

THE IRISH MARITIME TRANSPORT ECONOMIST

VOLUME
13



Irish Maritime
Development Office

The Irish Maritime Development Office

The Irish Maritime Development Office (IMDO) is Ireland's national dedicated development, promotional and marketing agency for the shipping and shipping services sector.

The IMDO is the Irish government agency which provides support to national and international maritime businesses in Ireland. It is the aim of the IMDO to be the focal point for maritime business in Ireland. The IMDO provides government and industry with a range of information and reporting across the sector and works with international businesses to help them set-up or expand in Ireland. The IMDO is also Ireland's designated Shortsea Shipping Agency and provides independent advice and guidance on EU funding initiatives.

The IMDO was established by the Fisheries (Amendment) Act 1999, as part of the Marine Institute, under an amendment to the Marine Institute Act 1991 in December 1999. The IMDO commenced operations in July 2000. After subsequent amendment in the Harbours (Amendment) Act 2009 its legislative mandate includes the following functions:

1. To promote and assist the development of Irish shipping and Irish shipping services and seafarer training.
2. To liaise with, support and market the shipping and shipping services sector.
3. To advise the Minister for Transport on the development and co-ordination of policy in the shipping and shipping services sector so as to protect and create employment.
4. To carry out policy as may be specified by the Minister for Transport relating to the shipping and shipping services sector and seafarer training.
5. To advise the Minister for Transport on the development and co-ordination of policy and to carry out policy, as may be specified by that Minister, relating to ports and the ports services sector, and;
6. any additional functions relating to the shipping and shipping services sector conferred on the Institute under section 4(4) of this Act.

Shipping services is defined as: sea routes, ship management, technical management, commercial management, crew management, ship finance and mortgages, marine insurance, maritime legal services, shipbroking and ship chartering.

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I am pleased to provide the foreword for this year's Irish Maritime Transport Economist (IMTE) and to acknowledge the vitally important role the maritime industry plays in facilitating economic growth and prosperity. The Irish economy depends heavily on international trade, with over 90% of all such traffic moving by sea. Our ports are gateways through which Irish businesses find customers for our exports and source the imported products and materials that sustain indigenous industries. An efficient, competitive and responsive maritime industry supports international trade and the creation of jobs.

2015 was a very successful year for the industry. The role of all ports, both national and regional, in driving growth and facilitating recovery in our regional and national economies cannot be underestimated. Port traffic grew strongly and consistently, with a 7% increase in total throughput being recorded in 2015 alone. It is encouraging that this growth in port traffic was spread across all traffic modes and geographically dispersed. The increase in bulk cargoes benefitted smaller regional ports in particular, many of which are well positioned to serve the agricultural and construction sectors.

In 2015, shipping companies added capacity to accommodate the growing volumes of imports and exports, and Irish port companies responded by providing the necessary services and infrastructure. With port traffic now approaching the high watermark set in 2007, it is timely and appropriate for ports to turn their attention to planning for future capacity. Ambitious development plans are being advanced by Dublin, Cork and Shannon Foynes that will create the capacity required to meet the growing needs of the economy for decades to come. These development projects were successful in attracting almost €40 million from the EU TEN-T Fund, a testament to the quality of the projects and the importance the EU places on improving trade links within Europe and with the rest of the world.

Our maritime industry also makes a valuable contribution to tourism. In 2015, more than 4.4 million ferry passengers passed through Irish ports, with a further 450,000 cruise passengers arriving on the many magnificent cruise liners that called to Irish ports last year. Our success in attracting these visitors is the result of collaboration between industry stakeholders and Fáilte Ireland, as they work successfully together to enhance Ireland's reputation as a tourist destination and to win repeat business from the growing number of tourists that visit Ireland every year.

In closing, I would like to thank the Irish Maritime Development Office for producing this annual publication, which provides the data and analysis needed to monitor the performance of the maritime industry. I know that the IMTE is highly valued as a reference text by industry stakeholders. In what has been a very successful year for the industry, I would also like to recognise the officials in my Department who worked so diligently to create the policies and legislation needed to protect and develop the maritime industry in this country.



Paschal Donohoe

Paschal Donohoe, T.D.

Minister for Transport, Tourism & Sport

Key 2015 Indicators

GDP: +7.8%

GNP: +5.7%

Inflation: -0.3%

Merchandise Exports: +20%

Merchandise Imports: +10%

In this, the 13th edition of the Irish Maritime Transport Economist (IMTE), we analyse the performance of Ireland's maritime industry in 2015 and comment on the underlying economic conditions that shaped its development.

Ireland's maritime industry grew strongly in 2015. The iShip Index, which measures the total volume of traffic moving through our ports, recorded a 7% increase, with all major traffic modes delivering substantial growth. Bulk traffic grew by 7% to reach 29.8 million tonnes, with Cork, Greenore, Shannon Foynes, Waterford and Wicklow recording above average growth rates. LoLo traffic, which moves predominantly through Dublin, Cork and Waterford, grew by 8% to 860,277 TEU, with each port recording significant volume gains. RoRo traffic grew by 6% to 1,002,920 units, 88% of which was shipped through Dublin and 12% through Rosslare. The total volume of traffic that moved through Irish ports in 2015 reached its highest level since 2008, at 977 points on the iShip Index. Although this is 7% lower than the peak of 1,042 points achieved 2007, it represents substantial progress from the low of 693 points recorded in 2009, and is the highest level recorded since the beginning of the economic crisis.

Domestic economic conditions in 2015 contributed to the growth of the maritime industry. GDP was up by 7.8% to €203.5 billion and GNP, a measure which excludes repatriated income, was up by 5.7% to €171.9 billion. In value terms, exports in merchandise trade grew by 20%, while imports, fuelled by strong domestic demand, rose by 10%. With oil prices falling sharply during the year, imports of mineral fuels, lubricants and related products fell by 21% to €5.1 billion. Overall, Ireland's merchandise trade performance improved significantly, due to a strong increase in exports over imports, creating a trade surplus of €44 billion, up by 39% on the previous year. The Central Bank of Ireland forecasts a continuation of this strong trading performance, with overall exports set to grow by a further 6.5% in 2016 and 4.9% in 2017. The Central Bank estimates that the value of imports will grow by 6.9% in 2016 and 4.4% in 2017. These strong growth rates bode well for the continued recovery and expansion of the Irish maritime industry.

From a macro-economic perspective, the World Bank reported a 2.4% increase in global trade in 2015 and forecasts growth of 2.9% in 2016. However, Ireland's trading performance was bolstered in 2015 by a number of external factors including the depreciation of the Euro against the US dollar and Sterling, robust growth in the economies of our main trading partners and low shipping and transport costs resulting from a combination of lower fuel prices and relatively depressed charter markets. With the possible exception of some hardening in the charter rates for the vessels that serve the Irish container market, these conditions are expected to continue into 2016 and auger well for Ireland's international trade volumes in the coming year.

Our ports are also important gateways for inbound and outbound tourism and make a very significant contribution to the success of the tourism industry. More than 4.4 million passengers travelled through Dublin, Rosslare and Cork in 2015, availing of the

Key 2015 Indicators
 LoLo Traffic: +7%
 RoRo Traffic: +5%
 Passenger Traffic: -3%
 iShip Index: +7%
 Bulk Traffic: +7%

many excellent ferry services that connect Irish ports to ports in Great Britain and France. A further 450,000 tourists experienced Ireland by cruising around our coast on the magnificent cruise liners that call to Irish ports each year. Cruise tourists come ashore to visit many of the world class attractions that Ireland has to offer and bring economic benefits to our cities, towns and regions.

The economic contribution made by our ports to the broader economy is recognised in the Government's integrated plan for the marine industry - *Harnessing Our Ocean Wealth*. This plan describes ports as enablers of economic growth. Their competitiveness and efficiency impact directly on international trade and national competitiveness and as a result, have a direct influence on the job creation capacity of the economy. As our ports move closer to the peak volumes handled in 2007/2008, it is important to address the need for additional capacity. Ambitious development plans, capable of meeting the growing needs of the national economy, have been progressed by Dublin, Cork, and Shannon Foynes and will be brought to fruition over the next five years. It is also important for other regional ports to consider the role that they will play in the provision of future capacity and in the achievement of the economic objectives set out in the *Harnessing Our Ocean Wealth Strategy*. Apart from providing the infrastructure that is needed for shipping, our ports are important transport and logistics hubs and focal points for heavy industry that requires access to seaborne transport. A number of Irish ports have naturally occurring deep water and shore-side capacity to handle the largest ocean-going vessels and the cargoes they carry. Irish ports are also capable of providing the services and infrastructure required by the marine renewable energy industry, in which Ireland has a strategic

interest. The contribution that Irish ports can make to the broader marine economy by participating in these diverse activities is also recognised in the *Harnessing Our Ocean Wealth Strategy* and will be an important driver of growth in the maritime industry in the future.

The IMTE is a collaborative effort that relies on the participation and support of industry stakeholders. This support is greatly appreciated and has enabled a valuable database to be created that informs and guides maritime policy and, in turn, contributes to the achievement of the ambitious plans that have been set out for our industry. I would like to thank all those who give so generously and willingly of their time and experience to bring this publication to fruition each year. In particular, I would like to thank our economic analysts, Eamonn O'Connor, Ciarán Corr and Tiago McCarthy, for their professionalism in compiling this edition of the IMTE and our many readers for their ongoing interest in our work.



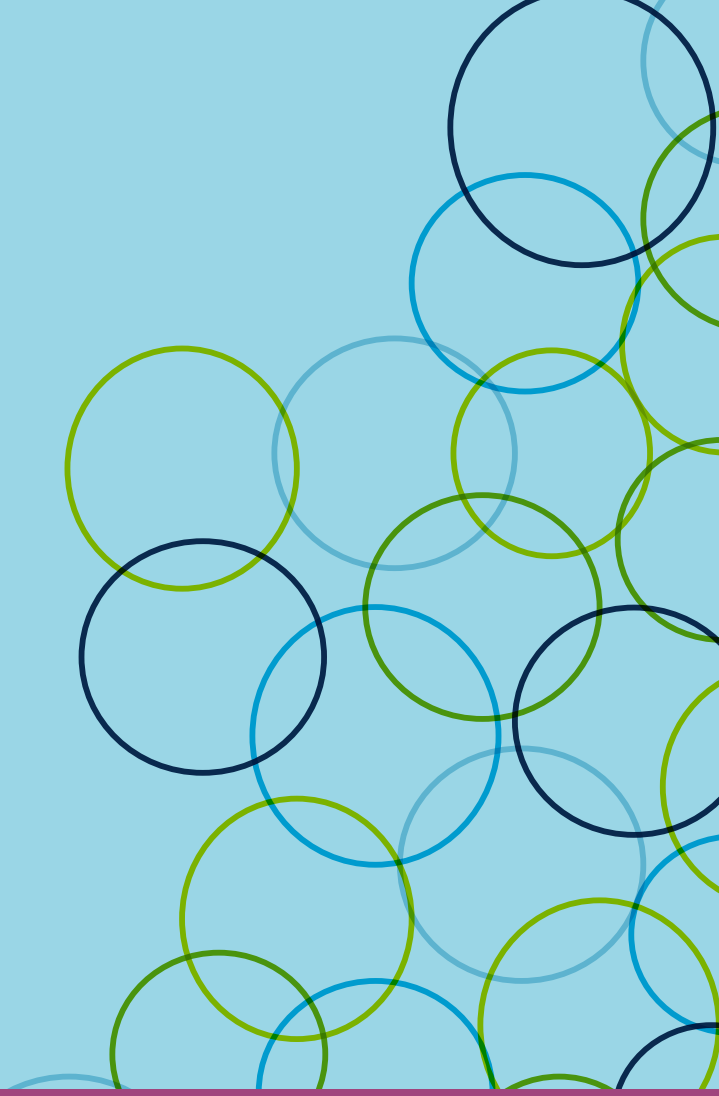
Liam Lacey.

Liam Lacey

Director

Irish Maritime Development Office





ECONOMIC REVIEW

NATIONAL ACCOUNTS

Irish Gross Domestic Product (GDP) rose by 7.8% in 2015 to €203.5bn, the highest rate of growth since 2000 and the highest rate of growth in the EU for the second year running. The strong growth performance in 2015 reflects a recovery which has become increasingly driven by growth in domestic demand, which grew by 9.3% in 2015. Domestic demand growth is reflected in the fact that import growth (+16.4%) outpaced export growth (+13.8%) in 2015 with overall net exports for the year increasing by €250m. Gross National Product (GNP), a measure which factors in repatriated income, increased for the fourth successive year, up 5.7% to reach €171.9bn.

GDP growth was strongest in Q1 and Q4, with the seasonally adjusted figures showing quarter on quarter growth of 2.7% and 2.8% respectively. Growth was slower in the middle of the year with 2.1% in Q2 and 1.5% in Q3. GNP recorded marginally negative growth in Q3 of -0.5%, while Q4 recorded the strongest growth of 3.4%.

Value added for all business sectors recorded growth in 2015. The highest growth was seen in industry with 13.7% followed by building & construction with an 8.8% increase. The distribution, transport, software & communications sector increased by 8.7% while agriculture increased by 6.4%. Public administration & defence recorded an annual decline of 2.6%.

The Central Bank of Ireland predicts that GDP will grow by 4.8% in 2016, while GNP is expected to grow by 4.3%. This forecast reflects a favourable outlook for consumer and investment spending and predicts that domestic demand will continue to be the main driver of growth. The Central Bank forecasts an increasing contribution from net exports to GDP growth in 2016 due to a gradual and sustained increase in external demand, coupled with an easing of domestic demand growth.

TABLE 1A

National Accounts, 2005-2015

Year	Constant Prices €millions (Chain Linked to 2013)			
	GDP	% change	GNP	% change
2005	165,566	6.3%	139,908	6.3%
2006	176,012	6.3%	150,178	7.3%
2007	185,768	5.5%	156,027	3.9%
2008	181,751	-2.2%	153,233	-1.8%
2009	171,503	-5.6%	141,032	-8.0%
2010	172,187	0.4%	144,169	2.2%
2011	176,644	2.6%	142,977	-0.8%
2012	176,910	0.2%	145,318	1.6%
2013	179,448	1.4%	152,042	4.6%
2014	188,777	5.2%	162,537	6.9%
2015	203,524	7.8%	171,866	5.7%

Source: CSO

TABLE 1B

Real GDP Growth in Selected Economies, 2012-2017

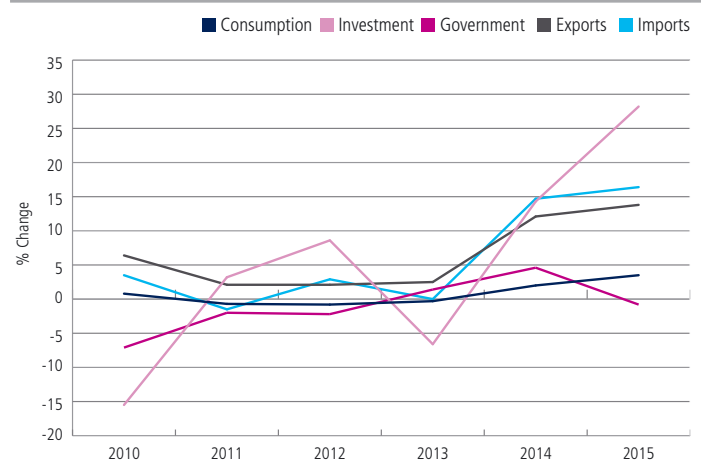
Country	Real GDP % Change (national currency)					
	2012	2013	2014	2015	2016 (f)	2017 (f)
Ireland	0.2	1.4	5.2	7.8*	4.8**	4.4**
Spain	-2.6	-1.7	1.4	3.2	2.8	2.5
United Kingdom	1.2	2.2	2.9	2.3	2.1	2.1
Germany	0.4	0.3	1.6	1.7	1.8	1.8
France	0.2	0.7	0.2	1.1	1.3	1.7
Italy	-2.8	-1.7	-0.4	0.8	1.4	1.3
EU	-0.5	0.2	1.4	1.9	1.9	2
Euro Area	-0.9	-0.3	0.9	1.6	1.7	1.9
USA	2.2	1.5	2.4	2.5	2.7	2.6
China	9.6	8	7.3	6.9	6.5	6.2

Source: European Commission

*CSO, ** Central Bank of Ireland

GRAPH 1A

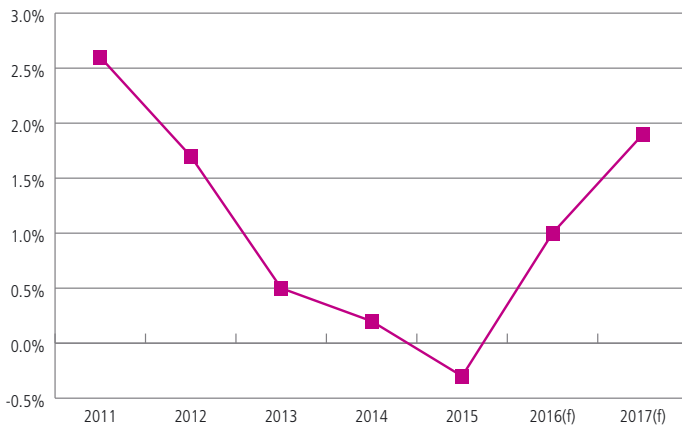
Growth in Components of Irish GDP, 2010-2015



Source: CSO

GRAPH 2A

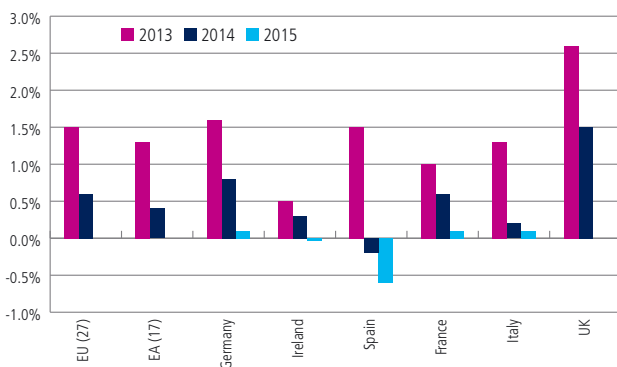
Consumer Price Index, 2011-2017(f)



Source: CSO, Central Bank of Ireland (f)

GRAPH 2B

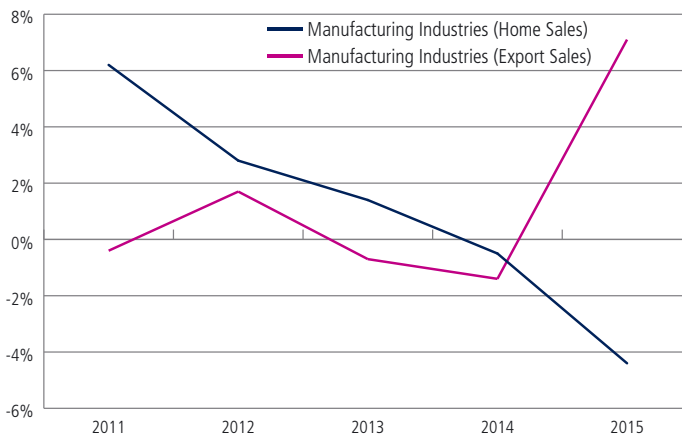
EU Harmonised Index of Consumer Prices, 2013-2015



Source: European Commission, CSO

GRAPH 2C

Wholesale Price Index, 2011-2015



Source: CSO

INFLATION

There was a 0.3% fall in the price level in 2015, as measured by the Consumer Price Index (CPI). This is down from a 0.2% increase in the CPI in 2014 and marks the first instance of deflation since 2010. The Harmonised Index of Consumer Prices (HICP), which allows for cross country comparisons of inflation within the EU and which excludes mortgage interest, showed marginal deflation of -0.03% in 2015, down from an increase of 0.3% in 2014.

The fall in the price level in 2015 was largely due to falls in oil and commodity prices which have resulted in lower goods price inflation with the price of goods decreasing by 3.8%. However, this fall in the price of goods was counterbalanced by a 2.4% increase in the price of services, which is reflective of the strong recovery in domestic demand.

Transport was the commodity group with the largest fall in prices in 2015, falling by 4.8%. Other notable decreases occurred in clothing & footwear (-3.7%), furnishings, household equipment & routine household maintenance (-2.3%) and food & non-alcoholic beverages (-2.1%). Education had the most significant increase in prices in 2015 of 4.7%. Other commodity groups which saw positive inflation were restaurants & hotels (+1.6%), communications (+1.6%) and housing, water, electricity, gas & other fuels (+1.5%).

The price index of goods sold on the home market, as measured by the Wholesale Price Index (WPI), decreased by 4.4% in 2015. The price index for exported goods on the other hand showed an increase of 7.1% in 2015, a marked turnaround from the 1.4% decrease in the previous year.

The Central Bank forecasts a return to positive inflation in 2016 of 1% with growth of 1.9% forecast for 2017. The same growth is forecasted for the HICP driven by the assumption that oil prices will recover modestly after the sharp falls seen since 2014.

INTEREST RATES

In 2015, the ECB maintained the main refinancing operations rate (MRO) at 0.05% following a reduction in the rate in September 2014. The ECB further cut the MRO to 0% in March 2016. The deposit rate, which banks may use to make overnight deposits with a national central bank within the Eurosystem, was reduced further in March 2016 to -0.40% in response to persistent low inflation in the euro area.

In December 2015, the Federal Reserve raised interest rates from 0.25% to 0.5%. This is the first increase in the rate for nine years and was deemed necessary due to considerable improvement in the labour market and a reasonable confidence in a rise in inflation. As the Central Bank of Ireland noted, the decision of the Federal Reserve to raise interest rates represents an important divergence in the monetary policy stance among major advanced economies and can be seen to reflect the different stages in the recovery from the financial crisis.

2015 started with a continuation of the sustained rally in Irish sovereign bonds seen in 2014, with the yield on the 10 year benchmark bond falling to a record low of 0.6% in April 2015. According to the Central Bank, this was the result of the ongoing economic recovery coupled with an increasingly expansionary monetary policy that had generally depressed euro area sovereign bond yields. However, following uncertainty in the markets, emanating from the Greek crisis, yields on 10 year bonds for Ireland reached 1.6% in June, but subsequently trended downwards for the rest of 2015 with December averaging 1.1%. The overall reduction in Irish Government bond yields was aided when Standard & Poor's raised Ireland's long term sovereign credit rating to A+ in June 2015. S&P stated that this upgrade reflected their view of Ireland's improved fiscal performance, higher state asset sales, and robust economic performance.

With regard to funding the sovereign, the National Treasury Management Agency (NTMA) availed of the favourable interest rate environment. In 2015, the NTMA completed early repayment of over €18bn (or 81%) of the original €22.5bn IMF loan facility. This early repayment generated total interest savings in excess of €1.5bn. Furthermore, the NTMA issued its first ever 30 year bond raising €5bn in the first quarter of 2015.

TABLE 3A

Interest Rates, 2011-2015

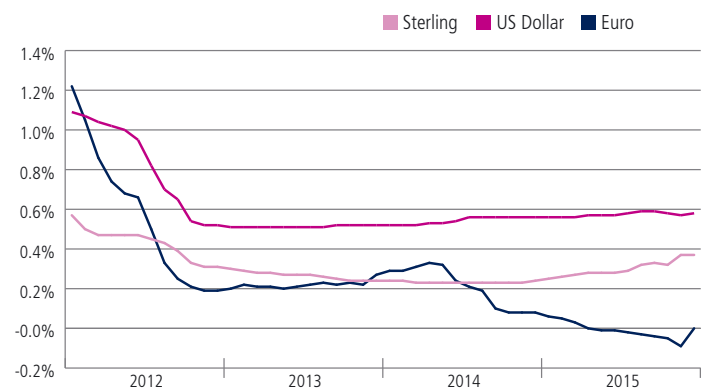
	2011	2012	2013	2014	2015
US (Fed Funds)	0.25	0.25	0.25	0.25	0.5
Euro (Refi Rate)	1.00	0.75	0.25	0.05	0.05
UK (Bank Rate)	0.5	0.5	0.5	0.5	0.5

Source: Global-rates.com

Note – interest rate shown is the rate in effect at the end of the year in question

GRAPH 3A

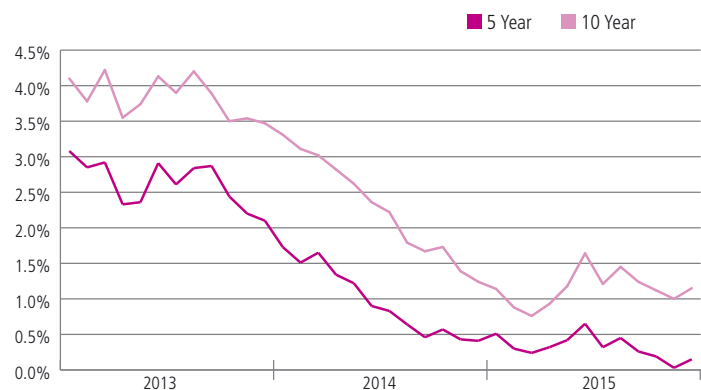
International 3-Month Interest Rates, 2012-2015



Source: Eurostat

GRAPH 3B

Irish Bond Yields, 2013-2015



Source: Investing.com

TABLE 4A

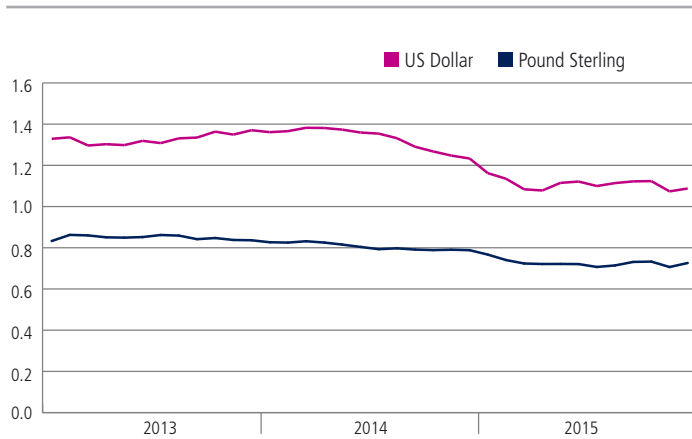
Selected Exchange Rates: Annual Averages (Units per Euro)

Year	Annual Averages				
	USD	GBP	CNY	CHF	JPY
2006	1.256	0.682	10.009	1.573	146.02
2007	1.370	0.684	10.418	1.643	161.25
2008	1.471	0.796	10.224	1.587	152.46
2009	1.395	0.891	9.528	1.510	130.34
2010	1.326	0.858	8.971	1.380	116.24
2011	1.392	0.868	8.996	1.233	110.959
2012	1.285	0.811	8.105	1.205	102.492
2013	1.328	0.849	8.165	1.231	129.660
2014	1.329	0.806	8.186	1.215	140.310
2015	1.110	0.726	6.973	1.068	134.310

Source: Central Bank of Ireland

GRAPH 4A

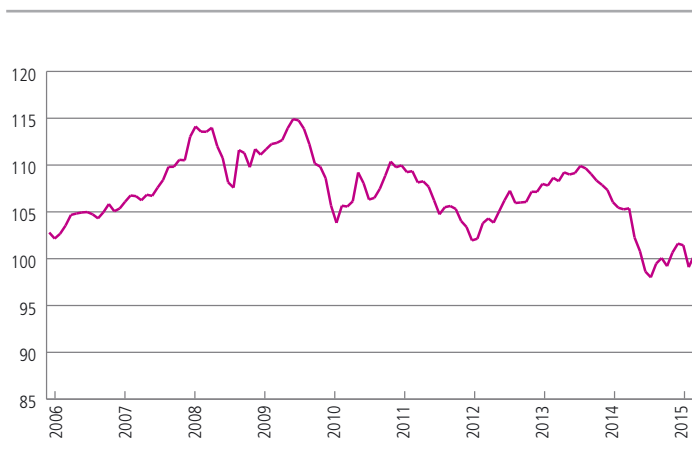
Euro Exchange Rates, 2013-2015



Source: Central Bank of Ireland

GRAPH 4B

Nominal HICP (2006-2015)



Source: Central Bank of Ireland

EXCHANGE RATES

Average annual exchange rates for the euro depreciated against all major currencies in 2015 as shown in table 4A. After remaining stable in 2014, the average annual exchange rate against the US dollar depreciated by 16% in 2015, while the euro continued its fall against sterling, depreciating by 10%. The euro reached lows against the dollar of \$1.074 for the month of November 2015, a level not seen since January 2003. The euro reached lows against sterling in November 2015 of £0.707, a level not seen since October 2007. The further depreciation of the euro in 2015 was largely the result of the ECB's expansionary monetary policy, as quantitative easing got under way in March 2015 and continued throughout the year. Current uncertainty with regard to the UK's ongoing relationship with Europe has driven a substantial appreciation of the euro against sterling since November 2015 with rates reaching £0.789 in February 2016.

The ESRI notes that the depreciation of the euro, as well as lower unit labour costs, improved Ireland's international competitiveness. These factors coupled with robust growth in Ireland's main trading partners are central to the country's strong export performance. Improvements in competitiveness are also suggested by the latest Harmonised Competitiveness Indicators (HCI). HCIs are trade weighted exchange figures which provide meaningful and comparable measures of euro area countries' price and cost competitiveness. Data for 2015 shows that the nominal HCI for Ireland fell by an average of 7% and when deflated by consumer and producer prices fell by 7.6% and 8.3%, respectively. This is a marked improvement on 2014 which saw a marginal increase (relating to a dis-improvement in competitiveness) in the nominal HCI.

The Central Bank forecast the average annual exchange rate to fall to \$1.08 and £0.72 in 2016 against the dollar and sterling respectively.

OIL AND BUNKER PRICES

The price of Brent crude oil fell by 46% in 2015 with an overall fall of 68% since prices began a steep decline in July 2014. In January 2016, the price of Brent crude oil fell to below \$30/bbl, the lowest level since 2003. The falling oil price was largely driven by oversupply in the market as OPEC producers continued their strategy to maintain market share by increasing production. This factor was compounded by a slowdown in China and other emerging market economies.

Falling oil prices had a knock on effect in the bunker markets with large reductions in the price of fuel. The Intermediate Fuel Oil (IFO) benchmark 380 cst Rotterdam fell to an average of \$264/tonne in 2015, down 50.4% from the 2014 average. Similar reductions are also evident in Los Angeles and Singapore, with falls from 2014 of 49.3% and 47.9% respectively.

Marine Gas Oil (MGO) which complies with the Sulphur Emission Control Area (SECA) 0.01% emissions criteria is set to become more significant for the Irish short sea market in the coming years. In 2015, the benchmark MGO Rotterdam declined by 41% on average to \$480/tonne. A steady decline in price was seen throughout the year with prices lowest in December averaging \$320/tonne for the month. Prices fell again in January 2016 averaging \$272/tonne for the month, the lowest monthly average price since January 2003.

The US Energy Information Administration (EIA) forecasts Brent crude oil prices to average \$38/bbl in 2016 and \$50/bbl in 2017. However, the EIA notes that the current value of futures and options contracts suggests continued high uncertainty in the price outlook. As bunker prices generally track those of crude oil (a correlation of 99% in 2015) a forecast of an average Brent Crude oil price of \$38/bbl in 2016, representing a 28% decline on the 2015 average, would indicate an equivalent expected fall in bunker prices. However, it is worth noting that factors such as refining priorities, capacity constraints and price hedging can create pricing distortions.

TABLE 5A

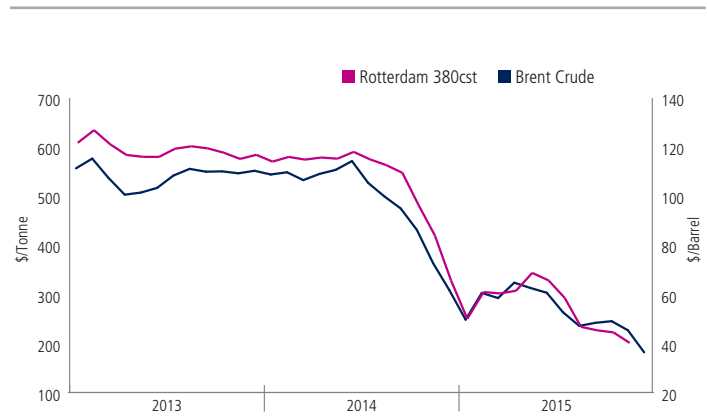
Bunker Prices, 2006-2015

Year	IFO 380cst \$/Tonne		
	Rotterdam	L.A.	Singapore
2006	293.04	320.96	313.18
2007	345.06	381.66	372.82
2008	471.91	524.54	505.62
2009	353.81	375.12	371.87
2010	450.23	468.83	464.14
2011	617.94	655.87	646.94
2012	639.64	681.37	664.06
2013	594.80	631.43	615.93
2014	532.14	568.31	559.68
2015	264.15	288.00	291.60

Source: Clarksons

GRAPH 5A

Bunker & Oil Prices, 2013-2015



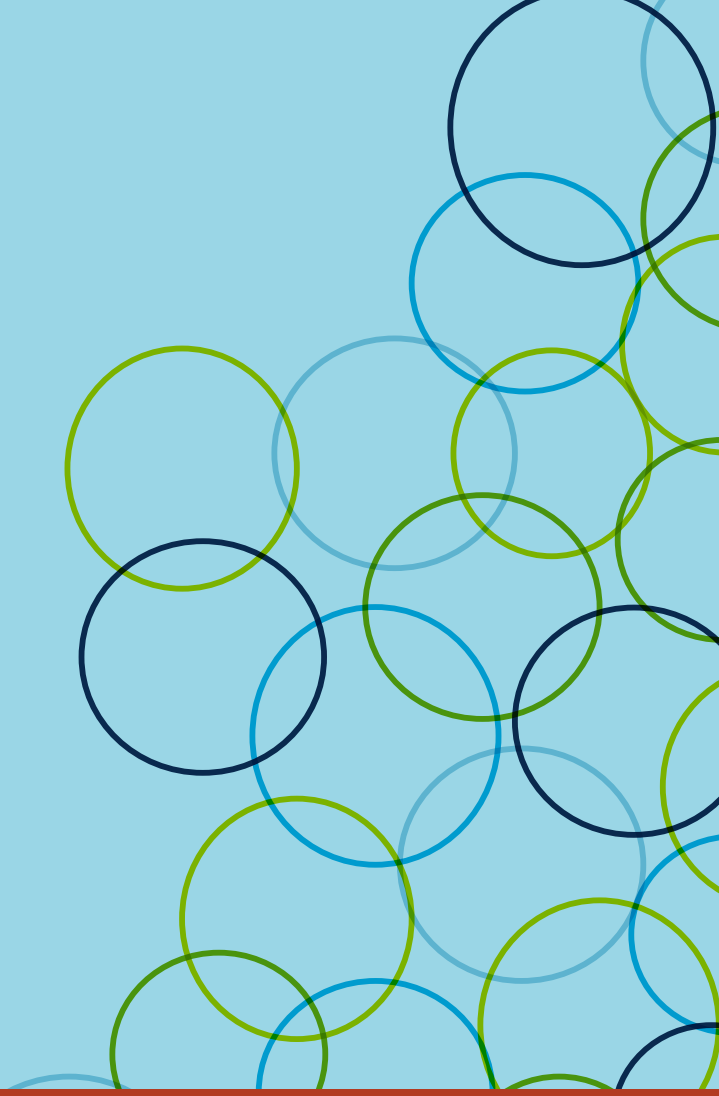
Source: Clarksons

TABLE 5B

Oil Prices, 2005-2015

Annual	Average \$USD per Barrel		
	Brent	OPEC	WTI
2005	54.57	50.64	56.70
2006	65.16	61.08	66.25
2007	72.44	69.08	72.41
2008	96.94	94.45	99.75
2009	61.74	61.06	62.09
2010	79.61	77.45	79.61
2011	111.26	107.46	95.11
2012	111.57	109.45	94.15
2013	108.56	105.87	98.05
2014	98.34	96.29	92.99
2015	52.98	49.49	51.58

Source: Clarksons, OPEC, EIA



TRADE REVIEW (ALL MODES)

EXTERNAL MERCHANDISE TRADE: VALUE

Ireland's merchandise trade performance in value terms improved significantly in 2015 due to a strong increase in exports over imports. 2015 saw the merchandise trade surplus increase by 39% to €44bn. On a monthly basis, October saw the largest trade surplus reaching a total of €4.3bn, while January saw the smallest at €2.4bn.

Exports in merchandise trade increased by 20% in 2015 to €111bn. The Central Bank of Ireland reported in its quarterly economic bulletin that this is largely due to a weaker euro, lower oil prices and favourable demand conditions. The biggest drivers of growth in merchandise exports in 2015 were chemical & pharmaceutical products increasing by 24% to €64bn and machinery & transport equipment increasing by 28% to €15.5bn. Chemical & pharmaceutical products accounted for 58% of merchandise exports, up 2% in terms of share. All commodity groups saw positive growth, with the exception of crude materials (-1%), mineral fuels (-6%) and animal fats (-8%).

Imports in merchandise trade increased by 10% in 2015 to €67bn. This has been the second year in a row where imports achieved double digit growth. The growth in imports is reflective of the significant increase in domestic demand of 9.3% in 2015. The biggest drivers of growth in merchandise imports in 2015 were machinery & transport equipment, increasing by 12% to €25bn and chemical & pharmaceutical products increasing by 22% to €14bn. Mineral fuels, lubricants & related products declined sharply by 21% to €5.1bn.

The Central Bank forecasts the value of Irish exports to increase by 6.5% in 2016 and 4.9% in 2017. The Central Bank also estimates that the value of imports will grow by 6.9% in 2016 and 4.4% in 2017. In terms of global growth figures for the year, the IMF forecasts that growth will be 3.4% in 2016 and 3.6% in 2017, primarily based on a gradual improvement in growth rates in underperforming economies.

TABLE 6A

External Merchandise Trade Growth (Value): 2006-2015

Year	Exports €m	Imports €m	Trade Surplus €m	Export Change %	Import Change %	Trade Surplus Change %
2006	86,246	63,329	22,917	1%	9%	-17%
2007	89,363	65,286	24,077	4%	3%	5%
2008	87,604	58,716	28,888	-2%	-10%	20%
2009	86,786	47,698	39,088	-1%	-19%	35%
2010	89,963	48,093	41,870	4%	1%	7%
2011	93,164	52,936	40,228	4%	10%	-4%
2012	93,507	55,057	38,450	0.4%	4%	-4%
2013	89,182	54,772	34,410	-5%	-1%	-11%
2014	92,616	60,865	31,750	4%	11%	-8%
2015	111,038	67,023	44,015	20%	10%	39%

Source: CSO

TABLE 6B

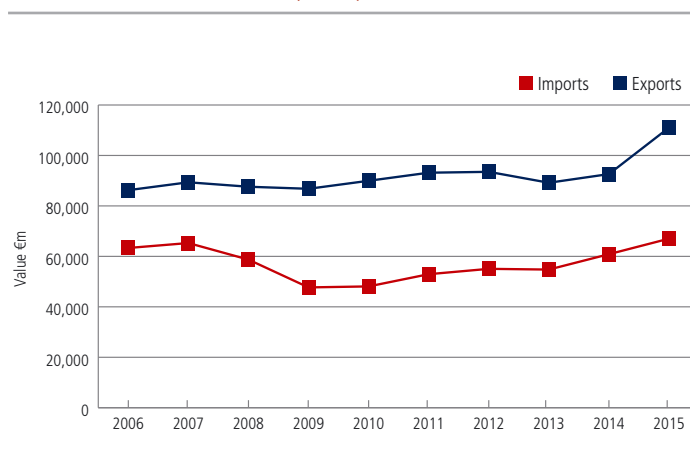
External Merchandise Trade by Commodity Group (Value): 2014-2015

Commodity	Exports			Imports		
	€m	% Change 2014	% Share 2015	€m	% Change 2014	% Share 2015
Food & live animals	9,853	5%	9%	6,659	8%	10%
Beverages & tobacco	1,289	12%	1%	878	5%	1%
Crude materials	1,776	-1%	2%	852	17%	1%
Mineral fuels & lubricants	795	-6%	1%	5,127	-21%	8%
Animal & vegetable oils	57	-8%	0.1%	241	11%	0.4%
Chemicals & pharmaceuticals	64,157	24%	58%	13,925	22%	21%
Manufactured goods	2,091	12%	2%	4,708	11%	7%
Machinery & transport equipment	15,489	28%	14%	24,938	12%	37%
Miscellaneous manufactured articles	14,254	13%	13%	8,163	18%	12%
Other commodities	1,277	2%	1%	1,532	-2%	2%
Total	111,038	20%	100%	67,023	10%	100%

Source: CSO

GRAPH 6A

External Merchandise Trade (Value): 2006-2015



Source: CSO

TABLE 7A

External Merchandise Trade Growth (Volume): 2006-2015

Year	Exports -Tonnes (000s)	Imports -Tonnes (000s)	Trade Balance -Tonnes (000s)	Export Change %	Import Change %	Trade Balance Change %
2006	13,898	38,114	-24,216	2%	3%	4%
2007	13,918	41,474	-27,556	0.1%	9%	14%
2008	14,000	38,196	-24,195	1%	-8%	-12%
2009	12,369	32,814	-20,444	-12%	-14%	-16%
2010	13,885	35,150	-21,264	12%	7%	4%
2011	15,017	34,165	-19,148	8%	-3%	-10%
2012	15,728	34,007	-18,278	5%	-0.5%	-5%
2013	15,672	36,602	-20,930	-0.4%	8%	15%
2014	16,714	36,385	-19,671	7%	-1%	-6%
2015	18,548	38,994	-20,447	11%	7%	4%

Source: CSO

TABLE 7B

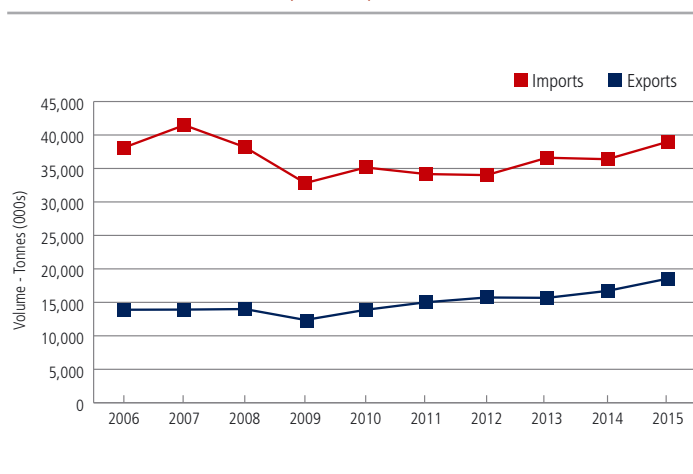
External Merchandise Trade by Commodity Group (Volume): 2014-2015

Commodity	Exports			Imports		
	Tonnes (000s)	% Change 2014	% Share 2015	Tonnes (000s)	% Change 2014	% Share 2015
Food & live animals	3,808	8%	21%	7,288	1%	19%
Beverages & tobacco	787	7%	4%	886	17%	2%
Crude materials	5,069	8%	27%	6,989	3%	18%
Mineral fuels & lubricants	2,782	23%	15%	15,316	11%	39%
Animal & vegetable oils	105	8%	1%	282	23%	1%
Chemicals & pharmaceuticals	1,087	10%	6%	3,476	1%	9%
Manufactured goods	3,473	13%	19%	2,933	14%	8%
Machinery & transport equipment	381	-2%	2%	992	14%	3%
Miscellaneous manufactured articles	329	2%	2%	811	16%	2%
Other commodities	727	18%	4%	21	37%	0%
Total	18,548	11%	100%	38,994	7%	100%

Source: CSO

GRAPH 7A

External Merchandise Trade (Volume): 2006-2015



Source: CSO

EXTERNAL MERCHANDISE TRADE:
VOLUME

Ireland's total merchandise trade in volume terms increased by 8% in 2015 reaching 57.5m tonnes. Ireland imports more tonnage than it exports and 2015 saw a 20.4m tonnes imbalance, an increase of 4% from 2014. On a monthly basis, December had the largest difference between imports and exports in volume terms at 2m tonnes, while June saw the smallest gap between imports and exports at 1.2m tonnes.

Merchandise exports in volume terms increased by 11% in 2015 to 18.5m tonnes. The three commodity groups with the largest amount of tonnage exported in 2015 were: crude materials with 5.1m tonnes (up 8%), food & live animals with 3.8m tonnes (up 8%) and manufactured goods with 3.5m tonnes (up 13%). The only commodity group that saw a decline in 2015 was machinery & transport equipment, which was down 2% to 0.4m tonnes.

Merchandise imports in volume terms increased by 7% in 2015 to 39m tonnes. This follows a contraction of -1% in 2014. The largest commodity groups in tonnage terms were: mineral fuels, lubricants & related products with 15.3m tonnes (up 11%), food & live animals with 7.3m tonnes (up 1%), and crude materials with 7m tonnes (up 3%). All commodity groups saw growth in tonnage imported in 2015.

There is a disparity between the value and volume of commodities traded. With regard to exports, chemical & pharmaceuticals was the most valuable commodity group in 2015, worth €64bn or 58% of the value of total exports, however, in volume terms it is 1.1m tonnes or 6% of total tonnage exported. Crude materials on the other hand is the commodity group with the most tonnage exported with 5.1m tonnes or 27% of total tonnage exported, while in value terms its exports are €1.8bn or 2% of total exports.

With regard to imports, machinery & transport equipment was the most valuable commodity group imported in value terms worth €25bn or 37% of total imports, while it accounts for 1m tonnes imported or 3% of total tonnage imported. Mineral fuels is the commodity group with the most tonnage imported at 15.3m tonnes or 39% of the total, while in terms of value it is worth €5bn accounting for 8% of imports.

EXTERNAL MERCHANDISE TRADE: COUNTRY

The United States was Ireland's largest trading partner of merchandise goods in value terms in 2015, with €36bn worth of trade or 20% of total trade. Great Britain was Ireland's second largest trading partner with €29.7bn worth of trade or 17% of total trade. The United States was the largest export destination in 2015 with €26.2bn of exports or 23.6% of total exports while Great Britain was the largest source market for imports valued at €16.2bn or 24.2% of total imports.

Total trade, in value terms, with countries within the EU was €98bn in 2015, or 55% of total trade. Exports to countries in the EU increased by 16% in 2015 to €58.6bn, however, its share of total exports fell by 1% due to an increase in Irish exports to the United States. Imports from countries within the EU, increased by 9% in 2015 to €39.5bn, however, its market share fell from 60% in 2014 to 59% in 2015 due to an 11% and 27% increase in purchases from China and the United States respectively.

Ireland's largest trading partner in terms of volume in 2015 was Great Britain with 20.2m tonnes or 36% of all tonnage traded. Northern Ireland was the second largest trading partner in volume terms with 6.1m tonnes, or 11% of all tonnage traded. Great Britain was the largest export destination in terms of volume in 2015 with 6.6m tonnes or 35.6% of total tonnage exported. Great Britain was also the largest source market for imports with 13.6m tonnes or 35% of total tonnage imported.

Total trade in volume terms with countries within the EU was 38.3m tonnes, or 67% of total tonnage traded. Tonnage exported to countries within the EU was 14.8m tonnes in 2015, 80% of all tonnage exported. Tonnage imported from countries within the EU was 23.6m tonnes in 2015, or 60% of all tonnage imported.

TABLE 8A
External Merchandise Trade by Country (Value): 2014-2015

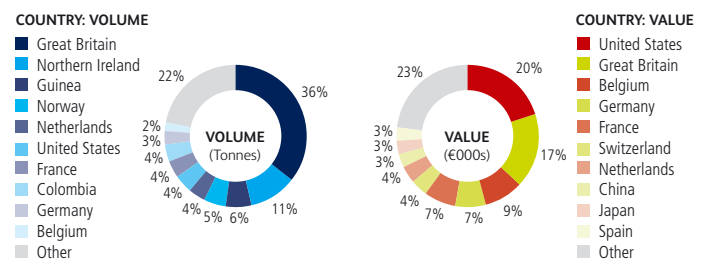
Country	Exports €m	% Change	Country	Imports €m	% Change
United States	26,233	26%	Great Britain	16,219	2%
Belgium	14,563	23%	United States	9,789	11%
Great Britain	13,464	14%	France	7,035	9%
Germany	7,388	22%	Germany	5,732	27%
Switzerland	6,095	16%	China	4,251	27%
Netherlands	4,857	17%	Netherlands	2,562	-1%
France	4,784	-3%	Japan	1,813	3%
Japan	3,888	120%	Switzerland	1,352	8%
Spain	3,740	35%	Belgium	1,255	13%
Italy	2,532	21%	Norway	1,205	29%
China	1,655	8%	Italy	1,125	26%
Northern Ireland	1,603	9%	Northern Ireland	1,004	-1%
Mexico	1,394	15%	Spain	933	10%
Poland	1,184	24%	Thailand	570	41%
Saudi Arabia	999	33%	South Korea	558	16%
All Other	16,659	9%	All Other	11,617	31%
Total EU	58,563	16%	Total EU	39,454	9%
Eurozone	39,651	19%	Eurozone	20,011	15%
Total	111,038	20%	Total	67,023	10%

Source: CSO

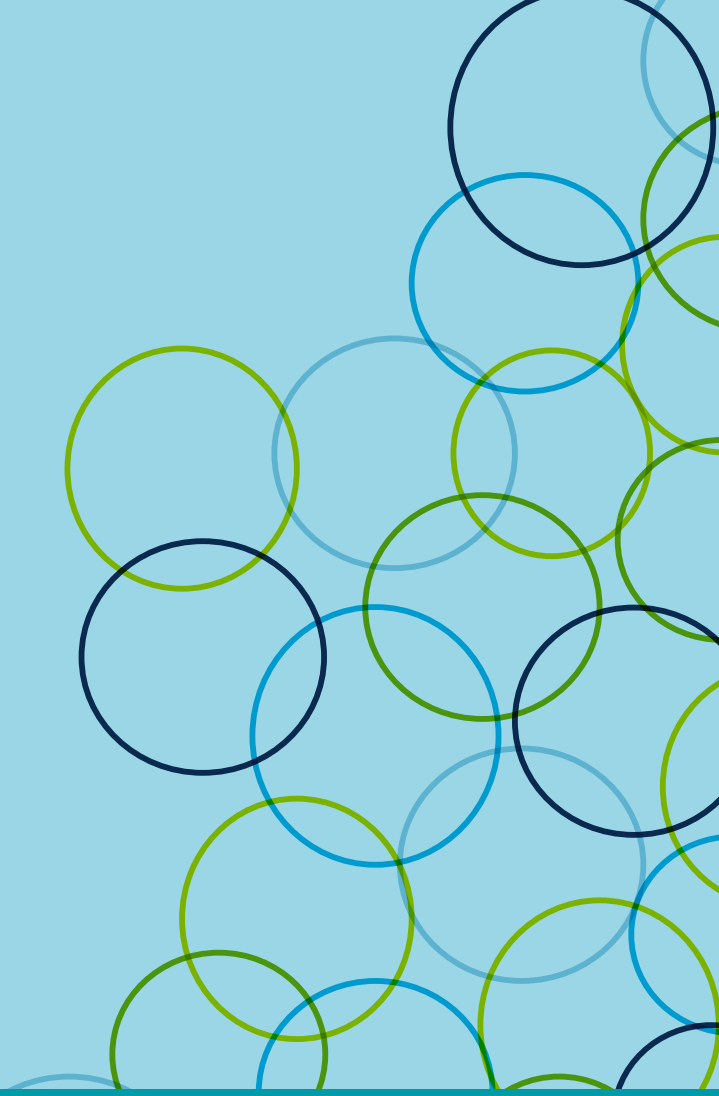
TABLE 8B
External Merchandise Trade by Country (Volume): 2014-2015

Country	Exports - Tonnes (000s)	% Change	Country	Imports - Tonnes (000s)	% Change
Great Britain	6,613	15%	Great Britain	13,603	4%
Northern Ireland	3,216	34%	Guinea	3,155	4%
Netherlands	1,251	5%	Northern Ireland	2,843	2%
France	1,155	24%	Norway	2,609	96%
United States	878	11%	Colombia	2,192	74%
Belgium	628	-1%	United States	1,469	-3%
China	457	12%	Germany	1,254	7%
Germany	409	9%	Brazil	1,213	-14%
Sweden	331	9%	France	1,177	27%
Spain	301	0.1%	Netherlands	1,171	1%
Italy	221	-6%	Spain	762	14%
Norway	213	-34%	Belgium	683	6%
Iceland	211	50%	Argentina	558	-17%
Finland	210	3%	China	518	20%
Russia	175	-63%	Russia	499	-35%
All Other	2,279	0.4%	All Other	5,288	-4%
Total EU	14,755	15%	Total EU	23,589	5%
Eurozone	4,337	6%	Eurozone	6,069	10%
Total	18,548	11%	Total	38,994	7%

Source: CSO

GRAPH 8A
Market Share of Countries by Value & Volume: 2015


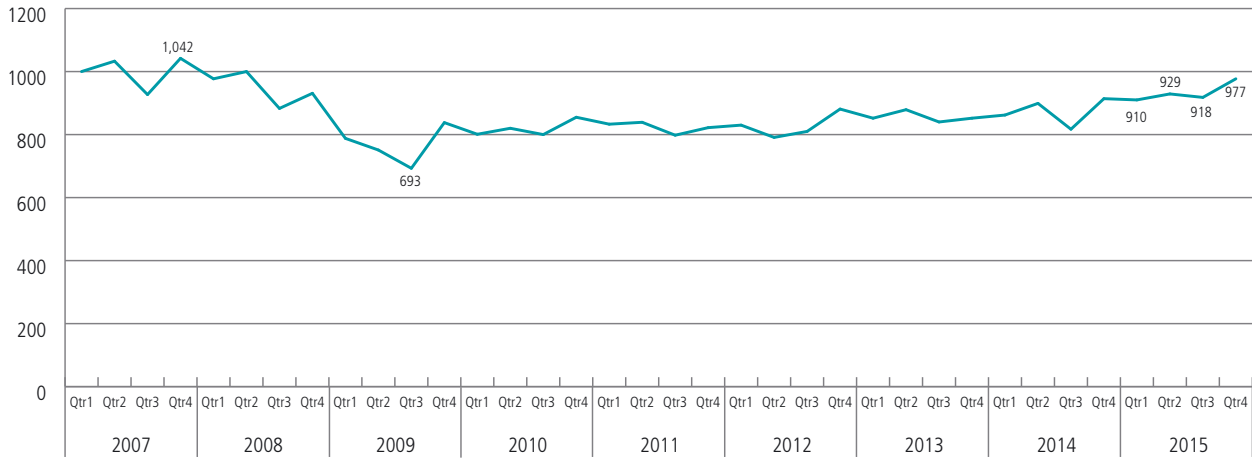
Source: CSO



iSHIP INDEX

SHIPPING INDEX

iShip Index: 2007-2015



Source: IMDO

iSHIP INDEX

The *iShip Index* is a quarterly weighted indicator that gauges the health of the Irish shipping industry. The index is comprised of five separate indices, representing the main maritime traffic categories moving through ports in the Republic of Ireland: LoLo, RoRo, Dry Bulk, Liquid Bulk and Break Bulk. As all three bulk segments are traditionally measured in tonnes, LoLo and RoRo traffic are converted into tonnage terms, whereby 1 TEU = 10 tonnes and 1 Freight Unit = 14 tonnes. The base period is Q1 2007 at which point, all indices are set to 1000.

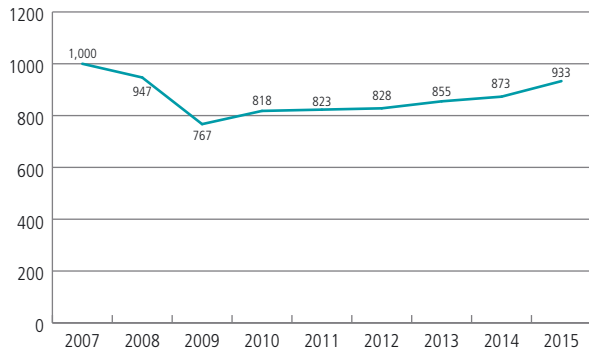
The *iShip Index* indicates a 7% increase in overall shipping volumes in 2015. All five traffic categories registered positive growth in 2015.

2015 saw strong growth in the LoLo and RoRo categories with both indices increasing by 6%. RoRo traffic is a reliable indicator of the trade between Ireland and Great Britain and therefore positive growth in this category reflects strengthening trade between the two economies. The LoLo sector was aided by the continued growth of Irish exports with merchandise exports increasing by 20%, as reported by the CSO.

Focusing on the last quarter of 2015, the *iShip* index figure stands at 977. Although this is still 7% lower than the peak recorded in Q4 2007 of 1,042, it is a substantial turnaround from the low of 693 seen in Q3 2009, and is the highest level recorded on the index since Q2 2008.

GRAPH A

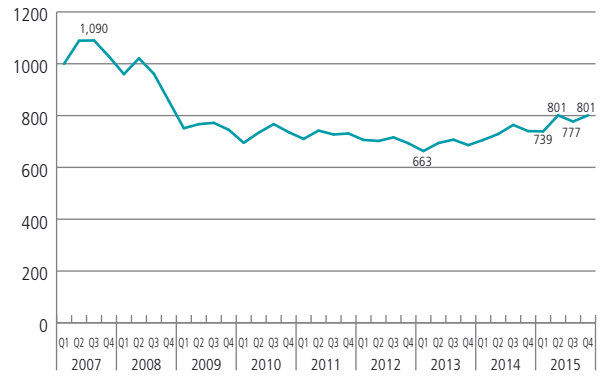
Annual iShip Index



Source: IMDO

GRAPH B

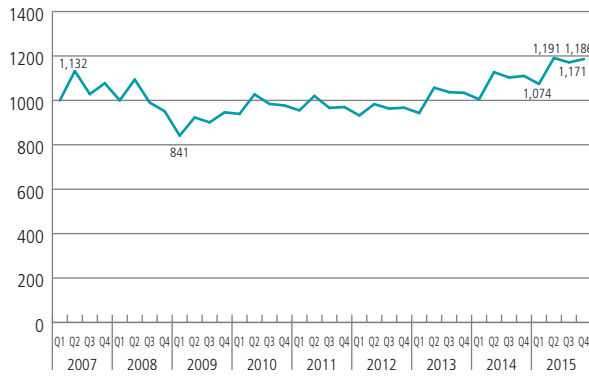
LoLo Index



Source: IMDO

GRAPH C

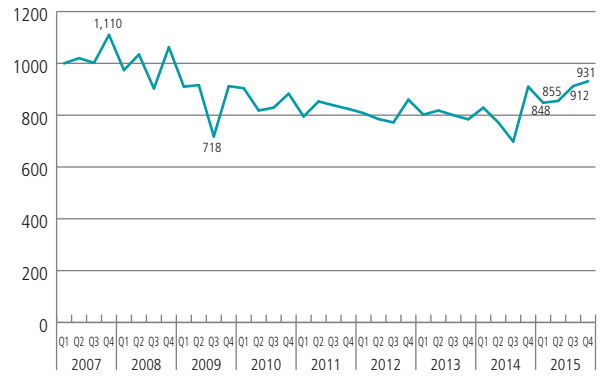
RoRo Index



Source: IMDO

GRAPH D

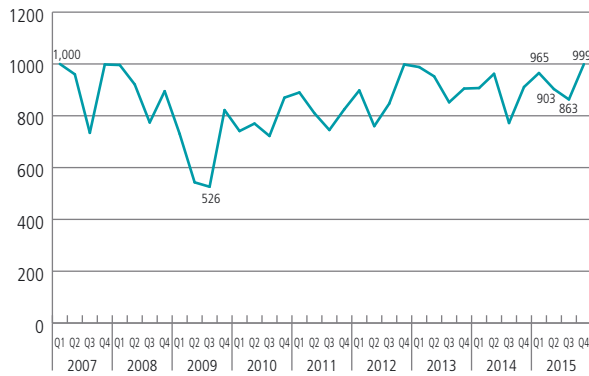
Liquid Bulk Index



Source: IMDO

GRAPH E

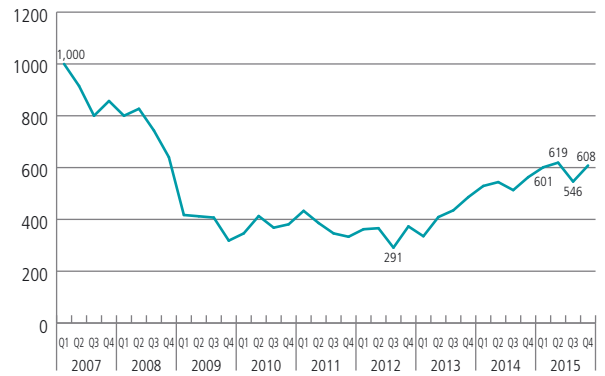
Dry Bulk Index



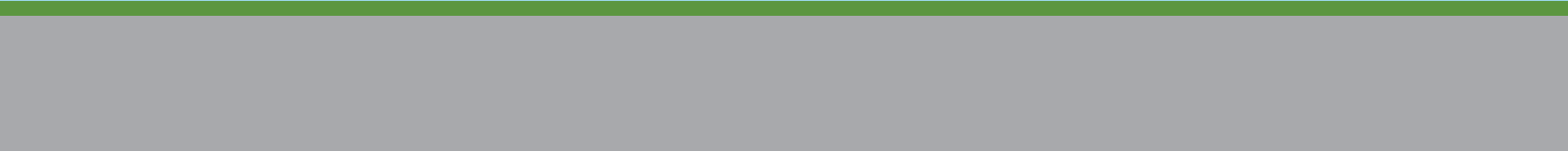
Source: IMDO

GRAPH F

Break Bulk Index



Source: IMDO





IRISH MARKET REVIEW

IRISH PORT TRAFFIC: TOTAL BULK VOLUMES

Total bulk volumes through ports in the Republic of Ireland increased by 7% to 29.8m tonnes in 2015. The dry and liquid bulk markets recorded increases of 5% and 9% respectively, while break bulk saw an increase of 10% to 1.5m tonnes.

The dry bulk market continues to be the largest bulk segment at 53%, compared to 42% for liquid bulk and 5% for break bulk. The majority of bulk volumes in the Republic of Ireland are handled by Cork, Shannon Foynes and Dublin. These three ports comprise 82% of total bulk volume – Shannon Foynes 37%, Cork 26% and Dublin 19%.

Increases in the import of coal and petroleum products had the largest impact on total bulk volume in 2015. Petroleum products as a share of total bulk increased from the previous year, while the share of total bulk made up of fertilizer fell slightly. The performance of the individual categories, each of which has different demand drivers, is assessed in more detail in the following sections.

TABLE 9A

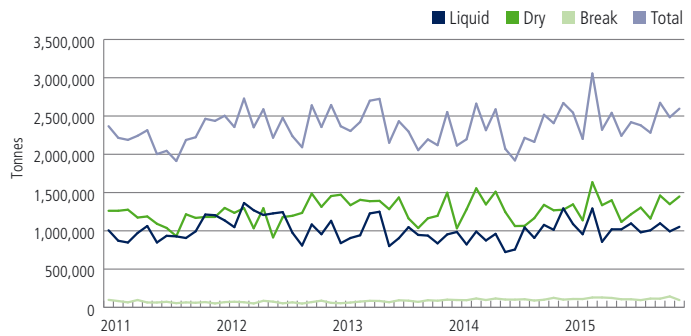
Irish Port Traffic: Total Bulk (Tonnes)

Port	Total		
	2014	2015	% Change
Bantry Bay	1,310,973	1,164,674	-11%
Cork	6,832,886	7,642,919	12%
Drogheda	1,220,380	1,226,283	0.04%
Dublin	5,552,492	5,686,624	2%
Dundalk	76,744	79,381	3%
Galway	562,804	562,548	<-0.01%
Greenore	504,880	619,497	23%
New Ross	332,017	286,286	-14%
Shannon Foynes	10,226,790	11,113,084	9%
Waterford	1,115,973	1,228,834	10%
Wicklow	97,974	134,470	37%
Youghal	95,680	94,371	-1%
Total ROI	27,929,593	29,838,971	7%

Source: IMDO

GRAPH 9A

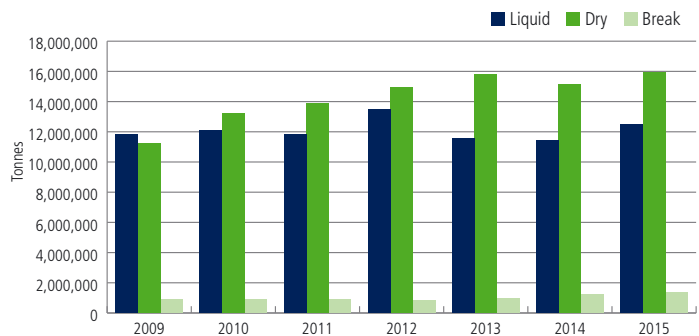
Total Bulk Tonnage through ROI Ports (Monthly)



Source: IMDO

GRAPH 9B

Bulk Traffic by Category 2009-2015



Source: IMDO

TABLE 10A

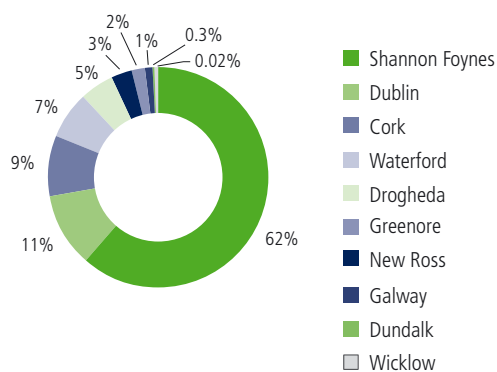
Irish Port Traffic: Dry Bulk (Tonnes)

Port	Dry		
	2014	2015	% Change
Cork	1,499,511	1,442,307	-4%
Drogheda	883,599	835,547	-5%
Dublin	1,885,105	1,779,931	-6%
Dundalk	24,845	47,016	89%
Galway	141,808	137,499	-3%
Greenore	334,125	424,949	27%
New Ross	320,318	286,286	-11%
Shannon Foynes	9,013,419	9,855,392	9%
Waterford	998,940	1,098,669	10%
Wicklow	44,199	2,997	-93%
Total ROI	15,145,869	15,910,592	5%

Source: IMDO

GRAPH 10A

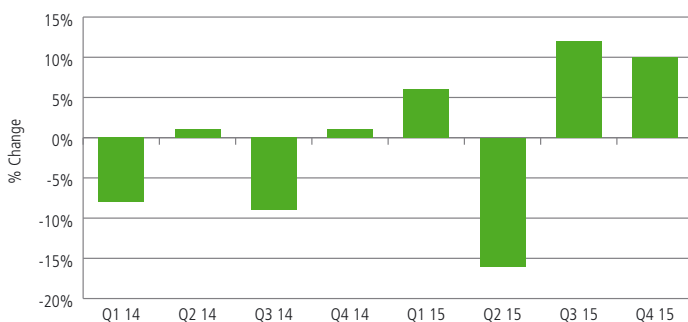
Market Share of Dry Bulk Traffic 2015



Source: IMDO

GRAPH 10B

% Change in Dry Bulk through ROI Ports



Source: IMDO

DRY BULK

Dry bulk volume through ports in the Republic of Ireland increased by 5% to 15.9m tonnes in 2015. This represents a return to growth following a decrease of 4% in 2014. This is the highest level of volume since 2006, where volume stood at 16.1m tonnes.

The main commodities in this category are: coal, cement, fertilizer, animal feed, bauxite and alumina. Increases in cement (+27%), coal (+24%) and animal feed (+10%) were the main drivers of growth in this sector. Cement recorded a significant increase in volume following steady growth of 1% in 2014, while imports of coal recovered after a decrease in volume of 18% in 2014. Teagasc attributed the increase in animal feed to an expansion of dairy production following the lifting of milk quotas and subsequent increase in milk yields in 2015. Bauxite and alumina make up the largest share of dry bulk activity representing 41% of total volume; demand for these commodities was steady in 2015, rising by 2%.

Volume was highest at the start and end of the year with demand falling off in the summer months, as is usual for the dry bulk sector. Q3 and Q4 recorded strong year on year growth of 12% and 10% respectively.

Volumes in Shannon Foynes increased by 9% to 9.9m tonnes in 2015 while Waterford recorded a 10% increase to 1.1m tonnes. This was in contrast with a decrease in volume through six of the other eight dry bulk ports. Shannon Foynes accounted for 62% of the market share in 2015.

LIQUID BULK

Liquid bulk volumes through Irish ports increased by 9% to 12.5m tonnes in 2015. This is the highest volume of liquid bulk to pass through Irish ports since 2012. When transshipment activity and crude oil storage are excluded from the overall figure, liquid bulk volumes increased by 11%, and have now recorded positive growth for five consecutive quarters.

The Port of Cork increased its liquid bulk volume by 18% in 2015, while Dublin Port reported 6% growth. Both Bantry Bay and Waterford reported declines of 11% and 13% respectively. The main commodities in this category include fuel oils, bitumen, heavy fuel oil and molasses. Petroleum based products increased by 9% this year while Bitumen saw an increase of 10%.

When transshipments are excluded, Q3 recorded the highest level of growth from 2.2m to 2.8m tonnes, an increase of 31%. However this was due to an anomaly in the market, namely the temporary closure of the Whitegate refinery in 2014.

In the Republic of Ireland, Cork maintained the largest share of the market in 2015 with 48% (up 5%), while Dublin and Bantry Bay saw declines in their share to 31% (down 1%) and 9% (down 3%) respectively. Shannon Foynes maintained its market share at 9%. These four ports handle 97% of liquid bulk volumes in the Republic of Ireland.

TABLE 11A

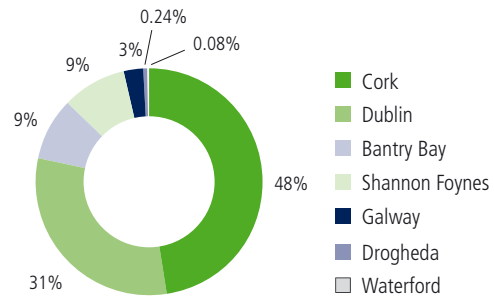
Irish Port Traffic: Liquid Bulk (Tonnes)

Port	Liquid		
	2014	2015	% Change
Bantry Bay	1,310,973	1,164,674	-11%
Cork	5,036,929	5,945,149	18%
Drogheda	27,898	29,977	7%
Dublin	3,624,318	3,856,899	6%
Galway	405,206	400,652	-1%
Shannon Foynes	1,017,925	1,054,589	4%
Waterford	11,893	10,395	-13%
Total ROI	11,435,142	12,462,335	9%

Source: IMDO

GRAPH 11A

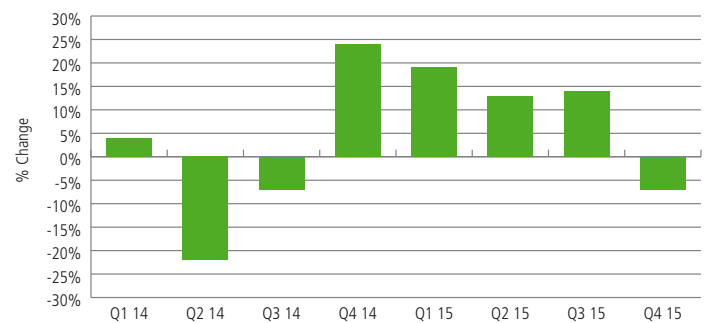
Market Share of Liquid Bulk Traffic 2015



Source: IMDO

GRAPH 11B

% Change in Liquid Bulk through ROI Ports



Source: IMDO

TABLE 12A

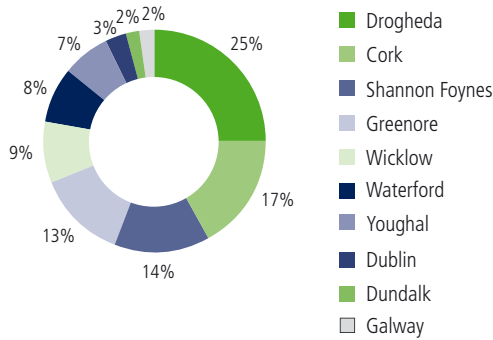
Irish Port Traffic: Break Bulk (Tonnes)

Port	Break		
	2014	2015	% Change
Cork	296,446	255,464	-14%
Drogheda	308,883	360,759	17%
Dublin	43,069	49,794	16%
Dundalk	51,898	32,364	-38%
Galway	15,790	24,397	55%
Greenore	170,756	194,549	14%
Shannon Foynes	195,447	203,103	4%
Waterford	105,140	119,770	14%
Wicklow	53,775	131,473	144%
Youghal	95,680	94,371	-1%
Total ROI	1,336,885	1,466,044	10%

Source: IMDO

GRAPH 12A

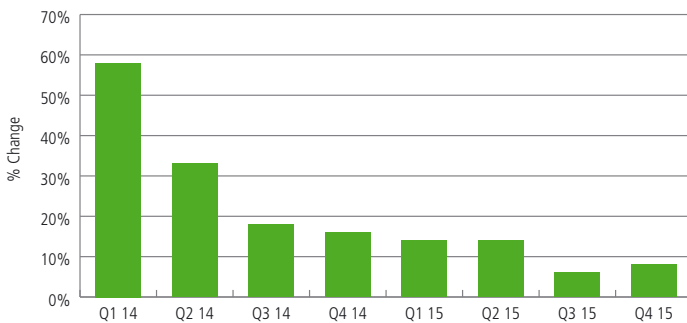
Market Share of Break Bulk Traffic 2015



Source: IMDO

GRAPH 12B

% Change in Break Bulk through ROI Ports



Source: IMDO

BREAK BULK

Break bulk remains the smallest bulk component at 5% of total bulk volumes. For ports in the Republic of Ireland break bulk increased by 10%, to 1.5m tonnes in 2015. This increase marks the third consecutive annual rise in break bulk, while quarterly data showed that break bulk recorded 11 consecutive year on year increases since Q2 2013.

Commodities such as timber, steel products, machinery and general project cargo make up the majority of break bulk cargo moving through Irish ports. The main drivers of growth in this segment are commodities related to the construction sector including cement and timber which increased by 27% and 8% respectively in 2015. Ulster Bank's Purchasing Managers Index, an index that has reported 28 consecutive months of growth in activity in the construction sector mirrors growth of break bulk tonnage in Republic of Ireland ports.

In relation to market share in the Republic of Ireland in 2015, Drogheda maintained the largest share of the market with 25%, followed by Cork (17%), Shannon Foynes (14%), Greenore (13%), Wicklow (9%) and Waterford (8%).

LIFT-ON/LIFT-OFF MARKET: PORTS*

Total laden container traffic for the island of Ireland increased by 6% in 2015 to reach 855,417 TEU. This is the second consecutive year of positive growth and the largest volume of container traffic since 2008 (1,012,171 TEU).

Laden exports from the Republic of Ireland increased by 5% to 283,664 TEU in 2015 with strong growth of 10% recorded in the second quarter. Growth in laden exports is in line with Ireland's strong export performance in 2015 and correlates closely with improved sentiment within the manufacturing sector as measured by the Ulster Bank Purchasing Managers Index. Laden exports from Northern Ireland also recorded positive growth with an increase of 3% to 91,585 TEU with growth strongest in the third quarter.

Laden imports into the Republic of Ireland increased by 8% to 380,169 TEU in 2015, the highest level recorded since 2009. Laden imports are linked with consumer demand with deep sea trades in particular related to the demand for non-essential consumer goods. Consumer spending, as measured by the CSO increased by 3.5% in 2015. This trend correlates with the pick-up in consumer sentiment reflected in the KBC/ESRI Consumer Sentiment Index. Consumption is expected to continue to increase in 2016 which would have positive implications for the container market in Ireland. Laden imports into Northern Ireland also grew in 2015 with an increase of 2% to 100,020 TEU.

The largest share of the LoLo market was maintained by Dublin Port in 2015, with 55% of all laden and unladen traffic on the island of Ireland, while Belfast maintained the second largest share with 19%. Elsewhere, Waterford recorded an 11% increase in container traffic, its highest volume since 2011 while Cork and Warrenpoint have now recorded five consecutive years of positive annual growth. Market share remains relatively unchanged between the Republic of Ireland and Northern Ireland, with 77% and 23% of container traffic, respectively.

TABLE 13A

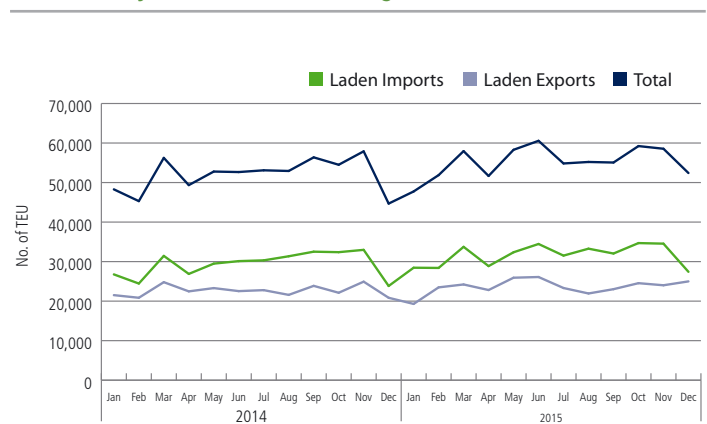
Laden Container Port Traffic (TEU)

Port	Total				
	No. of TEU	2014	2015	% Change	% Share
Dublin		441,366	471,485	7%	55%
Cork		154,907	163,969	6%	19%
Waterford		27,443	28,359	3%	3%
Belfast		159,008	159,358	0.2%	19%
Warrenpoint		27,623	32,247	17%	4%
Total ROI		623,717	663,813	6%	78%
Total NI		186,631	191,604	3%	22%
Total IRL		810,348	855,417	6%	100%

Source: IMDO

GRAPH 13A

Total Monthly Container Traffic through All Irish Ports 2014-2015



Source: IMDO

TABLE 13B

Total Container Port Traffic (TEU) (Laden and Unladen)

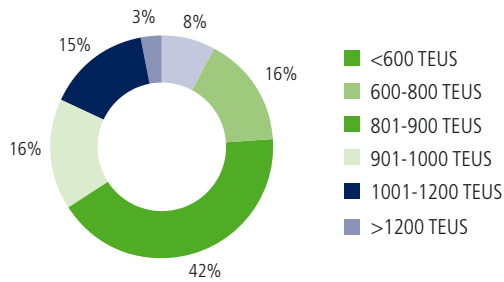
Port	Total				
	No. of TEU	2014	2015	% Change	% Share
Dublin		565,698	614,226	9%	55%
Cork		192,308	205,828	7%	18%
Waterford		36,174	40,224	11%	4%
Belfast		209,721	208,820	-0.4%	19%
Warrenpoint		45,642	52,008	14%	5%
Total ROI		794,180	860,277	8%	77%
Total NI		255,363	260,827	2%	23%
Total IRL		1,049,543	1,121,105	7%	100%

Source: IMDO

* For unitised traffic, both RoRo and LoLo freight moves in an all-island context. While figures for bulk in its various forms are given for the Republic of Ireland, it is our normal practice to include traffic through Northern Ireland ports for analysis of unitised traffic.

GRAPH 14A

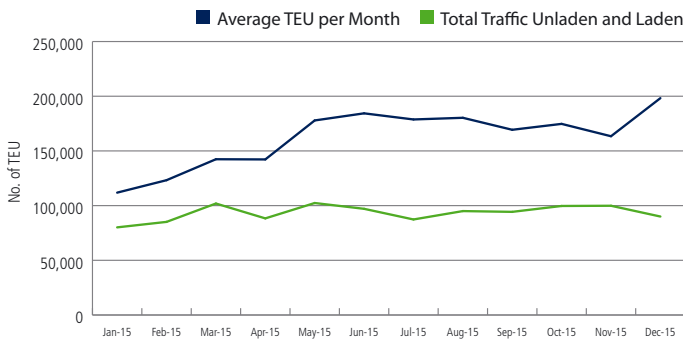
TEU Distribution of LoLo Vessel Arrivals in Irish Ports 2015



Source: Marine Traffic

GRAPH 14B

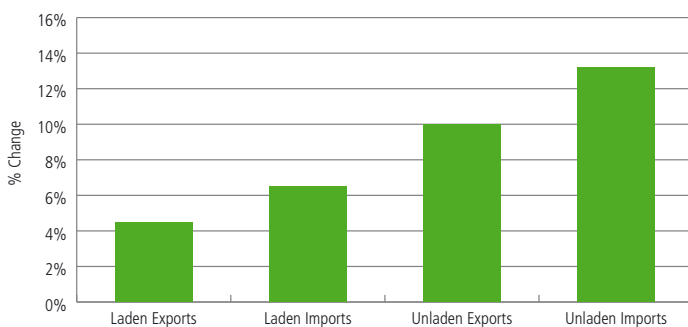
Estimated Total Capacity and Traffic in Irish Ports per Month 2015



Source: Marine Traffic

GRAPH 14C

Container Imports and Exports 2015



Source: IMDO

LIFT-ON/LIFT-OFF MARKET: OPERATORS

At the start of 2016, there were an estimated 16 LoLo operators offering 65 weekly services in the Irish market. These operators service approximately 32 routes. 34% of the services connect Irish ports to Rotterdam, while 56% of services connect Irish ports to British ports. Vessel Sharing Arrangements (VSAs) continue to be an important part of the short sea and feeder market with the majority of operators entering into such agreements.

CSO data shows that the past 15 years has seen an average annual growth rate in container ships calling to Irish ports of 5%, as measured in gross tonnage. The majority of containerships (82%) calling to Irish ports are below 1000 TEU vessel size, with vessels within the 801 – 900 TEU class, representing 42% of the total (as shown in graph 14A).

Graph 14B compares estimated total TEU capacity each month at Irish ports to total laden and unladen imports and exports. As graph 14B shows, total TEU capacity moves in line with traffic throughout the year with, as expected, traffic dropping off in December.

There was a 13% increase in empty containers shipped to the island of Ireland in 2015 amounting to 86,098 TEU, 55,050 TEU of which were moved through the Republic of Ireland. Empty containers shipped into Northern Ireland increased by 7% to 31,049 TEU. 2015 saw the total number of empty containers shipped from Ireland reach 179,590 TEU, up 10% from 163,233 TEU in 2014.

ROLL-ON/ROLL-OFF MARKET: PORTS

RoRo traffic in the Irish market increased by 5% to 1,780,285 freight units in 2015. This was the third year of consecutive growth in traffic volumes in the Irish market. Traffic through ports in the Republic of Ireland increased by 6% in 2015, while volumes in Northern Ireland increased by 4%. Belfast, Dublin, Larne and Rosslare all recorded growth of between 4-7% in 2015, while Cork and Warrenpoint saw freight volumes decline.

Driver accompanied traffic increased by 7% in 2015 to reach 709,762 freight units while unaccompanied traffic increased by 4% to reach 1,070,523 freight units. Driver accompanied traffic increased its share of total traffic in 2015 by 1%, now accounting for 40% of total traffic.

Dublin Port maintained the largest share of the RoRo market in 2015 with 49%, while Belfast (28%), Larne (11%), and Warrenpoint (5%) also maintained their respective market share. The distribution of volumes between the Republic of Ireland and Northern Ireland remained unchanged, with 56% and 44% respectively.

Services between Great Britain and the island of Ireland accounted for 91% of total volume in this market segment, a decline of 1% from 2014. Direct continental services to France, Belgium and the Netherlands increased in total by 14% in 2015 to 153,724 freight units.

TABLE 15A

Roll-on/Roll-off Freight Traffic (Freight Units)

Port	Total			
	Freight Units	2014	2015	% Change
Dublin	821,876	877,826	7%	49%
Rosslare	119,641	124,331	4%	7%
Cork	793	763	-4%	0.04%
Dún Laoghaire	725	0	-100%	0%
Belfast	476,331	496,498	4%	28%
Larne	184,779	193,168	5%	11%
Warrenpoint	88,573	87,699	-1%	5%
Total ROI	943,035	1,002,920	6%	56%
Total NI	749,683	777,365	4%	44%
Total IRL	1,692,718	1,780,285	5%	100%

Source: IMDO

TABLE 15B

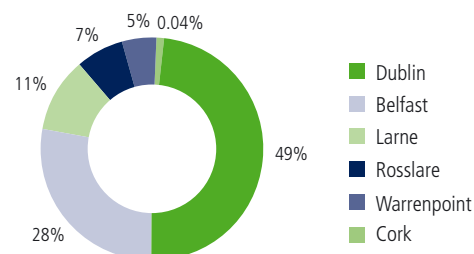
Roll-on/Roll-off Freight Traffic (Freight Units)

Port	Accompanied			Unaccompanied			
	Freight Units	2014	2015	% Ch.	2014	2015	% Ch.
Dublin	310,349	335,372	335,372	8%	511,527	542,454	6%
Rosslare	63,619	66,321	66,321	4%	56,022	58,010	4%
Cork	645	657	657	2%	148	106	-28%
Dún Laoghaire	725	0	0	-100%	0	0	-
Belfast	165,826	180,180	180,180	9%	310,505	316,318	2%
Larne	115,537	120,763	120,763	5%	69,242	72,405	5%
Warrenpoint	6,826	6,469	6,469	-5%	81,747	81,230	-1%
Total ROI	288,189	307,412	307,412	7%	461,494	469,953	2%
Total NI	375,338	402,350	402,350	7%	567,697	600,570	6%
Total IRL	663,527	709,762	709,762	7%	1,029,191	1,070,523	4%

Source: IMDO

GRAPH 15A

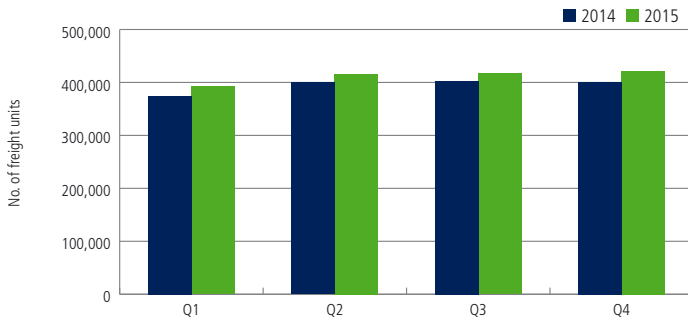
Market Share of Roll-on/Roll-off Traffic by Port 2015



Source: IMDO

GRAPH 16A

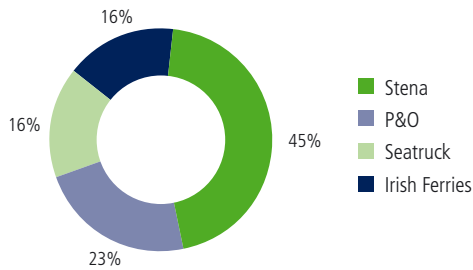
Quarterly Roll-on/Roll-off Freight Traffic



Source: IMDO

GRAPH 16B

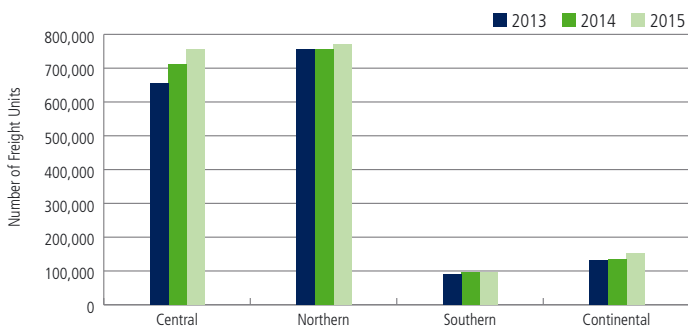
Market Share of Ireland-UK: Roll-on/Roll-off Traffic 2015



Source: IMDO

GRAPH 16C

Roll-on/Roll-off Freight Traffic per Corridor



Source: IMDO

ROLL-ON/ROLL-OFF MARKET: OPERATORS

In 2015, there were six RoRo freight operators providing scheduled services between Ireland, Great Britain and continental Europe: Stena Line, P&O, Seatruck, Irish Ferries, Cobelfret and Brittany Ferries. The market is segmented into four corridors: Northern, Central, Southern and Direct Continental.

The Northern Corridor is still the busiest corridor in terms of volume and recorded growth of 2% in 2015. This represents a return to positive growth following a slight decline in 2014. This corridor is serviced by Stena Line, P&O and Seatruck, providing services to Liverpool (Birkenhead), Heysham and Cairnryan.

On the Central Corridor there was an increase of 6% in volume, which represents the second year in a row of strong growth following a 9% increase in 2014. P&O, Irish Ferries, Stena Line and Seatruck serve this corridor, providing services to Liverpool, Holyhead and Heysham. Stena Line and Seatruck both added capacity in 2015; Stena Line introduced the Stena Superfast X to the Dublin-Holyhead route, and Seatruck added a third vessel to their Dublin-Liverpool route in November.

On the Southern Corridor volume increased by 2% on services provided by Stena Line and Irish Ferries to Fishguard and Pembroke.

The Direct Continental Corridor recorded an increase in volumes of 20% in 2015, this follows growth of 2% in 2014. The Direct Continental Corridor provides direct services from Dublin, Rosslare, and Cork and is serviced by Cobelfret, Brittany Ferries, Irish Ferries and Stena Line. This follows the first full year of operations by Stena Line of their service between Cherbourg and Rosslare, having acquired the service in 2014 from Celtic Link.

Market share between the corridors changed slightly in 2015, with strong growth on the Direct Continental Corridor resulting in an increase in market share to 9% from 8% in 2015, while the market share of the Northern Corridor decreased by 1% to 43%.

PASSENGER TRAFFIC

Passenger numbers between the island of Ireland, Great Britain and continental Europe declined by 2.6% to 4.4m in 2015. The overall decline in numbers is attributable to a decrease in traffic between the island of Ireland and Great Britain, with a decrease in passengers of 3.3% to 4m passengers in 2015. Passenger traffic between Ireland and continental Europe however, increased by 6% to reach 370,000 passengers. The decline in overall sea passenger traffic is in contrast to strong growth in air passenger traffic as represented in graph 17C.

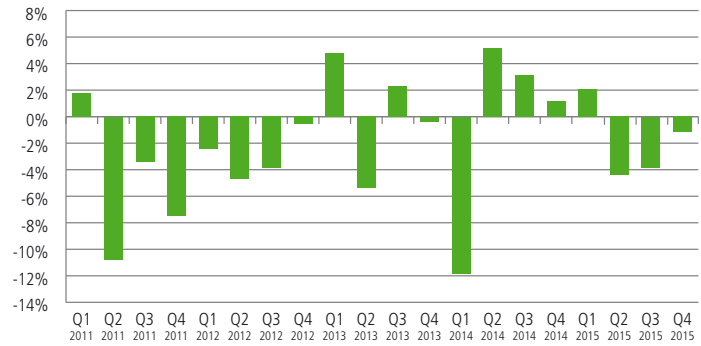
Passenger numbers decreased on three of the four corridors in 2015. The Northern Corridor, comprising passenger traffic from Belfast and Larne, reported a decline of 4%. The Central Corridor, which comprises services from Dublin to Holyhead and Liverpool, had a reduction in passenger numbers of 3%. Volumes on the Southern Corridor declined by 2% in 2015.

Car volumes for the island of Ireland decreased marginally by 0.2% in 2015 to 1.26m. Volumes moving from the Republic of Ireland stood at 782,962, an increase of 1%. Volumes moving from Northern Ireland fell by 2% in 2015 to 479,572.

Recent developments in the Irish market include Stena Line's introduction of its new vessel, the Stena Superfast X, operating between Dublin and Holyhead and P&O's plans to discontinue its Larne to Troon service due to a fall in passenger and car numbers.

GRAPH 17A

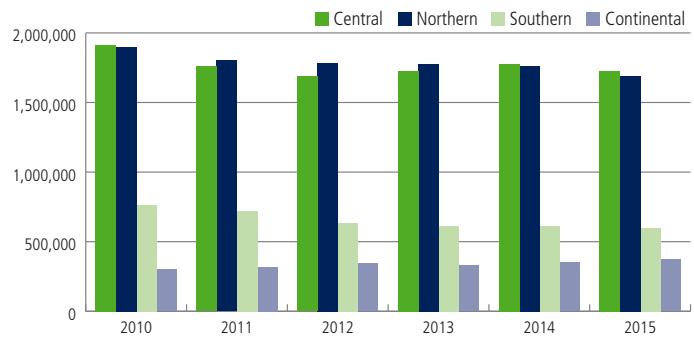
Quarterly Change in Passenger Traffic from the Island of Ireland



Source: IMDO

GRAPH 17B

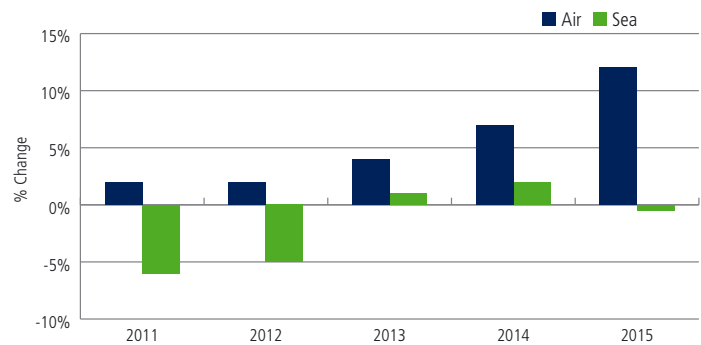
Passenger Traffic per Corridor 2010-2015



Source: IMDO

GRAPH 17C

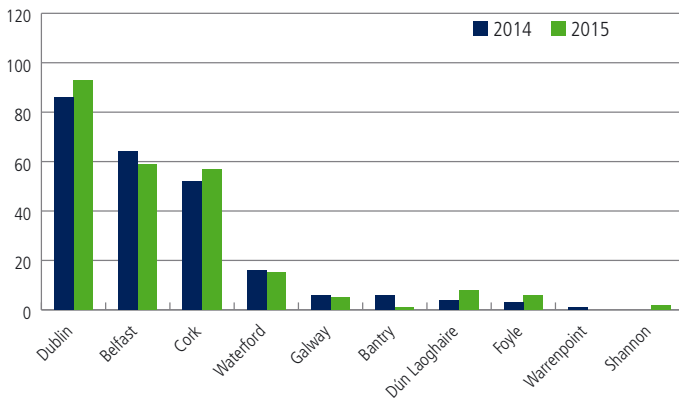
Annual Change in Air & Sea Passenger Traffic 2011-2015



Source: Fáilte Ireland

GRAPH 18A

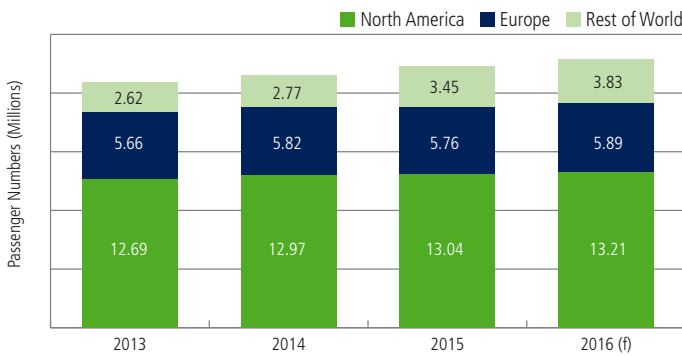
Annual Numbers in Cruise Ship Calls



Source: Individual ports

GRAPH 18B

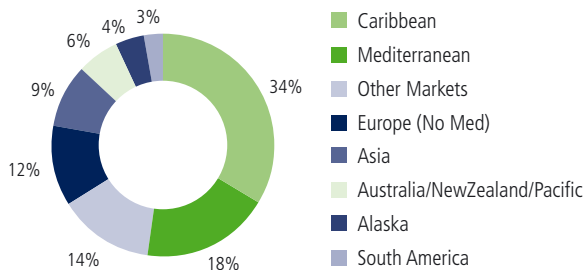
Top 10 Passenger Source Countries 2013-2016(f)



Source: Statistica

GRAPH 18C

Global Cruise Itineraries and Ship Deployment 2016(f)



Source: Cruise Lines International Association

CRUISE SECTOR

The IMDO estimates that in 2015, there were 246 cruise vessel calls to Ireland, carrying 446,690 passengers and crew. Encouragingly, there was a return to growth following a decline in 2014 with vessel calls up 3% and passenger numbers up 13%. 2015 saw the arrival of some of the largest ever cruise ships to call at Irish Ports, with the divergence in growth rate between vessel calls and passenger numbers reflective of a trend towards bigger cruise vessels.

Looking across the ports, Dublin Port remained the busiest cruise terminal on the island of Ireland receiving 93 calls and 148,891 passengers and crew up from 86 calls and 140,579 passengers and crew in 2014. The Port of Cork also recorded strong growth in 2015, with 57 calls and 145,142 passengers and crew, up from 52 calls and 118,637 passengers and crew in 2014. Total vessel calls decreased for Belfast Harbour in 2015, from 64 to 59 vessel calls. However, passenger numbers remained stable, down slightly from 111,676 to 111,238. Vessel calls in Waterford declined from 16 to 15 calls in 2015, while total passenger numbers increased from 10,197 to 11,641 for the year. The number of vessel calls in Dún Laoghaire doubled from four to eight this year, while there was also an increase in cruise activity in Foyle and Shannon Foynes. Vessel calls and passenger numbers fell in Bantry, Galway and Warrenpoint.

Cruise Liners International Association has projected that its cruise line members (representing 95% of global capacity) will see total passenger numbers rise by 4.2% in 2016 to 25m. As measured by ship deployments, the Caribbean remains the leading cruise destination, set to account for 34% of the global market in 2016. Europe (excluding the Mediterranean) is projected to account for 12% of the global market in 2016, while Asia, the fastest growing cruise region, is expected to reach 9% of the global market.

FORECASTING

The IMDO forecasts laden LoLo traffic to increase by 8% in 2016 over 2015. RoRo traffic is forecasted to increase by 6% in 2016, compared to 2015. This predicted growth in unitised trade is in line with operator sentiment in the Irish market with growth expected to increase in these sectors in 2016, while GDP which is highly correlated with unitised trade is forecasted to increase by 4.8% in 2016 by the Central Bank.

The bulk sector is predicted to grow at less than 1% in 2016. Bulk differs from unitised trade in that it is more volatile; reacting more to changes in agriculture, harvest yields and commodity prices.

These forecasts were done using a univariate model (see technical note in the annex). The advantage of a univariate method when forecasting port throughput in the short term (1-2 years) is that, firstly, it is independent of other variables and the resulting uncertainty around the forecasting of explanatory variables such as GDP and the exchange rate. Secondly, it offers a systematic approach to forecasting time series models that can be easily replicated. However, univariate models have one main disadvantage. Namely, these models are only informed by past values and as such are incapable of forecasting significant unforeseen deviations from the long term trend.

TABLE 19A

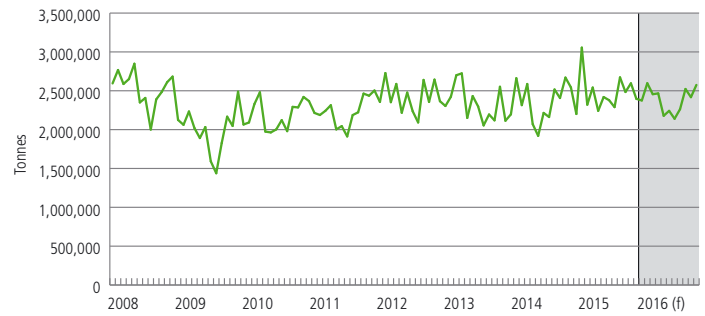
Forecast for 2016 for three major categories

	2014	2015	2016 (f)
Total Bulk	-2%	9%	<0.01%
Laden LoLo	7%	6%	8%
RoRo	7%	6%	6%

Source: IMDO

GRAPH 19A

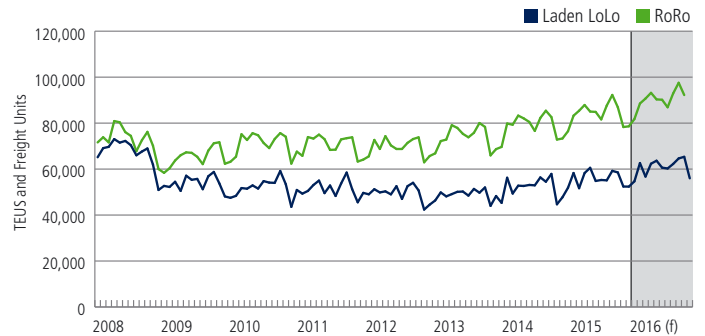
Total Bulk Forecast 2016



Source: IMDO

GRAPH 19B

Laden Lolo and RoRo Forecast 2016



Source: IMDO



GLOBAL MARKET REVIEW

TANKER MARKET

Tanker market conditions continued to improve in 2015 with average earnings across all tankers up by 74%, having increased by 51% in 2014. The global seaborne crude oil trade is estimated to have expanded by 3.9% in 2015 to 37.7m bpd after a 46% fall in the Brent crude oil price. Improvements in refinery margins due to lower oil prices boosted crude oil imports in several EU countries during 2015, while China's imports strengthened notably in 2015 as the low oil price encouraged the filling of the country's Strategic Petroleum Reserve.

Having been static in 2014, tanker demand increased by 4% in 2015 according to Clarksons' Oil and Tanker Trades. Tanker supply grew 3% in 2015, up from the 2% growth seen in 2014. Upward pressure was put on freight rates due to demand growing faster than supply.

The crude sector refers to the movement of unrefined crude oil from its point of extraction to refineries, comprising, inter alia, Very Large Crude Carriers (VLCC), Suezmax and Aframax vessels. Spot earnings for VLCCs increased to an average \$64,846/day in 2015, more than double the 2014 average. VLCC deadweight demand is estimated to have risen 4.2% in 2015 with demand supported by growth of crude VLCC trade on long haul routes from the Middle East Gulf and the Atlantic to Asia route, particularly China and India. Average spot earnings for Suezmax vessels increased by 68% to \$46,713/day in 2015, while the average one year time charter rate increased 58% in the same period. Aframax earnings rose 54% to average \$37,977/day while the average one year time charter rate increased 52% to \$26,712/day.

Freight rates were also up in the clean market which consists of vessels carrying refined oil products. In 2015 clean Medium Range tanker (MR) spot earnings averaged \$21,444/day, an increase of 71% with the average one year time charter rate for an MR increasing by 21%. Meanwhile, the 2015 average one year time charter rate for Long Range Tankers 1 (LR1) increased by 48%.

Looking forward, Clarksons forecast growth rates of 5% in total supply and 3% in total demand in 2016. Clarksons estimate a 5.3% increase in the crude fleet in 2016, up from the 1.8% increase achieved in 2015. Product tanker demand is forecasted to increase by 3.6% in 2016 having grown by 5.9% in 2015. Fleet growth is expected to slow to 4.6% in 2016, down from 5.9% in 2016.

TABLE 19A

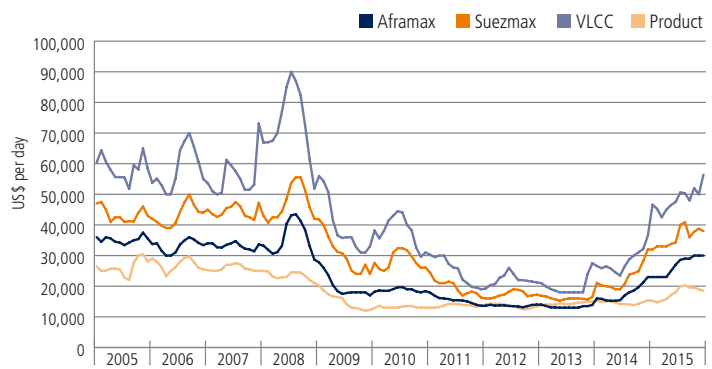
One Year Time Charter Rates (\$/day), 2015

	Product	Aframax	Suezmax	VLCC
Jan-15	15,250	23,000	32,000	46,600
Feb-15	14,750	23,000	33,000	45,250
Mar-15	15,250	23,000	33,000	42,500
Apr-15	15,813	23,000	33,000	45,000
May-15	17,150	25,000	33,800	46,500
Jun-15	18,063	27,000	34,250	47,500
Jul-15	19,900	28,600	40,000	50,600
Aug-15	20,250	29,000	40,875	50,375
Sep-15	19,625	29,000	36,000	48,000
Oct-15	19,500	30,000	37,800	52,000
Nov-15	19,000	30,000	38,750	50,000
Dec-15	18,500	30,000	38,000	56,375
Jan-16	18,570	30,000	38,600	56,300
Feb-16	17,725	29,500	36,000	48,125

Source: Clarksons

GRAPH 19A

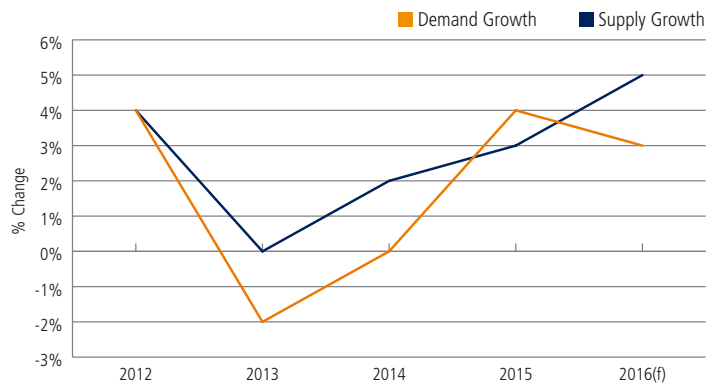
Tanker One Year Time Charter Rates, 2005-2015



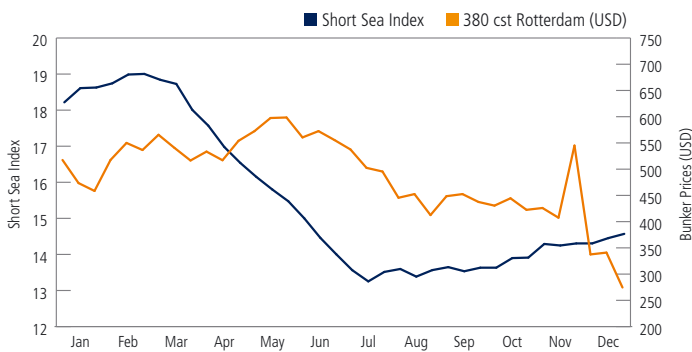
Source: Clarksons

GRAPH 19B

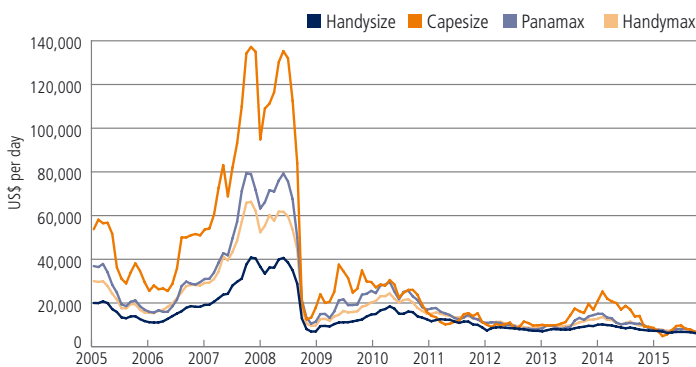
Demand Supply Dynamics: Crude Tankers, 2012-2016(f)



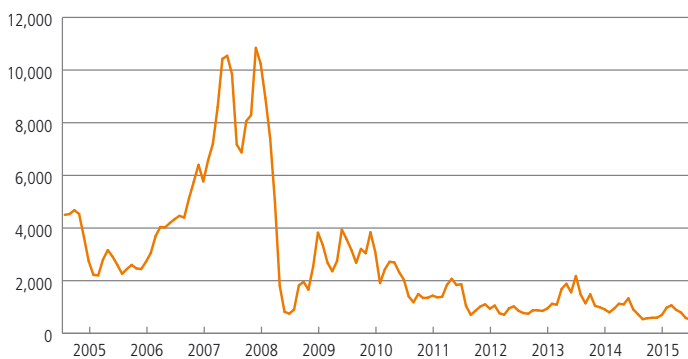
Source: Clarksons

GRAPH 20A**European Dry Bulk Short Sea Market, 12 Month Graph 2015**

Source: HC Shipping and Chartering

GRAPH 20B**Dry Bulk One Year Time Charter Rates, 2005-2015**

Source: Clarksons

GRAPH 20C**Baltic Dry Index, 2005-2015**

Source: Clarksons

DRY BULK MARKET

The dry bulk market had another disappointing year in 2015 as the imbalance between fleet capacity and lack of dry bulk trade continued to suppress bulk carrier earnings. Overall, 2015 saw average bulk carrier earnings fall to a 15 year low of \$4,792/day. The Baltic Dry Index averaged 717 in 2015, down 36% from the 1,112 average seen in 2014.

Global seaborne dry bulk trade was static in 2015. The slowing of GDP growth in China was a significant factor in the lack of growth in the sector as this caused a reduction in the country's seaborne iron ore and coal imports. In the wheat market, Clarksons predict global combined wheat and coarse grain trade to fall by 2% in the 2015/16 crop year. The decline is expected to be partly driven by a 4% drop in imports into Asia.

Global capacity expanded in 2015 at a rate of 2.4%, the slowest rate of growth since 1999. This was largely due to a firm increase in scrapping activity, which saw 30.4m dwt removed from the fleet. However, due to static trade growth in the dry bulk market, fleet growth in 2015 still contributed to oversupply, which negatively impacted rates across all bulk carrier classes. This effect can be seen in average one year time charter rates which were down substantially year on year in Capesize (-58%), Panamax (-38%), Handymax (-33%) and Handysize (-26%).

Looking forward, Clarksons predict the gap between dry bulk trade growth and fleet growth will continue with dry bulk trade expected to grow by 0.8%, with fleet growth of 2%. This is likely to result in continued downward pressure on freight rates.

The Short Sea Index in graph 20A sees the European Short Sea bulk market deviate from what is usually a consistent seasonal pattern. While Q1 started strongly, resulting in optimism in the market, Q2 saw a downward trend bottoming out at the start of Q3. The market failed to re-build momentum, something which usually starts by mid-September and coincides with the new harvest and general return to work. There was little sign of improvement in Q4, normally the strongest part of the year, however, demand picked up in late November resulting in some upward pressure in rates. Elsewhere, the negative forecasts for the impact of SECA have not materialised and gasoil closed the year at approximately \$300 per tonne, the lowest for over a decade.

CONTAINERSHIP CHARTER MARKET

Earnings in the time charter market exhibited notable gains in the first half of 2015, driven by limited supply side growth in the small and medium sized containership fleet. However, the significant slowdown in container trade in the second half of the year generated surplus capacity and this sharply eroded vessel earnings with rates standing at historically low levels by the end of 2015. The gains in earnings made at the start of the year resulted in Clarksons time charter rate index for 2015 averaging 13% above 2014. However, the subsequent fall in earnings in the second half the year resulted in the index closing 8% below the corresponding period in 2014.

The overall trend in time charter earnings in 2015 was also evident in the sub 1,700 TEU handy and feeder classes, which are predominantly the vessels that serve Irish ports. Earnings in these classes increased by a monthly average of 6% in the first six months of the year only to fall by a monthly average of 5% in the second half of 2015.

Historically weak container trade growth in 2015 was combined with a significant increase in capacity of 8.1% to reach 19.7m TEU. 2015 saw a record 1.7m TEU of deliveries predominantly the result of very large containership deliveries and this exerted additional pressure on the market. Although 2015 saw demolition stand at 0.19m TEU, down almost 50% from 2014, growth in demolitions did increase notably during Q4 2015, reflecting the depressed charter market. In terms of the orderbook, 2015 saw a total of 224 vessels, equivalent to 2.1m TEU, reportedly contracted, almost double the capacity ordered in 2014. Clarksons predict that very large containership deliveries are set to remain firm in 2016, although overall supply is forecasted to increase at a slower pace of 4%.

The outlook for the containership charter market is closely tied to the development of container trade growth. Looking forward, Clarksons argue that until vessel demand is boosted by a recovery in container trade, the charter market is not expected to recover to any significant degree, despite its more positive supply-side fundamentals.

TABLE 21A

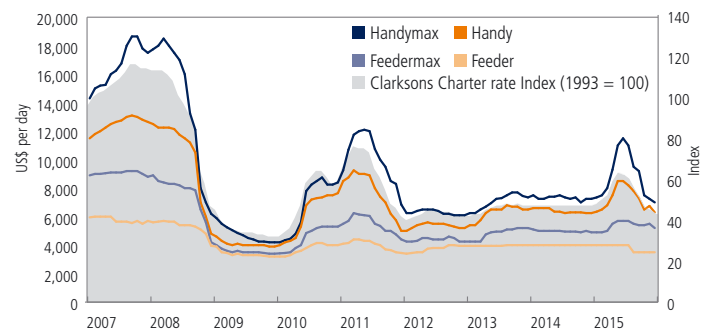
One Year Time Charter Rates (\$/day), 2015

	Feeder 350 TEU	Feedermax 725 TEU	Handysize 1000 TEU	Handymax 1700 TEU
Jan-15	4,000	4,900	6,350	7,350
Feb-15	4,000	4,900	6,500	7,500
Mar-15	4,000	5,000	6,800	8,000
Apr-15	4,000	5,500	7,500	9,300
May-15	4,000	5,700	8,500	11,000
Jun-15	4,000	5,700	8,500	11,500
Jul-15	4,000	5,700	8,200	11,000
Aug-15	3,500	5,500	7,800	9,500
Sep-15	3,500	5,400	7,300	9,200
Oct-15	3,500	5,400	6,500	7,500
Nov-15	3,500	5,500	6,750	7,250
Dec-15	3,500	5,200	6,300	7,000
Jan-16	3,500	5,350	6,200	7,000
Feb-16	3,500	5,350	6,750	7,000

Source: Clarksons

GRAPH 21A

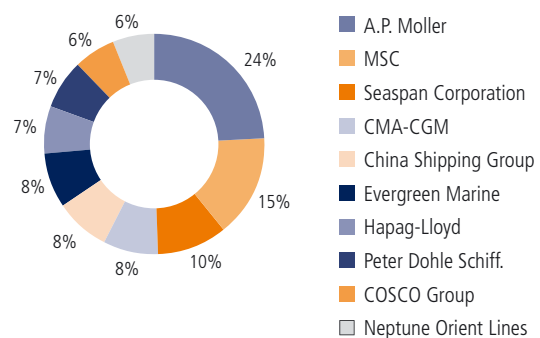
Container One Year Time Charter Rates, 2007-2015



Source: Clarksons

GRAPH 21B

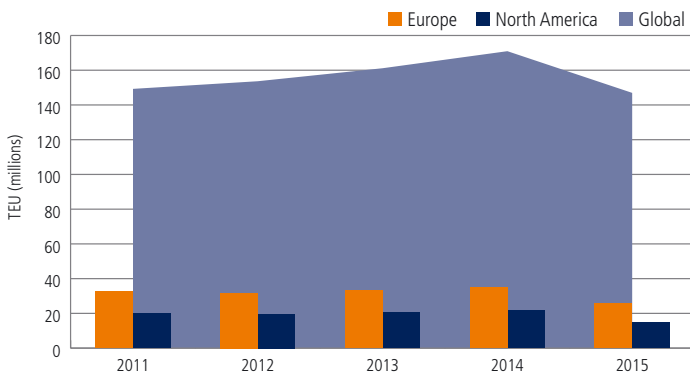
Top 10 Containership Operators by DWT, 2015



Source: Clarksons

GRAPH 22A

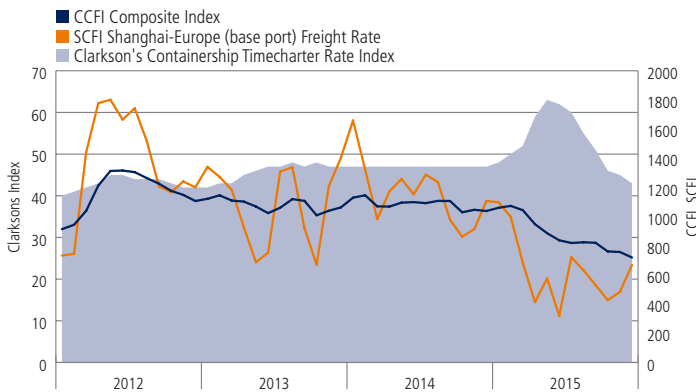
Container Import Volumes, (Excluding Intra Regional): 2011-2015



Source: Container Trade Statistics

GRAPH 22B

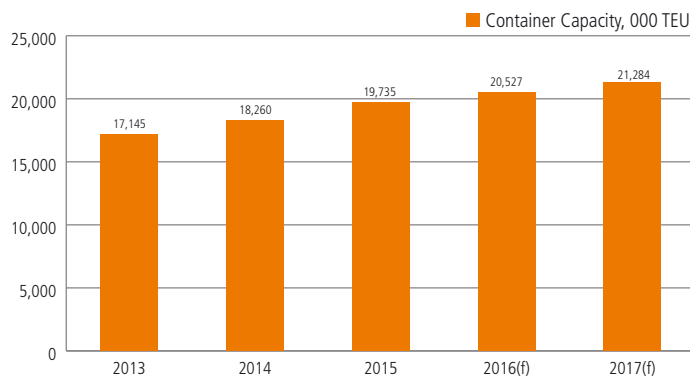
Containership Charter Rates vs Container Freight Rates: 2012-2015



Source: Clarksons

GRAPH 22C

Annual Container Capacity 2013-2017(f)



Source: Clarksons

DEEP SEA CONTAINER TRADES & FREIGHT RATES

World container trade is estimated to have expanded by just 2.4% in 2015, bringing total container volumes to 175m TEU. This is less than half the growth rate achieved in 2014 and the slowest rate since 2009. A significant development in 2015 was the estimated contraction by 3.9% on the Far East-Europe peak leg route. Container trade growth was also severely affected by the impact of lower commodity prices on the imports of commodity exporting developing countries in the Southern Hemisphere, resulting in growth of 1.5% (down from 4.3% in 2014) in the North South trades. There was also modest growth of 3.1% on the high volume intra-Asian trades (compared to 6% in 2014) which was largely the result of a slowdown in growth in the Chinese economy and the impact this had on trade with other Asian economies. Looking forward, Clarksons forecast container trade growth will reach 4% in 2016, however, this remains subject to volatility in the global economy.

Mainlane container trade volumes are estimated to have grown by a marginal 0.3% in 2015 to 51.2m TEU. Mainlane trade growth was limited by the significant contraction in the peak leg Far East-Europe route. Overall mainlane trade volumes in 2015 were bolstered by healthy growth on the Transpacific and Transatlantic peak leg trades, estimated at 5.6% and 7.3% respectively. North American imports from Europe rose an estimated 7.3% to 4.2m TEU in 2015, supported by the strong US dollar.

While challenging economic conditions look set to continue in Europe, container volume growth on the Far East-Europe peak leg trade is expected to recover to 3.8% in 2016 with factors such as the collapse in Russian imports in 2015 as well as the readjustment of European inventory levels not expected to present as much downside risk to growth in the coming year.

Conditions in the Deep Sea container freight market deteriorated significantly in 2015. While operators did benefit from lower bunker prices, freight rates fell significantly on mainlane routes. Freight rate erosion and volatility was especially visible on the Asia-Europe trade, with spot rates averaging just \$620/TEU on the Shanghai-North Europe route in 2015, down 47% according to the Shanghai Containerized Freight Index. In an effort to manage burgeoning capacity and support depressed freight rates, operators actively 'cascaded' vessels off the Far East-Europe route in Q4 2015 and a significant number of sailings were 'blanked', with a number of services removed altogether by several major alliances. The trend towards consolidation in the industry continued in 2015 with announcements of further alliances and mergers making the headlines. In particular, 2015 saw details of a multibillion-dollar restructuring deal between China Ocean Shipping (COSCO) and China Shipping Group revealed as well as the takeover of Neptune Orient Lines by CMA CGM.

In the short-term, deliveries of very large containerships are expected to remain robust and while global container trade growth is currently projected to improve in 2016, freight rates are expected to remain under pressure, particularly on the main lanes.

NEWBUILDING AND DEMOLITION MARKET

CONTAINERSHIP FLEET

Containership capacity increased by 8.1% in 2015 to reach 19.7m TEU with fleet growth driven by record deliveries of a combined 1.7m TEU. Demolition in 2015 totalled 90 vessels of a combined 193,156 TEU, which was approximately half that of the previous year in capacity terms. This was partly due to improved charter earnings in the first half of 2015, as well as depressed scrap markets. At the start of 2016, the containership orderbook totalled 455 vessels, representing 3.7m TEU, and 19% of the fleet in capacity terms. The containership fleet is expected to grow at a slower pace of 4% in 2016, although deliveries of very large vessels are scheduled to remain high.

RORO FLEET

The end of 2015 saw RoRo fleet capacity stand at 7.5m dwt, a year on year increase of 3.2%. This represents a change in the trend in RoRo fleet development as there had been an average annual decline of 3.6% in dwt since the start of 2010. The increase in fleet capacity can in part be attributed to a strong decrease in demolitions in 2015 with only eight vessels demolished in the year as opposed to the 41 in 2014. As of the start of 2016, RoRo newbuilds are set to decline with the orderbook showing an annual decrease of 39% to 17 vessels, while lane meters are down 46% to 42,400 meters.

DRY BULK FLEET

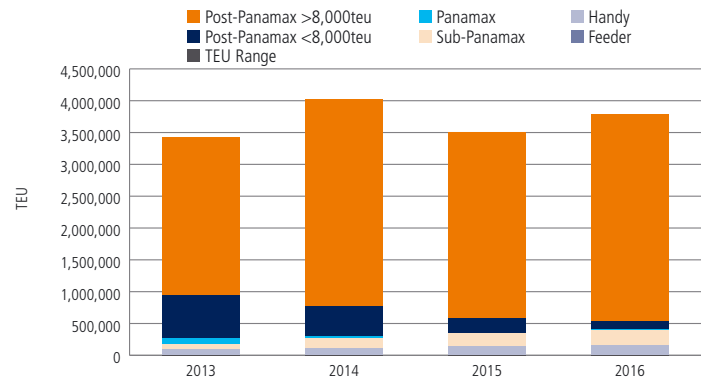
In 2015, bulk deliveries totalled 49.1m dwt, against demolitions of 30.4m dwt resulting in fleet growth of 2.4% to 776.1m dwt. This is the slowest rate of fleet growth since 1999 and was largely due to an 89% increase in the amount of dwt scrapped since last year, while deliveries increased by 2% in dwt. The average age of vessels sold for scrap in 2015 was 25.2 years. There is a downward trend evident in the average age of vessels demolished over the past ten years, falling by 5 years since 2006. The orderbook at the beginning of 2016 stood at 126.6m dwt or equivalent to 16.3% of the fleet, with 92.7m deliveries scheduled for 2016.

TANKER FLEET

The total tanker fleet grew by 3.3% in capacity terms in 2015 to reach 524m dwt, less than the 1.4% growth seen in 2014. 46 tankers were scrapped in 2015 amounting to 2.2m dwt. This is 51% less than the number of vessels demolished in 2014 and 71% less of the dwt removed. The orderbook for the start of 2015 stood at 75m dwt, a year on year increase of 8%, while the start of 2016 sees the orderbook increase by 36% to 102m dwt.

GRAPH 23A

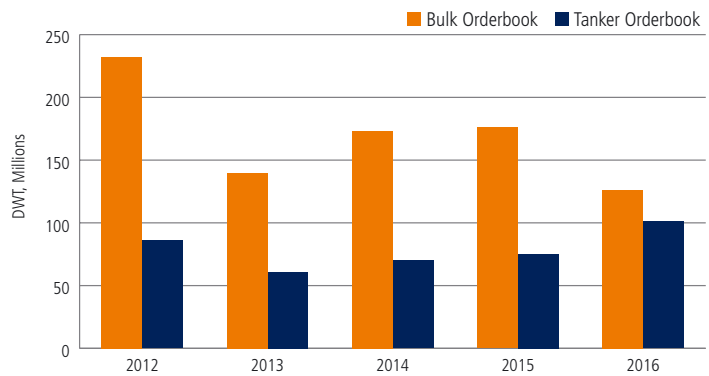
World Cellular Fleet Orders by Size Range, 2013-2016



Source: Clarksons

GRAPH 23B

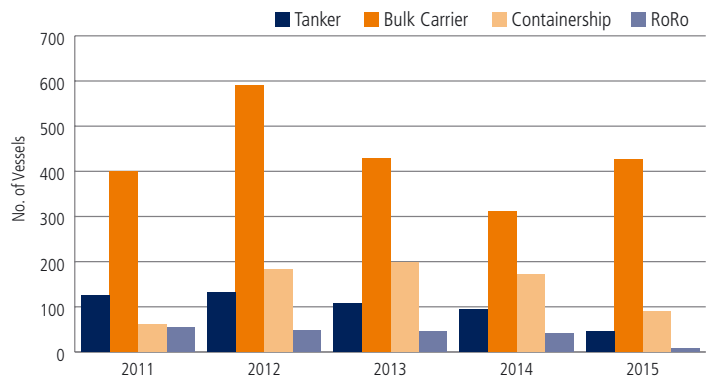
Bulk Carrier Orderbook, 2012-2016



Source: Clarksons

GRAPH 23C

Demolition by Fleet Category, 2011-2015



Source: Clarksons

GLOSSARY OF TERMS

Aframax: Oil tanker vessels between 80,000 – 120,000 dwt in size.

bbbl: Oil Barrel

bpd: Barrels Per Day

CPI-Consumer Price Index: designed to measure the change in the average level of prices (inclusive of all indirect taxes) paid for consumer goods and services by all private households in the country and by foreign tourists holidaying in Ireland.

cst: Centistoke (measurement of fuel viscosity)

dwt-deadweight tonnage: a measure of how much weight a ship is carrying or can safely carry.

ESRI: Economic and Social Research Institute

GDP-Gross Domestic Product: represents the total value added (output) in the production of goods and services in the country. The rate of growth in GDP measures the increase in the value of output produced in the state, irrespective of whether the income generated by this economic activity accrues to citizens of the state or not.

GNP-Gross National Product: the sum of GDP and Net factor income from the rest of the world. The rate of increase of GNP attempts to capture the increase in the incomes of the state's citizens irrespective of where the activity that generated the income took place.

HCI-Harmonised Competitiveness Indicators: a measure of euro area countries' price and cost competitiveness.

HICP-Harmonised Index of Consumer Prices: an indicator of inflation and price stability.

IFO: Intermediate Fuel Oil

LoLo: Lift-On/Lift-Off

OPEC: Organisation of the Petroleum Exporting Countries

RoRo: Roll-On/Roll-Off

RoRo Freight Unit: as defined by the CSO include HGVs and trailers; unaccompanied trailers; unaccompanied caravans; and agricultural and industrial vehicles.

Suezmax: Oil tanker vessels between 120,000 – 200,000 dwt in size.

TEU: Twenty-foot Equivalent Unit

VLCC-Very large Crude Carriers: Oil tanker vessels between 150,000 – 320,000 dwt in size.

SOURCES OF DATA

The bulletin contains the results of quarterly and annual analysis of activity at Irish Ports, and the activity of shipping lines operating from Irish Ports. The data is compiled from returns made by the Harbour Authorities, State Companies, Northern Ireland Ports and RoRo shipping lines on routes to and from Ireland and the UK as outlined below:

STATE COMPANIES:

Drogheda Port Company

Dublin Port Company
(Including Dundalk Port Company)

Dún Laoghaire Harbour Port Company

Galway Port Company

Greenore Port Company

New Ross Port Company

Port of Cork Company
(Including Bantry Bay Port Company)

Port of Waterford Company

Rosslare Europort

Shannon Foynes Port Company

Wicklow Port Company

Port of Youghal Company

NORTHERN IRELAND PORTS:

Belfast Harbour Commissioners

Londonderry Port

Port of Larne

Warrenpoint Harbour Authority

ROLL-ON/ROLL-OFF SHIPPING LINES:

Irish Ferries

P&O Irish Sea Ferries

Seatruck Ferries

Stena Line

- Data for graph 14A and graph 14B was provided by MarineTraffic.com

TECHNICAL NOTE

- The *iShip Index* is a weighted indicator comprised of five separate indices, representing the main maritime freight categories moving through Ports in the Republic of Ireland: LoLo, RoRo, Dry Bulk, Liquid Bulk & Break Bulk.
- The LoLo index comprises solely of laden traffic.
- The following ports have been included in the index: Port of Cork, Drogheda Port, Dublin Port, Dundalk Port, Dún Laoghaire Harbour, Galway Harbour, Greenore Port,

New Ross Port, Rosslare-Europort, Shannon Foynes Port, Port of Waterford and Wicklow Port. Bantry Bay has been excluded as its throughput is predominantly of a transshipment nature.

- All data is derived from the individual port companies and subject to a one-year revision period.
- The base period is **Quarter 1 2007** at which all indices equal 1000.

TRAFFIC BREAKDOWN

LIQUID BULK:

Consists mainly of petroleum, heavy fuel oil, liquefied gas and bio-ethanol.

DRY BULK:

Dry Bulk: Consists mainly of animal feed, fertilizer, cereals, ore, bauxite, alumina, and coal.

BREAK BULK:

Consists mainly of construction related materials and project cargo.

LOLO (LIFT ON/LIFT OFF):

There are direct daily container services from the Republic of Ireland to Great Britain, mainland Europe and the Mediterranean. There are also worldwide transshipment services available from the Republic of Ireland.

RORO (ROLL ON/ROLL OFF):

This traffic is wheeled accompanied and unaccompanied goods vehicles. The majority of this trade is between Ireland and the United Kingdom, but there is also a Con-Ro service between Ireland and Continental Europe included in this traffic classification.

FORECASTING

A univariate time series model is determined by its own history and by random effects that have taken place in a variable's past.

The variables used within this forecasting model are monthly throughout for the following traffic categories: Laden LoLo, RoRo and Total Bulk,

After assessing the forecasting accuracy of a multitude of univariate models, the Seasonal Auto Regressive Integrated Moving Average (SARIMA) method and the Exponential Smoothing (ES) method were found to be the most appropriate for the data in question. SARIMA was found to be the best univariate model in forecasting RoRo and LoLo, while ES was found the most appropriate for Bulk. Both SARIMA and ES are well established methods of forecasting variables.

Note: Only Republic of Ireland throughput data is used. Bantry is excluded from Total Break due to the volatility of transshipments making it harder to make forecasts in the Bulk category.



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