VOLUME 20

THE IRISH MARITIME TRANSPORT ECONOMIST

Foras na Mara
Marine Institute

Irish Maritime
Development Office

The Irish Maritime Development Office

As part of the Marine Institute, 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 that 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 the 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 establishing 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 a 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. 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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Volume 20
May, 2023
ISSN 1649-5228

The Irish Maritime Transport Economist

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How to cite this publication: Irish Maritime Development Office (2022) *Irish Maritime Transport Economist: Vol. 20*, Dublin: Irish Maritime Development Office

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Ministerial Foreword

I am pleased to provide the foreword for this, the 20th edition of the Irish Maritime Transport Economist, which reports on the performance of Ireland's maritime industry for 2022. As Minister with responsibility for the maritime sector, I have the privilege of overseeing one of our country's most important sectors - important not just for its value to the Irish economy, but also for its understanding that we will not stay successful by standing still. As our economy continues to grow and evolve, the maritime sector remains a key driver of trade, investment and prosperity. The efficient movement of goods and people is fundamental to our international competitiveness and the facilitation of global trade.

This publication, and the data that underpins it, form an invaluable time series which allows for Irish port traffic to be tracked over time and its trends to be examined. By assessing port volumes, we better understand Ireland's trading relationship with the rest of the world. As 90% of Ireland's internationally traded goods by volume are transported by sea, we also emphasise the role that our port infrastructure plays in facilitating economic growth.

I welcome the work of the Irish Maritime Development Office (IMDO), which provides research to help us better understand the complex challenges that the sector may face and that can input into the wider evidence-based policy making process. The value of this work was brought into sharp focus in recent years, as my department responded to the impacts of the COVID-19 pandemic and Brexit.

We live in an increasingly unpredictable world and 2022 saw new challenges emerge. For the first time in decades, with Russia's invasion of Ukraine, a brutal war is being fought on European soil. The invasion was unprovoked, unlawful and unjustifiable, and the ongoing war is first and foremost a humanitarian tragedy. Ukraine has been subjected to a brutal and reckless campaign of violence, the likes of which has not darkened our continent in decades, and the priority of Government has been to help those affected.

Since the onset of Russia's invasion of Ukraine, the EU and its allies made the collective decision to stand by Ukraine. The EU has also adopted strict economic sanctions against Russia, and these impacted Irish port volumes. Firstly, the volume of imported tonnes from Russia fell by more than 50% in 2022, driven by fewer imports of coal and petroleum products. Embargos were placed on these exports from Russia as part of ten packages of economic sanctions introduced since February 2022. Declining trade with Russia has been evident across the EU. Between February 2022 and March 2023, Russia's share of non-EU imports fell from 9.5% to less than 2%. This highlights the scale of the changes to international trade patterns that have occurred in such a short period of time.

The embargos placed on Russian oil by the EU, US, UK and others led to a rapid rise in the price of fuel, which put Irish supply chains under significant pressure. In March 2022, my department announced a temporary emergency support measure for licensed hauliers to address cost pressures arising from these high fuel prices. In the latter half of the year, fuel prices fell significantly as global supply chains were reorganised.

In addition to the Russian military aggression against Ukraine, the year 2022 was defined by a sharp rise in global inflation. Inflation in Ireland and across the EU ran at 8% in 2022, its highest rate in decades. This placed downward pressure on Irish consumption, and this was also evident in port volumes. The IMDO's iShip index, which is an aggregate measure of port volumes, declined by 1% in 2022. Despite this decline, Irish port traffic still remains above pre-pandemic levels, demonstrating that there is organic growth in the Irish economy despite strong economic headwinds.

I would like to take this opportunity to offer my thanks to all those working across the industry for their unwavering resilience and dedication during these challenging times. You have faced unprecedented disruptions and uncertainties but it is because of your collective efforts and commitment that we have been able to navigate through the storm.

In 2023, our attentions now turn to the challenges ahead, as new rounds of Brexit changes will begin to be implemented from 31 October 2023. In April 2023, the UK Government published a draft of the Border Target Operating Model. This sets out a new approach to exporting to Great Britain that will be introduced progressively. In summary, from 31 October 2023, full customs controls will be introduced for goods moving directly from Ireland to ports in Great Britain. In addition, export health certificates and phytosanitary certificates will be introduced for medium-risk animal products and plant products. My department and the IMDO will monitor the impacts of these changes on the Irish maritime industry closely.

I am confident that the Irish maritime industry is capable of adapting to these regulatory changes. As has been demonstrated in recent years, this industry is dynamic, resilient and competitive, all of which are characteristics that serve the Irish economy well.

I would like to extend my sincere gratitude to the author and editorial team who have contributed their time and expertise to this publication. Their dedication to advancing knowledge and understanding in the maritime sector is commendable, and their work will undoubtedly inspire future progress and innovation.

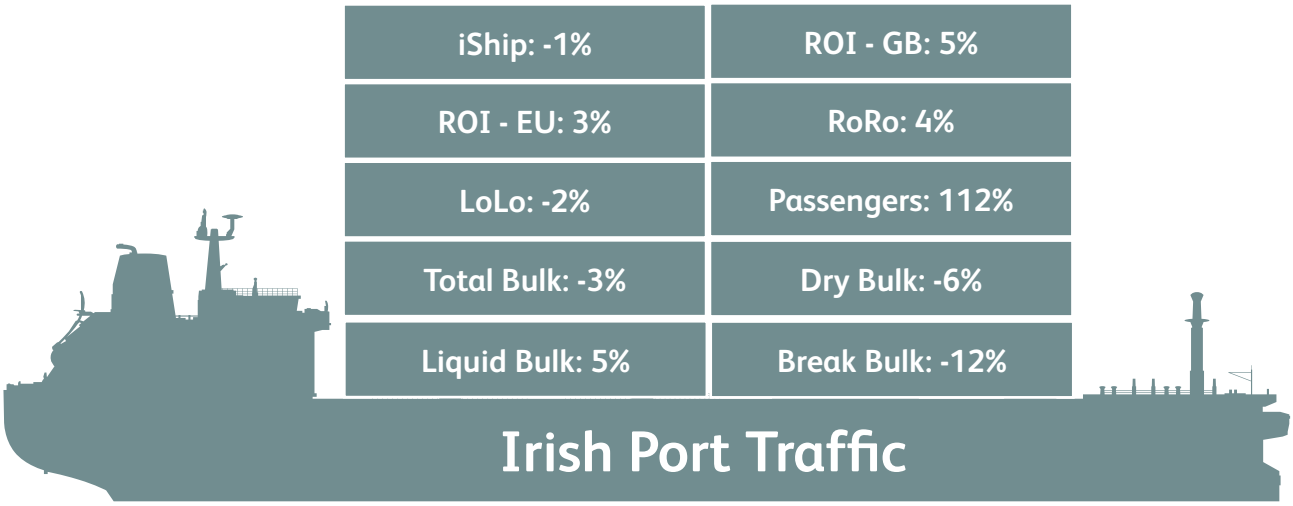
Finally, this year, my department will be commencing a review of National Port's Policy. The first phase will see the publication of an issues paper in the coming weeks. I encourage all stakeholders in the maritime industry, including policymakers, industry leaders, researchers, and communities, to engage with the consultation process. By working collaboratively and harnessing our collective wisdom, we can shape a prosperous and sustainable future for the sector, ensuring that it remains a cornerstone of our national prosperity for generations to come.

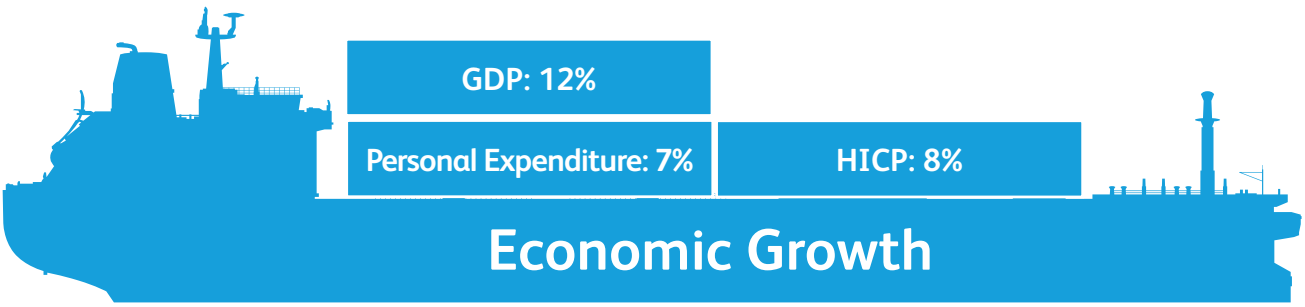
Jack Chambers T.D

Minister of State at the Department of Transport and at the Department of Environment, Climate and Communications

Foreword

2022 Key Statistics:





Welcome to the 20th edition of the Irish Maritime Transport Economist, in which we report on Irish trade and port throughput in 2022. This year marks the first since 2019 wherein no significant or prolonged restrictions relating to the COVID-19 pandemic were placed on economic activity or international travel. That was a welcome development for our ports, particularly those involved in maritime passenger travel, as tourists were welcomed back during what was a busy summer period. As for maritime trade, many international shipping markets returned to more normal patterns of demand, as supply chain bottlenecks loosened and global shipping rates fell.

2022 presented a new set of challenges for the Irish shipping market however. The factors that are currently driving Irish port traffic can be considered under three main headings: The Russian invasion of Ukraine, global inflation and post-Brexit patterns of trade.

The Russian invasion of Ukraine in February 2022 sparked a global food and energy crisis. The EU placed an embargo on Russian oil, while pipeline exports of Russian natural gas were greatly curtailed. This had the effect of restricting international supplies of both energy sources, causing prices to rise sharply. In addition, Ukrainian grain exports - a significant source of the global food supply - were effectively halted for several weeks. Concerns rose over shortages and countries aimed at building up reserves. Again, this had the effect of rapidly increasing prices on international markets over a short period. These developments drove changes in Irish port throughput. In terms of maritime trade with Russia, Irish imports of coal, petroleum products and fertiliser from that region were greatly reduced. Irish importers subsequently found new markets, often from greater distances, placing further pressure on transport costs. More broadly, Irish imports of animal feeds and grain products grew significantly in 2022, driven by fears over future shortages and/or further price increases. In all, Irish ports proved capable of adapting to the combined effect of increasing import volumes and changing trading patterns, and I commend their efforts in facilitating Irish international trade throughout another turbulent period.

The disruption caused by the Russian invasion of Ukraine is heavily linked to the global rise in inflation in 2022, which had a suppressive effect on Irish port throughput. In Ireland and across the Euro Area, inflation averaged 8% in 2022. However, goods inflation, which excludes the service economy and is a more relevant measure for Irish port volumes, ran at 12% in the Euro Area. That impacted Irish unitised traffic - RoRo and LoLo volumes - significantly. These modes predominantly handle everyday items such as food, clothing or electronics, and it is among these goods where the negative effects of inflation were clearest. The impact of inflation was felt most keenly in the second half of the year. In both the RoRo and LoLo markets, volumes in the first half of the year outperformed those of the latter half, an unusual trend that has only occurred twice in the last decade. Despite this, the RoRo market exhibited its resilience once more, growing by 4% and surpassing 1.2m units for the first time. This is an important benchmark that means RoRo volumes are now above their pre-COVID levels for the first time. LoLo traffic fell by 2%, but has held on to almost all of its post-Brexit growth that was evident following the end of the Brexit transition period.

On Brexit, the shifts in unitised traffic patterns that were detailed in Volume 19 of this report have remained persistent in 2022. In 2021, RoRo traffic on direct routes to mainland EU ports (i.e. ROI – EU routes) doubled. In 2022, this traffic grew by a further 3 %. As a result, just as in 2021, ROI – EU traffic accounts for one in every three RoRo units at Irish ports, compared to one in six before Brexit. In addition, despite the inflationary pressures experienced in 2022, LoLo volumes also remain 10 % above 2019 levels. As for RoRo traffic to ports in Great Britain (i.e. ROI – GB), the post-Brexit trends that were evident in 2021 have also persisted into 2022. Although ROI – GB traffic grew by 5 % this year, some growth was expected, as the first period of 2021 encompassed the negative effects of a large pre-Brexit stockpile, and so volumes were unusually low. Post-Brexit, the fall in ROI – GB traffic has been remarkably constant, with traffic on these routes consistently 20 % below their pre-Brexit comparisons. A decline in the use of the UK Landbridge continues to be the main catalyst for these changes. Overall, 2021 witnessed the expansion of capacity on existing EU services, the arrival of new shipping operators to the RoRo market, and greater diversity in port destinations following the establishment of new routes. All of these additions remain present in 2022, meaning the Irish RoRo market remains highly competitive, adaptable and dynamic.

The IMTE is a collaborative production that relies on the support and confidence of industry stakeholders. The work undertaken by the IMDO to monitor and interpret the performance of the maritime industry is trusted and has demonstrated its value throughout the challenges of recent years. Our work would not be possible without the participation of stakeholders, or without the collaboration of colleagues throughout the Department of Transport. I would like to express my gratitude to all who have contributed to this edition of the IMTE and in particular to our economic analyst Daniel Fallen Bailey, who brought the publication to fruition.

In conclusion, may I take this opportunity to wish all those involved in the maritime transport sector success in the vitally important work they do in maintaining and expanding Ireland's trade links with the rest of the world and in driving growth, efficiency and competitiveness in our economy. May I also thank all those who continue to support this publication through their readership and by providing the information on which the IMTE database is constructed.

Liam Lacey.

Liam Lacey
Director
Irish Maritime Development Office

Section 1. **The Irish Shipping Market in 2022**

Section 1 of this report is divided into 5 sections. Section 1.1 details the performance of the all-island bulk market, which comprises three cargo modes: liquid bulk, dry bulk and break bulk. Sections 1.2 and 1.3 deal with the unitised freight sector of the Irish shipping industry, which includes the Roll-on / Roll-off (RoRo) and Lift-on / Lift-off (LoLo) cargo modes. The unitised sector is largely made up of perishable food and retail items further along the value chain. Sections 1.4 describes the performance of the tourist passenger market. Section 1.5 illustrates the performance of the iShip index in 2022, which is a quarterly weighted indicator that outlines trends within the Republic of Ireland's (ROI) shipping industry.

1.1 Bulk Market

Bulk Port traffic refers to three market segments of port and shipping activity: Liquid bulk, dry bulk and break bulk. Liquid bulk ranges from fuel for domestic transport and aviation, to crude oil or liquefied natural gas. Dry bulk refers to raw materials for industrial or agricultural purposes, such as fertiliser, grains, animal feeds and iron ores. Lastly, break bulk is largely made up of non-containerised project and construction materials such as timber, steel and machinery.

Table 1 below provides a summary of bulk tonnage through ports on the island of Ireland in 2022. Overall, combined bulk traffic handled at ports in the Republic of Ireland (ROI) declined by 4% in 2022, equivalent to roughly 750,000 tonnes.

Table 1: All-Island Bulk Traffic 2022

	Dry Bulk		Liquid Bulk		Break Bulk		Combined Bulk	
	Tonnes	Growth (%)	Tonnes	Growth (%)	Tonnes	Growth (%)	Tonnes	Growth (%)
ROI	15,732,334	-6%	11,208,814	5%	1,447,132	-12%	28,388,279	-3%
NI	7,902,536	-11%	2,593,076	-7%	732,519	-13%	11,228,132	-11%

Source: *IMDO*

The decline in total bulk traffic in 2022 was driven by the dry bulk market. Specifically, Shannon Foynes Port Company, Ireland's largest dry bulk port, handled 1m fewer dry bulk tonnes than in 2021. The decline this year was driven in large part by a fall in coal imports to Shannon Foynes.

Demand for liquid bulk products grew in Ireland in 2022, rising by 5%, equivalent to 490,000 additional tonnes. An increase in liquid bulk traffic in 2022 is not surprising, as restrictions on domestic and international travel remained in place at various points throughout 2021, thus reducing energy demand.

Break bulk traffic fell sharply in 2022. Cargo in this sector is driven largely by the construction industry. Widespread increases in the price of building materials in 2022 had a suppressive effect on demand for such traffic. 2021 recorded the largest volume of break bulk traffic for a decade, meaning the inflationary pressures of 2022 interrupted post-Covid momentum built up in this industry.

1.1A Dry Bulk

In 2022, dry bulk traffic on the island of Ireland declined by 8% to 23.6m tonnes, equivalent to a decline of approximately 2 million tonnes. At ROI ports, dry bulk tonnage fell by 6% to 15.7m tonnes, a decline of just over 1 million tonnes compared to 2021. At NI ports, dry bulk tonnage fell by 11% to 7.9m tonnes, also equivalent to a decline of just over one million tonnes. ROI ports represented 67% of all dry bulk traffic on the island, up from 65% in 2021. Table 2 provides an overview of annual dry bulk tonnage across Irish and Northern Irish ports in 2021 and 2022.

2022 recorded the lowest all-island dry bulk total since 2012 (excluding 2020, when dry bulk traffic fell to 22.9m tonnes due to COVID-19 restrictions on industrial activity). The five-year average for all-island dry bulk traffic is 24.8m tonnes. 2022 volumes are 5% below this level. The commentary below will outline the areas of significant change in dry bulk traffic in 2022, focusing on several large ROI dry bulk ports.

Table 2: All-Island Dry Bulk Traffic, 2021 - 2022

	All-Island 2021		All-Island 2022		Annual Growth	
	Tonnes	% Share	Tonnes	% Share	%	Tonnes
Cork	1,409,379	5%	1,430,900	6%	2%	21,521
Drogheda	904,856	4%	732,933	3%	-19%	-171,923
Dublin	1,973,622	8%	2,075,514	9%	5%	101,892
Dundalk	70,122	0%	58,004	0%	-17%	-12,119
Galway	182,207	1%	197,716	1%	9%	15,509
Greenore	1,131,145	4%	1,184,047	5%	5%	52,902
New Ross	266,857	1%	173,451	1%	-35%	-93,406
Shannon-Foynes	9,379,260	36%	8,372,882	35%	-11%	-1,006,378
Waterford	1,473,857	6%	1,506,887	6%	2%	33,030
Total ROI	**16,791,306**	**65%**	**15,732,334**	**67%**	**-6%**	**-1,058,972**
Belfast	7,308,375	28%	6,425,376	27%	-12%	-882,999
Foyle	1,105,860	4%	1,106,202	5%	0%	342
Larne	56,903	0%	21,999	0%	-61%	-34,904
Warrenpoint	455,293	2%	348,959	1%	-23%	-106,334
Total NI	**8,926,431**	**35%**	**7,902,536**	**33%**	**-11%**	**-1,023,895**
Total All-Island	**25,717,737**		**23,634,870**		**-8%**	**-2,082,867**

Source: *IMDO*

Republic of Ireland

Dry bulk traffic represents approximately 30% of all ROI port tonnage. Dublin Port, Shannon Foynes and the Port of Cork consistently represent three quarters of all ROI dry bulk traffic. These three ports are categorised in Ireland's National Ports Policy as Tier 1 ports, meaning they are responsible for between 15% and 20% of overall tonnage through Irish ports, and they have the potential to lead the development of port capacity in the future.[1] The ports of Drogheda, Greenore and Waterford account for a further 20% of dry bulk traffic on average. Overall, more than 95% of all ROI dry bulk traffic is handled by six ports.

At 15.7m tonnes, the total for 2022 is below the five-year average for dry bulk traffic, which stands at 16.4m tonnes. However, this five-year period encompasses includes 2017 and 2018, where dry bulk imports surged to more than 17m tonnes as a result of a national fodder shortage.

Shannon Foynes

Shannon Foynes is Ireland's largest dry bulk port by a significant margin. In 2022, the port represented 53% of all ROI dry bulk tonnage. Between 2012 and 2022, this annual share has averaged 57%.

Imports of bauxite, a sedimentary rock that is the world's main source of aluminium, make up approximately 45% of all tonnage at the port. Bauxite is imported to Shannon Foynes predominantly for use by Aughinish Alumina, Europe's largest alumina refinery. The company, located in the Shannon estuary, refines bauxite into alumina which is then shipped abroad for use in myriad global products in transportation, construction, packaging and the production of electricity.

Aughinish Alumina is indirectly owned by Rusal International, a Russian company whose shareholders have faced Western sanctions in the wake of the Russian invasion of Ukraine. This, coupled with the rapid rise in energy costs, particularly natural gas, has led to a significant increase in uncertainty, meaning 2022 was a difficult year for the company.[2] Imports of bauxite into Shannon Foynes fell by 6%, equivalent to a decline of 260,000 tonnes. In turn, exports of alumina from the port fell by a similar level, roughly 250,000 tonnes. Dry bulk tonnage at Shannon Foynes declined by approximately 1m tonnes in 2022, and the decline in bauxite and alumina traffic therefore represented roughly half of this total.

Elsewhere in Shannon Foynes, 2022 recorded a 26% decline in coal imports, the majority of which is directed towards the ESB moneypoint coal-fired power station. The decline in 2022 was equivalent to 345,000 tonnes. The 2021 annual increase in Irish dry bulk traffic was almost entirely driven by coal, as highlighted in Volume 19 of the Irish Maritime Transport Economist. Imports of coal to Shannon Foynes Port Company rose significantly in 2021, from approximately 72,000 tonnes per year in 2019 and 2020, to over 1.3m tonnes in 2021. The context for such growth could be found in the composition of Ireland's energy requirements for the year. As stated by the Sustainable Energy Authority of Ireland (SEAI);

"Due to a low wind year for renewable generation in 2021, we used more coal and oil for electricity generation, which increased the carbon intensity of our electricity by 12.5%"

Energy in Ireland 2022 Report, SEAI, pg. 4[3]

In 2022, imports of coal to Shannon Foynes amounted to 960,000 tonnes. This volume is still significantly higher than pre-2021 levels, and points to the continued use of the ESB Moneypoint power station for electricity generation in Ireland. In a policy statement released in November 2021, the Department of the Environment, Climate and Communications indicated that;

"It is expected that Moneypoint will remain available to generate electricity beyond the previous target closure date of 2025, but only until it is replaced by new generation capacity"

Department of the Environment, Climate and Communications, Nov 2021[4]

[1] National Ports Policy, 2013
[2] Russian-owned Aughinish Alumina warns of 'uncertainty' over Limerick firm's future – Irish Times Nov, 2022
[3] Energy in Ireland 2022 Report, SEAI
[4] Minister Ryan publishes new Government Policy Statement to ensure security of electricity supply to 2.4 million homes and businesses throughout Ireland

Overall, dry bulk tonnage at Shannon Foynes amounted to 8.4m tonnes in 2022, a decline of 11% compared to 2021. Three quarters of this total was imported, with exported dry bulk dominated by alumina from Aughinish. As outlined above, the decline in dry bulk tonnage in 2022 was driven mainly by bauxite and coal. Regarding agricultural products, animal feed tonnage declined by roughly 240,000 tonnes, and was offset by a rise in cereal tonnage of approximately 255,000 tonnes.

Dublin Port

Dublin Port has consistently represented between 12% and 13% of ROI dry bulk tonnage for the last decade. In 2022, this has continued, with the port handling 2.1m tonnes of dry bulk traffic. This is the first time Dublin Port has surpassed 2m tonnes since 2018 and represents growth of 5% compared to 2021.

Of this 2.1m tonnes, 69% was imported, equivalent to 1.4m tonnes. This represents 9% growth over 2021, with the difference driven largely by increased imports of animal feed. Animal feed imports to Dublin Port rose by 88,000 tonnes, while fuel wood, cereals and cement additives all rose by roughly 10,000 tonnes each. As for exports, these were dominated by ores and concentrates, as well as cement additives, which accounted for three quarters of dry exports from Dublin when combined.

The Port of Cork

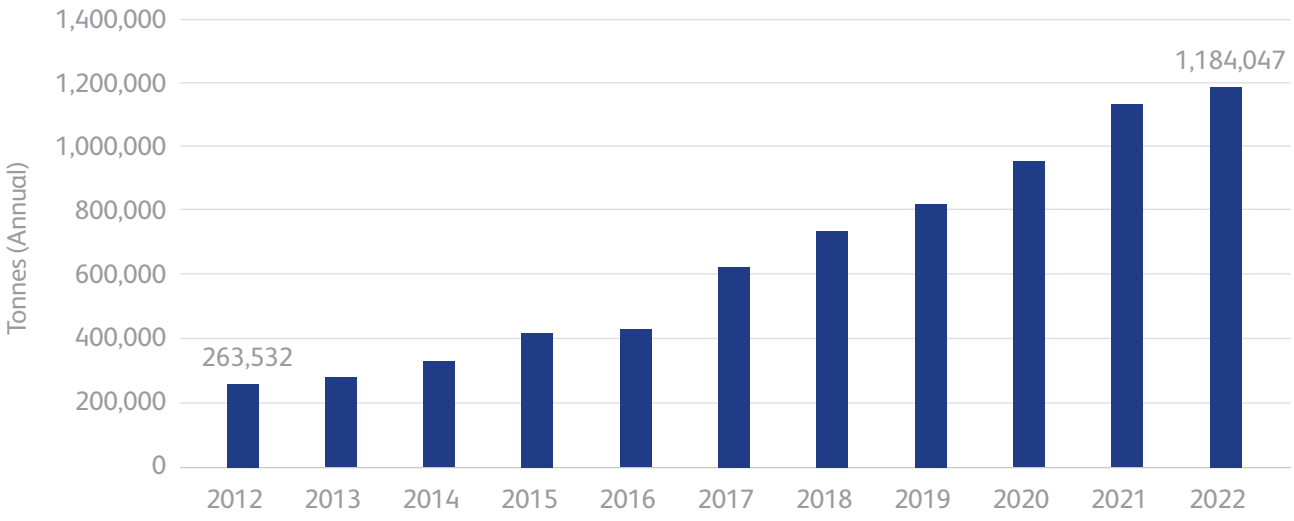
In Cork, dry bulk traffic rose slightly in 2022, by 2% to 1.43m tonnes. The port represents between 8% and 9% of ROI dry bulk traffic, and close to 100% of this is imported.

In 2022, animal feed imports to Cork rose by 13%, or 120,000 tonnes. This was offset by a 129,000-tonne decline in mineral imports, made up largely of industrial raw materials.

Greenore

One clear and consistent trend within the last decade of Irish bulk shipping has been the increase in tonnage at Greenore Port. In 2012, just 264,000 dry bulk tonnes were handled at the port. In 2022, the port handled just under 1.2m tonnes, effectively all of which was imported. During that time, Greenore added an average of 92,000 tonnes of dry bulk traffic each year, equivalent to an average annual growth rate of 17%. This consistent increase is illustrated in Figure 1.

Figure 1: Total Dry Bulk Tonnage, Greenore Port, 2012 – 2022:



Source: *IMDO*

In recent years, three dry bulk products make up roughly 80% of Greenore Port's tonnage; grain (including maize, barley and wheat), gypsum rock and non-grain animal feed. In 2022, dry bulk volumes rose by 5%, or 53,000 tonnes.

Drogheda

In contrast to Greenore Port, dry bulk traffic at Drogheda has declined consistently in recent years. In 2019, Drogheda handled over 1.2m tonnes of dry bulk traffic. In 2022, this fell to 0.73m tonnes. The 2022 total represents a 19% decline over 2021, equivalent to 172,000 tonnes.

In Drogheda, exports account for half of all dry bulk tonnage. This is twice the average across all ROI ports, where dry bulk exports account for roughly 25%. The decline since 2019 in Drogheda's dry bulk traffic has therefore been shared between declining exports and imports. A fall in imports of metalliferous ores and fertilisers contributed heavily to the dry bulk decline in 2022.

Waterford

Over the past five years, Waterford has consistently accounted for 9% of all ROI dry bulk tonnage. More than 95% of Waterford's dry bulk traffic is imported. All bulk tonnage at Waterford is dominated by two imported products; animal feed and fertilisers. When combined, they represent 60% of all bulk tonnage at the port. In 2022, dry bulk traffic at Waterford rose slightly, by 2%, or 33,000 tonnes.

1.1B Liquid Bulk Market

In 2022, the volumes of liquid bulk at Republic of Ireland ports rose by 5%, from approximately 10.7m tonnes, to 11.2m tonnes. In Northern Ireland ports, liquid bulk traffic fell by 7%, from approximately 2.8m tonnes, to 2.6m tonnes.

Table 3 below provides a summary of the volume of liquid bulk handled at ports on the island of Ireland in 2021 and 2022.

Table 3: All-Island Liquid Bulk Traffic, 2021 - 2022

	All-Island 2021		All-Island 2022		Annual Growth	
	Tonnes	% Share	Tonnes	% Share	Tonnes	%
Cork	5,222,218	49%	5,042,842	37%	-179,376	-3%
Drogheda	26,538	0%	28,654	0%	2,116	8%
Dublin	3,937,734	37%	4,715,276	34%	777,542	20%
Galway	290,863	3%	269,060	2%	-21,803	-7%
Shannon Foynes	1,241,713	12%	1,152,982	8%	-88,731	-7%
Total ROI	**10,719,066**	**79%**	**11,208,814**	**81%**	**489,748**	**5%**
Belfast	2,091,822	75%	1,841,192	71%	-250,630	-12%
Foyle	643,428	23%	707,383	27%	63,955	10%
Larne	5,667	0%	5,891	0%	224	4%
Warrenpoint	42,496	2%	38,610	1%	-3,886	-9%
Total NI	**2,783,413**	**21%**	**2,593,076**	**19%**	**-190,337**	**-7%**
Total All-Island	**13,502,479**		**13,801,890**		**299,411**	**2%**

Source: *IMDO*

Republic of Ireland

For ROI ports, this is the largest annual volume of liquid bulk handled since 2018, when 11.7m tonnes was recorded. An increase in liquid bulk in 2022 was expected however, as 2021 encompassed periods of COVID-19 restrictions on travel, the fuel for which is a key driver of demand for these products.

In 2020, during the COVID-19 pandemic, liquid bulk traffic declined by 9% compared to 2019, and recorded its lowest annual volume since 2007. Restrictions on domestic and international travel led to a significant decline in the demand for domestic and aviation transport fuels, both of which have a large impact on liquid bulk volume. The suppressive effect of COVID-19 restrictions continued in the first three months of 2021, as much of the Irish economy remained shut. Imports of liquid bulk traffic declined by 18% in Q1 2021 when compared to the same period in 2020. These volumes recovered over the next 6 months as the Irish economy reopened, and by Q4 2021, were back at 2019 levels at approximately 2.5m tonnes. Throughout 2022, liquid bulk traffic resembled both 2018 and 2019, averaging approximately 2.8m tonnes per quarter.

Ireland's core ports make up almost all of the liquid bulk market. Dublin Port and the Port of Cork accounted for 87% in 2022, while Shannon Foynes held a 10% share. Galway represented 2% of liquid bulk in 2022, while Drogheda held a less than 1% share. This spread of shares of ROI liquid bulk traffic has been consistent for most of the last decade.

Since 2013, imports have represented an average of 82% of all liquid bulk traffic through Irish ports, while liquid bulk exports hold a share of 18% on average. This also remains unchanged in 2022. Of the liquid bulk traffic exported, over 95% of this leaves from the Port of Cork, originating from the Whitegate oil refinery where crude oil is processed into products such as petroleum, diesel and kerosene. In 2022, liquid bulk exports from Cork fell by 6%, or 115,000 tonnes, offsetting the total increase in liquid bulk traffic. In Cork, 63% of all liquid bulk traffic is imported.

Northern Ireland

As highlighted above, liquid bulk traffic in Northern Ireland ports fell by 7% in 2022, or by roughly 190,000 tonnes. There are little to no liquid bulk exports from Northern Irish ports. Belfast consistently accounts for 75 – 80% of liquid bulk traffic in Northern Ireland, with Foyle accounting for 20 – 25%. In 2022, liquid bulk traffic at Belfast fell by 12%, or 250,000 tonnes. In Foyle, liquid bulk tonnage rose by 10%, or 64,000 tonnes. As a result, Foyle represented 27% of Northern Irish liquid bulk, its highest share of the last decade. Overall however, at 2.6m tonnes, this is the lowest volume of liquid bulk traffic at NI ports since 2012.

Rising Prices

It should be noted that the price of liquid bulk products, namely petroleum-based products, rose sharply in 2022. As a result of the Russian invasion of Ukraine, sanctions put in place by European countries required buyers to replace crude oil supplies they were importing from Russia with crude oil from another source. This was the predominant driver of the sharp increases in global oil prices in 2022. (More information on the global oil market in 2022 is provided in Section 3).

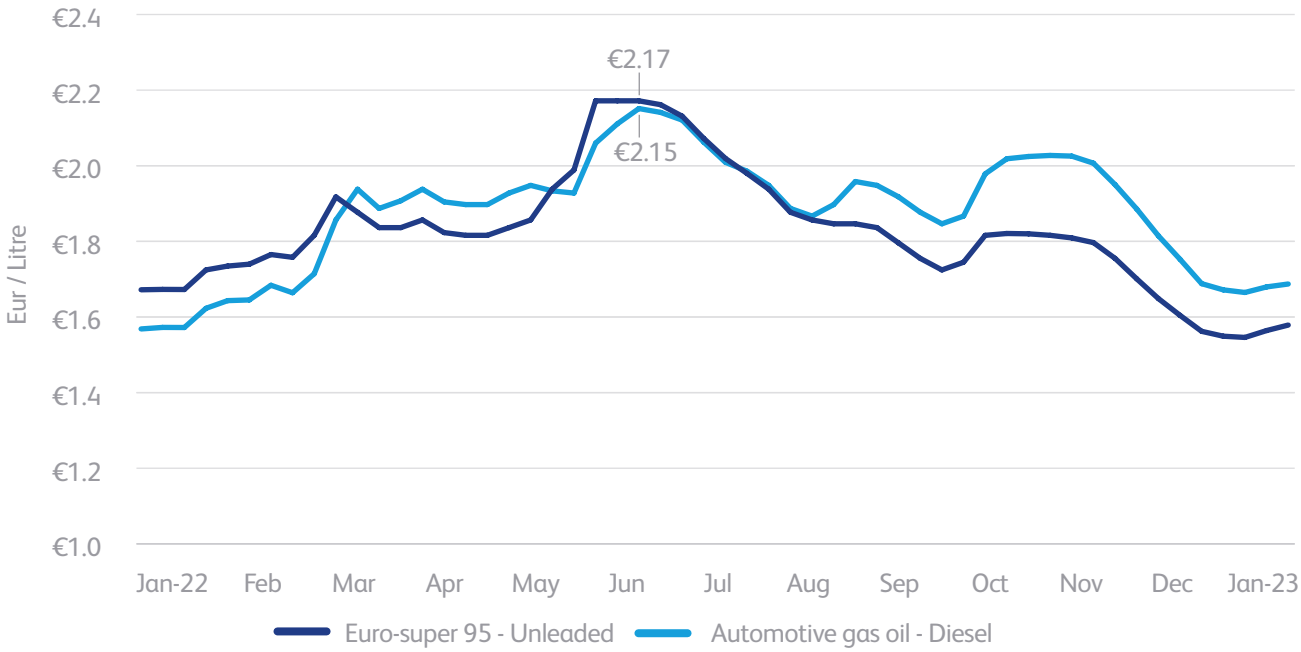
Consequently, imports of petroleum and petroleum-related products from Russia fell by 63% in 2022, from approximately 231,000 tonnes, to 86,000 tonnes according to CSO trade data.[5]

The impact of these price rises were felt by Irish consumers, particularly at the fuel pump. In Figure 2, the average daily pump price across Irish fuelling stations of Euro – super 95 (Unleaded) fuel, and Automotive Gas Oil (Diesel) is illustrated.

As evident in Figure 2, the price per litre of unleaded fuel at Irish filling stations rose by 29% from the first week of January 2022, to its peak of €2.17 per litre at the end of June. For diesel, prices rose by 36% during the same period.

[5] Standard International Trade Classification (SITC) Revision 3, Code 33

Figure 2: Daily Unleaded & Diesel Fuel Price/Litre, Ireland, Jan 2022 – Jan 2023



Source: *Oil Market Journal*

Despite the significant increase in global oil prices, Ireland still imported liquid bulk products in similar volumes to recent years, highlighting the inelastic nature of Irish demand for oil.

In all, Ireland imported 9.5m tonnes of liquid bulk products in 2022, a 6 % increase over 2021 worth and additional 530,000 tonnes. Since 2013, the volume of liquid bulk imports through ROI ports has been steady, averaging 9.4m tonnes per year. In Vol 19 of this report, it was highlighted that in the last decade, Ireland has made increasing use of natural gas and renewable energy to satisfy annual energy requirements. The decline in imports of coal and petroleum has a significant effect on overall port volumes, particularly at Ireland's core ports.

Despite this trend, Ireland remains extremely reliant on oil for its final energy use (particularly transport) and therefore on the 9.4m tonnes that are imported to Dublin, Cork, Shannon Foynes, Drogheda and Galway each year. The majority of this liquid bulk traffic is made up of petroleum-related products, such as that used to supply Irish filling stations. This dependence is reiterated in the latest edition of the Sustainable Energy Authority of Ireland's Energy in Ireland Report for 2022;

"Oil products account for more than half of Ireland's final energy use, followed by electricity, gas, renewables, coal and peat, in that order. Ireland is almost completely dependent on oil for the servicing of its transport sector, and that sector is Ireland's largest end use of energy".

Energy in Ireland Report, 2022, SEAI, pg. 46[6]

[6] Energy in Ireland, 2022 Report – SEAI

1.1C Break Bulk Market

In 2022, the volume of Break Bulk traffic at ROI ports fell by 12% to 1.45m tonnes. When compared to 2021, this decline was equivalent to just under 190,000 tonnes. In Northern Ireland, break bulk traffic declined by 13% to 0.73m tonnes. This amounted to an annual decline of 109,000 tonnes.

Table 4 below presents the total break bulk tonnage handled by each port in Ireland and Northern Ireland in 2021 and 2022.

Table 4: All-Island Break Bulk Traffic, 2021 - 2022

	All-Island 2021		All-Island 2022		Annual Growth	
	Tonnes	% Share	Tonnes	% Share	%	Tonnes
Cork	374,858	15%	295,429	14%	-21%	-79,429
Drogheda	295,697	12%	239,333	11%	-19%	-56,364
Dublin	69,549	3%	64,192	3%	-8%	-5,357
Dundalk	15,663	1%	15,847	1%	1%	185
Galway	0	0%	7,703	0%		7,703
Greenore	177,929	7%	187,243	9%	5%	9,314
Shannon Foynes	352,857	14%	315,131	14%	-11%	-37,727
Waterford	183,818	7%	167,508	8%	-9%	-16,310
Wicklow	151,467	6%	152,466	7%	1%	998
Youghal	14,066	1%	2,280	0%	-84%	-11,786
Total ROI	**1,635,904**	**66%**	**1,447,132**	**66%**	**-12%**	**-188,772**
Belfast	358,513	14%	296,884	14%	-17%	-61,629
Foyle	81,485	3%	75,654	3%	-7%	-5,830
Warrenpoint	401,400	16%	359,981	17%	-10%	-41,419
Total NI	**841,398**	**34%**	**732,519**	**34%**	**-13%**	**-108,878**
Total All-Island	**2,477,301**		**2,179,651**		**-12%**	**-297,650**

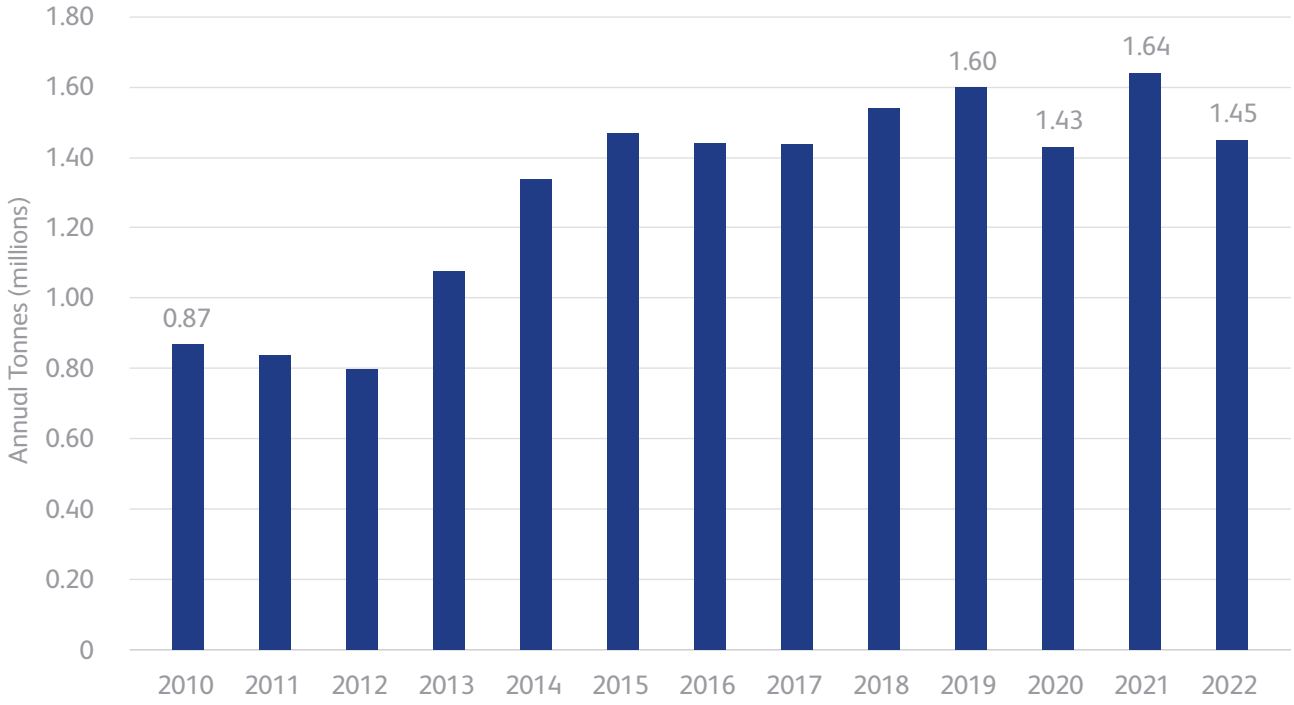
Source: *IMDO*

Republic of Ireland

For ROI ports, 2022 marks the largest annual decline in break bulk traffic recorded by the IMDO since 2009. It exceeds the pandemic-related decline recorded in 2020, which amounted to 162,000 tonnes. At 1.45m tonnes, 2022 traffic is 5% below the 5-year average (2017 – 2021), which stands at 1.53m tonnes.

Between 2010 and 2019, the volume of break bulk traffic at Irish ports rose steadily, reflecting the recovery in the Irish economy more broadly. Volumes rose from 0.87m tonnes in 2010, to a peak of 1.6m tonnes in 2019. The COVID-19 pandemic interrupted this growth, with volumes sliding back to 1.43m tonnes, before rebounding strongly to a record high of 1.64m tonnes in 2021. This trajectory of break bulk traffic at ROI ports is illustrated in Figure 3.

Figure 3: Annual Break Bulk Traffic, ROI Ports, 2010 – 2022



Source: *IMDO*

In the Republic of Ireland, 13 ports handle break bulk traffic each year. Five of these ports make up approximately 95% of the Irish market in 2022; Cork (20%), Drogheda (17%), Greenore (13%), Shannon Foynes (22%), Waterford (12%) and Wicklow (11%). This distribution of break bulk traffic has been consistent for the past five years.

Rising Costs

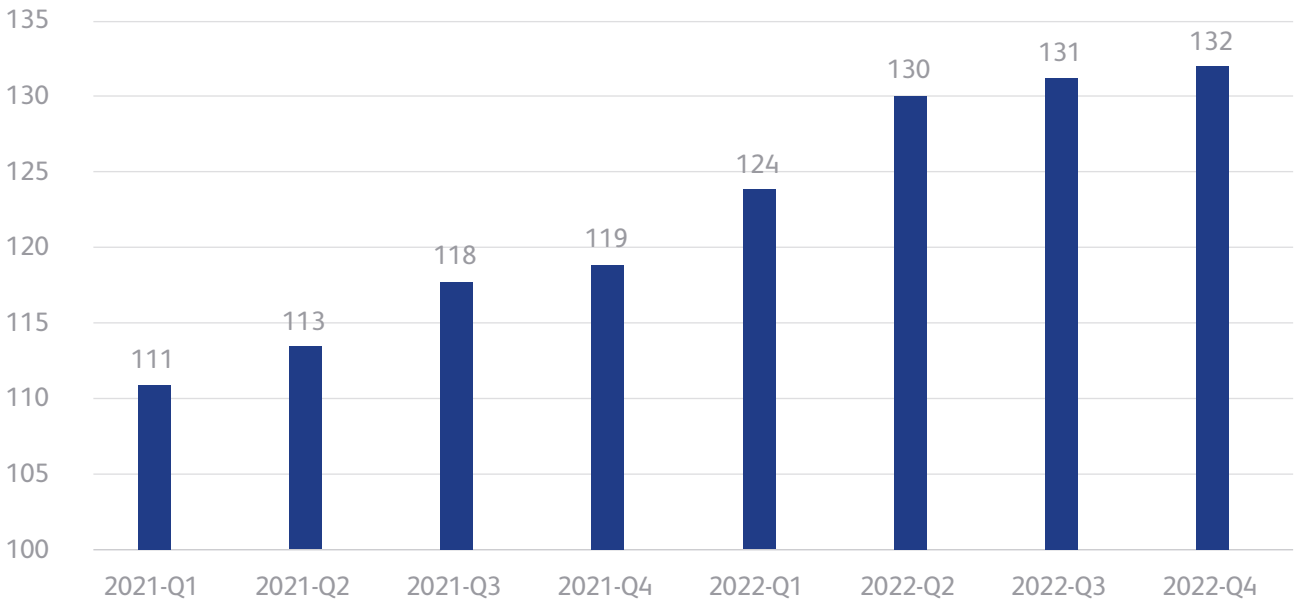
Break bulk cargo refers to loose, non-containerised cargo stowed directly into a ship's hold. It is not in raw material form, such as coal, oil or grain. In addition, it is also not capable, or is too large, to be containerised. Break bulk cargo commonly includes commodities such as timber, steel or machinery. Essentially, break bulk is cargo that is transported in individual units or packages, rather than being shipped in bulk, such as in a container or on a bulk carrier. The individual units may be of different shapes, sizes, and weights, and are typically loaded/unloaded individually at ports.

As a result, increases in break bulk traffic typically indicate a rise in infrastructural activity, such as the building of houses, roads, offices or other construction and manufacturing projects. At Irish ports, imports typically make up 55% of all break bulk traffic, with the rest exported to Ireland's trading partners. Demand for break bulk traffic is therefore derived from both the Irish economy and the economies of EU and UK.

When attempting to uncover why break bulk traffic fell so sharply in 2022, the answers may lie in the price of construction materials. As highlighted above, break bulk traffic is largely comprised of goods destined for the construction and manufacturing industries, so volumes are sensitive to such indicators.

As discussed frequently in this report, the general price of goods and services rose sharply in 2022 across large economies including the EU, UK and USA. Construction and manufacturing materials were not exempt from this trend, and also experienced strong inflationary pressures. In Figure 4, Eurostat's Construction Cost Index for new residential buildings is provided for the last two years.

Figure 4: Construction costs, new residential buildings, Euro Area, Q1 2021 – Q4 2022 (2015 = 100)[7]



Source: *Eurostat*

As evident in Figure 4, construction costs in the Euro Area rose by 19% between Q1 2021 and Q4 2022. A quarterly commodity report produced by Irish-based multinational surveyors firm Linesight provides detail on prices changes for specific materials in Ireland in 2022.[8] For example, the price of steel flat product rose from €719 per Metric Ton (MT) in 2021, to an estimated €1,205 in the third quarter of 2022, a 68% increase.[9] For lumber, the price over the same period rose from €80 per cubic metre to €111, a 29% increase. In the report for Q4 2022, Linesight highlight how rising prices, coupled with the rise in interest rates in Europe aimed at cooling inflation, negatively impacted upon construction demand in the latter stages of 2022;

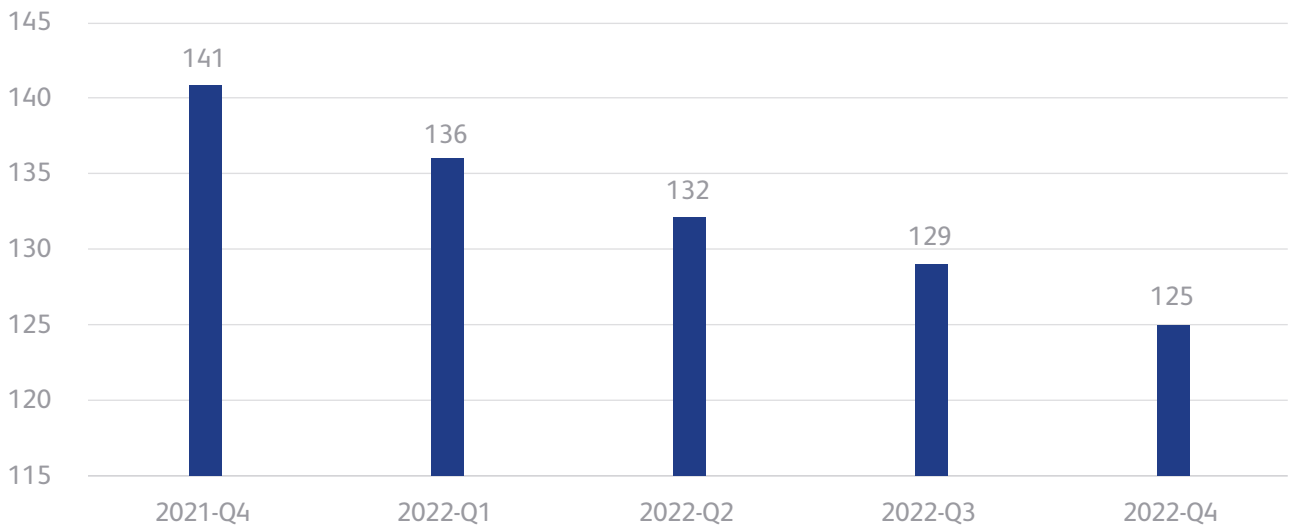
"The fourth quarter of 2022 saw a decline in construction activity, particularly in the civil engineering sector, amid concerns of global recession. Construction output has been impacted by labour shortages, high energy prices, and high financing costs due to elevated interest rates, driving up construction prices and causing demand to weaken"

Stephen Ashe, Senior Director – Europe, Linesight[10]

The weakening of output in the construction sector in the latter half of 2022 is evident in Figure 5, which illustrates the CSO's Volume of Production Index in Building and Construction in Ireland between 2021 and 2022. It can be seen from Figure 5 that the index fell by 11% between Q4 2021 and Q4 2022.

[7] Construction producer prices or costs, new residential buildings, Eurostat
[8] Linesight, About Us
[9] Linesight Country Insights and Commodity Report, Q3 2022, Pg. 97
[10] Linesight Country Insights and Commodity Report, Q4 2022, Pg. 64

Figure 5: Volume of Production Index in Building and Construction (Seasonally Adjusted), Ireland, (2015 = 100)



Source: *IMDO*

In all, the rising cost of construction materials in the first half of 2022, coupled with rising interest rates in the second half of the year, have likely played a significant role in the decline in the volume of building and construction in Ireland. This is borne out in the volume of break bulk traffic at ROI ports in 2022, particularly imports. Conversely, the volume of break bulk exports rose by 5% in 2022, adding roughly 30,000 tonnes.

Focusing on imports, in 2022, the volume of break bulk imports to Irish ports fell by 22%, from approximately 1m tonnes to 0.8m. This is the first time that break imports have fallen below 0.8m tonnes since 2015. Of the ten Irish ports that handled break bulk traffic in 2022, six recorded declines compared to 2021.

In terms of examples, in Drogheda, imports of construction materials fell by 35% this year, equivalent to 25,000 tonnes. In Cork, imports of timber fell by 49%, or 93,000 tonnes. And in Waterford, imports of cement and clinker fell by 52% and 30% respectively, worth 120,000 tonnes when combined.

Northern Ireland

At Northern Irish ports, 0.73m tonnes of break bulk tonnes were handled in 2022, a 13% decline over 2021. Similar to ROI ports discussed above, 2021 was a strong year for break bulk traffic for Belfast, Foyle and Warrenpoint, as post-pandemic pent-up demand was largely satisfied. 2022 slowed that momentum, however, with volumes falling by 109,000 tonnes. Break bulk traffic in 2022 is 9% below the five-year average recorded between 2017 and 2021.

In 2022, Belfast held a 41% share of Northern Ireland break bulk traffic. Warrenpoint held a 49% share, while Foyle held a 10% share. Belfast's share of break bulk traffic has slowly fallen over the last decade, from 63% in 2012 to 41% in 2022. Conversely, Warrenpoint's share has increased 33% to 49% over the same period.

1.2 RoRo

Introduction

In ROI ports, approximately 30% of all freight traffic is RoRo traffic. This means that three out of every 10 tonnes handled at Irish ports each year is carried on a RoRo vessel. This market is therefore central to the Irish shipping sector and by extension, Irish trade.

There are three RoRo ports in the Republic of Ireland, and three in Northern Ireland. Dublin, Cork and Rosslare Europort make up the RoRo ports in the Republic of Ireland (ROI), while Belfast, Larne and Warrenpoint make up the RoRo ports in Northern Ireland (NI).

There are several key points that should be highlighted if the performance of the Irish RoRo market in 2022 is to be clearly understood. This section is divided into seven parts, with each focusing on an important aspect of the RoRo market.

Part (i) describes how RoRo traffic in ROI ports achieved a record total of 1.2m units in 2022, an important milestone that would have been reached sooner if not for the disruption caused by COVID-19 and Brexit. In part (ii), it is described how global inflationary pressures suppressed RoRo traffic in the latter half of the year. In Part (iii) the persistence of post-Brexit patterns is highlighted. Brexit fundamentally altered the composition of the RoRo market on the island of Ireland, and these changes have continued into 2022. In Part (iv) to (vi), the performance of the three main route categories is described, which are; routes between Republic of Ireland ports and ports in Great Britain (ROI – GB), routes between Northern Ireland ports and ports in Great Britain (NI – GB), and routes between Republic of Ireland ports and mainland European ports (ROI – EU). Lastly, part (vii) provides an update on the share of RoRo traffic on the island of Ireland held by the unaccompanied cargo mode. This share has accelerated post-Brexit, and this changes the long term capacity calculations for Irish ports.

Table 5 presents the volume of traffic handled at each RoRo port on the island of Ireland between 2020 and 2022.

Table 5: All-Island RoRo Units, 2020 – 2022

Port	2020	2021	2022	Growth Vs 2021	Diff Vs 2021
	RoRo Units	RoRo Units	RoRo Units	(%)	RoRo Units
Cork	1,527	6,917	9,240	34%	2,323
Dublin	1,060,979	961,384	1,002,832	4%	41,448
Rosslare	122,700	183,075	188,023	3%	4,948
Total ROI	**1,185,206**	**1,151,376**	**1,200,095**	**4%**	**48,719**
Belfast	541,350	609,155	610,624	0%	1,469
Larne	185,274	207,804	159,492	-23%	-48,312
Warrenpoint	100,897	112,073	109,114	-3%	-2,959
Total NI	**827,521**	**929,032**	**879,230**	**-5%**	**-49,802**
Total All-Island	**2,012,727**	**2,080,408**	**2,079,325**	**0%**	**-1,083**

Source: *IMDO*

(i) Milestone Reached

2022 was a record year for RoRo freight traffic at ROI ports. Volumes at Dublin, Cork and Rosslare reached 1.2m units for the first time, surpassing the previous peak of 1.19m units reached in 2019. As presented in Table 5, the volumes recorded in 2022 represent a 4% rise over 2021, adding 48,719 units.

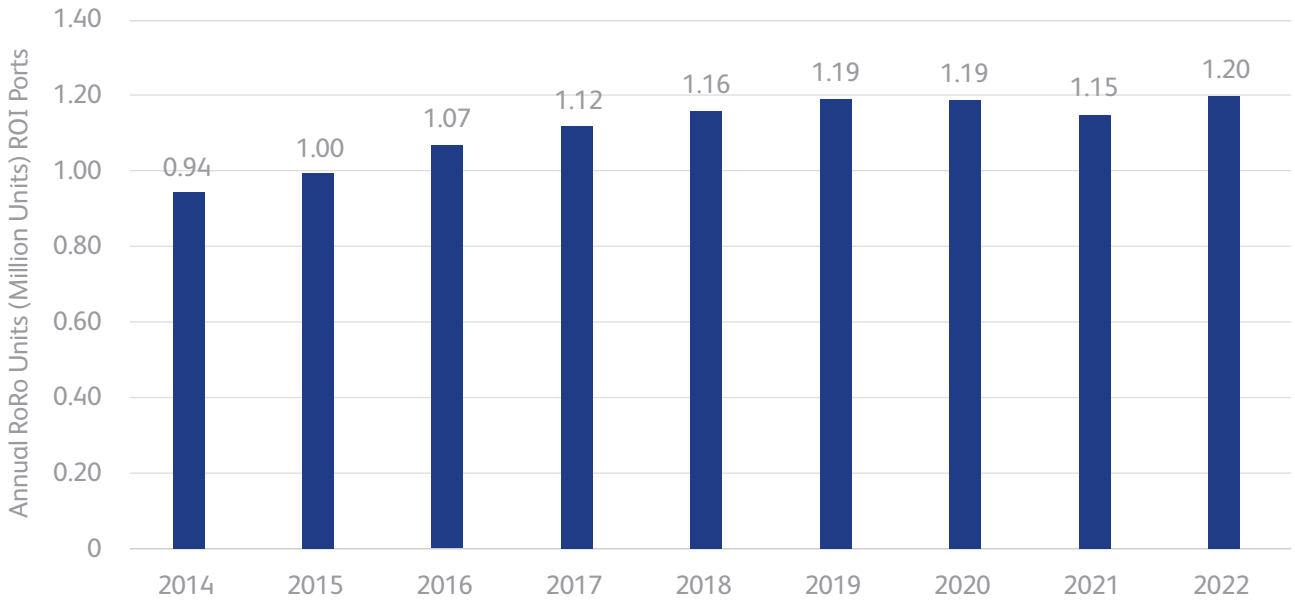
The 4% increase in 2022 follows a 3% decline in 2021. Some growth in 2022 was expected, as the first quarter of 2021 encompassed the negative effects of a large pre-Brexit stockpile in late 2020, and so volumes were unusually low. In addition, strict lockdown conditions were still in place in the early months of 2021, in Ireland and across Europe, further suppressing economic activity. This period of disruption, due to the Brexit stockpile and to lockdown restrictions, should be kept in mind when annual growth figures are analysed against 2021.

In that context, surpassing 1.2 million units is an important milestone for the Irish RoRo sector, as it would likely have been achieved before 2022 had the negative effects of COVID-19 in 2020 and 2021, or the aforementioned Brexit stockpiling effects in early 2021, not occurred.[11]

2022 represents a return to the momentum built up in the consistent period of growth in Irish maritime traffic recorded between 2014 and 2019. In addition, it once again highlights the resilience of this sector of the Irish economy to exhibit a reliability throughout difficult economic periods.

The trajectory of RoRo traffic at Irish ports since 2014 is illustrated in Figure 6 below. As evident in Figure 6, the COVID-19 pandemic in 2020, and the stockpiling effect of Brexit in 2021, interrupted a period of consistent growth in RoRo traffic in Ireland. Had Irish ports continued on that pre-COVID trajectory, they would likely have reached 1.2m units in 2020.

Figure 6: Annual RoRo Volume, Republic of Ireland, million units



Source: *IMDO*

[11] See IMTE Vol 19, Section 1.2. for more detail on the stockpiling effects on 2021 RoRo traffic, and the COVID-19 effects on 2020 & 2021 traffic.

The annual growth rate in ROI RoRo traffic between 2014 and 2016 was 7% per year, reflective of the recovery in the broader Irish economy that was gaining momentum at this time.[12] Between 2017 and 2019, i.e. prior to any COVID-19 and Brexit effects, annual RoRo growth cooled, averaging approximately 3% per year. Between 2020 and 2022, average growth has been flat, at 0% per year.

After a turbulent period therefore, the RoRo market enters 2023 in roughly the same position as that of 2019. In other words, in the face of COVID-19 and the end of the Brexit transition period, two highly disruptive events to international trade in Ireland, RoRo traffic is no worse off than 2019 levels. That is a remarkable achievement for the sector, which represents almost one third of all port traffic in the Republic of Ireland.

2023 proposes a new set of challenges however, with inflation rates above 8% in the UK, EU and US. Sharp increases in inflation in 2022 have reduced the volume of global seaborne trade. In addition, post-Brexit intermodal competition, which involves competition between RoRo and LoLo cargo modes, has intensified. This has been driven by a surge in demand for direct services into mainland European ports, bypassing UK ports where there are now additional administrative requirements post-Brexit. As the majority of LoLo services offer direct routes to large European port hubs, that market was well placed to satisfy the increase in this demand (See Section 1.3).

High inflation rates and an increase in intermodal competition are two potential obstacles to growth in Irish RoRo traffic in the coming years. However, if ROI RoRo traffic averages between 2% and 3% annual growth for the remainder of this decade, as it did in the years leading up to 2020, then the next major milestone, 1.5m units, will be surpassed in 2030. Overall, this market has proven its ability to adapt to emerging challenges such as these, and has exhibited significant resilience throughout Brexit and COVID-19. As a result, it has recorded a record total for 2022.

(ii) A Year of Two Halves, Inflation Takes Hold in H2

An importance characteristic to note about the performance of the RoRo sector in 2022 is that the first half of the year outperformed the second half. This is an unusual occurrence and was driven by the sharp rise in inflation in 2022 both in Ireland and in the economies of Ireland's trading partners, namely the UK, US and Euro Area. Consequently, RoRo volumes began to underperform in the latter half of the year.

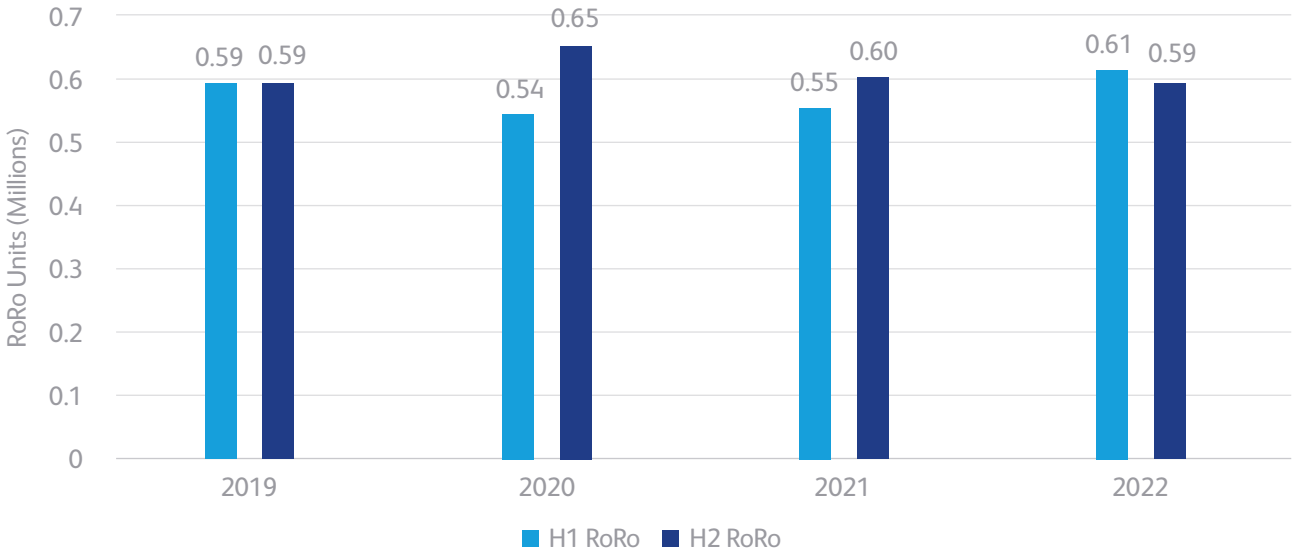
On average, the second half of a given year, H2, is 2% higher than the first in terms of traffic handled. RoRo traffic historically splits on a 51% to 49% basis in favour of the second half of the year. This is driven mainly by the busy months of October and November. Since 2007, these months have been 8% and 6% higher than an average month, respectively, as the volume of manufacturing increases and shelves are stocked ahead of the busy Christmas period.

In the first half of 2022, RoRo volumes in ROI ports reached a record total of 606,000 units. This represented a 10% rise over H1 2021, although the suppressive effects of the pre – Brexit stockpile and COVID-19 lockdowns in early 2021 should be recognised, as noted above. Setting aside the annual growth however, this was the first time on record that RoRo units had surpassed 600,000 units in the first half of the year. At this point, it was expected that RoRo traffic would easily surpass 1.2m units, and possibly reach 1.24m, equivalent to 7% growth (85,000 units) over 2021.

In Figure 7 below, the volume of ROI RoRo traffic in the first six months (H1) and the second six months (H2) is shown for the past four years. As evident in Figure 7, volumes in H1 2022 were strong, outperforming 2019 levels.

[12] Ireland's Recovery from Crisis, John Fitzgerald ESRI, 2014

Figure 7: ROI RoRo Traffic, H1 Vs H2, 2019 - 2022



Source: *IMDO*

However, the second half of the year proved to be underwhelming for RoRo traffic, with just 593,000 units handled. In the context of historical trends, this represents a loss of the momentum built up in the first half of the year. In all, RoRo traffic in H2 was 2% lower than H1 in 2022. H1 volumes have not exceeded H2 volumes in any year since 2012.

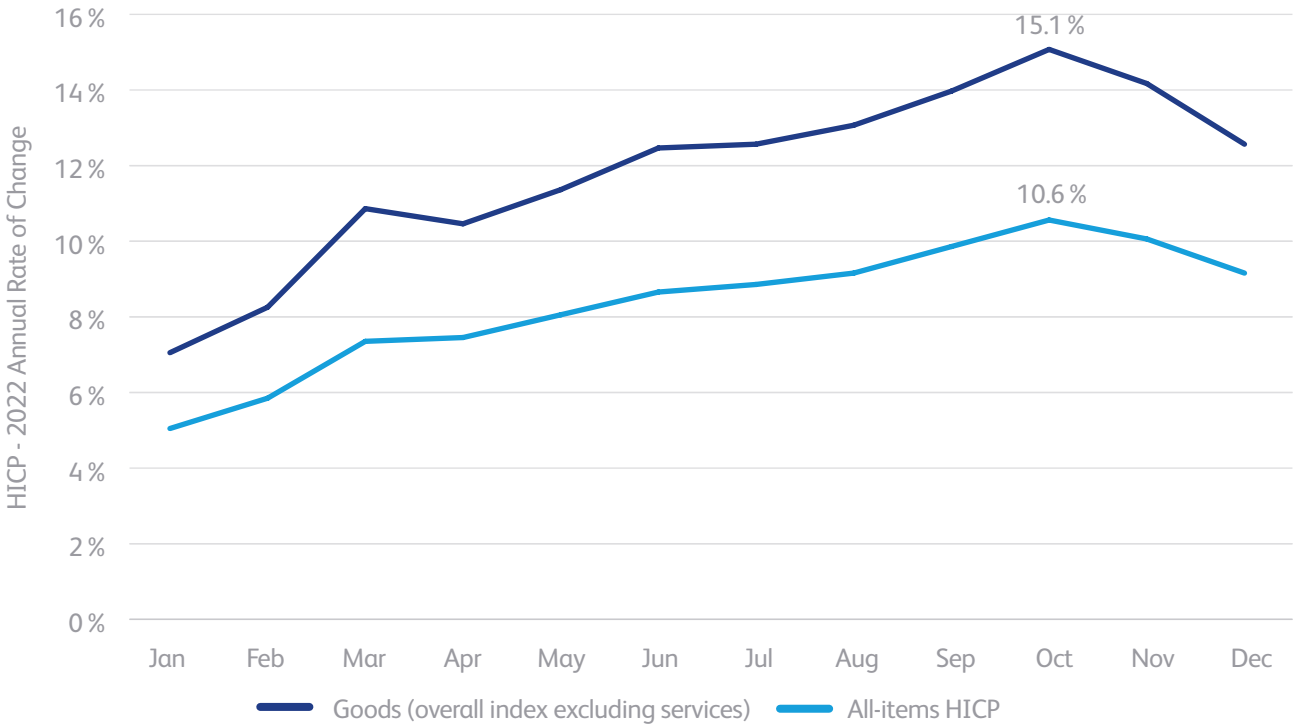
The trends described above were driven in large part by the sharp increase in inflation in 2022. A general increase in the price of merchandise goods has a suppressive effect on the volume traded, and this has a direct impact on shipping companies, and therefore port traffic. Inflation was the key driver behind the stalled momentum in Irish port traffic in second half of 2022, and these forces were not confined to the Irish economy.

In 2022, the average annual rate of inflation per month, as measured by the Harmonised Index of Consumer Prices (HICP), was 8.1% in Ireland. Across the Euro Area, it was 8.4%. In the UK and US, inflation averaged 8% and 8.7% respectively.[13] However, when the focus is only on merchandise goods, meaning the service economy is excluded, inflation in 2022 was even higher.

Figure 8 compares the rate of inflation in the Euro Area for 'All Items', as measured by the HICP, versus Goods only. The general price level for physical goods is more relevant to shipping companies, such as RoRo and LoLo operators, who facilitate the trade of such goods. Figure 8 illustrates that Euro Area inflation in Goods ran significantly higher than for 'All Items' in 2022.

[13] Eurostat: (PRC_HICP_MANR), ONS: CPIH ANNUAL RATE 00: ALL ITEMS 2015=100

Figure 8: Harmonized Index of Consumer Prices, Euro Area, monthly, annual rate of change



Source: *Eurostat*

As shown in Figure 8, Euro Area inflation for Goods rose at a faster pace in 2022 when compared to All Items. Euro Area Goods inflation averaged 11.9 % per month in 2022, compared to 8.4 % for All Items. In Ireland, Goods inflation averaged 11.3 %, compared to 8.1 % for All Items.

As is also clear from Figure 8, Goods inflation peaked in October at 15.1 %, the busiest period for both RoRo and LoLo traffic in Ireland.

(iii) Persistent Post – Brexit Patterns

In Volume 19 of this report, the changes in the Irish RoRo market resulting from the end of the Brexit transition period were discussed in detail. It was described that the Irish RoRo market was fundamentally altered as a result of new trading arrangements with the UK which began on January 1st 2021.

The biggest shift came in the form of the market's composition when broken down by regional route. Prior to Brexit, the RoRo sector was comprised of roughly 1 million units on ROI – GB routes, and 200,000 on direct EU routes. In 2021, this shifted to roughly 800,000 ROI – GB units, and 400,000 direct EU units. In the years leading up to 2021 therefore, RoRo units on routes direct to mainland European ports made up approximately 16 %, or one in six RoRo units per year. In 2021, this grew to 33 %, or one in three RoRo units. Conversely, RoRo units on routes to GB ports, such as Holyhead, Liverpool, Fishguard and Pembroke, represented 84 % of all RoRo traffic prior to Brexit. This share has fallen to 67 %.

In volume terms, post-Brexit traffic on ROI – GB routes has declined by roughly 20 %, while traffic on ROI – EU routes has doubled. Of the factors that drove this change, the decline in the use of the UK Landbridge has had the greatest impact.

The UK Landbridge is a term used to describe a route to market that connects Irish importers and exporters to international markets via the UK road and ports network. It is a strategically important means of access to mainland Europe that has been favoured by traders in high value or time sensitive goods because it offers faster transit times than direct routes. The reintroduction of customs controls as a consequence of Brexit increases transit times and places additional administrative costs on Irish businesses that reduces their competitiveness in accessing international markets. A report published in 2018 by the IMDO estimated that the volume of goods transported via the UK Landbridge was approximately 150,000 HGV's per year.[14] Speed and frequency were cited as key factors driving the choice of the UK Landbridge.

It is important to note that increased traffic on direct RoRo and LoLo services to mainland European ports does not automatically imply an increase in trade between Ireland and non-GB countries. Instead, Landbridge traffic represents trade between Ireland and non-GB countries that is captured within ROI – GB traffic volumes. Increased traffic on direct RoRo and LoLo services reflects a logistical rerouting away from the Landbridge in response to changes in the trading environment brought about by Brexit. Many Irish traders continue to use the Landbridge in 2022, and it remains a vital part of Irish access to EU and world markets. The intensity of its use however, has greatly reduced in 2021 and 2022.

Prior to 2021, concern about delays and disruption on the UK Landbridge due to new customs controls created uncertainty for Irish importers and exporters, and this drove the stockpile of merchandise goods in late 2020. Throughout all of 2021 and 2022, many importers and exporters have switched to alternatives to the UK Landbridge in order to access the EU markets, and from there, global markets. These alternatives include direct EU RoRo services from Irish ports to mainland EU ports, or Lift-on / Lift off (LoLo) container services, which operate predominantly between Ireland and large EU ports such as Rotterdam and Antwerp. Beginning in late 2020, and in anticipation of this shift in demand, shipping companies added unprecedented levels of capacity on direct services. This has allowed for continued, uninterrupted access for Irish trade between Irish ports and mainland Europe.

Another factor driving increases in ROI – EU RoRo traffic is the relocation of distribution hubs from Great Britain to mainland European countries such as France, Belgium and The Netherlands. The IMDO monitors industry activity closely, and frequently engages with Irish shipping market stakeholders. Following the end of the Brexit transition period, several large retail companies with Irish stores relocated distribution warehouses from areas such as Southern England, to areas such as Northern France and the Benelux region. The accelerated overall trend of rising ROI – EU direct RoRo traffic, and its impact continues in 2022.

It is important to highlight that in 2022, these patterns have persisted, with no clear momentum towards a return to the pre-Brexit composition of the Irish RoRo market. In light of these driving factors, the following commentary provides an update on the performance of ROI – GB, NI – GB, and ROI – EU routes in 2022.

(iv) ROI – GB RoRo Traffic

Table 6 details the volume of RoRo units carried on ROI – GB services between 2019 and 2022.

Table 6: ROI – GB RoRo Units, Accompanied & Unaccompanied, 2019 – 2021

Route	2019	2020	2021	2022	Growth Vs 2021
Dublin - GB	897,478	889,824	703,603	741,117	5%
Rosslare - GB	101,472	97,250	64,069	61,858	-3%
ROI - GB	998,950	987,074	767,672	802,975	5%

Source: *IMDO*

[14] The Implications of Brexit on the Use of the Landbrige – IMDO, 2018

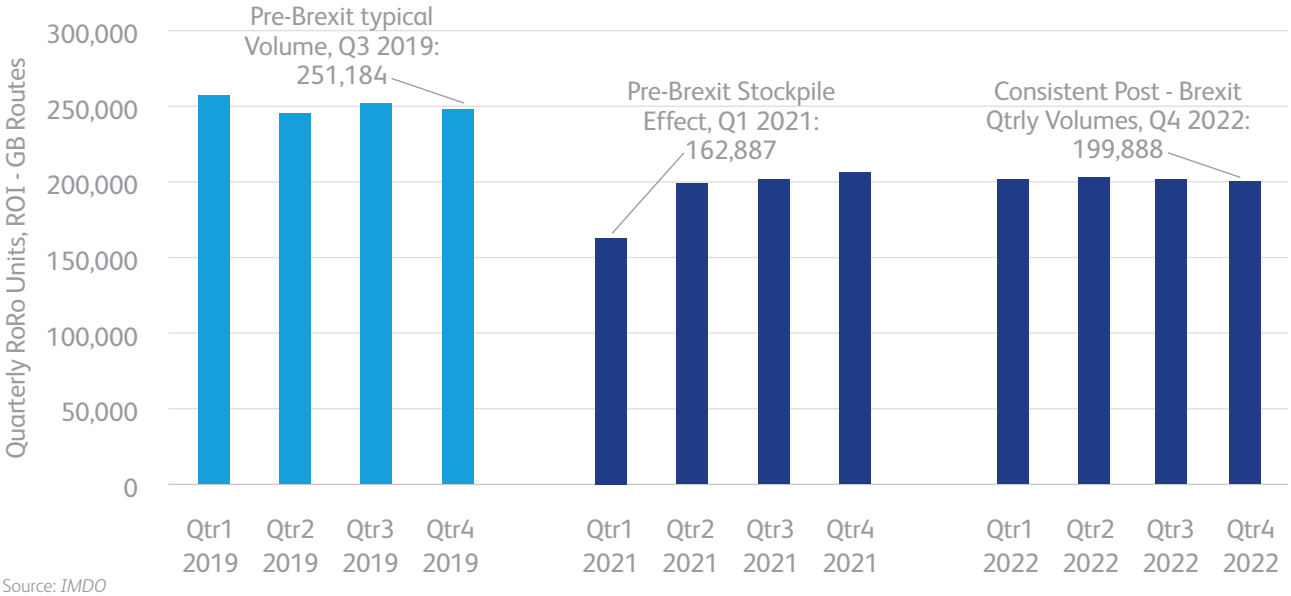
In 2022, RoRo traffic on routes between the Republic of Ireland and Great Britain, ROI – GB, grew by 5%. Some growth in 2022 was expected, as the first period of 2021 encompassed the negative effects of a large pre-Brexit stockpile, and so volumes were unusually low.

When compared to 2020 volumes, ROI – GB traffic in 2022 declined by 19%. When compared to 2019, the decline is 20%. In all, ROI – GB traffic has lost approximately 190,000 units a year compared to pre-Brexit totals.

In the eight quarters post-Brexit, the decline in ROI – GB traffic has been remarkably consistent. RoRo traffic on ROI – GB routes has consistently been 20% below 2019 levels, with average quarterly volumes falling from approximately 250,000 in that year, to approximately 200,000 in 2021 and 2022.[15] As shown in Table 6, 2022 recorded 802,975 units on ROI – GB routes, in line with this post-Brexit pattern of roughly 20% below pre-Brexit (2019 & 2020) ROI – GB volumes.

In Figure 9 below, 2019 ROI - GB volumes are compared to post-Brexit volumes from 2021 and 2022. Figure 9 illustrates the consistency in ROI – GB traffic in the post-Brexit era. There has been no significant momentum in either direction for ROI – GB traffic in the past twelve months. Since Q1 2021, ROI – GB volumes have stabilized, and this is illustrated in Figure 9.

Figure 9: ROI – GB Quarterly RoRo Traffic, 2019 Vs 2021/2022



Source: *IMDO*

Despite the consistency in total ROI – GB volumes, the two constituent ports, Dublin and Rosslare, have exhibited different trends when it comes to GB volumes.

At Rosslare Europort, RoRo traffic on GB routes has continued to decline in 2022. In 2019, just over 100,000 units were handled on Rosslare – GB routes, compared to 64,000 in 2021, and 62,000 in 2022. Rosslare – GB traffic in 2022 is therefore 39% below 2019 levels. That decline, attributable to Brexit, is steeper than at Dublin Port. In 2019, Dublin – GB routes handled approximately 900,000 RoRo units, compared to 741,000 in 2022, a decline of 17%. Dublin Port now accounts for 92% of ROI – GB traffic, compared to 90% in 2019. In proportional terms, the decline in GB traffic has been steeper at Rosslare compared to Dublin, and this trend had continued into 2022.

[15] Q1 2021 is excluded as this encompassed the effects of the large pre-Brexit stockpile recorded in Q4 2020. Q1 2021 volumes are unreliable as a result

(v) NI – GB RoRo Traffic

Table 7 details the volume of RoRo units carried on all GB services on the island of Ireland, including Northern Ireland ports, between 2019 and 2022.

Table 7: All-Island RoRo Traffic, GB Routes, 2019 – 2022

Route	2019	2020	2021	2022	Growth Vs 2021
Dublin - GB	897,478	889,824	703,603	741,117	5%
Rosslare - GB	101,472	97,250	64,069	61,858	-3%
Belfast - GB	555,410	541,350	609,155	610,624	0%
Larne - GB	192,678	185,275	207,804	159,492	-23%
Warrenpoint - GB	103,852	100,897	112,073	109,114	-3%
NI - GB	**851,940**	**827,522**	**929,032**	**879,230**	**-5%**
ROI - GB	**998,950**	**987,074**	**767,672**	**802,975**	**5%**
All-Island - GB	**1,850,890**	**1,814,596**	**1,696,704**	**1,682,205**	**-1%**

Source: *IMDO*

In part (iii), two factors were highlighted as having driven the decline in ROI – GB traffic in 2021 and 2022; A reduction in UK Landbridge traffic and the relocation of some large retail warehouses from central UK to mainland Europe.

Another factor that has driven the post-Brexit decline in ROI – GB traffic is the decline in the use of Irish ports by Northern Irish hauliers as a means of accessing Southern UK markets. This can also be referred to as 'The Irish Landbridge.'

The ports of Larne, Belfast, Warrenpoint, Dublin Port and Rosslare Europort all offer RoRo services to ports in Great Britain. Several shipping companies operate out of ports on both sides of the border on the island of Ireland. In addition, many haulage companies on the island of Ireland make use of RoRo routes on either side of the border. For example, many Northern Irish hauliers make significant use of the frequent short sea RoRo services between Dublin Port and ports such as Holyhead.

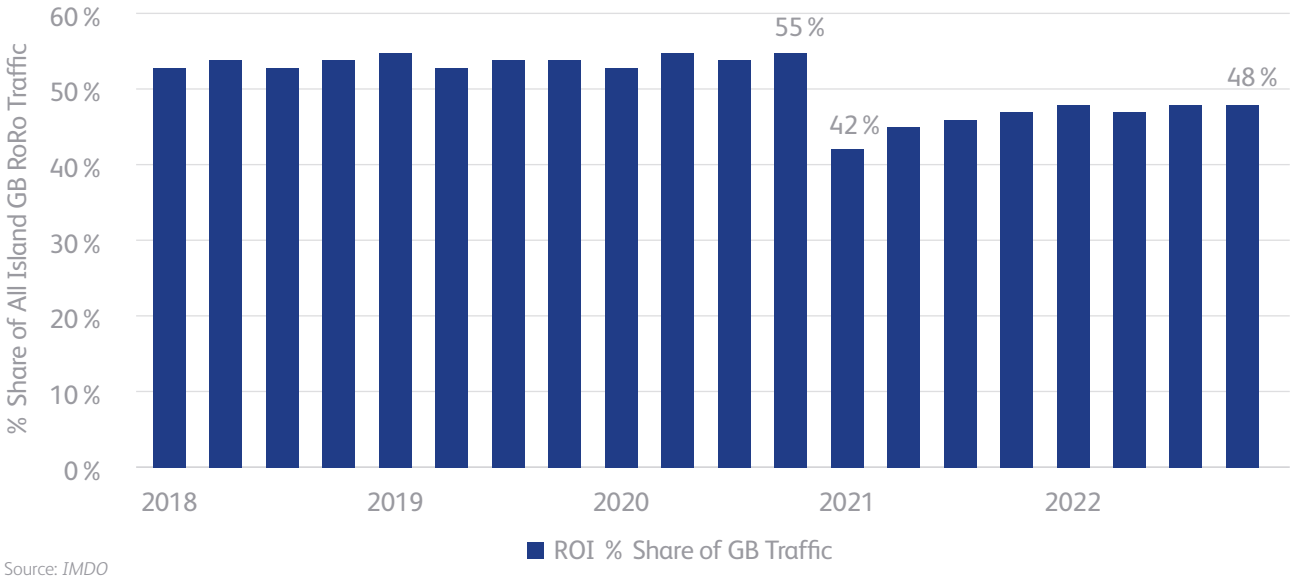
Through consultations with stakeholders, it was clear in 2021 that haulage companies based in Northern Ireland transferred significant volumes of traffic away from RoRo services in the Republic of Ireland. This is evident in Table 7, which shows NI – GB routes increasing by 12% between 2020 and 2021, adding over 100,000 units to reach a record total of 929,032. This impacted upon RoRo volumes at Dublin Port significantly, as Dublin has been the port of choice for many Northern Irish hauliers wishing to access markets in the midlands and southeast of England. Like the shift to ROI – EU routes, this was motivated by the desire to avoid not only heightened uncertainty around delays and disruption, but also additional administrative costs arising from new post-Brexit trading arrangements between the EU and UK.

In 2022, this trend reversed slightly, as Irish ports, particularly Dublin Port, regained some of this lost RoRo traffic. As can be seen in Table 7, ROI – GB traffic on the island of Ireland was effectively unchanged in 2022, but ROI – GB services rose by 5%, while NI – GB services fell by 5%. The growth in ROI traffic was entirely driven by Dublin Port, as GB traffic declined in Rosslare by 3%.

This shift between 2021 and 2022 highlights the increase in competition in the shipping and ports sector post-Brexit, both regionally and between individual ports.

Between 2010 and 2020, the share of All – Island RoRo traffic on GB routes that was held by ROI ports rose gradually from 50% to 54%. Between 2018 and 2020, ROI – GB routes consistently accounted for 54% of all GB traffic on the island. In the first quarter of 2021, this share fell dramatically, to 42%. The main cause behind this was the large pre-Brexit stockpile that occurred mainly on ROI – GB routes, and meant that volumes in Q1 2021 were unusually low. In the following seven quarters, ROI – GB routes, driven by Dublin Port, have gradually regained market share of GB traffic. In Q4 2022, ROI – GB traffic held its highest share of the post-Brexit era with 48.2%. The quarterly share of all – island GB RoRo traffic held by ROI ports is illustrated in Figure 10.

Figure 10: Share of All – Island GB RoRo Traffic held by ROI Ports, Quarterly, 2018 – 2022



Source: *IMDO*

Figure 10 shows that ROI ports have yet to regain their pre – Brexit share of GB RoRo traffic on the island of Ireland. However, it is also clear that some of that share was won back in 2022. An increase in this metric impacts upon Dublin Port RoRo volumes more than Rosslare, as Dublin is the port of choice for Irish Landbridge traffic.

In terms of wat caused this gradual return of 'The Irish Landbridge' in 2022, there are three likely factors.

The first is simply competitive. Shipping companies compete for freight business on the island of Ireland. The increase in Northern Irish hauliers using RoRo services from Northern Ireland ports to access GB markets represented a loss to shipping companies at Dublin and Rosslare, and required them to persuade such business to return. Some Irish Landbridge business will have returned therefore, due to completive forces.

Second, after two years working with post-Brexit trading arrangements, a level of familiarity with new processes has been built up by shipping companies, ports and haulage companies. Consequently, some Northern Irish hauliers will have adapted, and returned to accessing GB markets using the same methods they did prior to 2021.

Lastly, Northern Irish RoRo traffic was impacted this year by a disruption to P&O's service from Larne to Cairnryan.[16] Services were cancelled or disrupted for roughly 3 weeks beginning in late March 2022. As a result, Larne's RoRo volumes during that period fell by 60% compared to 2021 averages. Some of this traffic found alternatives at Belfast and Warrenpoint, as well as P&O's Dublin to Liverpool service. As a result, Larne's RoRo traffic fell by 23% in 2022 (See Table 7), its lowest annual volumes recorded by the IMDO. The disruption to these services had the effect of reducing RoRo traffic in Northern Ireland and therefore increasing the share of all-island GB traffic held by ROI ports. However, the trend of Northern Irish RoRo traffic slowly returning to ROI ports had begun before this event, and continued afterward. In all, it is likely that the three factors discussed combined to establish a gradual return of Irish Landbridge traffic in 2022.

(vi) ROI – EU RoRo Traffic

Table 8 details the volume of RoRo units carried on direct ROI – EU services between 2019 and 2022.

Table 8: ROI – EU RoRo Units, Accompanied & Unaccompanied, 2019 – 2021

Route	2019	2020	2021	2022	Growth Vs 2021
Dublin - EU	161,625	171,155	257,781	261,715	2%
Rosslare - EU	20,623	25,450	119,006	126,165	6%
Cork - EU	5,569	1,527	6,917	9,240	34%
ROI - EU	**187,817**	**198,132**	**383,704**	**397,120**	**3%**

Source: *IMDO*

A key message arising from Table 8 is that RoRo traffic on routes between the Republic of Ireland and mainland European ports, ROI – EU, are holding onto the gains made in the post – Brexit era. Traffic on these routes doubled in 2021 compared to 2020, and have held onto this level of traffic in 2022.

As shown in Table 8, ROI – EU traffic grew by 3% in 2022. As with ROI – GB traffic, some growth in 2022 was expected, as the first period of 2021 encompassed the negative effects of a large pre-Brexit stockpile and strict COVID-19 lockdown restrictions, meaning volumes were unusually low.

When compared to 2020 volumes, ROI – EU traffic in 2022 rose by 100%, and when compared to 2019, volumes rose by 111%. In all, ROI – EU traffic has added approximately 200,000 units per year compared to pre-Brexit volumes.

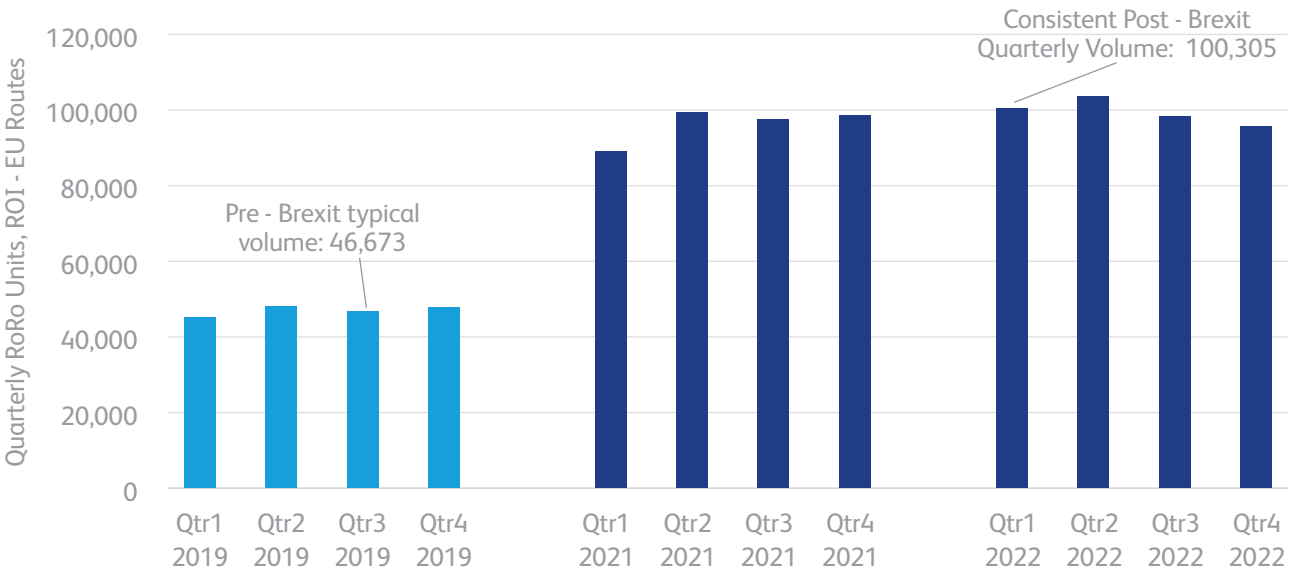
As with ROI – GB traffic, there has been no clear or consistent trend indicating that traffic on these routes will fall back to pre-Brexit levels. The rise in post-Brexit volumes on direct RoRo routes has been driven by the same factors that caused sharp declines in ROI – GB RoRo traffic; a reduction in UK Landbridge traffic and the relocation of some large retail warehouses from central UK to mainland Europe. Both of these factors are motivated by the desire to bypass the administrative cost associated with customs requirements at UK ports, and in 2022, both factors continued to motivate importers, exporters and shipping companies to make greater use of ROI - EU routes.

Like traffic on ROI – GB routes, there has been a notable consistency exhibited in quarterly volumes on ROI – EU routes. Quarterly volumes on direct routes have consistently been double those recorded in 2019 and 2020.

In Figure 11, pre-Brexit 2019 ROI - EU volumes are compared to post-Brexit volumes from 2021 and 2022. Figure 11 illustrates the consistency in ROI – EU traffic in the post-Brexit era. In the first two years of Brexit, RoRo traffic on direct routes to mainland European ports has averaged roughly 99,000 units each quarter. This is compared to an average of 47,000 units per quarter recorded in 2019. ROI – EU routes now consistently represent one in three units on all ROI routes, compared to one in six before 2021.

[16] "P&O Ferries makes 800 staff redundant and warns of 'significant disruption' to services 'over next few days'"- 18th March, 2022

Figure 11: ROI – EU Quarterly RoRo Traffic, 2019 Vs 2021/2022



Source: *IMDO*

Also evident in Figure 11 is the slight decline in ROI – EU traffic in the final quarters of 2022. The first half of 2022 recorded roughly 10,000 more units on ROI – EU routes compared to the second half. This is reflective of the inflationary forces detailed in part (ii). As a result, these declines are more reflective of global economic forces than of a return to pre-Brexit RoRo traffic patterns.

Due to these inflationary pressures, ROI – EU traffic in Q4 2022 fell by 3% to 95,305 units. This was the lowest quarterly total for direct routes of the post-Brexit era. Traffic on Dublin – EU and Cork – EU routes fell in the fourth quarter, while traffic on Rosslare – EU routes rose by 8%. It is important to highlight that traffic on Rosslare – EU and Cork – EU routes were impacted by the announcement in the third quarter of 2022 that a Cork – Zeebrugge service operated by Grimaldi would move to Rosslare Europort. Finnlines, a Finnish shipping company that is part of the Grimaldi Group, now operates the service from Rosslare. On 16th February 2023, Finnlines announced that a second vessel will be added to this route, further increasing capacity on direct, ROI – EU RoRo services.[17] This is emblematic of the staying power of post-Brexit trend towards direct ROI – EU RoRo routes.

In terms of port shares, Dublin continues to be Ireland's largest ROI – EU port, with a 66% share in 2022. Dublin – EU routes in 2022 are 100,000 units higher than they were in 2019. Rosslare holds a 32% share of ROI – EU traffic, up from 31% in 2021 and helped by the arrival of the aforementioned Rosslare – Zeebrugge service. In 2019, Rosslare handled roughly 21,000 ROI – EU units. This has grown to 126,000 in 2022. During that time, its share of EU RoRo traffic has increased from 11% to 32%. The increase in market share has predominantly come at the expense of Dublin Port, which accounted for 86% of all ROI – EU traffic in 2019, compared to 66% in 2022. Cork holds a 2% share in 2022, down from 3% held in 2019.

ROI – EU services in all three ports have gained significant volumes since the end of the Brexit transition period, and this has continued into 2022.

[17] Second vessel to be added to Rosslare-Zeebrugge route, RTE

(vii) Unaccompanied RoRo Traffic Continues to Rise

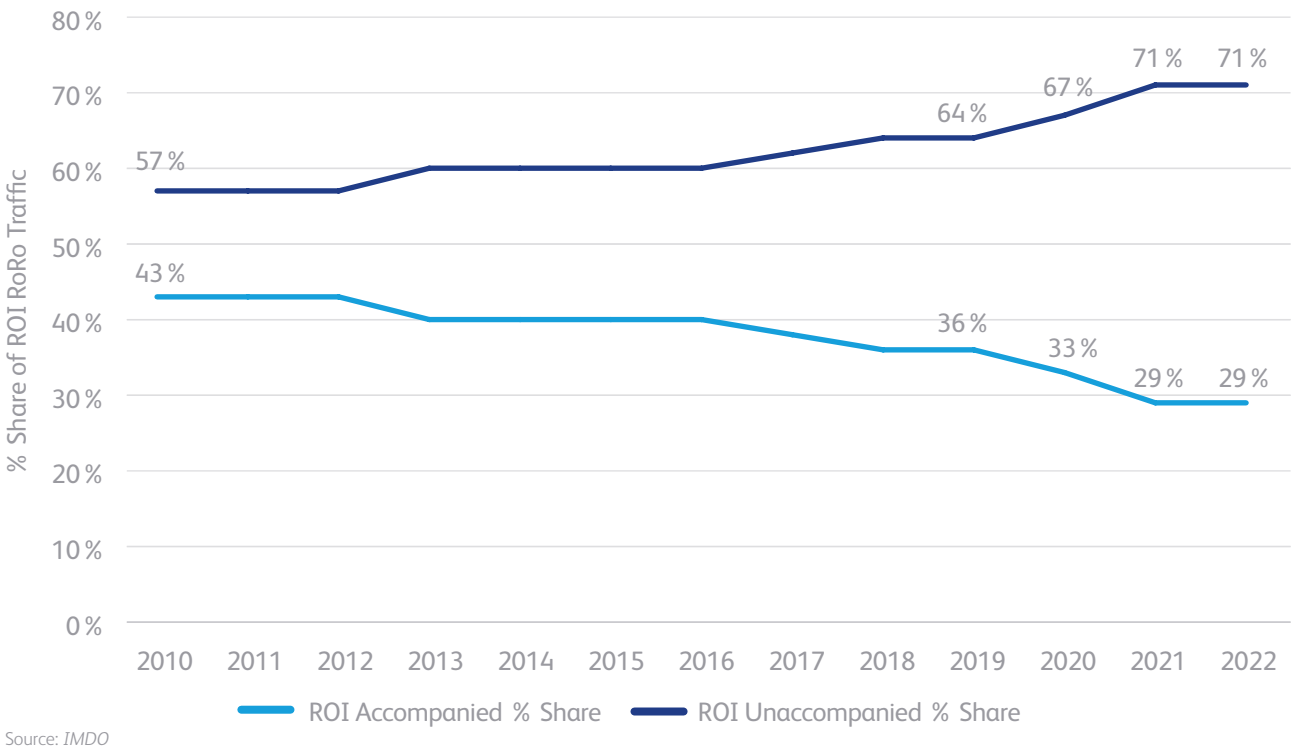
In the previous two editions of this report, it was highlighted that the share of unaccompanied RoRo traffic in the Republic of Ireland has been increasing, and that this trend has been a persistent feature of the RoRo market since at least 2016.

RoRo traffic can be either Accompanied, or Unaccompanied. Unaccompanied RoRo traffic refers to the transfer of RoRo units without a driver, and thus without a driver's cab, accompanying the container on the vessel. Instead, the RoRo unit, or container, is dropped to the departure port by a driver. From there, it is loaded onto the vessel by port staff, and travels unaccompanied on the voyage. It is collected at the destination port by a local haulier.

Unaccompanied RoRo traffic demands less physical capacity while on a vessel, as there is no driver's cabin. However, it demands greater physical capacity at port terminals, compared to Accompanied traffic. This is because RoRo units are stored in slots at port terminals while they await loading onto a vessel, or collection by a local haulier. Consequently, increases in Unaccompanied traffic have knock-on effects for the long term capacity calculations for Ireland's RoRo ports.

Beginning in January 2021, the trend towards Unaccompanied RoRo traffic accelerated. The widening gap between the shares of Accompanied and Unaccompanied RoRo traffic is illustrated in Figure 12 below, which shows the percentage share held by each mode between 2010 and 2022. Overall, the share of Unaccompanied RoRo has risen from 60% in 2016, to 71% in 2021. Between 2020 and 2021 alone, the share of Unaccompanied traffic rose from 67% to 71%. Between 2021 and 2022, the unaccompanied share continued to rise, adding a further 0.4%.

Figure 12: RoRo Traffic Shares by Mode, Accompanied Vs Unaccompanied, 2010 - 2022



Source: *IMDO*

There are several drivers of this modal shift. Firstly, the onset of the COVID-19 pandemic accelerated the growth in the share of Unaccompanied RoRo. Health and safety issues alongside restrictions on the travel of international freight drivers meant that Unaccompanied traffic recorded shallower declines and a faster recovery during the first wave of the pandemic.

Secondly, the rise in direct EU traffic will naturally be followed by a rise in Unaccompanied volume. Traffic on ROI – EU routes makes disproportionate use of the Unaccompanied mode due to, among other things, the significantly longer journey times on direct routes. The increase in ROI – EU RoRo traffic has been the most significant driver of Unaccompanied RoRo traffic in 2021 and 2022.

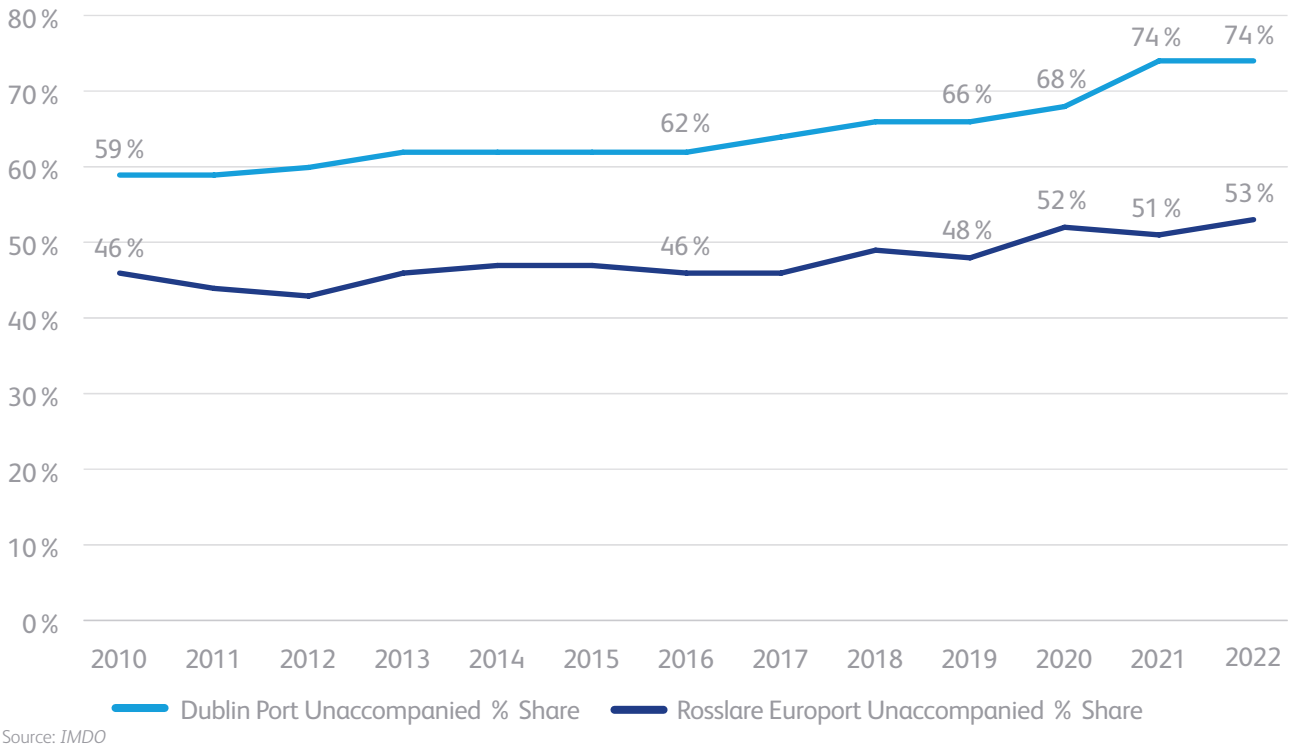
Third, stakeholders involved in the haulage industry continue to highlight the problem of a driver shortage. A report published in 2022 by the International Road Transport Union attempted to quantify the issue, stating;

"Without action to make the driver profession more accessible and attractive, Europe could lack over two million drivers by 2026, impacting half of all freight movements"

International Road Transport Union, Nov 2022[18]

In terms of the impact of this trend on individual ports, the rise of unaccompanied RoRo traffic has been stronger at Dublin Port compared to Rosslare Europort. In Figure 13, the percentage share of RoRo traffic held by the unaccompanied mode is presented between 2010 and 2022.

Figure 13: Share of RoRo Traffic Held by Unaccompanied Mode, Dublin Port & Rosslare Europort 2010 - 2022



Source: *IMDO*

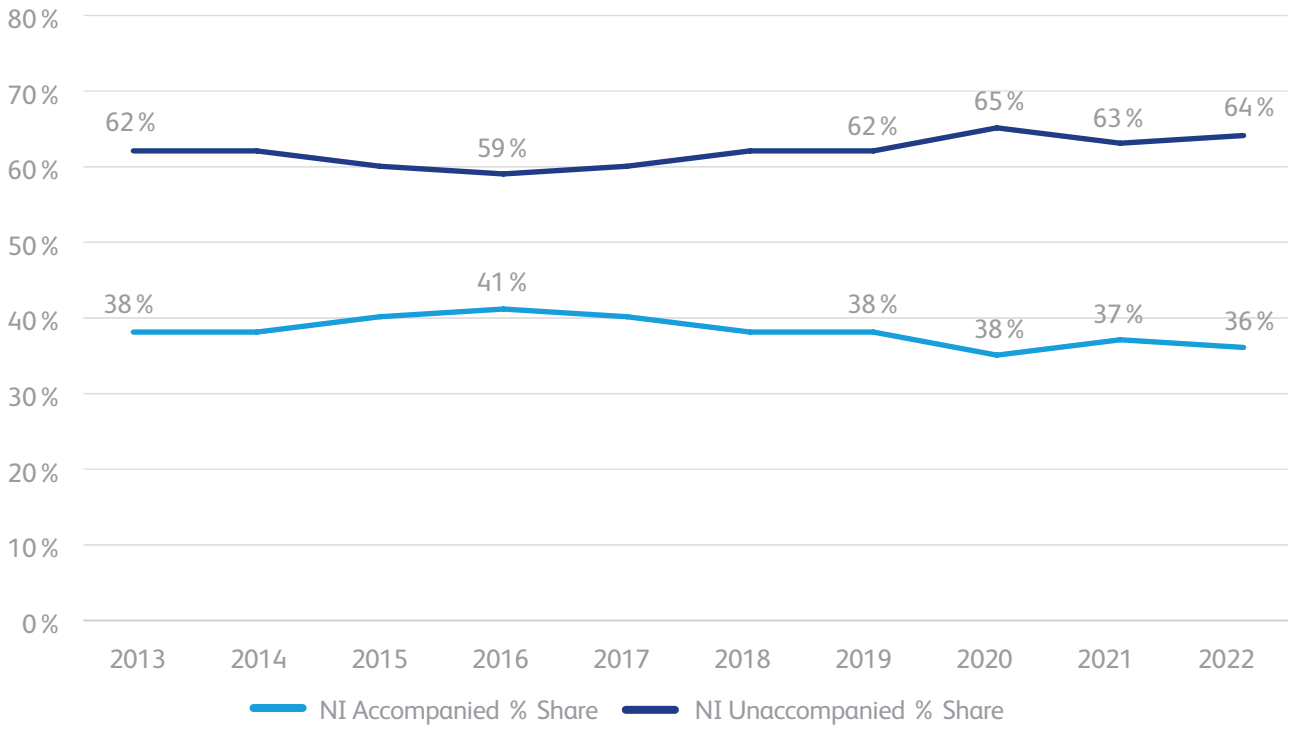
As evident in Figure 13, the rise in unaccompanied traffic has been steeper at Dublin Port. Between 2010 and 2022, the share held by unaccompanied RoRo at Dublin Port has risen by 25 %, compared to a 15 % rise at Rosslare Europort.

For both ports, the rise in unaccompanied traffic as a share of all RoRo traffic has increased at a faster pace since 2020. This is due to the two factors outlined above i.e. Health and safety issues surrounding driver travel during the COVID-19 pandemic, and the rise in EU traffic in both ports post-Brexit.

In Northern Ireland RoRo traffic, the trend towards a greater unaccompanied share has not materialised to the same extent. Figure 14 shows the percentage share held by accompanied and unaccompanied traffic at Northern Ireland ports between 2013 and 2022.

[18] "Europe driver shortage to triple by 2026 if no action: new IRU report" – IRU, 2022

Figure 14: RoRo Traffic Shares by Mode, Accompanied Vs Unaccompanied, Northern Ireland 2013 – 2022



Source: *IMDO*

As evident in Figure 14, the share of unaccompanied traffic has risen in the past decade, from 62 % to 65 %, but the increase has not been as steep as in ROI ports. One of the predominant reasons for this is the nature of the RoRo services offered at NI ports. A large portion of NI RoRo traffic is on routes between Larne – Cairnryan and Belfast - Cairnryan. Both are relatively short sea distances, (shorter than Dublin – Holyhead) which often make greater use of the accompanied mode. In addition, there are no RoRo services from NI ports direct into mainland European ports, the longer distances for which are often followed by increased use of the unaccompanied mode.

1.3 LoLo

Introduction

Containerships are vessels that specialise in the transportation of standardised shipping containers, which are usually either twenty or forty feet in size. These shipping containers are lifted on and off the vessel in a fast and efficient manner by specialised cranes. The term Lift-on Lift-off, or LoLo, is derived from this process. The cargo in these containers is generally made up of finished goods or intermediate goods, as opposed to raw materials often transported in bulk using bulk carriers. Retail items such as clothing, electronics, or furniture are typical products that would be transferred using this cargo mode.

In the Republic of Ireland, LoLo traffic, i.e. containers loaded or unloaded from containership vessels, make up 20% of all port tonnage. This market is essential for Irish importers and exporters who require access to large global shipping hubs in mainland Europe. The majority of LoLo traffic in Ireland is to large maritime hubs including Rotterdam, Antwerp, Le Harve, Amsterdam and many more.

There are three ports in the Republic of Ireland that handle LoLo traffic; Dublin, Cork and Waterford. There are two LoLo ports in Northern Ireland; Belfast and Warrenpoint.

The following section is divided into three parts. In part (i), an overview of the performance of LoLo traffic is provided, and is compared to the volumes handled in recent years. Part (ii) discussed the impact that sharp increases in inflation rates had on LoLo traffic in 2022. Lastly, part (iii) illustrates that despite the negative impacts of inflation this year, LoLo traffic is still higher now than it was before the end of the Brexit transition period in 2021. Brexit had a large and positive effect on Irish LoLo traffic, and the drivers of this are also detailed in part (iii).

(i) LoLo Container Traffic in 2022

Table 9 details the volume of LoLo (container) traffic handled by ports on the island of Ireland between 2020 and 2022.

In 2022, LoLo volumes in the Republic of Ireland (ROI) fell by 2%, equivalent to 18,047 fewer Twenty Foot Equivalent Units (TEUs). Excluding 2020, when LoLo traffic declined slightly (-0.4%), this is the first annual decline in ROI LoLo traffic since 2013.

Table 9: All-Island LoLo TEUs, Laden & Unladen, 2020 – 2022

Port	2020	2021	2022	Growth Vs 2021	Diff Vs 2021
	TEUs	TEUs	TEUs	(%)	TEUs
Cork	250,324	281,815	282,781	0%	966
Dublin	757,722	842,897	823,399	-2%	-19,498
Waterford	50,845	49,739	50,223	1%	484
Total ROI	**1,058,890**	**1,174,450**	**1,156,403**	**-2%**	**-18,047**
Belfast	203,889	238,287	226,538	-5%	-11,749
Warrenpoint	17,070	19,839	6,315	-68%	-13,524
Total NI	**220,959**	**258,126**	**232,853**	**-10%**	**-25,273**
Total All-Island	**1,279,849**	**1,432,576**	**1,389,256**	**-3%**	**-43,320**

Source: *IMDO*

Dublin Port was the only ROI port to record a decline in LoLo traffic in 2022. Both Cork and Waterford's TEU traffic increased, albeit very slightly. Despite this difference, the market shares for the ROI LoLo market did not change substantially. Dublin accounted for 71% of all LoLo traffic, compared to 72% in 2021. Cork represented 24% this year, with Waterford handling the remaining 4%.

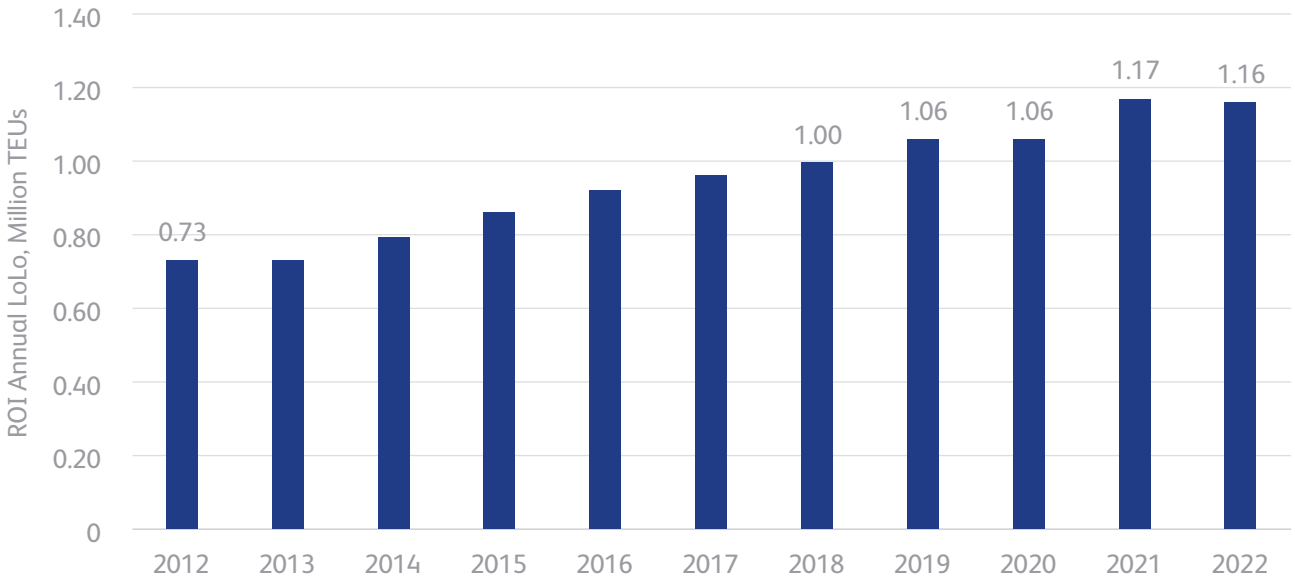
In Northern Ireland (NI), volumes fell by 10%, or 25,273 TEUs. A sharp drop in LoLo traffic at Warrenpoint means that Belfast accounted for 97% of the LoLo market in Northern Ireland in 2022, its highest share of the last decade.

(ii) Inflation Takes Hold in H2

Republic of Ireland

As noted in part (i), 2022 marks the first annual decline in ROI LoLo traffic since 2013. 2022 therefore interrupts a decade of expansion in Irish container trade that has seen the annual total grow by 58% between 2012 and 2022. This trajectory is illustrated in Figure 15.

Figure 15: Annual ROI LoLo Traffic, Million TEUs, 2012 - 2022



Source: *IMDO*

As with the Irish RoRo market, the predominant driver of the decline in LoLo traffic in 2022 was the sharp rise in inflation in 2022, both in Ireland and in the economies of Ireland's trading partners, namely the UK, US and Euro Area. Consequently, LoLo volumes underperformed significantly in the latter half of the year.

In an average year for ROI ports, LoLo volumes in the second half of the year (H2) are 2% greater than the first. This is driven by the busy period of September through to October. October is the busiest month for LoLo traffic, with volumes typically 7% above an average month. This is due to preparations for the busy Christmas period, when demand for merchandise goods, such as those carried by the RoRo and LoLo sectors, is strongest.

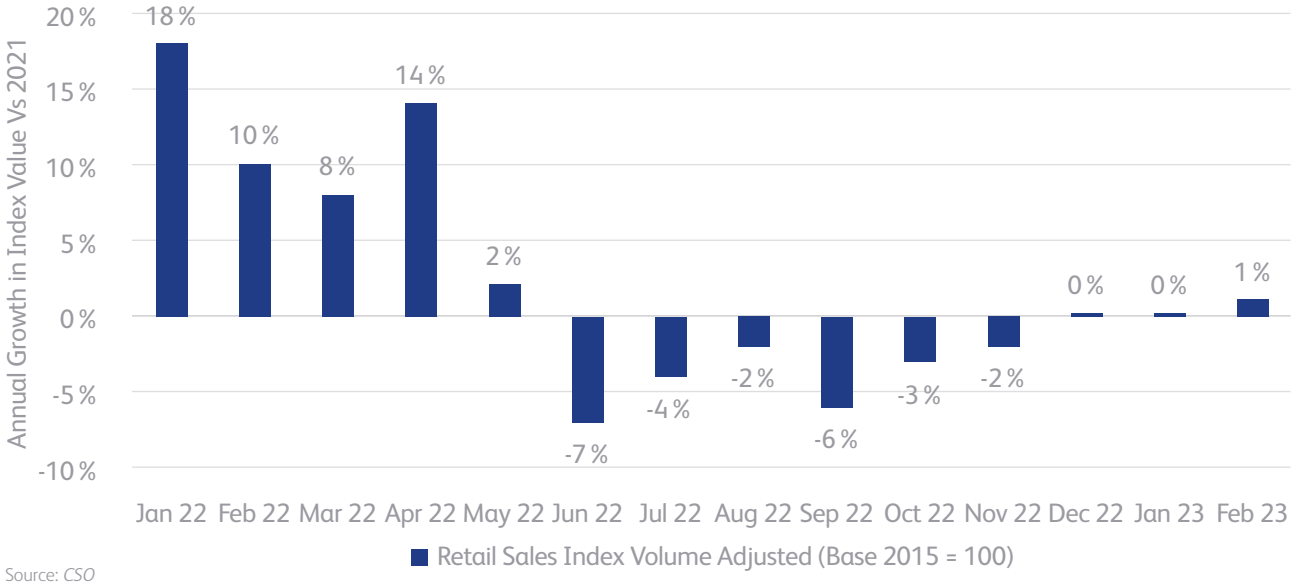
In the first half of 2022 (H1), ROI LoLo volumes reached a record high of 594,543 TEUs. At this point, an annual total of 1.2m TEUs could have reasonably been expected, a total which would have been another record for the LoLo sector, surpassing the previous record of 1.17m TEUs set in 2021. Instead, LoLo volumes in H2 fell to 561,860 TEUs, 5% below the level recorded in H1. This was only the second time since 2009 that the second half of the year recorded fewer TEUs than the first. At Dublin Port, the decline between H1 and H2 was 6%, and in Cork, it was 4%. Only Waterford recorded a greater volume in the H2, with volumes rising by 3%.

The decline in volumes between the first and second half of the year, a highly irregular event in Irish container traffic, occurred alongside a steep rise in inflation in 2022. As highlighted in Section 1.2, part (ii), the average annual rate of inflation per month in 2022, as measured by the Harmonised Index of Consumer Prices (HICP), was 8.1% in Ireland. Across the Euro Area, it was 8.4%. In the UK and US, inflation averaged 8% and 8.7% respectively.[19]

However, when the focus is only on merchandise goods, meaning the service economy is excluded, inflation in 2022 was even higher. Figure 8 in Section 1.2 part (ii) illustrated that Goods inflation in 2022 rose at a significantly faster pace than inflation for All Items. Euro Area Goods inflation averaged 11.9% per month in 2022, compared to 8.4% for All Items. Goods inflation also peaked at 15% in October 2022, the busiest month for LoLo traffic. The general price level for physical goods is more relevant to shipping companies, such as RoRo and LoLo operators, who facilitate the trade of such items.

The rise of inflation, along with the decline in RoRo and LoLo port traffic, is reflected in the performance of the retail sector in Ireland in 2022. In Figure 16, the annual growth in the CSO's retail sales index is provided, with the focus on volume of sales, rather than value. As evident in Figure 16, the annual growth in the volume of retail sales, when compared to 2021, started strongly in H1, before underperforming in H2.

Figure 16: CSO Retail Sales Index, Volume, Seasonally Adjusted (Base 2015 = 100), 2022



Source: *CSO*

Globally, the impact of these high inflation rates was again reflected in the volume of seaborne trade. According to Clarkson's Research, global container trade, a sector which carries predominantly finished goods, fell by 1.2% in 2022 to 198m TEU's.[20] In January of 2022, growth of 3.8% had been expected, with volumes forecasted to reach 214m TEUs.[21]

Inflation was a key driver of the declines in Irish port traffic in 2022, as consumers' and companies' disposable income was eroded by rising prices, reducing the demand for trade and industrial production.

[19] Eurostat: (PRC_HICP_MANR), ONS: CPIH ANNUAL RATE 00: ALL ITEMS 2015=100
[20] Container Intelligence Monthly, Volume 25, No. 3 – Clarkson's Research
[21] Container Intelligence Monthly, Volume 24, No.1 – Clarkson's Research

Northern Ireland

As mentioned above, LoLo traffic in Northern Ireland fell by 10%, driven in large part by a steep decline in LoLo traffic at Warrenpoint.

As detailed in Table 9, 232,853 TEUs were handled in Belfast and Warrenpoint in 2022. Excluding 2020, when traffic fell to 220,959 TEUs, this is the lowest annual volume of container traffic for NI ports since 2012. Between 2012 and 2022, LoLo traffic in NI ports has not exhibited the same consistent increases as in ROI ports, and annual growth has averaged 0% over that time.

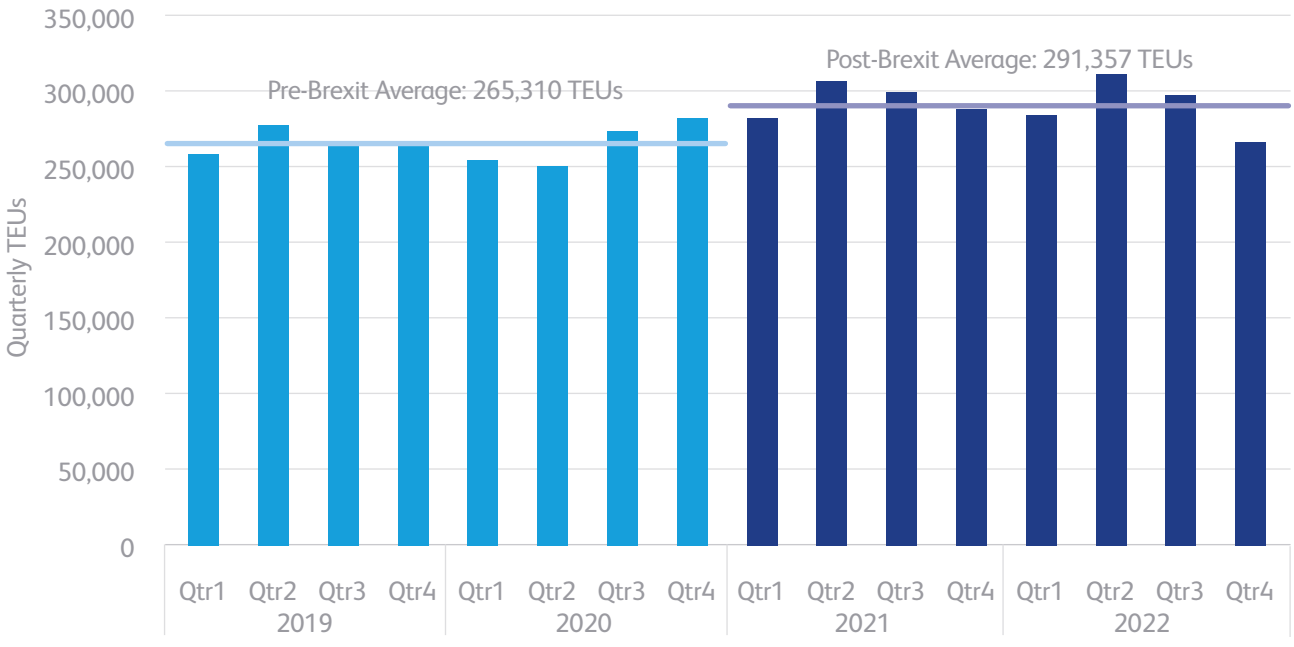
In Warrenpoint, no LoLo traffic was handled from August 2022 through to the end of the year. Between 2019 and 2021, Warrenpoint averaged approximately 4,500 TEUs per quarter. This is the first time that no LoLo traffic was handled at Warrenpoint since early 2010. All LoLo traffic in Northern Ireland is now handled at Belfast. It is unclear if Warrenpoint will handle LoLo traffic in 2023. It is likely that the decline in Warrenpoint is a symptom of the strong inflationary pressures outlined above and that strengthened in the second half of 2022. As container volumes continued to decline at Dublin port and Belfast in the latter half of 2022, there is little evidence of traffic previously handled at Warrenpoint relocating to a nearby port.

(iii) Direct Demand Still Evident

It is important to highlight that although LoLo traffic in ROI ports declined sharply in the second half of 2022, volumes remain significantly above pre-Brexit levels. This is explained by the surge in demand from Irish importers and exporters for direct RoRo and LoLo services to mainland European ports that emerged following the end of the Brexit transition period, and has been persistent throughout 2021 and 2022.

This evidence for this is illustrated in Figure 17, which shows the quarterly throughput of TEUs handled at ROI ports in the years before and after the end of the Brexit transition period. In 2019 and 2020, which recorded similar annual totals, the quarterly average was 265,310 TEUs. In 2021 and 2022, the average has risen by 10% to 291,357 TEUs.

Figure 17: Quarterly LoLo TEUs, ROI Ports, Q1 2019 – Q4 2022



Source: *IMDO*

As evident in Figure 17, a reorganisation of Irish unitised traffic towards LoLo services began to emerge in late 2020. This momentum continued throughout 2021 and into 2022, and in the second quarter of 2022, 310,000 TEUs were handled, a record for the LoLo sector. The decline in the latter half of 2022, driven by inflation, meant that volumes did not surpass those recorded in 2021. However, average quarterly throughput in 2022 was still 289,101 TEUs, 9% above the pre-Brexit average shown in Figure 17.

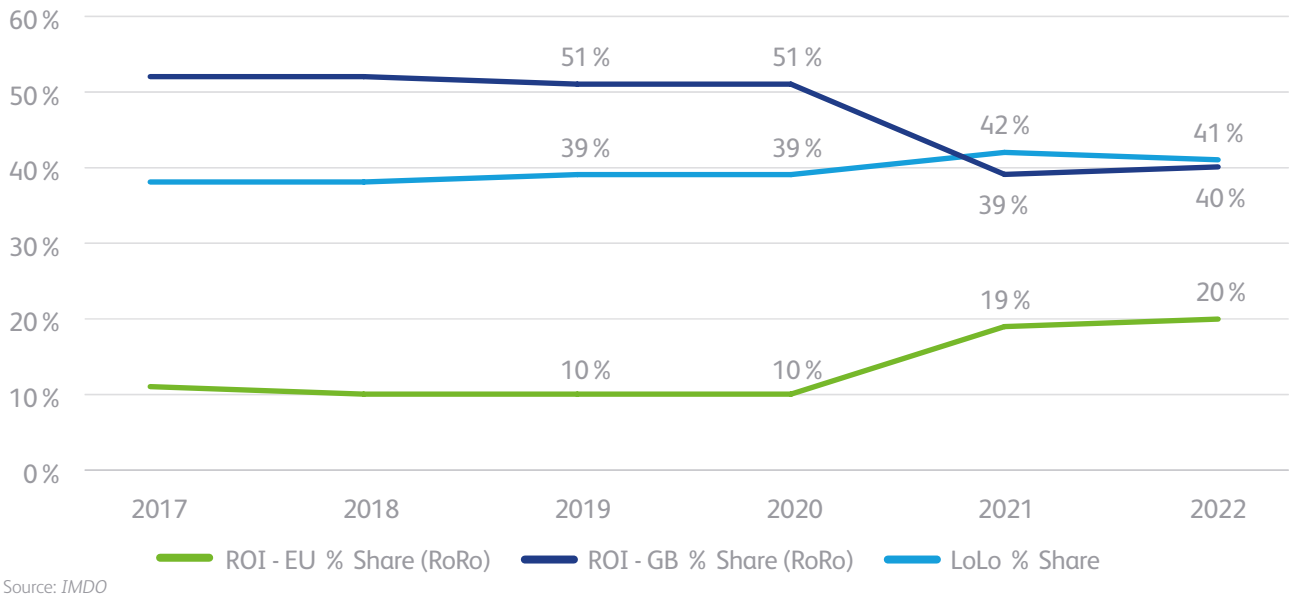
In terms of why shift towards LoLo traffic took place, the factors that have driven a surge in ROI – EU RoRo (See Section 1.2) traffic are applicable to the Irish LoLo market. The vast majority of LoLo services on the island of Ireland are direct to continental EU ports, with Rotterdam and Antwerp the two leading ports for Irish container traffic. When Irish exports reach these large European port hubs, many goods are transferred to much larger vessels and continue on to countries outside the European Union, such as the USA and China. Others may travel to EU Member States, such as the large markets of France, Germany and Italy. LoLo traffic from the island of Ireland therefore operates as a feeder service to and from large European maritime hubs, where Irish trade can access global markets.

Prior to Brexit, the UK Landbridge was a fast, effective way of accessing these European maritime hubs from Irish ports, and many shipping companies, hauliers and freight forwarders chose to do so. Post-Brexit, many still use the Landbridge for this purpose, particularly those with time sensitive products. However, it is clear from the rise in LoLo, and direct ROI – EU RoRo traffic, that the volume is significantly reduced.

In Figure 18, the share of unitised traffic (i.e. RoRo & LoLo) travelling on either LoLo services, ROI – EU RoRo services, or ROI – GB RoRo services is presented.[22] Figure 18 shows the reorganisation of unitised traffic in Ireland, towards services that offer direct access to European ports i.e. ROI – EU RoRo services, and LoLo services.

Prior to 2021, the shares held by each category were remarkably steady, changing little between 2010 and 2020. The shift in 2021 is highly irregular, and highlights the achievement of ports, shipping companies, hauliers and all stakeholders involved in the transfer of Irish container traffic, to adjust to new logistical frameworks post-Brexit.

Figure 18: Share of Unitised Traffic by Category, 2017 - 2022[23]



Source: *IMDO*

[22] Some LoLo traffic in Ireland does travel to / from ports in Great Britain. However, the vast majority are direct to large European ports such as Rotterdam, Antwerp etc. For the purposes of this analysis, it is assumed that all LoLo traffic is with a mainland European port.

[23] In order to create a common denominator for comparison, RoRo and LoLo traffic was converted to tonnes, whereby 1 RoRo units = 14 tonnes, and 1 LoLo unit = 10 tonnes. This is a standard conversion rate that the IMDO has employed in previous reporting.

In 2022, 60% of all unitised traffic from Irish ports is direct to/from a mainland European port, compared to roughly 50% pre-Brexit. Consequently, LoLo services and direct ROI – EU RoRo services can be effective substitutes for one another, and shipping operators in RoRo and LoLo markets compete for similar business. Like RoRo operators, LoLo operators have benefitted from the demand from Irish importers and exporters to access EU ports directly, without the need to adhere to new customs requirements at UK ports. In all, despite the suppressive effects of inflation in 2022, traffic on direct shipping services remain significantly above their pre-Brexit levels.

1.4 Passengers

Introduction

In the maritime sector, no market was more affected by COVID-19 restriction in 2020 and 2021 than the market for tourist passengers. Many shipping operators employ a RoPax model, meaning they carry not only freight traffic but passengers, and passenger vehicles as well. The consistently low passenger volumes due to pandemic-related travel restrictions in 2020 and 2021 created significant challenges to this business model. It is a remarkable achievement that in 2022, there are more services, more weekly sailings, and more route options for maritime passengers than before the pandemic.

This section will highlight the following key points that are important to understanding the maritime passenger market in 2022.

First, 2022 volumes were significantly above 2020 and 2021 levels. This was expected as 2022 marks the first year since 2019 where there were no pandemic-related restrictions on travel. For this reason, 2019 volumes will be compared to 2022 where relevant.

Second, in Republic of Ireland (ROI) ports, 2022 passenger numbers were 11% below those of 2019, while the volume of passenger vehicles were 2% below 2019.

Third, passenger numbers on ROI – GB routes fell compared to 2019, while volumes on ROI – EU routes increased. There may be Brexit-related factors at play, such as the increase in capacity provided by shipping operators on EU routes post-Brexit.

Finally, passenger numbers in Northern Ireland ports are 3% above those of 2019. The share of passengers held by Belfast and Larne was also impacted by the disruption to ferry services at Larne in March of 2022.

Passenger Numbers

Table 10 details the volume of RoRo ferry passengers that travelled through Irish and Northern Irish ports between 2019 and 2022.[24]

Table 10: RoRo Passenger Numbers, 2019 - 2022

Port	2019	2020	2021	2022	2022 Vs 2019
	No.	No.	No.	No.	%
Cork	113,346	9,083	22,273	115,925	2%
Dublin	1,949,229	832,816	845,326	1,685,746	-14%
Rosslare-Europort	582,047	137,353	243,386	552,831	-5%
Total ROI	**2,644,622**	**979,252**	**1,110,985**	**2,354,502**	**-11%**
Belfast	1,623,058	852,926	1,467,338	1,795,647	11%
Larne	479,528	242,240	395,648	368,931	-23%
Total NI	**2,102,586**	**1,095,166**	**1,862,986**	**2,164,578**	**3%**
Total All-Island	**4,747,208**	**2,074,418**	**2,973,971**	**4,519,080**	**-5%**

Source: *IMDO*

[24] The IMDO has updated its method of passenger data analysis. Table 10 represents the most up to date RoRo passenger data currently available. This was driven by the receipt of new, more detailed datasets. Efforts have been made to isolate only 'tourist' passenger traffic, removing the impact of commercial freight drivers. Volumes may be subject to revision in future publications.

The volume of RoRo ferry passengers on the island of Ireland rose dramatically in 2022 when compared to 2021. As shown in Table 10, more than 4.5m passengers travelled through the five ports listed above. This is 1.5m more than in 2021, and almost 2.5m more than in 2020.

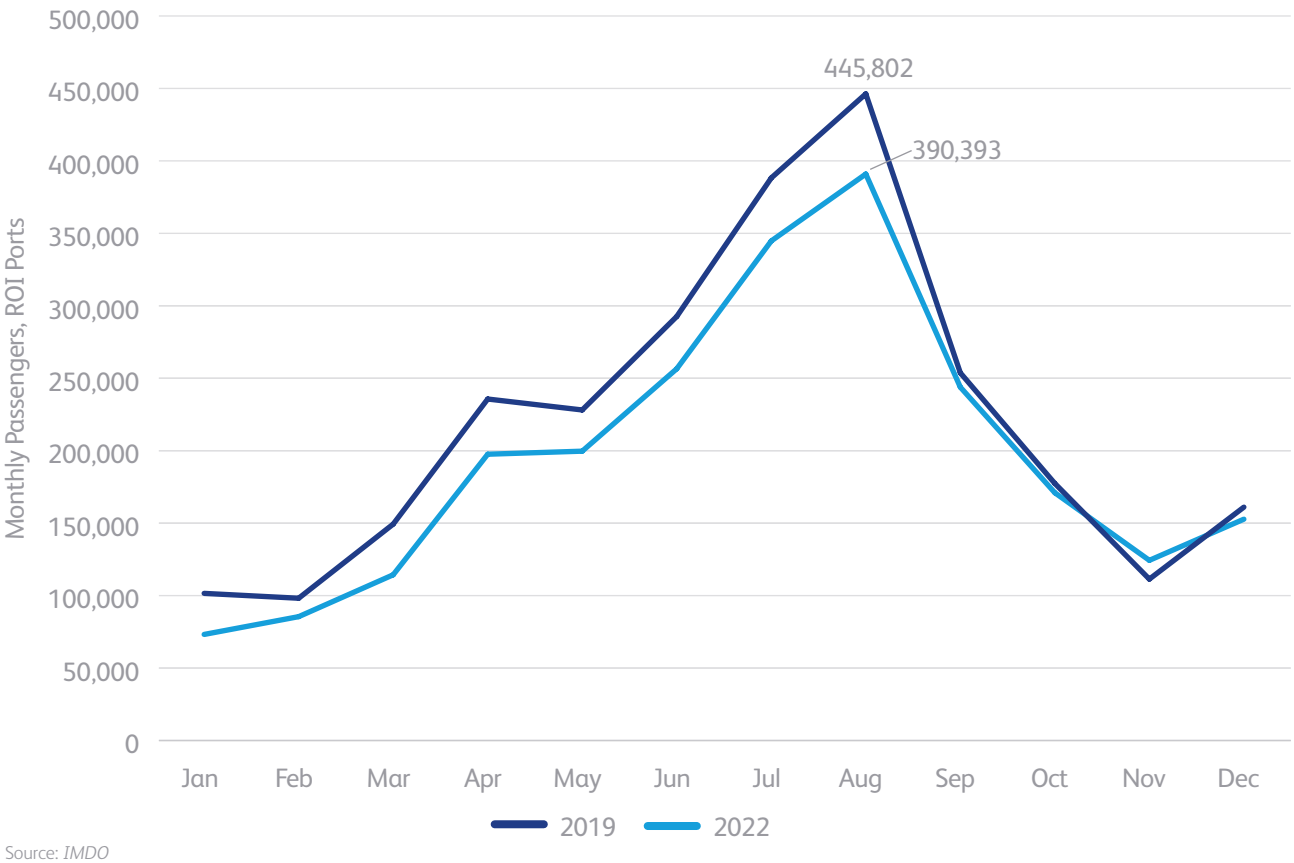
The increase in 2022 was expected, as 2022 marked the first year since the outbreak of COVID-19 in Ireland that no major travel restrictions were in place that affected maritime passengers. The return to more 'normal' passenger levels began in July 2021, following the introduction of the EU Digital COVID Certificate. This marked a turning point in maritime passenger volumes. From that point, passenger numbers have gradually returned towards pre-pandemic levels.

As there were no major COVID-19 related travel restrictions in 2022, it is appropriate to compare passenger volumes in 2022 to those of 2019. The percentage change in passenger numbers between these two years is presented in Table 10.

In 2022, passenger numbers at Dublin, Cork and Rosslare were still 11% below those of 2019, equivalent to 290,120 passengers. The decline versus 2019 was steepest in Dublin, where volumes remain 14% below 2019 levels, or 263,483 passengers. In Rosslare, passenger numbers remain 5% below 2019, or 29,216 passengers. In Cork, passenger numbers surpassed 2019 levels by 2%, equal to 2,579 additional passengers. Dublin Port remains the largest passenger port of the three, with a 72% market share in 2022. Rosslare accounts for 23%, and Cork accounts for 5%. These market shares are not significantly changed from 2019 levels.

In Figure 19, the monthly trajectory of passenger numbers at ROI ports is presented, comparing 2019 with 2022. In Figure 19, it can be seen that the busy summer period (Jun – Aug) of 2019 outpaced that of 2022. In the third quarter of 2022, 991,000 passengers were recorded, compared to 1.1m in 2019. However, in the latter stages of the year, 2022 numbers were on par with those of pre-pandemic, or 2019 levels.

Figure 19: RoRo Passenger Numbers, ROI Ports, Monthly, 2019 Vs 2022



Source: *IMDO*

In all, passenger numbers will require further growth in order to reach pre-pandemic levels, but the volumes recorded in 2022 will be a welcome sight to ferry operators who faced immense challenges over the last two years. Consistently low passenger volumes expose the RoRo freight/passenger model (also referred to as the RoPax model) to long term vulnerability, as well as being detrimental to the domestic tourism market.

Passenger Vehicles

Up to now, the term 'passengers' has referred to the volume of people travelling on RoRo ferries. The volume of passenger 'vehicles' is also an important consideration for shipping companies. Although many maritime passengers travel on foot, the majority travel on, or with, a domestic vehicle, such as a car, bus, trailer, caravan, etc. Such vehicles share RoRo capacity with freight traffic i.e. HGV's and unaccompanied containers. Monitoring the level of demand for these vehicles is important for tracking of available shipping capacity at Irish ports, which can fluctuate throughout the year.

Table 11 details the volume of passenger vehicles - which includes cars, coaches, caravans, and similar tourist vehicles - that travelled through Irish and Northern Irish ports between 2019 and 2022.

Table 11: RoRo Passenger Vehicles, 2019 – 2022

Port	2019	2020	2021	2022	2022 Vs 2019
	No.	No.	No.	No.	%
Cork	39,884	3,281	8,905	39,174	-2%
Dublin	449,131	170,521	212,249	411,813	-8%
Rosslare-Europort	197,707	65,192	115,067	218,985	11%
Total ROI	**686,722**	**238,994**	**336,221**	**669,972**	**-2%**
Belfast	327,538	231,957	410,795	462,079	41%
Larne	128,518	60,850	113,195	105,953	-18%
Total NI	**456,056**	**292,807**	**523,990**	**568,032**	**25%**
Total All-Island	**1,142,778**	**531,801**	**860,211**	**1,238,004**	**8%**

Source: *IMDO*

As with passenger numbers, the volume recorded in 2022 has increased considerably versus the pandemic affected years of 2021 and 2020. When compared to 2019, passenger vehicles in ROI ports are down by just 2% or 16,750 vehicles.

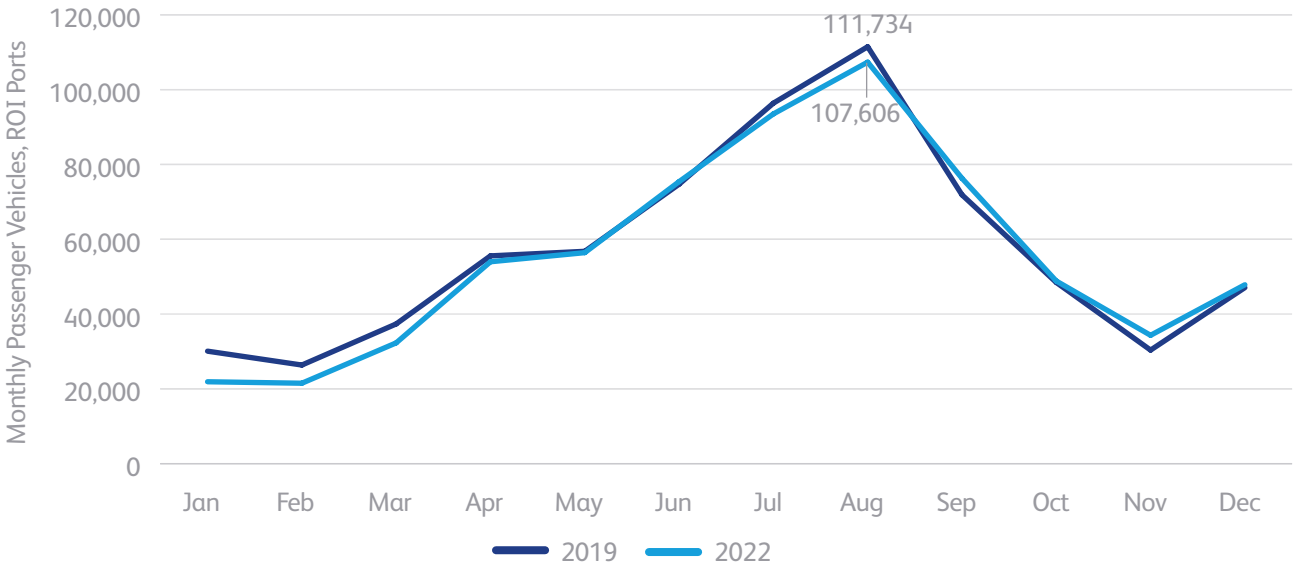
In Rosslare, passenger vehicles have risen by 11% compared to 2019, equivalent to 21,278 additional vehicles. There are several factors that may have influenced this change. Firstly, Brittany Ferries currently operate a RoPax service between Rosslare and Bilbao. In 2019, this Spanish service operated between Cork and Santander, before switching in 2020 to Rosslare and Bilbao. Secondly, as detailed in Section 1.2, there has been a marked increase in ROI – EU capacity at Rosslare post-Brexit. For example, in early 2021, Stena Line intensified its schedule on the Rosslare – Cherbourg route, increasing sailings to six round trips per week. Although motivated by the increase in demand from the freight market, this has also increased capacity for the tourist sector. In addition, DFDS, who operate the Rosslare – Dunkirk RoRo service since late 2020, began to trial this route as a passenger service, i.e. RoPax, in August of 2022.[25]

[25] DFDS to trial new passenger service between Rosslare and Dunkirk in France – Irish Independent, Aug 2022

As for Dublin and Cork, both ports remain behind 2019 volumes for passenger vehicles, but by a small margin relative to the declines recorded in recent years. In all, the passenger vehicle market in ROI ports has come closer to matching pre-pandemic, or 2019 levels when compared to passenger numbers.

In Figure 20, the monthly trajectory of passenger vehicles at ROI ports is presented. It is evident in Figure 20 that the passenger vehicle market in ROI ports has come closer to matching pre-pandemic, or 2019 levels when compared to passenger numbers. For example, in the third quarter of 2022 (Jun – Aug), 277,000 vehicles were recorded, compared to 283,000 in 2019, a difference of 2%.

Figure 20: RoRo Passenger Vehicles, ROI Ports, Monthly, 2019 Vs 2022



Source: *IMDO*

Passenger Market by Route

Like with RoRo freight, the RoRo passenger market can be separated into three route categories. The first is routes between ROI ports and ports in Great Britain (ROI – GB). The second is ROI ports and mainland European ports (ROI – EU), and finally routes between NI ports and ports in Great Britain (NI – GB).

The current list of RoPax routes, i.e. those routes available to tourist passengers as well as freight traffic, is presented in Table 12. There are currently 204 weekly sailings on ROI – GB routes, 44 on ROI – EU routes, and 148 on NI – GB routes.

Table 12: RoRo Passenger Services 2022, by Route Category

Operator	Irish Port	Destination Port	Total Weekly Sailings (In & Out)
ROI - GB			
Irish Ferries	Dublin	Holyhead	56
Stena Line	Dublin	Holyhead	56
P&O Ferries	Dublin	Liverpool	36
Irish Ferries	Rosslare	Pembroke	28
Stena Line	Rosslare	Fishguard	28
ROI - EU			
Irish Ferries	Dublin	Cherbourg	10
Stena Line	Rosslare	Cherbourg	12
Brittany Ferries	Rosslare	Bilbao	4
Brittany Ferries	Rosslare	Cherbourg	2
Brittany Ferries	Rosslare	Le Harve[26]	2
DFDS	Rosslare	Dunkirk	10
Brittany Ferries	Cork	Roscoff	4
NI - GB			
Stena Line	Belfast	Liverpool	38
Stena Line	Belfast	Cairnryan	70
P&O Ferries	Larne	Cairnryan	40

Source: *IMDO*

[26] The Brittany Ferries service between Rosslare and Le Harve began in 2021 as a freight only service. In December 2022, it was announced that tourist passengers will be able to travel on this route in 2023.

In Table 13, the number of passengers that travelled on each route category in 2022 and 2019 is provided. In Table 14, the volume of passenger vehicles handled in 2022 and 2019 is provided.

Table 13: RoRo Passenger Numbers by Route Category, 2019 Vs 2022

Passenger No.	2019	2022	% Ch	Diff
ROI - EU	379,298	397,156	5%	17,858
ROI - GB	2,265,324	1,957,346	-14%	-307,978
NI - GB	2,102,586	2,164,578	3%	61,992

Source: *IMDO*

As Table 13 shows, the volume of ROI – EU passengers rose by 5% in 2022 compared to 2019. As highlighted earlier in this section, the sharp increase in capacity on ROI – EU routes provided by shipping operators following the end of the Brexit transition period in 2021 has partly facilitated this rise, as more weekly sailings are now available to French and Spanish ports than in 2019. ROI – EU routes account for 9% of all passengers on the island of Ireland, and 17% of passengers in the Republic of Ireland.

Table 13 also shows that the number of passengers on ROI – GB routes in 2022 is 14% lower than in 2019, equivalent to 307,978 fewer passengers. There are Brexit-related factors which may explain some of this decline. The Common Travel Areais an arrangement between the Governments of the United Kingdom and Ireland that provides rights to citizens of both countries. Irish and UK citizens have the right to live, travel, work and study within the Common Travel Area.[27] However, common Travel Area rights can only be exercised by citizens of Ireland and the UK. People who are not citizens of either country may have encountered visa or immigration requirements when seeking to move between both countries, thus increasing the administrative burden of such travel.

Table 14: RoRo Passenger Vehicles by Route Category, 2019 Vs 2022

Passenger Vehicles	2019	2022	% Ch	Diff
ROI - EU	122,639	139,062	13%	16,423
ROI - GB	564,083	530,910	-6%	-33,173
NI - GB	456,056	568,032	25%	111,976

Source: *IMDO*

Table 14, which provides the volume of passenger vehicles handled in 2022 and 2019, exhibits similar patterns to those of Table 13. The volume of passenger vehicles on ROI – EU routes is 13% higher in 2022 compared to 2019. ROI – GB routes recorded a decline of 6% over the same period. The same factors which affected the change in passenger numbers is relevant to the change in passenger vehicle numbers.

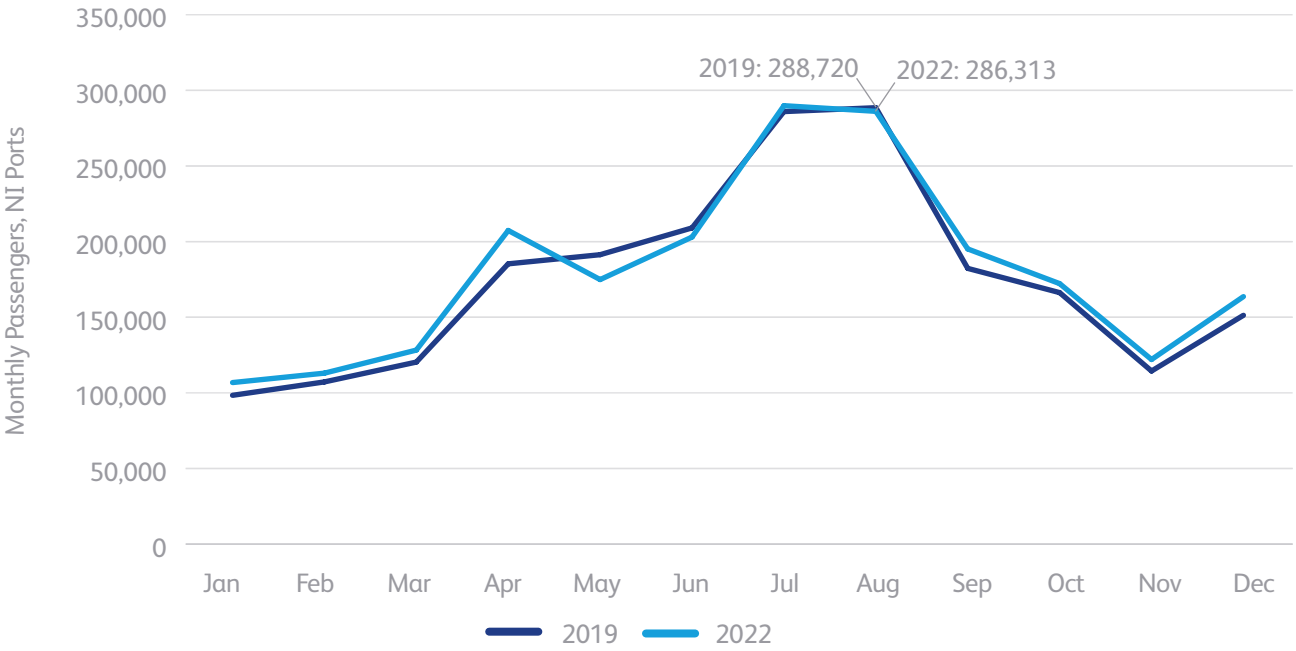
[27] Common Travel Area

Northern Ireland

In Table 10, the number of passengers at Northern Ireland ports (Belfast and Larne) is shown for 2019 to 2022. Passenger numbers in Belfast are 11% higher than in 2019, while passenger numbers in Larne are 23% lower. As a result, Belfast accounted for 83% of all NI passengers in 2022, compared to 77% in 2019. Overall, NI passenger numbers are 3% above 2019 levels.

Figure 21 shows the monthly trajectory of passenger numbers at Belfast and Larne in 2022 and 2019. During the busy six-month period for passenger travel between March and August, an almost identical number of passengers, 1.2m, were carried in both years.

Figure 21: RoRo Passenger Numbers, NI Ports, Monthly, 2019 Vs 2022



Source: *IMDO*

As highlighted in Section 1.2 part (v), Northern Irish RoRo services were impacted in 2022 by a disruption to P&O's RoRo service from Larne to Cairnryan. Sailings were cancelled or disrupted for roughly 3 weeks beginning in late March 2022. As a result, Larne's RoRo freight volumes during that period fell significantly and passenger numbers were also heavily affected. In the second quarter of 2022, Larne's passenger volumes fell by 53%. Many of the passengers affected by this disruption found an alternative in Stena Line's Belfast – Cairnryan service, and this may have facilitated the rise in Belfast passenger volumes in 2022 compared to 2019.

In Table 11, the volume of passenger vehicles at Northern Ireland ports (Belfast and Larne) is shown for 2019 to 2022. Table 11 exhibits the same patterns as Table 10. Passenger vehicles at Belfast rose significantly, by 41%, while the same at Larne fell by 18%. Overall, passenger vehicles through Northern Irish ports rose by 25% in 2022 compared to 2019. The disruption to P&O ferry services at Larne will have also affected the volume of passenger vehicles handled by both ports in 2022.

1.5 iShip Index

Introduction

Since 2007, the IMDO has produced the iShip Index, a quarterly weighted indicator that outlines trends within Ireland's shipping industry, and as a result, the wider economy.[28] The index accounts for five separate market segments, representing the main maritime traffic modes moving through ports in Ireland. Unitised traffic includes Lift-on/Lift-off (LoLo) and Roll-on / Roll-off (RoRo) traffic, while Bulk traffic includes break bulk, dry bulk and liquid bulk. All three of the bulk segments are measured in tonnes.[29]

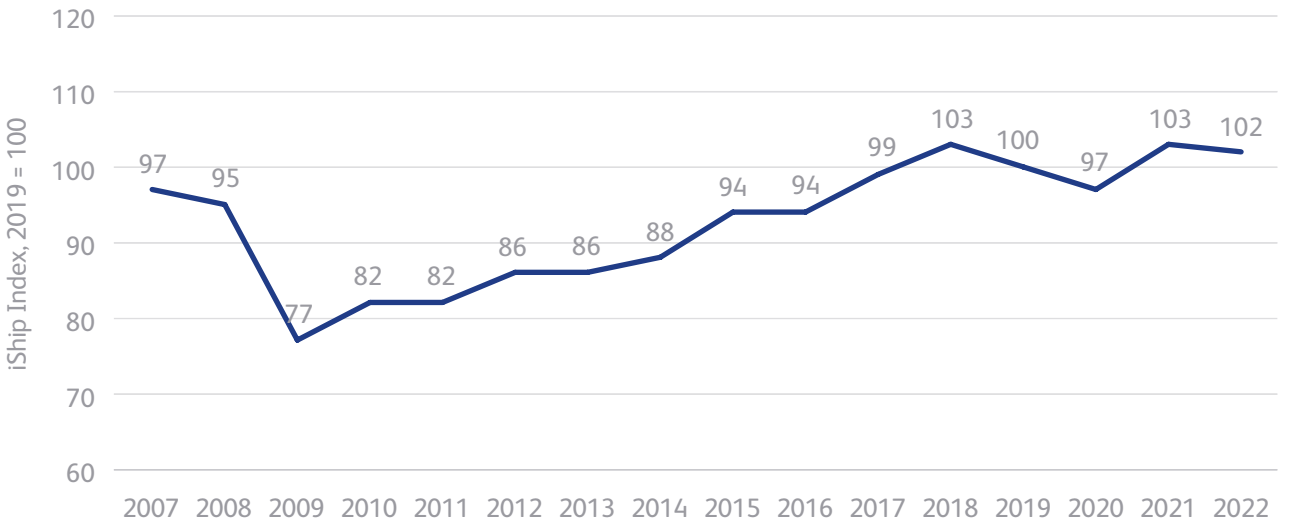
In order to establish a common denominator, LoLo and RoRo volumes are expressed in tonnage terms within the index, whereby 1 Twenty-Foot Equivalent Unit (TEU) = 10 tonnes, and 1 RoRo Freight Unit = 14 tonnes.

The base period of the iShip index has been updated to 2019. 2019 is an appropriate benchmark for the Irish shipping sector in Ireland as it marks the last year before the effects of the COVID-19 pandemic or Brexit took hold. It was also a record year for both RoRo and LoLo traffic up to that point, and these markets represent half of all port traffic in Ireland when combined.

iShip Index

Figure 22 illustrates the performance of the iShip index since its 2007.

Figure 22: IMDO iShip Index, 2007 – 2021 (2019 = 100)



Source: *IMDO*

In 2022, the iShip index declined by 1% compared to 2021. Irish Port tonnage is 2% higher in 2022 when compared to 2019.

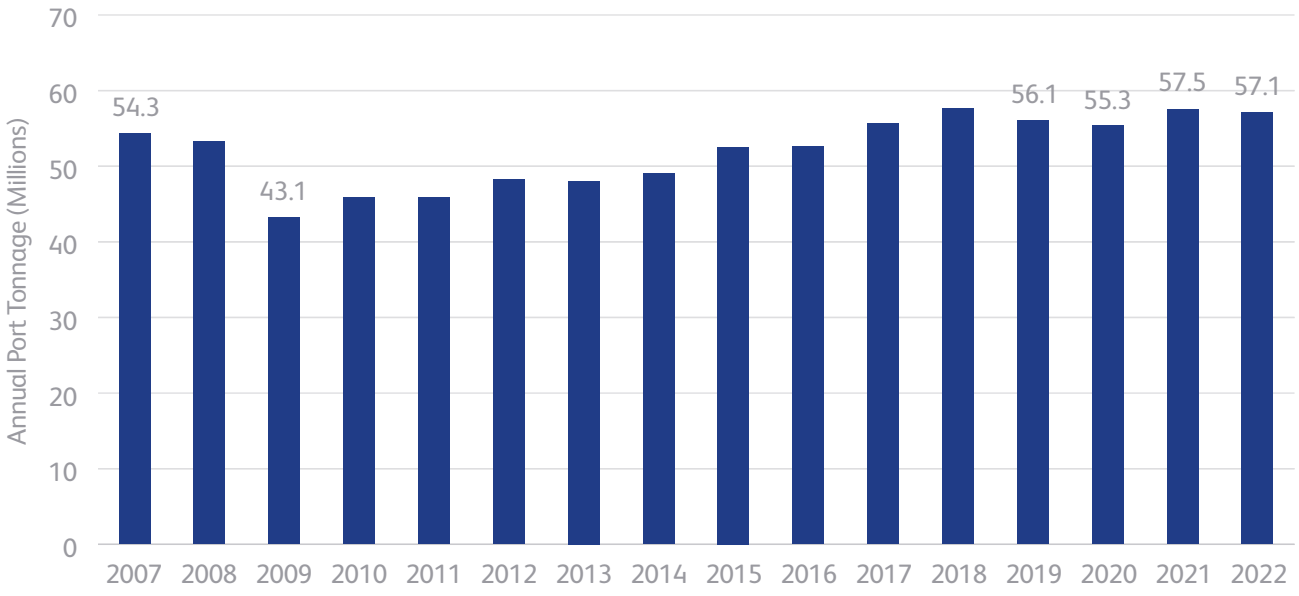
The trajectory of Irish port traffic since 2007 is presented in Figure 2022. The effects of the global financial crash are evident between 2008 and 2009. Irish port tonnage fell by 19% during that period as the Irish economy fell into recession. Between 2009 and 2019, port tonnage rose consistently as the Irish economy recovered and trade with other countries increased. The effects of the COVID-19 pandemic in 2020 are also evident, when the iShip index declined by 3% in that year.

Figure 23 illustrates the annual volume of port tonnage handled across all five market sectors at Republic of Ireland ports since 2007. In the last five years, an average of 56.7m tonnes has been handled at Irish ports each year.

[28] The iShip index does not include ports in Northern Ireland.

[29] Lift-on/Lift-off (LoLo) has been updated in 2022. LoLo data now includes both laden (full) and unladen (empty) containers. Unladen, or empty, containers are an important component of the LoLo sector because they are an indication of the flow of containers between different regions and countries. Empty containers are often transported to locations where there is a shortage of containers, or where containers are needed for the export of goods.

Figure 23: Tonnage Volume, Republic of Ireland Ports, 2007 – 2022

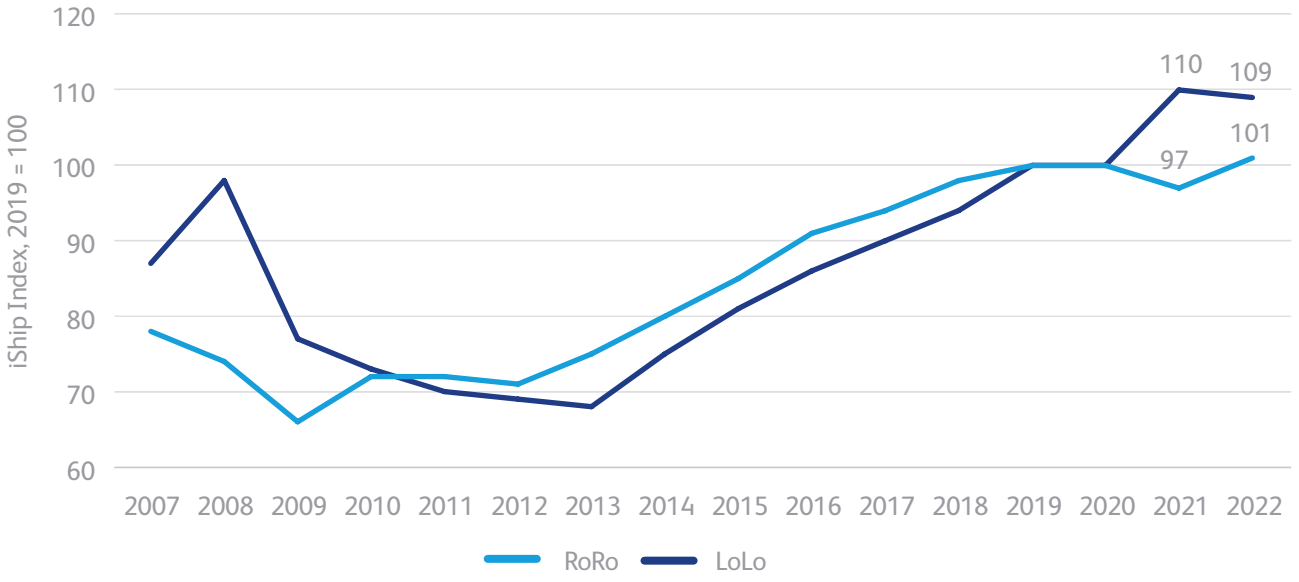


Source: *IMDO*

iShip Index – Unitised Markets

Figure 24 provides the iShip index for RoRo and LoLo traffic between 2007 and 2022.

Figure 24: RoRo & LoLo iShip Index, 2007 - 2022 (2019 = 100)



Source: *IMDO*

Figure 24 illustrates that both the LoLo and RoRo market underwent a period of consistent and rapid recovery between 2012 and 2019, which represented a recovery from the 2008 global financial crash. This was interrupted by the COVID-19 pandemic in 2020.

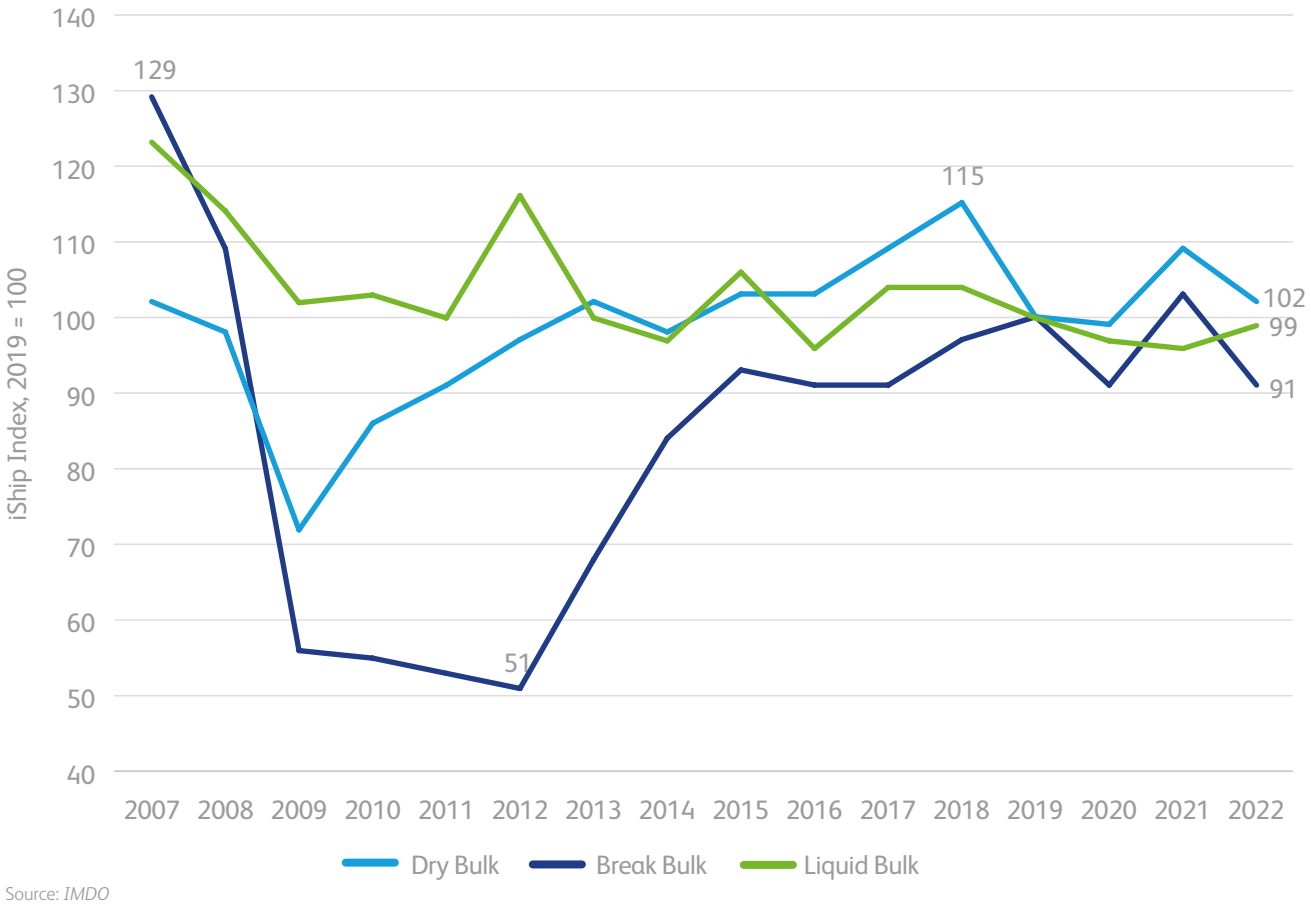
Figure 24 also shows that the LoLo market is outperforming its 2019, or pre-Brexit, volumes for the past two years. The factors driving this change are described in detail in Section 1.3. In 2022, RoRo traffic is just slightly above those volumes recorded in 2019. RoRo traffic has recorded significant fluctuation since 2020, and this is detailed in Section 1.2.

In all, LoLo traffic makes up 20% of all Irish port tonnage in 2022, while RoRo traffic makes up 29%. Therefore, roughly half of all traffic at Irish ports arrives/departs in containerised form, and is transported by either a RoRo vessel or a LoLo containership.

iShip Index – Bulk Markets

Figure 25 provides the iShip index for the three bulk segments of the Irish shipping market; Dry bulk, liquid bulk and break bulk. For detailed analysis on the performance all three markets in 2022, see Section 1.1.

Figure 25: Bulk Market iShip Index, 2007 - 2022 (2019 = 100)

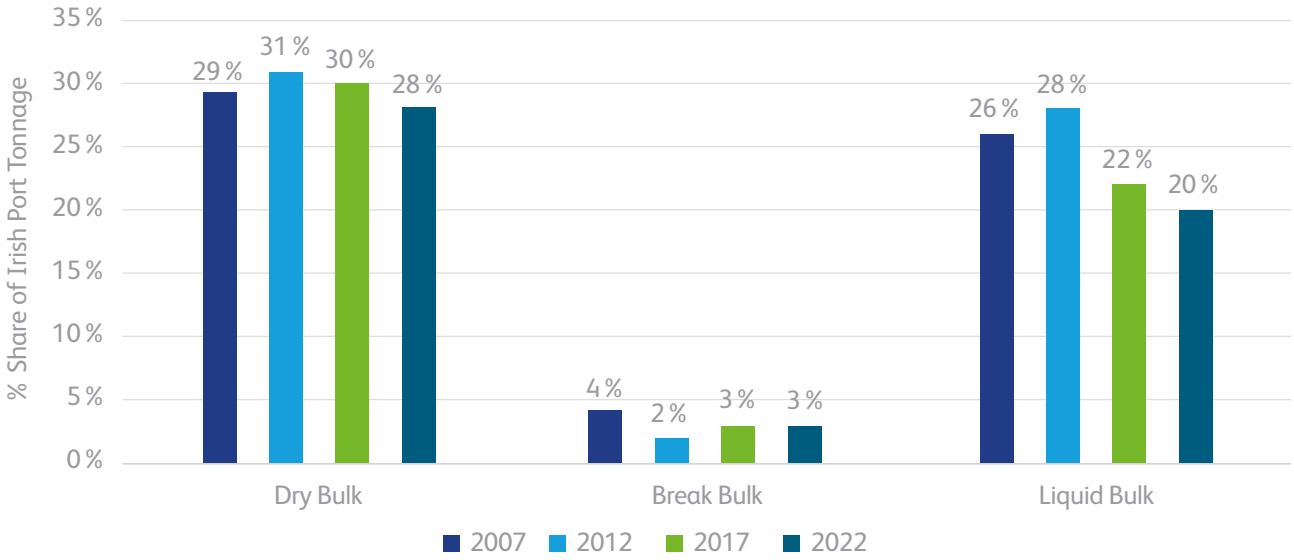


Source: *IMDO*

Figure 25 shows that in 2022, dry bulk and liquid bulk traffic are at roughly the same levels as 2019. Break bulk traffic however, which is comprised largely of non-containerised project cargo that is used in the construction sector, is 9% below 2019 levels. The sharp fluctuations in break bulk traffic between 2007 and 2012 are evident in Figure 25. The steep decline from an index score of 129 in 2007 to 51 in 2012 (-61%) was driven by the collapse of the construction sector in the Irish economy throughout this period. A strong recovery followed, and in the latter half of the decade, break bulk traffic performed at, or close to, the 2019 benchmark.

In Figure 26, the share of port tonnage held by each bulk segment is provided, separated by five year intervals.

Figure 26: Percentage Share of Irish Port Tonnage, Selected Years



Source: *IMDO*

In Figure 26, a decline in the share held by both dry bulk and liquid bulk traffic is clear. This is reflective of the changing composition of Ireland's primary energy usage, as highlighted in annual reporting prepared by the Sustainable Energy Authority of Ireland.[30] In the last decade, Ireland has made increasing use of natural gas and renewable energy to satisfy annual energy requirements, and less use of oil, a liquid bulk product, and coal, a dry bulk product. The decline in imports of coal and petroleum has a significant effect on overall port volumes, particularly at Ireland's core ports.

[30] Energy in Ireland 2022 Report, SEAI

Section 2: **Irish Merchandise Trade Review**

2.1 Irish Merchandise Imports

2.1A Tonnage

(i) Import Tonnage by Annual Volume

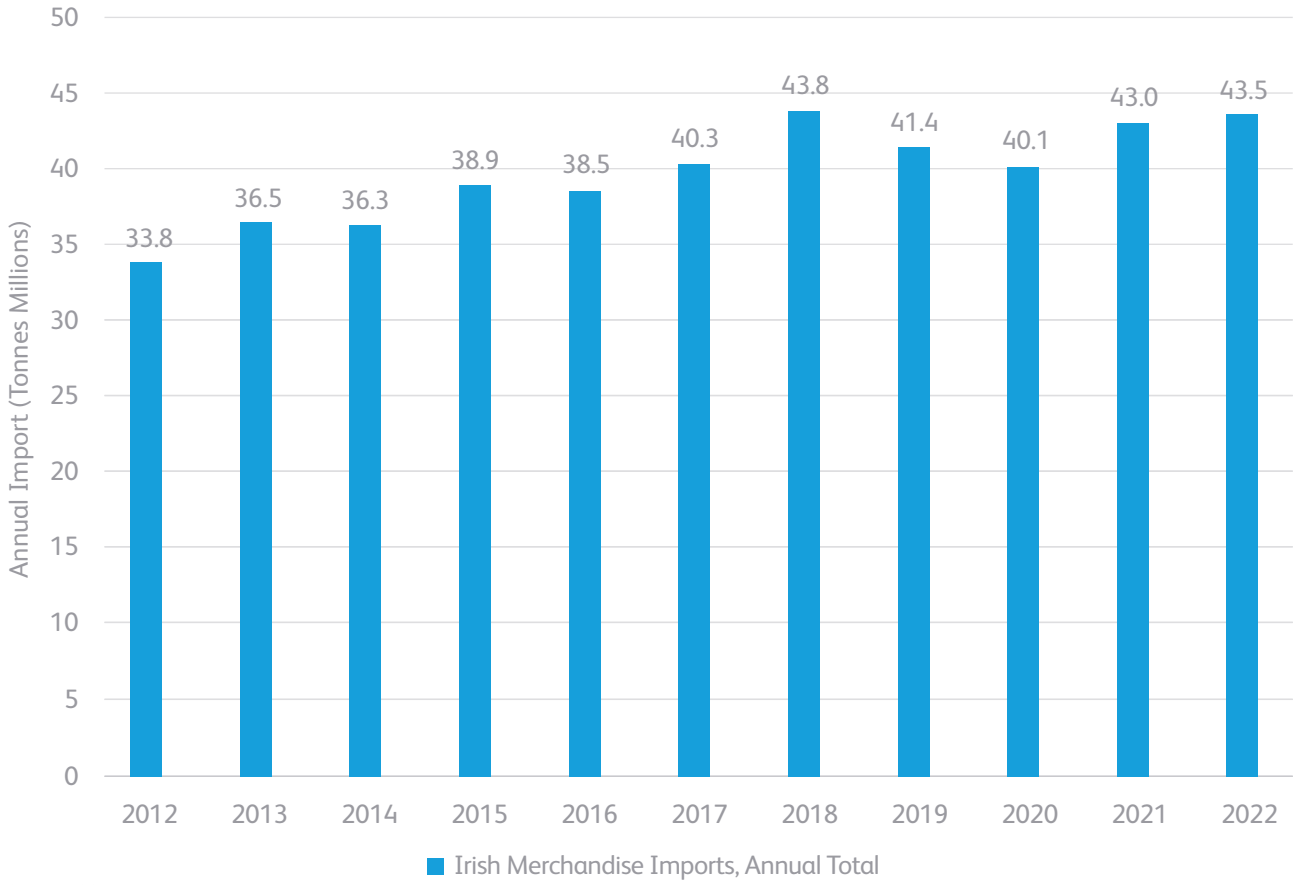
In 2022, 43.5m tonnes of merchandise goods were imported into Ireland, approximately 90% of which was handled by Irish ports. Irish merchandise imports rose by 1% compared to 2021, equivalent to an additional 0.6m tonnes. Import volumes are now close to the peak recorded in 2018.

The annual volume of Irish merchandise imports for the past ten years is provided in Figure 33. In 2018, import volumes reached a peak of 43.8m tonnes. This was due mainly to a national fodder crisis that necessitated agricultural stockpiling of bulk products such as animal feed. 2021 was also a year of unusually high growth. In 2021, volumes were driven largely by pent-up demand from the COVID-19 pandemic, the worst effects of which took place in 2020. In particular, volumes in 2021 were driven by a return of energy products for domestic and international transport.

Part (ii) will show that Irish imported tonnage was heavily impacted by the Russian invasion of Ukraine in 2022. Imports of natural gas, coal, animal feed and cereals all increased, driven in large part by the desire to build up reserves in a market where fears of supply shortages were heightened.

The outbreak of this conflict created both an energy security and food security crisis across Europe. Throughout this period, it was essential for Irish ports to adapt to larger shipments of these raw materials in order to facilitate the security of supply for the Irish economy.

Figure 27: Irish Merchandise Import Volumes, 2012 - 2022



Source: *CSO*

(ii) Import Tonnage by Product Grouping

Figure 27 above illustrates the volume of merchandise imports into Ireland each year. In terms of what categories of products were imported and how this changed in 2022, this section analyses Irish imports when broken down into Standard International Trade Classification (SITC) categories.[31] In Table 15, Irish imports in 2021 and 2022 are organised using these SITC groupings.

In line with previous years, the top three import categories in terms of tonnage were Mineral Fuels, Crude Materials and Food and Live Animals, which made up over 70% of all imported Irish tonnage in 2022.

Table 15: Irish Imported Tonnes by SITC Grouping

	2021	2022	Growth	Diff
SITC Product Grouping	Tonnes	Tonnes	(%)	Tonnes
Mineral Fuels, Lubricants, and Related Materials	13,292,369	13,878,005	4%	585,636
Food and Live Animals	8,449,678	9,551,924	13%	1,102,247
Crude Materials, Inedible, Except Fuels	8,652,872	7,844,912	-9%	-807,960
Manufactured Goods Classified Chiefly by Material	4,812,388	4,427,090	-8%	-385,298
Chemicals and related products	4,214,090	3,914,915	-7%	-299,175
Machinery and Transport Equipment	1,322,919	1,637,808	24%	314,889
Miscellaneous Manufactured Articles	970,718	941,922	-3%	-28,796
Beverages and Tobacco	900,382	936,592	4%	36,210
Animal and Vegetable Oils, Fats, and Waxes	334,603	365,048	9%	30,445
Commodities and Transactions Not Classified Elsewhere	9,947	18,656	88%	8,709
Total Irish Imported Tonnage	**42,959,965**	**43,516,871**	**1%**	**556,906**

Source: *CSO*

Mineral Fuels

Mineral fuels consistently represent 30% of all Irish imported tonnage, or approximately 13m tonnes per year. This category is essentially comprised of three fossil fuels; coal, petroleum products (oil) and natural gas. Over the past five years, mineral fuel imports break down roughly as follows: oill represents 60% of these imports, natural gas represents 30%, and coal, 10%.

Over 90% of Ireland's imported natural gas comes from Great Britain, and is supplied mainly through an interconnector (pipeline) from Scotland.[32] Only coal and oil products, therefore, are handled at Irish ports, the majority of which would make use of bulk shipping services. Petroleum will be transported predominantly in tanker vessels, while coal products will make use of dry bulk carriers.

In 2022, Ireland's imports of natural gas rose significantly, by 20%, equivalent to an additional 730,000 tonnes. This was a direct consequence of the Russian invasion of Ukraine, which began in February 2023. Following the outbreak of this conflict, uncertainty surrounding Russian supplies of natural gas to European countries rose dramatically. The scale of the problem facing European countries was highlighted by the World Bank;

"Europe has been affected by a reduction in Russian natural gas production and exports. Russian gas pipeline exports have fallen to 53% of their 2017-21 average, as the majority of exports to Europe were curtailed."

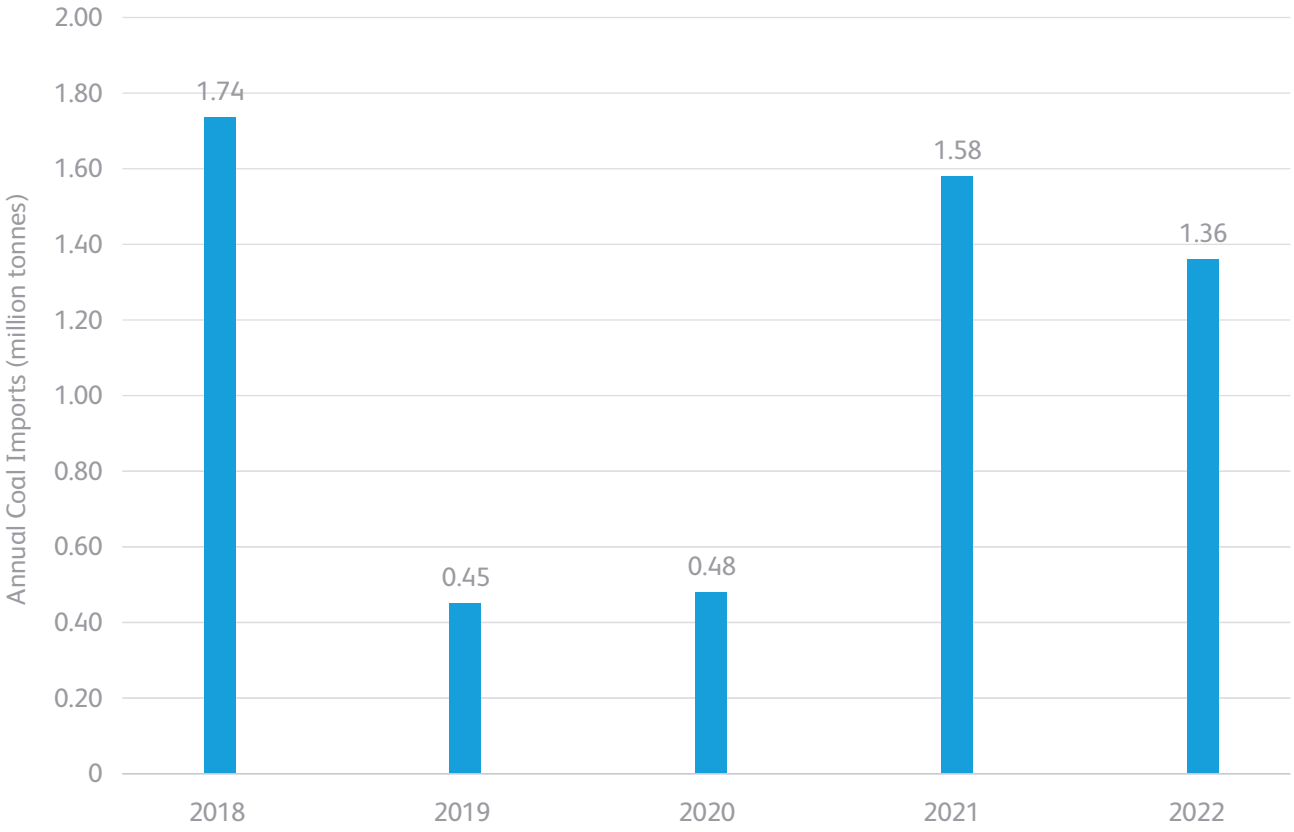
World Bank, February 2023[33]

[31] The Standard International Trade Classification (SITC) is a classification system, developed by the UN, used to categorize goods traded internationally. It provides a standardised framework for analysing and comparing international trade statistics. The SITC system organizes goods into various categories based on their characteristics and intended use.
[32] These figures do not include indigenous gas supply (for example, Corrib gas).
[33] Bubble trouble: what's behind the highs and lows of natural gas markets? – World Bank, February 2023

The curtailing of Russian natural gas exports caused prices to surge. For example, the Dutch TTF European price for a natural gas contract on August 26th 2021 was €19.60. On the same day in 2022, the price had risen to €307.[34] Facing these price rises, and uncertainty surrounding future supplies, many European countries rapidly increased natural gas stockpiles ahead of the winter period. It is likely that importers in Ireland underwent the same process, and that this desire to secure supply drove imports of natural gas to increase by 20% in 2022.

As for imports of coal, these have fluctuated in recent years, and in 2022, were likely also impacted by the Russian invasion of Ukraine. Figure 28 shows the annual volume of coal imported into Ireland since 2018.

Figure 28: Annual Coal Imports, million tonnes, 2018 - 2022



Source: *CSO*

Imports of coal had been falling consistently for the last decade, and this decline accelerated in 2019. The decline in coal imports in 2019 and 2020 led to a sharp reduction in operation at the ESB coal-burning generator plant in Moneypoint at the Shannon estuary. The large increase in 2021, however, was necessitated by what the Sustainable Energy Authority of Ireland (SEAI) described as a 'low-wind year,' when wind as a source of electricity generation fell by 15% compared to 2020.[35] In 2022, electricity generation from wind was back at roughly 2020 levels, which explains much of the decline in coal imports in 2022, as less coal was needed for this purpose. However, coal imports still remain significantly above the volumes recorded in 2019 and 2020. The energy crisis brought about by the Russian invasion of Ukraine led to stockpiling of energy resources across Europe. Concerns of disruption natural gas supplies created heightened energy insecurity. This was likely a factor in coal imports remaining close to 2021 levels this year.

[34] Dutch TTF Natural Gas Futures, ICE
[35] SEAI Monthly Electricity Data

Food and Live Animals

In the Food and Live Animals category, five products consistently make up 90% of the overall grouping; Animal Feeds (38%), Cereals (28%), Vegetables and Fruit (11%), Dairy products and Eggs (10%), and Sugar products (6%).[36]

In 2022, Irish imports of animal feed and of cereals increased significantly. Imports of animal feed rose by 11%, from 3.3m tonnes to 3.6m tonnes, while imports of cereals rose by 22% from 2.2m tonnes to 2.7m tonnes.

Regarding animal feed, Ireland imports large volumes of these products in order to meet the requirements of the national herd. The national herd rose in 2022 by 1%, its third consecutive year of growth. This places upward pressure on national feed requirements. However, as with mineral fuels, this increase in both animal feed and cereals was also heavily influenced by the Russian invasion of Ukraine.

Ukraine is a major producer of grain to world markets, e.g. wheat, maize. Following the outbreak of conflict in the region, exports of Ukrainian grain were effectively halted, with heightened uncertainty surrounding future supply. As was the case with energy products such as natural gas and coal, many importers chose to secure supplies and build up reserves. This played a role in Ireland's increased trade in these goods in 2022.

The uncertainty surrounding Irish grain and feed supplies is reflected in the introduction of the Tillage Incentive Scheme by the Department of Agriculture, Food and the Marine in the Spring of 2022.[37] This was a support measure for farmers to incentivise the increase in the eligible tillage crops in 2022 to reduce the dependency on imported feed material. A payment of €400 per hectare was provided to encourage farmers to plant additional barley, wheat and oats. This incentive, alongside favourable weather conditions, led to increased yields in 2022, as highlighted in Teagasc harvest reports.[38] In all, increased imports of animal feed and cereals in 2022 should be viewed in the context of the supply uncertainties created by the outbreak of war in Ukraine, with many importers seeking to increase stockpiles in a difficult market.

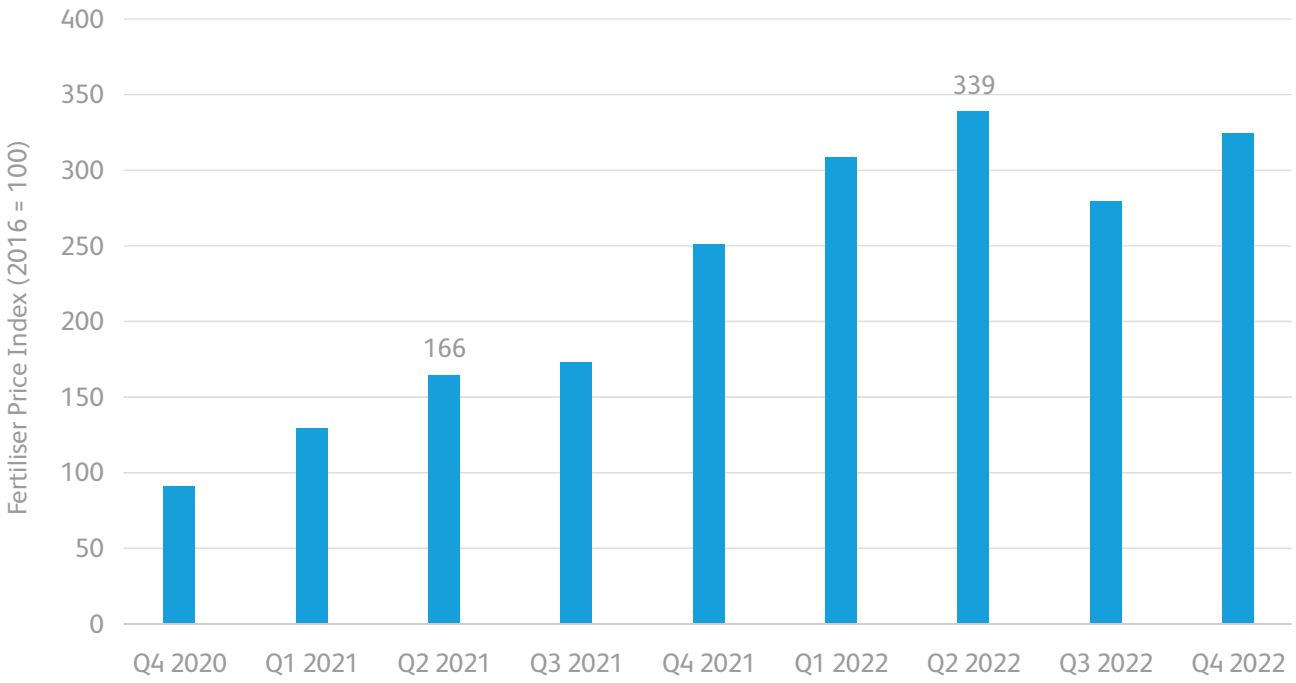
Crude Materials

In the crude materials category, over 90% of imports are made up of two products: metalliferous ores and crude fertilisers. Imports of cork and wood make up another 8%.

In 2022, imports of crude fertilisers fell by 10%, or 300,000 tonnes. This was driven by the sharp increases in the price of fertilisers on international markets. Following the Russian invasion of Ukraine, sanctions were placed on both Russia and Belarus by the EU. Both countries are important exporters of fertilisers, particularly Belarus. As highlighted by the World Bank, in 2022, exports from Belarus have fallen by more than 50%.[39] This disruption to global supplies placed severe pressure on prices. In Figure 29, the IMF's quarterly fertiliser price index is provided. It shows that between Q2 2021 and Q2 2022, the price index for fertilisers more than doubled. This underpins the decrease recorded in fertiliser imports recorded in Ireland in 2022.

[36] Percentage in parenthesis refers to share held in 2022.
[37] Tillage Incentive Scheme
[38] Harvest Report 2022, Teagasc
[39] Fertilizer prices ease but affordability and availability issues linger – World Bank, January 2023

Figure 29: IMF Fertiliser Price Index (includes DAP, Potash, UREA), (2016 = 100), Q4 2020 – Q4 2022



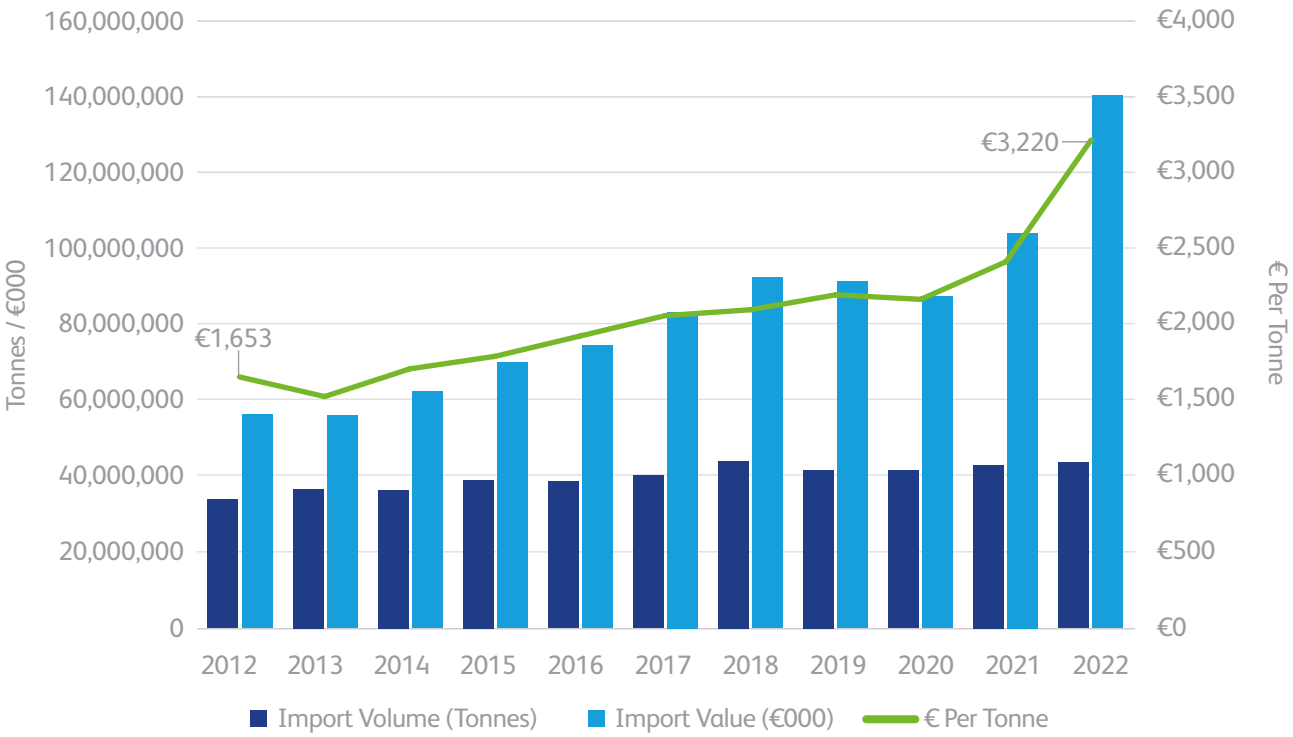
Source: *IMF*

2.1B Value

When unadjusted for inflation, the value of Irish imports rose sharply in 2022. Global inflation rates placed severe upward pressure on commodity prices, and the issue was compounded by disruptions to the supply of essential global raw materials such as oil, natural gas, fertilisers and grains, as described in part (i).

In 2021, the value of Irish imports surpassed €100bn for the first time. In 2022, the value grew by 35 % to surpass €140bn. The price per tonne of Irish imports in 2022 is €3,220. This is one third higher than 2021, and almost 50 % higher than 2020. The trend of rising per tonne cost of Irish imports has been consistent since 2013, interrupted only by the COVID-19 pandemic. In Figure 30, the value of Irish merchandise imports is provided for the last ten years. It is set alongside the annual volume of Irish merchandise imports, as well as the annual average import price per tonne.

Figure 30: Ireland Import Volume, Import Value, & Price per Tonne, 2012 – 2022



Source: *CSO*

In terms of what products were imported and how this changed in 2022, the following sections will analyse Irish import value when broken down into Standard International Trade Classification (SITC) categories. In Table 16, the value of Irish imports in 2021 and 2022 are organised using these SITC groupings.

In line with previous years, the top three categories in terms of import value were; Machinery and Transport Equipment (36% share), Chemicals and Related Products (27% share), and Miscellaneous Manufactured Articles (11% share). When combined, these three categories consistently represent approximately three quarters of the value of all Irish merchandise imports.

Table 16: Irish Import Value by SITC Grouping

	2021	2022	Growth	Diff
SITC Category	€bn	€bn	%	€bn
Chemicals and Related Products	€25.9	€38.4	48%	€12.5
Machinery and Transport Equipment	€40.8	€50.1	23%	€9.3
Miscellaneous Manufactured Articles	€12.3	€14.7	20%	€2.4
Food and Live Animals	€7.4	€9.3	26%	€1.9
Manufactured Goods Classified Chiefly by Material	€6.9	€9.0	30%	€2.1
Crude Materials, Inedible, Except Fuels	€1.1	€1.1	7%	€0.1
Beverages and Tobacco	€1.0	€1.2	15%	€0.1
Mineral Fuels, Lubricants, and Related Materials	€6.2	€13.1	112%	€6.9
Commodities and Transactions Not Classified Elsewhere	€1.9	€2.6	40%	€0.7
Animal and Vegetable Oils, Fats, and Waxes	€0.4	€0.6	57%	€0.2
Total Irish Import Value	**€103.8**	**€140.1**	**35%**	**€36.4**

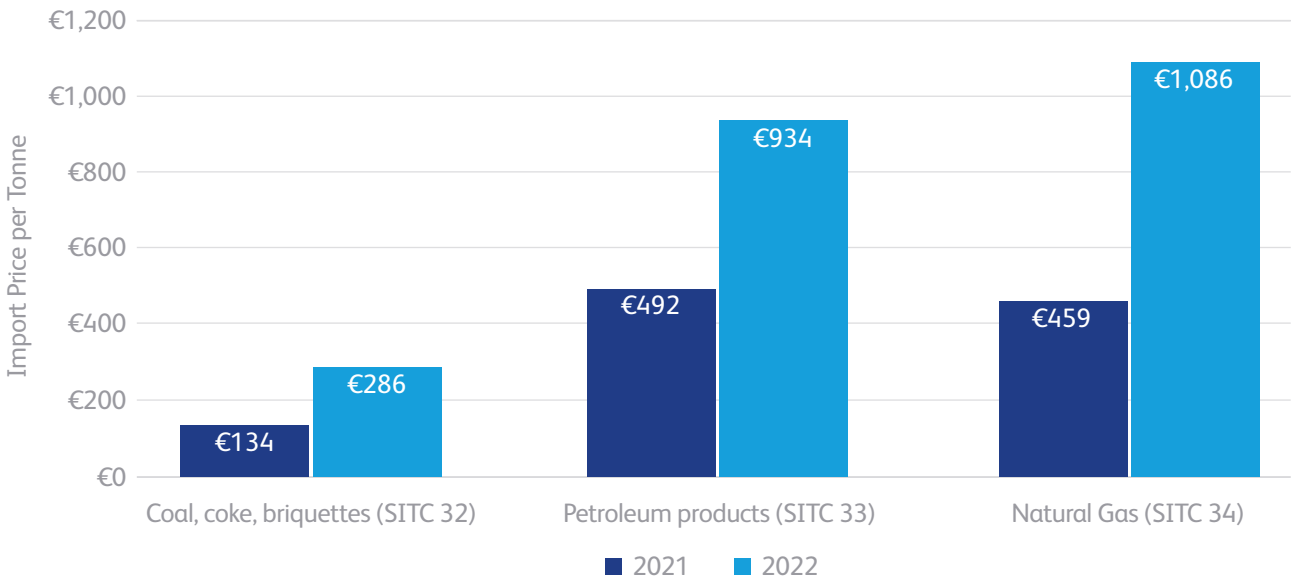
Source: *CSO*

Mineral Fuels

As has been discussed throughout this report, the Russian invasion of Ukraine created a global energy crisis that put severe upward pressure on the price of energy products. The reduction in pipeline exports of Russian natural gas to European countries, coupled with the embargos placed on imports of Russian oil by the EU, US and G7 countries, led to uncertainty, scarcity and reorganisation in global energy markets (See Section 2.1A). Consequently, Irish importers, like many around the world, faced higher prices when importing oil/petroleum, natural gas and/or coal. This is reflected in Irish import statistics for 2022.

In Figure 31, the average per tonne cost of coal, oil and natural gas is provided. All three products fall under the mineral fuels SITC category. As evident in Figure 31, the average import price per tonne of coal rose by 112%, petroleum by 90% and natural gas, 136%. The price of natural gas was most volatile as Russia is a key supplier of this product to European countries. The rise in the price of Irish natural gas imports accounted for 9% of the overall increase in Irish import value in 2022.

Figure 31: Average Import Price per Tonne, Selected Products, 2021 - 2022

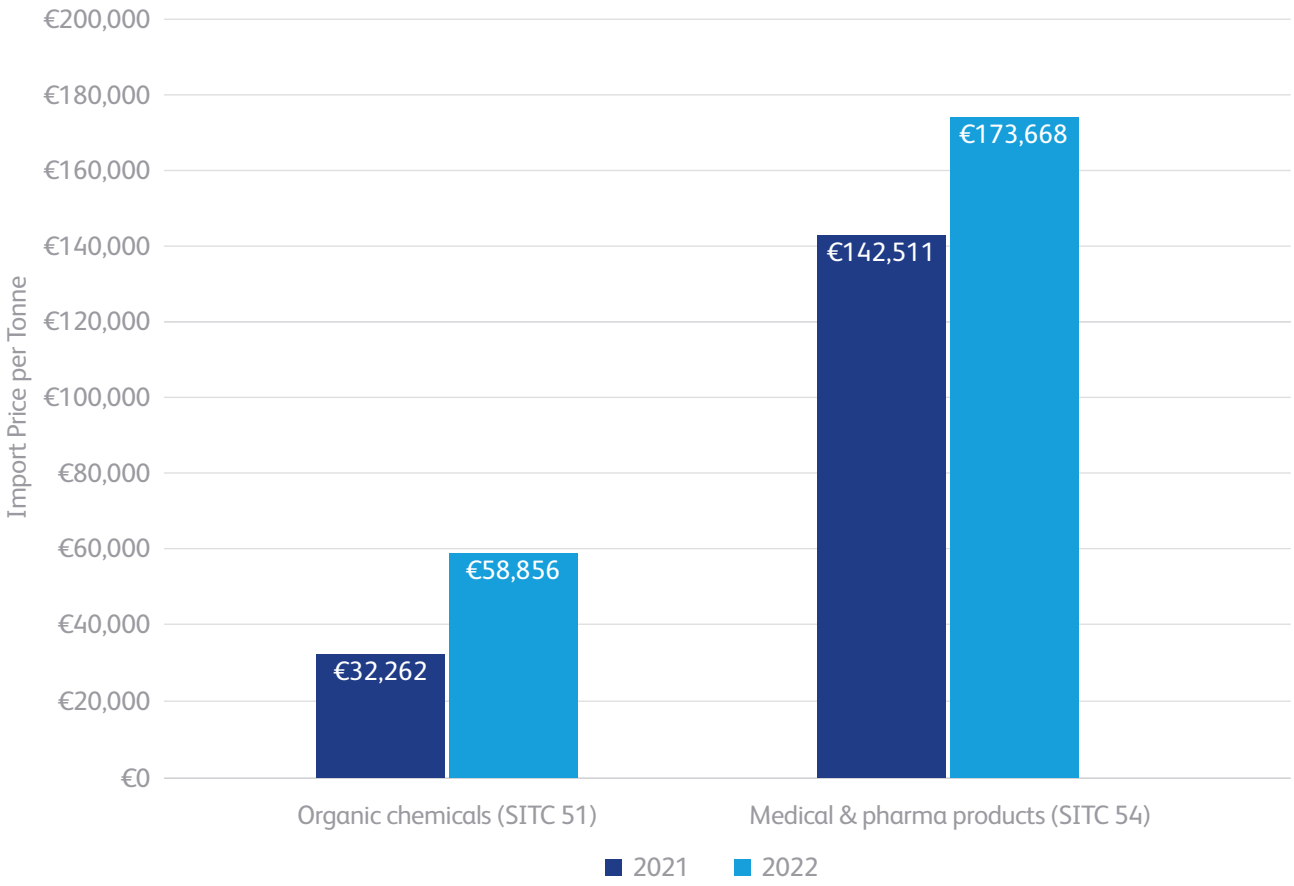


Source: *CSO*

Chemicals and related products

The rise in prices in 2022 was not isolated to just energy products. In 2022, the Harmonised Index of Consumer Prices for All Goods in the Euro Area averaged more than 8%. The pharmaceutical industry plays a significant role in the Irish economy, and Ireland imports many products with a high weight/value ratio. This is reflected in the fact that chemical and related products make up more than one quarter of Irish import value, but less than 10% of Irish import tonnage (See Tables 16 and 17). Over the past five years, two subdivisions of the chemical and related products category, 'Organic Chemicals' and 'Medical and Pharmaceutical Products', make up three quarters of the value of this SITC category. In 2022, the average price per tonne of these imports rose significantly, and this is illustrated in Figure 32.

Figure 32: Average Import Price per Tonne, Selected Products, 2021 - 2022



Source: *CSO*

As shown in Figure 32, the average import price per tonne of organic chemicals rose by 82%, while the same for medical and pharmaceutical products rose by 22%. When combined, the increase in the price of these two product divisions explains more than one quarter of the increase in all Irish import value in 2022.

2.2 Ireland's Import Trading Partners

2.2A Tonnage

Introduction

As shown in Section 2.1, Ireland imports approximately 43m tonnes of merchandise goods each year. This volume of goods is required to satisfy domestic energy, food, and industrial needs. Ireland relies heavily on a relatively small number of countries for these imports, and most of these countries are geographically close to the island of Ireland. However, the countries Ireland is dependent upon for imports changes significantly depending on what goods are considered. Therefore, in this section, Irish imports will be broken into three broad sections; **Food and Beverages, Manufactured Goods** and **Raw Materials**. These groupings split neatly, whereby Food Beverages and Manufactured Goods represent approximately one quarter of Irish import tonnage each, while raw materials account for one half.

Overall, this section will show that Great Britain remains Ireland's largest import partner in volume terms. When all products are included, 1 in 4 of all Irish imported tonnage is purchased from Great Britain. Brexit has had a profound effect on Irish trade, however, and this is reflected in the fact that for much of the last decade, Great Britain previously accounted for 1 in 3 Irish imported tonnes. Irish trade has found new markets for certain categories of goods, and these will be highlighted throughout this section.

From an Irish shipping market perspective, it should be noted that there is a difference between Irish trade and Irish port traffic. The analysis here refers to the country from which the item was purchased, which is often not the same as the country from where the product was shipped. For example, if Ireland imports tonnage from China, the products will most likely be shipped to a central European hub such as Rotterdam or Antwerp. From there, a feeder vessel will transport the Irish-owned goods to an Irish port. As noted throughout this report, maritime transport accounts for 90% of all Irish international trade. In order to facilitate the import of 43 million tonnes of merchandise goods, Ireland is heavily reliant on an even smaller number of countries than those with which it trades, and is particularly reliant on access to large maritime hubs. Overall, it is predominantly by sea that Ireland can successfully import the necessary volume of goods to sustain the Irish population and economy.

(i) Food & Beverages

Table 17 provides a selection of Ireland's largest import partners in 2021 and 2022 for food and beverage products. The countries listed in Table 17 represent 81% of imports in this grouping. Food and Beverages refers to products such as grains, dairy, beverages and animal feeds for agricultural use. It encompasses SITC categories 0 & 1. In maritime transport, the products in this grouping will employ a mix of bulk carrier vessels and RoRo and LoLo vessels. Goods such as grains and animal feed will be transported by bulk carrier vessel, whereas dairy products, seafood and meat products will be transported in containers either by RoRo vessels or by LoLo containerships.

Table 17: Ireland's Top Merchandise Import Partners in Volume terms, Food & Beverages

	2021	2022	Growth	Diff
Trading Partner	Tonnes	Tonnes	(%)	Tonnes
Great Britain	1,247,734	1,351,876	8%	104,142
Northern Ireland	1,832,163	2,139,328	17%	307,165
United States	780,568	991,358	27%	210,790
Argentina	723,594	963,654	33%	240,060
Canada	594,267	633,960	7%	39,694
France	639,636	700,048	9%	60,412
Netherlands	601,906	558,126	-7%	-43,781
Germany	354,613	390,116	10%	35,502
Brazil	229,675	564,103	146%	334,427
Ukraine	209,100	174,689	-16%	-34,410
Total Food & Beverage Imports	**9,350,059**	**10,488,516**	**12%**	**1,138,457**

Source: *CSO*

In 2022, Ireland imported 12% more food and beverage products that in 2021, equivalent to an additional 1.1m tonnes. There was a notable increase in imported tonnage from Brazil. This was driven by cereal products, which increase by 330,000 tonnes. This reflects the global food crisis that was sparked by the Russian invasion of Ukraine. Ireland, like many other countries, faced uncertainty regarding grain supplies from Ukraine, and looked to other suppliers both to facilitate Irish demand, and to build up reserves in case of future shortages. Cereal imports from Great Britain, France and Canada all rose significantly in 2022 as a result of these influences. Driven by similar concerns, to secure supply and build reserves, the increases in imports from Northern Ireland, the United States and Argentina were all driven primarily by animal feed products.

From a Brexit perspective, food imports from Great Britain held a 13% share for the second consecutive year. This is compared to a 23% share held in 2019. Much of that loss in market share has been captured by Northern Ireland, which held a 20% share of Irish food imports in 2022 compared to 17% in 2019. France, Netherlands, Canada and Argentina all hold higher shares of Irish food imports post Brexit, highlighting the changes that Brexit has caused to Irish international trade.

(ii) Raw Materials

Table 18 provides a selection of Ireland's largest import partners in 2021 and 2022 for Raw Materials. The countries listed in Table 18 represent 85% of imports in this grouping.

Raw materials are comprised mainly of energy products such as coal, petroleum, natural gas. It also includes industrial goods such as crude fertilisers and metalliferous ores. It refers to SITC categories 2 & 3. In terms of maritime transport, the products in this grouping will predominantly use tanker vessels for petroleum and other liquid products, and bulk carrier vessels coal, fertilisers, metalliferous ores etc.

Table 18: Ireland's Top Merchandise Import Partners in Volume terms, Raw Materials

	2021	2022	Growth	Diff
Trading Partner	Tonnes	Tonnes	(%)	Tonnes
Great Britain	6,143,574	7,351,473	20%	1,207,900
Guinea	2,961,705	2,961,347	0%	-358
Northern Ireland	2,521,062	2,470,789	-2%	-50,273
United States	2,016,744	2,198,885	9%	182,141
Brazil	1,727,298	991,005	-43%	-736,294
Russia Federation	1,586,739	511,696	-68%	-1,075,043
Norway	853,346	117,045	-86%	-736,301
Spain	698,803	547,473	-22%	-151,331
Netherlands	619,048	560,273	-9%	-58,775
Colombia	157,601	820,990	421%	663,389
Total Raw Material Imports	**21,945,241**	**21,722,917**	**-1%**	**-222,324**

Source: *CSO*

Two thirds of the imported tonnage in this raw material grouping is made up of coal, petroleum and natural gas. As highlighted in Section 2.1 part (ii), Ireland's imports of natural gas in 2022 rose significantly, by 20%, equivalent to an additional 730,000 tonnes. This was a direct consequence of the Russian invasion of Ukraine, whereby concerns over scarcity, disruption, and future price increases led to a stockpile of natural gas across many European countries. As more than 90% of Ireland's natural gas is supplied via pipeline from Scotland, this drove most of the 20% increase in raw imports from Great Britain that are evident in Table 18. Imports of natural gas from Great Britain rose from 3.6m tonnes to 4.1m tonnes.

Overall, Brexit's impact on imports of these products has been limited. Products in this grouping are bulky and relatively inelastic when it comes to domestic demand. For that reason, Great Britain continues to be the key partner for Ireland for such goods.

The sharp decline in raw material imports from Russia are also evident in Table 18. An EU ban on imports of Russian coal, oil and other products drove this decline. Imports of coal from Russia fell by almost 700,000 tonnes, while imports of petroleum products fell by 370,000 tonnes. Much of this was replaced by Colombian coal, imports of which increased by 660,000 tonnes in 2022. Regarding petroleum, Ireland's supply chain also underwent changes in 2022. Imports of petroleum products from Norway fell by 730,000 tonnes, compared to an increase of 810,000 from Great Britain and 500,000 tonnes from Azerbaijan.

The remainder of the raw material grouping is made up predominantly of crude fertilisers and metalliferous ores. As described in Section 2.1 part (ii), imports of both products fell significantly in 2022 as global prices for these commodities rose sharply. For crude fertilisers, the decline was largely spread across many countries, including Spain, Great Britain and Brazil. As for imports of metalliferous ores, the decline was borne predominantly by Brazil. The majority of metalliferous ores, however, arrive from Guinea. Much of this ends up in Aughinish Alumina, via Shannon Foynes port company. This is Europe's largest alumina refinery, and bauxite from Guinea is the main input.

(iii) Manufactured Goods

Table 19 illustrates a selection of Ireland's largest import partners in 2021 and 2022 for Manufactured Goods. Manufactured goods refer to goods that are durable, or further along the supply chain than a raw material. It includes construction materials such as iron, steel, wood and machinery. It also includes retail goods such as clothing, appliances, medical products and various manufactured items. This grouping refers to SITC categories 4 – 9. In maritime transport, the products in this grouping will predominantly use RoRo vessels and LoLo containerships.

Table 19: Ireland's Top Merchandise Import Partners in Volume terms, Manufactured Goods

	2021	2022	Growth
Trading Partner	Tonnes	Tonnes	(%)
Great Britain	2,076,720	2,180,856	5%
Northern Ireland	930,250	1,096,759	18%
Spain	1,543,647	940,927	-39%
Germany	896,520	933,727	4%
China	706,772	782,917	11%
Netherlands	976,916	705,805	-28%
Belgium	560,123	647,456	16%
France	366,345	411,942	12%
Russia Federation	404,029	252,329	-38%
United States	341,410	274,405	-20%
Total Manufactured Goods Imports	**11,664,665**	**11,305,438**	**-3%**

Source: *CSO*

In 2022, the volume of manufactured goods imports fell by 3%, or roughly 360,000 tonnes. This is the first annual decline in this group of products since 2012, and underscores the intensity of the inflation pressures that took hold in 2022. As noted in Section 1.2, Euro Area goods inflation (i.e. excluding services) averaged 12% per month throughout 2022.

The impact of Brexit is evident when considering imports of manufactured goods. Between 2010 and 2020, one third of all manufactured goods imports came from Great Britain. This has fallen to one fifth in 2021 and 2022.

Between 2019 and 2022, Great Britain's share of these products fell by 13%. Of this displaced share, Northern Ireland captured 4%. This was driven predominantly by non-metallic mineral manufactures (SITC division 66). This group includes construction related goods such as cement, glass, stone, ceramics and lime. Imports of these products to Northern Ireland are considerably higher post-Brexit. For example, in 2019 Ireland imported 128,000 tonnes of this division of goods from Northern Ireland, compared to 3229,000 tonnes in 2021, and 492,000 tonnes in 2022.

EU countries captured 5% of the manufactured goods previously sourced from Great Britain. The share held by EU countries rose from 39% to 44% post-Brexit. This was driven by a variety of products including paper, plastics, non-metallic minerals and chemical products. Iron and steel products also played a significant role in this shift. Imports of iron and steel from Great Britain fell by roughly 200,000 tonnes between 2019 and 2022. When combined, imports of the same products from Germany, Belgium, Spain and Portugal rose by 150,000 tonnes over the same period. Northern Irish imports of iron and steel also rose by 50,000 tonnes between this period.

Overall, in tonnage terms, Ireland sources fewer imports from Great Britain post-Brexit, and this is most evident when manufactured items are focused upon, as opposed to food and raw materials. As Ireland imports roughly the same volume of imports compared to pre-Brexit, it is clear that Irish traders have found some new markets for their imports. Northern Ireland has captured a relatively large portion of this reorganised trade from Great Britain, as have EU countries. However, the countries responsible for replacing British imports vary depending on what products are considered.

2.2B Value

Table 20 details Ireland's top import partners in value terms, with all products included. The countries included in Table 20 represent three quarters of all Irish import value.

When employing the same grouping of products as Section 2.1A, the shares held by each change significantly. Manufactured goods (SITC 4 – 9) dominate the value of Irish imports, representing 82% of the total value. Raw materials represent 10% in 2022, while Food & Beverage products represent 7%.

As highlighted in Section 2.1B, the value of Irish imports rose by 35% in 2022, from €104bn to €140bn. This was driven by rising inflation and of surging energy prices following the Russian invasion of Ukraine. In the following section, an analysis of the changes in import value this year is presented by focusing on several large import partners.

Table 20: Ireland's Top Merchandise Import Partners in Value terms, All Products

	2021	2022	Growth	Diff
Trading Partner	€bn	€bn	%	€bn
Great Britain	€15.5	€24.0	55%	€8.6
United States	€18.1	€21.7	20%	€3.6
France	€10.3	€12.2	18%	€1.9
China	€8.5	€14.4	71%	€6.0
Germany	€7.3	€10.4	43%	€3.1
Switzerland	€5.1	€6.4	25%	€1.3
Northern Ireland	€4.0	€5.4	32%	€1.3
Netherlands	€4.5	€4.8	6%	€0.3
Belgium	€2.2	€2.4	6%	€0.1
Italy	€2.2	€2.3	7%	€0.2
Total Irish Import Value	**€103.8**	**€140.1**	**35%**	**€36.4**

Source: *CSO*

As shown in Table 20, the value of imports from Great Britain rose by 55% in 2022. This was due mainly to the rising cost of energy, particularly natural gas. As illustrated in Figure 31 of Section 2.1, the per tonne average cost of natural gas more than doubled for Irish importers this year. In total, imports of natural gas from Great Britain rose by more than €2.9bn euro. The value of petroleum imports from Great Britain exhibited similar increases, rising by €2bn.

The import value of organic chemicals from Great Britain (SITC division 51), a division which contains key inputs into Ireland's pharmaceutical industry, rose by €2.6bn. The same division of products drove increases in the value of Chinese imports. The cost of organic chemical imports from China rose by just over €4bn. Overall, Ireland's tonnage imports of organic imports rose by just 5%, but the price per tonne of these imports rose by more than 80%. This highlights the distorting impact that the low-weight, high-value products within Ireland's pharmaceutical industry can have.

In all, in 2022, one quarter of the value of Irish imports came from EU countries. A further 17% came from Great Britain, 15% from the USA and 4% from Northern Ireland.

2.3. Irish Merchandise Exports

2.3A Tonnage

(i) Export Tonnage by Annual Volume

In 2022, Irish merchandise export tonnage declined by 2% to 18.8 million tonnes. This represents a decrease of 305,000 tonnes compared to 2021. This is the first annual decline in Irish export tonnage since 2018. However, 18.8m tonnes is still the second largest volume of exports for Irish trade on record, second only to 2021, when 19.1m tonnes were exported.

Irish export volume has been relatively stable in recent years, recording approximately 18m to 19m tonnes per year since 2015. This stands in contrast to the period between 2010 and 2014, when there was rapid growth in the volume of Irish merchandise exports as the Irish economy recovered from the 2008 financial crash.

Overall, Irish export tonnage in recent years has been robust, remaining consistently above 18 million tonnes and exhibiting considerable resilience in the wake of the significant challenges faced in recent years, including Brexit, COVID-19, global inflation and rising energy costs.

(ii) Export Tonnage by Product Grouping

The performance of Irish merchandise exports in 2022 is better understood by analysing the Standard International Trade Classification (SITC) categories in detail. In Table 21, Irish exports in 2021 and 2022 are organised using these SITC headings.

Table 21: Irish Exported Tonnes by SITC Grouping

	2021	2022	Growth	Diff
SITC Category	Tonnes	Tonnes	%	Tonnes
Food and Live Animals	4,573,308	4,504,396	-2%	-68,912
Crude Materials, Inedible, Except Fuels	4,708,313	4,477,212	-5%	-231,101
Manufactured Goods Classified Chiefly by Material	4,233,620	3,736,435	-12%	-497,186
Mineral Fuels, Lubricants, and Related Materials	2,286,089	2,240,483	-2%	-45,607
Chemicals and Related Products	1,373,741	1,390,531	1%	16,790
Beverages and Tobacco	869,321	970,540	12%	101,219
Machinery and Transport Equipment	441,077	696,218	58%	255,141
Commodities Not Classified Elsewhere	213,522	370,952	74%	157,429
Miscellaneous Manufactured Articles	317,934	319,101	0%	1,166
Animal and Vegetable Oils, Fats, and Waxes	114,384	120,627	5%	6,244
Total Irish Exported Tonnage	**19,131,311**	**18,826,495**	**-2%**	**-304,816**

Source: *CSO*

Staying with the SITC system for analysing international trade, there are a further 67 divisions of products associated with the 10 categories presented in Table 21.[40] When it comes to Irish tonnage exports in 2022, 32 of those 67 divisions recorded a decline, equivalent to 47% of all product divisions using this system. This is emblematic of the difficult economic headwinds present in the global economy in 2022, particularly in the latter half of the year. As highlighted in Section 1.2, Euro Area Goods inflation—a more relevant measure when considering port traffic—averaged 12% per month in 2022. As a result, many Irish exporters faced higher input costs and lower demand in major global economies. The end result was that fewer goods were exported in 2022. The following paragraphs will highlight noteworthy changes in the volume of Irish exports.

[40] See Standard International Trade Classification, Revision 4, page xii

Manufactured Goods

In terms of Irish exported tonnage, Manufactured Goods is dominated by non-metallic mineral manufactures (SITC 66), which represents three-quarters of Irish export volume in this category. This division refers to products derived from non-metallic minerals that have undergone processing or manufacturing to create finished goods. These goods are often used in construction, agriculture, or consumer goods. Some common non-metallic mineral manufactures include cement, glass and ceramics. In 2022, exports of these products fell by 10%, equivalent to 300,000 tonnes, which heavily influenced the overall trajectory of Irish export tonnage in 2022.

Export volume of Cork and Wood Manufactures (SITC 63) also recorded significant declines in 2022, falling by 29% from 740,000 tonnes to 524,000 tonnes, thus contributing more than 200,000 tonnes to the fall in Irish export volume this year. Products in this division include manufactures of wood such as flooring, veneers, panels and doors.

Crude Materials

In 2022, exports of metalliferous ores (SITC 28) fell by 20%, equivalent to 560,000 fewer tonnes. This was the largest decline recorded by a single product division this year. The Russian invasion of Ukraine likely had a significant impact on this development. As highlighted in Section 1.1A, imports of bauxite, a sedimentary rock that is the world's main source of aluminium, make up approximately 45% of all tonnage at the port of Shannon Foynes. Bauxite is imported to Shannon Foynes predominantly for use by Aughinish Alumina, Europe's largest alumina refinery. The company, located in the Shannon estuary, refines bauxite into alumina which is then shipped abroad.

Aughinish Alumina is indirectly owned by Rusal International, a Russian company whose shareholders have faced Western sanctions in the wake of the Russian invasion of Ukraine. This has led to a significant increase in uncertainty for the company.[41] Exports of alumina from the port fell by roughly 250,000 tonnes, and this contributed heavily to the decline in exports of metalliferous ores (SITC 28) in 2022.

Food & Beverages

In tonnage terms, food and live animals (SITC 0) and beverages and tobacco (SITC 1) make up 30% of all Irish export volume when combined. This reflects the importance of these sectors to the domestic economy.

In 2022, exports of Food & Live Animals fell by 2%, or 68,912 tonnes. Exports of dairy products (SITC 02) fell by 3%, or 35,000 tonnes, while exports of fish (SITC 03) fell by 14%, or 32,000 tonnes. For dairy products, which represent one quarter of all food and live animal exports, this is a subdued result and represents the lowest volume of such exports since 2018.

Elsewhere, exports of animal feed fell by 5%, or 37,000 tonnes. Much of this may have been repurposed for domestic use, as the Russian invasion of Ukraine led to a global crisis in the supply of grains and oilseeds (See Sections 2.1A and 2.2A).

The decline in exports of food and live animals was offset by growth in the volume of meat exports. Exports of meat and meat preparations (SITC 01) grew by 5%, or 43,000 tonnes. This division represents one fifth of all food and live animal exports, totalling 947,000 tonnes in 2022.

On a similarly positive note, exports of beverages grew by 12% in 2022, equivalent to an additional 100,000 tonnes. At 970,000 tonnes, this is the largest export volume of these goods since 2019, when a similar total was achieved.

[41] Russian-owned Aughinish Alumina warns of 'uncertainty' over Limerick firm's future – Irish Times Nov. 2022

Machinery and Transport Equipment

Exports of machinery and transport equipment (SITC 7) grew significantly in 2022, by 58 %, or 255,000 tonnes. This was driven predominantly by exports of electrical machineries, apparatus and appliances (SITC 77), which grew by 161,000 tonnes, equivalent to growth of more than 150 %. In addition, exports of office machines and automatic data processing machines (SITC 75) grew by 63 %, adding 13,000 tonnes. In both cases, 2022 marks the largest annual volume exported in the last decade.

Ireland has a thriving Information and Communication Technology (ICT) sector.[42] In addition to exporting ICT services, Ireland also produces and exports physical components for this market. Semiconductors, processors, medical technology devices and data storage devices are among the products exported from Ireland. Despite the inflationary pressures in 2022, considerable resilience has been shown by this export sector in recent years.

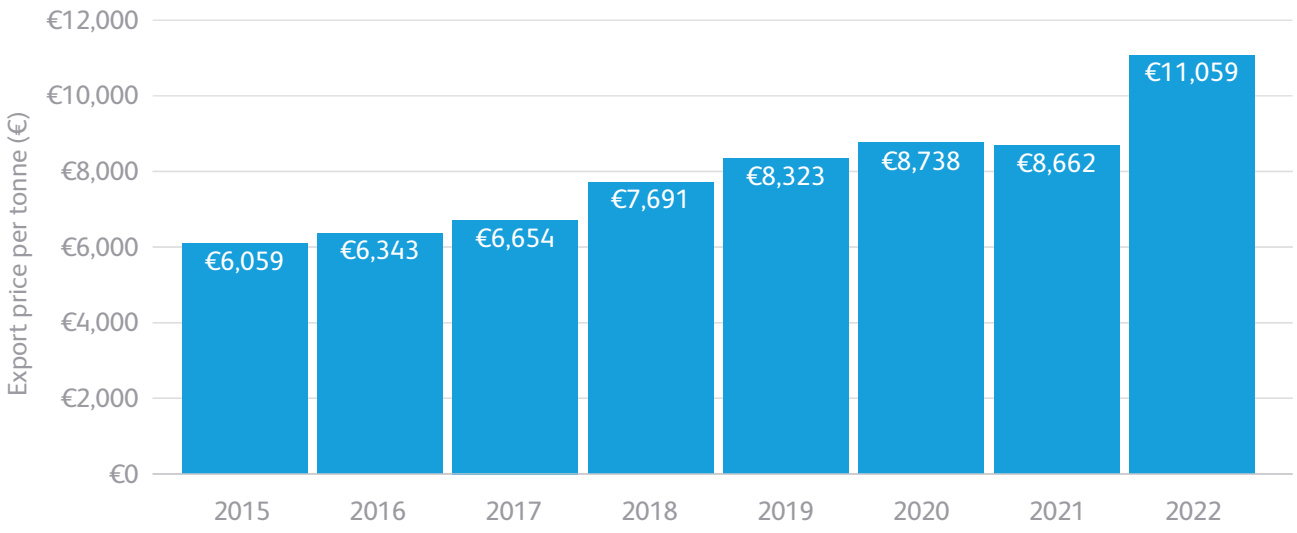
2.3B Value

(i) Export Value by Annual Volume

When unadjusted for inflation, the value of Irish exports rose sharply in 2022. A record high for the value of Irish exports was set in 2021 when they reached more than €165bn. In 2022, this value has grown by a further 26 % to reach €208bn. This is the first time Irish exports have surpassed €200bn, and comes less than a decade after Irish exports first surpassed €100bn in value in 2015.

Beginning in 2015, the nominal value of Irish merchandise exports began to rise sharply. Average annual growth in Irish export value was 9 % between 2015 and 2021, equivalent to an additional €10bn per year. 2022 represents a step change however, with Irish export value rising by €42bn in one year. This trend of rising export value is reflected in Figure 33, which shows the price per tonne of Irish exports since 2015.

Figure 33: Irish Merchandise Export Price per Tonne, 2015 – 2022



Source: *CSO*

[42] Information & Communications Technology (ICT) sector profile – Enterprise Ireland

(ii) Export Value by Product Grouping

In terms of what products drove this increase in Irish export value in 2022, this section analyses Irish export value when broken down into Standard International Trade Classification (SITC) categories. In Table 22, the value of Irish exports in 2021 and 2022 are organised using these SITC groupings.

Table 22: Irish Merchandise Export Value by SITC Grouping

	2021	2022	Growth	Diff
SITC Category	€'000	€'000	%	€'000
Chemicals and related products	102,602,973	133,755,681	30%	31,152,708
Machinery and Transport Equipment	25,025,441	27,412,722	10%	2,387,281
Miscellaneous Manufactured Articles	17,404,142	21,185,884	22%	3,781,742
Food and Live Animals	12,129,171	14,795,493	22%	2,666,322
Manufactured Goods Classified Chiefly by Material	2,809,859	3,276,960	17%	467,101
Crude Materials, Inedible, Except Fuels	2,068,878	2,196,037	6%	127,159
Beverages and Tobacco	1,758,616	2,047,309	16%	288,693
Mineral Fuels, Lubricants, and Related Materials	947,802	1,792,345	89%	844,543
Commodities and Transactions Not Classified Elsewhere	854,349	1,591,477	86%	737,129
Animal and Vegetable Oils, Fats, and Waxes	113,883	154,421	36%	40,538
Total Irish Export Value	**165,715,115**	**208,208,330**	**26%**	**42,493,215**

Source: *CSO*

As evident in Table 22, three quarters of the overall increase in Irish export value in 2022 was driven by the chemicals and related products category. Specifically, just two divisions—organic chemicals (SITC 51) and medical and pharmaceutical products (SITC 54)—make up almost 90% of this category of goods. When combined, exports of these two divisions are valued at €117bn in 2022, or 56% of all Irish export value. In 2021, the value of these two divisions stood at €89bn. The increase in 2022 was therefore equivalent to 32%, or €28bn in value. Within these two divisions are contained many of the low-weight, high-value pharmaceutical products that Ireland exports.

Given the dominance of chemical and related products to Irish export value, it is useful to consider the changes in 2022 when this category is excluded. When removed, total Irish export value in 2022 was €74.5bn, compared to €63.1bn in 2021. This represents growth of 18%, or €11.3bn.

Even when the impact of Irish pharmaceutical exports is removed, therefore, the inflationary pressures of 2022 are evident. Inflation played a major role in the swift growth in Irish export value in 2022. As highlighted throughout this report, goods inflation across the Euro Area averaged 12% annual growth (see Section 1.2, Figure 8). It is clear from Table 22 that this general rise in prices impacted Irish exports, as all 10 categories listed recorded increases in value in 2022.

2.4 Ireland's Export Trading Partners

2.4A Tonnage

Table 23 presents Ireland's top 10 export trading partners in volume terms for 2021 and 2022. When combined, this group accounted for 81% of all Irish export tonnage in 2022.

Table 23: Ireland's Top Merchandise Export Partners in Volume terms, All Products

Country	2021	2022	Growth (%)	Diff
Great Britain	5,540,196	5,877,124	6%	336,927
Northern Ireland	4,383,754	4,348,673	-1%	-35,081
France	1,390,076	1,093,285	-21%	-296,791
Netherlands	1,123,747	992,542	-12%	-131,205
United States	453,402	791,804	75%	338,402
Belgium	481,792	437,190	-9%	-44,602
Russian Federation	542,739	640,166	18%	97,427
Germany	467,171	452,214	-3%	-14,957
Sweden	386,053	339,734	-12%	-46,319
Spain	246,709	340,726	38%	94,017
Grand Total	**19,131,311**	**18,826,495**	**-2%**	**-304,816**

Source: *CSO*

(i) Russia – Ukraine War, Indirect Impact on Irish Exports

In 2022, there were some significant shifts in the volume of goods exported to certain countries. One particular division of exports had an outsized influence on this development. In recent years, exports of metalliferous ores (SITC 28) have consistently represented 15% of all Irish export volume, or approximately 2.65m tonnes each year. In 2022, exports of these products fell by 20% compared to 2021, equivalent to a decline of more than half a million tonnes.

Alumina is among the products included in the metalliferous ores (SITC 28) division. The majority of alumina exports from Ireland originate from the Aughinish Alumina refinery located in Limerick. Bauxite is imported in large quantities through Shannon Foynes Port Company. It is refined into alumina, which is then transported to EU countries such as France. In these countries, the alumina is smelted to produce aluminum. As highlighted in Section 1.1A, imports of bauxite and subsequent exports of alumina fell significantly at Shannon Foynes in 2022. The impact of this is evident in Irish trade figures, and in Table 23 above.

For example, exports of metalliferous ores to France fell by 45%, equivalent to 440,000 tonnes. Exports of the same products to Iceland and the Netherlands fell by 162,000 tonnes and 72,000 tonnes respectively.

Exports of these products to Russia, however, grew in 2022 by 23% or 120,000 tonnes. Also highlighted in Section 1.1A, Aughinish Alumina is indirectly owned by Rusal International, a Russian company whose shareholders have faced international sanctions following the Russian invasion of Ukraine. This, coupled with the rapid rise in energy costs, particularly natural gas, has led to a significant increase in uncertainty about future operations at the facility.[43] Overall, the decline in exports from the Aughinish Alumina refinery caused large shifts in Irish export volumes, particularly to France. This is another example of the far-reaching impact of the Russian invasion of Ukraine on international trade patterns.

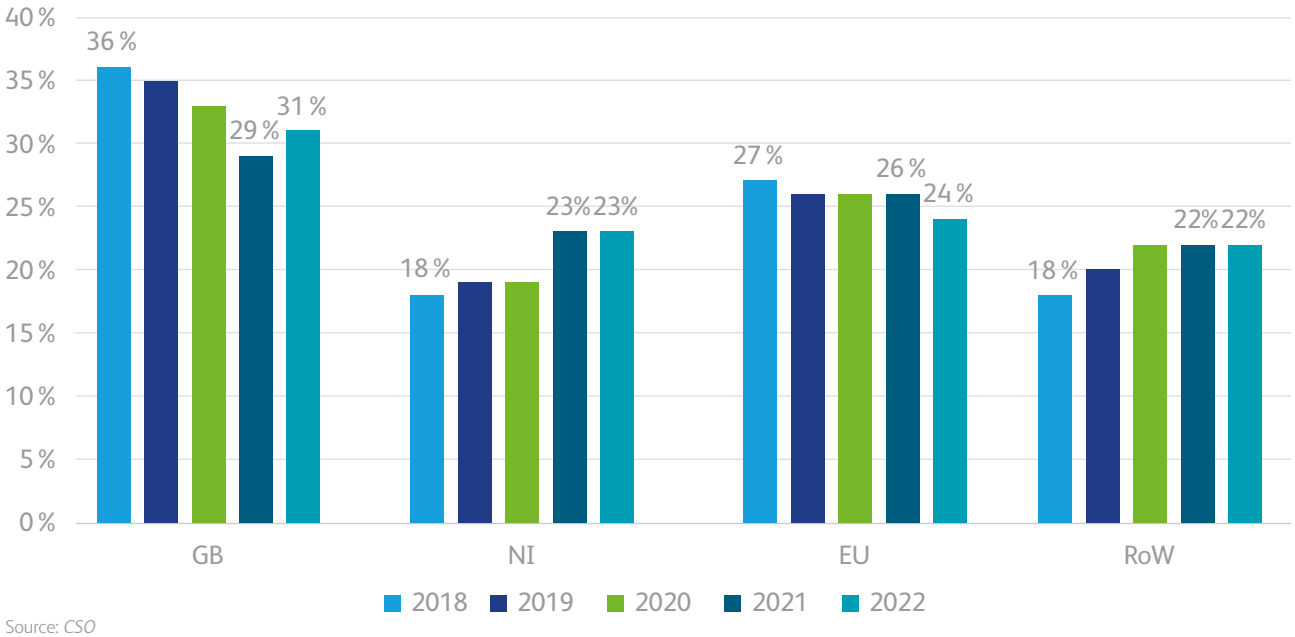
[43] Russian-owned Aughinish Alumina warns of 'uncertainty' over Limerick firm's future

(ii) Regional Dispersion of Irish Exports

As highlighted in Section 2.3A, the volume of Irish exports in recent years has been relatively stable, fluctuating between 18m and 19m tonnes per year. In terms of where this volume of traffic ends up, Ireland is reliant on close neighboring countries, particularly Great Britain, Northern Ireland, France and the Netherlands, which when combined, account for roughly two thirds of all Irish exported tonnage.

Regarding the regional dispersion of Irish exports, Figure 34 illustrates the share of Irish export tonnage held by four countries/regions over the past five years: Great Britain (GB), Northern Ireland (NI), European Union (EU) and Rest of World (RoW).

Figure 34: Share of Irish Export Tonnage by Region, 2018 – 2022

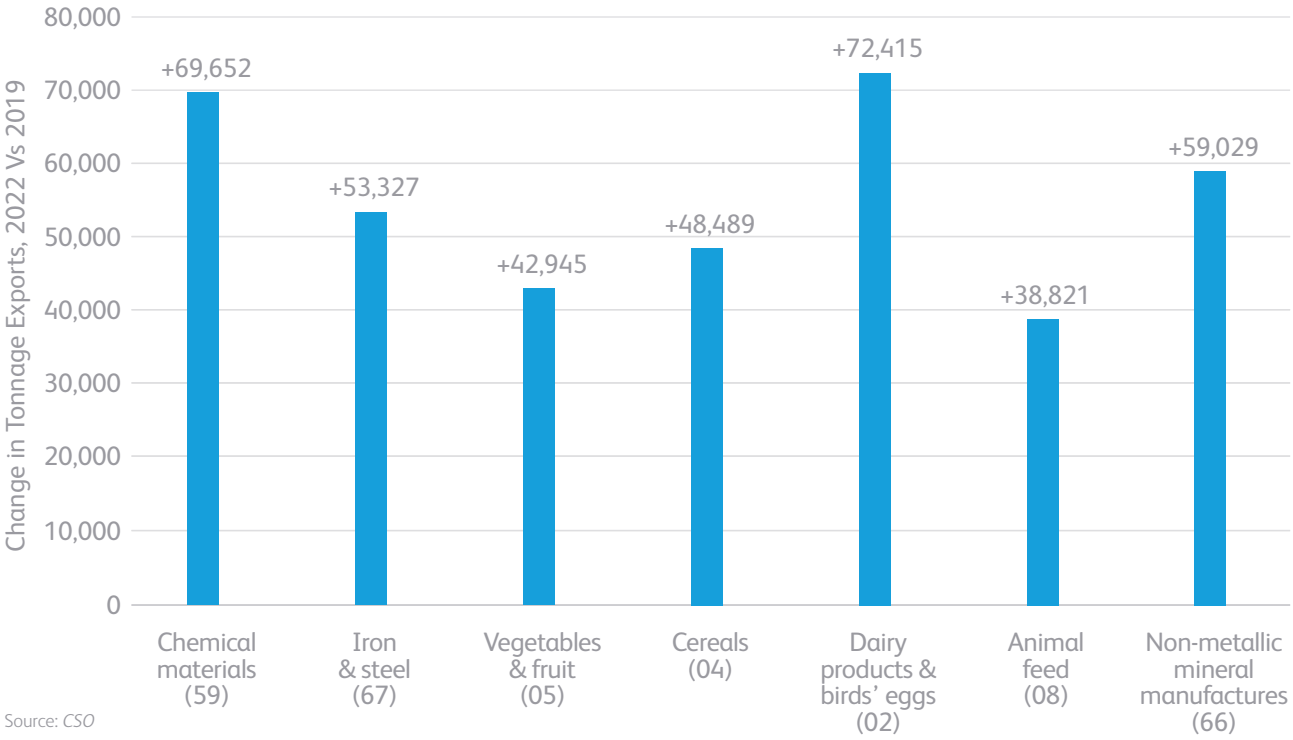


Source: *CSO*

Northern Ireland

As evident in Figure 34, some trends have emerged in the past five years in terms of the destination of Irish export tonnage. For example, Brexit represents a step change in export volume to Northern Ireland (NI). Between 2019 and 2022, NI has grown its share of Irish exports from 19% to 23%. 2022 also marks the second year NI has held a 23% share of Irish exports, demonstrating that some post-Brexit shifts are proving consistent. When compared to 2019, export volume to Northern Ireland in 2022 increased by more than 800,000 tonnes. No single product division has driven this shift, but rather, increases have been spread across dozens of Irish export divisions. Some of the larger increases are shown in Figure 35. Figure 35 shows the change in export volumes to NI between 2022 and 2019.

Figure 35: Irish Exports to Northern Ireland, 2022 Vs 2019[44]



Source: *CSO*

Great Britain

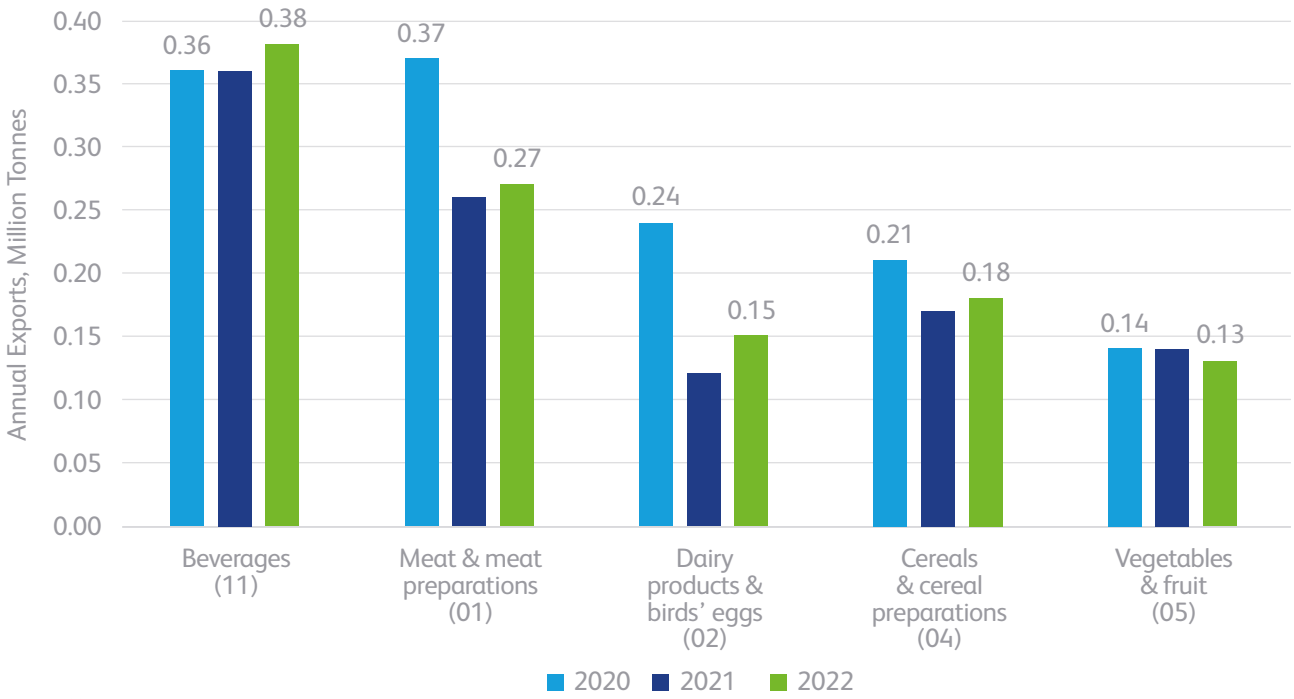
In Figure 34 above, the decline in the share of Irish export volume held by Great Britain is also clear, beginning in 2021 i.e. the end of the Brexit transition period. Great Britain now holds a 31% share of Irish exports in 2022, compared to a 36% share in 2018.

However, Great Britain's share increased from 29% in 2021 to 31% in 2022. This increase was driven by products that have been largely unaffected by Brexit. Rather, it is more reflective of the impact of the Russian invasion of Ukraine in 2022. Irish petroleum exports (SITC 33) to Great Britain rose by 55% in 2022, equivalent to 240,000 tonnes. Global trade patterns of energy products were heavily disrupted in 2022 due to the embargos placed by the EU and US on Russian produced oil. This unusually large increase in 2022 is likely a reflection of that disruption. Similarly, exports of crude fertilizers to Great Britain rose by 71%, or 100,000 tonnes. As described in Section 2.1A, following the Russian invasion of Ukraine, sanctions were placed on both Russia and Belarus by the EU. Both countries are important exporters of fertilisers, particularly Belarus. Belarusian exports of fertiliser fell significantly, and this also disrupted global trade patterns of such products. Overall, the increase in exports to Great Britain in 2022 was driven by products affected by the Russia – Ukraine war, rather than by any post-Brexit patterns.

Brexit has, however, had a substantial impact on Irish export volume to Great Britain, particularly regarding food exports. In Figure 36, the annual volume of selected food products exported to Great Britain for the last three years is presented. In Figure 36 it is clear that post-Brexit, Ireland exported less meat, dairy and cereal products to Great Britain. Fortunately, exports of these three products from Ireland remain at roughly the same levels as before the end of the Brexit transition period. In terms of what markets have absorbed these exports that were previously destined for Great Britain, Northern Ireland has been the largest recipient (See Figure 34). Exports of these products to Northern Ireland have increased by 25%, or 140,000 tonnes between 2019 and 2022.[45] In addition, exports of these products to other EU countries have risen by 10%, worth more than 70,000 tonnes.

[44] SITC reference number in parenthesis
[45] SITC 01, 02 and 04 combined

Figure 36: Irish Exports to Great Britain, Selected Products, 2020 - 2022[46]



Source: *CSO*

(iii) New Brexit Checks for Irish Exports

In April 2023, the UK Government published a draft of the Border Target Operating Model (BTOM).[47] This sets out a new approach to exporting to Great Britain that will be progressively introduced from the end of October 2023. The document outlines four key milestones that impact on Irish exporters and their supply chain partners. More detail on these deadlines can be found on Revenue.ie and on page 54 of the draft BTOM document.[48, 49]

In summary, from October 31st 2023, full customs controls will be introduced for goods moving directly from Ireland to ports in Great Britain. In addition, export health certificates and phytosanitary certificates will be introduced for medium risk animal products and plant products.

For a typical export journey for an Irish product travelling, for example, from Dublin Port to Holyhead using the accompanied RoRo cargo mode, there will be several additional requirements going forward. The UK's new Single Trade Window will now be used to submit a full customs declaration and to obtain a Movement Reference Number (MRN). Ahead of arrival to the port of Holyhead, the driver of the goods will be notified if any customs inspections are required at the port or inland facility. Border Force may also carry out inspections upon arrival. For more information on the changes to typical user journeys, see Annex B of the draft BTOM document.[50]

These new trading requirements will be challenging for Irish exporters. However, Irish importers and exporters have proved adaptable and resilient in the face of Brexit, COVID-19 and the Russia – Ukraine war. This is reflected in the fact that despite significant changes to Irish trading patterns post-Brexit, Great Britain remains Ireland largest export partner in tonnage terms. The IMDO will continue to monitor the effects of Brexit and these new trading arrangements on Irish maritime traffic.

[46] SITC reference number in parenthesis
[47] Border Target Operating Model, UK Government
[48] UK import controls – implementation dates
[49] Section 3: Implementation timeline for the Border Target Operating Model
[50] Annex B: Safety and Security User Journeys, Border Target Operating Model

2.4B Value

As described in Section 2.3B, the value of Irish exports grew by 26% in 2022 to reach a record high of €208bn. Inflation was the main driver of this growth, rather than an increase in the volume of goods exported, or a substantial change in the type of products exported. At 26%, the growth in Irish export value in 2022 was faster than any year in the previous decade.

Table 24 details Ireland's top export partners in value terms, with all products included. The countries included in Table 24 represent 84% of all Irish import value in 2022.

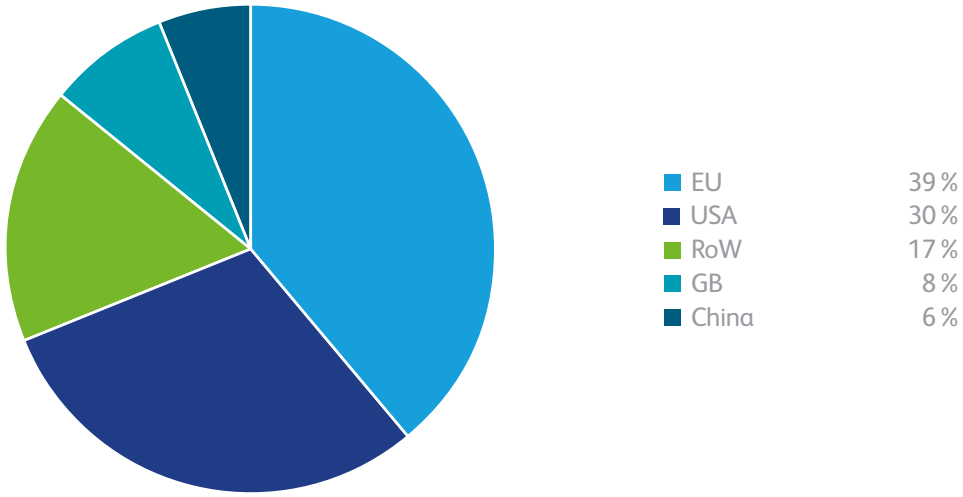
Table 24: Ireland's Top Merchandise Export Partners in Value terms, All Products

	2021	2022	Growth (%)	Diff
Country	€bn	€bn	%	€bn
United States	€ 52.57	€ 63.03	20%	€ 10.46
Germany	€ 17.77	€ 25.22	42%	€ 7.45
Belgium	€ 13.53	€ 17.59	30%	€ 4.06
Great Britain	€ 14.42	€ 17.17	19%	€ 2.75
Netherlands	€ 9.39	€ 14.22	51%	€ 4.83
China	€ 11.20	€ 13.10	17%	€ 1.90
France	€ 5.35	€ 7.16	34%	€ 1.81
Switzerland	€ 2.81	€ 3.28	16%	€ 0.46
Italy	€ 4.37	€ 4.54	4%	€ 0.18
Japan	€ 2.71	€ 4.10	51%	€ 1.38
Northern Ireland	€ 3.76	€ 4.94	31%	€ 1.18
Grand Total	**€ 165.72**	**€ 208.21**	**26%**	**€ 42.49**

Source: *CSO*

In terms of the regional dispersion of Irish export value, Figure 37 illustrates the share of Irish export value held by five countries/regions in 2022.

Figure 37: Share of Irish Export Value by Region, 2022



Source: *CSO*

The USA is Ireland's largest export partner in volume terms. Two SITC product divisions, organic chemicals (SITC 51) and medical and pharmaceutical products (SITC 54) make up 70% of all the export value to the USA. However, even when these two divisions are excluded, the USA still represents 20% of all Irish export value. This is reflective of the significant role that the USA plays as a consumer of Irish exports.

The example of the USA highlights the outsized role played by medical and pharmaceutical products within Irish exports. The two SITC product divisions noted above, organic chemicals (SITC 51) and medical and pharmaceutical products (SITC 54), make up 55% of all Irish export value when combined. When these products are removed, Irish export value totalled €91.4bn, which represents 18% growth over 2021. Aside from the USA, the largest consumers of these two export divisions are Belgium and Germany. In 2022, €16bn worth of these products were exported to Belgium, while €21bn was exported to Germany.

Elsewhere, the share of Irish exports held by EU countries has remained consistent in recent years, at or just below 40%. This is similar to the USA, which has consistently held a 30% share. As a result of the post-Brexit decline in export volume to Great Britain (See Section 2.4A), its share of Irish export value has fallen from an average of 12% between 2010 and 2019, to 8% in 2022. Lastly, export value to China has risen significantly in recent years, from approximately €2bn per year between 2010 and 2018, to more than €10bn each year between 2019 and 2022.

2.5 Key Drivers of Irish Merchandise Trade

In section 1, an analysis of the traffic handled at Irish ports across unitised and bulk shipping modes is provided. Section 2 provides a trade review of Irish imports and exports, giving insight into the types of goods traded and the makeup of Ireland's main trading partners.

The prevailing economic conditions in the domestic economy and those of Ireland's trading partners have a significant impact on the volume of traffic at Irish ports. In this section, key economic indicators for the Irish economy are provided, such as domestic demand and the domestic price level. Following this, the same indicators are provided for Ireland's largest trading partners. This information provides further context for the volumes that passed through Irish ports in 2022.

2.5A Domestic Economy

Table 25 below is adapted from the Central Bank of Ireland's first quarterly bulletin of 2023, released in March.[51]

In all, the report highlights that the Irish economy slowed in the latter half of 2022. This is reflected in port traffic during this period, particularly regarding RoRo and LoLo traffic (See Section 1). As Inflation is expected to cool in 2023 from 8% to 5%, before falling back again in 2024 and 2025. The resilience of the Irish economy is highlighted, which continued to grow in the face of difficult economic headwinds.

Table 25: Key Economic Indicators for the Irish Economy

	2022	2023f	2024f	2025f
Modified Domestic Demand	8.2%	3.1%	2.9%	2.6%
Gross Domestic Product	12.0%	5.6%	4.8%	5.6%
Personal Consumer Expenditure	6.6%	4.8%	3.7%	3.1%
Unemployment Rate	4.5%	4.4%	4.4%	4.3%
Harmonised Index of Consumer Prices (HICP)	8.1%	5.0%	3.2%	2.2%
HICP Excluding Energy	5.1%	4.3%	2.9%	2.6%

Source: *Central Bank of Ireland*

2.5B Trading Partners' Economies

Through exports, the Irish economy satisfies surplus demand in foreign economies. Consequently, aggregate demand within those economies drives demand for Irish exports. As 90% of Irish trade employs maritime transport, the performance of these economies also drives port traffic volumes.

Ireland's economy is export-led and, as shown in Section 2.3B, exports of high value goods such as pharmaceutical products, are essential to Irish economic growth. The United States, Germany, Belgium and Great Britain are among Ireland's largest export partners in value terms. The economic performance of these economies is essential for Ireland's economy.

Table 26 below is adapted from the European Commission's Spring Economic Forecast, which was produced in May 2023.[52] The table shows the rate of growth for the Gross Domestic Product of a selection of Ireland's largest trading partners.

[51] Quarterly Bulletin, QB1 – March 2023
[52] Spring 2023 Economic Forecast, European Commission

Table 26: Gross Domestic Product, Annual Rate of Growth 2022 – 2024

Country	2022	2023	2024
Belgium	3.2%	1.2%	1.4%
EU	3.5%	1.0%	1.7%
Euro Area	3.5%	1.1%	1.6%
France	2.6%	0.7%	1.4%
Germany	1.8%	0.2%	1.4%
Italy	3.7%	1.2%	1.1%
Netherlands	4.5%	1.8%	1.2%
Spain	5.5%	1.9%	2.0%
Japan	1.1%	1.3%	1.0%
United Kingdom	4.0%	-0.3%	1.0%
United States	2.1%	1.6%	1.1%

Source: *European Commission, IMF*

As described by the European Commission, in the latter half of 2022 and into early 2023, the EU economy exceeded expectations.[53] Despite the uncertainties caused by the war in Ukraine, the global energy crisis and the global increase in interest rates, it seemed likely that the EU economy would fall into recession. In the Autumn of 2022, it was predicted by the EU Commission that the EU economy would shrink in the last quarter of 2022 and the first quarter of 2023. However, data indicates a contraction that is smaller than anticipated in the final quarter of 2022, followed by positive growth in the first quarter of 2023. The outlook for the EU economy in 2023 is therefore more positive, and that is good news for Irish exporting companies.

As for the global economy, the IMF's latest World Economic Outlook predicted global growth would fall from 3.4% in 2022 to 2.8% in 2023, before plateauing at 3% in 2024. Advanced economies were expected to experience a greater slowdown, with 1.3% growth predicted in 2023. Overall, the high inflation, high interest rate environment, coupled with the ongoing effects of the Russia – Ukraine war are creating challenges for global economies. However, from a positive perspective, growth is still expected.

[53] Spring 2023 Economic Forecast: an improved outlook amid persistent challenges – European Commission

Section 3 **- Global Shipping Market Review**

3.1 Containership Market

Introduction

In 2022, containership freight rates fell back to 'normal', or pre-COVID levels. This marked the end of an extraordinary cycle for the containership market, when freight rates soared by more than 700%. The sharp increases began midway through 2020, when large economies began reopening after the initial wave of COVID-19 lockdowns. Freight rates continued to increase throughout 2021, and peaked in the first half of 2022. Since then, however, they have fallen sharply, and in early 2023, are at roughly the same levels they were on the eve of the COVID-19 pandemic. This section will describe what drove this sharp rise and fall in both containership freight rates and seaborne container trade.

Part (i) will illustrate the changes in containership spot rates and time charter rates. It will show that containership rates reached record highs, before falling sharply in the latter half of 2022. Part (ii) will describe the sharp rise and fall in seaborne container trade, which followed a similar trajectory. Lastly, part (iii) will discuss the main influences behind these shifts in containership trade and prices. It will show that the pandemic changed consumer patterns in favour of durable goods. It will also demonstrate that rising containership rates were exacerbated by moderate fleet supply growth and record port congestion. It will conclude by describing how in 2022, rising inflation, high US retail inventories, and a rebalancing of demand toward the service economy meant that seaborne container trade and containership freight rates fell to pre-pandemic levels.

(i) Freight Rates – Rise & Fall

International containership freight rates can be understood and benchmarked in numerous ways, but two metrics are commonly used; spot rates and charter rates. Spot rates refer to the price of booking a vessel for a single, once-off shipment, typically for immediate or near-term use. Spot rates fluctuate based on the real-time interaction between supply and demand dynamics and can change rapidly based on factors such as shipping capacity, cargo volume, and port congestion. Charter rates refer to the cost of leasing a vessel on a longer-term basis, typically ranging from a few months to several years. Charter rates are negotiated between the charterer and the ship owner and are usually based on a daily rate ($/day).

In the following paragraphs, the recent changes in international containership spot rates and time charter rates will be detailed.

Spot Rates

The surge, and subsequent decline, in containership freight rates is appropriately captured by the Shanghai Export Containerized Freight Index (SCFI). The SCFI is an index that reflects the spot rates on key global shipping routes from Shanghai, China.[54] The SCFI index is presented in Figure 38 for the Shanghai – Europe container route. Figure 38 shows that the price per TEU to ship a container from Shanghai to a European base port, i.e. a large reference port such as Rotterdam or Antwerp, rose by 759% between July 2020 and January 2022. It subsequently fell by 86% between January and December 2022.

[54] The Shanghai Export Containerized Freight Index (SCFI) is a weekly index that tracks changes in the shipping rates for containerized cargo exported from Shanghai, China to destinations around the world. The SCFI is published every Friday by the Shanghai Shipping Exchange (SSE), which is a specialized exchange for shipping-related products and services (Shanghai Shipping Exchange).

Figure 38: SCFI Shanghai-Europe Container Freight Rate, $ per TEU, Monthly

Source: *Clarkson's Research*

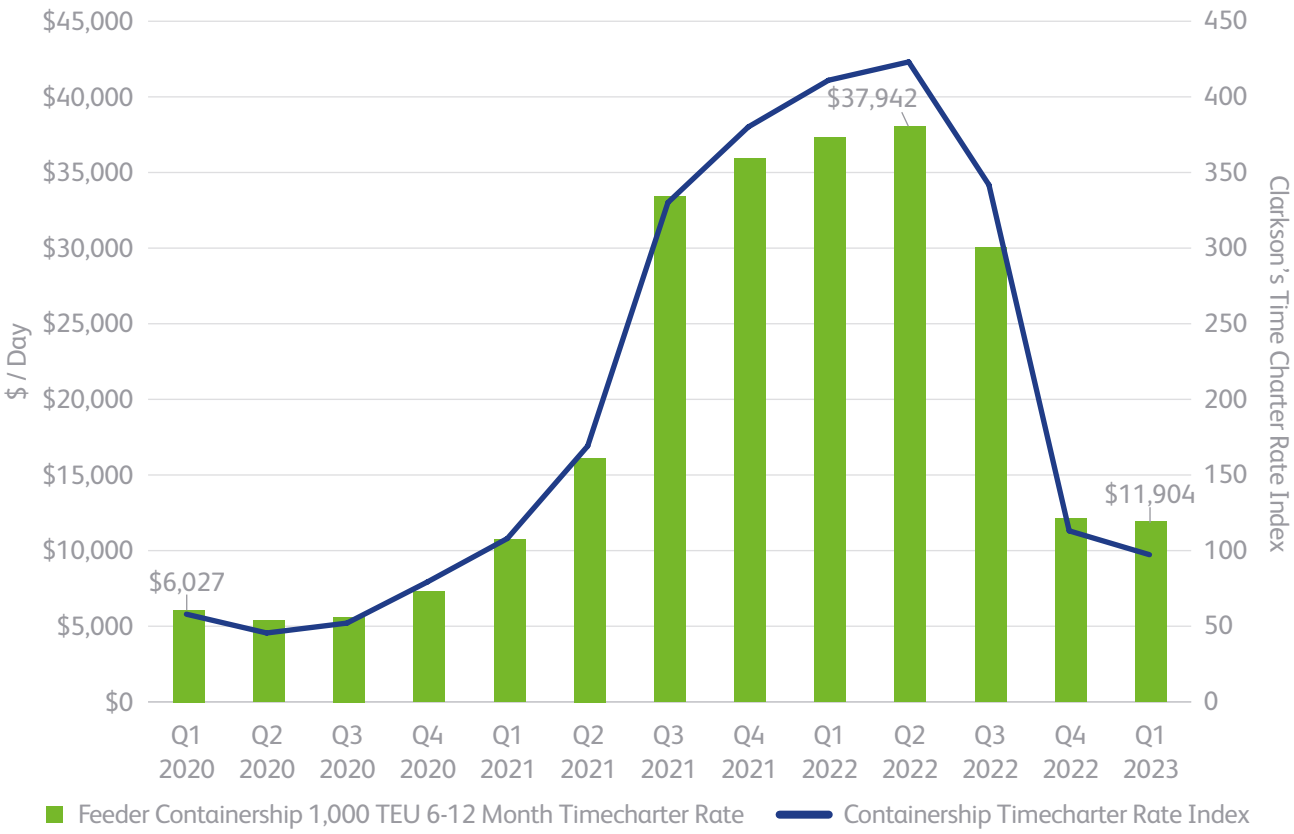
Time Charter Rates[55]

Figure 39 illustrates the time charter rate for a 1,000 TEU containership between Q1 2020 and Q1 2023. The 1,000 TEU vessel size is chosen as it is most relevant to Irish ports. Ireland relies mainly on "feeder" container vessels, which have a smaller TEU capacity. These vessels transport Ireland's containers to and from very large port hubs such as Rotterdam or Antwerp, and feed them back into Irish ports, in a system often referred to as a 'Hub and Spoke' model.

In Figure 39, this metric is set alongside Clarkson's Containership Timecharter Rate Index, a sub-index of Clarkson's Timecharter Rate Index that specifically tracks the movement of time charter rates for containerships. It is published weekly by Clarkson Research, a leading provider of market intelligence and analysis for the shipping industry. The index covers a range of vessel sizes and is based on actual charter rates agreed upon by ship owners and charterers in the market. It is a useful tool for shippers, ship owners, and investors to monitor trends and changes in the market for containership capacity.

[55] As highlighted above, a time charter is a contract wherein the charterer hires the containership for a specified period of time, with a typical time frame being 6 to 12 months. The time charter rate covers the vessel's operating costs, including fuel, crew wages, etc. Since the charterer pays a daily rate to the ship-owner, time charter rates are a useful way for ship-owners to assess the earnings performance of a vessel. The rate charged is based on several factors, including the size of vessel, the duration of the charter, and the current demand and supply dynamics in the industry.

Figure 39: Feeder Containership 1,000 TEU 6-12 Month Timecharter Rate, Q1 2020 – Q1 2023



Source: *Clarkson's Research*

Between Q1 2020 and Q2 2022, the time charter rate for a 1,000 TEU vessel rose by 530%. Between Q2 2022 and Q1 2023, it subsequently fell by 69%. Over the same time periods, Clarkson's Time Charter Rate Index for containerships rose by 629% and subsequently fell by 77%.

Unlike spot rates, time charter rates in Q1 2023 remain almost double the rate recorded in Q1 2023, and have therefore yet to return to pre-COVID, or more 'normal' levels. According to Clarkson's Research, the reason for this is that some containership capacity remains constrained after many ships were previously fixed on long-term charters during the period of soaring prices. Due to the longer-term nature of the arrangement, charterers can secure a stable supply of shipping capacity at a fixed price, and they may choose to do this in times of volatility such as that recorded in 2021. However, when prices begin to fall, they may not be able to avail of lower rates until the charter period ends.

(ii) Container Trade – Rise & Fall

In part (i), it was noted that international containership spot rates and time charter rates are determined by the interactions between supply and demand. Supply, in this context, refers to the development of the global containership fleet and the provision of that fleet by operators for trade. Demand refers to the volume of goods traded.

The recent increases in containership rates were ultimately driven by an increase in the global demand for trade that began in late 2020. Likewise, the decline was driven by a sharp drop in demand. This section will illustrate the extent of the changes in containership trade in recent years.

Figure 40 shows the monthly trajectory of Clarkson's Global Seaborne Container Trade Indicator, which is an index of global container trade. The time period shown is between June 2020 and January 2023, which coincides with the rapid rise and fall in containership freight rates.

It is evident from Figure 40 that growth in the seaborne container trade rose sharply throughout all of 2021, before contracting in 2022. It was this steep rise and decline in demand that drove the fluctuations in containership freight rates that were outlined above.

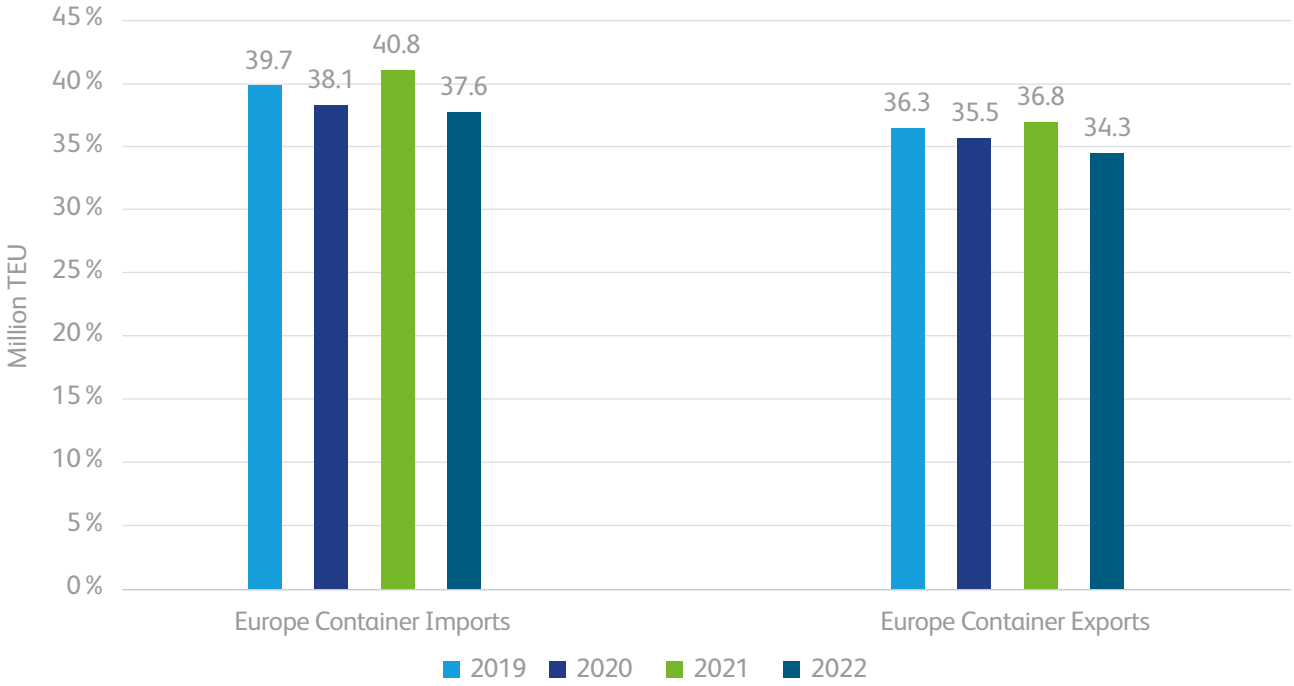
Figure 40: Global Seaborne Container Trade Volume Index, % Change in Index, Monthly[56]

Source: *Clarkson's Research*

In Europe, the same narrative of rising and falling container trade can be shown. In Figure 41, the volume in TEUs of container trade at European ports is illustrated. It can be seen from Figure 41that in 2020, container trade declines versus 2019. In 2021, there is a strong rebounding, before another decline in container trade in 2022 to levels below those of 2019.

[56] Clarkson's global seaborne container trade growth indicator is derived from trends in container volume data in terms of TEUs, with volumes accounting for ~85 % of total global seaborne container trade. In the global seaborne container trade volume index, 2014 = 100

Figure 41: European Container Trade, Imports & Exports, 2019 – 2022



Source: *IMDO*

(iii) Understanding the Rise & Fall

Part (i) documented the rapid rise and fall in spot rates and time charter rates in the international containership market. Part (ii) documented the steep rise and fall in the volume of seaborne container trade over the same period, which is what ultimately drove the changes in freight rates. In this section, the drivers behind the dramatic changes in the demand for container trade will be provided, and how this caused an even greater surge in freight rates.

Pandemic-related Demand

In late 2020, after the initial wave of the COVID-19 pandemic had passed in Europe and the US, robust pent-up demand drove a surge in the trade for physical merchandise, which are primarily transported around the world by containerships. This was caused by the closure of the service industry in many large economies, which meant consumer incomes unaffected by the pandemic were redirected to physical goods, e.g. furniture, clothing, electronics.[57]

The savings rate of consumers whose income was unaffected by the pandemic also increased, and this was spent gradually as economies re-opened.[58] This helped to create prolonged, post-pandemic demand for trade and explains much of why containership rates continued to rise into 2022, even after the worst effects of COVID-19 had passed.

This fast growth in demand far outstripped that of containership supply, meaning the price of containership capacity to soared to record highs. As it takes time to build large containerships, the supply of containership capacity is relatively fixed in the short term.

[57] Why Has Durable Goods Spending Been So Strong during the COVID-19 Pandemic? – US Federal Reserve
[58] Savings and Consumption in the Post-Pandemic Economy – Central Bank of Ireland

This dynamic was exacerbated by two factors. Firstly, the supply of new containerships was, like many industries, heavily disrupted by the pandemic in 2020. As a result, the global containership fleet grew by just 2.9% in 2020, below the 4% recorded in 2019.[59] Even in 2021, the containership fleet grew by just 4.5% as COVID-19 continued to disrupt the manufacturing process. Fleet supply growth was moderate therefore, precisely at the time when demand was rising rapidly. This put further upward pressure on the price of containership capacity, as expressed through time charter and spot rates.

The second factor to exacerbate the imbalance between containership supply and demand was port congestion. Clarkson's Port Congestion Index, which illustrates the level of containerships in port as a percentage of the global fleet, averaged 31% between 2016 and 2019. By the end of 2021, this had risen to 36%.

An IMF working paper on supply chains and port congestion quantified the delays of this congestion, finding the following;

"Delays (in shipping times) surpassed 1.5 days on average by December 2021 – or roughly a 25 percent increase in global travel times"

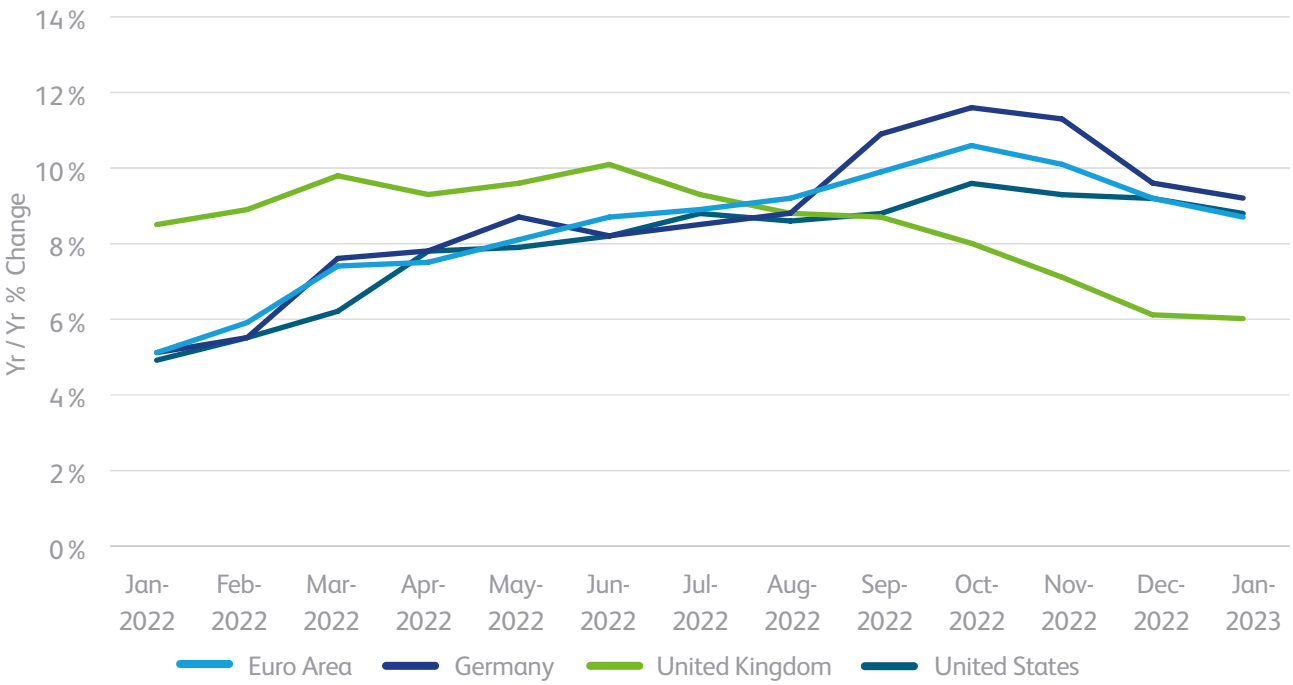
IMF, March 2022[60]

Port congestion had the effect of reducing available containership capacity, and once again put upward pressure on freight rates.

Demand Decline

There were three predominant factors that drove a decline in the volume of seaborne containership trade in 2022. The first was inflation. Inflation in the world's largest economies rose quickly in 2022, driven in large part by rising energy costs following the Russian invasion of Ukraine in February. Figure 42 illustrates this sharp growth in inflation over the past twelve months in some of the world's largest economies, as measured by the EU's Harmonised Index of Consumer Prices (HICP).

Figure 42 HICP All Items, Selected Economies, Monthly Annual Rate of Change



Source: *Eurostat, ONS*

[59] Shipping Review & Outlook, March 2023 – Clarkson's Research
[60] Komaromi, A., Cerdeiro, D. A., & Liu, Y. (2022). Supply Chains and Port Congestion Around the World. IMF Working Paper

Figure 42 shows that inflation was above 8% in large economies for much of the past year. This was significantly above levels recorded over the past decade. In the absence of wage increases, inflation erodes the purchasing power of consumer's incomes, leading to reduced spending and therefore, reduced trade. This has had a large and negative effect on the volume of seaborne container trade in 2022.

Another influencing factor behind the decline in container trade was the rise in US retail inventories. During the period of high pandemic era demand, and of supply chain bottlenecks and port congestion that caused shipping delays, many US businesses built up large stockpiles of goods to navigate these challenges. As demand has declined in 2022, many companies are now left with excess inventory. This has reduced the demand for US imports, which was contributed to global trade volumes. Figure 43 shows the annual rate of change in US retail inventories for 2021 and 2022. Figure 43 illustrates that during 2022, annual growth in US retail inventories was above 20%.

Figure 43 US Retailers Inventories, Annual Percent Change, Monthly, Seasonally Adjusted

Source: *US Federal Reserve*

Finally, the normalisation of post-pandemic demand in 2022 has also contributed to a slowdown in global container trade. As service economies have reopened, demand for durable goods has rebalanced towards services. Global container trade rose to 208bn TEUs in 2021, a record high that represented 7% growth on 2020.[61] That level was underpinned by COVID-19 consumer patterns, and was unlikely to be sustained when the service sectors reopened.

Overall, the three factors described above – rising inflation, large US inventories and a 'normalisation' of global demand – combined to put downward pressure on the volume of seaborne container trade in 2022. Faced with this decline, the price of containership capacity subsequently fell, and this is reflected in the falling time charter and spot rates described in part (i).

Looking ahead, containership freight rates are expected to remain under downward pressure in 2023, as fleet growth is expected to strengthen. During the period of surging demand described above, a record number of new vessels were ordered, according to Clarkson's Research. As those new vessels reach the market, it is expected to keep freight rates low for in the short to medium term.

[61] Shipping Review & Outlook, March 2023 – Clarkson's Research

3.2 Dry Bulk Market

Dry bulk vessels, or bulk carriers, are employed to transport large volumes of loose, non-containerised bulk cargoes like coal, grains, and iron ore. These products are essential to global food supplies and industrial production.

This section will provide an overview of the volume of seaborne dry bulk cargo in 2022. It will also describe the trends in the prices charged by ship owners to transport this cargo. Following this, the influencing factors driving market changes this year will be detailed.

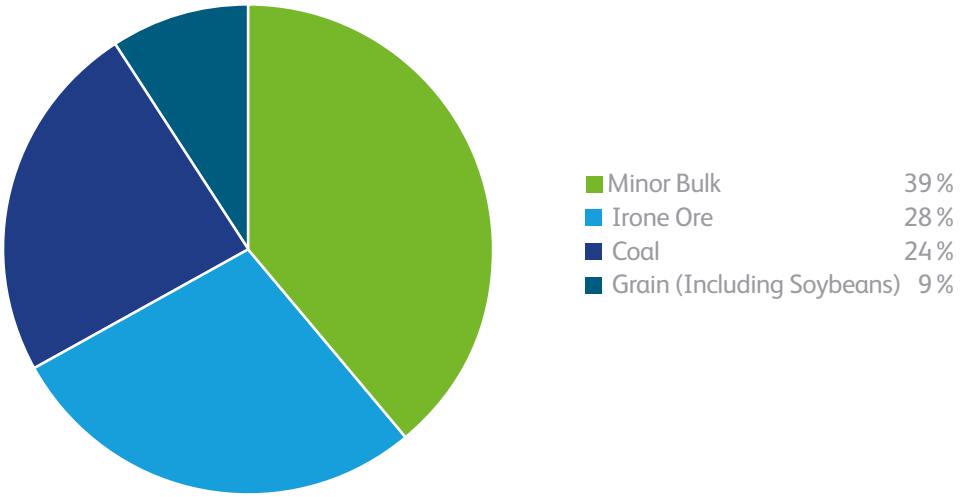
(i) Seaborne Dry Bulk Trade

In 2022, 5.28bn tonnes of dry bulk cargo was transported by sea around the world. This represented a 3% decline on 2021 volumes, equivalent to a decline of roughly 160m tonnes. This is the largest annual decline in dry bulk trade since 2009, a year when some of the worst effects of the Global Financial Crash were felt on trade. 2021 was a strong year for dry bulk trade however, with a total of 5.44bn tonnes transported. Much of this reflected the pent-up demand from 2020, when the COVID-19 pandemic suppressed global economic activity. The five-year average annual volume of dry bulk trade is 5.33bn tonnes (2018 – 2022). Average annual growth since 1990 in this trade has been 4% per year.[62]

Dry bulk products can be categorised into four main groups; grains, iron ore, coal, and minor bulk commodities. The first three - grains, iron ore and coal - are often referred to as 'major bulk' commodities, given the large volumes in which they are traded around the world. Minor bulk commodities refer to cargo that is transported in smaller quantities and/or is packaged in some way. Examples of minor bulk commodities include; steel, fertilisers, agricultural products, cement ect.

Figure 44 shows the average share of total seaborne dry bulk traffic held by each of the four commodities listed above. The shares presented in Figure 44 have changed little over the past decade.

Figure 44 Average Share of World Seaborne Dry Bulk Trade, 2012 – 2022



Source: *Clarkson's Research*

[62] Clarkson's Research

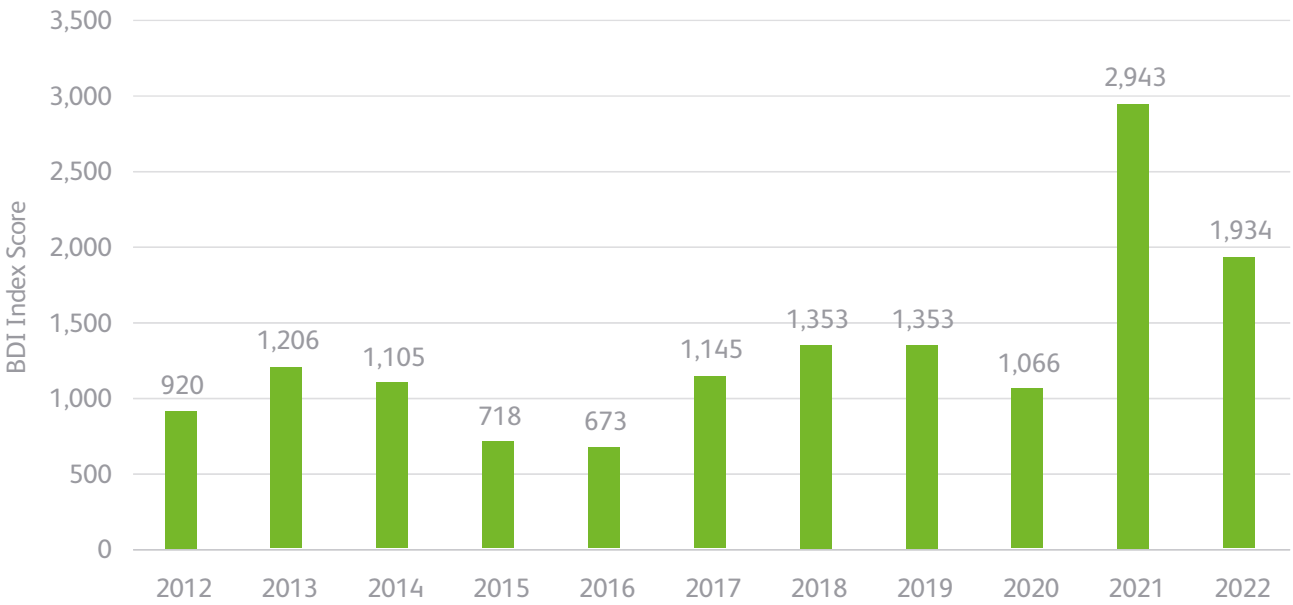
Approximately 60% of the decline in dry bulk trade in 2022 is attributable to minor bulk trade. For example, seaborne trade in steel fell by 10%, from 401m tonnes to 360m tonnes. In addition, global seaborne trade in cement fell by 13%, from 150m tonnes to 130m tonnes.

Global trade in seaborne grain fell by 3%, from 530m tonnes to 516m tonnes. Iron ore trade also fell by 3%, from 1.53bn tonnes to 1.48bn tonnes. Lastly, seaborne trade in coal remained virtually unchanged between 2021 and 2022, with 1.2bn tonnes transported.[63]

(ii) Seaborne Dry Bulk Prices

The London Baltic Dry Index (BDI) measures the rates charged for chartering the bulk carrier ships that carry essential raw materials. This index is a made up of the Capesize, Supermax and Panamax time charter rate averages.[64] The BDI is underpinned by the interaction between the demand for dry bulk trade and the supply of dry bulk carriers. It is a measure of the cost of shipping the dry bulk commodities that facilitate the global economy. In this way, it is not only an effective benchmark for shipping rates, but a leading economic indicator, providing insight into global demand for raw materials and the state of international trade. When the BDI is rising, it can indicate increased demand for commodities and a growing global economy. Conversely, a declining BDI may suggest weaker demand and a slower economy. In Figure 45, the annual average index score for the BDI is provided between 2012 and 2022.

Figure 45: Annual Average London Baltic Dry Index Score, 2012 – 2022 (1st Nov 1999 = 1,334)



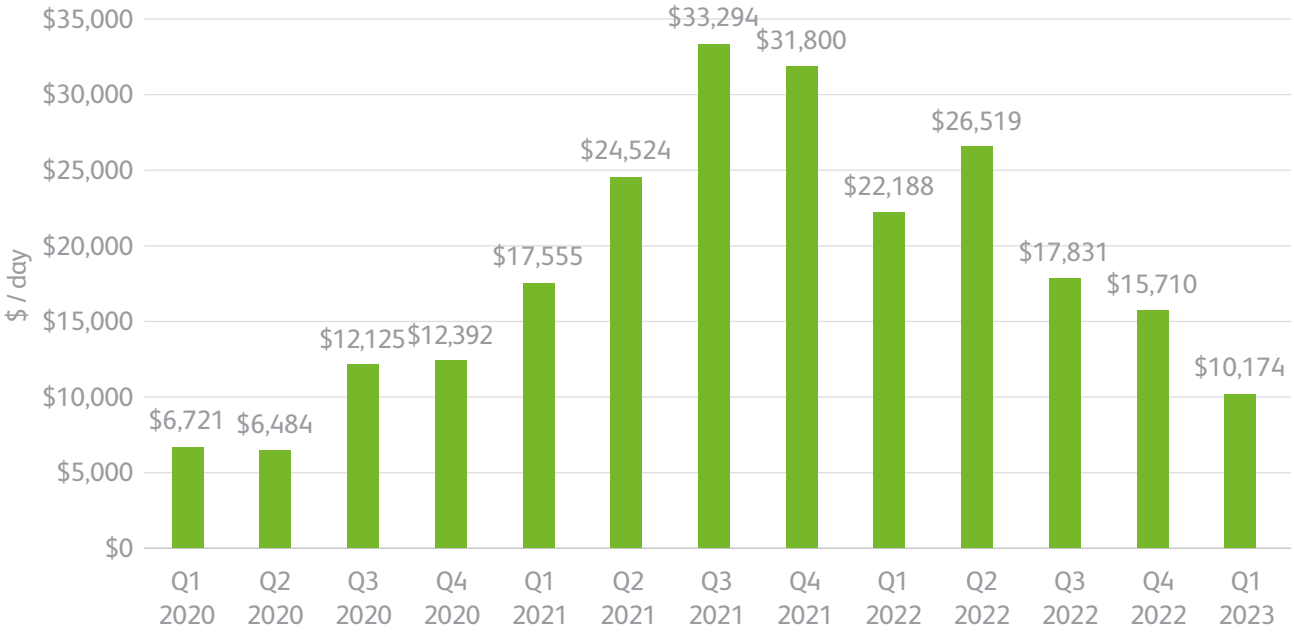
Source: *Clarkson's Research*

As evident in Figure 45, the BDI rose rapidly in 2021, by 176% when compared to 2020. Between 2021 and 2022, the annual BDI fell by 34%. The period between 2020 and 2022 was a turbulent one for the global economy, as the COVID-19 pandemic initially suppressed global trade volumes before a sharp rise in pent-up demand was recorded in 2021. In 2022, the Russian invasion of Ukraine created logistical disruption and uncertainty, and rising inflation rates suppressed global demand. This cycle of sharp rises and steep declines in global trade is evident in Figure 46, which shows average vessel earnings across the bulk carrier sector (weighted by the number of ships in each segment).

[63] Dry Bulk Trade Outlook, Clarkson's Research, Volume 29 No. 4

[64] Like tanker vessels, bulk carriers are named for their size and the task for which they are employed. Supramax (50,000 – 60,000 dwt), Panamax (80,000 dwt) and Capesize (80,000 – 200,000 dwt) are among the most common vessel classes.

Figure 46: Average Bulk Carrier Vessel Earnings, Q1 2020 – Q1 2023



Source: *Clarkson's Research*

(iii) Seaborne Dry Bulk Market – Catalysts of Change

In parts (i) and (ii) of this Section, an overview was provided of the volume of seaborne dry bulk trade in 2022 and the prices charged by ship owners to transport this cargo. In volume terms, it was shown that 2022 recorded a relatively steep decline in dry bulk trade. This followed a strong 2021 that benefitted from pent-up demand in the wake of the COVID-19 pandemic in 2020. In price terms, the Baltic Dry Index fell in 2022 after sharp increases in 2021. It was also shown that the period between 2020 and 2022 was a turbulent one for vessel earnings in dry bulk sector, with steep rises in 2021 bookended by declines in 2020 and 2022.

In the following paragraphs, the main influencing factors driving these changes in dry bulk trade and prices in recent years will be detailed.

Russian Invasion of Ukraine

The outbreak of conflict between Russia and Ukraine had a direct impact on the international market for seaborne dry bulk trade.

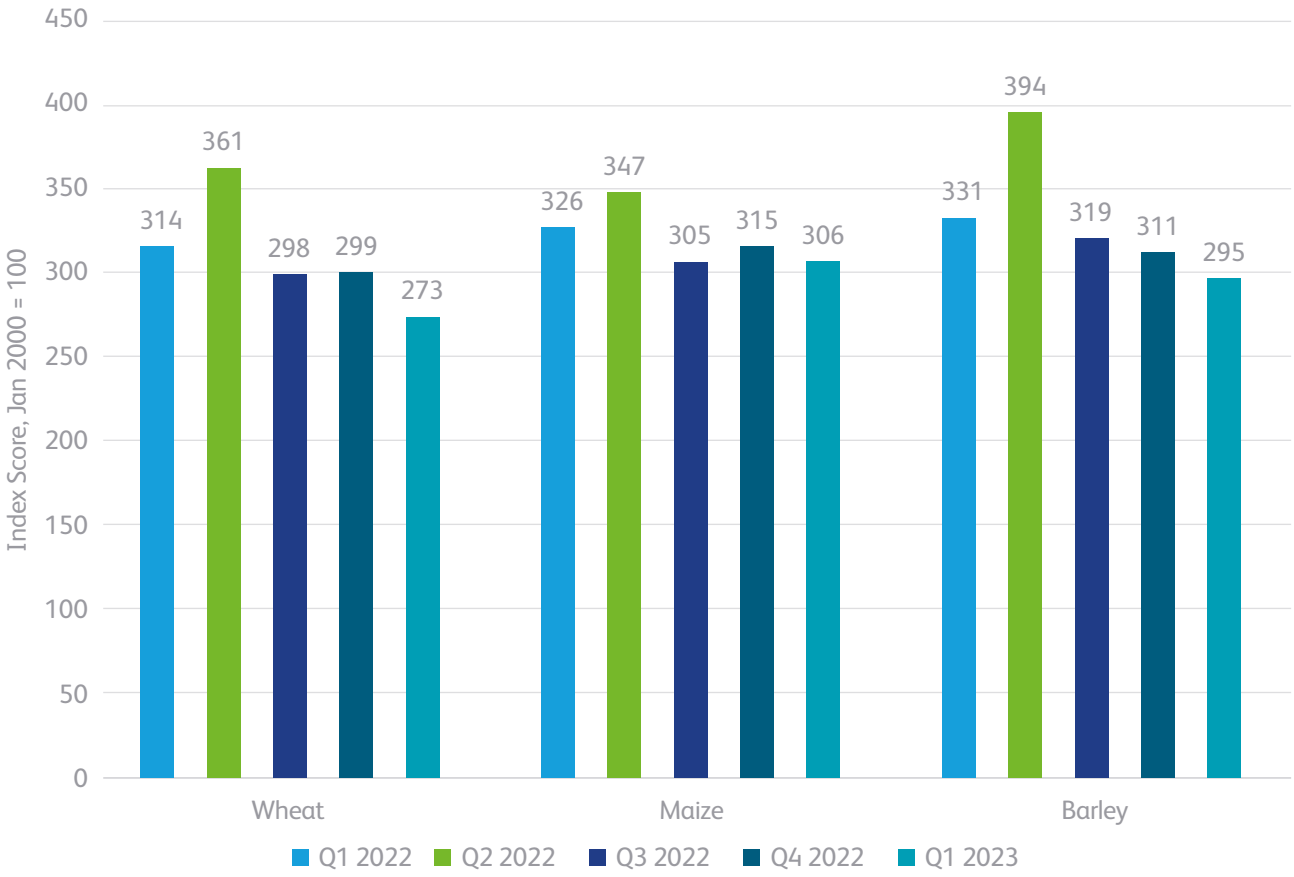
In the seaborne grain trade, approximately 500m tonnes of grain are transported on dry bulk vessels each year. Exports from Ukraine have, in recent years, accounted for roughly 10% of this total, as Ukraine is a major producer of grains, particularly wheat, barley and maize. In 2021, dry bulk exports of Ukrainian grain totalled 49m tonnes. Following the outbreak of conflict, in 2022, this total fell by 40% to 29m tonnes.[65] In the following months, there was heightened uncertainty as to how these 'lost' Ukrainian grain exports would be replaced. Concerns over scarcity therefore caused international grain prices to spike.

The International Grains Council (IGC) Grains and Oilseeds Index is a measure of global market prices for a basket of major grains and oilseeds.[66] The index is based on prices for wheat, maize, barley, rice and soybeans. The prices used to calculate the index are based on export quotations from major producing and exporting countries. In Figure 47, the sub-indices for wheat, barley and maize are provided. As shown in Figure 47, the index for these products rose sharply in the second quarter of 2022. This was due to maritime shipments of grain in the Black Sea region being halted. Consequently, the uncertainty around future Ukrainian grain supplies intensified during this period.

[65] Dry Bulk Trade Outlook, Clarkson's Research, Volume 29 No. 4

[66] The IGC is an intergovernmental organization that promotes cooperation in the global grain trade and provides analysis and statistics on grains and oilseeds markets. IGC website

Figure 47: IGC Grains & Oilseeds Index, Sub-Indices for Wheat, Barley, Maize 2022



Source: *International Grain Council*

Following the spike in grain prices in Q2 2022, prices subsequently returned to more 'normal' levels. This occurred for two reasons. Firstly, the Black Sea Grain Initiative led to an agreement to resume key shipments of grain from Black Sea ports.[67] This allowed Ukrainian grain supplies to return to market, easing concerns over shortages. Secondly, exports of grain from other regions increased significantly. For example, in Brazil, exports of grain rose from 22m tonnes in 2021, to 46m tonnes in 2022.

The halting of dry bulk shipments of Ukrainian grain in 2022 led to a global food crisis. Uncertainty is still severely heightened as to future supplies of this global necessity. The IMDO has monitored the impact for Ireland of these trends for Irish ports and the Irish economy, and has shared its findings with the Irish Government and other stakeholders.

The Russian invasion of Ukraine also affected the international market for commodities other than grain. As noted in part (i), the majority of the decline in dry bulk trade in 2022 was driven by a decline in minor bulk trade i.e. steel, fertilisers, forestry products. Seaborne minor bulk trade fell by 4% this year, and contributing significantly to this was a decline in exports of such products from Russia and Belarus. Sanctions placed on both countries by the EU, US and other Western economies have led to declines in exports of certain goods, and the redirection of other goods to new markets.

For example, potash, a key ingredient in fertiliser production makes up approximately 10% of all minor bulk trade. Belarus is one of the world's largest potash producers. In 2022, seaborne trade in potash fell by 9% from 46m tonnes, to 42m tonnes. As for forestry products, seaborne trade in these products fell by 8% in 2022 fell by 5%.

[67] Black Sea Grain Initiative

Chinese Imports

Another significant cause of the decline in seaborne dry bulk trade in 2022 was a decline in Chinese imports, particularly of iron ore.

Iron ore accounts for approximately 28% of all dry bulk trade. In 2022, 1.5bn tonnes of iron ore was transported on dry bulk vessels. This represented a decline of 3% compared to 2021, or 50m fewer tonnes traded. Imports to China alone account for 1.1bn tonnes, or three quarters of the entire seaborne iron ore trade. Seaborne iron ore imports to China fell by 1% in 2022, or 15m tonnes. That decline accounted for 30% of the overall decline in global seaborne iron ore trade. Chinese imports of iron ore are driven primarily for the production of steel. In 2022, Chinese steel production fell by 2%, which explains the parallel decline in iron ore imports. The decline in steel production in turn was driven by two factors. Firstly, issues surrounding the Chinese property market were such that less steel was demanded within the Chinese economy. Second, pandemic-related restriction in 2022 continued to suppress economic activity.

Market Correction

As shown in part (ii), the price of transporting dry bulk goods, and therefore the earnings of dry bulk ship owners, declined significantly in 2022, particularly in the latter half of the year. Market correction, or market 'normalisation' following the COVID-19 pandemic was a contributing factor to this decline in freight rates. There are two key factors to consider on the issue of market corrections.

First, 2021 was described as a "bumper year" by Clarkson's research in its first report of 2022, as earnings for bulk carriers surged on the back of pent-up pandemic demand. Much of this post-Covid bounce had worn off in 2022, reducing the pressure on vessel capacity and therefore on freight rates.

Second, port congestion in 2021 was close to record levels, as supply chain problems in the wake of the COVID-19 pandemic tied up vessels at port for longer than anticipated, reducing available supply. In 2021, up to 36% of bulker capacity was tied up 'at port' at a given time. This has fallen back towards more 'normal' levels, of roughly 30%, in 2022.

3.3 Global Oil Market

Introduction

Oil is essential to the functioning of the Irish economy each year. As recorded by the Sustainable Energy Authority of Ireland (SEAI), oil products represented 52% of Irelands final energy use in 2021, more than any other energy type by a significant margin. Ireland is also entirely dependent on oil for the transport sector, and oil remains the dominant source of home heating.[68]

Irish ports import approximately 9 million tonnes of oil products each year, which represents almost 1 in every 5 tonnes of all port traffic. Global oil demand and supply dynamics are therefore essential to the performance of the Irish economy, as well as its level of energy security.

In this section, part (i) will detail the demand for oil in 2022, how this has evolved since the pandemic in 2020, and the global regions driving this demand. Part (ii) will detail the supply of oil, and will highlight the shifts in global supply following the Russian invasion of Ukraine. Part (iii) will illustrate the price changes for crude oil, bunker fuel and marine gas oil that occurred in 2022. Oil prices were highly volatile this year, as the Russian invasion of Ukraine created a high level of uncertainty and fears of undersupply.

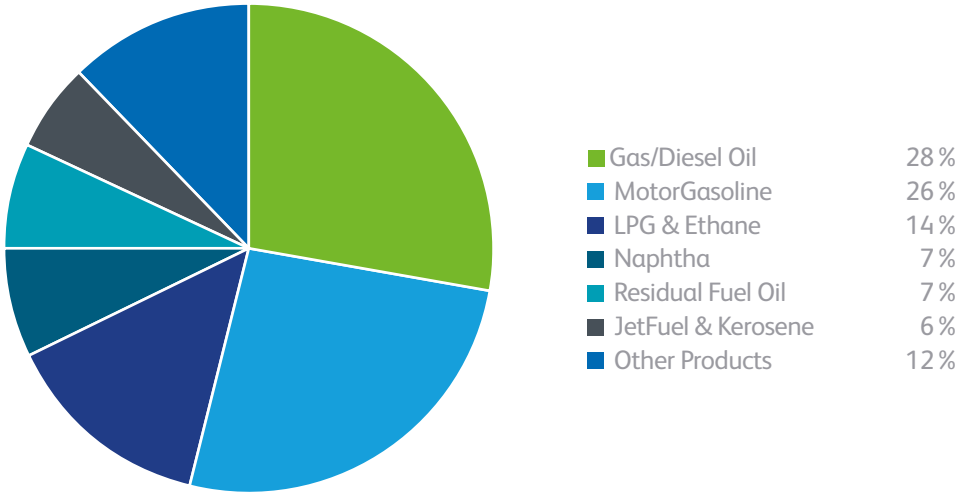
(i) Global Oil Demand

As reported by the International Energy Agency (IEA), the global demand for oil rose in 2022 from 97.7 million barrels per day (mb/d) to 99.9mb/d.[69] That equates to an increase of 2%, or 2.2mb/d. This 2022 volume is also slightly above 2019 levels (+0.3%) where global demand averaged 99.6mb/d. Global demand for oil has therefore surpassed pre-pandemic levels. Between 2020 and 2021, intermittent periods of restrictions on economic activity in large economies reduced travel and industrial production, and ultimately, the consumption of oil.

It is unsurprising then, that the growth in the 2022 demand for oil was driven largely by increased demand for jet fuel & kerosene. This corresponds with the lifting of restrictions on international travel that occurred in 2022. In 2022, global demand for jet fuel & kerosene averaged 6.1mb/d.[70] This was 17% above 2021, and 29% above 2020 levels of demand. In all, the increase in jet fuel & kerosene accounted for 40% of the total increase in oil demand in 2022. A further 16% of the increase in 2022 came from motor gasoline. Like jet fuel, demand for such products is derived from transport sectors, the restrictions on which were greatly eased in large economies in 2022. In Figure 48 below, the share of global oil demand held by the main oil product categories are provided.

[68] Energy in Ireland 2022, SEAI
[69] IEA Oil Market Report, Jan 2023, Table 1
[70] IEA Oil Market Report, Jan 2023, pg. 5

Figure 48: Global Oil Demand by Product, 2022

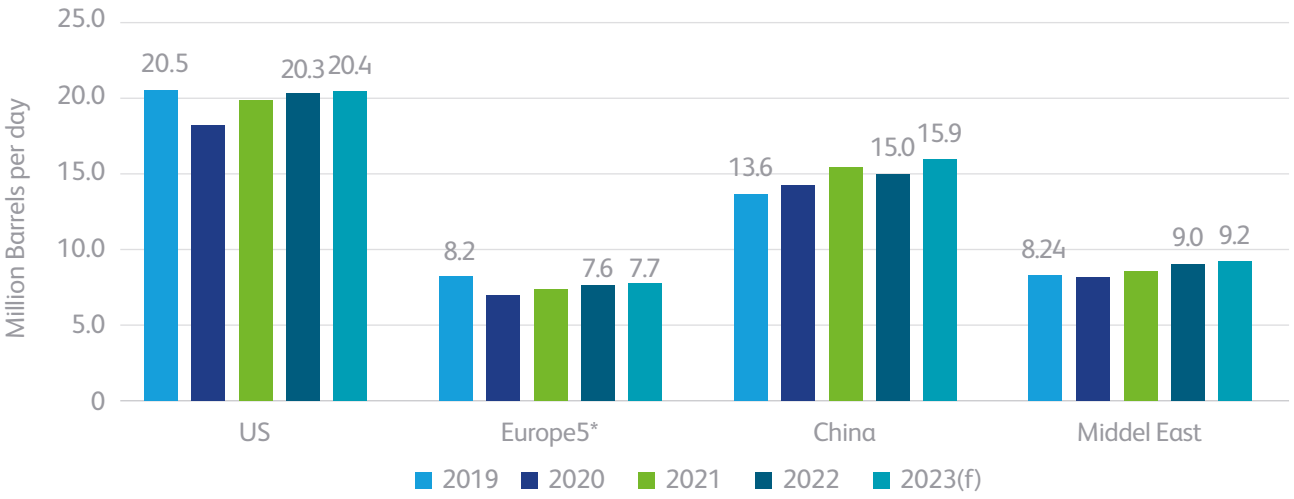


Source: *IEA*

As outlined above, global oil demand increased in 2022 by 2%, equivalent to 2.2mb/day. In terms of what countries / regions drove this growth the US accounted for 18%, as its demand rose by 0.4mb/d between 2022 and 2021. Large European economies (France, Germany, Italy, Spain and UK) accounted for a 14% of this annual growth (+0.3mb/d), while the Middle East region represented 26% (+0.6mb/d). Growth in global oil demand was offset by the Chinese economy, where demand fell by 3%, or 0.4mb/d. For much of 2022, the Chinese economy continued to face pandemic-related restrictions on economic activity. This had a significant impact on the global demand for oil.

In terms of the regional composition of global oil demand, the countries / regions in Figure 49 consistently make up 52% of global oil demand.

Figure 49: Global Oil Demand by Region, 2019 – 2023



Source: *IEA, *Europe 5 = France, Germany, Italy, Spain & UK*

As evident in Figure 49, US demand for oil is consistently around 20mb/d, which is roughly one fifth of global demand. China is the next largest source of global oil demand, with a demand of roughly 15mb/d, or 15 % of global demand.

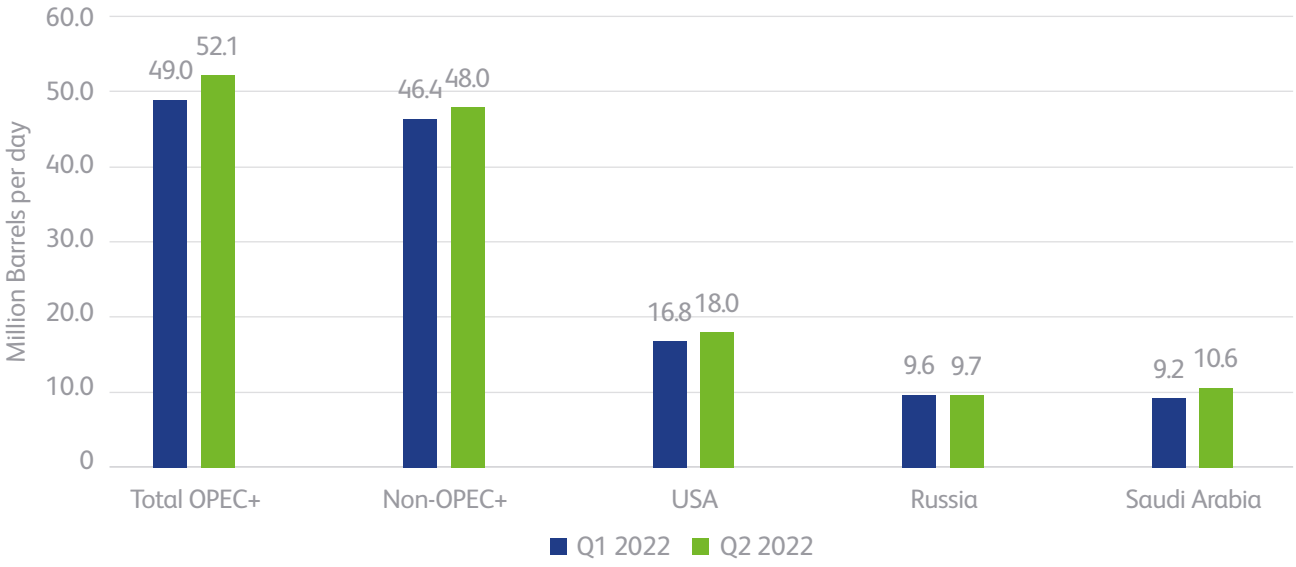
Figure 49 provides the forecasted volumes for 2023, as provided by the International Energy Agency in early 2023. Demand for oil is expected to rise by a further 2 %, to a record high of 101.7mb/d. jet fuel is once again expected to make be a driver of growth, with demand forecasted by the IEA at 6.9mb/d in 2023. Elsewhere, a resurgence in the Chinese economy following the reopening of economic activity following a period of prolonged pandemic-related restrictions will make a significant contribution to global oil growth. Oil demand is forecasted to grow by 6 % in 2023, to 15.9mb/d, as shown in Figure 49. This will represent 45 % of the growth in oil demand for 2023.

(ii) Global Oil Supply

The global supply of oil in 2022 rose by 5 %, from an average of 95.4mb/d, to 100.1mb/d. This equated to an additional 4.7mb/d.

The Russian invasion of Ukraine caused heightened uncertainty in the global supply of oil. Russia is a major global oil producer, averaging roughly 9.5mb/d in each of the last three years. This represents approximately 10 % of global oil supply. In 2022, the US, UK and EU had all placed embargos on the import of Russian oil.[71] This effectively reduced the available supply of oil to three very large global consumers. In response, oil production increased from many suppliers but particularly the US and Saudi Arabia. Figure 50 illustrates the volume of oil produced by OPEC+, non-OPEC countries, as well as the US, Russia and Saudia Arabia.

Figure 50: Global Oil Production, Selected Groups / Countries, 2021 – 2022



Source: *IEA*

[71] EU sanctions against Russia explained – European Commission

As evident in Figure 50, USA oil production rose by 7% in 2022, while Saudi Arabian oil production rose by 15%. When combined, this accounted for 55% of the global increase in oil supply in 2022 and helped to offset the effects of the bans on Russian oil.

Despite the level of sanctions placed on Russian oil in 2022, supply has remained consistent with 2021. New markets, other than those in the EU, have been found by Russia, including in China and India.[72] In 2023 however, the IEA forecasts Russian oil production to fall by 15%, or 1.4mb/d. This significant decline is expected to be driven by mounting impact of Western sanctions on Russian exports.

Looking ahead, the IEA expects the global supply of oil to fall in 2023 by 0.4mb/d, driven by the announcement in April 2023 of cuts to production by the OPEC+ group.[73] According to the IEA, this will be offset by increased production from non-OPEC countries, led by the US and Brazil.[74]

(iii) Global Oil Prices

In this section, the price trajectory of Brent crude oil will be illustrated and commentary will be provided on the key drivers of price changes in 2022. Following this, an overview of bunker fuel prices will be provided.

2022 was an extraordinary year for oil prices, and this is reflected in the price trajectory of Brent crude oil. In February, the Russian invasion of Ukraine caused rapid increases in Brent crude prices. In January, the Brent crude price stood at roughly $80 per barrel. By March 8th, the price per barrel had soared to $133, a 66%.

Following the outbreak of conflict, many European countries indicated that they would no longer purchase Russian oil. Consequently, European countries would have to replace these Russian with crude oil from another source. This uncertainty of supply was the predominant driver of the sharp increases recorded in the first half of the year.

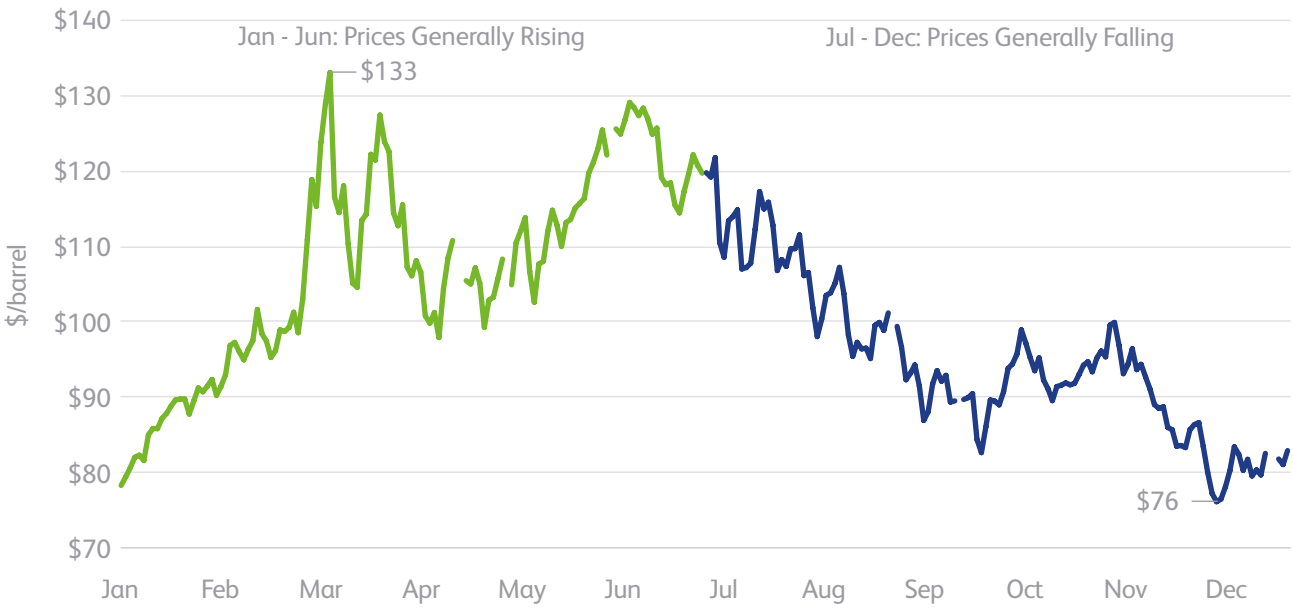
As outlined in part (ii), both OPEC and US oil production rose significantly in 2022. As this became clear, crude oil prices gradually began to fall. This was accelerated by the global rise in interest rates, including the US Federal Reserve, Bank of England and European Central Bank. Rising interest rates have a suppressive effect on global oil price. This effect materialised due to the negative relationship between rising interest rates and economic growth. In addition, rising US interest rates led to an appreciation of the US dollar against other currencies. As Brent crude is often denominated in US dollar terms, this affected its affordability.

Overall, following a year of high variation, crude oil prices ended 2022 at roughly the same level as it began. However, significant uncertainty remains for global demand and supply dynamics in 2023.

In Figure 51, the daily price of Brent Crude oil in dollars per barrel is provided for 2022. As labelled in Figure 51, prices were generally rising in the first half of the year, and generally falling in the latter half, for the reasons outlined above.

[72] *Rising flow of Russian oil products to China, India and the Middle East – Reuters*, February 2023
[73] OPEC announcement of cuts to production
[74] IEA Oil Market Report, April 2023

Figure 51: Brent Crude Oil Price ($/barrel), Daily, 2022



Source: *US Federal Reserve*

In Table 27, an overview of bunker prices for all of 2022 and the first quarter of 2023 is provided. Bunker fuels are underpinned by the price of global crude oil and, as evident in table 27, the spike in crude oil prices in the first half of 2022 is reflected in the bunker prices provided.

Table 27: Bunker Prices, Monthly, Jan 2022 – Mar 2023

Date	MGO Bunker Prices, Rotterdam	HSFO 380cst Bunker Prices (3.5% Sulphur), Rotterdam	VLSFO Bunker Prices (0.5% Sulphur), Rotterdam
	$/Tonne	$/Tonne	$/Tonne
Jan-2022	$734	$476	$618
Feb-2022	$827	$524	$689
Mar-2022	$1,108	$646	$871
Apr-2022	$1,195	$642	$852
May-2022	$1,175	$636	$816
Jun-2022	$1,308	$635	$911
Jul-2022	$1,146	$496	$814
Aug-2022	$1,073	$512	$731
Sep-2022	$1,022	$439	$663
Oct-2022	$1,050	$395	$645
Nov-2022	$967	$404	$611
Dec-2022	$863	$371	$540
Jan-2023	$890	$386	$562
Feb-2023	$820	$403	$585
Mar-2023	$766	$404	$555

Source: *Clarkson's Research*

3.4 Tanker Market

As highlighted in Section 3.2, Ireland's energy usage is heavily dependent on oil, especially in the transport and residential sectors. As Ireland does not have a supply of indigenous oil, all of its supply is imported by sea through Irish ports. Ireland is heavily exposed therefore, to the supply and demand dynamics in the international market for seaborne oil products.[75]

This section will describe the key trends in the international market for seaborne oil products, also known as the tanker market. It will outline the volume of oil transported by sea in 2022 and how this compared to previous years. It will then provide an overview of the prices charged for transporting such products in tanker vessels. In both cases, the main drivers of change in these markets will be discussed.

Vessels that carry liquefied freight, or liquid bulk, are known as tanker vessels. Tankers represent one quarter of the gross tonnage of the world fleet, and are extremely important for carrying the world's liquefied energy around the globe. Examples of liquefied freight include crude oil, petroleum, or bitumen. They are categorized based on their size and the task for which they are employed. Tanker vessels are named based on their size in deadweight tonnes (dwt).[76] Some of the most common vessel classes include; Suezmax, Panamax, Aframax and Very Large Crude Carrier (VLCC).[77] Suezmax and Panamax vessels are so named because their size and operation is designed for the Suez Canal and Panama Canal.

In Ireland, approximately 9m tonnes of liquid bulk products are imported each year. Approximately 80% of liquid bulk imports arrive at Dublin Port and the Port of Cork. Dublin has held a 45% share on average over the last five years, while Cork has held a 35% share of liquid bulk imports (see Section 1.1B).

(i) Seaborne Oil Trade

Oil tankers are broken down into crude tankers and product tankers. Crude tankers are generally extremely large and carry unrefined oil, mainly from the point of extraction to refineries. Product tankers are much smaller, and carry the refined oil products, such as petroleum to the point of market. In this section, the focus will be on the crude oil market as it is significantly larger than the market for product oil, and it represents the starting point for the global oil supply chain.

Globally, there were just over 3bn tonnes of oil transported by sea in 2022. This represented 5% growth over 2021, and is the largest annual volume traded since 2019. The global volume of seaborne oil is at, or very slightly below, pre-pandemic levels in 2022.

Crude oil consistently represents two thirds of global seaborne oil trade. In 2022, 1.97bn tonnes of crude oil were transported by sea. This was 7% higher than 2021 and marks the fastest pace of annual growth in seaborne crude oil trade since 2004. This is reflective of the post-covid strength in demand, following global restrictions on economic activity and travel in 2020 and 2021.

China is the world's largest singular importer of crude oil, with 453 million tonnes in 2022, or almost one quarter of the global seaborne crude oil market. This represents an 8% decline from the 490 million tonnes imported by China in 2020 and is reflective of pandemic restrictions in the Chinese economy that remained in place in 2022. Chinese demand has a significant impact on the price of transporting crude oil by sea, as shifts in demand are large enough to affect available fleet capacity at a given time.

India is the world's second largest importer, with 233 million tonnes imported in 2022, or 12% of the world's total. This represented strong growth of 10% compared to 2021. In Europe, 514 million tonnes of crude oil were imported, the largest annual total since 2019, when 527 million tonnes were imported. European imports represent one quarter of total global seaborne crude oil imports.

[75] *"Apart from a small amount of indigenous biofuel production, Ireland imports all of its oil. The likelihood of a new indigenous supply of crude oil is low given the low levels of recent offshore drilling activity, low oil prices and Ireland's policy position that there will be no future licensing for offshore oil exploration."* – Energy in Ireland Report 2020 – SEAI

[76] Dwt: This is a measurement of the entire contents of a ship, including cargo, fuel, crew and water.

[77] Panamax = 50,000 – 80,000 dwt, Aframax Capacity = c.80,000 dwt, Suezmax capacity = 125,000 – 180,000 dwt. VLCC capacity = c.320,0000 dwt.

In terms of the origins of this crude oil, the Middle East / Gulf region is the largest exporter of seaborne crude oil in the world by a significant margin. 943 million tonnes of seaborne crude oil were exported from this region. This represents 15% growth on 2021, and accounts for roughly half of the global seaborne crude oil market.

(ii) Seaborne Oil Prices

As for the prices charged to transport crude oil, Figure 52 shows average weighted crude tanker earnings in 2021 and 2022. This is a measure of the average daily earnings of crude oil tankers. It is calculated by Clarkson Research, and is based on a weighted average of the daily earnings of different types of crude oil tankers, including VLCCs (Very Large Crude Carriers), Suezmaxes, Aframaxes, and Panamaxes. The metric is expressed in US dollars per day ($/day) and is often used as a benchmark for assessing the profitability of the crude oil tanker industry. The earnings reflect the daily rates at which tankers are hired for spot voyages and are influenced by a range of factors, including global oil demand and supply, the availability of tanker tonnage, geopolitical risks, and weather-related disruptions.

Figure 52: Average Weighted Crude Tanker Earnings, US $/day, 2021 – 2022

Source: *Clarkson's Research*

As is clear from Figure 52, 2022 was an extremely profitable year for the crude tanker industry. Between 1990 and 2022, earnings in this market have averaged approximately $30,000 per day. In 2020 and 2021, earnings collapsed as global pandemic restrictions on travel and on industrial production came into effect, thereby suppressing the demand for seaborne oil transport. In 2021, earnings fell to an average of just $6,600 per day. In 2022, this increased rapidly, to an average of $44,000 per day. The rise in peaked in November 2022, when earnings averaged over $100,082 per day, a rare occurrence for this market in recent decades.

(iii) Seaborne Oil Market – Catalysts of Change

As outlined in part (ii), the profitably of crude tanker vessels rose significantly for ship owners in 2022. For importers and exporters, this reflects a rise in the price of transporting crude oil around the world. There were three main factors that drove the rapid increase in the cost of seaborne oil transport that is illustrated in Figure 52.

Increased Tonne-Miles

A significant factor behind the spike in the price of tanker freight rates in 2022 is the increase in the average distance travelled per voyage. This can also be referred to as the tonne-miles. Tonne-miles is a measure used in the shipping industry to quantify the volume of cargo transported over a distance. It is calculated by multiplying the weight of the cargo by the distance travelled.[78] Tonne-miles are an important metric for assessing the efficiency and environmental impact of the shipping industry. It is also used as a basis for calculating freight rates, as shipping companies charge based on the tonne-miles transported.

In 2022, the US, UK and EU had all placed embargos on the import of Russian oil.[79] This had two large effects on the dynamics of the international market for seaborne oil.

First, by gradually reducing oil imports from Russia, European countries have replaced this with imports from countries further away, particularly the Middle East and the US. Average annual tonne-miles for crude oil imports to the UK / Continental EU was 634bn tonne-miles between 2015 and 2019. In 2022, tonne-miles jumped by 23 % to 780bn.[80] Clarkson's estimate that this will rise to 900bn in 2023. Seaborne crude oil imports to European countries are therefore travelling further distances to arrive in ports. This increased distance has the effect of increasing costs faced by the ship owner, but also acts as a reduction in available tanker supply, as vessels are at sea for longer.

Second, due to the European ban on Russian exports of oil and oil products, these have been 'redirected' to markets further away, notably China and India. This is reflected in the tonne-miles of crude oil exports in the Baltic Sea region, which rose from 128bn tonne-miles in 2021, to 326bn tonne-miles in 2022. Russian exports of oil and oil products are therefore travelling further significantly further in order to reach their destination.

Overall, the average 'haul' of global seaborne trade is projected by Clarkson's Research to increase by 2 % between 2022 and 2024, with an increase of 7 % expected for the oil trade. The combined effect of the two trends outlined above was to contribute to the increase in the cost of hiring tanker capacity in 2022, and amplify the sharp increase in tanker earnings.

Post-Covid Demand

The impact in 2022 of the lifting of pandemic restrictions on travel and economic activity should be acknowledged as a key driver behind the increase in the demand for seaborne oil trade. Globally, the total volume of seaborne oil trade surpassed 3bn tonnes in 2022 for the first time since 2019. In 2022, the volume trade was 2.8bn tonnes.

Across all major economic regions, imports of crude oil rose in 2022, and were above those of 2020 and 2021. In Europe, imports of crude oil rose by 8 % to reach 514m tonnes. In Asia, the increase in crude oil imports was 5 %, to 1.2bn tonnes. This growth occurred alongside a decline in China, the world's largest importer of crude oil. Many strict pandemic-related restrictions were still place in China throughout 2022, and this impacted upon the level of energy demand for the region.

Moderate Fleet Growth

Subdued growth in the global tanker fleet helped to sustain the sharp rises in tanker freight rates in 2022. The crude tanker fleet grew by 4.2 % in 2022, which was insufficient to dispel the sharp increases described in part (ii). In addition, tanker fleet growth is projected to remain moderate in 2023, with just 1.9 % growth expected.

With Chinese oil imports expected to grow in 2023 and 2024 following the lifting of pandemic restrictions in late 2022, and with the changing trade patterns towards longer-haul voyages following the ban on Russian oil, tanker prices may remain elevated for some time.

[78] For example, if a ship carries 10,000 metric tonnes of cargo over a distance of 1,000 nautical miles, the total tonne-miles would be 10,000 x 1,000 = 10 million tonne-miles.
[79] EU sanctions against Russia explained – European Commission, US Bans imports of Russian Oil, UK ban on Russian oil & oil products
[80] Seaborne Trade Monitor Volume 10 No. 5, Clarkson's Research

Glossary of Terms:

Bulk Port Traffic: Refers to three market segments of port and shipping activity, Liquid, Dry, and Break Bulk which are explained below.

Break Bulk: Involves loose, non-containerised cargo stowed directly into a ship's hold. Commodities such as timber, steel products, machinery and general project cargo make up the majority of break bulk cargo. The main drivers in this segment's volumes are construction activities and the delivery of project cargo.

Dry Bulk: Commodities in this segment include animal feed, iron ore, coal, fertilizer, cement, bauxite and alumina. This market segment can be particularly affected by adverse or mild weather conditions during the course of a year.

Liquid Bulk: Is a commodity that ranges from petrol for cars to crude oil or liquefied natural gas. Due to their physical characteristics, these are not boxed, bagged or hand stowed, but are instead stored in large tank spaces, known as the holds, of a tanker.

LoLo (Lift-on Lift-off): LoLo involves a specific ship that engages in the transportation of freight that is loaded and unloaded with the use of different cranes or other lifting devices at a port. To describe the capacity of containership or container terminals, twenty-foot equivalent unit (TEU) is used to measure such parameters.

The **twenty-foot equivalent unit** (often TEU or teu) is an inexact unit of cargo capacity often used to describe the capacity of container ships and container terminals.

RoPax: The sector that uses vessels capable of carrying passengers, passenger vehicles, and RoRo freight.

RoRo (Roll-on Roll-off): RoRo involves vessels designed to carry wheeled cargo, such as cars, trucks, semi-trailer trucks, trailers, etc., that can be driven on and off the ship on their own wheels, or using a platform vehicle, such as a self-propelled modular transporter.

TEU: Twenty Foot Equivalent Unit – used to measure containership and container capacity.

TCR: time charter rates are set for shipping vessels for a fixed period of time instead of a certain number of voyages. Rate averages allow comparisons between periodic changes in a shipping company's performance.

VLSFO: Very Low Sulphur Fuel Oil containing a maximum of 0.5 % sulphur.

Product tankers: are used to transport petroleum-based chemicals.

DWT: Deadweight tonnage, measurement of ships weight carrying capability.

Merchandise Trade: Goods which add or subtract from the stock of material resources of a country by entering (imports) or leaving (exports) its economic territory.

Sources of Data:

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

Irish Port Companies:

Drogheda Port Company
Dublin Port Company, including Dundalk Port Company
Dún Laoghaire Rathdown County Council[81]
Galway Port Company
Greenore Port Company
New Ross Port Company
Port of Cork, including Bantry Bay Port Company
Port of Waterford Company
Port of Youghal Company
Rosslare-Europort
Shannon Foynes Port Company
Wicklow County Council[82]

Northern Irish Port Companies:

Belfast Harbour Commissioners
Foyle Port
Port of Larne
Warrenpoint Harbour Authority

[81] Dún Laoghaire Harbour Company was dissolved in October 2018 under Statutory Instrument 391/2018. The Harbour was transferred to Dún Laoghaire Rathdown County Council.
[82] Wicklow Port Company was dissolved in August 2016 under Statutory Instrument 462/2016. The Company was transferred to Wicklow County Council.

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