-year to 255 million tons respectively according to the preliminary data, lending support to the freight market particularly in the second half of the year.

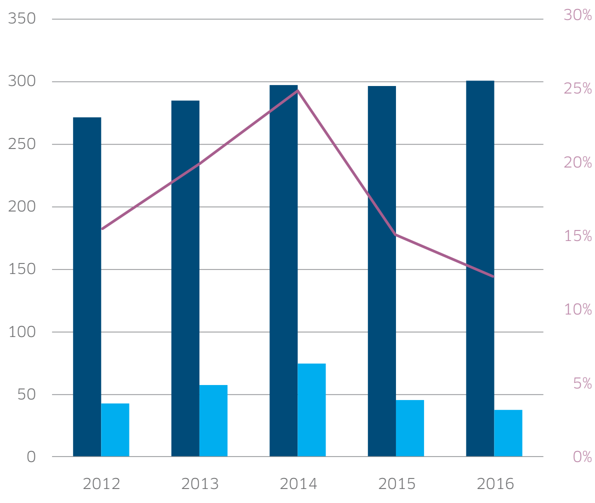
With this in mind, the iron ore majors continued expanding production to new record levels. Australia and Brazil continued to dominate the market as exports to China grew to 684 and 200 million tons respectively. Looking forward, we expect Brazil's share to increase slightly with the start of the S11D project in January 2017 and the potential return of Samarco to the market.

Meanwhile, bauxite reappeared on the Capesize map with the Winning Guinea project which shipped 9 million tons to China and is expected to ramp up to 30 million tons in the next couple of years.

Capesize Age Breakdown



Capesize fleet evolution



It is also worth noting that the new Panama Canal locks opened in June, enabling Capesizes with suitable mooring arrangements to transit between the two basins. Although only 4 Capesizes made the passage in 2016, the canal could impact trades such as Colombia to WC Mexico by saving more than 30 days of the sea voyage.

Supply

The slowdown in supply growth continued as the Capesize fleet (>120,000 dwt) stood at 301 million deadweight (1,527 ships) at the end of 2016, 1.4% more than a year ago. Once again delays in newbuilding deliveries played a major role, as 46% of the ships due in 2016 slipped back. Scrapping activity remained strong, supported by poor market conditions and rising steel prices, and 82 Capesizes headed to the breakers.

An important development in this regard was the adoption of new ballast water management rules by the IMO. The new regime requires ships dry-docking after September 2017 to be retro-fitted with a ballast water treatment system, costing between $1m and $5m. This could encourage owners of older tonnage to scrap rather than go through another special survey. Alternatively, we could see an increased number of ships dry-docking before the convention kicks in. In any case, this has the potential to reduce the supply of ships, particularly VLOCs, which constitute a big fraction of today's older tonnage.

Furthermore, with poor returns on dry bulk assets, it came as no surprise that apart from the 30 Valemaxes announced at the end of 2015, only two Capesizes were contracted over the course of the year. As such the orderbook shrank to a mere 12.3% of the active fleet – the lowest level in the last few years.

Finally, it is worth noting that the International Maritime Organisation agreed another prominent regulation, namely reducing the global cap on ship fuel sulphur content from 3.5% to 0.5% by 2020. Analysis shows that this will likely raise bunker costs significantly, thus giving owners more incentive to slow-speed their vessels. This is an important turnaround considering that cheap oil prices in the last couple of years resulted in an increase of 1 knot in global Capesize fleet speeds (see graph).

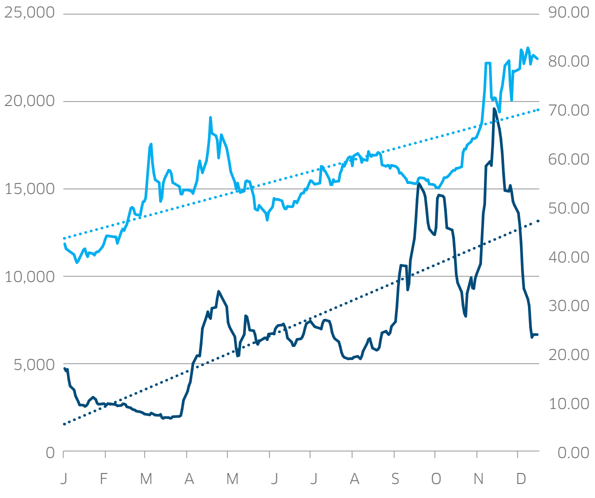
In conclusion, even though 2016 saw record low rates, the overall feeling at the end of the year was that supply and demand were moving closer to an equilibrium. Nevertheless, a potential recovery is dependent on many external factors. Industrial capacity cuts pose a serious downside risk, while increased stimulus measures present upside potential. As such, we expect volatile market conditions in 2017 characterised by slowly improving fundamentals.

$485
An all-time low recorded by the Capesize 4TC Average

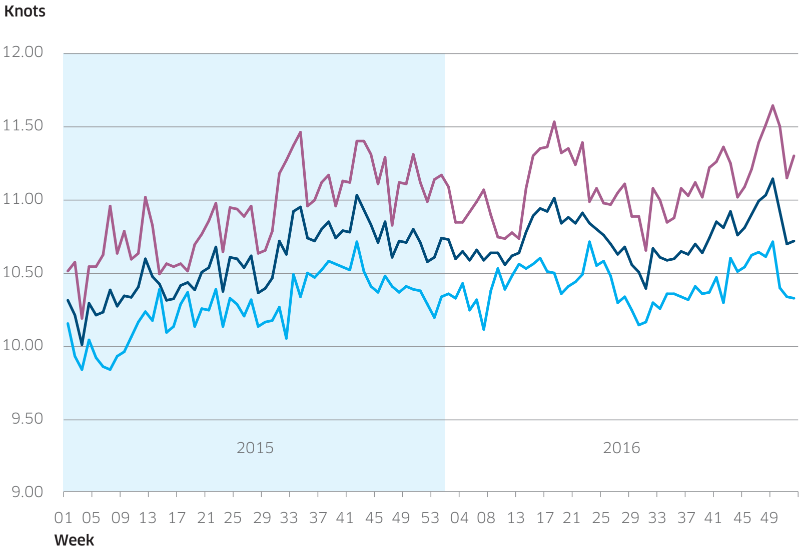
70
The peak number of Capesizes idled

Bauxite reappeared
on the Capesize map with the Winning Guinea project

Capesize 5TC Average versus Iron Ore Prices
in 2016



Capesize speeds since January 2015
(Standard vessels 170-190,000 dwt)



Source: Alphabulk

Babycape and Post-Panamax (90-120,000 dwt)

With Capesizes trading below Panamaxes and Supramaxes at the beginning of the year, the Babycape segment became an interesting option for charterers to increase their stem size and exploit cheaper hire rates and economies of scale. The Babycape fleet grew by two units, but more interesting was the sale and purchase and long-term charter market which saw much of the fleet sold or chartered to established Babycape players.

The upshot is that going into 2017, over 50% of the market fleet resides in the hands of SwissMarine and Oldendorff. By comparison, our 2016 Annual Review listed the same percentage in the hands of *"6 big names"*. However, though control of the fleet became concentrated, we also saw several new names operating Babycapes on both a spot and period basis, particularly in the Pacific.

2016 heralded the first time all three major miners had simultaneously exported from west coast Australia, with CXC in particular trebling their output from Cape Preston to 104 Babycape cargos for the year, whilst approximately 155 Babycape cargos left Port Hedland, an increase of 49 against 2015. Thus it was in the Pacific that the action was to be found, whilst in the Atlantic it was not uncommon to see ships idling during the weaker quarters. Despite optimism for a diversification into the grain trades, the Babycape cargo book remained dominated by minerals with only the Cargill east coast South America transatlantic trade offering a semi-regular grains route in the size segment.

The Post-Panamax segment had a mixed year, suffering in the low markets, but bouncing back strongly with considerable premiums above the Panamax 4 Time Charter Average and Baltic Exchange Panamax routes, even on the less tradeable 93,000 dwt, 14.9 metre draft types.

As with the Babycapes, the Pacific began as the *comparative* bright spot (bright meaning \$2,000 versus \$4,000!), yet in the fourth quarter of the year the Atlantic stole the show. By October, some 93,000 dwt vessels were trading fronthaul at a premium of 8-11% above the Baltic Exchange P2A fronthaul index, before the eruption in rates had the same size vessels trading at nearly 20% above the P1A transatlantic route for equivalent duration, as November became December. At the top of the market, Nexter Imabari 95,000 dwt post-Panamax types were scoring close to \$25,000 per day on the back of rocketing coking coal prices *(see Alphabulk Issue 40)* and long haul grain trades ex US Gulf.

In the east, a healthy flow of mineral stems ex Weipa and Port Hedland allowed many owners to leave their vessels simply trading rounds, whilst the return of Indian iron ore exports in October 2015 meant that by the end of the 2016 monsoon season, the Goa-China route was in full swing on 85,000/10 stems heading into 2017. For the future, the trade's triangulation will be highly dependent on Indian coal import policy. Fronthaul grain remained dominated by the Kamsarmax fleet, but the widening of the Panama Canal will likely encourage grain traders with a defined post-Panamax disport to explore the size further, though we will have to wait for the next drydockings, higher charter rates and higher bunker prices before all owners fit their fleets with the required chocks and bitts for transit of the canal.

>50%
of Babycape fleet controlled by two companies

155
Babycape cargoes left Port Hedland in 2016

SPAR INDUS, bulk carrier, 63,800 dwt, delivered in 2016 by Chinese shipyard Hantong Shipbuilding, operated by Spar Shipping

Panamax (68,000-89,999 dwt)

2016 got off to a very poor start with rates, as well as fundamentals, looking extremely weak. On 11 February, the Panamax index settled at 2503 points, an unprecedented all-time low. Throughout the first and second quarter the market did not see any fundamental improvement, as rates continued to hover around these low levels.

Freight, as well as commodity markets, showed very little volatility, which led to market participants unable to take any form of forward position. The South American grain season was little aid to the market, as we observed a glut of ballasters heading from the Pacific to the Atlantic in search of better paying business. Economic Kamsarmaxes were able to achieve around $6,500 + $150,000 ballast bonus on APS basis for trips east coast South America to Far East, which equated to a low/mid $5,000 basis Singapore delivery.

During the course of the second quarter, the Baltic Exchange 4 Time Charter Average hovered between $4,500 and $6,000. On the back of increased grain outputs, the end of April saw a small push, however this failed to materialize going into May/June. Period activity continued throughout the first half with owners trying to take some sort of coverage. For short/medium period we saw Kamsarmax tonnage getting covered in the low/mid $5,000s, whilst for 1-year period some owners covered Newbuilding Japanese Tonnage in and around $6,000, barely covering operational expenses.

On the back of this continued market weakness, Panamax demolition in 2016 increased by 51% year-on-year to reach 7.7m dwt. Contracting activity was minimal, with just two Kamsarmaxes ordered against a backdrop of weak markets and a lack of funding. Modern second-hand tonnage, particularly amongst Greek buyers, remained popular at depressed price levels.

As we moved into the second half of the year, China showed some promise for the bulk markets, with falling internal iron ore and coal production leading to greater amount of goods being imported. The Panamax market, particularly in Asia, benefited from these developments during the course of the third quarter. The consequence was a spike in rates in July and September, although most of the time short-lived. During these bursts of activity a number of owners took longer-term positions, locking their vessels away at in and around $7,000, depending on vessel specifications. Most owners remain cautious going into the next year as uncertainty prevails. Throughout the year, the FFA Calendar 2017 price reflected this sentiment, trading range-bound between $6,000 and $7,000 throughout the year.

With the US Gulf grain season kicking off in the fourth quarter, export levels looking healthy, and stronger than anticipated activity in Asia-Pacific, the market did show some strength in the last quarter, which had not been seen for a long period of time. With a large number of vessels occupied in long fronthaul trade (90 days +), and positional tightness in the Atlantic basin, the market saw a boom in rates end November/early December. Transatlantic round voyages advanced well into the $20,000s with fronthauls just shy of these levels. The market spike lasted for about three weeks, longer than previously seen, before it came off sharply again towards mid-December.

Despite recent upturns, uncertainty prevails going into 2017, with seaborne trade for coal and iron ore looking weaker. Despite increased scrapping, the overall fleet is forecast to grow in 2017. Whilst we may not see the unprecedented lows of early 2016 again, another challenging year lies ahead of us with potentially more volatility.

11 February
saw an all-time low in the Panamax index of 2,503

7.7m dwt
Panamax demolition recorded in 2016

RS IRON RANGE, Capesize bulk carrier, 179,842 dwt, built by Hanjin HHI Philippines, owned by Carval, managed by Teekay Bulk and on charter to Oldendorff Carriers

Supramax and Handysize (25,000-67,999 dwt)

The year started with the Baltic Supramax Index (BSI) at 449 points. By 21 October that had increased to 700 points, and to 809 points by 18 November, to reach 975 on 14 December before closing at 903 points – a 101% rise over the year. The Baltic Handysize Index (BHSI) followed the same pace, starting at 275 points and closing at 597, a remarkable increase of 123% and reaching a one and a half year high. But the year was uneven, with the first half in contrast to the second.

The first quarter of the year was arguably a real disaster for shipping, with rates reaching levels unseen for 30 years and driving owners to lay up ships, reschedule newbuilding deliveries and outright cancel orders. The adjustment in supply, combined with renewed demand for raw materials out of China, led to the market recovery.

As such we could note:

- Increased demand for coal in China: in July/August an average of 40-45 Supramaxes a week were loading out of Kalimantan, versus 50 in November. In total, coal imports from Indonesia surged 160% in November from a year earlier, and 38% year-on-year.
- Increased iron ore imports into China: for example, November imports reached 98.99 million tons, a rise of 13.9% on October.
- The return of Indian iron ore exports (a projected 10 million tons in Fiscal Year 2016/2017 versus 4.5 million tons in 2014/2015 and 6 million tons in 2015/2016).
- Despite efforts by the Indian government to limit coal imports, more coal was brought into India, particularly from South Africa: 3.1 million tons in July, decreasing to 2.1 million tons in August but rising again to 2.3 million tons in September.
- A massive increase year-on-year of grain exports out of the US Gulf from September onwards, which pushed up rates and attracted ballasters as far away as the Indian Ocean and Persian Gulf. Corn, soyabean and wheat exports out of the region together reached 30.4 million tons for September-November against 21.6 million tons in the same period the previous year.

And on the supply side:

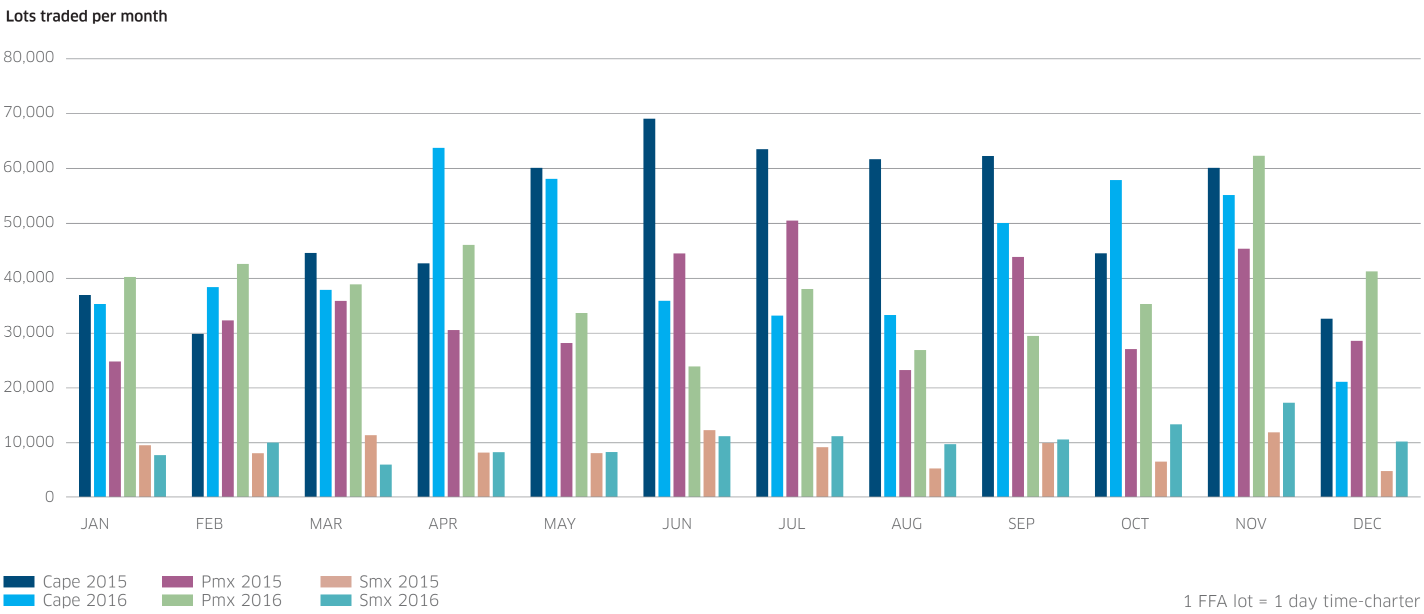
- Shipowners made considerable efforts to delay/reschedule newbuilding programmes.
- Some 15 Supramaxes (50,000-67,999 dwt) were delivered in July (versus 30 the previous year), 23 in September (25 in 2015), but only 13 in October (27), and 22 in November (34 in 2015).

Not everything was rosy though. The north Pacific region remained under pressure due to slower Chinese steels exports. The final figure of 108.5 million tons for the year was down on the 112 million tons achieved in 2015, and represents the first contraction since 2010.

In the second half of the year, the rise in bunker prices (and possibly low cashflow levels) deterred shipowners from ballasting their ships to the stronger areas (which was the case for fronthaul trades). This resulted in an imbalanced market between the Atlantic and Pacific, with the latter being far lower.

But the outlook looks more promising, with ship deliveries slowing and economies improving on both sides of the world. But some facts should be monitored closely: according to the latest US Department of Agriculture figures, grain production in Brazil and Argentina is forecast at 173 million tons in 2017, a 6.3 million ton drop from the 2016 harvest. A lot will also depend on China's success in curbing steel production and coal consumption. What is good for the planet may not be as good for shipping. Shipowners should be wise and resist the temptation to return to the yards, so as not to hamper the light recovery.

Dry bulk FFA volumes by month 2015-2016



THE FFA MARKET

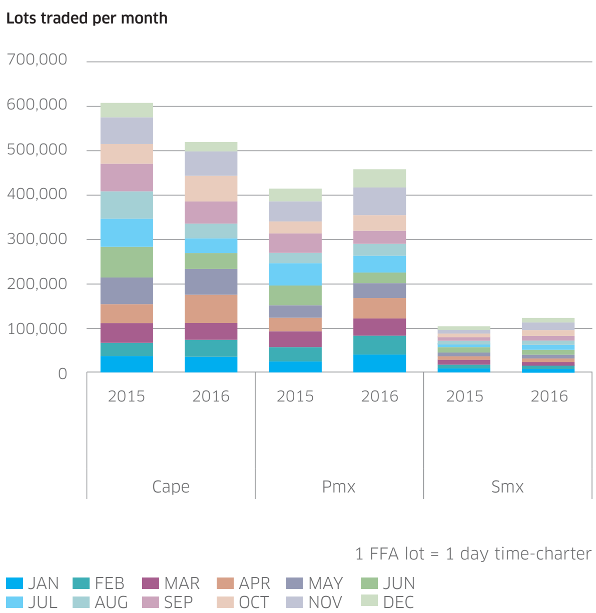
Reflecting on the year gone by, most would argue that volumes seemed promising in the FFA market in contrast to 2015. However, after running the numbers, the lots traded in the market were in fact 40,000 lower than the previous year (-4%). The Capesizes felt the brunt of this decrease (-15%), whilst the smaller Panamax (+9%) and Supramax markets (+15%) were up a combined 10% compared to 2015. Thankfully, the volatility of the FFA market (circa 200% on the front month on average in 2016) once again provided the fuel necessary to keep most players in the market, but the year was not without bloodshed. A number of big volume players left the market and/or decreased their open exposure and trading volumes; this included three funds, one utility company, and one commodity trading house, reflecting the harsh market conditions.

The Capesize physical market opened the year in ill health, where rates remained very range-bound and at low levels for most of the first quarter (spot rates ranged between the year's low of $503 on 22 March, and $2,055 on 25 January). With little profit to be made selling at such low levels, and the upside appearing limited, it was therefore unsurprising to see fairly scarce FFA volumes (Q1 saw 111,558 lots traded). However, some respite arrived in April when spot rates pushed north of $8,000 per day, and the increased volatility produced the greatest monthly volumes seen in the year: 64,078 lots (a 50% increase on April the previous year). This push above $8,000 can largely be accredited to the higher levels of scrapping in the first quarter, though was rather short lived, as rates were quickly eroded down to below $5,000, and with this volumes dried up somewhat.

Fortunately, September through to the end of December brought the rally necessary to reawaken the market, and by 17 November the year's high of $20,063 was reached on the spot market. A number of reasons were behind the rally: namely, the poor weather in the East delaying ships, increased coal activity into China post domestic restrictions, shipments for iron ore improving with low prices and increasing production capacity. Additionally, China stepped up efforts to shrink oversupply and a worsening pollution crisis in its major cities by reducing the number of working days for its coal miners to 276 days a year from 330. As a result the Capesize FFAs saw robust volumes in the final quarter of the year (averaging 44,959 lots/month) and

Dry bulk FFA volumes by segment

2015-2016



123%
increase in BHSI over the year

-4% drop
in FFA lots traded

KYPROS SPIRIT, bulk carrier, 78,000 dwt, delivered in 2016 by Sasebo shipyard of Japan, operated by Safe Bulkers

with the volatility and a lack of offers into year-end over the Christmas period, Q4 settled at a stronger $11,664.

On Panamax, Q1 opened with a 30% year-on-year increase in volumes, despite a fairly stagnant physical market at low rates (the year low of $2,260 was reached on 2 February). The volume was largely derived from a couple of big players selling size on the front end of the curve, illustrating their bearish view of the market. Q2 and Q3 saw modestly rising rates, however volumes did not fully pick up until Q4, when spot rates saw a substantial push amidst a healthy supply of grain cargoes out of the US Gulf, surpassing expectations; the year high of $12,478 was reached on 7 December. This push brought about increased volumes as players rejoiced from increased volatility on the curve, November in particular which saw 62,762 lots traded (38% increase from 2015).

Supramax volumes increased once again, notably in Q4 where a massive 78% year-on-year increase in volumes was seen. This quarter saw the highest spot rates (settling at $8,317), and also healthy volatility as it ranged from $7,034 to $10,198.

A similar pattern to the swaps emerged on the options with total lots traded down 10%: Capesizes were 22% lower than in 2015, whilst Panamax was up 166% and Supramax a promising 483%, though 82% of the total options traded this year in the market were on the Capesizes.

The robust finish to the year looked set to continue into January trading, despite the index ($9,203) ending 2016 at under half the year's high, although the forward pricing fails to see a contango before Q4 2017. That being said, the increasing interest in the index-linked FFA contracts to bridge the gap between the underlying physical business holds promise for volumes, particularly as the market switches from 4 Time Charter Average to 5 Time Charter Average open interest.

THE SECOND HAND MARKET

Capesize

At the end of 2015, we indicated that the fall in Capesize asset values would accelerate in 2016, enabling those shipowners with sufficient liquidity to snap up tonnage at attractive prices.

We recorded nearly 100 transactions of vessels over 100,000 dwt in 2016. Many of these deals involved sellers in financial distress, pushed to sell or restructure by their creditors, or by the state of their financial accounts.

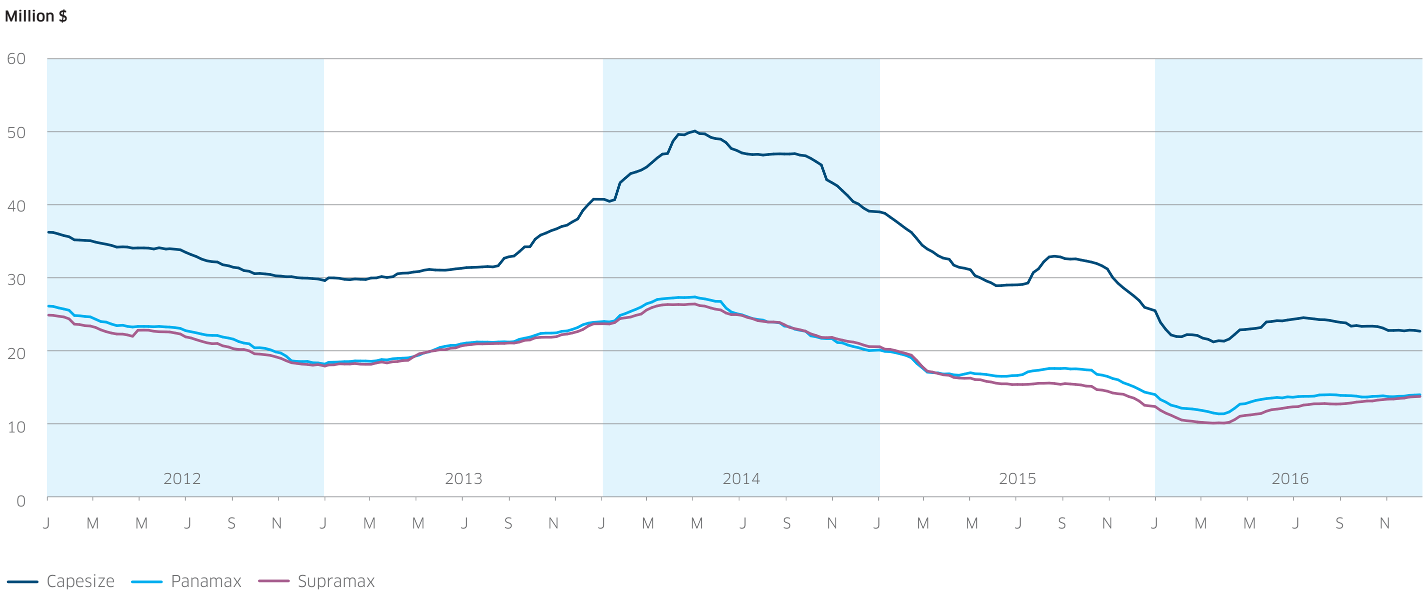
Taking as a reference the value of a theoretical five year old 180,000 dwt vessel built in a first-tier yard as evaluated weekly by the Baltic Exchange Sale & Purchase Assessment (BSPA), we note that prices fell again in 2016, by more than 11% over the year.

Prices hit a low point at the end of March (-17% compared to the start of the year), before rising sharply again up to mid-July (a rise of +16% versus the low), before gradually falling back over the rest of the year (a -7.5% decline from July).

We note the following price evolutions for a vessel of this class built in 2011 ($ million).

04/01/2016	25.305
01/02/2016	21.728
21/03/2016	20.981
31/05/2016	23.743
18/07/2016	24.338
26/09/2016	23.250
31/10/2016	22.899
05/12/2016	22.604
19/12/2016	22.459

Dry Bulk Carrier S&P prices - 5 yrs



Older vessels were less affected by the price declines, and a 10 year old Capesize built in Japan was worth approximately $13-$13.5 million at the beginning of 2016 and about $14.5-$15 million at the end of the year.

We recorded just over 80 demolition sales of vessels of 100,000 dwt or more in 2016, including some 9 units of more than 200,000 dwt. This compares to nearly 100 demolition sales in 2015.

Overall, therefore, in 2016 the value of Capesize tonnage fell for the more modern vessels but to a lesser extent than in 2015, and in a market that gradually, albeit slowly, is tending to improve, benefiting in particular the older ships in the fleet.

Demolition activity (the aforementioned 82 vessels equivalent to about 13.8 million dwt), combined with relatively few orders (some 33 ships of about 12.7 million deadweight, including 30 Valemaxes) opens up the possibility of a return to eventual equilibrium if demand remains stable.

With current orders mainly concentrated on vessels of 220,000 dwt and up, however, we can speculate on the size and number of vessels required in the coming years. This will surely have an impact on the secondhand market. Nevertheless we believe that values should hold firm and increase in 2017.

Panamax to Handysize

"Blood, Sweat and Tears" are most probably the three words that can best describe the state of the second hand dry bulk market during 2016, in direct continuation of the previous year which we described as an "*Annus Horribilis*", and in line with our predictions that the depressed market would persist during 2016.

Freight rates dropped to all-time lows, with the Baltic Dry Index (BDI) plunging to 290 points on 10 February. According to the Alphabulk Newsletter, the average BDI value in 2016 was the worst since the BDI was created in 1985. Looking back, we note that the worst consecutive three-year average of the BDI was recorded in 2016, 2015 and 2014.

Over the past twelve months, distressed assets came to the market for sale via financial institutions involving 'packages' of three, four… seven ships (especially from German banks), as well as via outright bankruptcies (Daiichi, United Ocean etc).

January: United Ocean filed for receivership. Its assets (33 bulk carriers, 7 PCTCs or pure car/truck carriers and a few woodchip carriers) were soon placed on the market for sale on a ship-by-ship basis. About 10 units (9 bulk carriers and 1 woodchip carrier) had been sold by end 2016. The remaining tonnage is expected to be sold over the course of the next 12-18 months.

May: Daiichi Chuo Kisen won the approval of its *"creditors"* (Japanese shipowners and shipbuilders) for the restructuring of the company.

September: Daiichi Chuo Kisen officially emerged from bankruptcy in a 'slimmer' form after selling about a dozen units and with a 'new' ownership composed of several (about 17) of the company's Japanese customers: 2 Japanese shipbuilders (Imabari Group and one other) plus several Japanese shipowners (Doun Kisen, Shoei Kisen, Nissen Shipping and others).

Over the first and second quarters of the year, values dropped significantly from the already depressed levels they had reached at the end of 2015. An 'occasion not to be missed' prompted a few cash-rich buyers to enter the market and pick up attractively priced assets.

82
Capesizes scrapped

Many distressed Panamax
assets came to the market

CIELO DI LIVORNO, bulk carrier, 37,277 dwt, delivered in 2008 by Japanese shipyard Saiki, operated by d'Amico

As the freight market improved so did prospective buyers' confidence, leading to increased competition which in turn resulted in improving price levels.

By the end of the year, prices for most size and age segments had experienced a rebound, reaching levels similar to those recorded at the end of 2015.

Asset values at end 2016 compared to those observed at end 2015:

(Estimated values are for Japanese, Korean and top-tier Chinese yards. For units built at lower quality Chinese yards a discount of at least 10%-15% should be expected.)

Panamax-Kamsarmax values end 2016 (74,000-82,000 dwt)

10 year old: The lowest value recorded was some $7.5-$8.0 million in the first quarter, while the value at year end stood at about $8.5-9.0 million (almost no change compared to the value at end of 2015). This represented a 'swing' of about 30% over the twelve-month period.

5 year old: Values dropped to their lowest point of about $12.5-$13.0 million during the first quarter. At year end they recovered to reach almost $14 million (a 3.5% drop compared end-2015 values), equivalent to a 'swing' of about 20% over the period.

Newbuilding re-sale: For prompt (3-6 month) delivery ex Korean or Japanese yard, Kamsarmax re-sales basis NSF contract & 20/80% payment terms reached a lowest level of about $22 million, again during the first quarter, before recovering to around $23-$23.5 million at year end, a downward correction of approximately 5% compared to year end 2015. This size and age of ship experienced a 'swing' in values of about 17% over the period in question.

Handymax-Supra-Ultramax values end 2016 (43-50,000/52-58,500/60-64,000 dwt)

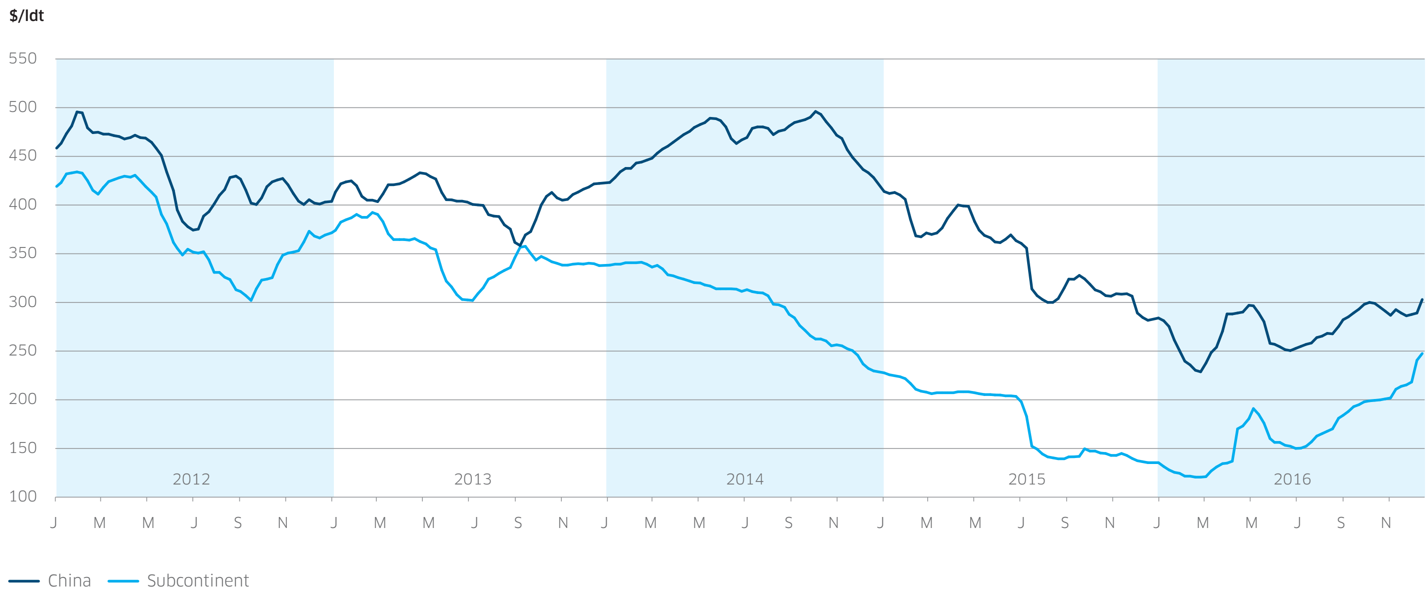
10 year old: The first quarter saw values drop to a low of $6-$6.5 million before rebounding in the third and fourth quarters to end the year in the region of $9 million (almost no change compared to the value at end of 2015). The 'swing' experienced was a massive 80%. Those players brave enough to invest in this age class during the first few months of 2016 saw their assets appreciate by about 50% by the end of the year, resulting in some interesting asset play cases: the Marianthi (48,000 dwt, built 2003 Oshima) was purchased by Greeks for $4.35 million in April, delivered in July and sold in October for $6 million, realising a 38% profit for her owners in the space of six months; the Vinayak (58,000 dwt, built 2009 Tsuneishi) was bought for about $9.8 million in June and sold on in October for a price of $12 million, an appreciation of about 22% within four months.

5 year old: The 'swing' experienced for this age class was more moderate (in the order of 26%) compared to the older ships. Values bottomed out at $12 million during the first quarter and gradually picked up to reach almost $14 million by the end of the year, representing a 4% gain compared to the value at the end of 2015.

Newbuilding re-sale: During first-quarter, Ultramax (61-64,000 dwt) values dropped to about $16.5-$17 million for vessels built at 'top tier' Chinese yards, whereas Japanese-built units saw their values decline to about $18.5-$19 million. Going into the second half of the year, values corrected upwards and at the end of the year China-built units were valued at $18.5-$19 million and the Japanese ships stood at $20.5-$21 million.

Values bottomed out in the first quarter

Bulk Carrier Demolition Prices



Handysize values end 2016 (28,000-43,000 dwt)

10 year old: At the end of 2016 a Japanese built Handysize (28,000 dwt) was worth about $6.5 million i.e. no major change from twelve months earlier – however the value dropped to about $4 million in the first quarter. Larger Handysizes (32,000 dwt) saw their values drop to about $5 million to eventually bounce back over the course of the second half to $6.7-$6.8 million. Asset play came in focus in this category too: the Sider Caribe (32,000 dwt, built 2009 Kanda) was purchased by Italians for $5.9 million in April then sold on in October for about $8.75 million, realising a 48% profit for her owners in the space of six months.

5 year old: During the same period, the value of a 5 year old Handysize (28,000 dwt) corrected downwards by about 11% to reach $8 million at the end of the year. Larger units (32,000 dwt) and (37,000 dwt) were worth close to $10.5-$11 million and $14 million respectively at the end of 2016.

Newbuilding re-sale: Chinese-built vessels were worth close to $15-15.5 million at year end while Japanese-built tonnage was commanding a price of about $18 million, thus no real change when compared to the values at the end of 2015.

By the end of the year, the market seemed to be slowly but surely improving, mainly due to the following factors:

- Owners have continued to refrain from placing new orders.
- Newbuilding programs, already re-structured, have been under renewed scrutiny with further cancellations and delayed deliveries.
- Shipyard capacity has continued to shrink with additional shipyard bankruptcies recorded, especially in China.
- Continued scrapping has lifted the market during 2016, although there was a noticeable slowdown during the last quarter.

Demolition / Recycling market

The total tonnage 'removed' from the market was about 30 million deadweight (slightly more than the total removed during 2015), representing some 419 vessels of all sizes from Handysize to Capesize inclusive.

The breakdown reads as follows:

- Totals for Handysize to Kamsarmax (25-85,000 dwt): 284 vessels or 14.4 million dwt
- Totals for Capesize (85-250,000 dwt): 82 vessels or 13.8 million dwt

Demolition prices end 2016: India, Bangladesh and Pakistan stood at $290-280/LT (no change from end 2015 prices), whereas China saw a massive improvement in the fourth quarter, ending the year at about $230/LT (+77% from the $130/LT recorded at end 2015).

In last year's annual review, we were of the opinion that 2016 would be a year of hardship and opportunity, and with hindsight it looks as if this was indeed the case. Greek buyers moved aggressively over the year and will certainly reap some handsome returns in the future. We do believe that, while prices bottomed out in 2016, investing in quality dry bulk carriers over the next three to nine months will prove a sound and worthwhile investment for the future.

Asset play came into focus for the Handy-Ultramax segment

30 million deadweight removed from the bulk market

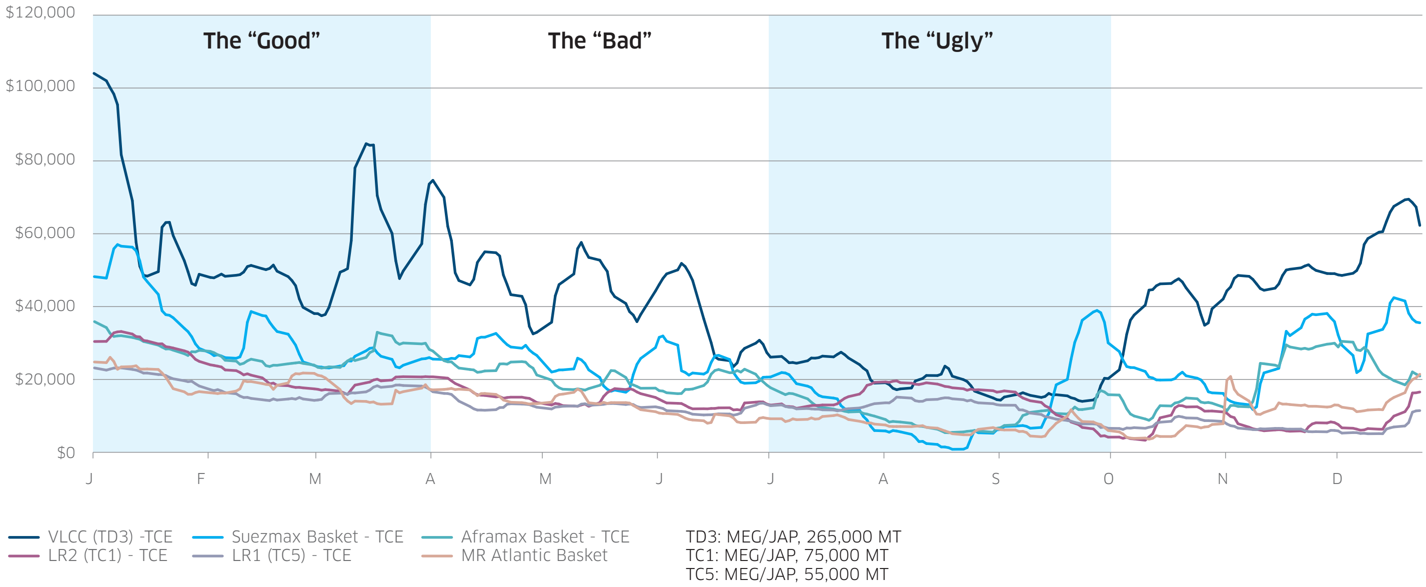
MINERVA CLARA, Aframax tanker, 103,232 dwt, delivered in 2006 by the South Korean shipyard Samsung to Minerva Marine

TANKER

The Good, the Bad and the Ugly

2016 saw all tanker rates retreat from their 2015 highs as the arrival of a slew of new builds and slowing oil demand growth saw market fundamentals soften. The rise in oil prices by $29/bbl (104%) over the year also contributed to pressure Time Charter Equivalent (TCE) earnings. Consequently, compared to 2015, TCE earnings declined by around 45% on crude tankers and by about 50% on clean tankers.

Tanker rates 2016



2016 was not all bad, in fact it started brightly. The good: The first quarter was indeed the best quarter of the year for the market. Although crude tanker TCE earnings weakened from the stratospheric levels hit in fourth quarter 2015, they remained at relatively high levels. The decline in TCE was caused by the rise in crude oil prices which fed into bunker costs (+40%), and reduced port delays.

However, the second quarter was another story. The bad: Indeed, TCE earnings fell by about 25%-30% from Q1 levels, as tanker demand growth slowed. Weak refining margins, high inventories and the lack of a substantial increase in refining capacity kept crude tanker demand flat. Furthermore, crude oil prices rose from around $35/bbl in early April 2016 to about $50/bbl in mid-June, propelling bunker costs more than 40% higher.

Worse was to come as the situation deteriorated further in the third quarter. The ugly: despite oil prices stabilising, TCE earnings plunged to extremely low levels during the summer of 2016. Freight rates for all crude tanker segments declined sharply as they were hit by accelerating fleet growth. Some 97 large crude tankers (from VLCC to Panamax) were delivered in 2016, the highest since 2012. The clean tanker market did not suffer as much as the crude tanker segment but it could not escape the downward trend. Everyone could hear the charterers saying to tanker owners: *"You see, in this world there's two kinds of people, my friend: those with loaded guns and those who dig. You dig"*. Charterers had indeed loaded guns during this period. But the roles were soon temporarily reversed...

The fourth quarter saw tanker freight rates rebound led by two short-term factors: increased floating storage driven by temporary marketing and logistical issues, and refiners hiking purchases ahead of an expected global crude output cut in early 2017. Meanwhile, ton-miles increased as, buoyed by cheap freight rates, US crude exports slowly but surely began to reach new markets in Europe and Asia while at the same time cargoes of light, sweet crude from West Africa were imported by Atlantic coast refiners.

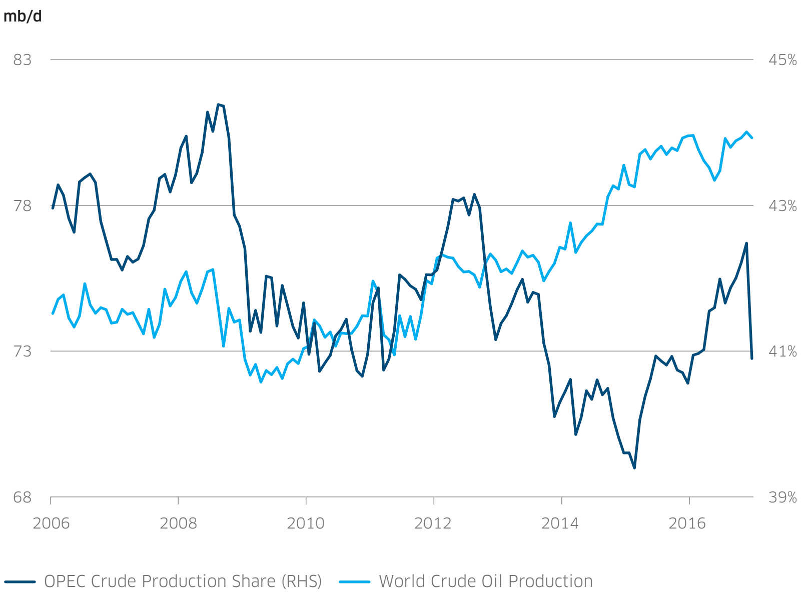
So if 2016 saw the tanker market turn heel and hit the downslope, the questions for 2017 are how low can the market go, and how long will the downturn last? The omens for the first six months of the year are not good with the promise of crude production cuts and still-bloated crude and product inventories likely to reduce seaborne oil trade, while still-high new vessel deliveries will soften fundamentals even further. Additionally, individual tanker classes will also have to deal with specific problems, including the release of the National Iranian Tanker Company (NITC) VLCCs into the general market, the transporting of large gasoil parcels from east to west by newly-delivered crude tankers and the avalanche of new deliveries expected to hit the Suezmax fleet.

The ease at which these hurdles are dealt with will ultimately determine how long it will take for individual sectors to rebound, but more generally the second half of the year looks more hopeful on expectations of increased scrapping, the slippage of new vessel deliveries, inventories drawing to more habitual levels, and an uptick in crude production. Finally, one trend from 2016 is likely to proliferate into 2017: the trend of logistical bottlenecks driving short-term surges in freight rates. Logistical inefficiencies remain in many regions, as infrastructure has not yet caught up with changes in oil supply and demand. In 2016 these inefficiencies manifested themselves in vessel delays and demurrage, and again can be expected to provide some much needed respite to owners over the coming year.

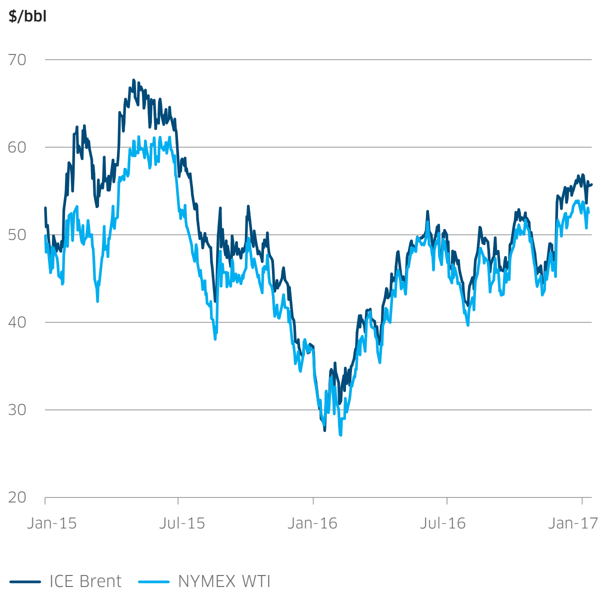
+104%
Increase in crude oil prices over 2016

97
Number of large crude tankers (VLCC to Panamax) delivered in 2016

World crude oil production



Benchmark crude prices



CHARTERING

In contrast to 2015, average time charter rates declined as the year progressed and there was a notable shift in sentiment from mid-February onwards as period activity began to decline, driven primarily by a weaker spot market environment. Crude tonnage activity as defined by the number of Time Charter fixtures declined by 37% and clean tonnage activity slipped by 27%.

Ship category	Period	2016 Time charter rate (average) usd/day	2016 Vs. 2015 (%)
VLCC	12 MONTHS	36,833	-23%
	36 MONTHS		
SUEZMAX	12 MONTHS	26,794	-25%
	36 MONTHS		
AFRAMAX	12 MONTHS	20,784	-21%
	36 MONTHS		
LR2	12 MONTHS	20,911	-15%
	36 MONTHS		
LR1	12 MONTHS	18,393	-22%
	36 MONTHS		
MR2	12 MONTHS	15,352	-13%
	36 MONTHS		
MR1	12 MONTHS	14,127	-11.5%
	36 MONTHS		

Owners soon accepted time charter rates would not recover immediately to 2015 levels and those in need of coverage stomached lower rates. As the year progressed, charterers consistently re-delivered tonnage from their books and re-evaluated their future strategy, shifting from longer to shorter periods with optionality (30-90 days option 30 days). It is a waiting game which will take us well into 2017 as charterers remain bearish versus owners looking for a shift in market sentiment to justify higher numbers. Hence, a compromise has been reached, base rate plus profit-sharing structures.

With approximately 560 ships on order until 2019 and upcoming new industry regulations (Ballast Water Treatment System in September 2017 and low sulphur bunker regulations in January 2020), there are increasing challenges to mitigate.

We anticipate 2017 will be another challenging year with time charter rates likely to remain under pressure. Charterers will look to maintain time charter fleets in crude and product sectors but their commitment horizon will shorten compared to previous years. The trend of safety in numbers (i.e consolidation) could increase from an ownership perspective and they will consistently monitor spot vs time charter performance throughout the year.

The onset of new regulations may encourage an increase in scrapping activity which could be the catalyst required towards market recovery… will we observe more long-term deals being done in the second half of 2017? ….. Let's see!!

Crude Tankers

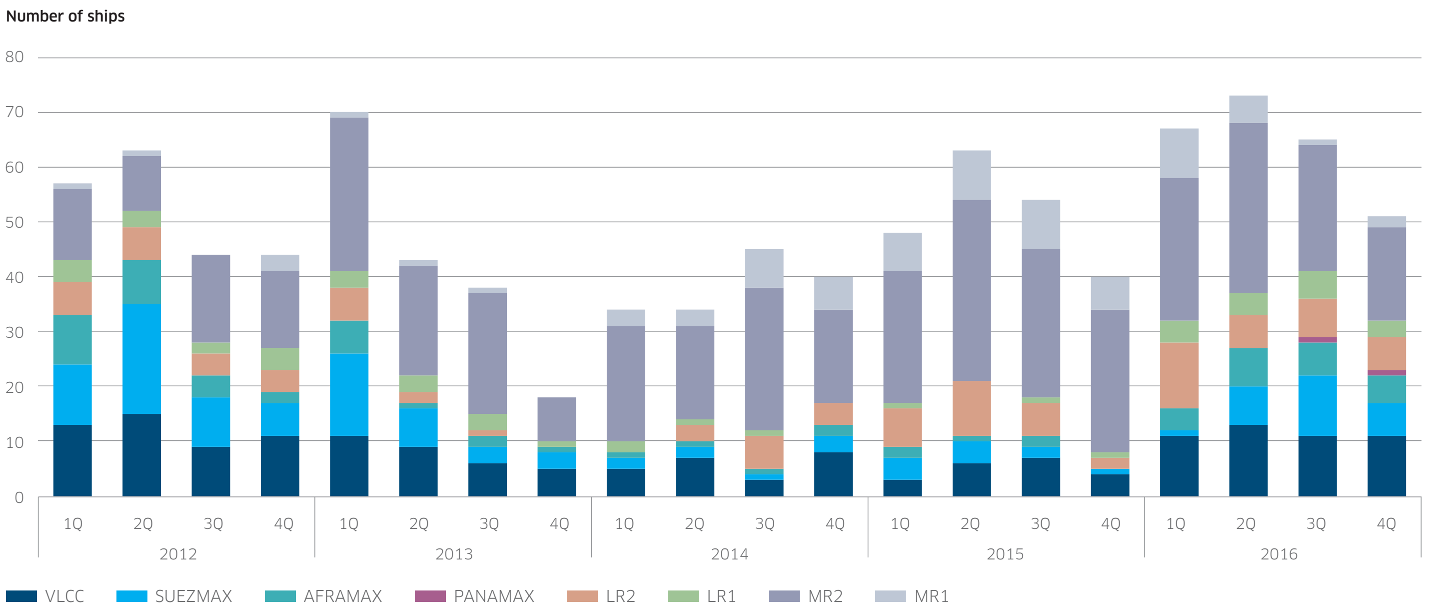
VLCC

The world of VLCCs… Interesting, influential as always and more than ever one may argue sentiment driven.

The significant orderbook, vessel re-deliveries, and increased newbuilding deliveries did of course play their role in the weaker rates but not as much as one would expect.

Owners had a clear memory of 2015 rates and managed to push and obtain a satisfactory yearly Time Charter Equivalent (TCE) average of $43,600 per day (average of MEG/JAP 265,000t and WAF/CHINA 260,000t) with the exception of between July and September (when MEG/JAP 265,000t averaged $19,000 per day and WAF/CHINA 260,000t averaged $25,800 per day during this period).

Tanker deliveries - 2012-2016



Thereafter the market recovered, influenced by Typhoon Malakas in September and port congestion in China, India and Korea. With a yearly average of Worldscale (WS) 59 for Baltic Exchange route TD3, owners gained an average TCE of $42,300 per day (39% lower than 2015) which is higher than consensus forecasts made last year. We also saw several spikes during the course of the year. TD3 rose from WS 50 at the beginning of the March 2016 to WS 98 by mid-March and then rebounded from WS 33 at end-September 2016 to WS 66 in mid-October and to WS 91 by mid-December.

On the demand side, China and India have been very active. Chinese teapot (or independent non state-owned) refineries started to appear in the market and are now themselves chartering after obtaining crude import quotas. Increased OPEC output ahead of the announced early-2017 production cut also contributed to an average of 143 monthly fixtures ex-Middle East Gulf, 11 (8%) more than during 2015.

On the other hand, the supply side was less supportive. The VLCC fleet is growing briskly. Back in 2010 there were 550 ships, by 2016 there were an additional 145 ships, with 47 deliveries in 2016 alone.

For 2017, OPEC and non-OPEC producers agreed to cut output which will lead to less global spot cargoes. On the supply side, the increase in the VLCC fleet is expect to remain significant. However, growth is slowing with about 36 VLCCs expected to be launched over the year, while 36 VLCC tankers will turn 15 years old. The average age of the VLCC fleet will also increase to 9.2 years by the end of 2017 from 8.7 years in December 2016. Nonetheless, the start of the Iranian Persian Star refinery project in 2017 is likely to absorb much of the condensate currently stored on around 20 National Iranian Tanker Company VLCCs. This will see them released into the spot market.

Taking the above into consideration, and looking towards 2017, flat rates are forecast to decline by 23% on MEG/JAP voyages. The second and third quarters are expected to be weaker compared to 2016 but towards the end of the year we could see some more positive signs as fleet growth slows, the likely resurgence of scrapping, and stronger demand for long haul voyages. TCE should be around $35,000 per day +/- $2,500 per day, provided there will not be any unexpected events occurring in the global economy.

Suezmax

The Suezmax market dove into 2016 with remarkable earnings around $50,000 per day in the west, similar to the record year of 2015. These conditions did not last for long and were soon eroded with Time Charter Equivalents reaching sub operating expenses (OPEX) levels in August. Although autumn and early winter brought some respite for owners, the year averaged $23,500 per day, nearly half the earnings of the previous year.

The main change to trading patterns came from the January lifting of Iranian sanctions and the subsequent export of Iranian crude on Suezmaxes and VLCCs. However, only a limited number of owners could (or would) call in Iran.

On a global basis, West African volumes remained the most important. Accordingly, owners with modern tonnage positioned their fleet in the Atlantic Basin. However, Nigeria suffered numerous setbacks due to terrorist attacks on oil infrastructure. Summer was characterised by very low returns for owners following ex-West Africa delays. Trading patterns continue to evolve as China and India diversify their imports and take more cargoes from West Africa and the Mediterranean. Additionally, South America imported more crude from West Africa while exports from Brazil and Uruguay to Asia, Europe and the USA, rose. The latter's new sweet crude is particularly prized by Asian refiners. Increased Kurdish exports from Ceyhan have helped the Mediterranean market as these cargoes absorbed tonnage. The situation in Libya remains fragile. Nonetheless, steady volumes are shipped to Mediterranean or Chinese refiners.

The eastern side of the business and moreover that for voyages leaving the Middle Eastern Gulf have seen the development of different markets. Firstly, older tonnage for Indian destinations. Secondly, vessels fitted with 20 ton

STENA SUEDE, Suezmax tanker, 159,158 dwt, delivered in 2011 by the South Korean shipyard Samsung to Stena Bulk

cranes together with a small group of Iran-suitable players which both obtain premiums ranging from 5 to 20 points for a "normal" cargo. Meanwhile, the rest of the fleet suffered from anemic demand with average Worldscale rates of 42.5 basis 140,000t for a voyage to the west (down a few points from an average of WS 48 in 2015, but on a flat rate basis was 27% lower than 2015) and WS 85 to the east basis 130kt.

With an ageing fleet (average 10 years) of roughly 520 units, 27 new ships were delivered during 2016. Accordingly, the overcapacity coupled with lower demand during most of the year took its toll on earnings. The trend has been set, and with 100 ships on order - of which 70 units are scheduled for delivery in 2017 - the outlook for the near-future looks bleak.

Aframax

After an exceptional 2015, the workhorse of the tanker segment did not escape the overall downturn endured in 2016. TCE earnings for Baltic Exchange route TD17 fell by 45% with the TD7 route down by 37%. However, in comparison to the cross-Mediterranean (TD19) and Caribbean to US Gulf (TD9) markets, the North (TD7 and TD17 combined) outperformed its neighbor's earnings by 44%.

2016 was the year of Urals. Russia hiked crude production by around 700,000 bbl/day which peaked in October with 7.7m tons exported by Primorsk and Ust-luga combined, the highest since September 2012. Russian export blend's (REBCO) main home was Northwest Europe which accounted for 50% of deliveries. An additional 40% was delivered into the Baltic with only 9% shipped long haul to the Mediterranean, Caribbean or US Gulf. Next year, exports to Europe from Baltic and Black Sea ports will likely decline in line with the Kremlin's commitment to reduce production by 300,000 bbl/day and as Russia maintains its strategy of exporting as much as possible to Pacific Basin markets.

The North Sea / Continent (TD7) market suffered from a growing appetite for North Sea grades from Chinese, South Korean and US refiners. Forties and Ekofisk saw increased liftings on Suezmaxes or VLCCs which hurt the Aframax segment, forcing owners to either endure more idle time or to ballast from the region in order to find alternative employment.

The outlook for 2017 is evidently not as optimistic. Back in August 2016 we experienced a glimpse of how tough market conditions could be, as earnings on TD7 and TD17 sank to their lowest since 2014. The unfavorable clean market has motivated certain owners to dirty up their LR2s (approximately 25 in December 2016). This trend could continue in 2017 with 34 LR2s expected to be delivered on top of 32 non-coated Aframaxes.

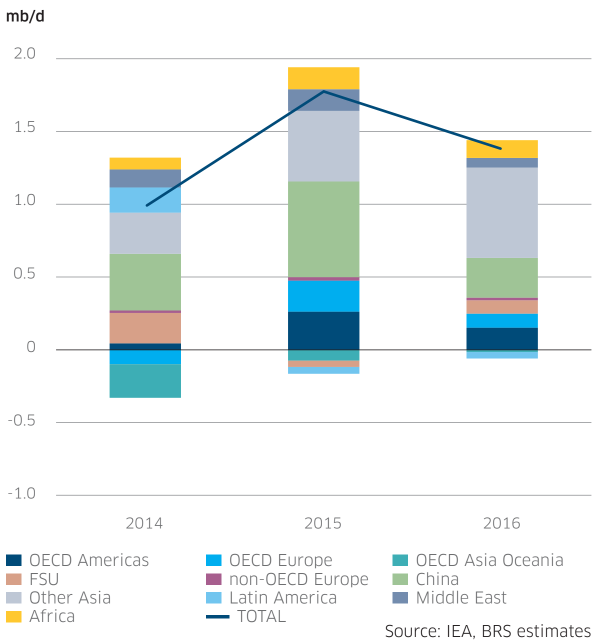
The Mediterranean Aframax market remained depressed for much of the year with owners' returns from March to October averaging about $8,000-$8,500 per day. Now Libya is starting to export more, the market is increasingly volatile. Owners were even able to intermittently push up rates as some Black Sea cargos are now facing more competition from cross-Mediterranean voyages.

Generally speaking, most of the crude volumes coming out of the Black Sea last year allowed charterers, in the absence of Turkish straits delays, to better program their fixtures with owners unable to push for higher rates even in a very active environment.

As expected, cross-Mediterranean activity increased towards year-end as market fundamentals tightened but the question is, is this going to be enough to compensate for the losses incurred during the long summer market?... obviously not.

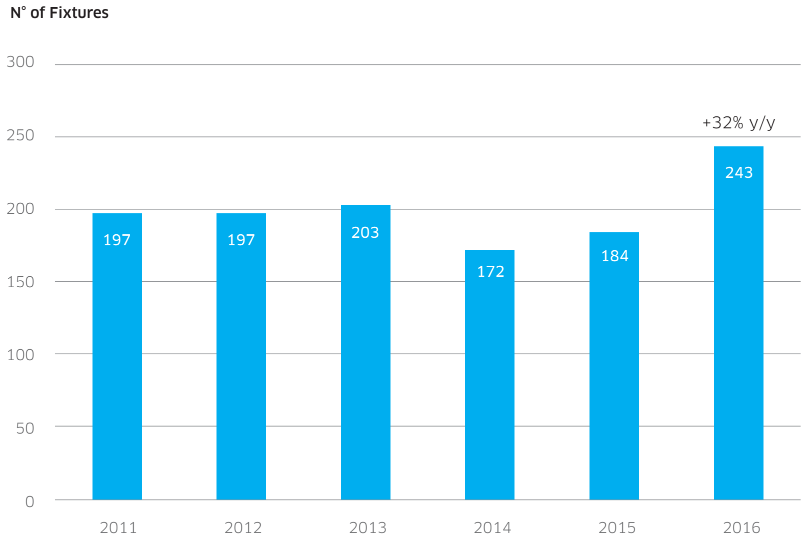
The outlook for 2017 is not looking any better in the Mediterranean. Charterers are taking more and more ships on time charter (around $18,000 per day levels for 90 days) for the winter season, and thus the market will probably suffer from a lack of inquiry.

Global Oil Demand Growth
2014-2016



Source: IEA, BRS estimates

S. American Vegoils - N° of Fixtures
2011-2016



Product Tankers

Fuel Oil

The year started off badly with the introduction of lower Worldscale flat rates, coupled with lower demand for dirty Handysizes and MRs. On the Handysize, average daily returns ranged from $2,000 per day up to approximately $23,000 per day with the year averaging $10,500 per day.

Compared to 2015, the year was very different. 2015 was dominated by traders filling land-based storage to take advantage of the prevalent contango structure in crude markets. In 2016, tanker demand ebbed as storage was filled, with rates slumping accordingly.

Throughout 2016, new vessel deliveries remained high as 118 Handysizes and MRs were launched versus 144 in 2015 and 102 in 2014. This did not have an immediate effect on the supply side dynamics for the DPP market, but it can be expected that in the future it will. Most of the new builds are expected to firstly enter the CPP (Clean Petroleum Products) market, from where older ships could be seen as candidates to be 'dirtied up' and enter the DPP (Dirty Petroleum Products) segment. How heavy this affect will be on the market remains to be seen.

The Panamax market was similar with demand remaining tepid during much of the year due to the adequate supply of VGO (Vacuum Gas Oil) floating in the US Gulf. Accordingly, owners made around $4,500 per day for a TD12 round trip (ARA/USG) and $20,000 per day during the busier months. Increased US VGO production and already-high stocks saw demand for European VGO remain thin. However, increased activity from the US West Coast prevented this segment from completely failing.

Some speculated that following the expansion of the Panama Canal, Panamax rates would drop due to increased Aframax demand. However this proved unfounded as the expansion of US West Coast ports to accommodate larger vessels has not taken place and the general increase of Aframax Panama Canal Transit costs has buttressed Panamax demand for now.

Vegetable Oils Soya & Sunflower Oils + Biodiesel

The export of vegoils from South America followed the same increasing trend as 2015 with approximately 7.2 million tons shipped in 2016. 158 MR1s and MR2s have been fixed to Asia of which 129 went to India which has again been extremely active this year, mainly due to an attractive price differential compared to sunflower and palm oils.

Biodiesel exports from Argentina increased significantly with the US buying large volumes of SME (Soya Methyl Esther). Approximately 1.5 million tons of biodiesel employing 40 MR1s and MR2s were fixed in 2016 giving owners interesting repositioning cargoes to the US Gulf.

This year we saw two phases in the evolution of rates. During the first semester, rates averaged between $50 to low $50's per ton. The poor summer market pressured rates lower to touch $33 per ton for 40,000 mts. Daily returns started above $20,000 per day at the beginning of the year and fell to around $9,000 per day at their lowest.

The year's Black Sea sunflower crop was excellent and sunflower oil exports really started during the fourth quarter. This market not only employs mostly small tankers which are fixed into the Mediterranean / Continent regions, but also intermediate sizes up to MR1s which are fixed to the Red Sea, Middle East Gulf and India. Very few MR2s were fixed from the Black Sea to China. The rates from the Black Sea to India varied from low $40's per ton to high $40's per ton depending on the combination of quantity and ports.

Palm Oils

Close to 210 MR1s and MR2s were employed in this trade in 2016, slightly less than the previous year. Approximately 40 newbuilds were fixed with palm oil for their maiden voyage. The daily returns for an MR2 averaged $17,000 to $20,000 per day in the first half of the year and decreased to around $14,000 to $16,000 per day during the second half, depending on the delivery

area. The leading charterer/operator remained Stenaweco with 45 MR2s carrying palm oils in 2016. Palm oil production is expected to rise in 2017, while fewer new carriers will be delivered, so expectations are for a firmer market (74 MR2s are forecast to be delivered in 2017), although without major changes. It will also depend on CPP market activity in the region and the evolution of bunker prices. To be seen...

Clean petroleum products - West

MR1

2016 was a rough year for owners. It was expected that market rates would be lower than in 2015 but most players were surprised at how bad it ended up being. There were not any major changes in this market. Owners are expecting another rough year this year - this cannot be disputed considering that activity is expected to remain flat while tonnage capacity will increase.

MR2

Overall, there were many more ships traded in the west this year due to the continual delivery of newbuilds - not only did the position lists look wider, but they were also full of new names. Baltic Exchange route TC2 (CONT/USAC, 37kt) started the year at healthy levels before it crashed during the summer. The remainder of the year was driven by a series of incidents on the US Colonial pipeline which heightened market tension. However, each time the market saw some improvement, LR1s jumped in before the next available MRs could benefit from higher rates. The span of the spikes observed were also shorter – from around two weeks in 2015 to less than a week in 2016 – thereby preventing owners reaping any significant benefits. A mild winter and low activity to Argentina and West Africa did not allow for the market to boast healthy rates.

US Gulf trade also disappointed this year. The TC14 arbitrage remained more or less closed with the region consequently saturated with tonnage throughout most of the year. Traders fell back on cross-US Gulf or South American deals, thereby lowering the ton/mile ratio. As for Western owners, many were tempted to ballast their units opening in US Atlantic Coast due to crumbling returns.

The outlook for 2017 is not particularly exciting even though it is expected to be slightly busier. An interesting prospect for 2017 lies in the change of gasoil specifications in West Africa where the sulphur content is expected to be lowered to 50 ppm from the current 3,000 ppm. Baltic gasoil will not meet these requirements, thus product is expected to be sourced from the US Gulf, Asia or the Middle East. This should help absorb US Gulf tonnage.

LRs

Ironically enough in 2016, the Baltic Exchange chose to publish two new route indices for LRs in the West: TC16 LR1s ARA/WAF and TC15 LR2 Med/Japan. Market levels observed this year have shown how fragile both these trades are.

LR1 – The 'MRisation' of the L1 in the West

LR1s have struggled this year. CONT/WAF fixtures fell to 120 in 2016 from 205 in 2015. This is partly due to regional problems in West Africa (mainly Nigeria) but also due to the fact that the MR segment has been winning more TC16 business (MR CONT/WAF volumes were up y-o-y, eating into the LR1 share). MRs have been cheaper on a US dollar-per-ton basis considering they cost less on demurrage and can call at ports directly, meaning that ship-to-ship transfer costs are minimised. The competition between LR1 and MR vessels saw the two segments cap each other.

This has been combined with the fact that fixtures on the Continent and Baltic to Far East routes have been few and far between, as the west / east naphtha arbitrage remained stubbornly shut. Therefore the segment's two longest routes have fallen off and LR1 earnings have duly followed suit.

While taken for granted since 2011, the heavy use of LR1s for discharge in West Africa has shrunk to the point where LR1s are now just big MRs, able only to compete on a dollar-per-ton basis. The western LR1 market was turned upside down as it lost its natural West Africa market and relied only on freight arbitrage with MRs and product arbitrages such as UMS shipping to the AG. This also raised questions over the fundamentals driving the intrinsically unnatural West/AG arbitrage where cargoes are delivered to massively oversupplied areas. With the West African market absorbing much less tonnage than before, LR1s are now treated and traded as big MRs for voyages that are not Far East bound.

As the east market got busier in September/October, an unprecedented migration of Western tonnage ballasting to the Middle East Gulf was observed. Obviously, these terrible months offered poor returns to owners over a long period of time.

LR2 segment

The main trade for LR2s in the west (Baltic route TC15 Med/Japan) has been practically non-existent since the end of the first quarter. Cheaper LPG has been preferred to naphtha by the Asian petrochemical industry, meaning demand has greatly fallen for naphtha East of Suez.

During most of the year, any LR2 opening in the west ballasted directly to the MEG seeking TC1 runs. For their open positions in the west, owners have used as a benchmark the returns provided by ballasting a ship to load a cargo ex-east in order to give a rate for cargoes loading ex-west. Med/Japan LR2 fixtures fell to 57 in 2016 from 94 in 2015. Nonetheless, supported by contango economics, lots of vessels transited via the Cape of Good Hope instead of the Suez Canal for east/west or west/east movements thus increasing the ton/mile ratio. With the contango having now narrowed significantly, LR2s will once again be used for their natural trade, thereby lowering the utilisation of the fleet and exposing it to another year of new deliveries.

2016 saw newly-delivered VLCC and Suezmaxes fixing gasoil from east to west. The crude market will need to remain at high levels in order to prevent a scenario where crude carriers start claiming clean ships' market shares. Additionally in 2016, 10% of the LR2 fleet dirtied up and helped owners that have kept tonnage clean. This is similar to the LR1 substitution for Panamaxes observed 10 years ago in the dirty market.

VUKOVAR, MR2 tanker, 49,990 dwt, delivered in 2015
by the South Korean shipyard Hyundai Mipo to Tankerska Plovidba

Clean petroleum products – East

MR2

The MR2 segment has probably been the most volatile this year East of Suez, with sudden temporary spikes in the market. MRs suffered from the competition of LR1s and LR2s on what has usually been dedicated MR business such as cross-MEG and cross-Red Sea voyages which capped rates somewhat.

Most MR operators reported $12,000 to $15,000 per day Time Charter Equivalent earnings East of Suez, approximately 40% lower than last year. On a positive note, higher Red Sea refining capacity has generated a market of its own as MR owners have been able to perform intra-regional and longer haul voyages with much greater frequency than in the past. Also the North Asian market has been busy and helped occupy tonnage in that region. The orderbook for delivery in 2017 – approximately 5% of the existing fleet – does not seem too heavy for the market to digest, the only factor weighing on MRs will be the competition from LR1 and LR2 tonnage for traditional business.

LR1

The LR1 market behaved in stark contrast to 2015. The low level of cargoes in the west has seen the East of Suez market constantly supplied by ballasters searching for employment. Accordingly, Baltic Exchange route TC5 Time Charter Equivalent earnings for 2016 averaged $12,600 per day, 50% less than in 2015. In contrast, most LR1 players managed to average fleet earnings worldwide around $17,000 per day by optimizing with backhaul voyages in the Far East such as Korea/Singapore or Korea/Australia routes, which has been a busy market this year. This has, in effect, offered owners alternatives to ballasting back to the MEG. Meanwhile MEG/UK-Cont runs provided poor earnings (below $5,000 per day TCE round trip) and nearly no backhaul opportunities which made it difficult for owners. Most players preferred TC5 or MEG/USAC voyages where the chance of backhauls was greater.

The fact that the MR/LR1 and LR2 segments have never been active at the same time has resulted in inconsistent periods of momentum which were often immediately annulled by the fact that traders were able to split and change cargo sizes in favour of other cheaper tonnage sizes. On a positive note, LR1s benefitted from the preference of big naphtha players to move cargoes on LR1s. With nearly 9% of the world fleet due to be delivered this year, the market is expected to maintain the status quo, with inconsistent activity and earnings under pressure, unless product trading patterns change.

LR2

The East of Suez LR2 market has behaved much like the LR1s this year. The closure of the west / east naphtha arbitrage has created few opportunities for owners to reposition in the east. This resulted in many LR2s ballasting to the MEG or Red Sea in order to find closest employment. In turn, TC1 earnings were heavily impacted and averaged $15,300 per day over 2016, almost 45% lower than 2015. In spite of Red Sea volumes increasing (approximately 10 ULSD (Ultra Low Sulfur Diesel) LR2 cargoes a month from Yanbu alone) it seems that the voyages have been mainly short hauls into the Red Sea or MEG which has not helped occupy tonnage as was expected last year.

For the LR2s also, the Far East backhaul market has proved to be a saving grace with voyages such as Korea/Singapore, and increasing demand from Australia, helping tie up tonnage and reduce the number of ballasters heading to the MEG. In the fourth quarter there was also a growing trend for LR2 operators to dirty up tonnage in view of the significantly better returns available in the Aframax DPP market. If sustained, this may have a positive impact on rates in 2017, a year where 14% of the LR2 fleet is due to be delivered.

SUNRAY, LR1 tanker, 74,039 dwt, delivered in 2016 by the South Korean shipyard Sungdong to Tsakos S&T

FFA MARKET

The last two years have seen a resurgence in tanker FFA derivative traded volumes. January 2015 and 2016 saw in excess of ten million tons of paper freight traded within the first week alone. Although the year's volume did not keep up to that pace, it certainly remained healthy seeing a 2015 + 2016 combined weekly average of 5.8 million tons. Traded volumes were higher for the clean routes due to their greater number with TC2 and TC5 being the most predominately traded. TC14, TC6, TC12 & TC15 made up the remainder. The latter part of 2Q leading into 3Q saw a quieter period with rates on TD3 (VLCC: RT-CHIBA) touching a low of WS 32.46 but finishing the year strongly, albeit briefly, in the WS 90's.

Consistent volumes, increased activity, and renewed interest from owners underscored that FFAs are not only here to stay but are an essential tool in physical shipping to mitigate risk. Even some of the most conservative ship owners have come to realise that leaving their ships spot is often more damaging than managing risk correctly via FFAs. Thus the number of actors is slowly expanding, in the process increasing market liquidity so that volumes can now be transacted across all traded routes.

-39%
Decline in 5 year old Aframax values in 2016

11
Number of tankers demolished in 2016

94
Number of second hand tanker transactions in 2016

SECOND HAND MARKET

Crude tankers

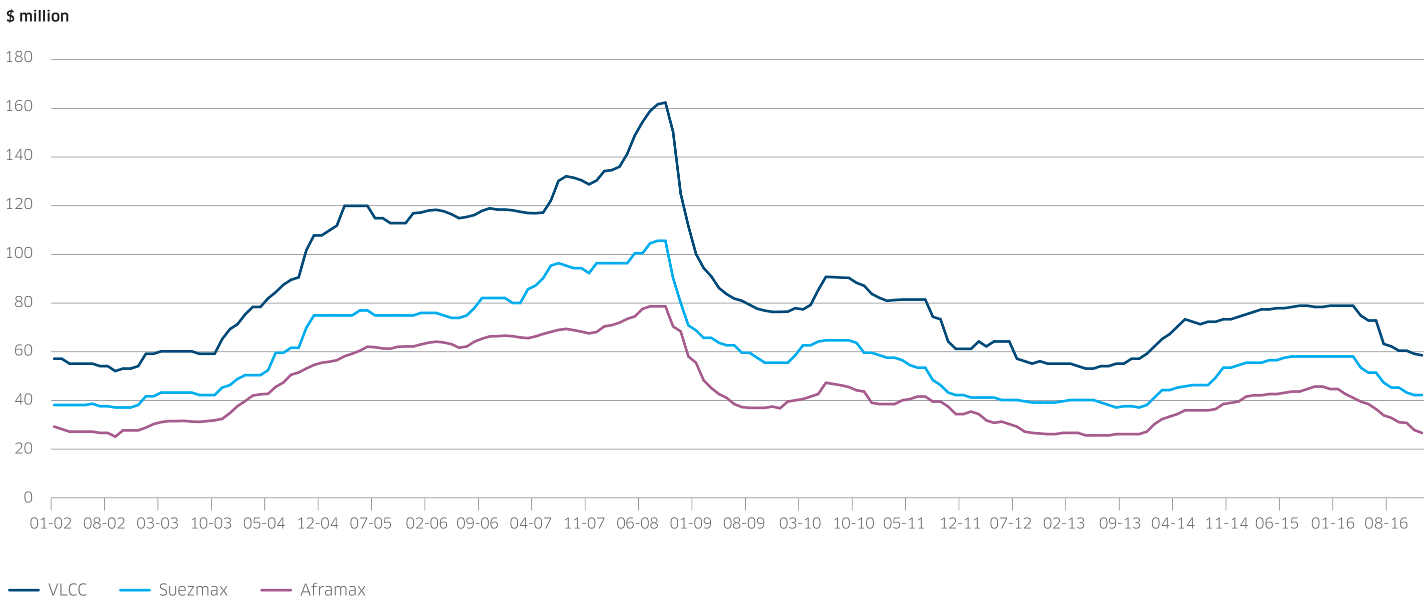
"If, with the intention of absolving myself, I excuse my misfortunes by chance, I submit myself to fate."
Antoine de Saint-Exupéry (1900-1944).

The author of this quote was a French writer and pilot whose plane disappeared in the Mediterranean Sea. His most famous book "Le Petit Prince" (The Little Prince) published in 1943 received, and still receives, international coverage today.

During 2016, crude tanker owners certainly could not blame fatality for the reduced earnings they received during most of the year, with the exception of the last two winter months. Neither could they blame fate for the massive drop in asset values suffered. It was no secret that the fleet had gained efficiency due to the increased size (both in deadweight and cubic terms) for each segment from VLCC to Panamax tankers. It was no secret that 2015 saw almost no demolition. It was no secret that crude and products stocks were at their highest for many years, with most shore capacities full due to low oil prices. Finally, it was no secret that too many newbuildings had been contracted and would start to hit the water in 2016.

2016 saw two contradictory elements which will drive tomorrow's market in the opposite direction. On a positive note for the long term, and contrary to last year, there was less contracting activity and the tanker orderbook shrank in all segments. However, in a negative note for the short term, while spot and Time Charter returns were generally lower, they were still considered strong enough for owners not to consider substantial

5 year old Crude Tanker Prices



demolition. The number of tankers demolished in 2016 was very similar to 2015 as only 11 ships (versus 13) exited the fleet – the tables for "New Orders" and "Units Scrapped" illustrate this point.

Simply calculating the difference between the number of ships contracted in 2013 and 2014, and the number of ships demolished in 2015 and 2016, shows that the market would have enjoyed greater balance with more scrapping.

New orders 2012 to 2016

N° of ships	2012	2013	2014	2015	2016
VLCC	20	41	40	60	17
Suezmax	9	5	48	62	18
Aframax & LR2	22	68	28	99	18
Panamax & LR1	3	2	33	32	7

Units scrapped per year

N° of ships	2012	2013	2014	2015	2016
VLCC	18	24	11	1	2
Suezmax	21	8	10	1	1
Aframax & LR2	21	25	27	3	7
Panamax & LR1	17	9	14	8	1

Tanker owners had a lot on their plates in 2016. They were certainly not particularly active buying and selling ships, as we will elaborate below, but still had to monitor and deal with several sensitive issues: the reappearance of the Iranian fleet on the market; the reduction of shipbuilding capacity in China, Japan and South Korea; the delivery of numerous units on a monthly basis; the management of their finances, and more precisely, the lack of available financing for the shipping industry; and last but not least, they had to closely follow the decisions taken by regulators in respect of the SOx content of bunker fuels from 2020 onwards and the Ballast Water Management (BWM) regulations coming into force next year. As a simple reminder for the latter, all ships due for dry-docking survey after September 2017 will need to install a BWM system.

This year's price evolution for second hand tankers showed massive declines across all segments and vintages. As from late 2015, tanker owners already knew the party was over. The simple offer/demand ratio for oil transportation continued to deteriorate and access to financing became increasingly difficult, even impossible, for most owners. Shipyards priced their newbuilding proposals lower by the day which immediately impacted the values of modern units, resulting in a cascade effect on the older vintages. The table below illustrates this dramatic fall. One should add that older vessels (20 year old units) were less affected, as their values were sustained by strong demolition prices averaging $295 per LT during the year.

Value Changes from 01/2016 to 12/2016

N° of ships	Resale	5 years	10 years	15 years
VLCC	-16.00%	-25.30%	-24.50%	-33.80%
Suezmax	-19.70%	-26.50%	-30,00%	-38.90%
Aframax & LR2	-21.40%	-38.90%	-40.60%	-23.50%
Panamax & LR1	-12.80%	-25.70%	-30,60%	-20.00%
MR2	-10.70%	-26.30%	-25.30%	-27.30%

In direct continuation to 2015, we have again witnessed in 2016 a further decrease of the sale and purchase (S&P) activity for big tankers from VLCC to Panamax (LR2 and LR1 included but excluding OBOs). The Aframax category has been the only one to show significant activity. Globally, as the table below shows, we could count just 94 units changing hands for further trading, a little more than half the number last year. This included various en-bloc transactions which therefore gave market players little vision of the true value of their assets since appropriate benchmarks were scarce. It is also fair to say that most tankers owners had enjoyed very good results in previous years and thus had no reason nor motivation to sell their assets as prices fell month after month.

MAERSK BARRY, Flexy tanker, 29,040 dwt, delivered in 2006 by the Chinese shipyard Ghangzhou SY to Maersk Tankers

S&P activity for further trading

N° of ships	2012	2013	2014	2015	2016
VLCC	26	60	51	55	28
Suezmax	9	20	34	38	19
Aframax & LR2	33	41	67	52	39
Panamax & LR1	10	25	22	18	8
Total Number	**78**	**146**	**174**	**163**	**94**

VLCC

S&P activity in this segment was spread quite nicely since 12 units sold were younger than 5 years old, while another 14 units sold were built from 2010 to 1998. There was no spectacular transactions but most of the big players such as Frontline, Euronav, Bahri, Metrostar and Mitsui were active. To illustrate the falling values, we may remember the sale of the Hanjin Ras Tanura (built HHI in 2011) for $75 million in January while the E Elephant (built Samho in 2011) was sold for $55.3 million at auction in June. Meanwhile, early in the year the Famenne (built Hitachi in 2001) was sold for $38.4 million which compares with the reported $24 million received for the sale of the DHT Chris (built HHI in 2001) in October.

We saw 47 VLCCs entering the fleet in 2016 (compared to our expectation of 64). The orderbook included 95 units by the end of 2016 and theoretically no less than 53 ships should hit the water in 2017.

Suezmax

There were almost no modern vessels sold in this segment as the only two units younger than 5 years sold were in fact re-financed and did not truly change hands. Out of the 19 units sold in 2016, no less than 14 of those were built between 2000 and 2004. Once again let's illustrate the falling values: the DHT Trader (built HHI in 2000) obtained $26.5 million in January, while the sistership Gener8 Spyron fetched $15 million in December 2016.

Of the 43 units we expected at the end of 2015 to be delivered in 2016, only 27 actually hit the water. In 2017, we should see another 70 vessels delivered, while the total orderbook stood at no less than 100 units at the end of 2016.

Aframax and Panamax

Aframax transactions were seen among all vintages, and refinancings also played a big part. This can be illustrated by the sale of the Navig8 Solace, Navig8 Solidarity and Navig8 Stability (built Sungdong in 2016) for about $119.4 million with a 10 year bareboat charter back to a Chinese leasing company. This year was also the year when Sovcomflot took over Primorsk's Aframax fleet at auction. The Aframax fleet (LR2 included) saw an extra 53 units delivered in 2016 against a forecast of 81 at the end of 2015. As of December 2016, the orderbook still included a strong 145 units, of which 83 should start trading in 2017.

The number of Panamax tankers sales fell to just 8 units in 2016 as opposed to 18 last year. As usual, Prime Marine was an active player in this field selling tonnage and also buying the 75,000 dwt LR1 Classy Victoria (built Onomichi in 2007) for about $18 million. No less than 5 out of these 8 transactions were re-financings, such as the sale of SPP Sacheon Shipyard hull numbers S1185 and 1186 to a Chinese leasing entity. As for the Panamax segment (LR1 included), we finally saw 21 vessels delivered in 2016 against an anticipated number of 41 units at 31 December 2015. The total orderbook by end 2016 consisted of 58 units of which 38 are due in 2017.

OBO

2016 saw the sale of 4 Norwegian-controlled OBOs of 109.000 dwt built between 1996 and 1997 to Turkish buyers for conversion to electric power ships. Two other units were sold for demolition.

STS ATLANTAS, VLCC tanker, 321,300 dwt, delivered in 2010 by the South Korean shipyard Daewoo to Capital

CALIDA, Aframax tanker, 115,812 dwt, delivered in 2012 by the South Korean shipyard Samsung to TMS Tankers

Tomorrow's market

While owners will likely adopt a prudent attitude before taking any decision in respect of the sulfur limit on marine fuel oil in 2020 for their existing units, they will quickly take a position in respect of the ballast water management system and whether to drydock or scrap their ships.

The talk of the town will remain for years to come the use of Big Data in shipping. There is no doubt that tanker owners will have no choice but to integrate this profound change in society into their business. Information flow, whether internal or external, will continue to increase massively. Captors, sensors and readers will help owners manage their fleets but they will have to adapt to these technologies and hire new profiles in their organigrams. Decision-makers will need to have a proper understanding of the advice given by computer programmers, mathematicians, analysts and statisticians.

Some are anticipating or even advocating for an 'uberization' of shipping. We see little benefit nor merit for consumers in such a development if it happens. Carrying goods by sea demands much more than an impersonal corporate structure and risk analysis carried out by third parties. It also demands sailing expertise and quick decisions by responsible and experienced owners who care for their ships and their crew. If the purpose of uberization is to decrease further the sea transport element cost for the benefit of customers, this is a chimera. We expect manufacturers and industrialists to realize that carrying good by seas is risky in many areas and deserves a proper remuneration to compensate for these risks. Why would anyone in the world carry millions of barrels of oil on the oceans if the remuneration was not risk-related?

Excluding any geo-economic or political disruption in the tanker market, it is difficult to see values rising substantially in 2017. Forthcoming deliveries should be negative to earnings, while shipyards' hunger for new orders will cap modern vessel values. Access to finance for second hand acquisitions will remain problematic. Chinese leasing companies will probably be more active in tankers but will strongly favour clean carriers as opposed to crude carriers.

Older units, however, may fare better. The tanker demolition price has averaged around $395 per LT over the past five years (from the present $310 per LT). Now that raw material prices have increased, it seems likely this average will likely be maintained, which will benefit those vessels in the 15 and 20 year old age range.

$23,500
Average daily net returns for Suezmaxes in 2016

158
MRs fixed with South American vegoil for Asia delivery

-41.5%
Annual decline in LR1 Cont/WAF fixtures

PUMA, MR2 tanker, 51,215 dwt, delivered in 2009 by the South Korean shipyard STX to Ultranav

Clean tankers

MR1/MR2

The second hand market for the MR1 segment (Handysizes from 25,000-40,999 dwt) and MR2 (41,000-56,000 dwt) has seen a steady and unsurprising decline in prices representing a contraction of 25% in their value over 2016.

Secondhand activity was subdued with only 63 MR2 changing hands at an average age of 8 years (and 23 Handysizes of 12 years on average). Buyers have been quite cautious and have run for cover: out of the 25 sales of vessels below 5 years, no less than 12 of them were on the basis of a lease or time charter back to the seller. Chinese and sometimes Japanese leasing houses have replaced speculative buyers, who all seem to have left town. With good reason: the value of a 5 year old 51,000 product tanker peaked at $27.75 million in December 2015 and fell by $7.25 million down to $20.5 million one year later.

On the supply side, the situation is that of slowly reducing overcapacity.

The MR2 deliveries represented 90 units against a scrapping of 11 vessels only. Although fleet growth is decelerating, the market was invited to digest an extra 6 % fleet expansion during the year, with more than two-thirds of the fleet now younger than ten years old. Four Handysizes have been scrapped, which almost equates to the total current orderbook (7 units only). This shows that owners are moving away from a market segment that is more and more perceived as, rightfully or not, a fragile niche. MR2 size is more appropriate for the bulk of charterers given then long-term increase in shipment sizes and the well-known fact that MR2 can be contracted for just a fistful of dollars more than MR1.

Although average time charter rates resisted to a very decent $15,300/day for MR2 (basis 12 months) and $14,100/day for MR1, it is a deceptive figure as the volumes in period activity have dropped (both in numbers of fixtures and average duration), with charterers quite relaxed about finding sufficient quality tonnage on the spot market.

The disheartening orderbook has kept over-optimistic buyers at bay, in a context of anticipated hikes in borrowing costs.

S&P outlook for 2017

Although stronger bunker costs may help sale and purchase activity (rather than propelling prices up), we believe they will favour only the most modern units. In the case of stabilising bunker costs (which increased 130% over 2016), demand should focus on eco-ships (say post 2012 built) already fitted with Ballast Water Treatment Systems (BWTS). The secondary market for vessels in an age range allowing cash purchases without much finance may also prove to be quite active for some regional markets.

We are again in familiar territory as far as the supply side is concerned. The fleet growth is decelerating, scrapping should remain negligible (but hopefully higher than the 1% of the active fleet seen in 2016, thanks to entry into force of BWTS regulation) and ordering should prove modest once you factor in that the ratio between a 5 year old MR2 and its newbuilding re-sale value is now approaching a 40% discount. This has never be seen in the current decade. We believe this should direct new investment towards re-sales or modern vessels if a sensible increase in earnings materialises.

Nevertheless, the pace will be set from the macro-economic environment and Trumponomics will be the principal drummer. True, some good things can be expected from Mr Trump's economic policy of boosting public investment in infrastructure in terms of higher demand for transport, but this will certainly not take effect as early as 2018/2019. Increased US oil exports in 2017 are becoming more likely by the day. But the financial and monetary consequences will happen even earlier. It is probable that unavoidable increases in interest rates will cap asset prices across the board. The ensuing stronger US dollar, despite OPEC cuts, should inhibit a further rise in oil prices. So even if financing becomes more onerous, owners' operating expenses should improve. Speculative investors may come back on the scene and we therefore expect a more active market in 2017 with slowly but surely rising prices.

FURE WEST, chemical tanker, 17,557 dwt,
built by Shanghai Edward shipyard in 2006,
operated by Furetank Rederi

CHEMICALS & SMALL TANKERS

Timing is everything

Owners returned to the black in 2015 and entered 2016 on a positive, yet still uncertain, note. There was scepticism as to whether the positive turn was substantial enough to support improvements in the chemical market, knowing that a fair amount of newbuildings would be delivered over the coming years.

ENDELO SWAN, chemical tanker, 4,672 dwt/5,092 cbm,
built by Celiktekne yard in 2007,
operated by Uni-Chartering A/S in Denmark

CHARTERING

During the first half of 2016, the ingredients were steady-to-firm demand and a moderate increase in bunker prices, which kept a strong grip on the market. Accordingly, rates were pushed higher, which confirmed the first half of the year as a continuation of the gradual recovery started in 2015.

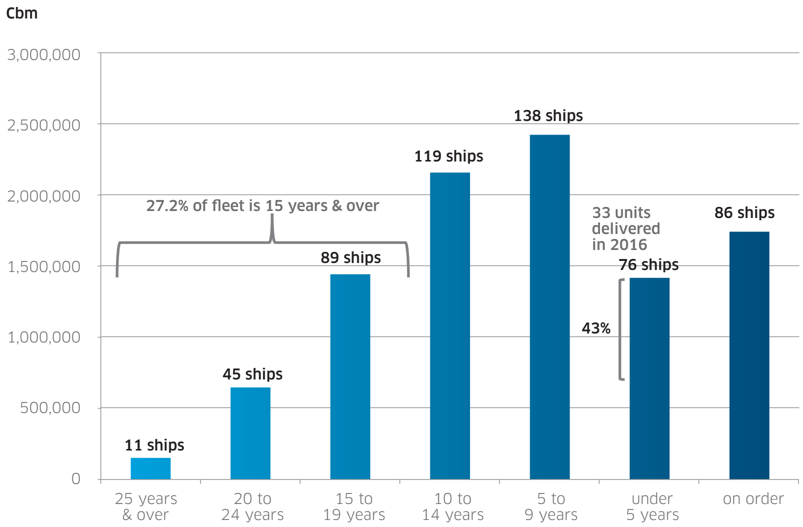
The peak in the market was reached just at the point of entering the usual summer slump. Thereafter it was downhill, as lower cargo volumes combined with a raft of newbuildings entering the market (see graph right).

Overflow of deliveries

Notably, 33 units were delivered into the stainless steel 10-25,000 dwt segment over the course of the year, which amounted to a total of 632,000 dwt. This equalled more than 8% of the stainless steel segment below 20 years by deadweight (see table below).

SST & Part SST Chemical Tanker Fleet by Age Class

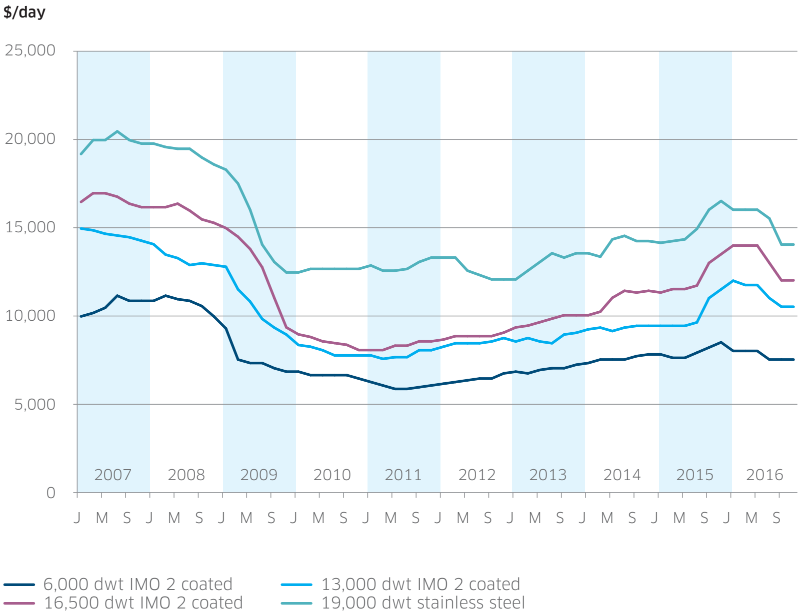
(10-25,000 dwt)
478 ships in service - Average Age = 11.3 years



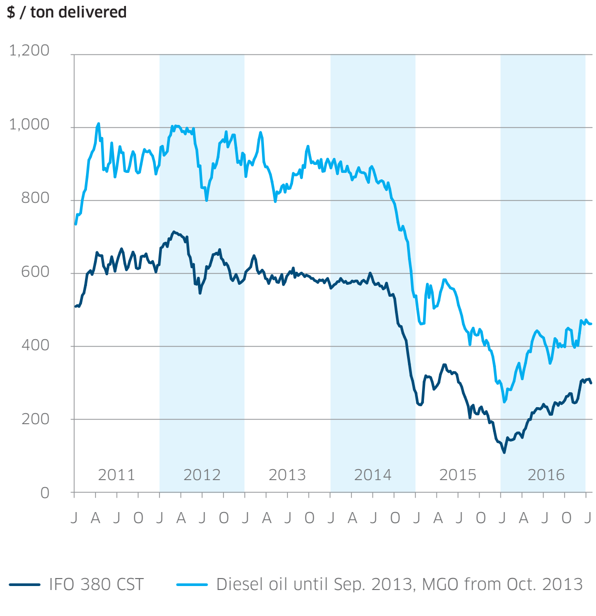
Fleet Evolution Stainless Steel Vessels 10-25,000 dwt

Delivery Year	Number of deliveries	DWT Delivered	Total Fleet <20 years	Percentage Delivered/ Total Fleet <20 years	Dwt Exiting (>20 years)
2016	33	631,963	7,674,440	8.2	15,866
2017	48	975,794	8,414,268	11.6	235,966
2018	29	577,332	8,691,103	6.6	300,497
2019	8	166,443	8,571,271	1.9	286,275
2020	1	19,950	8,198,489	0.2	392,732

Time charter rates - basis 1 year



Bunker prices basis delivery Rotterdam



Several companies completed a restructuring during the year and two well-known and established operators joined forces in 2016 as Stolt acquired Jo Tankers. On paper it seemed a good match in view of their combined newbuilding programmes. Stolt have five vessels on order which will be insufficient to replace their older units and Jo Tankers have eight vessels on order which is more than required to maintain the fleet at current levels.

Chemical demand

On the production side, the methanol boom ex USG to China was expected to take off in 2016 due to the commissioning of new plants. Although the boom occurred, it never controlled the market: although its effect was pronounced during the first half of the year, it progressively slowed over the remainder of year with only temporary blips of increased action at year-end.

Longhaul routes encountered pressure throughout the third and fourth quarters as more newbuildings entered the market and demand weakened. The Far East market was hit by a drop in Chinese exports during second-half 2016 against the backdrop of a stronger Chinese domestic market. Additionally, trade to the Far East fell following a number of unscheduled plant shutdowns in the Middle East. Overall, the market only saw a glimpse of recovery at the very end of the year.

Focus on north west Europe / small tankers (cpp-dpp)

The previous year ended with a hectic market across most sectors; from 3,000 cbm coasters to 14-19,000 cbm intermediates, there was much forward fixing. This pattern continued well into first-quarter 2016, with healthy volumes and strong freight rates. The future looked bright.

And then there was International Petroleum Week in London; volumes and freight rates started to tumble, and the situation continued through the rest of a very bleak 2016 with virtually no respite. There were occasional brief spikes in demand, but momentum was never maintained, with increases lasting barely more than a week. Any sense of optimism was quickly extinguished.

After poor second and third quarters, owners hoped that the negative trend would come to an end by the autumn. Unfortunately, September and October were even worse, and freight rates were some of the weakest of the year. Indicative of this was the cascading effect: 14,000 cbm vessels fixing cargoes normally the preserve of 8,000 cbm, while 19,000 cbm vessels were taking those from 14,000 cbm vessels, and so on. Owners fought over scraps of stems they would never usually even look at...

Freights had not been seen that low since the market crash of 2008. Between first quarter and second quarter, owners of tonnage in the 19,000 cbm segment on the primary Northwest European routes saw rates drop around 25-30% on DPP and 30-40% on CPP. As a consequence, owners saw an average Time Charter Equivalent of $9-$10,000 per day over the year, with as low as $5-$6,000 per day during the very weakest months.

Even the usual pre-Christmas rush to fix forward had virtually no effect; rates remained depressed and the fixing window very short, unusual for this time of year. Charterers were able to dictate the market at their mercy.

As we move into the new year, it appears we are in for a very harsh winter (ice in the Baltic and/or poor weather causing serious berthing delays), which would normally cause a knock-on effect to freight rates. After that, however, it looks as if 2017 could be 'more of the same'. We hope to be proved wrong...

Freights had not been seen that low since the market crash of 2008

The transatlantic market

On the eastbound route, the year started in the same vein as the end of 2015, that is, on a firm note. The first quarter saw a healthy amount of spot volume and Contract of Affreighment (COA) nominations. Freight rates increased and space was tight due to some tonnage leaving this route to target methanol shipments from the US to East Asia.

After this positive quarter, owners struggled to sustain firm freight rates mainly due to the additional tonnage in the market. Accordingly, freight rates dropped thereafter.

On the westbound route, the market was little better. During most of the year owners had difficulty finding cargoes for their vessels. Even if COA cargoes were regular, the spot market did not provide enough cargoes to occupy the remaining space, leading to stiff competition between owners. During 2016, freight rates sank progressively. However, at end-year, rates firmed as tonnage was employed for other destinations such as India or China.

Focus on Iran

2016 was an important year for Iran as president Rouhani and the P5+1 group reached agreement over Iran's nuclear enrichment program, leading to the January lifting of UN and EU sanctions which had been in place since 2012. However, remaining sanctions on the financial sector still hindered some owners and traders from doing business with Iran. Going forward, many players will closely follow the result of the next Iranian presidential election, as well as any change in the administration's relationship with the incoming US president, Donald Trump.

Due to the same financial sanctions which clearly affected the Iranian petrochemical industry, the export of Iranian product to Europe and Japan has still not resumed. For the time being, most chemical products including methanol are being sold to China, India or Turkey. Currently, most Iranian chemical exports are aromatics, caustic soda, methanol and MEG.

Iran is one of the world's largest methanol exporters. Some huge investments are underway to increase production, and new players will enter the market over the next few years. After a great start at the beginning of the year, we witnessed a continuous decline in the freight rates in line with the rest of the Middle East market. The Iranian export of xylenes (essentially to China), which represents a huge market with more than 30,000 tons exported per month, was considerably reduced from second-quarter 2016 onwards, causing significant damage to Asian owners. One of the main reason was the huge fire at Bou Ali Sina in July 2016, which completely destroyed the chemical plant and halted all production. Normal supply is not expected to resume until second-quarter 2018 at the earliest. The freight market softened steadily from the second quarter of 2016 onwards until December, when an increase in export volumes saw rates suddenly firm, giving some hope to owners going forward.

Considering the depressed state of the global chemical market, all eyes will be on Iran in 2017, which will be sensitive to macro-economic factors and accordingly will have a significant impact on freight levels. Japan, which has been a great business partner with Iran, will play a huge role in the recovery of the Iranian market as soon as it obtains the financial green light to re-commence business with Iran.

Focus on China

The first quarter saw the highest rates of 2016 in the Northeast Asian chemical tanker market with levels thereafter softening so that by the fourth quarter they had lost almost 30%. One driver was the dreadful Southeast Asian palm oil market, which released a significant volume of tonnage from the palm oil market into the chemical tanker market. Further downward momentum came from weak Chinese demand, which produced a reduction in intra-North Asian cargo movements compared to the previous few years. Owners in this region were struggling to utilise their tonnage, but fortunately most of them could break even as they benefitted from lower bunker prices. Notably, Chinese owners which focused on the Chinese domestic market reported better margins. At year-end, the market rebounded and tightened after a spell of bad weather in Northeast Asia, which saw many vessels miss their laycans which drove freight rates higher.

One interesting phenomena in 2016 was that more and more small owners and operators emerged to take vessels on time charter, or to purchase two or three vessels from head owners. As bunker costs soared towards the end of the year, going forward some owners expect freight rates to follow suit. However, this cannot be taken for granted as rates also always depend on supply and demand. There are still many newbuildings to be delivered in 2017, including vessels for Sinochem and Great Horse, but we have not seen these appear in the spot market. Meanwhile, the Chinese Renminbi continues to depreciate, while it is forecast China will increase exports due to the oversupply in domestic markets.

The imbalance between supply and demand was reinforced

Conclusion

2016 started strongly for those shipowners who were able to maintain and increase their rates from the previous year. However, after entering the usual bearish summer period, market sentiment waned more than in previous years as the imbalance between supply and demand was reinforced by the significant number of newbuildings coming into the market. Owners subsequently tried to protect their market share and COAs by attempting to extend contracts as far forward as possible, thus maintaining pressure on all segments.

We are certainly looking at a challenging year, especially given the number of newbuildings expected to hit this already imbalanced market in the short term. Beyond that, timing is everything.

YM MIRANDA, chemical tanker, 12,993 dwt/14,428 cbm, delivered by Marmara Shipyard in Turkey in 2013 for Yildirim Group

SECOND HAND MARKET

The second-hand market for small tankers and chemical carriers (3,000-25,000 dwt).

After a burst of delirious optimism in 2015, this segment has returned to more difficult times: too many vessels chasing too few cargoes has reduced the segment's attraction for investors.

Due to the structural imbalance of tonnage supply, good (or bad) news can only come from external factors. Owners were able to play the low bunker cost card in 2015, but this situation has now been completely reversed, with a 140% increase in prices over 2016.

While higher bunker costs are good news for larger tankers thanks to the increased ton-miles, they are severely damaging for the smaller units. By definition, these ships remain confined to their regional trades, so the ton-mile stimulus is quite contained. The vessels' microeconomics are, however, badly hit by higher bunkering costs, as freights and bunkers are arguably in competition with each other, that is, owners collect whatever amount of dollars a charterer is prepared to pay for a given voyage or, to a lesser extent, a period charter. The smaller the vessel, the higher the bunker component.

To this backdrop, a total of 124 sales were recorded in 2016 (including 39 stainless steel vessels), which represented again a decrease in overall activity. Prices also decreased during the year.

Furthermore, again this year, the average age of the vessels sold declined (averaging 10 years in 2016).

As the flight from smaller vessels continues, the size of the vessels sold increased again and reached an average 11,600 dwt during the year for coated vessels, and almost 13,000 dwt for stainless steel chemical tankers.

The extremely low scrapping activity remains a concern for the industry and those who expected higher activity in 2016 were disappointed. Nine ships in total were demolished in 2016 (less than half the previous year's figures). Added to that, stripping out very specialized vessels and demolition as a result of a marine casualty, the average scrap age stood at 35 years for the year, which is alarmingly high (and four years older than in 2015).

Prospects for 2017

Could the implementation of the International Maritime Organisation's Ballast Water Management Convention as from September 2017 finally trigger a flurry of sales for demolition? This seems likely, at last.

The orderbook looks sizeable in quantitative terms (163 coated units and 87 stainless steel vessels) but there is a significant "non-quality effect" with many orders for vessels with low specifications and low contract prices. According to our estimates, this may represent up to 65% of the orderbook for coated vessels. Those vessels will not meet the minimum requirements for trading with the oil majors on period contracts or even for spot voyages. The bulk of these orders are a by-product of Chinese shipyards hastily converting from dry bulk construction to other activities with little attention paid to design and forthcoming regulations.

Oil price forecasts will be scrutinized by owners: not for a potential boost in demand but for the impact on owners' profitability and henceforth their ability to repay their loans, not to mention invest in new assets.

2018 should be a key year, once the majority of the fleet exceeds the age bar of ten years. This will likely prompt charterers to secure tonnage on period business, rather than relying on the endless number of modern vessels available on the spot market. We do not expect owners to have the upper hand before that time!

CELTIC GAS, LPG Tanker, 24,281 dwt,
delivered in 2015 by STX Shipbuilding in South Korea,
managed by Ultragas Naviera

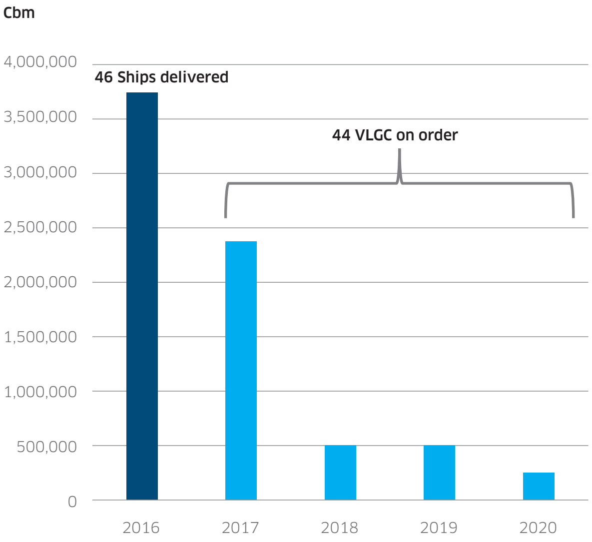
LPG

Back to reality

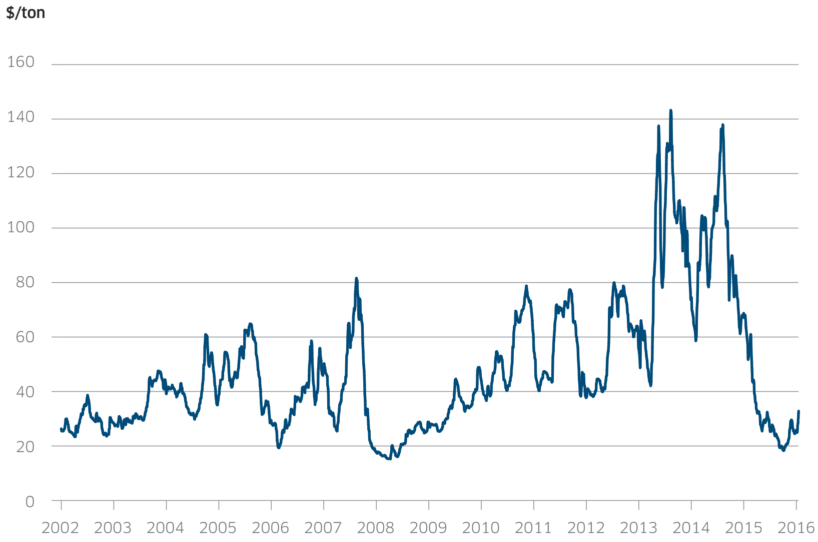
As 2016 pulled to a finish, it was evident that the positive outlook and sentiment shared by all in the segment had come to an end. People in shipping might be used to cycles and never-ending stories about how markets can go up and down. However, in the case of the LPG market, people expected 2016 to be challenging but perhaps not as dire as the year eventually turned out to be.

Sometimes the story is too good to be true; with oil prices remaining low, spreads turning out to be narrower than expected, and a very volatile arbitrage across the segments, 2016 really became a testament to how quickly and badly things can turn. Luckily some players had alternatives to LPG cargoes, whereas for others 2016 turned out to be their last full year in the segment.

VLGC Deliveries & Orderbook



Baltic Exchange Liquid Petroleum Gas Index



CHARTERING

VLGC – 75,000 cbm +

Coming into 2016, most stakeholders following the segment were astonished at developments in the market and were perhaps still slightly hungover from the party that was 2015. The year started off with a slight downward turn, which was sustained until Baltic Exchange rates plumbed depths they had never touched before.

In terms of annual average returns, we saw rates significantly down from 2015's Time Charter Equivalent (TCE) average of $83,000 per day. Thus, it is clear that owners have been, and will be, suffering going into 2017. Even though this was somewhat expected due to the large numbers of vessels being delivered in 2016, the extreme downturn packed a significant punch. The Baltic Exchange Liquid Petroleum Gas Index ended below $12,000 per day TCE, in spite of a very marginal pick-up during the fourth quarter.

We did not see a market even close to being sustainable throughout the year, and rates dropped due to the extreme imbalance between supply and demand. Furthermore, the numerous cancelled cargoes out of the US Gulf had a multiplying effect on the fragile market, thereby pushing rates further towards the abyss. Although hindsight shows the very turbulent year might have been expected, several significant events had a much stronger impact than anticipated.

With the BW bid for Aurora, we are now seeing massive consolidation in the market, with BW emerging as an even stronger and more powerful player. Perhaps the challenging times of 2016 will encourage even more consolidation in 2017? We can only ask the question, but looking at how many of the smaller players have performed, cash-strapped companies might be easy targets for larger players with funds available (if there are any left...?).

Dorian, together with Phoenix Tankers (Helios LPG pool), agreed to operate eight time chartered VLGCs from China's largest propane dehydrogenation plant (PDH) operator Oriental Energy. However, by the end of the year, the Chinese company cancelled their long term FOB contracts from the US and defaulted on charter payments.

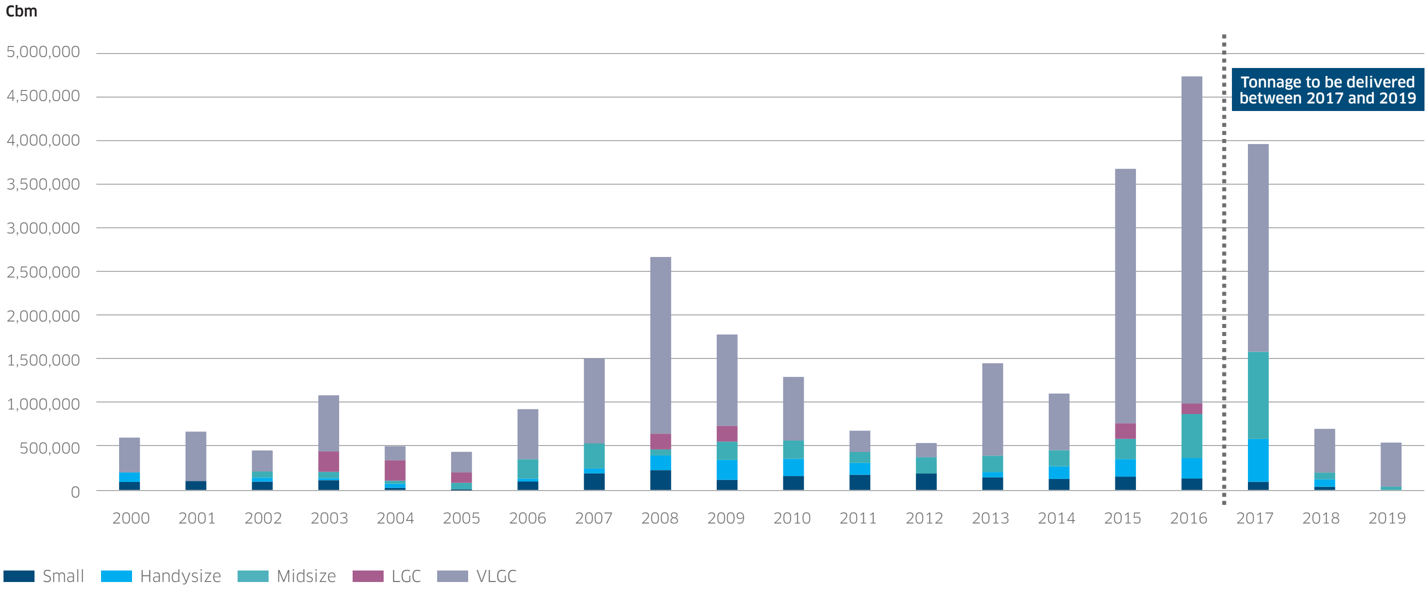
For charterers and traders who took coverage against the market in 2015, the bearish sentiment proved correct; and even though some are out of the money, it could have been much worse. Owners who secured longer term coverage at the beginning of the year also got lucky in terms of securing earnings above market levels, with charterers paying the price compared to fixing in the spot market.

The US is still really driving the VLGC market and with the opening of the Panama Canal, the US Gulf became a more attractive loading area as the trading arbitrage proved sustainable, thus putting more pressure on the contract price (CP) in the MEG. An increase in excess cargoes from the MEG did not occur to the extent it was expected and this pressured an already struggling market. Therefore it did not provide the much needed increase in demand for VLGCs that owners were hoping for.

LGC – 50,000 to 75,000 cbm

With the sharp decline in the Baltic Index, perhaps it was not surprising that the most stable market in terms of fleet evolution had to pay the price of a falling global LPG shipping market. We did not see a significant impact from newbuildings coming into the market, as only two vessels were delivered in 2016. Meanwhile, just one vessel was sold for demolition. Thus, at the end of the year, the total fleet counted 24 vessels, with no newbuilding orders on the books. As we know, when the bigger sizes take a tumble, this will cascade down as the LGCs are not able to compete with larger tonnage offering better dollar-per-ton rates. Normally, there are few spot cargoes concluded on LGCs, and 2016 did not provide any significant changes in activity levels, apart from during the spring when a number of traders re-negotiated existing contracts at significantly lower rates. In 2016, the market saw a massive decrease in

LPG delivery breakdown and orderbook by vessel type since 2000



time charter rates, taking the market down towards the sub-$500,000 per month mark. At the end of the year, short time charters were even concluded at sub-$400,000 per month. Going into 2017, we expect the LGC market to remain under pressure due to the underlying uncertainty and volatility on the larger carriers.

Midsize – 30,000 to 50,000 cbm

The start of the year proved to be somewhat dull and uneventful for midsize vessels. As activity increased in the west, most owners kept their fleets there trying to prepare for the trickle-down effect which at some point in time was expected to hit this market.

As several traders continually re-delivered vessels, this led the market to experience a sharp increase in open spot positions. Luckily for owners, the increased demand for ammonia cargoes managed to bring some balance back into the market, and by the end of the year the market was extremely tight for midsizes both in the east and the west.

2016 brought more and more fresh tonnage into the market and this trend will be sustained into 2017. In particular, we expect to see several newbuildings delivered by Exmar and Eastern Pacific. This will without question put further downward pressure on rates and perhaps also push the already low time charter rates down further. Nonetheless, at year-end, owners remained bullish for the short term, and perhaps we will see a slight spike in rates, provided that LPG and ammonia demand remains stable and VLGC`s and Handysizes do not compete in the negotiations.

Handysize 12,000 to 30,000 cbm

As some Handysize owners will argue: “LPG is so 2015”. Last year was without a doubt a stronger year for owners who had both knowledge and vessels capable of carrying petrochemicals. When the LPG market started to decline sharply for Handysizes as well, strong demand for long-haul cargos out of Brazil and Europe to the Far East really helped owners and ensured that the market remained reasonably tight throughout the year. Owners with smaller ethylene-capable tonnage also capitalized on this, helping earnings and also shifting focus from LPG to petrochemicals across the board. When looking at the Dragon-type Ethane carriers that came into the market end-2015, these vessels continued to be aggressive throughout the year putting a real squeeze on rates, but as the year came to an end, these ships were slowly and steadily moving more and more into their intended trade (although not at the same pace as intended).

We observed a reasonable amount of action out of Marcus Hook and the US Gulf at the beginning of the year which was further supported by the usual cross-Caribbean and South American movements. As the year reached half-way the arbitrage seemed to shut, thus making owners more dependent on their usual short-haul intra-regional voyages. Short-haul cargo equaled longer position lists in various areas, and fueled by the potential competition from midsizes, rates started to seriously tumble in this market as well.

The last two quarters did however provide owners with a slightly more positive outlook, as the impact of long-haul petrochemical voyages led to only a handful of open positions in terms of LPG-ready Handysizes.

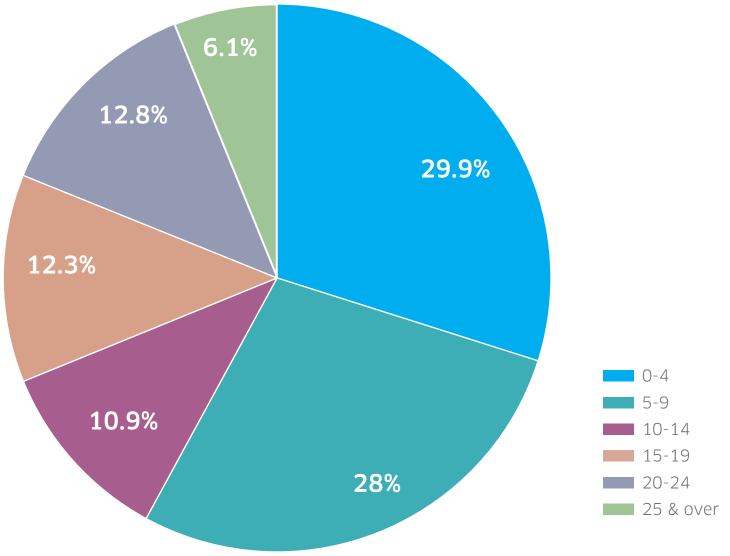
We are now seeing a massive consolidation in the market

Short LGC time charters were even signed below

$400,000/month

LPG Fleet Age Breakdown

Total fleet: 1,027 vessels



$20,000
Average earnings
for a modern VLGC

50%
The drop in LPG company
stock prices during 2016

It was a strong year for those with petrochemical gas knowledge

PERSEVERANCE V, LPG Tanker, 54,637 dwt, delivered in 2015 by the Korean shipyard Hyundai Heavy Industries, managed by Transpetrol

ATLANTIC GAS, LPG Tanker, 24,232 dwt, delivered in 2014 to Ultragas Naviera by the Korean shipyard STX Shipbuilding

SECOND HAND MARKET

2016 saw all segments within the LPG sector hit hard both in terms of earnings and asset prices. Record deliveries of newbuildings into the fleet, which was already experiencing some overcapacity, weighed heavily on charter rates and ultimately asset prices. The VLGC segment finished 2015 riding high on average earnings for the year of $90,000 per day but was to end 2016 with a rather nasty fall. All factors which could affect asset prices, namely earnings and newbuilding prices, fell together to have a sobering effect on second hand values.

The main indicator for VLGC earnings, the Baltic Exchange rate, fell from $61 to below $20 (voyage basis 46,000t MEG/Chiba), equivalent to around $12,000 per day. Earnings for a modern VLGC in 2016 averaged $20,000 excluding waiting time. These earnings and the downward pressure on newbuilding prices had an impact on second hand values. The most affected within the VLGC sector were vessels over 15 years old which had been enjoying record high levels. Asset values for these vintage ships fell more than 50%. That said, the LPG market remains an industrial business and as prices fell, transactions dried up. The number of vessels sold above 20,000 cbm was in single digits.

A very noteworthy transaction in 2016 within the VLGC segment was the takeover of Aurora by BW LPG which added 9 modern VLGCs to the BW LPG fleet. This also served to highlight falls in share values with the takeover price being more than 4 times less than the offer Avance Gas had tabled and had rejected by Aurora shareholders the year before. In general terms, shares in stock listed LPG companies fell around 50% while the index of leading shares rose by more than 10%.

The midsize and Handysize markets also experienced some downward pressure in 2016 but not as dramatic as for VLGC. The main reason for this was again the numbers of newbuildings delivering into the fleet. Falls in asset prices are basically theoretical as potential sellers retreated to the shadows and only one vessel transaction was concluded in this segment. This again underlines the long term perspective of owners in this market.

Sub 12,000 cbm saw market conditions fairly unchanged from 2015. It is here that most asset transactions took place with the vast majority of the vessels sold being over 15 years old at prices in single figures. It could be seen to be somewhat surprising that owners still prefer to sell their vintage vessels for a small premium over scrap than send them to the beaches which would ultimately rebalance the fleet sooner.

2016 was a difficult year, but as it ended, the markets in all segments steadied, and even tentatively began to firm. The massive numbers of newbuildings that weighed on the fleet's supply and demand balance, have now been delivered. The market is fundamentally over-supplied, but there has been no collapse and no lay ups. Optimism is seeping in, and most feel the worst is over. Asset prices are steady, and we may go as far as to say that we see no further downside in asset values going into 2017.

2016 saw all segments within the LPG sector hit hard

>50%
The fall in asset values for 15 year olds

Sub 12,000 cbm
vessels dominated the s&p market

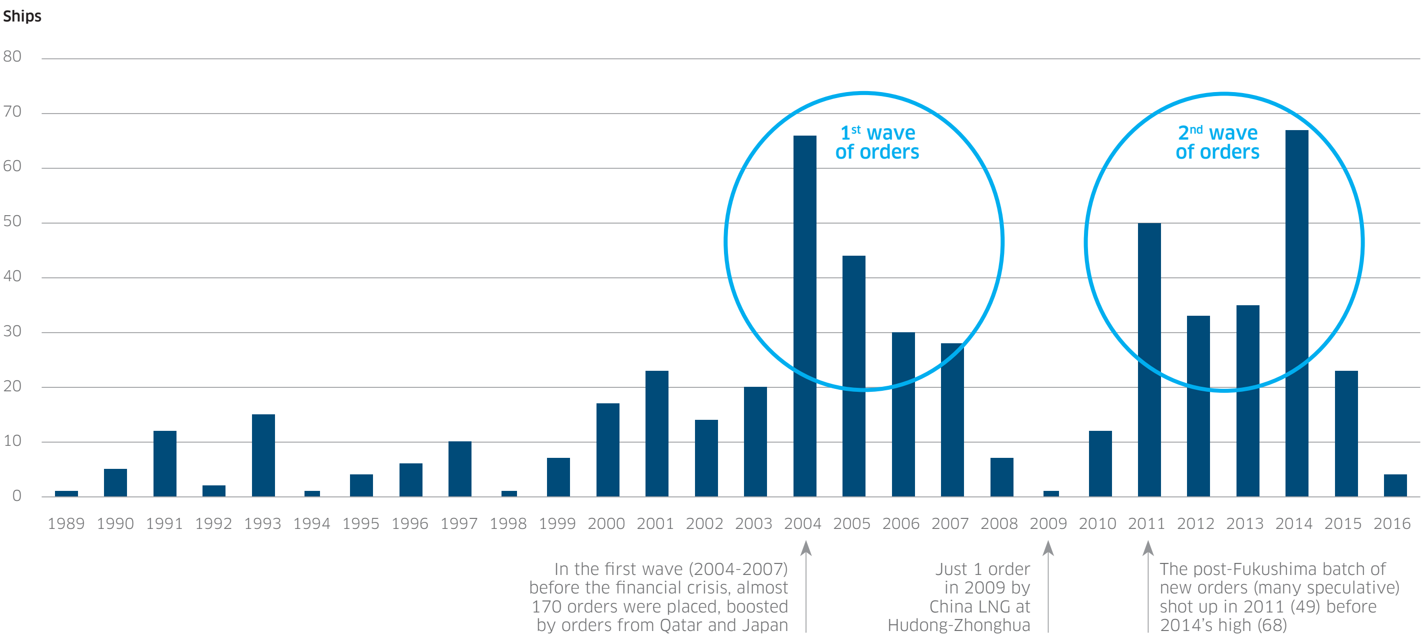
MARIA ENERGY, LNG carrier, 174,000 cbm, delivered in 2016 by Hyundai Ulsan, owned by Tsakos Shipping & Trading, operated by BG

LNG

A year of consolidation

It was a challenging year for LNG owners in 2016, with a surplus of tonnage pushing rates down for much of the year. But a recovery was visible as the year drew to a close, while several project and technology-led developments promise to raise the profile of the LNG industry going forward.

LNG order evolution



FLEET

At the end of 2016, the LNG fleet over 100,000 cbm consisted of 440 vessels, of which 40 units were handed over in 2016, increasing the fleet by approximately 10%. Approximately 40 more vessels are scheduled for delivery in 2017. These two years will represent the highest deliveries since 2008, which was something of an exceptional year with the completion of 40 vessels for the Qatar projects alone.

When it comes to ordering activity, it is important to note the cyclical nature of this market, with, for example, 67 LNG carriers contracted in 2014 but only 6 in 2016. A similar phenomenon was observed in 2009 when only one order was placed (a consequence of the 2008 financial crisis), compared to 50 orders in 2011 (the Fukushima effect). For this reason, it is hard to predict shipyard activity in the current year, although we can observe that 2016 was a slow year for contracting.

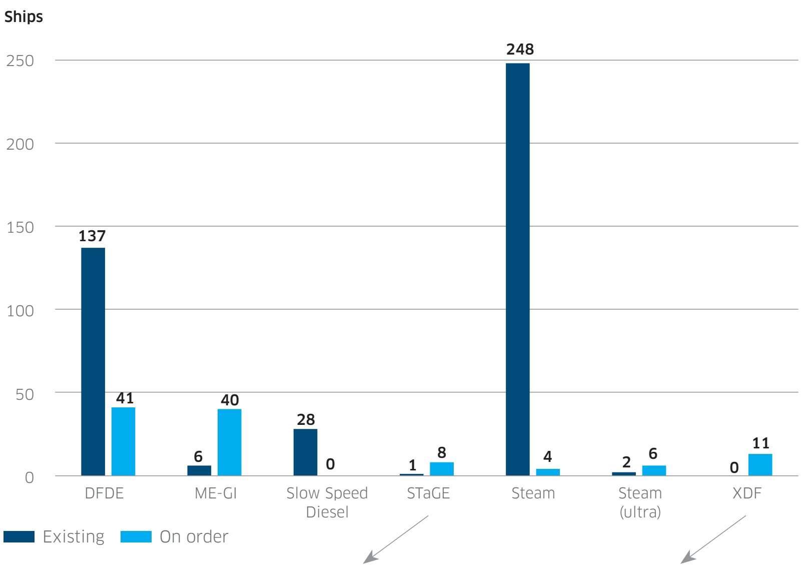
In 2016, the three large Korean shipyards (Samsung Heavy Industries, Hyundai Heavy Industries, DSME) recorded just 2 LNG orders each. Interestingly, in this gloomy climate, there was a move towards a standardization of orders: the Korean contracts comprised two 174,000 cbm carriers and four 180,000 cbm carriers, each equipped with GTT cargo containment systems, and two-stroke slow-speed propulsion systems (4 XDF from Wartsila and 2 ME-Gi from MAN).

There were no orders for LNG carriers either in China or Japan in 2016. Furthermore, out of a total of 111 vessels in the orderbook in 2016, 74 were under construction in Korea, 28 in Japan and 9 in China.

Korean shipyards, thus, retain their position as market leader with some 70% of the orders in progress.

LNG fleet by propulsion system

(above 15,000 cbm)

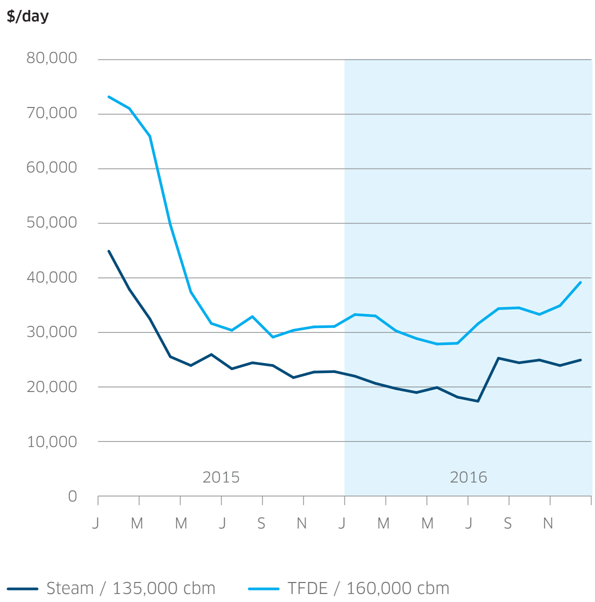


Delivery year	Shipyard	Parent	Cbm	Containment system
2018	MITSUBISHI NAGASAKI	NYK	165,000	MOSS
2018	MITSUBISHI NAGASAKI	NYK	165,000	MOSS
2018	MITSUBISHI NAGASAKI	NYK	177,000	MOSS
2018	MITSUBISHI NAGASAKI	MOL	177,000	MOSS
2018	MITSUBISHI NAGASAKI	MOL	177,000	MOSS
2018	MITSUBISHI NAGASAKI	MOL	177,000	MOSS
2019	MITSUBISHI NAGASAKI	MITSUBISHI CORP	165,000	MOSS
2019	MITSUBISHI NAGASAKI	MOL	177,000	MOSS

Delivery year	Shipyard	Parent	Cbm	Containment system
2017	HYUNDAI ULSAN	LIVANOS GROUP	174,000	GTT MK III
2017	HYUNDAI ULSAN	LIVANOS GROUP	174,000	GTT MK III
2017	SAMSUNG	LIVANOS GROUP	174,000	GTT MK III
2017	SAMSUNG	LIVANOS GROUP	174,000	GTT MK III
2017	SAMSUNG	SK SHIPPING	180,000	GTT MK III
2017	SAMSUNG	SK SHIPPING	180,000	GTT MK III
2018	SAMSUNG	MITSUI & CO	174,000	GTT MK III
2018	SAMSUNG	MITSUI & CO	174,000	GTT MK III
2018	SAMSUNG	MITSUI & CO	174,000	GTT MK III
2019	HYUNDAI ULSAN	SK SHIPPING	180,000	GTT MK III
2019	HYUNDAI ULSAN	SK SHIPPING	180,000	GTT MK III

GASLOG GENEVA, LNG carrier, 174,000 cbm, delivered in 2016 by Samsung to the Livanos Group, operated by BG

LNG Spot Rates



Meanwhile, the first four LNG carriers with the two-stroke slow-speed propulsion systems were delivered in 2016 (two 178,000 cbm units for Knutsen at Hyundai Heavy Industries and two 173,400 cbm vessels for Teekay at DSME).

This is a real turning point for LNG transport, as these new engines consume at least 10% less fuel than the Dual Fuel Diesel Electric (DFDE) engines previously on offer. When combined with cargo containment systems with controlled natural evaporation rates of less than 0.09%, the two technologies together can significantly lower the cost of transport by reducing self-consumption, thus maximizing the amount of LNG delivered.

We note that the proportion of DFDE propulsion has declined significantly in the orderbook: LNG tankers with two-stroke slow-speed propulsion systems now represent more than 60% of the vessels in the orderbook, with 40 of those ships equipped with MAN's ME-Gi system and 13 with the XDF motor from Wartsila.

The field of competition is now very open, and all shipyards are now able to offer all types of propulsion system. So far, the downturn in orders has not led to a severe price war between shipyards despite increasing pressure from shipowners. However, each tender is subject to very strong competition and we can estimate prices have fallen around 10% for those contracts with values under $200 million.

The market for Floating Storage Regasification Units (FSRU) is an opportunity for shipyards and will be an important market for the future as demand increases for these types of projects. However, despite the high demand for LNG storage solutions with regasification capacity, only two orders for this type of unit were recorded in 2016.

By the end of 2016, there were four major players in the FSRU segment controlling 23 units in service: Hoegh (6 units), Excelerate (9), Golar (7) and BW (1).

THE CHARTER MARKET

2016 saw two distinct phases for the market: from January to June, during which the charter market continued the decline started in 2015; then, from July onwards, the start of a recovery which is expected to continue into 2017. We will look at the two periods in more detail below:

1. January-June 2016

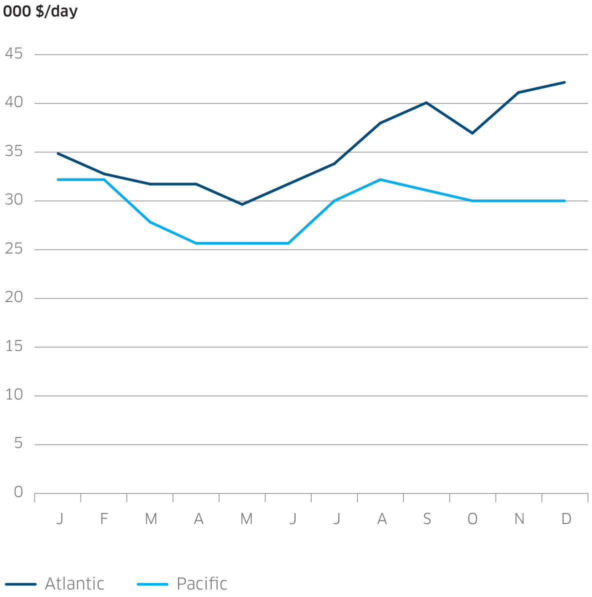
Short-term charter rates continued to plummet in this period, reaching levels of less than $30,000 per day on average for modern LNG carriers (160,000 cbm/DFDE propulsion), and even levels of $18,000 per day for older carriers (135,000 cbm/steam propulsion) during May and June, equivalent to operating expenses (OPEX). Charterers also benefited from favourable conditions on the ballast bonuses, frequently negotiating to pay only the bunkers instead of also paying the charter rate on the ballast element of the route. Thus shipowners generally repositioned close to their place of last discharge.

In terms of demand, the decisive factor in the market in 2016 was the decline in 'inter-basin' trade; the alignment of European, American and Asian LNG prices reduced the possibility of market arbitrage, and with it, the average 'ton-miles' of the market.

This price alignment was largely due to the drop in oil prices. As the vast majority of Asian contract prices are indexed to Brent oil prices, LNG contract prices fell sharply during the first nine months of 2016 (a trend which had already started in 2015). Spot prices also fell due to the sharp increase in LNG supply in Asia, mainly as a result of the start-up of the Australian projects APLNG and Gorgon LNG, as well as the Sabine Pass project in

LNG spot rates by basin in 2016

160,000 cbm TFDE vessel



LNG FINIMA II, LNG carrier, 175,180 cbm, built by South Korean shipyard Samsung, and delivered in 2015 to Nigeria LNG

Cheniere in the US. Thus the market saw an increase in supply, combined with lower than expected demand. The decline in oil prices also rendered LNG less competitive against other sources of energy such as oil, of course, but also coal.

On the supply side, LNG carriers ordered speculatively in 2012-2013 following the surge in Asian LNG prices were for the most part delivered into the market in 2015-2016. However, many failed to find medium or long-term employment, rapidly increasing the availability of vessels on the spot market. Added to these were carriers tied to projects but delivered prior to the start-up of these projects. These included the vessels for Gorgon LNG, as well as the 7 ships for Angola LNG. At the start of 2016, as many as 55 LNG carriers were open on the spot market.

10%
increase in the fleet

6
LNG carriers contracted

28m
tons of liquefaction capacity added

2. July-December 2016

The months of July and August 2016 saw a change, with the market tightening gradually in line with the increase in Asian LNG prices. Inter-basin trades resumed and, as a result, average ton-miles increased. Demand also increased sharply after October following a number of tenders involving large quantities (EGAS with 96 cargoes, Torrent Power with 37 cargoes). Rising oil prices also helped make LNG more competitive and boosted Brent-indexed Asian LNG prices. Towards the end of 2016, seasonally-low temperatures in Korea and Japan pushed the major LNG importers and electricity producers to issue several purchase tenders, removing the remaining available surplus in the market.

The end of the year also saw several periods of maintenance or shutdown for certain projects, notably Gorgon LNG and Angola LNG, provoking some temporary shortages that were nevertheless sufficient to push up prices. As a result, Asian spot prices (Platt's JKM Index) doubled between May and December, reaching $9.70/MMBtu at the end of the year.

Simultaneously, tonnage supply declined during the year as a result of traders taking medium-term positions and projects hedging their tonnage needs in the face of rising Asian prices. A total of 17 'fixtures' between 6 months to 1 year, with options, were signed from October onwards.

In addition, LNG carriers that had been delivered ahead of their projects (the aforementioned Chevron LNG carriers for Gorgon NG and Angola LNG's carriers) departed the spot market. By the end of 2016, just 25 LNG carriers were open on the spot market, compared with 55 in the Spring.

At the end of 2016, charter rates had risen above $35,000 per day for LNG carriers of 160,000 cbm with DFDE propulsion, and to around $25,000 per day for older LNG carriers.

Rates rose by the greatest margin in the Atlantic, reaching $45,000 per day in December for modern ships. The gap with Pacific rates widened as the year progressed (as shown in the graph top left).

This discrepancy reflects the concentration of LNG demand in Asia where the majority of ships are redelivered, after which they will rarely ballast empty to the Atlantic unless they have committed employment.

CHRISTOPHE DE MARGERIE, LNG carrier, 172,600 cbm, delivered in 2016 by Daewoo to Sovcomflot for the Yamal project

PROJECTS

At the end of 2016, the worldwide nominal liquefaction capacity was 320 million tons per year, of which 28 million tons was added during the year.

During the year, Australia increased its exports by 15 million tons, while the US became an exporter, shipping approximately 4 million tons.

Global demand for LNG during 2016 was an estimated 266 million tons per year, versus 248 million tons in 2015. This increase of around 18 million tons per year was principally due to China (+4 million tons), India (+5 million tons), Egypt (+5 million tons) and Jordan (+1.5 million tons).

Despite an unfavourable context, 2016 saw the implementation of two major projects that are significant and emblematic of LNG's growth potential. February 2016 saw the first cargo loaded from Sabine Pass' Train 1, thus marking the start of LNG project exports from the US. 2016 also saw the first ever LNG produced from an offshore installation, which was subsequently exported from the first LNG production vessel, the PFLG Satu in Malaysia.

No major LNG projects were approved in 2016. Furthermore, some projects that were already well underway were deferred or even cancelled, rendered unviable by the decline in energy prices, and impacted by the drastic investment cuts made by the oil and gas companies. This was particularly true in North America, where speculative investment in LNG projects has come face to face with low energy prices.

These issues have of course impacted all associated LNG transport projects. The handful of tenders, together with delays in existing tenders, have accentuated the gloom. Transport tenders for the Spanish projects (Repsol, Iberdrola, ENDESA) have seen their charter durations reduced to less than 10 years, creating problems for shipowners who have difficulty securing bank finance for such short periods. The GAIL project to transport 5 million tons of LNG per year between India and the US has also been delayed and is not expected to materialise before late 2017, when it will require short-term bridging tonnage.

Finally, new accounting regulations linked to IFRS16 (International Financial Reporting Standards) also come into force in January 2019, requiring companies chartering LNG carriers to integrate the cost of the charter into their accounts, significantly inflating the balance sheet. This likely explains the reluctance on many charterers to sign charters for longer than 10 years.

Conclusion

In conclusion, 2016 was a year of taking stock for the sector, with few projects, few new orders and a largely gloomy chartering market.

Initial assessments in 2017 show a gradual increase in charter rates, and shipowners, as well as charterers, expect this upward trend to continue, as evidenced by the end-of-year positions taken by a number of players seeking to benefit from last year's rates.

Expected Spanish and Indian tenders (Iberdrola, Endesa, Gas Natural and Gail) could represent employment for between 10 and 14 LNG carriers, including 6 for Gail from September 2017 onwards, which will have a significant impact on the short-term market.

Shipowners had already adopted a wait-and-see position at the start of 2017, and were in no hurry to fix out their LNG carriers, preferring to wait until they could benefit from better rates.

Meanwhile, 2017 will surely represent a pivotal year in the supply-demand balance of the industry, as LNG export projects in the US are gradually implemented. It is also expected that the new global economic context will enable oil and gas companies to finally take a decision regarding new gas liquefaction projects, which will ultimately reinforce the rise of LNG in the global energy mix.

STENA DRILLMAX, ultra-deepwater drillship DP3 capable of drilling in depths up to 3,000m

OFFSHORE

How long must we wait?

It was another extremely difficult year for the offshore oil and gas industry which was left reeling by a lack of investment and falling rates. Spending by oil companies is now estimated to have dropped 35% since the end of 2013.

ATLANTIS, offshore accommodation and support rig inbound to Mexico

TURRITELLA, FPSO in operation for Shell, Gulf of Mexico, Stones development, world's deepest field (2,900m/9,500ft)

OVERVIEW

Prices have steadily dropped as vendors, contractors and subcontractors have cut costs and reduced profit margins. These reductions have gone well beyond just the commercial departments into structural changes inside companies at large. Operators have taken advantage of this opportunity to review the concept selections and schedules, optimising them so as to reduce costs further.

Whether in the drilling, offshore services or production sector, there are simply too many units in the fleet for the number of projects currently available. This, in turn, means fierce competition and low day-rates. The disarray is still evident in early 2017. Financial restructuring is taking place throughout the industry, and more consolidation is expected.

'Lower for longer' was the mantra in 2016, as overhangs in inventory and supply weighed on oil markets. Accordingly, benchmark crude prices touched twelve-year lows in January 2016 but thereafter recovered somewhat to trade between $40-50/bbl until end-November, when they were propelled above $50/bbl on the agreement by OPEC members to cut crude supply in tandem with a number of non-OPEC producers.

Oil companies have postponed most new offshore projects

PRODUCTION

In this environment, oil companies have postponed most new offshore development projects. Only three major construction contracts (valued at more than $1 billion) were awarded in 2016, including the Mad Dog II semisubmersible based MOPU, for which BP and its partners selected Samsung Heavy Industries.

There are 14 FPSOs reported under construction and scheduled for first production within the next 24 months. We expect some of these orders to slip further.

Given ongoing tenders in Brazil, the region is of great interest, particularly in relation to the Libra field development plans. Mexico, with its ongoing reform, plus various smaller field developments in South East Asia, make for keen interest as well. In West Africa, there is considerable momentum in Nigeria with the independent oil companies, while the opposite could be said of Angola whose market is currently at an impasse. The Middle East has a good level of activity, albeit with very low rates, while Iran remains an open question.

The dismal condition of the production and drilling market has forced a lot of operators to take a closer look at converting units into MOPUs, providing real cost savings.

On the supply side, the three major Korean builders, respectively EPC contractors, have had to manage the enormous stress generated by the non-delivery of offshore drilling and production units, such as the fifteen drillship hulls and their ancillaries still on the premises of SHI and DSME; the two yards have entered into a restructuring process which is expected to finish in first-half 2017. Korean authorities and financial institutions have confirmed they will stand by their strategic yards.

The mid-term sustainability of the Korean EPC industry is at stake, all the more so given the major Chinese contenders are engaged in consolidation and rationalization in order to comply with the very stringent requirements of the international oil companies (IOCs).

NORWEGIAN WEST COAST, rigs lined up in cold layup

DRILLING

A few key numbers sum up the state of the offshore drilling market in 2016: there were 0 new orders, only 3 floaters delivered out of the 31 planned, and just 20 jackups delivered out of the 88 scheduled. On a more positive note, 13 jackups and 23 floaters were retired from the global fleet during the year.

At least the timing of the cycle has become a bit clearer: the market continued to spiral downwards in the first half of 2016, but now seems to be plateauing at the bottom. When will the recovery start? All macroeconomic signs point to the market staying flat for the coming year. There was some welcome positive news out of Mexico with the end of the first deepwater bid round, signaling the investment of IOCs in the country, and in turn providing hope for work in the US Gulf. Saudi Aramco also announced a major shift in its rig intake strategy, with a newly forged partnership with Rowan Drilling.

Zero
drilling orders in 2016

57%
current utilisation rate for jackups

The timing of the cycle has become a bit clearer

Except for the harsh-environment jackup Maersk Invincible, delivered by DSME, rig owners had no other choice than to continue delaying delivery of their newbuild rigs as there is no financing solution available to pay for the last instalments. The yards are also feeling the pressure of delayed deliveries, but do not have much of an option as some of their clients are on the brink of bankruptcy or, as mentioned, are unable to secure financing for the final payment. There are still approximately 50 floaters and 105 jackups on order, under construction, or sitting at the yard undelivered.

Owners were very active in recycling 30-45 year old floaters early on in the downturn. The volume of recycling has now slowed. As one of the key factors to recovery, one would need to see the volume pick up again, especially in the jackup sector, to account for all of the newbuilds that could potentially rejoin the active fleet.

The drilling market remains under extreme pressure across all classes. The jackup and floater markets are under the same supply-demand crunch. Currently there are 288 floaters in the market, out of which only 151 are contracted. This puts the utilization level at approximately 52%. As for jackups, there are 542 in the market, out of which only 309 are contracted. This puts the utilization level of jackups around 57%. These numbers do not include the units sitting undelivered in the yards.

The ‘lucky’ ones that are able to obtain contracts are signing them at seemingly shockingly low day rates. A drillship earning well over $500,000 per day three years ago can hope for less than $200,000 in today’s market.

BOURBON EVOLUTION 802, light subsea construction vessel capable of operations at depths of 2,500m (8,200ft)

OFFSHORE SUPPORT VESSELS

General

The combination of reduced activity in all market areas, combined with extensive pressure from charterers to discount rates (without sacrificing quality), and an even more pronounced oversupply of tonnage in all vessel segments made 2016 extremely challenging. To survive the current downturn, service companies need to find ways to further reduce their costs by 30%.

By year-end 2016, close to half of the global OSV active fleet was unemployed. In addition, the orderbook still shows around 400 vessels. Very few of them shall join the active fleet in 2017 as few buyers are willing, or able, to take delivery.

The vast majority of OSV owners are in survival mode and engaged in financial restructuring processes - either forced or managed. A little in advance of the rest of the industry, Norwegian OSV owners have started the consolidation process. In 2016 we witnessed the first significant consolidation deal, the takeover of REM by Solstad. Meanwhile, industry observers are closely following the tremors of the US market and Gulfmark, as well as the numbers of bankruptcies in South East Asia. We have noticed a number of investors showing interest in acquiring vessels – or companies – at bargain prices. Banks are more cautious right now and only a few are willing or prepared to take over assets.

A few owners have made serious attempts to do their part by scrapping their older vessels or, alternatively, permanently removing them from the offshore market. Maersk Supply Service, for example, announced the retirement of up to 20 OSVs. This needs to be done on a far greater scale, and we hope to see more of this going forward.

Asia Pacific

The Asia Pacific region was also hit by the gloom. 'Judicial management' was the expression tormenting everyone's mind as a reminder of the market conditions. In Singapore, Swiber backtracked on its initial liquidation, instead seeking judicial management in July. It was shortly followed by Swissco in a similar move. These are not the only ones that are facing the crunch; many OSV owners in the region are seeking debt restructurings or bond refinancings.

To reduce operating expenses (OPEX), many owners started stacking vessels, awaiting awards for term jobs. Anchorages and yards are flush with these units, a visible sign of the current limbo. The scrap value of vessels made it unattractive for owners to recycle their older assets, meaning they still linger in the market.

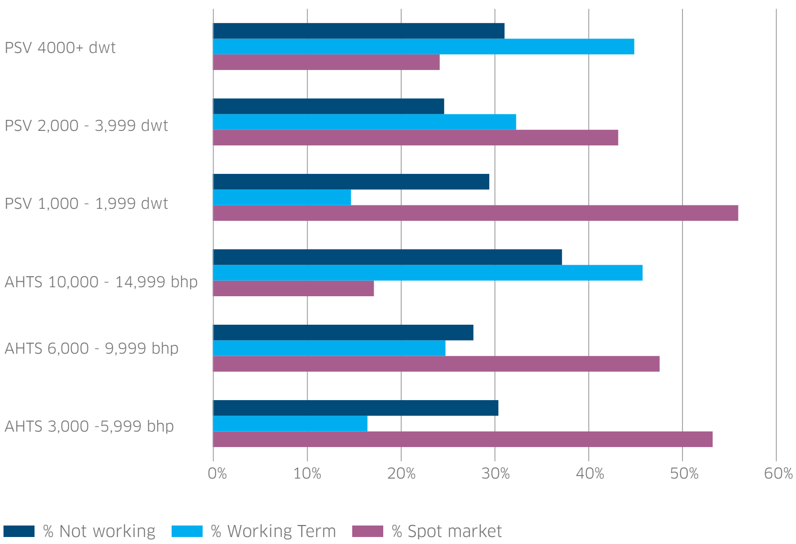
The main merger and acquisition in the region was the sale of Perdana Petroleum Bhd to Malaysia's local giant, Dayang Enterprise Sdn Bhd. The new entity is currently offering part of its fleet for sale as a consequence of the merger. Most South East Asian players are not so keen on the idea of mergers, but the question that often comes up is still "Who is next?".

Middle East

The Middle East was a potential bright spot entering 2016. Many owners made the bullish decision to mobilize vessels from South East Asia for possible work in the region, counting in particular on the promising opening Iranian market, and predicted continued activity in Saudi Arabia and Qatar. Despite the numerous tenders floated out by the different Iranian players, demand remained too low versus an overcrowded market, and moreover owners had to quickly face the reality of the very low rates and poor payment terms in this new market.

At end 2016, close to half the OSV fleet was unemployed

Breakdown of OSV Fleet Utilisation in West Africa
On January 2017



BERYL, AHTS 60 t BP, operating in Malaysia

US

The US market has also seen a large number of lay-ups, with owners struggling to find employment for their manned/working vessels. There is little hope for any immediate recovery in the US Gulf; most of the new activity in the region is likely to be in deeper water, which in turn is probably not going to gain any significant momentum as long as there is room for significant production increase onshore (shale oil and gas). American owner Seacor created some surprise market excitement by announcing in July the purchase of 11 AHTS from Pacific Richfield.

Brazil

2016 is best described as a year of stagnation for Brazil and Petrobras: a year in which the country lived through a presidential impeachment, the Summer Olympic and Paralympics games, plus one more chapter of the Car Wash scandal, causing political Institutions and companies to suffer symbiotic paralysis.

This led to an OSV market that filled the bays and dockyards with units waiting for better days. Contract renegotiation was part of everyday life, as well as discussions regarding the importance of local content for existing and future projects in all segments of the offshore market.

The OSV fleet in Brazilian waters at the end of December totaled 398 vessels, 302 of Brazilian flag and 96 of foreign flag. During 2016, 69 foreign flag vessels and 44 Brazilian flag vessels were demobilized. Some 19 foreign flag vessels switched to the Brazilian flag.

A positive paradigm change was the enactment of Law 13.365/2016, which rendered optional the participation of Petrobras as the exclusive pre-salt operator, while setting out Petrobras' pre-emptive rights. This measure was a welcome sign of better times to come for the international oil and gas industry in Brazil.

North Sea

The situation in the North Sea was as gloomy as the rest of the world. A significant oversupply in all classes of vessels has caused owners to lay up major parts of their fleets and, consequently, lay off significant numbers of employees. A couple of companies narrowly escaped bankruptcy after clinching last-minute refinancing plans, while others are in the middle of such negotiations going into 2017. Investors with deep pockets were looking for bargain assets in the OSV market, and we saw the first of what we believe will be several transactions going forward.

There are more than 100 units laid up.

West Africa

The West African market was another market hit hard by project deferrals and investment cuts, resulting in scarce demand over the year.

Oversupply and fierce competition for the weak demand made rates fall continuously for all classes of OSV (3,000 dwt DP2 PSV ended the year trading at $8-9,000/day, 80t BP AHTS at $7-8,000/day) with still all the same challenges for operating in the region (taxation, political instability, security, local content). Owners had no choice but to continue unmanning their vessels in order to lay them up where they could. Stacking in the Norwegian Fjords or South East Asian ports is much easier, cheaper and safer than in West Africa. By end December, close to 180 offshore vessels were estimated to be laid up in West Africa.

>100
number of units laid up in the North Sea

West Africa was hit hard by project deferrals and investment cuts

SKANDI AFRICA,
deep water pipelay and construction vessel

SUBSEA AND OFFSHORE CONSTRUCTION

Subsea

The subsea market has fared no better than other market segments during the recent downturn, despite the fact that both existing production and new projects are heavily reliant on the services provided by this industry segment.

The global oversupply of tonnage affected subsea vessels as well, and during 2016 we have seen an increasing number of very expensive and very sophisticated vessels idled and tugging on mooring lines rather than being out working and generating cash flow for their owners. Subsea construction vessels rates were at least 50% lower in 2016 than in 2014. Owners and contractors were all engaged in heavy cost savings and some of them also financial restructuring.

The short term forecast for this market segment is subject to a resurgence in demand for maintenance services for the existing fields.

One of the most significant transactions of the year was the purchase of the ex-Ceona Amazon newbuilding pipelay and installation vessel for just under $60m, less than 20% of the complete construction price.

2016 is not considered as the likely bottom of the subsea market, despite the short-term forecast predicting the market segment may be less gloomy than most others. Existing fields are, and will be, in need of maintenance work, and new fields cannot be brought onstream without the services of these vessels.

The Technip – FMC merger closed in January 2017. The other major prime subsea contractors do not apparently plan to incorporate the strategic alliances they have formed, such as Subsea7 & OneSubsea or Forsys Subsea (Aker Solutions – Saipem).

Tier 1 subsea contractors have continued to downsize, and now seem better rigged to weather the downturn; the big unknown remains the eventual number of casualties amongst the other companies.

LAND RECLAIM AND RENEWABLES

Land Reclaim

Worldwide the land reclaim market has shrunk by 20% since 2013.

In 2016 the competition between the five major international land reclaim and dredging contractors (JDN, DEME, VAN OORD, BOSKALIS and Chinese CHEC) remained very fierce except for project-based alliances. Their subsea services, offshore departments and dedicated equipment (such as stone dumpers/fall pipe) were significantly exposed to the downturn in the O&G market. 2016 also saw the final commissioning of the second, wider part of the Panama Canal. All in all, the contractors in this segment continued to order new tonnage on the grounds of renewing some of their ageing units. Amongst others, IHC delivered a large trailing suction hopper dredger to China's CCCC Guangzhou Dredging Company, while Jan de Nul ordered a series of newbuilding trailing suction hopper dredgers at Keppel in Singapore.

Renewables

After an active 2015, offshore wind farm installation activity in North West Europe was significantly lower in 2016 (2013: 1,500 new MW installed; 2014: 1,500 MW; 2015: 3,000 MW; 2016: about 1,000 MW). The industry has been waiting all through the year for new developments to be awarded, and many of them are now expected to arrive in 2017 (mainly in Germany and the UK).

One of the immediate consequences is that 50% of the fleet of crew transfer vessel operators is now laid up (CTV operators), pushing some of them into economic difficulty. 2016 has further confirmed that the average turbine size continues to increase (3.7 MW in 2014 to 4.8 MW in 2016). Some Wind Turbine

VOLE AU VENT, wind turbine installation vessel currently in operation in the UK/Continent-North Sea

OCEANWIND9 of Hartlepool, crew transfer vessel operating in the UK

Installation Vessel (WTIV) operators have been considering upgrading their units. Van Oord are to fit a 1,500t Huisman crane on their Aeolus, replacing the existing 900t crane.

At the end of 2016, about 50% of the jackup WTIV fleet (26 vessels with a lifting capacity above 500t) was capable of lifting more than 1,000t at more than 20m outreach.

As fields have moved further from the coast and to deeper waters, requirements for Service Operation Vessels (SOV) have increased for the construction, installation and maintenance of offshore windfarms. Recent requirements as issued by field operators and turbine suppliers (Dong, Siemens, Vestas, Statoil) have proven to be very specific, and operators such as Ostensjo, Esvagt and Bibby have placed dedicated newbuilding orders, all in European shipyards.

The main European land reclaim contractors that can offer and tackle a wide scope of supply and services have the financial and operational backbone to deal with the execution risks of an EPC contractor; they are able to tackle all areas from ground survey and preparation, to the final connection of the offshore windfarm to the power grid. In general, the industry is leaning towards a business model quite similar to the oil and gas industry.

All in all, the entire industry was under economic pressure in 2016 and rates further decreased. However, with the share of the wind power generation set to increase in the global energy equation, prospects for North West Europe today are still promising, with forecasts for 2017 better than for 2016. The same can be said for Asia and North America in the coming years.

20%
shrinkage in the land reclaim industry since 2013

1,000 MW
wind farm installation in 2016

2017: the view from the bridge

Steadily decreasing rates and continuous cost cutting now question the resistance of the entire supply chain. Some leading executives have already voiced fears that the industry has been deeply damaged, especially in terms of future availability of skilled human resources.

Heading into 2017, the days of oil prices at $100/bbl look as far away as ever, with crude sitting below $60/bbl and forecasts that it will remain that way for the rest of the year. This will continue to delay or limit the sanctioning of most of the capital-intensive new offshore upstream projects.

Despite the volatility of the energy markets, in part due to the ongoing shifts and changes in the international environment, oil majors are preparing to ramp up investment in maintenance and development, as steadier oil prices contribute to rebuilding confidence. Some of the projects postponed in recent years are being revived, such as brownfield developments or Shell Bonga South West in Nigeria.

This, combined with the deep cost cuts already achieved, is starting to render the economics of producing oil offshore more affordable. These should start to positively impact the global demand for offshore services in 2017, albeit still with no real effect on short-term rates.

LE LAPÉROUSE and **LE CHAMPLAIN**, Cruise vessels, 10,000 gt, 92 cabins, to be delivered by the Norwegian shipyard Vard to PONANT in 2018
©PONANT-Sterling Design International

CRUISE

Full steam ahead!

2016 was an excellent vintage for the cruise industry in terms of new orders. With currently around 70 cruiseships under construction, the sector is still growing rapidly, and is in good health.

MEIN SCHIFF 5, Cruise vessel, 98,785 gt, 1,253 cabins, delivered by Meyer Turku to TUI Cruises in June 2016

DELIVERIES

Seabourn took delivery of the **Seabourn Encore** (40,350 gt/300 cabins), built by Fincantieri. Viking Ocean received the **Viking Sea** (47,800 gt/465 cabins), also from Fincantieri. Meanwhile, Regent Seven Seas Cruises took delivery of the **Sevenseas Explorer** (55,200 gt/375 cabins), again from Fincantieri.

The Meyer Turku yard in Finland delivered the **Mein Schiff 5** (99,800 gt/1,267 cabins) to TUI Cruises, while Holland America Line received the **Koningsdam** (99,800 gt/1,330 cabins) from Fincantieri.

Mitsubishi finally delivered the **AidaPrima** to Aida (125,572 gt/1,643 cabins), while the Carnival Vista (133,500 gt/1,967 cabins), was delivered to Carnival Cruises by Fincantieri.

Dream Cruises in turn received the **Genting Dream** (151,300 gt/1,674 cabins) from Meyer Werft, which also delivered the **Ovation of the Seas** (168,666 gt/2,094 cabins) to Royal Caribbean Cruises. Finally, the **Harmony of the Seas**, currently the largest cruiseship in the world, was delivered by STX to Royal Caribbean Cruises (227,000 gt/2,747 cabins).

15
Number of expedition ships ordered during the year

2016 saw renewed interest in LNG and fuel cell propulsion

NEW ORDERS

STX France

RCCL ordered a fifth Oasis-class ship (227,000 gt/2,750 cabins) for subsidiary Royal Caribbean International. Delivery is scheduled for 2021.

For Celebrity Cruises, RCCL also confirmed and signed additional contracts for a third and fourth EDGE class vessel (117,000 gt/1,450 cabins), to be delivered in 2021 and 2022 respectively.

MSC firmed up two options to expand its improved **MSC Meraviglia** series (177,000 gt/2,444 cabins), which will be delivered end 2019 and end 2020, and also indicated its intention to order two new World Class vessels plus two options (200,000+ gt/2,700 + cabins/LNG propulsion) for delivery in 2022, 2024, 2025, 2026.

Fincantieri and Vard

Virgin Voyages ordered 3 firm vessels (110,000 gt/1,400 cabins) to be delivered in 2020, 2021 and 2022 respectively.

Meanwhile there was confirmation of the 5 orders announced by the Carnival group at the end of 2015: 2 for Costa Asia and 1 for P&O Cruises Australia (135,500 gt/2,100 cabins), and 2 Royal Princess class vessels for Princess Cruises (143,700 gt/1,780 cabins) for delivery between 2019 and 2020.

Norwegian Cruise Line Holdings contracted a second vessel for Regent Seven Seas Cruises (54,000 gt/370 cabins). It will be delivered in 2020.

Ponant confirmed its order for 4 expedition ships (10,000 gt/92 cabins) at Vard (55.63% owned by Fincantieri). They will be delivered between the summer of 2018 and the summer of 2019.

Also at Vard, Hapag-Lloyd Cruises confirmed its order for 2 expedition ships (16,100 gt/120 cabins) for handover in the first and last quarters of 2019.

HARMONY OF THE SEAS, Cruise vessel, 226,963 gt, 2,704 cabins, delivered by the French shipyard STX France to RCCL in May 2016

Meyer Werft and Meyer Turku

Carnival Corporation & plc ordered 3 cruiseships with LNG propulsion during the year: 2 units to be built by Meyer Turku will join Carnival Cruise Line in 2020 and 2022, while another ship will be built at Meyer Werft's Papenburg yard for P&O Cruises with delivery in 2020.

Disney Cruise Line has signed a contract for two additional cruiseships to be delivered in 2021 and 2023 (135,000 gt/1,250 cabins).

Kleven

Hurtigruten ordered 2 expedition cruiseships (20,000 gt/300 cabins) for delivery in 2018 and 2019, plus 2 options.

MV Werften

The yard will build 3 expedition cruiseships (20,000 gt/100 cabins) for Crystal Cruises which will see the light in 2019, 2020 and 2021.

Brodosplit

The yard will build an expedition cruiseship for Oceanwide Expeditions for delivery in mid 2019 (5,590 gt/85 cabins).

Uljanik

Scenic confirmed an order at the yard for one ship (16,500 gt/120 cabins) for delivery in 2018.

SECOND HAND SALES

The **Saint Laurent** (4,954 gt/110 cabins, built in the USA in 2001) was sold to clients of Victory Cruise Lines.

Saudi Arabian interests acquired the **Aranui III** (Cargo/passenger ship of 7,325 gt/96 cabins, built in 2002 in Romania).

The **Ocean Gala** (40,171 gt/772 cabins, ex **Viking Serenade**, built by Dubigeon in France in 1982) was purchased by clients of North-Star Holdings.

A contract was signed with Cruise & Maritime Voyages, which will take control of the **Pacific Pearl** in 2017 and start operations in June (63,500 gt/773 cabins, built in 1989 at Chantiers de l'Atlantique).

The **Legend of the Seas** (63,786 gt/915 cabins, built by Chantiers de l'Atlantique in 1989) was purchased by Thomson Cruises and will be delivered to them in the Spring of 2017.

70
Number of cruiseships under construction

Mitsubishi announced it would withdraw from cruiseship building

KONINGSDAM, Cruise vessel, 99,836 gt, 1,330 cabins, delivered by the Italian shipyard Fincantieri Breda to Holland America Line in March 2016

MARKET DEVELOPMENTS

China unquestionably remains the driving force behind current developments in the industry.

Many of the ships under construction and already delivered are destined to serve this market which is currently undergoing very strong growth. It has firmly caught the attention of the Chinese authorities, not only in terms of the development of terminals, but also in terms of cruiseship construction in China and other potential economic benefits for the country.

We observe also the strong trend towards renewing the global fleet of expedition ships. The marked ageing of the fleet and the entry into force of the Polar Code explain this interest, as well as voyagers' appetite for new and exceptional cruise products.

1 million
Estimated number of Chinese cruise passengers in 2016

The trend was confirmed for large companies to control and develop private islands

Including options, some fifteen expedition ships were ordered in 2016, and several other projects will undoubtedly be announced in 2017.

New shipbuilders, notably Norwegians such as Vard and Kleven which have previously been dedicated to the offshore industry, moved aggressively and took full advantage of this trend to refill their emaciated orderbooks.

Cuba continues to open itself up to new US operators, but perhaps this easing in relations will be challenged by the new American administration.

The trend was also confirmed for the large cruise companies to control and develop private islands which have become stopovers for some of their ships. The latest example is MSC with Ocean Cay in the Bahamas.

In the shipbuilding sector, we note the continuing concentration of shipbuilders specialising in the cruise business: at the end of 2016, only Fincantieri applied to buy STX France, after the majority was put up for sale by the Korean court administrator following the restructuring of STX Korea.

The Genting group, after the acquisition of Lloyd Werft, for its part created MV Werften, which regroups the three sites of the former Nordic Yard.

This vertical integration will enable the owner to control a production facility that can build ships for its various brands.

In addition, Lürssen took control of the Blohm & Voss shipyard, while San Giorgio del Porto signed a cooperation agreement with Costa, which took a 33.33% stake in its subsidiary Chantier Naval de Marseille. This reinforces a naval repair hub dedicated to cruiseships and large vessels.

We also note the statements from Mitsubishi which, after its mishaps with the Aida orders, announced it was withdrawing from any new cruiseship building projects.

Finally, it is interesting to note that despite a global concentration in shipbuilding capacity, the main cruiseship owners are sparking the development of new players in China.

Thus Fincantieri, encouraged by its main client Carnival Corporation, signed an agreement in principle with the latter plus the Chinese groups CIC Capital Corporation and CSSC to create a joint venture for the construction of two cruiseships for delivery in 2022 at SWS (a subsidiary of CSSC). The ships will be based on the company's Vista class of ships, and will come with two further

GENTING DREAM, Cruise vessel, 150,695 gt, 1,682 cabins, delivered by the German shipyard Meyer Papenburg to Dream Cruises in October 2016

options. These ships will be designed to serve the Chinese market and will be operated under a new brand created by the joint venture.

Fincantieri had previously signed a cooperation agreement with CSSC to develop and support growth in China via the transfer of technology and expertise, enabling the design of ships dedicated exclusively to the Chinese and Asian markets.

Other cooperation agreements between cruise companies and local Chinese groups will likely to be negotiated in future with a view to developing new national players in the cruise segment.

If new and dynamic cruise operators are appearing with, for example, the confirmation of new orders by Virgin Cruises, others have left the scene, such as the All Leisure Group which ceased its activities at the end of the year.

In addition, we note the sale by Royal Caribbean Cruise Lines of its 51% stake in Pullmantur to Springwater Capital.

Shipowners are also mindful of the development of ships with alternative, environmentally-friendly propulsion methods, and there are around a dozen vessels on order with LNG or fuel cell propulsion.

Outlook

Many countries and destination ports have clearly understood the significant profits that can be generated from cruise tourism.

The latest is South Korea, whose government wants to promote this activity, and which attracted around 2.2 million passengers in 2016. The authorities plan to create a fund to help set up and develop local companies.

According to the Cruise Lines International Association (CLIA), about 24.2 million passengers took a cruise in 2016 (and close to an estimated one million in China). Forecasts suggest the number will be around 25.3 million in 2017. It should be noted that in 2009 the number of cruise passengers was counted at 17.8 million.

The diversity of cruises on offer, and the growing popularity of cruising, has generated a vibrant growth in demand that shows no sign of waning. It is accelerating with the opening and strengthening of new markets where the penetration rate of the cruise product in the population remains low, in China for example.

The resilience of this sector must be again underlined; despite geopolitical uncertainties, and the varying economic performances at national level, the cruise market continues to perform at a high level, a phenomenon which is expected to continue in the years to come despite the large number of ships on order.

SEVEN SINS, 44m awarded yacht
and fully booked for charter in 2016

YACHTING

Cautious optimism

Despite expectations of a difficult year, 2016 finished with continued growth in yacht sales, and evidence that the industry had managed to weather several geopolitical and regulatory challenges.

RAPTOR, new build project of a 100m yacht for a YPI client. This project highlights the latest technological progress in both structure and use of glass

SALES AND PROJECTS IN BUILD

As we leave 2016 behind us and focus on 2017, it is a good time to reflect on the trends observed over the past year and how they will influence the current year and beyond. It is important to note that 2016 was a 'steady' year in many ways: sales increased at a stable rate of around 3% year-on-year, while the average length of yacht broked remained the same at around 40 metres.

Furthermore, the top ten countries producing yachts remained exactly the same as the previous year based on number of units. However, if we do the same calculation based on gross tonnage (GT), we have a quite different outcome in 2016. Traditionally, Italy has produced the most number of yachts but based on GT, last year Germany outstripped them.

We believe 2017 will bring a number of new orders over the 100 metre mark. There are currently 52 yachts in build over 250 feet (76 metres), which represents a doubling since 2008 and about an 8% increase year-on-year.

Large yachts are now in demand due to a much better understanding of the class rules regarding the number of passengers able to stay on-board overnight. Under the Passenger Yacht code, this has now been increased to 36.

However, market rumours and hearsay suggest that a lot of these newbuilds will not be coming onto the charter market, leaving a gaping hole in that sector. Strong demand in the large yacht charter sector has pushed up weekly rates and increased utilisation rates for the yachts that are on the market.

Both buyers and brokers are witnessing long delivery lead times, which has led both parties to seek more efficient build times and cost efficiencies. This in turn has prompted many buyers to turn to the commercial maritime shipyard sector in order to produce custom yachts.

The marriage between the yacht sector and the commercial shipping sector is a testing one but as time goes by, we expect to see more and more commercial shipyards producing yachts. The downturn in the offshore supply boat sector has led many of these offshore yards to produce Exploration Yachts, which are becoming increasingly popular.

Overall the forecast for 2017 is one of 'cautious optimism'. We believe that once the new President of the US is in office, and the United Kingdom executes article 50 to leave the European Union, it may well be business as usual, and with a bit of optimism thrown in, 2017 may well turn out as a good year for yachting.

3% year-on-year
increase in sales

Germany overtook Italy
to build the largest number of yachts

52
yachts in build over 250ft

O'PARIS, the second largest yacht built by Golden Yachts was sold by YPI in December 2016

HEUREKA, this 45m sailing yacht was built for performance and is for sale at YPI

CHARTERING

A number of factors served to make the chartering market less buoyant in 2016 than 2015: the application of different Value Added Tax (VAT) charges across Europe, growing instability in Turkey, continued restraints on Russian and former Eastern Bloc business, Brexit, the US elections, plus the renewed fear of terrorist incidents in Europe after the Paris and Nice attacks.

Nevertheless YPI, as one example, recorded the same or more charter activity for all of its vessels as the previous year.

One of the strongest trends to emerge was the growing globalisation of the charter market. More and more owners are taking their yachts further afield, both for their own interests and to attract new charters.

We are seeing increased interest in far flung locations such as Indonesia, south East Asia generally, the North and South Poles, Greenland and Patagonia. Charter demand in all of these areas increased in 2016.

In addition, we predict that some of the geopolitical turmoil seen recently could in fact enhance rather than hinder demand. We foresee a potential increase in the popularity of both charters and sales, as yachts offer the ultimate protected and private getaway, in what feels like an increasingly unpredictable and unsafe world.

Report and Analysis prepared by YPI, a wholly-owned subsidiary of the BRS Group, with thanks to Boat International Media for their help with added worldwide data.

Yachts ordered or under construction by type

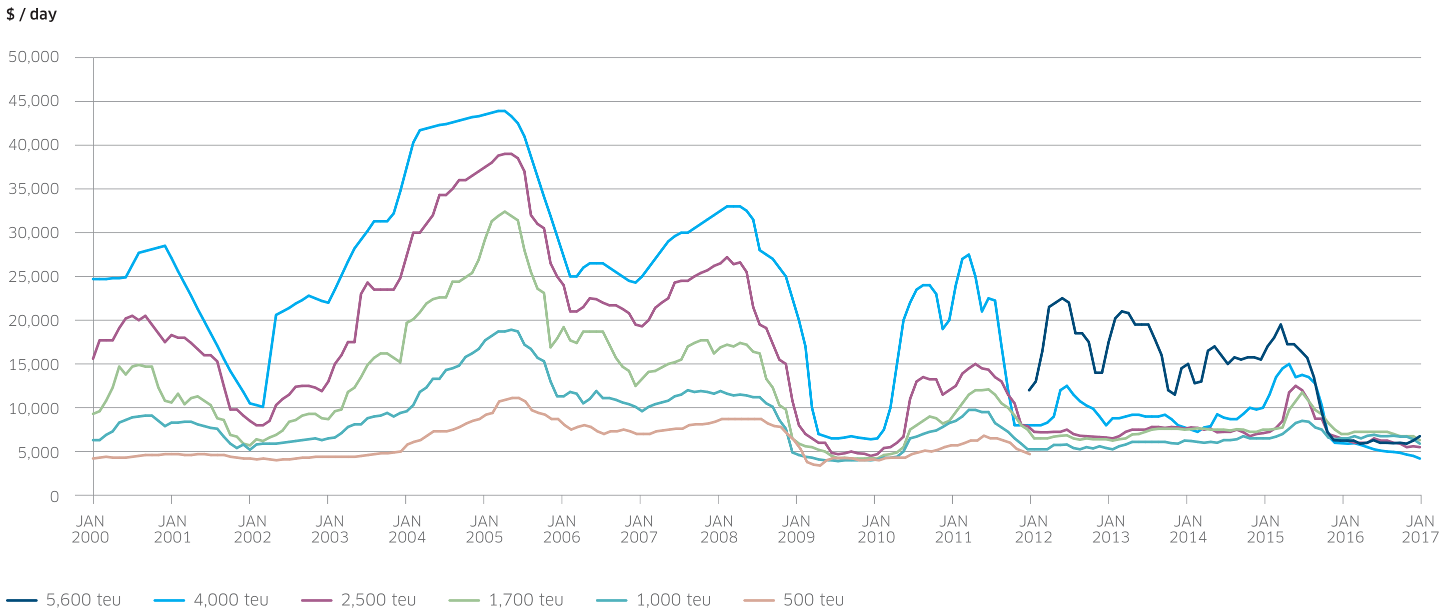
MAERSK SHAMS, containership, 9,962 teu, delivered end 2015 by Hyundai Heavy Industries, operated by Maersk Line

CONTAINERSHIPS

Another lost year

The dismal performance of the world economy and the stagnation of international trade led to a miserable year in 2016 for the container market. Demand has been insufficient to absorb redundant capacities. The prospects for 2017 appear gloomy, with, however, a ray of hope brought by a volume recovery in the last weeks of 2016.

Charter rates from 2000 to end January 2017



GLOBAL CONTEXT

Rampant protectionism and isolationist politics will also affect trade volumes with a negative impact on international trade, while a huge overhang of large newbuildings adds to the grim outlook. There is still hope for better days despite such bad fundamentals, with expectations that a rise in demand could help to reverse the overcapacity build-up.

2016 spot market freight rates remained at record lows in the first part of the year, with a positive trend in the second half of the year. The China Containerized Freight Index (CCFI) slumped to a new record low of 632 points in April 2016, falling below its previous trough of 713 points registered in June 2015. It has since recovered, passing the 800 mark in December 2016.

Carriers are struggling to survive in this depressed context. The dreadful market has precipitated the demise of Hanjin. The Korean company's insolvency, announced on 31 August 2016, set a new record for the largest container shipping bankruptcy in history. It set off a flight-to-safety that allowed carriers to push through general rate increases that were most pronounced on the Transpacific and Asia-Europe routes.

Spot market freight rates remained at record lows in the first part of the year

Fuel oil prices ramped up, prompting carriers to intensify fuel saving efforts while also passing part of the increased fuel bill to the shippers through bunker adjustment factor (BAF) increases.

Charter rates for containerships remained stuck throughout 2016 in the $4,000-$6,500 range for almost all ships of 1,000-7,000 teu. The classic Panamaxes of 4,000-5,100 teu fared the worst, with rates sinking to $4,000 in December 2016. Paradoxically, the 1,000-2,000 teu vessels traded at rates 20-25% higher than for the 2,500-5,000 teu ships.

The idle (unemployed) containership pool remains chronically high with an average figure of 1.27 million teu in 2016 or 6.3% of the total fleet, a dramatic increase on the 0.55 million teu average observed in 2015.

CHARTER MARKET

In the doldrums

2016 has been the worst year on record for the container charter market. While rock bottom freight rates on most long haul trades severely impacted the bottom line of carriers, the Non Operating Owners (NOO – the companies that hire their ships to the carriers) were themselves not spared, with record unemployment levels pushing charter rates down to operating expense (OPEX) levels for medium sized ships of 2,000-9,000 teu.

Charter rates have reached abysmal levels for classic Panamax tonnage (4,000-5,100 teu) and remained generally at historical lows for ships above 2,000 teu. Flexible charters, with periods such as 1-6 months or 2-12 months, ruled the market and trip charters abounded.

Only a handful of modern and fuel-efficient vessels managed to obtain more decent conditions, although rates were not rewarding enough to repay the investments. Owners of these modern newbuildings will continue to face the competition of older tonnage purchased at distressed prices. Buyers of such cheap tonnage are satisfied with rates that are far from sustainable for owners of modern newbuildings who need to recoup their investment.

The forced cascading triggered by the incessant flow of Ultra Large Containership (ULCS) newbuildings and neo-Panamaxes of 9,000-11,000 teu

CMA CGM BENJAMIN FRANKLIN, containership, 17,859 teu, delivered end 2015 by Jiangnan Changxing, operated by CMA CGM

continued to create havoc throughout the year among the smaller sizes. Hanjin Shipping's collapse flooded an already gloomy charter market with modern units of 4,200 to 13,100 teu that were hitherto locked in long-term charters or in financial leases.

The NOOs bore the brunt of the tonnage redundancies as the carriers redelivered chartered units at an unprecedented pace. Those heavily exposed to the classic Panamax market were the most distressed. Several shipowning companies were bankrupted, while others sold mid-aged ships either for scrap or to other owners at scrapping levels.

The enforcement in September 2017 of the Ballast Water Management obligations for ships reaching the deadline of Classification Special Surveys will precipitate disposals. Looking at the 2020 horizon, modern fuel-efficient tonnage will have a strong competitive advantage, with the enforcement of the new low-sulphur fuel oil, leading to further incentives to get rid of older ships.

In this context, it would make sense to clear out the older ships by setting up 'scrap and buy' or 'scrap and hire' schemes, with a handful of owners and carriers taking that direction. These endeavours could finally bring light at the end of the long tunnel in which the market has been thrown.

2017 outlook for charter market ships

7,500-10,000 teu

Charter rates for conventional 8,000-9,000 teu class tonnage hovered in the $8,000-$10,000 range in 2016 and improvement is not in sight. The opening in June of the new Panama Canal locks mopped up some of the excess tonnage, bringing down the average number of spot ships to six units during the first three quarters of the year. During the last quarter, the Hanjin demise brought modern units onto the open market, leading to a doubling of the spot ship pool during the last months of 2016.

Prospects for 7,500-10,000 teu Very Large Containerships (VLCS) look grim for 2017, with a newbuiliding overhang adding to the substantial idle fleet. The delivery of several neo-Panamax newbuildings of the 9,000-11,000 teu-class was deferred from 2016 to 2017, including NOO units. In the absence of a trade surge, this gloom might even extend beyond 2017.

5,300-7,500 teu

The Large Containership (LCS) segment (5,300-7,500 teu) continued to suffer from the forced cascading triggered by the incessant flow of VLCS and ULCS newbuildings. The employment surge induced by the opening of the new Panama Canal locks was too weak to absorb the excess tonnage. Rates for standard tonnage reflected the chronic oversupply and remained mostly in the $5,900-$6,500 range.

The outlook for the 5,300-7,500 teu segment in 2017 is bleak with the adverse market situation. The upsizing of several services will offer new employment opportunities, but they will likely be offset by the forced cascading on other services.

6.3%
average proportion of fleet idled during 2016

632
the record low recorded by the CCFI in April

Non operating owners bore the brunt of the tonnage redundancies

GRANDE DAKAR, container-ro-ro vessel, 1,614 teu, delivered to the Grimadi Group by Hyundai Mipo in 2015

Classic Panamax 4,000-5,100 teu

As anticipated, the 4,000-5,100 teu Panamax segment has witnessed a horrible second half of year, due to massive substitution following the opening of the new Panama Canal locks in June.

This situation has sent rates in a downward spiral, from an already dismal $5,500-$6,000 level at the beginning of the year to a paltry $4,000-$4,200 in December. Classic Panamaxes as young as 6-10 years old are being sold for scrap.

The outlook for 2017 is gloomy. NOO units formed the bulk of the 88 classic Panamaxes of 4,000-5,100 teu that were idle as at 31 December 2016, even though 52 Panamaxes were scrapped in 2016.

Over 100 more classic Panamaxes would need to be scrapped in order to rebalance supply and demand, in order to bring the total pool of classic panamax vessels under 470 units (down from 670 units four years ago). Only such a drastic reduction could push rates up from their current all-time lows of $4,000-$4,200 per day, with positive side effects on the 2,700-3,800 teu size bracket as well.

One way of dealing with the Panamax surplus would be to set up 'scrap and buy' or 'scrap and hire' schemes, whereby older tonnage is cleared out and replaced by either younger, more economical tonnage purchased at scrap level prices, or by cheaply hired tonnage. It makes sense to sell a 20 year old vessel for scrap for $6 million and re-invest a comparable sum in a ship of only 7-10 years old, that burns less fuel and has lesser maintenance costs.

3,000-3,600 teu

The 3,000-3,600 teu segment has been in relatively short supply most of the year (compared to other sizes). In spite of this, charter rates remained at depressed levels.

The prospects for this size range will continue to be influenced by the pressure exerted by the huge overhang in the 4,000+ teu Panamax segment. Classic Panamaxes are cheaper to hire than basic 3,500 teu gearless units. Any attempt at raising rates would entice carriers to consider the replacement of 3,000-3,500 teu units by 4,000+ teu vessels on certain services, with even an added 'bonus' brought by economies of scale.

2,000-2,900 teu

This segment faces substantial oversupply that has started to be addressed through a rise in demolitions. Service consolidations could be driven by the availability of cheap Panamaxes of 4,000-4,500 teu. The situation is compounded by the arrival in the second half of 2017 of the first ships in Evergreen's 2,800 teu 20-ship newbuilding program, which should dampen the demand for chartered tonnage.

While run-of the-mill units will continue to face hard times, modern fuel-efficient tonnage with attractive specifications, such as the new 2,100-2,700 teu 'Chittagong max' units, will continue to command premiums. The level of these premiums might however not be sufficient to cover the financial costs, unless fuel oil prices rise substantially.

1,500-2,000 teu

This size range remains popular both for feedering and for intra regional services. However, many regional carriers tend to order ships answering their own needs, either owned, leased or under long-term charters, with a negative effect on chartered ship demand.

Some 36 newbuildings are expected to join the fleet in 2017, of which 14 are aimed at the liquid charter market. The charter market ships to be delivered are all 'Bangkokmax' units of quality design such as 'CSBC 1800', 'CV Neptun 1700' and 'Wenchong Mark II'. They will continue to command premiums that

Alphaliner - Cellular fleet essential figures for 2016-2017

	Ships	teu	% Change YoY
Fleet as at 1 Jan 2017	**5,112**	**20,271,225**	**1.5 %**
Orderbook as at 1 Jan 2017	**413**	**3,187,665**	**-21.9 %**
Ratio O/E		*15.7%*	
2016 - Activity			
Ordered 2016	82	291,922	-87.4%
Value of new orders		*US$ 3.5 Bn*	*96.2%*
Delivered 2016	136	934,460	-45.8%
Deleted 2016	201	664,717	227.4%
Breakdown			
Scrapped	*192*	*654,862*	*240.3%*
De-celled	*7*	*3,455*	*-63.0%*
Lost	*2*	*6,400*	*411.6%*
Average idle fleet 2016		1,272,332	130.5%
Idle fleet at end Dec		*1,419,649*	*4.4%*
Average CCFI 2016		712	-18.6%
CCFI end Dec		*811*	*12.2%*
Ave. Alphaliner charter index 2016		43.2	-33.4%
Index at end Dec		*39.3*	*-12.1%*
Average FO $/ton 2016 (Rtm/Sin)		224	-19.1%
FO $/ton end Dec		*328*	*107.6%*

	Ships	teu
Fleet as at 1 Jan 2016	**5,171**	**19,964,851**
Orderbook as at 1 Jan 2016	**492**	**4,084,122**
Ratio O/E		*20.5%*
2015 - Activity		
Ordered 2015	253	2,309,058
Value of new orders		*US$ 19.9 Bn*
Delivered 2015	214	1,724,621
Deleted 2015	107	203,008
Breakdown		
Scrapped	*89*	*192,428*
De-celled	*16*	*9,329*
Lost	*2*	*1,251*
Average idle fleet 2015		552,043
Idle fleet at end Dec		*1,359,400*
Average CCFI 2015		875
CCFI end Dec		*723*
Ave. Alphaliner charter index 2015		65
Index at end Dec		*45*
Average FO $/ton 2015 (Rtm/Sin)		277
FO $/ton end Dec		*158*

will hopefully rise with fuel oil prices, allowing them to break even, leaving older tonnage in a second tier market producing less rewarding charter rates (see graph).

1,250-1,500 teu

This segment is proving increasingly popular on certain feeder or regional services, including as replacement for smaller units. It includes high-reefer tonnage that should continue to attract carriers' interest and rewarding rates. Only six newbuildings of 1,400 teu will join the fleet in 2017, of which three units are aimed at the Baltic sector (with 1A ice class) and three units of a wider use.

1,000-1,250 teu

This segment is increasingly aimed at niche markets and local feeder services. Regional carriers employing such tonnage continue to replace chartered ships with dedicated units. Most of the 14 newbuildings planned for delivery in 2017 fall into this latter category. Demand for charter market ships aimed at generic services should remain however, sustained by low volume routes or where physical constraints apply.

The segment did not attract any recent investment in newbuildings for the liquid charter market, and with existing ageing units often purchased at distressed prices, their owners should enjoy rewarding rates, which will not put them under pressure to scrap. In 2016, only six units were demolished. Longer term, once the older units are scrapped, the market could face a supply shortfall in this size category.

500-1,000 teu

Vessels of 500-1,000 teu are now well past their charter market heyday. Even though there is a constant flow of business for niche markets, the demand is limited. Redundant ships are often sold to local carriers for domestic services or for conversion into breakbulk carriers. The only ships currently on order are 500-700 teu units ordered directly by liner shipping companies with specific assignments in mind.

THE FLEET

Supply growth at all-time lows

The global containership fleet grew by only 1.5% to reach 20.27 million teu as of 1 January 2017, according to *Alphaliner* figures, the lowest annual growth rate ever recorded in the industry's history. It is well under the compound average annual growth of 10% per year seen over the past 25 years, with the fleet capacity having been multiplied by ten in this period, from 1.9 million teu in 1991 to over 20 million teu today.

The low growth rate was driven by the record number of ships scrapped and by massive deferrals in newbuilding deliveries. A total of 192 containerships for 654,900 teu were demolished in 2016 while weak employment prospects prompted owners to delay the deliveries of some 60 ships with a total capacity of 400,000 teu.

New containership deliveries fell to 934,500 teu in 2016, down 46% compared to 2015. Weak employment prospects prompted owners to delay the deliveries of some 60 ships with a total capacity of 400,000 teu.

The low supply growth was, however, insufficient to prevent the idle containership fleet from soaring to a record high of 1.59 million teu in October before ending the year at 1.42 million teu. The surplus capacity overhang remains the industry's biggest headache, especially with some 1.7 million teu of new capacity due in 2017.

With this in mind, and with demand expected to remain sluggish in 2017, scrappings should reach new record highs while delivery deferrings are expected to go on.

Alphaliner - Cellular fleet as at 1st January 2017

- The cellular fleet counts 5,112 ships for 20.27 M teu - of which 55.5% are chartered from non-operating owners
- The cellular fleet aggregates 98.0% of the total capacity deployed on liner trades in teu terms
  >> Out of a total of 6,015 ships active on liner trades for 20.69 M teu and 256.2 M tdw
- The orderbook counts 411 ships for 3.19 M teu representing 15.7% of the existing fleet) (firm orders only)
- The orderbook includes 201 ships for 1.65 M teu with charter status representing 51.9% of the total orderbook

	01 JANUARY 2017 - EXISTING					01 JANUARY 2017 - ORDERBOOK					
Size ranges	All		Of which chartered fm NOO			All		Of which chartered fm NOO			
teu	ships	teu	ships	teu	% Cht	ships	teu	ships	teu	% Cht	O/E
18,000-21,000	47	890,497	21	404,477	45.4%	58	1,135,887	23	441,789	38.9%	**127.6%**
13,300-17,999	126	1,829,534	63	910,913	49.8%	47	670,998	31	433,512	64.6%	**36.7%**
10,000-13,300	215	2,511,886	118	1,357,214	54.0%	68	807,833	47	539,666	66.8%	**32.2%**
7,500-9,999	475	4,176,453	256	2,258,470	54.1%	7	64,592	3	28,224	43.7%	**1.5%**
5,100-7,499	471	2,911,464	261	1,614,962	55.5%	5	28,062	5	28,062	100.0%	**1.0%**
4,000-5,099	679	3,077,443	395	1,784,938	58.0%	4	16,022	2	8,000	49.9%	**0.5%**
3,000-3,999	249	864,922	146	511,787	59.2%	30	106,439	5	18,621	17.5%	**12.3%**
2,000-2,999	621	1,571,908	419	1,063,474	67.7%	74	193,309	24	61,348	31.7%	**12.3%**
1,500-1,999	590	1,008,445	311	534,122	53.0%	59	106,242	33	58,639	55.2%	**10.5%**
1,000-1,499	699	807,654	404	472,888	58.6%	44	52,402	28	35,588	67.9%	**6.5%**
500-999	753	560,370	427	327,714	58.5%	6	3,903	0	0	0.0%	**0.7%**
100-499	187	60,649	36	12,470	20.6%	9	2,998	0	0	0.0%	**4.9%**
TOTAL	**5,112**	**20,271,225**	**2,857**	**11,253,429**	**55.5%**	**411**	**3,188,687**	**201**	**1,653,449**	**51.9%**	**15.7%**

* Note on neo-panamaxes - The ships of 13,300 to 14,000 teu with neo-panamax gauge are counted in the 10,000-13,299 teu segment

* Note : the existing chartered fleet takes into account ships chartered out by non-operating owners to operators, thus it does not take into account 87 ships for 232,447 teu which are normally owned by an owner-operator but are chartered out to another operator, either for operational reasons (operational exchanges within alliances or partnerships) or because they are surplus to their owners requirements.

THE CARRIERS

Consolidation wave

2016 started with 20 large scale international carriers and ended with only 17. This drop resulted from the acquisition of APL by CMA CGM and from the integration of CSCL within COSCO, while Hanjin Shipping made an abrupt exit from the container shipping market in September 2016.

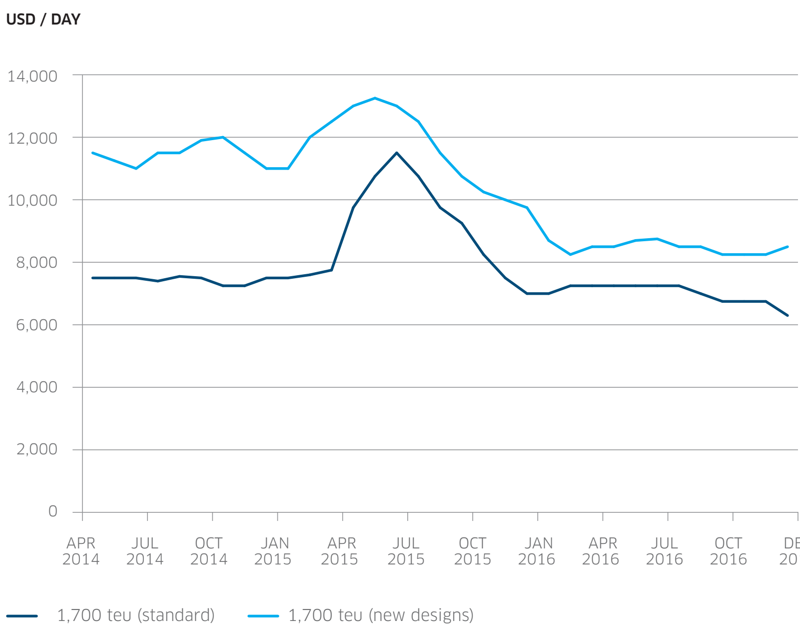
This number will shrink further in 2017-18 with the pending conclusion of the Hapag-Lloyd and UASC merger, the acquisition of Hamburg Süd by Maersk, and the merger of the liner shipping businesses of K Line, MOL and NYK.

The overall capacity operated by the 17 main carriers shrank by 1.3% in 2016. Collectively, these carriers control 81.2% of the global liner capacity as of 1 January 2017, compared to 83.7% controlled by the 20 main carriers a year ago, based on *Alphaliner's* carriers league.

2017 will also witness the implementation of a new set of East-West alliances with CMA CGM, COSCO Shipping, Evergreen and OOCL teaming up within the 'Ocean Alliance', while Hapag-Lloyd/UASC, K Line, MOL, NYK and Yang Ming are joining forces within the 'Transport High Efficiency' (THE) Alliance.

Charter rates

Standard 1,700 teu vessels vs new 1,700 teu eco-designs



MSC ANTIGUA, containership, 8,762 teu, delivered in 2013 by Hyundai Samho for the Schulte Group, operated by MSC

Alphaliner Top 25 operators as at 1 January 2017

		Total existing		Orderbook	
	OPERATOR	**teu**	**Ships**	**teu**	**Ships**
1	APM-Maersk	3,273,314	630	376,130	27
2	Mediterranean Shg Co	2,838,719	482	275,835	22
3	CMA CGM Group	2,130,843	448	235,736	24
4	COSCO Shipping Co Ltd	1,621,317	292	551,796	34
5	Evergreen Line	992,905	188	324,000	36
6	Hapag-Lloyd	950,212	167	31,767	3
7	Hamburg Süd Group	603,508	116	30,400	8
8	OOCL	575,561	97	126,600	6
9	Yang Ming Marine Transport Corp.	570,018	100	98,396	7
10	UASC	526,858	55	29,986	2
11	NYK Line	518,897	98	154,156	11
12	MOL	495,383	79	120,900	6
13	Hyundai M.M.	455,859	66		
14	PIL (Pacific Int. Line)	366,330	139	142,200	13
15	K Line	350,937	60	69,350	5
16	Zim	305,211	65		
17	Wan Hai Lines	218,252	87	15,200	8
18	X-Press Feeders Group	161,311	99		
19	KMTC	137,132	63	5,355	3
20	IRISL Group	101,157	47	58,000	4
21	SITC	98,513	77		
22	TS Lines	81,155	38	7,200	4
23	Arkas Line / EMES	72,547	41	23,416	8
24	Simatech	59,189	19		
25	Sinotrans	61,102	42	15,600	6

SECOND HAND MARKET

Investors attack a weakening market

Some 235 containership sales were recorded in 2016, a drop of 23% compared to 2015, which had seen a record 305 transactions!

Transactions by ship size varied widely from 2015 to 2016, and last year saw a significant increase in sales of vessels over 10,000 teu: at 27 ships compared to just 2 the previous year. Sales of ships in the 2,000-3,800 teu segment, however, fell from 83 units in 2015 to just 40.

The most contested sector during the year was the Panamax segment, due to the opening of the new Panama Canal locks which now enable transit by 'post-Panamax' vessels of up to 14,000 teu capacity, 366 meters in length and 49 meters in width. Despite very high transit fees according to operators using the canal, the economies of scale generated are still significant compared to the 'old' Panamaxes. Simultaneously, the other routes where the 4-5,000 teu vessels have found refuge are now also making use of larger ships.

Several courageous buyers took a chance, however, on buying modern Panamax units, albeit without exposing themselves to significant financial risk: Seaspan acquired four 4,275 teu vessels built in 2008 and 2009 at Samsung Shipyard, the **Hanjin Kingston**, **Hanjin Gdynia**, **Hanjin Atlanta** and **Hanjin Monaco**, for about $5.25 million each, equivalent to the scrap price.

Another significant trend observed during the year was the growing presence of the Chinese leasing companies. Their shipping portfolio has grown considerably in recent years, with values for the five largest companies (ICBC, Mingsheng Financial Leasing, Bocomm Leasing, CMBL and CDB Leasing) reaching a probably understated figure of $20-$25 billion. The containership portion represents more than 50% of this amount, which illustrates their keen interest in this sector. The companies' market share is estimated to have grown sixfold over the last five years. The five companies carried out 34 sale-and-leaseback operations in the containership market in 2016, of which 24 were post-Panamax vessels (5,700-13,900 teu). According to our intelligence, also confirmed by company statements, forecast spending by each of these companies is set to run into billions of dollars. This massive inflow of capital into shipping and the container markets is arguably a double-edged sword.

The operation of often unprofitable liner services precipitated several attempts at rationalisation. We note the acquisition of NOL-APL by CMA CGM, the absorption of UASC by Hapag-Lloyd, the purchase of Hamburg South by Maersk Line, and of course the bankruptcy of Hanjin Shipping, arguably the most striking event of the year. Operating margins which have been, at best, very low in recent years have often forced operators to resort to tailored financial solutions to achieve fleet renewal. The Chinese leasing companies have responded quickly and aggressively to these needs, offering very flexible financial packages.

The other side of the coin, however, is a massive injection of funds into a market already plagued by overcapacity. However, unlike investment funds and pension funds, these Chinese operations have acquired a strong maritime experience. They are often armed with specialised analysts capable of carefully selecting investments based on the risks associated with each type of transaction and market segment.

Some notable sale-and-leaseback transactions:

- CMA CGM sold 11 containerships of 9,000-10,700 teu to CMBL and CMIGL with a 7 year bareboat charter back with a purchase option.
- CMA CGM also sold 11 smaller containerships ranging from 1,691-5,782 teu to CMBL and Mingshen Financial Leasing, also with a 7 year bareboat charter back plus purchase option.
- Maersk Line sold 8 ships of 8,400 teu to Bocomm Leasing against a 5 year bareboat charter. This sale-and-leaseback deal took place after Maersk Line exercised its option to purchase 8 ships from MPC Capital.

Second hand transactions since 2007

	2007	2008	2009	2010	2011	2012	2013	2014
< 900 teu	44	58 *incl. 18 mpp*	43	33	33	55	40	39
901-2,000 teu	85	54	64	92	33	76	84	84
2,001-3,000 teu	51	22	19	25	9	15	41	39
> 3,001 teu	45	20	6	54	29	13	44	86
Total	**225**	**154**	**132**	**204**	**104**	**159**	**209**	**248**

	2015	2016
< 900 teu	67	47
901-2,000 teu	77	75
2001-3800 teu	83	40
Panamax	44	22
over-Panamax	32	24
> 10,000 teu	2	27
Total	**305**	**235**

Analysis of 2016 transactions by size segment

The containership fleet grew by 1.5% in terms of teu capacity during 2016. However, by number of vessels there was a net loss of 60 units year-on-year (from 5,172 to 5,112 cellular ships). Strong demolition activity in the 2,500-5,000 teu segment was a significant factor in the result.

Ships over 10,000 teu: 27 sales

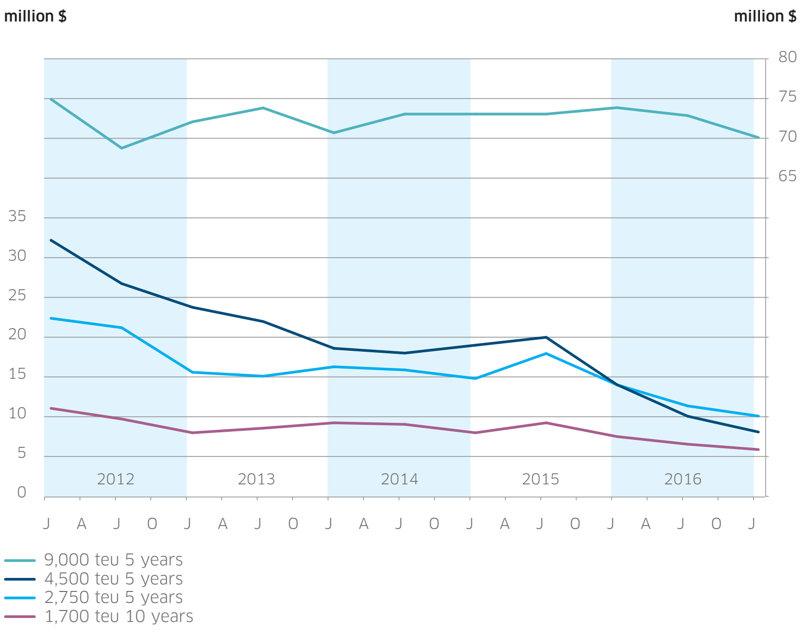
This segment recorded the strongest growth in activity in 2016. We are convinced that this phenomenon will accelerate over the next two years with the massive arrival of more vessels over 10,000 teu (91 ships scheduled for delivery in 2017 and 66 in 2018).

5,300-10,000 teu: 24 sales

There were 946 vessels in this segment at end 2016, representing 35% of the total container capacity.

Vessels over 8,400 teu enjoyed a steady flow of activity, supported by sale-and-leaseback deals. Apart from the Chinese leasing companies, we noted the presence of several traditional investors such as Zodiac Maritime, MC Seamax and Dynacom, who seized the opportunity to pick up tonnage at attractive prices.

Containership second hand prices




MUNCHEN BRIDGE, containership, 13,870 teu, delivered in 2015 by Imabari Hiroshima, operated by K Line

3,800-5,300 teu: 22 sales

At the end of 2016, there were 388 vessels in this segment, equivalent to 15% of total containership capacity (versus 17% at end 2015).

79 Panamaxes were sold during the year, of which only 22 were traded for continued navigation (less than 3% of the Panamax fleet), while the remaining 57 went for scrap.

These figures illustrate the near total loss of buyer confidence in this market segment. The incompatibility of this size with the needs of the market, plus the poor profitability of the ships due to their high operating costs, offers purchasers little hope.

2,000-3,800 teu: 40 sales

There were 870 vessels in this segment at end 2016, or 12% of total container capacity (versus 13% in 2015).

Similar to the Panamax segment, sales of vessels for further trading were halved compared to the previous year at 40 vessels, while a record level of 61 ships were sold for demolition.

The failure of many German KGs, the crisis in the freight market, plus an ageing fleet resulting from a shortfall of ordering over the past ten years, are driving these figures. Nevertheless, our views regarding the prospects for this sector are reasonably optimistic.

While only 22 units were delivered in 2016, more than 100 vessels will be delivered in 2017-2018, demonstrating that the market has woken up to the need to renew this segment, which remains an essential part of most operators' business plans.

900-2,000 teu: 75 sales

This segment recorded 1,289 vessels in the fleet at 31 December 2016, or 13% of the total container capacity.

With sales oscillating between 70 and 80 units per year, we note a certain stability in the segment in recent years. This level of activity was again maintained in 2016, with buyers taking advantage of lower prices and the delicate financial situation of German shipowners.

The relative stability in freight rates also limited the number of sales for demolition. Only 24 units were sold for scrap in 2016.

For vessels of 900-1,400 teu, the orderbook now represents around 6% of the existing fleet. This is insufficient to ensure a normal rate of renewal in this segment and reinforces our observation last year that this fleet is ageing. Furthermore, we note a lack of technological development in this segment, which has been effectively abandoned by shipyards and design companies over the past ten years.

900 teu and less: 47 sales

This segment consisted of 940 vessels at 31 December 2016, equivalent to 3% of total container capacity.

German shipowners alone sold 34 ships (72% of the active fleet) during the year, primarily to buyers in the Far and Middle East.

We note a similar ageing of the fleet in this segment as for the previous one, and the average age of vessel sold in 2016 was 14 years!

235
number of second hand transactions in 2016

Another significant trend was the growing presence of the Chinese leasing companies

SEAROAD MERSEY II, ro-ro, 1,960 lm capacity plus 110 cars or 450 teu, 20.5 knots.
Delivered by FSG Shipyard in November 2016 and operated by Searoad

RO-RO

A good year

We predicted in 2015 that 2016 would overall be a successful year for the ro-ro industry. On the back of healthy cargo flows, controlled operational costs and an encouraging supply-demand equilibrium, the industry continued its upward trajectory, leading to a new cycle of investment which might shape the ro-ro sector horizon for years to come. 2015 was a year of stabilisation and recovery but 2016 will be remembered as the year in which the sector made a big step forward.

ECONOMIC ENVIRONMENT

The general economic environment in the principal ro-ro market of Europe continued to show signs of fragility. A return to the strong, sustainable, balanced growth still eludes us. Taken as a whole, the world economy is growing at a moderate rate.

Overall, European economies performed slightly better and posted a growth rate of about 1.7% in 2016 as opposed to 0.8% in 2015. This confirms earlier predictions that Europe is facing a prolonged period of subdued growth. The main unforeseen development in 2016 was the vote in the United Kingdom (UK) in favour of leaving the European Union (EU). Considering the importance of British import and export for the ro-ro sector as a whole, Brexit is very much an unfolding event. The long-term shape of relations between the UK and the EU, and the extent to which their mutual trade and financial flows will be curtailed, will likely become clear only after several years. For the time being, the market reaction to the Brexit shock was reassuringly calm as the future of institutional and trade arrangements between the UK and the EU remains dubious. The possible contraction in trade and exchange to and from the UK could over the medium term have negative consequences on the ro-ro sector as a whole.

Lower oil and commodity prices continued to have negative implications for the emerging markets and developing economies (EMDEs) on Europe's periphery, such as Russia, North and West African countries.

Over the year, a large number of non-economic factors continued to affect economic and consequently transport activity - civil strife in Libya; full blown civil wars in Syria and Yemen; the unresolved question of the Crimean peninsula; tension between Turkey and Russia; multiple terror attacks in France, Germany, Tunisia, Turkey and Egypt, as well as the difficulties in absorbing a large volume of refugees who fled tragic events in the Near East. The Brexit vote also reflects resentment towards cross-border migration, and rising nationalist sentiment in Europe and the United States (US) – will new trade barriers, anti-integration and de-globalisation platforms gain more traction and jeopardize the free flow of cargo within Europe and between Europe and its periphery, essential to an efficient ro-ro sector?

1.7%
growth in European economies in 2016

2016 saw a fierce rivalry in the Italian market

Regional markets

The Mediterranean is increasingly becoming a two-tier market. On one side we have noted strong activity on the Turkey to Italy/France corridor, as well as very solid volumes in the Italian, Spanish and Greek domestic markets. On the other hand, trades to North African countries continue to suffer due to low demand, regional instability and conflicts. Cargo flows to Algeria were very volatile and Nisa stopped their Marseilles-Algeria ro-ro service. Not surprisingly, there was very limited ro-ro activity to Libya and Syria, countries mostly being served by tramp operators on an irregular basis.

During 2016, we witnessed a fierce rivalry in the Italian domestic market between the Grimaldi Group on one side and the alliance between Onorato-led Moby/Tirrenia and Grandi Navi Veloci (GNV) on the other side. A real contest ensued throughout the year with Sardinia as the main battleground. Both groups added and removed tonnage to various services throughout the year. After Grimaldi launched a Livorno – Cagliari link at the end of 2015, Tirrenia retaliated by opening a new freight only Genoa – Cagliari service. In December, Grimaldi launched a Savona – Porto Torres link, adding two ships, while in the meantime Tirrenia ceased the freight-only link from Genoa to Cagliari. The offensive launched by the two rivals also risk damaging the results of the historical Grendi service from Vado Ligure to Cagliari, which relocated to Marina di Carrara. In addition, Moby/Tirrenia and GNV agreed a business alliance encompassing services to Malta in order to compete with Grimaldi.

After a long and drawn out process, French ferry operator SNCM was finally sold at the beginning of the year. Newly-founded Corsica Linea took over its fleet and services between the French mainland and Corsica. Initially, the idea was to add freight only services to Corsica and the charter of two vessels ensued. The new freight only concept, however, did not last long, and Corsica Linea quickly returned to the ro-pax concept.

The continued status quo on the Crimean peninsula, as well as the complex relationship between Turkey and Russia, continued to disturb ro-ro services in the Black Sea, primarily based on fruit and vegetable trade. After 22 months, Russia's ban on certain Turkish products was partially lifted in October, allowing operators to re-activate their fleet.

Due to the weak purchasing power of its commodity driven economies, West Africa witnessed withdrawals of more services. Newcomers MNM Shipping, which started a ro-ro service end 2015 between Western Mediterranean and West Africa, winded down their activity before the summer. The remaining volumes to West Africa from the Mediterranean are distributed between Grimaldi and Spanish operator Marguisa, whereas from the Continent they are fiercely contested by the car carrier operators.

The Caribbean market remains isolated with very few existing operators. At the beginning of the year, SC Line sold their pan-Caribbean ro-ro service to Hoegh Autoliners, which will continue running it with car carrier tonnage. On a positive note, American Cruise Ferries (ACF) added a ro-ro vessel to their established Puerto Rico – Dominican Republic service. Although we were expecting increased activity related to Cuba after the easing of the US sanctions, we are yet to see the start of a regular ro-ro service serving the country.

The North European and Baltic region, the heart of Europe's ro-ro trade, continued its resurgence after a very arduous period between 2009 and2014. The announcement of Brexit and the depreciation of the British pound seemed to have no immediate impact on freight volumes between the UK and the Continent as they continued to grow throughout the year. In general, freight volumes in the Baltic continued to rise as did those between Scandinavia and the Continent, while volumes between Sweden/Norway and the UK showed limited growth. Certain trade lanes even achieved double-digit year-on-year (y-o-y) expansion, most notably UK to Continent and Continent to North Sea. This encouraged most operators to add capacity to existing routes with the exception of services to Russia, which remain under pressure not only due to the ongoing EU embargo

PRIMULA SEAWAYS, ro-ro, delivered by FSG Shipyard in 2004 and here in the process of being lengthened at Lloyd Werft

but also due to disputes between Russia and Poland over transit procedures for trucks, which forced operators to look for alternative transport routes. In addition, a number of operators such as P&O and Compagnie Luxembourgoise de Navigation (CLdN) continued investing in their freight terminals in order to meet the surge in demand. In the case of CLdN, the investment is also to adapt their port infrastructure for their newbuildings.

Timely investments in emission abatement technology and fuel efficiency helped most operators to absorb the growing bunker prices which increased more than 60% between January and December 2016. It was a year in which certain operators recorded impressive financial results, unseen since the crisis that started in 2009. For example, Finnlines posted its best ever quarterly financial result in Q3 2016 with a 23% increase in operating profit y-o-y. Danish operator DFDS also reported impressive results for 2016, reflecting the increasing volumes in freight in all their trading areas with the exception of the France to Tunisia route. Baltic operator Swedish Orient Line (SOL) / Transprocon was active throughout the year, adding tonnage through chartering, bareboat charters and a second hand acquisition. On a positive note, forest industry producer UPM Kymenne added extra ro-ro capacity at the end of the year to their transport system.

Consolidation & mergers

The trend of market consolidation continued in 2016. Icelandic shipping company Eimskip purchased NorLines, a Norwegian ro-ro, ro-lo and sideport vessel operator. During 2016, Swedish owner/operator Transatlantic Rederi effectively stepped out of the ro-ro arena after selling its last owned ro-ro vessel **Transfighter** and transferring the bareboat charters of three ro-ro vessels which were novated by compatriots SOL. At the beginning of the summer, Spliethoff Group, also owner of ro-ro operator Transfennica, acquired Bore from the Finnish Rettig Group. Bore was the largest remaining independent tonnage provider with a fleet of 11 ro-ro vessels. Despite the strong charter market allowing better returns, it is an indicator of the challenges tonnage providers have been facing over the last 6-7 years. With the gradual disappearance of the tramp market and the investments made by operators themselves, the number of remaining tonnage providers has been reduced drastically.

CHARTERING ACTIVITY

Considering the endless consolidation in the ro-ro sector and its domination by operators whose predominantly owned fleets are expanding, it is no wonder that the overall number of chartering transactions in 2016 remained steadily low. The tramp market is nowadays virtually inexistent and is based on sporadic military deployments and shipments to Africa, the Near East and the Far East. It must be said that the ro-ro sector has come under increased pressure from aggressive car carrier competition, offering idle capacity and flexible vessels with growing high and heavy capacity, thus increasingly cannibalizing the ro-ro sector. Fuelled by consistently strong demand, charter rates increased by 10-20% on average y-o-y for larger tonnage of 2,500+ lane meter (lm) capacity. For smaller tonnage under 2,000 lm capacity the improvement was more moderate. A slowdown of activity was registered between April and August and it brought some downward pressure on rates. Overall, demand was strong for all sizes but particularly for larger tonnage with good speed (minimum 17 knots) and equipped with scrubbers – suitable capacity matching the above mentioned criteria was scarce throughout most of the year.

10-20%
average rate increase for larger vessels

Several operators posted impressive financial results

FLEET

Demolition activity

Demolition activity continued to contract in 2016, which is generally the symptom of a sector lacking capacity. Between 2010 and 2014, on average almost 40 vessels were recycled every year. Only 10 vessels were recycled in 2015 and the number fell further to 8 in 2016. The average age was 31.2 years, while the average size increased to approximately 1,899 lm, compared to 1,115 lm in 2015. The primary victims were larger units, with 4 vessels of above 2,000 lm, including one vessel of more than 3,000 lm. The total lane meter capacity removed accounted for approximately 15,200 lm, a 27% increase y-o-y. We expect demolition activity to remain subdued in 2017 due to strong demand for tonnage and low demolition prices.

Sale and purchase activity

Sale and purchase activity slowed down slightly in 2016 with a total of 19 transactions registered against last year's 24, a 21% decrease y-o-y. This amounted to a total of approximately 20,665 lm with an average age of approximately 26.2 years and average lm capacity of approximately 1,033 lm compared to 2,139 lm last year. The focus was on smaller tonnage with 13 vessels under 1,000 lm capacity. Only 3 vessels were younger than 15 years and only 4 vessels were purchased by EU buyers. The remaining buyers were Norwegian (2), Turkish (3), Russian (2), Lebanese (2), with one unit going to Chilean, Mexican, UAE, Filipino, Korean and Japanese buyers respectively.

New deliveries in 2016

8 new vessels were delivered during the course of the year for a total of approximately 20,425 lm. In comparison, 13 vessels were delivered in 2015 with a total capacity of approximately 54,500 lm, of which 9 were large con-ros. This year only 2 large con-ro vessels were delivered, both to Atlantic Container Line (ACL). The average size of vessels delivered has therefore decreased to 2,553 lm compared to 4,190 lm last year. With the exception of the Frijsenborg, built by the Visentini shipyard in Italy on speculation and later chartered to Nordana Line, all of the ships delivered in 2016 were ordered for specific trades and none of them are destined for the tramp market. It is worthwhile noting the delivery of the Searoad Mersey II, a 1,950 lm ro-ro vessel ordered by Australian operator Searoad, which will be powered by LNG stored in portable LNG tank trailers.

At the turn of the year, 18 vessels are expected to be delivered in 2017 amounting to more than 56,500 lm of new capacity. Only two vessels were ordered on speculation, one by the Visentini shipyard and the other by Giovanni Visentini Trasporti Fluviomarittimi at Avic Weihai shipyard in China. In the meantime both of them found a home, with Mann Lines and Grendi respectively. Flensburg Shipyard (FSG) will deliver three 4,100 lm ro-ro units during 2017 against long term contracts, two for DFDS and one for Ekol Lojistics. A total of 6 vessels will be delivered in 2017 to Japanese domestic operators while US operator Crowley will receive two large LNG powered con-ro vessels built at Halter Pascaguola shipyard.

New orders in 2016

When it comes to newbuilding orders, the ro-ro sector often tends to move in a counter-cyclical fashion when compared to traditional shipping sectors such as dry bulk, tanker or container. The primary motivator for ro-ro ordering is usually not speculation but a genuine need for extra capacity or unavoidable fleet rejuvenation. Caused by the drastic drop in newbuilding orders worldwide and the unemployed shipyard capacity worldwide, newbuilding prices at shipyards plummeted. This situation coincided almost perfectly with the needs of a number of ro-ro operators to add capacity in order to answer growing demand. In addition, a number of operators have been posting strong financial results in the last couple of years allowing them to set in motion a new wave of investments. To illustrate this trend, a total of 18 ro-ro vessels have been ordered in 2016, compared to only 14 in 2015. The ordered vessels are expected to add almost 60,000 lm to the world fleet when delivered between 2017 and 2019. The average size of vessels ordered is more than 3,380 lm, with 8 vessels of more than 4,000 lm, mostly destined for North European trades. Driven by the perpetual search for greater economies of scale, we are witnessing a real trend of "gigantism" with orders of vessels of up to 7,700 lm capacity, almost double the size of the largest vessels existing today. The introduction of these behemoths into existing services will be interesting to observe as it will surely revolutionise traffic on the busiest corridors. This gigantism might also trigger a cascading effect comparable to the one witnessed in the container industry with the arrival of ultra large container vessels, with smaller ships being pushed to the Mediterranean and possibly non-European markets. European operators CLdN/Cobelfret and DFDS were at the forefront of events. CLdN/Cobelfret ordered two 5,400 lm units at Uljanik shipyard in Croatia for delivery in 2018 while DFDS ordered two 6,700 lm units at Jinling shipyard in China. Australian operator Toll Shipping ordered a pair of 3,000 lm vessels at Jinling shipyard while US operator Matson ordered two large con-ro vessels at NASSCO Shipyard in California. The remaining 5 vessels ordered in 2016 are orders by Japanese operators in local shipyards.

With the exception of Italian owner Giovanni Visentini Trasporti Fluviomarittimi which ordered one vessel in Avic Weihai shipyard, speculative investors and pure tonnage providers have still not decided to order tonnage. As a special case where a shipyard is acting as a tonnage provider, we will mention FSG shipyard (part of Siem Group), which will construct four 4,100 lm ro-ro vessels, two each for DFDS and Ekol Lojistics, against long term charters.

8
number of new deliveries

27%
increase in capacity demolished

FRIJSENBORG, ro-ro, 2,550 lm or 934 teu on 3 decks plus 1 car deck, 20 knots. Delivered by Visentini Shipyard in April 2016 and operated by Nordana

Lengthening

As a sign of the growing need for additional capacity on short notice, a number of operators decided to lengthen existing units. Lengthening a ro-ro vessel is a complex operation and has not been performed very often in the past. As much as it is difficult to compare the costs per "extra" lm gained by lengthening to the cost of capacity added by building a new vessel, the advantage of lengthening lies in the time factor. It is a quick fix allowing operators to gain extra capacity promptly – normally the lengthening of a standard ro-ro should not last more than 45-80 days per vessel, which also means that existing capacity is not immobilised for a long period. Back in July, DFDS lengthened their Primula Seaways by adding a 30 meter long section and thereby increasing the vessel's lm capacity from 3,800 to 4,650 lm. Turkey's largest operator UN Ro-Ro announced plans to lengthen up to 8 ro-ro vessels from their fleet, the 3,700 lm Flensburg-built class. Grimaldi also announced ambitious plans to lengthen six Jingling built ro-ro vessels in 2017, increasing their capacity by almost 1,000 lm, and possibly four to six Eurocargo-class vessels built by Hyundai Mipo Dockyard (HMD), whose capacity would be increased from 3,810 lm to nearly 5,000 lm.

Future predictions

The IMF projects global output growth at 3.4% in 2017, an increase of 0.3 points compared to 2016. Over the medium term, we expect that advanced economies will continue along a relatively low growth path. There are however uncertainties surrounding the policy stance of the newly elected US administration and its possible global spillover effects, including geopolitical instability, which could further destabilize markets on Europe's periphery. Even more importantly for the highly Euro-centric ro-ro sector, it will be very interesting to follow the consequences of Brexit. We expect strong cargo flows to persist throughout 2017 in the Continent, Baltic and Mediterranean with the exception of trades to the UK which might slow down. As a result, we expect most operators to continue adding capacity to accommodate the expected growth. We believe that the sector will still lack capacity during 2017, but things may change in 2018 with the arrival of newbuilding tonnage and the ensuing reshuffling of the existing fleet. Overall, charter rates are expected to stay firm in the first half of the year, but may stop growing and stabilise towards the end of the year in case the cargo volume growth is unable to absorb the added capacity.

Newbuilding prices are expected to stay relatively low in 2017. The already improved market fundamentals, coupled with increased demand for large, modern tonnage, should fuel additional newbuilding investments. However, we expect that the number of newbuildings ordered in 2017 should not exceed 2016 levels.

SHI JIANG, car carrier with approximately 18,500 square meters
on 9 decks equivalent to approximately 2,100 CEU with 1 hoistable deck.
Delivered in June 2016 by Xiamen Shipbuilding Industry and operated by Kingfour Marine.

CAR CARRIER

Down we go

The sector's regression undoubtedly accelerated in 2016, plagued by persistent low cargo volumes which translated into weak demand for tonnage. Although China, the European Union (EU) and the United States (US) all registered record sales of vehicles, it was the continued poor sales in emerging market and developing economies (EMDEs) that lay at the heart of the problem, because they are the ones most reliant on seaborne trade to have their vehicles delivered. Consequently, operators struggled to fill up their ships and engaged a zero-sum game to secure cargo, slashing freight rates.

In turn, in one of their solutions to salvage profit margins, operators pushed down time charter rates, which were already under pressure from the number of ships being released and redelivered by operators to adjust their fleets to lower cargo volumes. For their part, tonnage providers had no other choice but to accept increasingly lower charter rates, often on the edge of their operational expenses, or face the even worse spectre of idling their ships.

In such an environment, survival was the name of the game, for owners and operators alike. There were very few policy options to choose from in order to do so. One was consolidation, of which there were a few cases amongst the operators – Hoegh taking over SC Line's activities, China Merchants Group acquiring Sinotrans & CSC Holdings, and most importantly the merger into a new ownership structure of the jointly owned entities of Wilh. Wilhelmsen ASA and Wallenius Lines. Curiously, there were no such cases amongst owners – we suspect it is only a matter of time before some will be forced to consider it, perhaps under pressure from creditors. Another course of action was bankruptcy protection – this was the case of United Ocean Group in Japan and of International Shipholding Corporation in the US. Laying up ships, another option, was not at all popular, with only one isolated case to date. One further option was to seek new trades, with only one case to show for, in India, where a domestic service was set up after one failed attempt earlier in the year – so far it has not gone beyond absorbing one ship. Last but not least, selling was increasingly sought, both for demolition and for further trading. In the case of the latter, finding buyers proved to be challenging when the purchase of the asset came without an employment.

The decision by the Organization of Petroleum Exporting Countries (OPEC) in November to curb output in an attempt to balance the supply of oil with demand was therefore a welcome and key development, but it remains to be seen whether it will produce the effects needed to revive the economies of oil exporting countries, and thereby increase their purchasing power. In the best case, the positive externalities are unlikely to be felt before the end of 2017. By that time, it might be too late for some of the sector's players.

Global growth is forecast to pick up in 2017 and to reach 3.4%, on the back of increased economic activities in advanced economies and in some EMDEs. However, we see a substantial increase in geopolitical and protectionist risks on the horizon which cannot be easily dismissed and which we fear will contribute to creating the conditions of another tough year ahead for the sector.

400%
increase in idle
6,400-6,700 CEU ships

CHARTERING ACTIVITY

Chartering activity was scant throughout the year, with on average 10 deals registered each month and mainly of short term duration not exceeding two months, with the exceptions of May and November, when activity spiked to approximately 20 deals each. As a result, the size of the idle fleet fluctuated between 20 and 30 ships of all sizes depending on the amount of tonnage having found short term employment. With such a heavy tonnage overhang consistent throughout the year, downward pressure on charter rates was relentless, with levels reaching close to historic lows. The rate for a 6,400-6,700 car equivalent units (CEU) vessel was pushed down to around $15,000 daily for period business and even under $10,000 daily for short term spot business by the end of the year, down 42% from the historic level of $26,000 daily for period deals. For the medium size category, the rate decline was even steeper, with charter rates hovering around $8,000 daily for the 4,900 CEU ships, a collapse of approximately 50% year-on-year (y-o-y). The root of the imbalance continued to be on the demand side, with key export destinations in the EMDEs still suffering from weak purchasing power due to continued low commodity prices. Protectionist policies adopted by certain countries, such as Algeria and Nigeria, to cope with their purchasing power crisis exacerbated already fragile trade flows. It is a sign of the dire times that the number of 6,400-6,700 CEU ships idling stood at approximately 10 ships at the end of the year, a whopping 400% increase y-o-y. This size has since long supplanted the medium size category as the industry workhorse and until only a year ago was the prized possession of operators.

The Ongoing Anti-Trust Investigation

As anticipated, the sweeping investigation into the global car carrier price fixing scandal produced further results throughout the year. In February, Brazil joined the fray when its Administrative Council for Economic Defence (CADE) announced a formal probe into alleged anti-competitive behaviour in the car carrier industry, placing nine companies under investigation, namely CSAV, EUKOR, Grimaldi, Hoegh, K Line, MOSK, NYK, Nissan Motors Car Carriers (NMCC), and Wallenius Wilhelmsen Logistics (WWL). In the US, at the end of March, a class action suit was filed on behalf of 39 US residents with the Federal Maritime Commission (FMC) against NYK, MOSK, World Logistics Services (WLS), NMCC, K Line, EUKOR, WWL, CSAV, and Hoegh. In May, two American dealership groups, Landers Brothers and Rush Truck Centers, filed class action lawsuits with the FMC against NYK, MOSK, Hoegh, NMCC/WLS, K Line, WWL, EUKOR, and CSAV. The following month, an executive from CSAV and resident of Chile was charged with participating in the price-rigging scandal – he is the eighth executive to be charged by the US Department of Justice (DoJ), four of which have already pleaded guilty and have been sentenced to prison terms, whereas three have been indicted but remain fugitives. In July, the investigation by the Australian Competition and Consumer Commission (ACCC) led to NYK pleading guilty to criminal cartel conduct in Australia's Federal Court, marking the first criminal charge laid against a corporation under the criminal cartel provision of the Competition and Consumer Act. At the same time in the US, WWL reached a settlement with the DoJ covering activities from February 2000 to September 2012, in which it agreed to pay $98.9 million in fines and to provide continued support to the DoJ investigation. The settlement also closed the DoJ investigation into EUKOR's activities. Later, in October, the FMC announced it had reached a compromise agreement with WWL and EUKOR collecting $1.5 million in civil penalties. The agreement resolved allegations that the two companies had violated sections of the Shipping Act as well as failed to file space charter agreements and service contracts. The two companies agreed to cooperate further with the FMC but did not admit to violating the Shipping Act. In November, the ACCC laid criminal charges against K Line in relation to alleged

AUTO ENERGY, car carrier with dual-fuel Liquified Natural Gas (LNG) propulsion and approximately 32,660 square meters on 10 decks, equivalent to approximately 3,800 CEU with 2 hoistable decks and 1A Super Finnish/Swedish ice class.
Delivered in November 2016 by Kawasaki Heavy Industries (KHI) at the Nantong COSCO yard (NACKS) in China for United European Car Carriers (UECC) and operated by UECC. Together with her sister ship Auto Eco, delivered in September 2016, they are the first ever car carriers with a dual fuel LNG propulsion system

cartel conduct with regards to the international shipping of vehicles to Australia between July 2009 and September 2012. That same month, Brazil's CADE validated a cease and desist agreement (TCC) with Grupo OW/WW, formed by Wallenius Wilhelmsen Logistics AS and Eukor Car Carriers Inc., whereby the two companies agreed to pay fines totalling Reais 28.6 million ($8.8 million), of which 15.9 million by EUKOR and 12.7 million by WWL. As part of the agreement, the two companies also acknowledged their participation in anti-competitive behaviour.

Just like we wrote last year, given the seemingly endless proportions that the scandal is reaching, with some probes by governmental authorities still underway (Australia, Brazil, US, etc.), we anticipate that in 2017 more convictions and penalties will follow and that new investigations are likely to emerge.

Vehicle Manufacturing and Exports

As usual, year-end statistics shed some light on the evolution of the charter market throughout 2016.

Annual sales of light vehicles in the US reached a record setting 17,539,052 units, edging up 0.3% y-o-y, of which 6,893,078 units were cars, down 8.9% y-o-y, the fourth lowest total since 1962, and 10,645,974 units were light trucks, up 7.4% y-o-y. Light trucks accounted for an unprecedented 60.7% of total annual sales and, together with incentives, set the pace throughout the year. Annual imports from Japan grew by 0.7% y-o-y with 1,785,836 units and from Korea by 18.7% y-o-y with 758,751 units. It marked the fifth consecutive year that the US market was the key contributor to overseas shipments and the star performer.

For the calendar year, Japanese automotive production stood at 9,204,590 units, slipping 0.8% y-o-y, of which passenger cars were 7,873,886 units, up 0.6% y-o-y, and domestic sales shed 1.5% y-o-y with 4,970,260 units, of which passenger cars accounted for 4,146,459 units, down 1.7% y-o-y. For the second consecutive year, automotive exports expanded, up 1.2% y-o-y with 4,634,097 units, of which passenger cars accounted for 4,118,496 units, up 3.7% y-o-y, with 605,129 units exported to the EU, up 16.9% y-o-y, 1,708,134 units exported to the US, up 8.3% y-o-y, and 382,065 units exported to the Near East, a loss of 24.2% y-o-y.

In South Korea, annual domestic sales increased 0.7% y-o-y to reach 1,600,154 units, exports contracted 11.8% y-o-y with 2,623,453 units, and output declined 7.2% y-o-y against 4,228,536 units. Whereas the result for domestic sales was fuelled by the individual consumption tax reduction, which was extended for the first six months of the year, both exports and output were hard hit by weak demand from the EMDEs and in the case of the latter also by labour disruptions.

Chinese annual automotive output and sales not only registered another record year with 28,118,800 units and 28,028,200 units respectively, but returned to double-digit y-o-y growth rates with 14.46% and 13.65% respectively. Annual production and sales of passenger cars followed suit, with 24,420,700 units and 24,376,900 units respectively, equivalent to y-o-y increases of 15.50% and 14.93% respectively. Sales of passenger cars with an engine capacity of 1.6 liters or below totalled 17,607,000 units, up 21.4% y-o-y, and

10
average number of
chartering deals per month

50%
collapse in rates
for 4,900 CEU ships

20-30 ships idling throughout the year

represented a huge 72.2% of overall annual passenger car sales. In terms of commercial vehicles, annual production and sales rallied to 3,698,100 units and 3,651,300 units respectively, up 8.01% y-o-y and 5.80% y-o-y respectively. Exports also recovered after three consecutive years of decline, posting a rise of 9.3% y-o-y with 790,000 units.

Annual new car registrations in the EU totaled 14,641,356 units, representing an increase of 6.8% y-o-y, the third consecutive year of expansion. Growth was sustained throughout the region in all major markets on the back of robust consumer confidence. Italy posted the best performance with a gain of 15.8% y-o-y and overall sales of 1,824,968 units, followed by Spain +10.9% y-o-y and 1,147,007 units, then France +5.1% y-o-y and 2,015,177 units, Germany +4.5% y-o-y and 3,351,607 units, and the UK +2.3% y-o-y and 2,692,786 units. On the flip side of the coin, annual sales of light commercial vehicles in Russia declined by 11% y-o-y to reach 1,425,791 units, the fourth consecutive year of contraction, but an improvement from last year's rate.

With the country experiencing its worst recession in a century, annual new light vehicles sales in Brazil amounted to 1,988,593 units, losing 19.8% y-o-y, the 4th consecutive year of decline, annual production reached 2,078,064 units, down 11% y-o-y, and annual exports stood at 489,056 units, up 25.7% y-o-y. Imports of light vehicles continued in their downward spiral, contracting 35.7% y-o-y with 265,444 units, of which passenger cars were 185,795 units, a 44.7% slump y-o-y.

In Algeria, annual new passenger car sales were finally capped by the government at 98,374 units in November, after an appeal motion lodged by various dealerships forced the government to add 15,374 units to the previous ceiling of 80,000 units which had been set in May. The final quota represents a massive 61% reduction y-o-y, for a market which in 2012 accounted for in excess of half a million new vehicles! To add insult to injury, despite the increased quota of November, the total value of imported vehicles remained unchanged at $1.0 billion, effectively establishing an unrealistic price tag per vehicle of maximum $10,000, thereby making it impossible to attain the revised quota threshold.

The International Monetary Fund (IMF) is projecting world trade volume to rise 3.8% y-o-y and global light vehicles sales are forecast to grow between 1% and 2% in 2017 reaching just in excess of 93 million units, compared with a better than expected approximately 5% rise y-o-y in 2016 fuelled by sales in the US, China and the EU. It seems doubtful, however, that improved sales in some of the EMDEs will be sufficient to counterbalance the expected slowdown in the American, Chinese and European markets.

In China, sales of passenger vehicles are expected to slow sharply in 2017 as the stimulus measures designed to boost demand will be gradually phased out by 2018. Indeed, the government decided to scale back the duty cut on vehicles with an engine capacity of 1.6 liters and below to 7.5% from the current 5% throughout 2017 and restore it to 10% in January 2018.

In the US, the consensus appears to be that sales have reached a plateau and that they should reach just in excess of 17 million units in 2017 but under the 17.5 million level of 2016. The trend that has seen sales driven by pickups, crossovers and SUVs, i.e. light trucks, is expected to continue, with passenger cars set to lose more ground.

In South Korea, exports are forecast to grow 0.4% y-o-y to 2.69 million units, but domestic sales are expected to fall 2.8% y-o-y with 1.75 million units, dragging down production, which is set to shed 1.2% y-o-y with 4.17 million units. The base effect of the previous year is to benefit exports but harm sales.

In Japan, in June the government decided to postpone the date of the increase in sales tax from April 2017 to October 2019. This should boost domestic sales, which are forecast to rise 3% y-o-y in 2017. However, prospects for automotive output and exports are mixed, with Japanese operators expecting cargo volumes to remain steady in 2017.

With elections due to be held in the two key markets of France and Germany, coupled with the UK expected to trigger article 50 and execute their exit from the EU, new car sales in the EU are expected to slow down considerably and grow by only 1% y-o-y in 2017.

On the flip side of the coin, Russian car sales are forecast to rise by about 4% to 5% y-o-y with approximately 1.5 million units after four consecutive years of decline, bolstered by the government's extension of a fleet renewal program and loan subsidizing. An improvement of the Russian market is unlikely to be able to counter balance a slowing EU performance, but will nonetheless be a welcome bright spot.

In Brazil, automotive sales are expected to rise 4% y-o-y in 2017 and reach 2.13 million units, exports to increase 7.2% y-o-y with 558,000 units, and production to expand 11.9% y-o-y with 2.41 million units, powered by improved consumer and investor confidence due to a projected stabilization of macroeconomic indicators.

THE FLEET

10.6
average age of fleet over 1,000 CEU

1.5%
contraction of fleet

3
number of new orders in 2016

Dark clouds continue to loom on the horizon of the sector's supply side. Based on a capacity of 1,000 CEU and above, at the turn of the year, the fleet counted 754 vessels equal to approximately 3.99 million CEU, with an average age of 10.6 years. Compared to 2015, the fleet contracted by 1.5%, capacity remained steady, and average age improved by 1.8%. The fleet contraction represents the new low of a bell-shaped curve over the past 5 years, which saw growth rise from 3.7% in 2012, to 7.5% in 2013, reaching its inflection point at 13.6% in 2014, and then starting to descend in 2015 with only 1.8%. The overall orderbook ended the year at 52 units, representing 6.8% of the current fleet, stretching out into 2020, and accounting for a total of approximately 356,000 CEU. It marks a y-o-y fall of 36% and brings us back

AUTO ECO, sister ship to Auto Energy – see caption for Auto Energy page 111

to the more normal orderbook-to-fleet ratio witnessed between 2012 and 2014. 33 units or 63.5% of this orderbook are composed of post-Panamax beam vessels, accounting for approximately 251,000 CEU, equivalent to 29% of the CEU capacity on order. Most importantly, 12 of these 33 ships belong to tonnage providers, which means that 36% of the post-Panamax beam orderbook will need to secure employment.

With just 3 new orders placed during 2016, equivalent to approximately 19,000 CEU with an average intake of 6,400 CEU, the orderbook grew only 4% y-o-y, but new orders collapsed 94% y-o-y. Arguably, there were no new orders placed during 2016, because the 3 orders registered were options exercised by Grimaldi for 2 more units of 7,500 CEU at Yangfan and by Shanghai Ansheng for 1 more unit of 3,800 CEU at Jinling.

13 ships, or 25%, of the total orderbook are without employment, equivalent to a capacity of approximately 257,000 CEU. When added to the idling fleet, whose tally fluctuates between 20 to 30 ships, it is clear that demand is unlikely to be able to absorb all of this supply.

21 units were delivered during the course of the year, accounting for approximately 134,000 CEU, versus last year's 20. This 5% growth will be further accentuated by the 37 units due for delivery in 2017, before plunging dramatically in 2018 with only 9 units. As expected, the average size dipped 2% y-o-y at 6,858 CEU, just under the 7,000 CEU threshold which had been attained for the first time ever in 2015.

In another sign of the dire times, there were 10 units whose delivery dates were deferred beyond 2016, accounting for approximately 70,000 CEU. In addition, 2 units on order were cancelled, equivalent to 14,000 CEU.

As we had anticipated and hoped for, demolition activity witnessed a whopping 300% surge y-o-y with 28 units being beached, accounting for approximately 144,000 CEU. Average age was 28.8 years, 1.3% lower than in 2015, evidence that some owners and operators recognized the benefit of sending their vintage ships for recycling. Indeed, 8 ships, or 28.5%, belonged to tonnage providers, whereas the balance of 20 ships was owned by operators.

Looking ahead, 30 units, or approximately 120,000 CEU, representing 3.97% of the current fleet, will be 28 years and above in 2017. In 2018, 33 ships, or approximately 131,000 CEU, representing 4.37% of the current fleet will be 28 years and above. We would dare to say that – ideally – all of these 30-33 ships should be sold for demolition, if one wishes to keep the fleet's expansion in check, attempting to offset the influx of newbuildings expected this year in order to accelerate a recovery of the sector. It is interesting to note that of the 30 ships due to be 28+ years old in 2017, 7 units, or 23%, belong to tonnage providers, of which 5 have charter contracts due to expire in 2017. It also means that the remaining 23 ships, accounting for 87% of the fleet of 28+ years old belong to operators. While it is true that some operators did their share of the burden by sending a bunch of their ships to the scrapyard during 2016 (WWL and related companies hold the gold medal with 9 units), it is also true that more can and should be done by the others.

Sale and purchase activity picked up, rising from last year's 10 units to 15, including 5 sale and leaseback deals. The average age was 16 years and the average size was 3,296 CEU, for a total of approximately 49,434 CEU. Similarly to last year, 67% of the buyers are based in Asia-Pacific, with Chinese interests appearing on the scene as a result of new legislation regulating the size of road trailers, leading to an expected modal shift in logistics in favour of water (sea & river) over land. To the exception of one transaction, all sale and leaseback deals were concluded with Japanese institutions. Despite the protracted poor state of the charter market which continues pushing down asset prices, we expect the level of sales to remain steady in 2017 on the back of continued demand from China and the rise of opportunistic deals, such as distressed asset sales.

APL SENTOSA, 13,892 teu Super post-Panamax containership, delivered by Korean shipyard Hyundai Heavy Industries in 2014 to APL

FINANCE

A struggle of lions and foxes

"Brexit means Brexit", said Theresa May, Recep Erdogan wiped out Turkey's economic growth, Brazil impeached Dilma Rousseff, Venezuela remains on the brink of collapse and the US president-elect advocated America's withdrawing from international free trade. The political scene at the end of 2016 certainly offered little support for the world economy.

RIBERA DEL DUERO KNUTSEN, LNG carrier, 173,400 cbm, delivered by Korean shipyard Daewoo to Knutsen OAS in 2010

In the shadow of such turbulent global political landscapes, 2016 was another lacklustre year for shipping. Capital markets reacted to the industry's volatility by punishing the sector with indifference throughout the first half of 2016. Half-way through the year, Posidonia, the industry's bi-annual tête-à-tête, turned out to be a remarkably different event than previously. Two years ago, hedge funds were widely present. In 2016, they were clearly absent. As public companies failed to fill up their meeting schedules, analysts were dragging the sector even further down on the back of an imploding tanker market that had been the last bright spot in 2015.

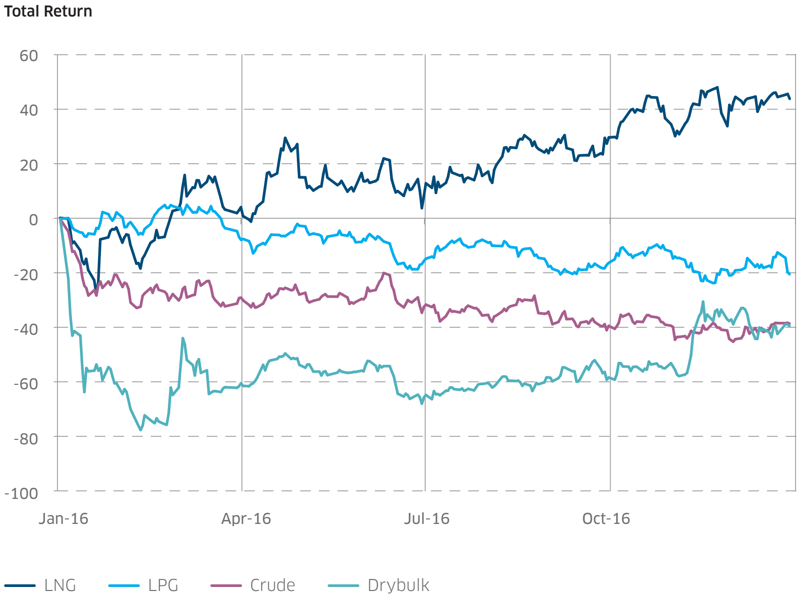
US investment bankers gave notice that equity markets were not open for shipping at this point, ascertaining that "Shipping is dead for capital markets in the foreseeable future". A few weeks later, the Marine Money Ship Finance Forum in New York confirmed the negative sentiment in ship finance. Banks have been nursing losses in offshore, responding to regulatory changes and investor pressure, and mostly been busy restructuring existing debt portfolios. The words of a leading German banker echoed through the summer: "There is no more room to kick cans". The few banks that have still been lending offered lower leverage, higher margins and shorter tenures. Even the strongest shipping companies are now losing confidence in their ability to re-finance upcoming loan maturities, whilst the traditional maritime lenders are pulling back en masse. At the same time bond markets were closed for shipping, with a few major names the exception. In short, the lemmings went over the cliff.

The second half of the year proved this to be partly wrong. The industry's lions are still capable of dragging the foxes. Whilst George Procopiou publicly stated that one should "Buy anything that is a ship, I would say anything that floats, because almost everything is very cheap now", some of the big names were already plotting their return to the capital markets. The dry bulk market in particular started attracting interest again. Whilst the encouraging demolition pace kept up, value uplift gained some momentum. Funding was the bottleneck. Eagle Bulk was one of the first to launch a round of equity raises to bridge an equity shortfall from August onwards. They were followed by the likes of Marc Saverys pulling together $150 million with a SPAC aimed at bulk and container vessels, Arne Blystad's Songa Bulk raising $74 million in Norway, as well as John Michael Radziwill raising $50 million in a private placement for opportunistic investments in the dry bulk space through its new "Goodbulk" setup. Nevertheless, the aforementioned names confirm a pattern that coined 2016 – only the leading names of the industry are capable of accessing money, whilst mid- and lower-tier owners drop off the cliff.

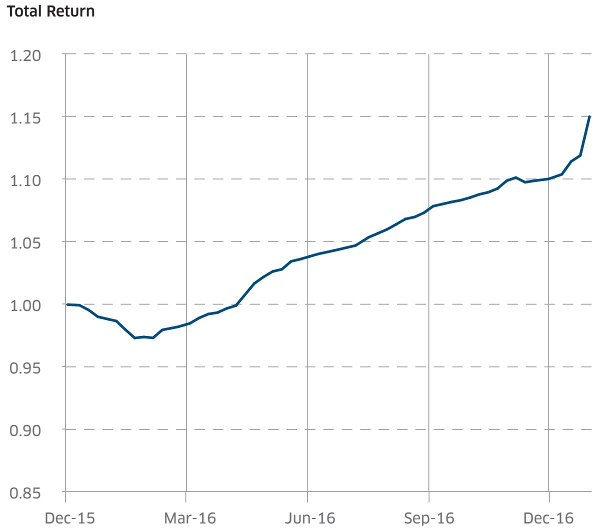
For debt capital markets, things have been evolving in a similar manner. The Nordic high yield markets gained some traction towards the end of the year, but deals have been limited to a selected handful of owners. Ocean Yield successfully tapped the markets in September raising $60 million, after an equity issue a few weeks earlier. The transaction with maturity date in September 2021, carrying a coupon of 3 months NIBOR + 4.50% p.a., was used to re-finance existing debt as well as to fund part of their commitment to the recently acquired 19,000 TEU container vessels. The former is a pattern that was observed all year, with most of the bond issues appearing in the market having the aim of replacing maturing facilities. Amongst other noteworthy transactions, Klaveness Ship Holding raised $35 million in November on an unsecured basis with a coupon of 3 months NIBOR + 5.25% maturing in 2020 with the aim of redeeming existing bond facilities. Meanwhile Teekay LNG raised $110 million at a fixed coupon of 7.75% maturing in 2021 in order to refinance an existing bond facility and fund newbuilding instalments. These deals, however, cannot hide the fact that 2016 was a slow year for the shipping high yield markets.

Of much greater interest was the up-and-coming debt private placement market for the maritime space in 2016. These private bond structures, which provide annuity-style debt and are purely aimed at projects with investment grade credit risk and guaranteed employment of more than five years, have seen substantial success throughout the year as conventional sources of debt finance have dried up. A major Norwegian owner obtained funding of more than 90% loan-to-value for several methanol carrier newbuildings

Equity Returns for Aggregated Stocks by Sector



Aggregated return for Pareto-covered Shipping Bonds



with 15-year time charters attached at a fixed interest rate of about 5.0% and a profile slightly longer than the employment. Meanwhile, Knutsen NYK managed to raise financing likely to cover in excess of 100% of the price of a second hand LNG carrier with long-term employment by a major utilities company at about 4.5% fixed with a repayment down to zero until term of the charter. Such deals are likely to be the taste of things to come, and it is anticipated they will play a more important role in financing 'industrial' types of maritime deals in future.

On another positive note, Chinese leasing has filled part of the gap vacated by conventional shipping banks in the market. Leading banks, as well as more recently created private companies, have continued to gain ground in the industry, closing some major deals in 2016 notably across the container, gas and product tanker segments, as well as dry bulk. The re-financing of a package of 11 vessels belonging to a leading liner operator through two Chinese banks and one investment fund, plus the funding of Fortescue Metal's very large ore carriers (VLOCs) by China Development Bank, and finally the recent sale and leaseback of an FSRU belonging to Excelerate Energy illustrate that this source of liquidity is here to stay and expand.

Funding availability

Funding is available for projects with long-term employment, or for strong counterparties putting their corporate guarantee into the leasing deal. Capital costs may vary substantially depending on the structure, but can go down as far as 3.5% for the most competitive deals with maturities of up to 15 years. Looking at operating lease structures, the lower end of the funding costs are about 200 bps higher and can go up substantially depending on the project. Chinese leasing structures will on such basis naturally expand at the cost of conventional lenders to the industry. The appetite of the established and newly emerged players remains significant, with massive investment pressure on the side of the financiers. Owners will however need to provide predictable cash flows or material guarantees in order to access this emerging pocket of liquidity.

2016 saw newbuilding prices tumble to another record low. Despite this, ordering activity has been limited, and the financing element is key here. Bank finance markets have never been more challenging and divided as in the past year – as "tier 1" clients have never been granted "cheaper" financing, while the less fortunate are simply receiving nothing from their banks. This was recently evidenced by Frontline and BW LPG, who both secured financing below 200 bps. Shipyards are doing even worse than their offshore and shipping clients, and refund guarantees are becoming more and more challenging – even for major Korean yards, where this has never been an issue. Further, speaking to traditional shipping banks, it appears that some shipping companies are actually contacting their traditional banks to receive "guarantees on top of the refund guarantees", clearly distrusting the traditional refund banks. It remains to be seen whether this is a trend, but it definitely tells us something about future ordering activity.

Looking at 2017, dark clouds are hanging over the shipping markets. It is likely though we will see a progressive return of investors looking at countercyclical opportunities in the several distressed segments of the industry. On the equity side as well as the high yield debt side, dry bulk will most certainly be the first segment to run the risk of getting flooded by investor money again, endangering a recovery. Debt private placements will further gain importance, although will be limited by the small portion of adequate projects meeting the criteria of investment grade investors. Meanwhile, Chinese leasing houses will be the most aggressive players going forward and could with rising competition progressively need to look at deals with shorter employment guarantees and more terminal value exposure to the asset. In the meantime, the geopolitical, financial and shipping scenes align to form a sober picture. One could simply stick to the counsel of Nathan Rothschild who in 1810 had no better advice to investors than to "buy on the sound of cannons" and "sell on the sound of trumpets".

Report and analysis prepared by Pareto Securities, a partner of the BRS Group.

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Design and production: increa

2017 ANNUAL REVIEW

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