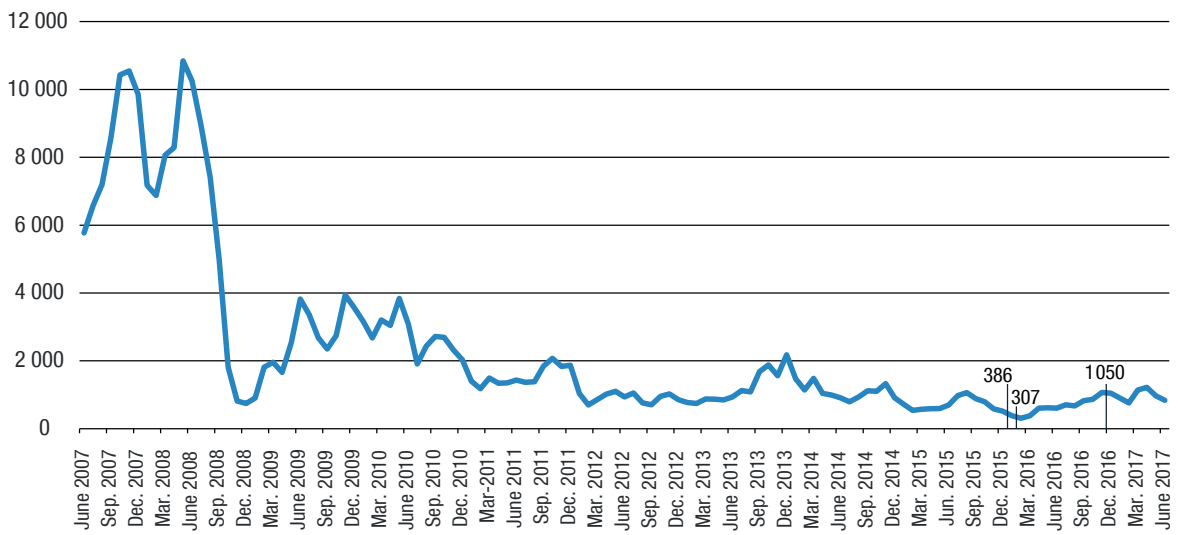
B. DRY BULK FREIGHT RATES

2016 was another difficult year for the dry bulk sector, which continued to face overcapacity and weak growth in demand. The year started with historically low freight rates as demand remained weak and the inflow of new vessels continued.

The Baltic Exchange dry index experienced record lows in 2016. It reached its lowest average – 307 – in February (figure 3.3). Dry bulk demand, especially for iron ore, improved towards year's end, when Chinese imports expanded in response to a new round of fiscal and financial stimuli launched by the Government to boost economic growth (Clarksons Research, 2017d). This mainly benefited the Capesize bulk carriers as they transported the key commodity of iron ore into China. The industry continued taking steps to limit fleet supply growth through increased scrapping and postponing or reducing deliveries of new vessels during 2016. As previously noted, the fleet capacity of bulk carriers grew by 2.22 per cent, one of its lowest rates of growth since 1999 (Clarksons Research, 2017d). As such, the management of supply growth and the boost in demand supported freight rates as they increased in the second half of the year, with the Baltic Exchange dry index reaching 1,050 in December 2016. Nevertheless, freight rates remained relatively low compared with historical data.

As a result of market imbalance in the dry bulk market, average earnings fell in all fleet segments, with figures dropping below $4,000 per day (Clarksons Research, 2017d).

Figure 3.3. Baltic Exchange dry index, 2007–2017



Source: UNCTAD secretariat calculations, based on data from the Baltic Exchange.

Notes: The index is made up of 20 key dry bulk routes measured on a time charter basis and covers Handysize, Supramax, Panamax and Capesize dry bulk carriers, which carry commodities such as coal, iron ore and grain. Index base: 1985 = 1,000 points.

1. Capesize

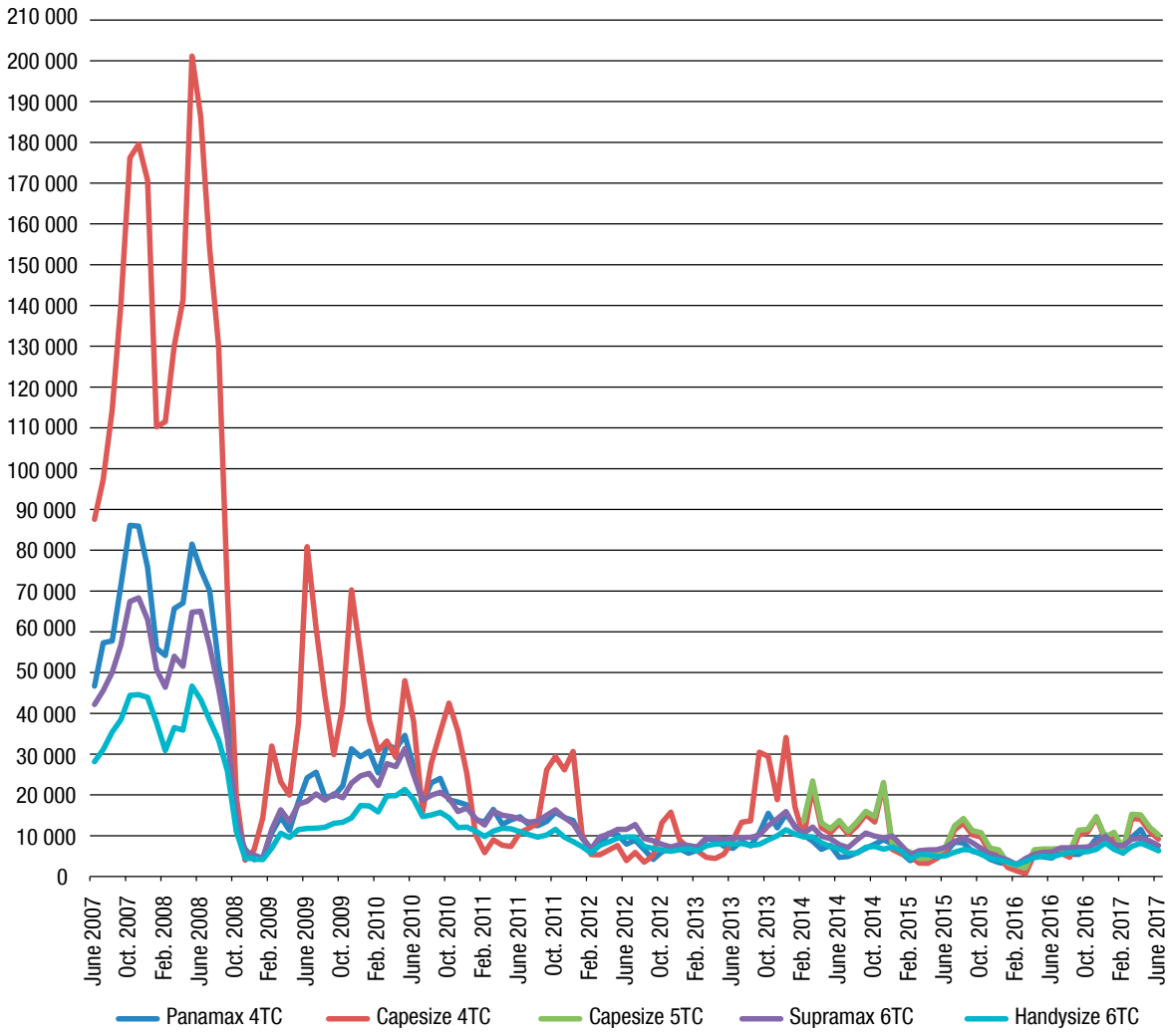
Capesize spot and charter rates continued to be volatile and highly depressed during much of 2016, affected by supply overcapacity and weak demand stemming from weak commodity markets and macroeconomic conditions. Rates dropped to their lowest level in the first half of the year, reaching an unprecedented point, as noted by the Baltic Exchange Capesize four timecharter average, which recorded an all-time low of $696 per day in March 2016 (figure 3.4). This resulted in many owners laying their ships up.

Yet Capesize earnings did improve in the second half of 2016 and into early 2017, supported partly by more positive trends in demand, in particular strong growth in iron ore trade. Furthermore, cheap voyage rates encouraged new long-haul trade, such as coal from Colombia to India and the Republic of Korea (Barry Rogliano Salles, 2017). Nonetheless, the market remained disturbed by oversupply, despite relatively slow fleet expansion (1.9 per cent in dwt) (Clarksons Research, 2017d). Postponement of newbuilding deliveries, along with a high level of scrapping and improved trade towards the end of the year, had a positive impact on earnings. As a result, the Capesize four timecharter average for the fourth quarter was at $11,447 per day, compared with an annual average of $6,360.

2. Panamax

In 2016, the Panamax sector also remained under pressure, reflecting an imbalance in fundamentals, with declining coal trade for the second year in a row and continued oversupply, which was curbed to a certain extent by substantial demolition activity. The average of the four timecharter routes for the Baltic Exchange Panamax index was about $5,615 per day, close to the previous year average of $5,507 per day.

Figure 3.4. Daily earnings of bulk carrier vessels, 2007–2017 (Dollars per day)



Source: UNCTAD secretariat calculations, based on data from Clarksons Research Shipping and the Baltic Exchange.
Abbreviations: Panamax 4TC and Capesize 4TC, average rates of the four time charter routes; Capesize 5TC, average rates of the five time charter routes; Supramax 6TC and Handysize 6TC, average rates of the six time charter routes.

However, in late 2016 and early 2017, Panamax earnings improved slightly, supported by seasonally strong grain shipments from South America and firmer coal trade, as well as tighter expansion in fleet capacity. Overall, Panamax fleet capacity expanded by 0.6 per cent in 2016, the slowest pace of growth recorded since 1992 (Clarksons Research, 2017d). The average of the four timecharter routes for the Baltic Panamax index reached $10,298 per day in December 2016, compared with $3,031 per day in January 2016.

3. Handysize and Supramax

Market conditions in smaller bulk carrier sectors were poor in 2016, with high levels of supply growth impaired by relatively slow demand growth in minor bulk trade and coal. As in other segments, the first half of the year was challenging; as a result, rates decreased and owners were compelled to lay up ships, delay newbuilding deliveries and cancel orders. Adjustments in supply, combined with renewed demand for raw materials (coal, iron ore and grain), led to market recovery and better freight rates in the second half of the year. The final quarter average was at $6,988 per day, whereas, the annual average of the six time charter routes for the Baltic Handysize index was traded at $5,244 per day in 2016, compared with $5,355 per day in 2015.

The annual average of the six time charter routes for the Baltic Supramax index was traded at $6,270 per day in 2016, compared with $6,922 per day in 2015. The final quarter average stood at $8,418 per day.

Sustained growth in demand and low contracting supply capacity will be necessary to produce a shift in fundamentals and raise freight rates.

Although the vessels order book was reduced significantly in 2016 through scrapping, delayed deliveries, low contracting activity and order cancellations, it is still too large, given current oversupply and future demand expectations (Clarksons Research, 2017d). As previously noted, prospects reflect a firming up in demand in the dry bulk trade sector, with the five major bulk commodities projected to expand in 2017. Therefore, it is essential that shipowners manage the supply side of the market carefully and limit its expansion. Charter rates are also expected to improve for most of the dry bulk segments in 2017, with the steepest recovery expected to take place in the Capesize segment.

C. TANKER FREIGHT RATES

In 2016, freight rates in all tanker segments went down from the high level of 2015, but were not far from the five-year average across most segments. Market conditions were altered with the arrival of new vessels and a slowdown in oil demand growth.

As shown in table 3.2, the average dirty tanker index declined to 726 in 2016, compared with 821 in 2015. This represents a decrease of 12 per cent. The average Baltic Exchange clean tanker index reached a low of 487 points in 2016, compared with 638 in 2015, 24 per cent less than the annual average in 2015.

Market fundamentals worsened in the crude tanker segment in 2016, as the fleet expanded rapidly, surpassing demand. This led to steep declines in freight rates. As previously highlighted, global seaborne tanker trade expanded by 4.2 per cent in 2016 over the previous year. Contributing factors included a sharp rise in oil imports into China, India and the United States, as well as the lifting of oil sanctions on the Islamic Republic of Iran, which increased export shipments from the Middle East. At the same time, global tanker deliveries also increased. Carriers of liquefied natural gas and other types of gas continued their high growth (+9.7 percent); oil tankers grew at 5.8 per cent and chemical tankers, at 4.7 per cent, following several years of low growth.

Freight rates for product tankers also fell in 2016 as market fundamentals deteriorated. The market observed about 4.6 per cent growth in the demand for seaborne products trade, together with fast growth of about 6.1 per cent in the product tanker fleet (Clarksons Research, 2017b).

These imbalances in markets fundamentals had a repercussion on earnings which came under further pressure, particularly in the last six months of the year. Overall, tanker earnings averaged about $17,917 per day in 2016, a 42 per cent decline, compared with 2015. This decline was affected by the rise in crude oil prices, which also had an impact on bunker costs. (Clarksons Research, 2017b). As noted in table 3.3, most Worldscale figures were below 2015 levels. Most annual average Worldscale spot rates for very large and ultralarge crude carriers declined in 2017. For instance, Worldscale values for the Persian Gulf–North–West

Table 3.2. Baltic Exchange tanker indices, 2007–2017

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Percentage change (2015–2016)	2017 (first half year)
Dirty Tanker index	1 124	1 510	581	896	782	719	642	777	821	726	-12	838
Clean Tanker index	974	1 155	485	732	720	641	605	601	638	487	-24	631

Source: Clarksons Research, Shipping Intelligence Network – Timeseries, 2017e.
Notes: The Baltic Exchange dirty tanker index is an index of charter rates for crude oil tankers on selected routes published by the Baltic Exchange. The Baltic Exchange clean tanker index is an index of charter rates for product tankers on selected routes published by the Baltic Exchange. Dirty tankers generally carry heavier oils – heavy fuel oils or crude oil – than clean tankers. The latter generally carry refined petroleum products such as gasoline, kerosene or jet fuels, or chemicals.

Table 3.3. Tanker market summary: Clean and dirty spot rates, 2010–2016 (Worldscale 100)

Vessel type	Routes	2010	2011	2012	2013	2014	2015	2016												Dec. 2015–Dec. 2016 (Percentage change)
		Dec.	Dec.	Dec.	Dec.	Dec.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
Very large/ultralarge crude carriers (200 000 dwt+)																				
	Persian Gulf–Japan	61	59	48	64	77	90	76	62	62	81	66	53	43	37	37	55	64	80	-11.1%
	Persian Gulf–North-West Europe	57	59	26	..	32	59	43	36	38	44	36	29	25	28	30	30	43	53	-10.2%
	Persian Gulf–Singapore					71	83	63	63	62	67	64	53	43	34	33	52	73	83	0.0%
	Persian Gulf–United States Gulf	36	37	28	37	34	49	38	34	37	38	37	31	25	24	23	33	39	48	-2.0%
	West Africa–China	..	58	47	61	63	77	72	76	71	63	59	59	50	41	41	60	66	78	1.3%
	West Africa-United States Gulf	..	..	..	..	68	90	87	63	65	65	57	53	49	49	49	53	53	53	-41.1%
Suezmax (120 000–200 000 dwt)																				
	West Africa–Caribbean/East Coast of North America	103	83	65	97	79	81	81	76	74	77	68	74	61	36	71	68	65	80	-1.2%
	West Africa–North-West Europe	118	86	70	102	76	80	83	82	80	84	81	79	60	39	72	80	95	106	32.5%
	Mediterranean–Mediterranean	113	86	67	99	84	97	109	86	79	78	76	80	70	64	66	72	117	112	15.5%
Aframax (70 000–120 000 dwt)																				
	Caribbean–Caribbean/East Coast of North America	146	112	91	155	108	130	118	133	120	120	106	95	76	76	91	98	114	115	-11.5%
	Indonesia–Far East	111	104	90	99	116	126	136	115	165	119	90	96	90	76	63	80	85	118	-6.3%
	Mediterranean–Mediterranean	138	130	85	100	106	97	107	93	108	88	108	109	84	66	86	70	128	130	34.0%
	Mediterranean–North-West Europe	133	118	80	107	108	115	107	89	96	83	103	111	80	63	81	76	143	106	-7.8%
	North-West Europe–North-West Europe	162	122	93	135	113	113	112	99	113	111	103	107	90	79	93	93	101	112	-0.9%

Table 3.3. Tanker market summary: Clean and dirty spot rates, 2010–2016 (Worldscale 100) *(continued)*

Vessel type	Routes	2010	2011	2012	2013	2014	2015	2016												Dec. 2015–Dec. 2016 (Percentage change)
		Dec.	Dec.	Dec.	Dec.	Dec.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
Panamax 40 000–70 000 dwt)																				
	Caribbean–East Coast of North America	..	..	..	..	113	160	120	130	120	120	115	120	95	88	85	85	120	134	-16.3%
	Mediterranean–Caribbean–East Coast of North America	146	121	160	105	130	n.a.	n.a.	118	98	110	n.a.	120	87	86	82	79	99	115	
	Mediterranean–Mediterranean	168	153	168	113	n.a.	150	n.a.	125	120	114	n.a.	136	108	94	96	104	133	156	4.0%
	North-West Europe–Caribbeean	..	..	..	..	118	129	134	88	123	104	104	93	93	80	84	81	95	129	0.0%
Clean tankers																				
80 000–120 000 dwt	Persian Gulf–Japan	..	..	..	81	102	90	111	97	97	87	86	82	89	104	63	88	75	87	-3.3%
50 000–80 000 dwt	Persian Gulf–Japan	..	..	..	93	110	94	121	102	114	100	102	92	101	111	86	67	67	87	-7.4%
35 000–50 000 dwt	United States Gulf–North-West-Europe	..	..	..	..	142	105	95	109	110	110	84	68	67	62	70	57	92	92	-12.4%
25 000–35 000 dwt	Singapore–East Asia	193	..	220	167	120	110	131	130	131	131	130	130	130	130	130	111	111	125	13.6%

Source: UNCTAD secretariat calculations, based on Drewry Shipping Insight, various issues.
Note: Figures are indexed according to voyage charter rates per ton for a 75,000-dwt tanker.

Europe route stood at 36 points, compared with 63 in 2015. The West Africa–United States Gulf route (TD4) average for December 2015 experienced a 40 per cent drop from December 2015 levels. Worldscale yearly average rates for most Baltic Exchange Suezmax tanker routes were also lower than 2015 levels. The Worldscale average for the West Africa–Caribbean–East Coast of North America route (TD5) was 69 points, compared with 82 in 2015. Worldscale values for the West Africa–North–West Europe route (TD20) stood at 78 points, compared with 80 in 2015. Average clean tanker freight rates were also significantly lower than in 2015.

In 2016, the oil tanker segment experienced a difficult year, spilling over to 2017 as freight rates for all crude oil and product tankers continued their decline, following a brief improvement at the end of 2106. The outlook appears challenging in the short term, given expectations for continued strong supply growth and numerous risks to the demand side.

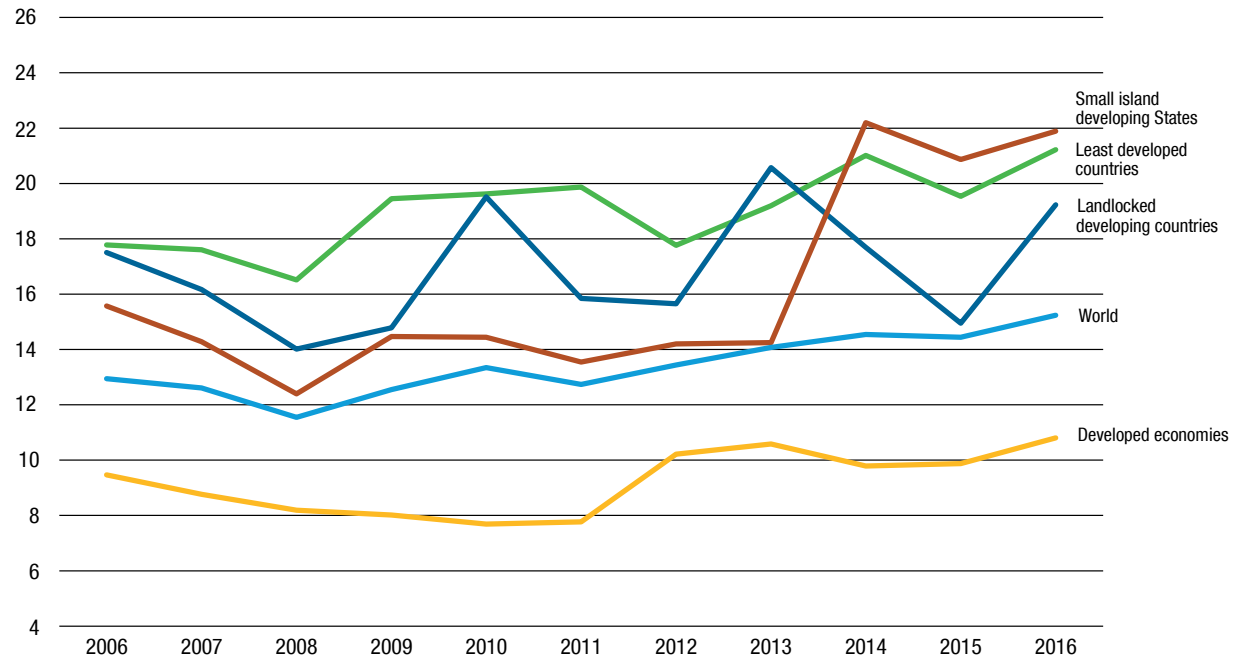
However, one important regulatory development may reduce fleet supply and support freight rates in the future. New IMO ballast water management standards, which became effective in September 2017, require ships using ballast water in international trade to be retrofitted with a ballast water treatment system. This would come at an estimated cost ranging between $1 million and $5 million (Barry Rogliano Salles, 2017) that may push shipowners to increase scrapping of their old tonnage with low earnings potential, instead of incurring the additional cost. This may also lead to better balanced market fundamentals as supply may contract considerably, in particular in the very large ore carrier segment, which constitutes a big fraction of today's older tonnage (Danish Ship Finance 2016).

D. INTERNATIONAL TRANSPORT COSTS

Figure 3.5 shows the transport costs across all modes of transport as a share of the value of imports. Figures are derived by calculating the c.i.f–f.o.b. margins (costs of transport and insurance of international trade) from 2006 to 2016. On average, low-income economies and geographically disadvantaged countries, namely landlocked developing countries and small island developing States, face relatively higher transport costs than other economic groupings.

Given that average transport costs represent about 21 per cent of the value of imports for least developed countries, 19 per cent for landlocked developing countries and almost 22 per cent for small island developing States, compared with a world average of 15 per cent, it is a priority to deal with the factors that drive up transport expenditure in these countries. While other considerations can determine a country's level of participation in value chains – local production costs, policy framework, just-in-time production methods and geographical distance between trading partners, for example – the incidence of relatively more prohibitive

Figure 3.5. Transport and insurance costs of international trade, 2006–2016 (Percentage share of value of imports)



Source: UNCTAD secretariat calculations.
Note: All modes of transport; the least developed countries grouping includes 48 countries for all periods up to 2016.

transport costs in the least developed countries, landlocked developing countries and small island developing States may be an important factor in their marginalization from global and regional transport and trading networks.

Distance and connectivity may be relevant factors in the case of landlocked developing countries and small island developing States, as illustrated by estimates showing that intercontinental trade increases transport and insurance costs by 2–4 per cent, as compared with comparable intracontinental trade (OECD, 2016). Other estimates show that for imports of electrical machinery for example, c.i.f.–f.o.b. margins are significantly lower for Chinese imports from Viet Nam and Hong Kong (China) than from other Asian economies and from Brazil and South Africa. Similarly, United States imports from Mexico and Canada have much lower c.i.f.–f.o.b. margins than those from other trading partners, as do French imports from European partners (OECD, 2016). However, economic distance, which is captured by shipping connectivity and a country's position within global shipping networks, may contribute more to rising international transport costs than geographical distance, it may be that is of important factor for international transport costs.

Fuel costs are also a key cost-factor heading in overall transport costs. An increase at the global level of oil prices from $25 to $75 per barrel increases the estimated c.i.f.–f.o.b. margin by 1.4 percentage points, all other factors being equal (Miao and Fortanier, 2017). Likewise, a reduction in oil prices from, for example $100 per barrel to $50 per barrel reduces the c.i.f.–f.o.b. margin by nearly 1 percentage point. These findings were corroborated in an UNCTAD study estimating the elasticity of shipping freight rates to oil price and bunker fuel costs. The study concluded that container freight rates, as well as the rates for shipping iron ore and oil, were positively correlated with fuel costs (UNCTAD, 2010).

However, recent trends suggest that the relatively lower oil and fuel cost environment prevailing since mid-2014 had not been reflected in the c.i.f.–f.o.b. margins (figure 3.5). This is particularly evident in the case of the landlocked developing countries and small island developing States. This may suggest that other transport cost determinants, such as product and trade composition, size and economies of scale or their lack, remoteness, transport connectivity, insufficient or inadequate infrastructure, as well as trade imbalances may have had a larger impact. Furthermore, it is also possible that lower fuel costs may have produced a rebound effect through increased demand and expenditure for transport services.

It is generally recognized that the incidence of higher transport costs is more significant in developing countries that specialize in low value goods with little potential for differentiation. This trend is more prominent in rural areas where transport challenges are greater and where access to market places is more difficult. For example, port cargo-handling charges in the Caribbean small island developing States are estimated to vary between $200 and $400 per container, compared for example, to $150 per container charged in Argentina. Similarly, the cost of transport and insurance is reported to be some 30 per cent higher than the world average. Freight rates between Miami, Florida (United States) and the Caribbean are similar to those paid for the much longer distance between Miami and Buenos Aires, Argentina. A container shipped between the port of Shanghai and the port of Los Angeles over a distance of over 19,000 nautical miles attracts a freight rate of approximately $700, while a box shipped from port of Kingston, Jamaica to Oranjestad, Aruba over 513 nautical miles attracts an average freight rate of $2,800 (UNCTAD, 2014). Overall, these trends create an effective barrier to trade which undermines their growth and prospects for sustainable development. However, research shows that lowering transport costs and improving infrastructure can foster trade and reduce the impact of barriers such as remoteness and distance in the case of the small island developing States (Borgatti, 2008).

In landlocked developing countries, transport costs represent an average of 77 per cent of the value of exports. Poor road infrastructure is responsible for 40 per cent of the transport costs in coastal countries, compared with 60 per cent in landlocked countries (Limão and Venables, 2000). Reflecting the particular challenge of landlocked developing countries, revenue losses from inefficient border procedures may exceed 5 per cent of GDP (an increase by $2.6 trillion) (Moïsé and Le Bris, 2013). Together, these factors heighten the overall costs of transport, which account for a larger share of the value of imported goods. The cost burden in landlocked developing countries is a constraint not only to imports but to exports – so is the cost premium associated with exporting a container from landlocked developing countries versus neighbouring coastal countries, which can range from 8–250 per cent (Arvis et al., 2010).

E. OUTLOOK AND POLICY CONSIDERATIONS

The weak trade economy since the 2008 recession and the overcapacity of the shipping industry have continued to limit growth in shipping. This was still true in 2016, where low demand and high overcapacity brought down freight rates and led to low profitability and a depressed year for all market segments. Despite some encouraging signs in early 2017 for most segments, the market situation is still challenging. Rates and demand levels remain low, which is why it is important to effectively manage overcapacity.

In the container ship segment, new mergers and acquisitions and mega alliances established in 2016 and 2017 may lead to better handling of supply and fleet

utilization, which in turn could lead to improved markets and profitability for the container shipping sector and services for shippers. However, there might be a risk that shipping lines exert market power, constrain supply and raise prices in the long run. Therefore, regulators will need to be vigilant of future developments in these alliances to ensure fair competition. It is also important to assess the implications of recent trends in liner shipping, including for small countries, and to revisit the rules governing consortiums and alliances to determine whether these should be regulated differently, with a view to balancing the interests of shippers and carriers and prevent abuse of market power.

Well-functioning, efficient, resilient freight transport systems are a prerequisite for successful trade and economic integration. They are also necessary to attract investment, develop business and build productive capacities. Helping countries, in particular small island developing States and landlocked developing countries, to manage the factors behind the increases in transport costs is key. This can be done by implementing soft measures, such as providing support for enabling frameworks and training, and facilitating technology transport; as well as hard measures, such as upgrading infrastructure and improving equipment procurement.