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DEVELOPMENTS IN INTERNATIONAL SEABORNE TRADE

In 2015, world gross domestic product (GDP) expanded by 2.5 per cent, the same rate as in 2014. Diverging individual country performances unfolded against the background of lower oil and commodity price levels, weak global demand and a slowdown in China. In tandem, global merchandise trade by volume weakened, increasing by only 1.4 per cent, down from 2.3 per cent in 2014.

In addition in 2015 – for the first time in the records of UNCTAD – world seaborne trade volumes were estimated to have surpassed 10 billion tons. Shipments expanded by 2.1 per cent, a pace notably slower than the historical average. The tanker trade segment recorded its best performance since 2008, while growth in the dry cargo sector, including bulk commodities and containerized trade, fell short of expectations.

UNCTAD expects world GDP to further decelerate to 2.3 per cent in 2016, while, according to estimates by the World Trade Organization, merchandise trade volumes are expected to remain steady and grow at the same rate as in 2015. Growth in world seaborne trade shipments is expected to pick up marginally in 2016, with the estimated pace remaining relatively slow on a historical basis.

While a slowdown in China is bad news for shipping, other countries have the potential to drive further growth. South–South trade is gaining momentum, and planned initiatives such as the One Belt, One Road Initiative and the Partnership for Quality Infrastructure, as well as the expanded Panama Canal and Suez Canal, all have the potential to affect seaborne trade, reshape world shipping networks and generate business opportunities. In parallel, trends such as the fourth industrial revolution, big data and electronic commerce (e-commerce) are unfolding and entail both challenges and opportunities for countries and maritime transport.

This chapter covers developments in January 2015–July 2016. Section A reviews the overall performance of the global economy and world merchandise trade; section B, developments in world seaborne trade, including by market segment; and section C, relevant trends and developments that may increase growth, reinvigorate trade and boost maritime transport activities and seaborne trade volumes, and that entail both challenges and opportunities These need to be further monitored and taken into account when devising maritime transport policies and making growth projections and investment decisions in transport. Section D concludes with an outlook.

A. WORLD ECONOMIC SITUATION AND PROSPECTS

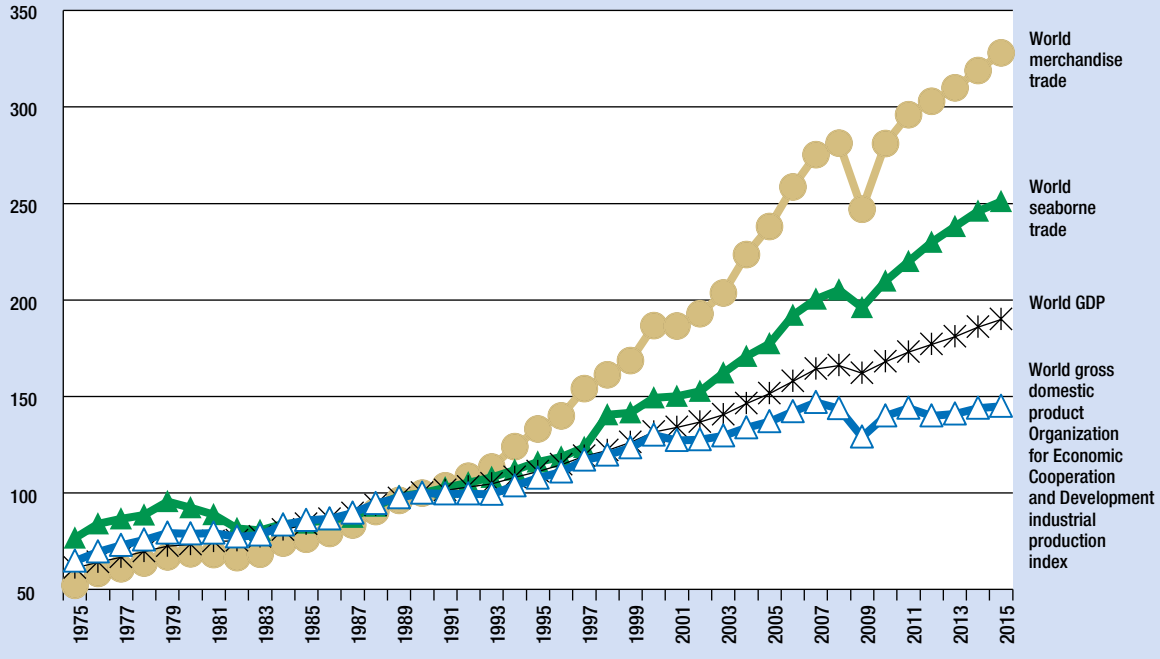
Although a number of factors are increasingly redefining seaborne trade patterns, maritime trade flows continue to be largely determined by developments in the macroeconomic landscape. Seaborne trade volumes have generally moved in tandem with economic growth, industrial activity and merchandise trade, albeit at varied speeds (figure 1.1).

1. World economic growth

Falling short of expectations and below the pre-financial crisis levels, growth in world GDP expanded by 2.5 per cent in 2015, the same rate as in 2014 (table 1.1). Diverging individual country performances unfolded against the background of lower oil and commodity price levels, weak global demand and a slowdown in China. China's transition from an investment and export led-growth model has had an impact on global manufacturing activity, aggregate demand, investment and commodity prices. An additional factor dampening global growth was the reduced positive effect of lower oil prices, partly offset by the negative impact on investment in the oil sector and the import demand of oil-exporting countries.

Developing country growth decelerated from 4.4 per cent in 2014 to 3.9 per cent in 2015, although still accounting for 70 per cent of global expansion (International Monetary Fund, 2016). China's economy has slowed over the past few years, although it is still growing at a relatively high rate; GDP growth decelerated from 7.2 per cent in 2014 to 6.9 per cent in 2015. China may be said to be growing at two speeds, with its manufacturing sector facing overcapacity and limited growth, while its consumer-driven services sector is growing at a rapid pace (The Economist Intelligence Unit, 2016a). India is now growing faster than China, as its GDP growth, supported by factors such as infrastructure investment, accelerated to 7.2 per cent in 2015. Apart from developments in China and continuing weak demand conditions, other

Figure 1.1. Organization for Economic Cooperation and Development industrial production index and indices for world gross domestic product, seaborne trade and merchandise trade, 1975–2015



Source: UNCTAD secretariat calculations, based on Organization for Economic Cooperation and Development, 2016; UNCTAD, *Review of Maritime Transport*, various issues; UNCTAD, 2016a; World Trade Organization, 2014; and World Trade Organization, 2016.

Note: 1990=100. Indices calculated based on GDP and merchandise trade in dollars and seaborne trade in metric tons.

trends have also affected many developing countries, namely, the recession in Brazil, the low commodity and energy price environment, and geopolitical tensions and domestic conflicts in a number of countries.

Some estimates suggest that a sustained 1 percentage point decline in Brazil, China, India, the Russian Federation and South Africa could reduce growth in other emerging and developing economies by around 0.8 percentage points and global growth by 0.4 percentage points (World Bank, 2016). This is illustrated by GDP growth in Latin America, which has recorded its worst performance since 1999, expanding at merely 0.2 per cent in 2015. Similarly, GDP growth in Africa decelerated from 3.7 per cent in 2014 to 2.9 per cent in 2015. Growth in the least developed countries remained relatively firm, albeit slowing from 5.5 per cent in 2014 to 3.6 per cent in 2015. This rate remains below the Sustainable Development Goals' target of at least 7 per cent GDP growth and may potentially undermine progress in achieving the 2030 Agenda for Sustainable Development and the Goals.

GDP in countries with economies in transition declined by 2.8 per cent, owing to the recessions in the Russian Federation and Ukraine, as well as low commodity prices, net capital outflows, falling real wages, conflicts and unilateral coercive measures. While still fragile, the recovery in developed economies continued in 2015, with GDP expanding by 2.0 per cent, up from 1.7 per cent in 2014. In the United States of America, GDP expanded by 2.6 per cent, while growth in the European Union improved to 2.0 per cent, supported in particular by higher domestic consumption and investment levels and by falling energy prices. GDP growth in Japan remained subdued, at 0.5 per cent, reflecting the country's continued struggle against economic stagnation.

2. World merchandise trade

Global merchandise trade by volume (that is, trade in value terms, adjusted to account for inflation and exchange rate movements) increased by 1.4 per cent in 2015, down from 2.3 per cent in 2014 (table 1.2). Trade in volumes held up relatively well, compared with trade in value, which recorded a decline of 13 per cent, due to fluctuations in commodity prices and exchange rates (World Trade Organization, 2016). Together, the slow recovery in Europe, weaker global investment and the slowdown in large developing economies have depressed global trade. Overall, the

Table 1.1 World economic growth by selected country grouping, 2013–2016 (Percentage change)

	2013	2014	2015	2016 (forecast)
World	2.2	2.5	2.5	2.3
Developed economies	1.1	1.7	2.0	1.6
European Union (28 countries)	0.3	1.4	2.0	1.8
Germany	0.3	1.6	1.7	1.7
France	0.7	0.2	1.2	1.5
Italy	-1.8	-0.3	0.8	0.8
United Kingdom of Great Britain and Northern Ireland	2.2	2.9	2.3	1.8
Japan	1.4	0.0	0.5	0.7
United States	1.7	2.4	2.6	1.6
Developing economies	4.6	4.4	3.9	3.8
Africa	2.0	3.7	2.9	2.0
South Africa	2.2	1.5	1.3	0.3
Asia	5.5	5.5	5.1	5.1
China	7.7	7.3	6.9	6.7
India	6.3	7.0	7.2	7.6
Western Asia	3.4	3.0	2.9	2.1
Developing America	2.7	1.1	0.2	-0.2
Brazil	3.0	0.1	-3.8	-3.2
Least developed countries	4.9	5.5	3.6	3.8
Transition economies	2.0	0.9	-2.8	0.0
Russian Federation	1.3	0.7	-3.7	-0.3

Source: UNCTAD, 2016a.
Note: Calculations for country aggregates based on GDP in constant 2005 dollars.

impact of Asia, which had contributed more than any other region to the recovery of world merchandise trade after the financial crisis, appears to be easing. The contribution to global import growth from Eastern Asia dropped significantly, from an average of 27 per cent in the previous decade to 8.4 per cent in 2015 (United Nations Department of Economic and Social Affairs, 2016). In comparison, Europe contributed 59 per cent to global import growth, in contrast to the negative contribution in 2012 and 2013. With regard to global export growth, Europe contributed 44 per cent and Asia, 35 per cent (World Trade Organization, 2016). Other regions had limited contributions.

Developing country trade was particularly weak in 2015, with export and import volumes, respectively, expanding at the marginal rate of 0.4 per cent, a significant drop from growth in previous years. The contraction of both exports and imports in Eastern Asia had negative impacts on the trade of other developing economies, in particular manufacturing export-dependent economies in developing Asia. China accounted for about 20 per cent of the slowdown in import growth of developing economies and countries with economies in transition in 2014–2015 (United Nations Department of Economic and Social Affairs, 2016). Export growth in the oil-exporting regions of Africa and Western Asia and countries with economies in transition remained positive. With regard to imports, demand in commodity and oil export-dependent countries and regions such as Africa, Latin America and Western Asia and countries with economies in transition either weakened or declined due to erosion in their terms of trade and purchasing power. In contrast, India experienced a surge in its import demand (10.1 per cent).

For the second consecutive year, developed economies were more active in driving global trade, with exports rising slightly (2.2 per cent) while imports grew at a faster pace, by 3.3 per cent. United States exports declined marginally (-0.2 per cent) while in Japan, modest growth, a weaker currency and a slowdown in key trading partners in Eastern Asia dampened both exports and imports. Import demand in the United States and Europe held up relatively well (4.8 per cent and 3.6 per cent, respectively), owing to a stronger dollar and relatively solid economic growth in the Unites States and, arguably, due to recovery in intra-European Union trade.

A trend with potentially long-term implications for seaborne trade and shipping is the apparent weakening of the trade–GDP growth ratio. In recent years, world merchandise trade has been expanding at a relatively slower pace, either matching or below world GDP growth levels, while in earlier years, on average, international trade grew significantly faster than world GDP. The trade–GDP growth ratio was estimated at 0.62 in 2015, down from 0.94 in 2014 and

Table 1.2 Growth in merchandise trade volume by selected country grouping, 2013–2015 (Percentage change)

Exports				Imports		
2013	2014	2015		2013	2014	2015
3.3	2.3	1.4	**World**	2.7	2.4	1.6
2.2	1.9	2.2	**Developed economies**	0.0	2.8	3.3
1.8	1.7	3.2	**European Union**	-0.9	3.3	3.6
-1.5	0.6	-1.0	**Japan**	0.3	0.6	-2.8
2.8	4.4	-0.2	**United States**	1.0	4.3	4.8
4.6	3.1	0.4	**Developing economies**	6.3	2.5	0.4
-0.7	0.0	2.1	**Africa**	6.5	5.7	1.5
1.9	3.3	2.9	**Developing America**	3.6	0.2	-1.8
5.6	3.3	-0.1	**Developing Asia**	6.8	2.6	0.7
6.7	4.9	-0.5	**Eastern Asia**	8.9	2.8	-1.6
7.7	6.8	-0.9	**China**	9.9	3.9	-2.2
4.1	5.2	-0.2	**South Asia**	-0.4	4.6	7.2
8.5	3.5	-2.1	**India**	-0.3	3.2	10.1
4.7	3.5	-0.3	**South-East Asia**	4.3	1.7	2.8
3.8	-2.3	2.0	**Western Asia**	7.4	1.8	2.0
2.3	0.5	0.9	**Transition economies**	-0.5	-7.6	-19.4

Source: UNCTAD secretariat calculations, based on UNCTADstat and national sources.
Note: Trade volumes derived from international merchandise trade values deflated by UNCTAD unit value indices.

1.4 in 2013. While international trade is still influenced by the Great Recession (2009), the question is whether the continued slowdown in merchandise trade results mainly from cyclical factors (weaker GDP growth and macroeconomic cycles) or a break in the long-term trade–GDP relationship, indicating that structural factors are at play, such as the potential start of a de-globalization pattern (box 1.1).

In sum, global recovery continues but at a slower pace, with momentum created by China and other developing economies in Asia increasingly easing. Developments in the economy of China and related spillover effects on other large developing countries impact all countries, both developed and developing. Other factors – namely, lower commodity and oil price levels, eroding terms of trade in many commodity and oil-exporting countries, weaker global demand and investment, geopolitical tensions and political unrest – contribute to heightening uncertainty, increasing downside risks and challenging the outlook for merchandise and seaborne trade. A trend that was reinforced in 2015 and that has a bearing on the long-term outlook for seaborne trade and shipping is the evolving trade–GDP relationship.

B. WORLD SEABORNE TRADE

Maritime transport is the backbone of globalization and lies at the heart of cross-border transport networks that support supply chains and enable international trade. An economic sector in its own right that generates employment, income and revenue, transport – including maritime transport – is cross-cutting and permeates other sectors and activities. Maritime transport enables industrial development by supporting manufacturing growth; bringing together consumers and intermediate and capital goods industries; and promoting regional economic and trade integration.

The importance of transport has been recognized in the Sustainable Development Goals, which have integrated infrastructure and transport as an important consideration. While none of the Goals is exclusively dedicated to transport or maritime transport in particular, transport is considered a critical factor for the effective realization of eight Goals and 11 targets, both directly and indirectly. For instance, as part of the implementation process, the United Nations Inter-agency Expert Group on Sustainable Development

Box 1.1 Global trade slowdown and the trade–gross domestic product relationship

Long-term trade–GDP elasticity was estimated at 1.3 in 1970–1985, 2.2 in 1986–2000, 1.3 in the 2000s and 0.7 in 2008–2013. The estimates suggest that the contribution of cyclical factors to trade slowdown is more pronounced during crises and recession periods. However, reduced elasticities outside periods of crises point to other potential factors.

An oft-cited potential structural factor in the observed reduced elasticity is the recent limited growth in vertical specialization and the global fragmentation of production, reflecting a maturation of value chains (in China and the United States). While the decline in trade elasticities of primary goods and investment goods relates in particular to cyclical factors, lower trade elasticity for intermediate goods mainly reflects structural causes, such as a shift in production and trade patterns in global value chains. Overall decline in the vertical specialization process is evident when considering trade in intermediate goods, especially in Eastern Asia. China's share of intermediate imports as a proportion of its exports of manufacturing goods, which measures the reliance of the manufacturing sector on imported inputs, has declined constantly over the last decade, from almost 60 per cent in 2002 to less than 40 per cent in 2014. Another measure, the share of China's intermediate goods in its total imports, fell from 33 per cent in 2001 to about 18 per cent in 2014. Although still substantially high, vertical specialization in other countries in Eastern Asia has also declined in recent years. These trends are also indicative of a potential re-shoring or near-shoring process (that is, moving manufacturing activity home or closer to home) and of the consolidation of production processes into geographical clusters of production that, together, result in relatively lower levels of trade per unit of output.

Other potential explanatory factors are changes in the composition of global demand, with slow recovery in investment goods that are more trade intensive than government and consumer spending, as well as a shift in the composition of consumer demand away from tradeable (manufactured) goods to services. Globally, the share of capital goods in total imports dropped from 35 per cent in 2000 to 30 per cent in 2014. In the same period, consumer goods, which tend to have lower import content relative to investment goods, maintained their share of about 30 per cent.

Another view is that the decline in the global wage share and related negative impact on domestic demand growth may have also contributed to slower trade growth. The global wage share continued to decline due to continued efforts to raise competitiveness, such as by delocalizing production to low-cost sites. Greater access to global markets has often been associated with a deterioration in national wage income compared with the global level.

While boosting global aggregate demand remains key to stimulating global trade growth, various non-cyclical factors suggest that even if trade recovers gradually, trade elasticities may not return to the high levels of the late 1990s and early 2000s.

Sources: Constantinescu et al., 2015; European Central Bank, 2015; UNCTAD, 2015a; UNCTAD, 2015b; UNCTAD, 2016a; United Nations Department of Economic and Social Affairs, 2016.

Goal Indicators (see http://unstats.un.org/sdgs/iaeg-sdgs) has proposed that freight volumes by mode of transport, including maritime transport, be used to measure progress towards target 9.1 (develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all). To put things in perspective, in 2015, world seaborne trade volumes are estimated to have accounted for over 80 per cent of total world merchandise trade. In value terms, some observers have estimated the share of maritime trade at 55 per cent (figure for 2013 from Lloyd's List Intelligence) and others at over two thirds of total merchandise trade (IHS Markit, 2016). Linking the performance of freight volumes, including maritime freight, to target 9.1 highlights the importance of further monitoring, assessing and analysing developments affecting international seaborne trade (UNCTAD, 2016b).

1. Overall seaborne trade

In 2015 – for the first time in UNCTAD records – world seaborne trade volumes[1] were estimated to have exceeded 10 billion tons. However, shipments expanded by 2.1 per cent, a pace notably slower than the historical average and below rates recorded over the last decade, when volumes were lifted by strong import demand from China. Individual performances varied by country and across market segments, with tanker trade performing relatively better than any other sector. A key influence on seaborne trade in 2015 was China. Over the last decade, China has contributed the largest shares of import volume growth, particularly in imports of dry bulk commodities, which fell in 2015, for the first time since the Great Recession. Given the rising contribution of the services sector to the GDP of China, along with the contribution of industry and construction, the implications for seaborne trade patterns and volumes are significant.

In 2015, dry cargo shipments accounted for 70.7 per cent of total seaborne trade volumes, while the remaining share was made up of tanker trade, including crude oil, petroleum products and gas (tables 1.3 and 1.4 (a) and (b) and figure 1.2). Also in 2015, volumes increased by 1.6 per cent, down from 4.1 per cent in 2014. Growth in world seaborne trade by ton–miles – providing a more accurate measure of demand for ship-carrying capacity, as it takes into account distances travelled – also decelerated; world seaborne trade totalled an estimated 53.6 billion ton–miles, up from an estimated 52.7 billion ton–miles in 2014 (figure 1.3). While there are reports of some increases in ship-operating speeds in the tanker sector, overall, the shipping industry seems committed to slow steaming as a way of managing excess capacity and, in view of the design of eco-ships, optimizing for lower speeds.

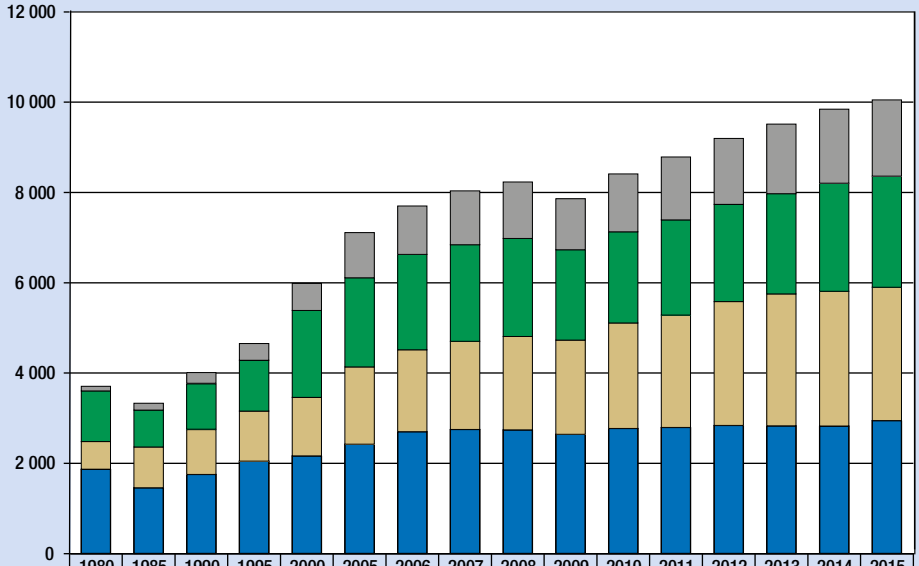
Table 1.3 Developments in international seaborne trade, selected years (Millions of tons loaded)

	Oil and gas	*Main bulk commodities (iron ore, coal, grain, bauxite and alumina and phosphate rock)*	*Dry cargo other than main bulk commodities*	*Total (all cargo)*
1970	1 440	448	717	2 605
1980	1 871	608	1 225	3 704
1990	1 755	988	1 265	4 008
2000	2 163	1 295	2 526	5 984
2005	2 422	1 709	2 978	7 109
2006	2 698	1 814	3 188	7 700
2007	2 747	1 953	3 334	8 034
2008	2 742	2 065	3 422	8 229
2009	2 642	2 085	3 131	7 858
2010	2 772	2 335	3 302	8 409
2011	2 794	2 486	3 505	8 785
2012	2 841	2 742	3 614	9 197
2013	2 829	2 923	3 762	9 514
2014	2 825	2 985	4 033	9 843
2015	2 947	2 951	4 150	10 047

Source: UNCTAD secretariat calculations, based on data from reporting countries, as published on relevant government and port industry websites, and from specialist sources, as well as Clarksons Research (2006–2015), *Dry Bulk Trade Outlook*.

Note: Data for 2006–2015 have been revised and updated to reflect improved reporting, including more recent figures and better information regarding breakdown by cargo type. Figures for 2015 are estimates based on preliminary data or on the last year for which data were available.

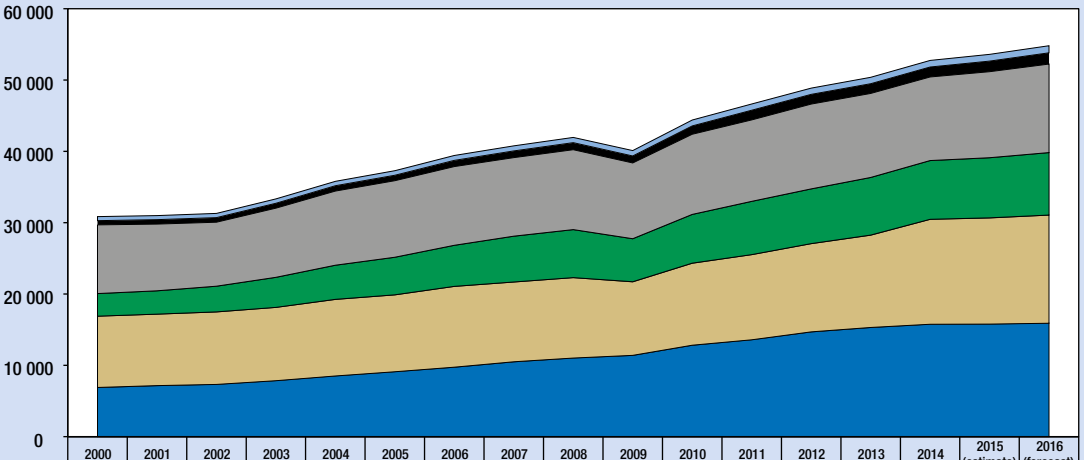
Figure 1.2 International seaborne trade, selected years (Millions of tons loaded)



	1980	1985	1990	1995	2000	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Containers	102	152	234	371	598	1 001	1 076	1 193	1 249	1 127	1 280	1 393	1 464	1 544	1640	1687
Dry cargo other than main bulk commodities	1 123	819	1 031	1 125	1 928	1 975	2 112	2 141	2 173	2 004	2 022	2 112	2 150	2 218	2393	2463
Main bulk commodities	608	900	988	1 105	1 295	1 711	1 814	1 953	2 065	2 085	2 335	2 486	2 742	2 923	2985	2951
Oil and gas	1 871	1 459	1 755	2 050	2 163	2 422	2 698	2 747	2 742	2 642	2 772	2 794	2 841	2 829	2 825	2 947

Source: UNCTAD, Review of Maritime Transport, various issues.

Figure 1.3 World seaborne trade by cargo type, 2000–2016 (Estimated billions of ton–miles)



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015 (estimate)	2016 (forecast)
Chemicals	552	562	593	606	625	651	689	724	736	765	824	864	889	908	914	953	998
Gas	576	591	611	662	719	736	833	913	956	958	1 147	1 344	1 346	1 347	1 392	1 467	1 561
Oil	9 631	9 352	8 971	9 698	10 393	10 729	11 036	11 011	11 200	10 621	11 237	11 417	11 890	11 779	11 717	12 059	12 410
Containers	3 170	3 271	3 601	4 216	4 785	5 269	5 757	6 422	6 734	6 030	6 833	7 469	7 673	8 076	8 237	8 428	8 757
Other (minor bulk commodities and other dry cargo)	9 998	10 023	10 167	10 275	10 729	10 782	11 330	11 186	11 272	10 325	11 504	11 927	12 375	12 952	14 707	14 892	15 156
Main bulk commodities	6 896	7 158	7 331	7 852	8 527	9 107	9 745	10 503	11 028	11 400	12 824	13 596	14 691	15 312	15 768	15 790	15 918

Source: UNCTAD secretariat calculations, based on Clarksons Research, 2016a.

Table 1.4 (a) World seaborne trade by type of cargo and country grouping, 2006–2015 (Millions of tons)

Region or country	Year	Goods loaded				Goods unloaded			
		Total	Crude	Petroleum products and gas	Dry cargo	Total	Crude	Petroleum products and gas	Dry cargo
World	2006	7 700.3	1 783.4	914.8	5 002.1	7 878.3	1 931.2	893.7	5 053.4
	2007	8 034.1	1 813.4	933.5	5 287.1	8 140.2	1 995.7	903.8	5 240.8
	2008	8 229.5	1 785.2	957.0	5 487.2	8 286.3	1 942.3	934.9	5 409.2
	2009	7 858.0	1 710.5	931.1	5 216.4	7 832.0	1 874.1	921.3	5 036.6
	2010	8 408.9	1 787.7	983.8	5 637.5	8 443.8	1 933.2	979.2	5 531.4
	2011	8 784.3	1 759.5	1 034.2	5 990.5	8 797.7	1 896.5	1 037.7	5 863.5
	2012	9 196.7	1 785.7	1 055.0	6 356.0	9 188.5	1 929.5	1 055.1	6 203.8
	2013	9 513.6	1 737.9	1 090.8	6 684.8	9 500.1	1 882.0	1 095.2	6 523.0
	2014	9 843.4	1 706.9	1 118.3	7 018.2	9 836.1	1 850.4	1 127.1	6 858.6
	2015	10 047.5	1 771.0	1 175.9	7 100.6	10 033.4	1 916.2	1 185.2	6 932.0
Developed economies	2006	2 460.5	132.9	336.4	1 991.3	4 164.7	1 282.0	535.5	2 347.2
	2007	2 608.9	135.1	363.0	2 110.8	3 990.5	1 246.0	524.0	2 220.5
	2008	2 715.4	129.0	405.3	2 181.1	4 007.9	1 251.1	523.8	2 233.0
	2009	2 554.3	115.0	383.8	2 055.5	3 374.4	1 125.3	529.9	1 719.2
	2010	2 865.4	135.9	422.3	2 307.3	3 604.5	1 165.4	522.6	1 916.5
	2011	2 982.5	117.5	451.9	2 413.1	3 632.3	1 085.6	581.3	1 965.4
	2012	3 122.9	125.2	459.7	2 538.0	3 700.2	1 092.6	556.5	2 051.1
	2013	3 188.3	114.4	470.5	2 603.4	3 679.4	1 006.7	556.6	2 116.0
	2014	3 343.7	121.8	463.4	2 758.5	3 690.1	964.4	518.9	2 206.8
	2015	3 423.4	135.6	467.2	2 820.6	3 733.7	994.3	530.9	2 208.5
Transition economies	2006	410.3	123.1	41.3	245.9	70.6	5.6	3.1	61.9
	2007	407.9	124.4	39.9	243.7	76.8	7.3	3.5	66.0
	2008	431.5	138.2	36.7	256.6	89.3	6.3	3.8	79.2
	2009	505.3	142.1	44.4	318.8	93.3	3.5	4.6	85.3
	2010	515.7	150.2	45.9	319.7	122.1	3.5	4.6	114.0
	2011	505.0	132.6	42.0	330.5	156.7	4.2	4.4	148.1
	2012	544.2	135.6	40.3	368.3	148.1	3.8	4.0	140.3
	2013	551.9	145.1	32.1	374.8	77.4	1.1	10.6	65.7
	2014	592.7	152.1	36.8	403.8	68.7	0.2	4.2	64.3
	2015	632.3	164.4	43.1	424.7	58.6	0.3	4.3	54.0
Developing economies	2006	4 829.5	1 527.5	537.1	2 765.0	3 642.9	643.6	355.1	2 644.3
	2007	5 017.2	1 553.9	530.7	2 932.6	4 073.0	742.4	376.3	2 954.3
	2008	5 082.6	1 518.0	515.1	3 049.6	4 189.1	684.9	407.2	3 097.0
	2009	4 798.4	1 453.5	502.9	2 842.0	4 364.2	745.3	386.9	3 232.1
	2010	5 027.8	1 501.6	515.6	3 010.5	4 717.3	764.4	452.0	3 500.9
	2011	5 296.8	1 509.4	540.4	3 247.0	5 008.8	806.7	452.1	3 750.0
	2012	5 529.6	1 524.9	555.0	3 449.7	5 340.1	833.1	494.7	4 012.4
	2013	5 773.4	1 478.5	588.2	3 706.7	5 743.4	874.2	527.9	4 341.3
	2014	5 907.1	1 432.9	618.2	3 855.9	6 077.3	885.7	604.1	4 587.5
	2015	5 991.8	1 470.9	665.6	3 855.3	6 241.0	921.6	649.9	4 669.5

Table 1.4 (a) World seaborne trade by type of cargo and country grouping, 2006–2015 (Millions of tons) *(continued)*

Region or country	Year	Goods loaded				Goods unloaded			
		Total	Crude	Petroleum products and gas	Dry cargo	Total	Crude	Petroleum products and gas	Dry cargo
Africa	2006	721.9	353.8	86.0	282.2	349.8	41.3	39.4	269.1
	2007	732.0	362.5	81.8	287.6	380.0	45.7	44.5	289.8
	2008	766.7	379.2	83.3	304.2	376.6	45.0	43.5	288.1
	2009	708.0	354.0	83.0	271.0	386.8	44.6	39.7	302.5
	2010	754.0	351.1	92.0	310.9	416.9	42.7	40.5	333.7
	2011	723.7	338.0	68.5	317.2	378.2	37.8	46.3	294.1
	2012	757.8	364.2	70.2	323.4	393.6	32.8	51.0	309.8
	2013	815.3	327.5	82.4	405.3	432.2	36.6	65.3	330.3
	2014	757.4	299.3	74.3	383.7	469.6	37.2	71.0	361.5
	2015	756.1	294.7	58.6	402.8	483.6	39.4	70.1	374.2
Americas	2006	1 030.7	251.3	93.9	685.5	373.4	49.6	60.1	263.7
	2007	1 067.1	252.3	90.7	724.2	415.9	76.0	64.0	275.9
	2008	1 108.2	234.6	93.0	780.6	436.8	74.2	69.9	292.7
	2009	1 029.8	225.7	74.0	730.1	371.9	64.4	73.6	234.0
	2010	1 172.6	241.6	85.1	846.0	448.7	69.9	74.7	304.2
	2011	1 239.2	253.8	83.5	901.9	508.3	71.1	73.9	363.4
	2012	1 282.6	253.3	85.9	943.4	546.7	74.6	83.6	388.5
	2013	1 263.7	240.0	69.8	953.9	569.4	69.4	89.4	410.7
	2014	1 292.2	232.6	76.4	983.1	571.7	65.1	99.8	406.8
	2015	1 327.6	223.5	83.8	1 020.3	593.6	65.8	101.1	426.7
Asia	2006	3 073.1	921.2	357.0	1 794.8	2 906.8	552.7	248.8	2 105.3
	2007	3 214.6	938.2	358.1	1 918.3	3 263.6	620.7	260.8	2 382.1
	2008	3 203.6	902.7	338.6	1 962.2	3 361.9	565.6	286.8	2 509.5
	2009	3 054.3	872.3	345.8	1 836.3	3 592.4	636.3	269.9	2 686.2
	2010	3 094.6	907.5	338.3	1 848.8	3 838.2	651.8	333.1	2 853.4
	2011	3 326.7	916.0	388.2	2 022.6	4 108.8	697.8	328.0	3 082.9
	2012	3 480.9	905.8	398.1	2 177.0	4 386.9	725.7	355.5	3 305.7
	2013	3 686.9	909.4	435.2	2 342.4	4 728.7	767.4	369.2	3 592.1
	2014	3 849.4	899.4	466.5	2 483.6	5 023.1	782.5	429.2	3 811.4
	2015	3 899.9	951.0	522.3	2 426.7	5 151.3	815.6	474.6	3 861.1
Oceania	2006	3.8	1.2	0.1	2.5	12.9	0.0	6.7	6.2
	2007	3.5	0.9	0.1	2.5	13.5	0.0	7.0	6.5
	2008	4.2	1.5	0.1	2.6	13.8	0.0	7.1	6.7
	2009	6.3	1.5	0.2	4.6	13.1	0.0	3.6	9.5
	2010	6.5	1.5	0.2	4.8	13.4	0.0	3.7	9.7
	2011	7.1	1.6	0.2	5.3	13.5	0.0	3.9	9.6
	2012	8.3	1.6	0.8	5.9	13.0	0.0	4.6	8.4
	2013	7.5	1.6	0.8	5.1	13.1	0.8	4.1	8.2
	2014	8.1	1.6	0.9	5.5	12.9	0.9	4.1	7.9
	2015	8.2	1.7	0.9	5.5	12.5	0.9	4.1	7.5

Source: UNCTAD secretariat calculations, based on data from reporting countries, as published on relevant government and port industry websites, and from specialist sources.

Note: Data for 2006–2015 have been revised and updated to reflect improved reporting, including more recent figures and better information regarding breakdown by cargo type. Figures for 2015 are estimates based on preliminary data or on the last year for which data were available.

Table 1.4 (b) World seaborne trade by type of cargo and country grouping, 2006–2015 (Percentage share)

Region or country	Year	Goods loaded				Goods unloaded			
		Total	Crude	Petroleum products and gas	Dry cargo	Total	Crude	Petroleum products and gas	Dry cargo
World	2006	100.0	23.2	11.9	65.0	100.0	24.5	11.3	64.1
	2007	100.0	22.6	11.6	65.8	100.0	24.5	11.1	64.4
	2008	100.0	21.7	11.6	66.7	100.0	23.4	11.3	65.3
	2009	100.0	21.8	11.8	66.4	100.0	23.9	11.8	64.3
	2010	100.0	21.3	11.7	67.0	100.0	22.9	11.6	65.5
	2011	100.0	20.0	11.8	68.2	100.0	21.6	11.8	66.6
	2012	100.0	19.4	11.5	69.1	100.0	21.0	11.5	67.5
	2013	100.0	18.3	11.5	70.3	100.0	19.8	11.5	68.7
	2014	100.0	17.3	11.4	71.3	100.0	18.8	11.5	69.7
	2015	100.0	17.6	11.7	70.7	100.0	19.1	11.8	69.1
Developed economies	2006	32.0	7.4	36.8	39.8	52.9	66.4	59.9	46.4
	2007	32.5	7.5	38.9	39.9	49.0	62.4	58.0	42.4
	2008	33.0	7.2	42.3	39.7	48.4	64.4	56.0	41.3
	2009	32.5	6.7	41.2	39.4	43.1	60.0	57.5	34.1
	2010	34.1	7.6	42.9	40.9	42.7	60.3	53.4	34.6
	2011	34.0	6.7	43.7	40.3	41.3	57.2	56.0	33.5
	2012	34.0	7.0	43.6	39.9	40.3	56.6	52.7	33.1
	2013	33.5	6.6	43.1	38.9	38.7	53.5	50.8	32.4
	2014	34.0	7.1	41.4	39.3	37.5	52.1	46.0	32.2
	2015	34.1	7.7	39.7	39.7	37.2	51.9	44.8	31.9
Transition economies	2006	5.3	6.9	4.5	4.9	0.9	0.3	0.3	1.2
	2007	5.1	6.9	4.3	4.6	0.9	0.4	0.4	1.3
	2008	5.2	7.7	3.8	4.7	1.1	0.3	0.4	1.5
	2009	6.4	8.3	4.8	6.1	1.2	0.2	0.5	1.7
	2010	6.1	8.4	4.7	5.7	1.4	0.2	0.5	2.1
	2011	5.7	7.5	4.1	5.5	1.8	0.2	0.4	2.5
	2012	5.9	7.6	3.8	5.8	1.6	0.2	0.4	2.3
	2013	5.8	8.3	2.9	5.6	0.8	0.1	1.0	1.0
	2014	6.0	8.9	3.3	5.8	0.7	0.0	0.4	0.9
	2015	6.3	9.3	3.7	6.0	0.6	0.0	0.4	0.8
Developing economies	2006	62.7	85.6	58.7	55.3	46.2	33.3	39.7	52.3
	2007	62.4	85.7	56.9	55.5	50.0	37.2	41.6	56.4
	2008	61.8	85.0	53.8	55.6	50.6	35.3	43.6	57.3
	2009	61.1	85.0	54.0	54.5	55.7	39.8	42.0	64.2
	2010	59.8	84.0	52.4	53.4	55.9	39.5	46.2	63.3
	2011	60.3	85.8	52.2	54.2	56.9	42.5	43.6	64.0
	2012	60.1	85.4	52.6	54.3	58.1	43.2	46.9	64.7
	2013	60.7	85.1	53.9	55.4	60.5	46.4	48.2	66.6
	2014	60.0	83.9	55.3	54.9	61.8	47.9	53.6	66.9
	2015	59.6	83.1	56.6	54.3	62.2	48.1	54.8	67.4

Table 1.4 (b) World seaborne trade by type of cargo and country grouping, 2006–2015 (Percentage share) *(continued)*

Region or country	Year	Goods loaded				Goods unloaded			
		Total	Crude	Petroleum products and gas	Dry cargo	Total	Crude	Petroleum products and gas	Dry cargo
Africa	2006	9.4	19.8	9.4	5.6	4.4	2.1	4.4	5.3
	2007	9.1	20.0	8.8	5.4	4.7	2.3	4.9	5.5
	2008	9.3	21.2	8.7	5.5	4.5	2.3	4.7	5.3
	2009	9.0	20.7	8.9	5.2	4.9	2.4	4.3	6.0
	2010	9.0	19.6	9.4	5.5	4.9	2.2	4.1	6.0
	2011	8.2	19.2	6.6	5.3	4.3	2.0	4.5	5.0
	2012	8.2	20.4	6.6	5.1	4.3	1.7	4.8	5.0
	2013	8.6	18.8	7.6	6.1	4.5	1.9	6.0	5.1
	2014	7.7	17.5	6.6	5.5	4.8	2.0	6.3	5.3
	2015	7.5	16.6	5.0	5.7	4.8	2.1	5.9	5.4
Americas	2006	13.4	14.1	10.3	13.7	4.7	2.6	6.7	5.2
	2007	13.3	13.9	9.7	13.7	5.1	3.8	7.1	5.3
	2008	13.5	13.1	9.7	14.2	5.3	3.8	7.5	5.4
	2009	13.1	13.2	7.9	14.0	4.7	3.4	8.0	4.6
	2010	13.9	13.5	8.7	15.0	5.3	3.6	7.6	5.5
	2011	14.1	14.4	8.1	15.1	5.8	3.7	7.1	6.2
	2012	13.9	14.2	8.1	14.8	5.9	3.9	7.9	6.3
	2013	13.3	13.8	6.4	14.3	6.0	3.7	8.2	6.3
	2014	13.1	13.6	6.8	14.0	5.8	3.5	8.9	5.9
	2015	13.2	12.6	7.1	14.4	5.9	3.4	8.5	6.2
Asia	2006	39.9	51.7	39.0	35.9	36.9	28.6	27.8	41.7
	2007	40.0	51.7	38.4	36.3	40.1	31.1	28.9	45.5
	2008	38.9	50.6	35.4	35.8	40.6	29.1	30.7	46.4
	2009	38.9	51.0	37.1	35.2	45.9	34.0	29.3	53.3
	2010	36.8	50.8	34.4	32.8	45.5	33.7	34.0	51.6
	2011	37.9	52.1	37.5	33.8	46.7	36.8	31.6	52.6
	2012	37.8	50.7	37.7	34.3	47.7	37.6	33.7	53.3
	2013	38.8	52.3	39.9	35.0	49.8	40.8	33.7	55.1
	2014	39.1	52.7	41.7	35.4	51.1	42.3	38.1	55.6
	2015	38.8	53.7	44.4	34.2	51.3	42.6	40.0	55.7
Oceania	2006	0.0	0.1	0.01	0.0	0.2	—	0.7	0.1
	2007	0.0	0.1	0.01	0.0	0.2	—	0.8	0.1
	2008	0.1	0.1	0.01	0.0	0.2	—	0.8	0.1
	2009	0.1	0.1	0.02	0.1	0.2	—	0.4	0.2
	2010	0.1	0.1	0.0	0.1	0.2	—	0.4	0.2
	2011	0.1	0.1	0.0	0.1	0.2	—	0.4	0.2
	2012	0.1	0.1	0.1	0.1	0.1	—	0.4	0.1
	2013	0.1	0.1	0.1	0.1	0.1	—	0.4	0.1
	2014	0.1	0.1	0.1	0.1	0.1	—	0.4	0.1
	2015	0.1	0.1	0.1	0.1	0.1	—	0.3	0.1

Source: UNCTAD secretariat calculations, based on data from reporting countries, as published on relevant government and port industry websites, and from specialist sources.

Note: Data for 2006–2015 have been revised and updated to reflect improved reporting, including more recent figures and better information regarding breakdown by cargo type. Figures for 2015 are estimates based on preliminary data or on the last year for which data were available.

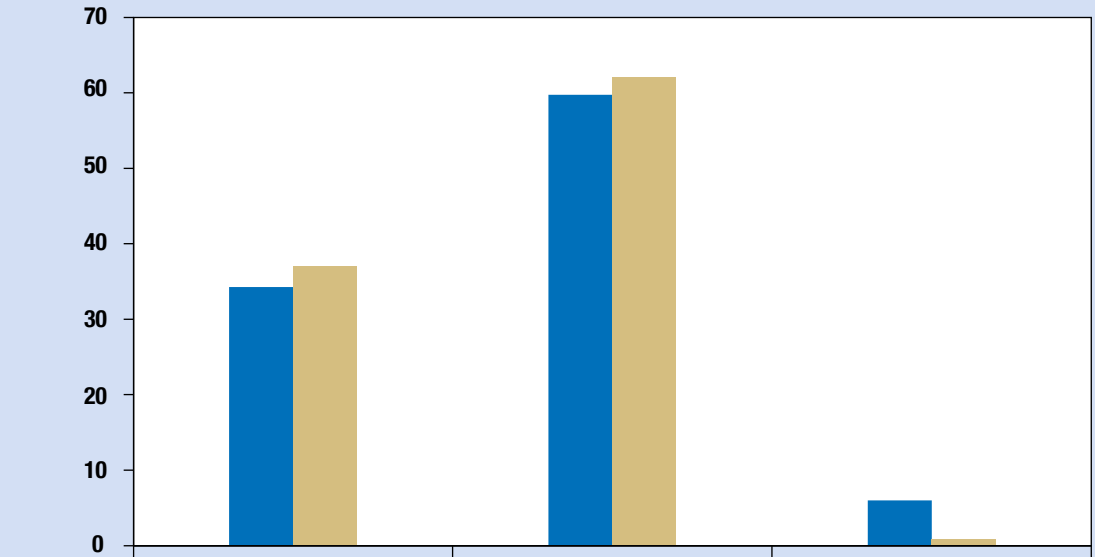
In 2015, dry cargo shipments increased by 1.2 per cent, a much slower pace than the 5 per cent growth in 2014. Trade in dry bulk commodities totalled 4.8 billion tons, with volumes declining by a marginal 0.2 per cent, the first decline since 2009. Growth was constrained by a fall in shipments of the five major dry bulk commodities (-1.3 per cent), in particular coal (-6.9 per cent), which contracted for the first time in about three decades. The slowdown in construction and infrastructure investment by China and the decline in steel output have affected iron ore trade, which accounted for 13.6 per cent of total seaborne trade in 2015. Heavily concentrated in China, iron ore trade expanded by 1.9 per cent in 2015, a significant slowdown from the double-digit rate of 12.5 per cent in 2014.

Minor bulk commodities (agribulks, metals and minerals and manufactures), many of which are also linked to steel production, are estimated to have increased by 1.5 per cent, supported, in particular, by growing exports of steel products from China. Accounting for over one third of all dry cargo, volumes of other dry cargo (general cargo, break bulk and containerized cargo) are estimated to have increased at the slower pace of 2.6 per cent, with a total of 2.53 billion tons in 2015. Reflecting sluggish intra-Asian trade and a drop in volumes in Eastern Asia–Europe trade, growth in containerized trade, which accounted for about two thirds of other dry cargo, is estimated to have decelerated significantly, from 6.1 per cent in 2014 to 2.9 per cent in 2015. Total containerized trade volumes are estimated at 1.69 billion tons, equivalent to 175 million twenty-foot equivalent units (TEUs).

In contrast, and supported in particular by an ample supply of oil cargo and lower oil prices, the tanker sector experienced one of its best performances since 2008. Crude oil shipments are estimated to have increased by 3.8 per cent in 2015, following two consecutive annual contractions in 2013 and 2014. According to UNCTAD, petroleum products and gas trade together expanded by 5.2 per cent in 2015, up from 2.6 per cent in 2014. A breakdown of this total, based on estimates by Clarksons Research, indicates that in 2015, trade in petroleum products increased faster than trade in gas.

Developing countries continued to contribute larger shares to the total volumes of international seaborne trade. Their contribution with regard to global goods loaded is estimated at 60 per cent, and their import demand as measured by the volume of goods unloaded increased, reaching 62 per cent (figures

Figure 1.4 (a) World seaborne trade by country grouping, 2015 (Percentage share of world tonnage)

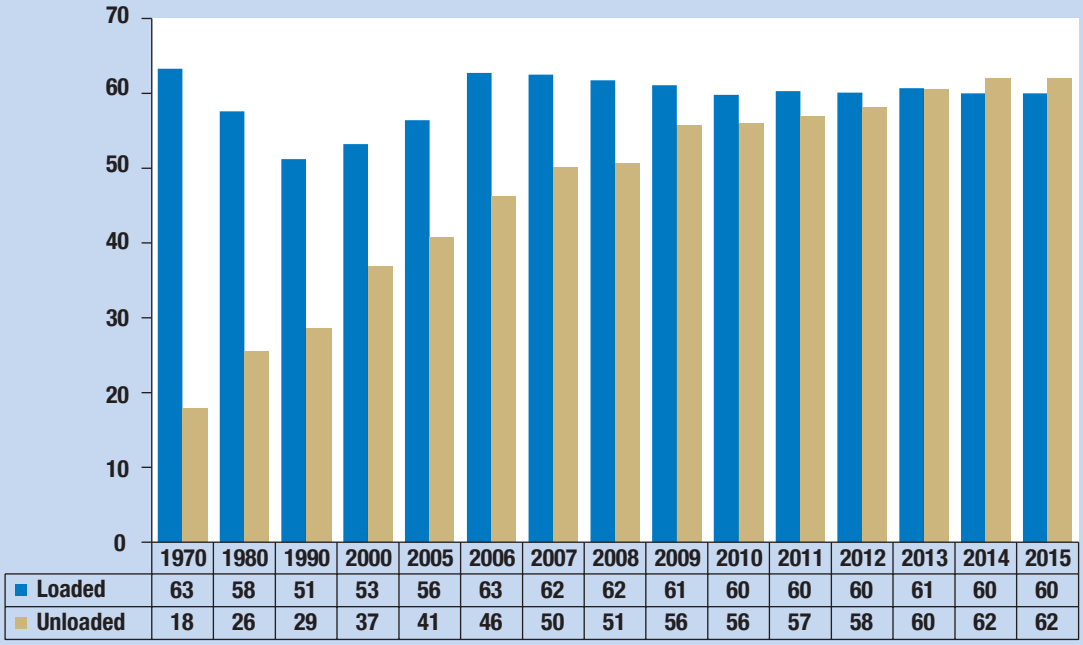


	Developed economies	Developing economies	Transition economies
Loaded	34	60	6
Unloaded	37	62	1

Source: UNCTAD secretariat calculations, based on data from reporting countries, as published on relevant government and port industry websites, and from specialist sources.

Note: Estimated figures are based on preliminary data or on the last year for which data were available.

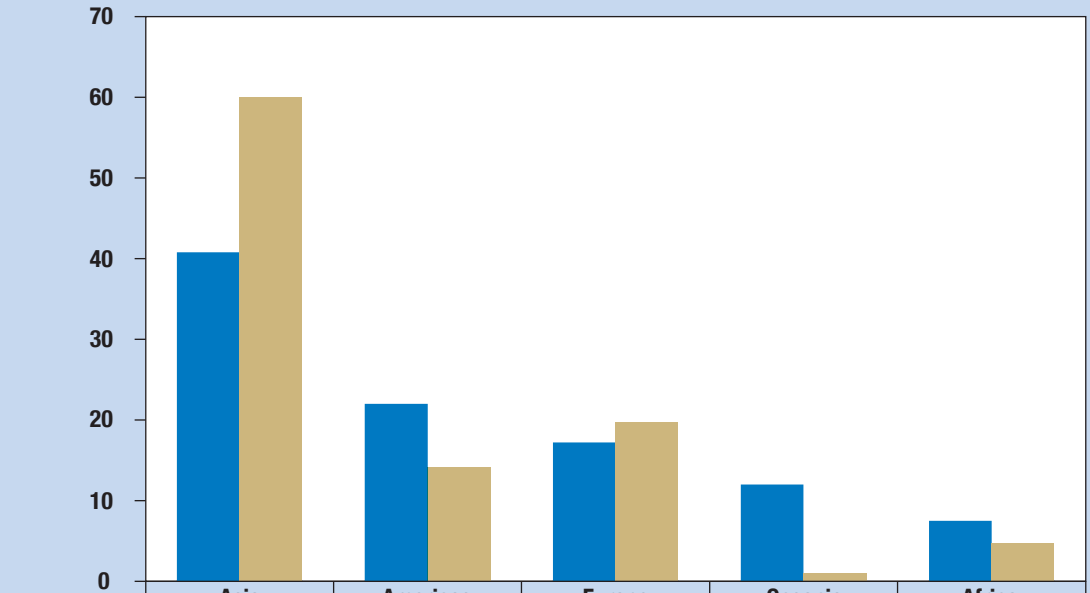
Figure 1.4 (b) Developing country participation in world seaborne trade, selected years (Percentage share of world tonnage)



	1970	1980	1990	2000	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Loaded	63	58	51	53	56	63	62	62	61	60	60	60	61	60	60
Unloaded	18	26	29	37	41	46	50	51	56	56	57	58	60	62	62

Source: UNCTAD, *Review of Maritime Transport*, various issues.

Figure 1.4 (c) World seaborne trade by region, 2015 (Percentage share of world tonnage)



	Asia	Americas	Europe	Oceania	Africa
Loaded	41	22	17	12	8
Unloaded	60	14	20	1	5

Source: UNCTAD secretariat calculations, based on data from reporting countries, as published on relevant government and port industry websites, and from specialist sources.

Note: Estimated figures based on preliminary data or on the last year for which data were available.

1.4 (a) and (b)). Developing countries remained key world importers and exporters in 2015 and have consolidated their position as suppliers of raw materials, while also strengthening their position as large sources of consumer demand and main players in globalized manufacturing processes (figure 1.4 (b)). Over the past four decades, a compositional shift has occurred in seaborne trade reflecting, among others, the effects of globalized manufacturing processes, longer supply chains and the expanding energy and industrial commodity needs of developing countries, as well as their growing requirements for consumer goods and processed products. With regard to regional influence, in 2015, Asia continued to dominate as the main loading and unloading area. The Americas surpassed Europe, Africa and Oceania with regard to goods loaded, while Europe received larger volumes of goods unloaded, followed by the Americas, Africa and Oceania (figure 1.4 (c)).

2. Seaborne trade by cargo type

(a) Tanker trade

(i) Crude oil

In 2015, oil remained the leading fuel, accounting for one third of global energy consumption. Global oil consumption was supported by demand among members of the Organization for Economic Cooperation and Development, in particular the United States and the European Union, and also partly sustained by China and India, where oil consumption expanded by 6.3 per cent and 8.1 per cent, respectively (British Petroleum, 2016). Global oil production expanded at a faster pace, resulting in continued downward pressure on oil prices. Underpinned by these developments, global crude oil trade reversed the 2014 trend and expanded by 3.8 per cent in 2015, with total volumes reaching an estimated 1.77 billion tons. An overview of global consumers and producers of oil and gas is presented in table 1.5.

Global seaborne oil trade expanded faster than underlying oil demand, suggesting that end-user oil demand was not the only factor at play. Ample oil supply, low oil price levels, additions to refinery capacity, improved refinery margins and stock-building activity all contributed to the rise in crude oil volumes, which in turn led to infrastructure bottlenecks, delays and greater demand for oil storage. Lower oil prices and improved refinery margins supported imports into Europe, as well as shipments within the region and from both Western Africa and Western Asia. Crude oil imports into China accounted for about half the growth, as volumes increased by an estimated 9.3 per cent (Clarksons Research, 2016d). Together, growing refinery throughput in China, the need to fill the country's strategic petroleum reserve and liberalization of the market, allowing a number of independent refineries to either import crude oil or refine imported volumes, boosted China's oil demand and crude oil imports. India – the third largest importer of crude oil after the United States and China – increased its imports, while increasingly diversifying sources of supply, including Latin America and Western Africa (Tusiani, 2016).

Two major developments in 2015 had potentially important ramifications on crude oil trade. The United States lifted a 40-year ban on crude oil exports, and export shipments are reported to have since been made. In the short term, continued lower oil price levels

Table 1.5 Major producers and consumers of oil and natural gas, 2015 (Percentage of world market share)

World oil production		*World oil consumption*	
Western Asia	32	Asia–Pacific	34
North America	19	North America	23
Transition economies	15	Europe	13
Developing America	11	Western Asia	11
Africa	10	Developing America	9
Asia–Pacific	9	Transition economies	6
Europe	4	Africa	4
Oil refinery capacities		***Oil refinery throughput***	
Asia–Pacific	33	Asia–Pacific	34
North America	21	North America	22
Europe	15	Europe	16
Western Asia	10	Western Asia	10
Transition economies	9	Transition economies	8
Developing America	8	Developing America	7
Africa	4	Africa	3
World natural gas production		***World natural gas consumption***	
North America	26	North America	25
Transition economies	22	Asia–Pacific	20
Western Asia	17	Transition economies	16
Asia–Pacific	15	Western Asia	14
Europe	7	Europe	13
Developing America	7	Developing America	8
Africa	6	Africa	4

Source: UNCTAD secretariat calculations, based on British Petroleum, 2016.

Note: Oil includes crude oil, shale oil, oil sands and natural gas liquids, but excludes liquid fuels from other sources such as biomass and coal derivatives.

and limited adequate export facilities are holding back oil export growth. However, exports from the United States are expected to redraw the future energy map as the country's shale oil production increases (Miller, 2016). In addition, some sanctions on the Islamic Republic of Iran have been lifted, allowing for the return of its crude oil to the market, which is expected to add more pressure on oil supply and weigh down price levels, although the pace at which its exports will fully recover remains uncertain, given continued obstacles arising from some outstanding issues, including financial, legal and insurance-related issues (Danish Ship Finance, 2016).

(ii) Refined petroleum products

Trade in petroleum products and gas increased by 5.1 per cent in 2015, reaching a total volume of 1.17 billion tons. UNCTAD data do not allow for a breakdown of such trades. However, estimates, for example by Clarksons Research, indicate that trade increased in petroleum products by 6.2 per cent, to above 1 billion tons, and in gas by 3.5 per cent, to 328 million tons. Import demand in Asia, as well as strong demand in Australia resulting from the closure of some refineries in 2014 and 2015, helped support trade. Import growth was also fuelled by strong import demand in India, driven largely by the removal of diesel subsidies in late 2014. Imports in Europe also increased on the back of lower oil price levels, which supported growth in refinery throughputs and intra-European trade. In parallel, and in addition to end-user demand, lower oil price levels triggered greater trading activity and generated arbitrage opportunities, further supporting trade in petroleum products. With regard to cargo types, strong demand for gas and transportation fuels, as well as storage activity with regard to diesel, supported demand for petroleum products. With regard to supply, increased refinery throughput resulting from the availability of domestic crude oil boosted export volumes from the United States, while growing refinery capacity in Western Asia, in particular in Saudi Arabia, supported export volumes from the region.

(iii) Gas

Global natural gas trade carried by sea in liquefied form, which accounted for nearly one third of world natural gas trade in 2015, expanded by 1.6 per cent, down from 2.5 per cent in 2014. Total volumes reached 338.3 billion cubic metres (British Petroleum, 2016). Export growth was driven by growing shipments from Australia, Indonesia, Malaysia, Papua New Guinea and Qatar, among others. Rising import demand in Europe and Western Asia helped partly offset volume declines in some key liquid natural gas importing countries such as Japan. The largest importer, Japan reduced its imports, possibly owing to a mild winter, reduced coal prices and the restart of two nuclear reactors in 2015 (World Nuclear Association, 2016). The Republic of Korea, the second largest importer, also reduced its imports by 15 per cent (British Petroleum, 2016). Imports into China fell by 3.3 per cent due to the economic slowdown, a mild winter and expansion of the country's domestic gas production. In addition, although starting from a low base, liquefied natural gas imports to the United States increased by over 50 per cent, while exports increased eightfold (British Petroleum, 2016). In 2015, the high cost of onshore import facilities resulted in the use of alternative and new solutions, including the use of regasification equipment on board ships, liquid natural gas regasification carriers as mobile import terminals and floating storage and regasification units (Clarksons Research, 2016e). In July 2015, 19 countries were reported to be exporting liquid natural gas, and 16 countries are reported to have started importing liquid natural gas over the past 10 years (Clarksons Research, 2015a). Trade in liquefied petroleum gas, which competes with naphtha for use as a feedstock in the petrochemical sector, is estimated to have expanded by 8.3 per cent in 2015, owing to continued export growth in the United States and rising demand in the petrochemical and household sectors in Asia, notably in China and India.

(b) Dry cargo trade: Major and minor dry bulk commodities and other dry cargo

In 2015, global dry bulk shipments contracted by 0.2 per cent, and their volume was estimated at 4.8 billion tons. In contrast to the average annual growth of 7 per cent in recent years, dry bulk trade contracted due to the 1.3 per cent decline in trade in the five major dry bulk commodities (iron ore, coal, grain, bauxite and alumina and phosphate rock). In 2015, shipments of the five major bulk commodities totalled 2.95 billion tons. In less than 15 years, China's import volumes increased nearly sevenfold, from 319 million tons in 2000 to 2.1 billion tons in 2015. The concentrated growth, both in China and in two key commodities – iron ore and coal – heightened the vulnerability of shipping and seaborne trade to fluctuations affecting demand and to developments

in China's economy. This became evident in 2015, when China's steel output, which accounted for nearly half of global output, declined (by 2.3 per cent) for the first time since 1981 (World Steel Association, 2016). Reduced steel production in China compressed the country's demand for imports of iron ore, as well as other related commodities and metals. An overview of global players in the dry bulk sector is presented in table 1.6.

Table 1.6 Major dry bulk commodities and steel: Main producers, users, exporters and importers, 2015 (Percentage of world market shares)

Steel producers		*Steel users*	
China	50	China	46
Japan	6	United States	7
India	6	India	5
United States	5	Japan	4
Russian Federation	4	Republic of Korea	4
Republic of Korea	4	Russian Federation	3
Germany	3	Germany	3
Brazil	2	Turkey	2
Turkey	2	Mexico	1
Ukraine	1	Brazil	1
Other	17	Other	24
Iron ore exporters		***Iron ore importers***	
Australia	54	China	70
Brazil	27	Japan	10
South Africa	5	Europe	8
Canada	3	Republic of Korea	5
Ukraine	1	Other	7
Sweden	1		
Other	9		
Coal exporters		***Coal importers***	
Australia	33	India	19
Indonesia	32	Japan	16
Russian Federation	9	Europe	15
Colombia	7	China	14
South Africa	7	Republic of Korea	11
United States	5	Taiwan Province of China	5
Canada	2	Malaysia	2
Other	5	Thailand	2
		Other	16
Grain exporters		***Grain importers***	
United States	22	Asia	33
Russian Federation	19	Africa	22
European Union	14	Developing America	19
Ukraine	11	Western Asia	16
Argentina	9	Europe	7
Canada	8	Transition economies	3
Other	17		

Source: UNCTAD secretariat calculations, based on Clarksons Research, 2016f; International Grains Council, 2016; and World Steel Association, 2016.

(i) Iron ore

Following strong expansion (12.6 per cent) in 2014, world seaborne iron ore trade is estimated to have grown by 1.9 per cent in 2015, the slowest pace since 1999. Seaborne iron ore shipments totalled 1.36 billion tons, with import volumes into China – accounting for over two thirds of world iron ore imports – increasing by 2.8 per cent, a slower pace than the 15 per cent expansion in 2014. The slowdown was partly due to reduced steel production and to reliance on existing stocks. With regard to supply, in 2015, major iron ore exporters, namely, Australia and Brazil – accounting for over 80 per cent of the global iron ore market – continued production and increased their global shipments.

(ii) Coal

In 2015, for the first time in about three decades, world seaborne coal (steam and coking) shipments fell, by 6.9 per cent, and total volumes fell to 1.13 billion tons, with a division of 78 and 22 per cent, respectively, between steam and coking coal. Steam coal exports are estimated to have dropped by 7.5 per cent to 881 million tons, while coking coal shipments are estimated to have dropped by 5.3 per cent to 248 million tons, owing mainly to contraction in China's coal imports (-31.4 per cent), in particular steam coal. This contraction was caused by the slowdown in China's economic growth, restrictions on low-quality coal imports and air pollution control measures introduced in China. After overtaking China as the world's leading steam coal importer in mid-2015, India saw its steam coal imports decline by 3.2 per cent due to reduced power demand and growing domestic output. Meanwhile, India's coking coal imports increased by 8.9 per cent, stimulated by infrastructure development and manufacturing activity. In Europe, the Large Combustion Plant Directive of the European Union, which aims to reduce carbon emissions, constrained the region's coal imports, resulting in steam and coking coal imports falling by 9.6 per cent and 6.2 per cent, respectively. In Japan, falling steel output was a drag on coking coal imports, with volumes falling by 4.5 per cent in 2015. With regard to exports, in 2015, Australian shipments to China fell by 35 per cent, as China began to make greater use of domestic coal, renewables and uranium (Catlin, 2015). Other exporters, including Indonesia and South Africa, and in North America, remain vulnerable to developments in China's economy, as well as the potential for India to increase domestic production, which may offset its coal import requirements. Vulnerabilities also arise, for example, in connection with logistical disruptions in Indonesia, as well as from intense competition among producers (Catlin, 2015).

(iii) Grain

In 2015, global trade in grains (wheat, coarse grain and soybeans) increased by an estimated 4.9 per cent, reaching 453 million tons. Wheat and coarse grains, accounting for 71.5 per cent of the total, expanded by 2.9 per cent, while soybean shipments increased by 10.3 per cent. The slowdown from the double-digit growth rates in 2014 reflects high grain stockpiles and weaker import demand in some of the largest grain-importing countries, especially in North Africa and Western Asia. The Islamic Republic of Iran scaled back its imports and was reported to have introduced taxes to limit imports and promote domestic production. Improved domestic harvests, including in China and Egypt, and moves to increase reliance on local harvests, such as in Algeria, contributed to limited shipping volumes.

(iv) Bauxite and alumina, and phosphate rock

In 2015, global bauxite and alumina trade volumes expanded by 18.1 per cent, in contrast to the negative performance in 2014 (-24.5 per cent). China's ability to secure sources of bauxite other than from Indonesia, and its growing alumina production capacity, contributed to the growth. Following Indonesia's ban on the export of bauxite in January 2014, stocks of bauxite lessened, while bauxite production in China increased, together with imports from countries other than Indonesia. In 2015, China imported 20 million tons of bauxite from Australia, 28 per cent more than in 2014, and bauxite production in Malaysia increased to 21.20 million tons, from 3.26 million tons in 2014, and nearly all bauxite was exported to China in both years (United States Department of the Interior and United States Geological Survey, 2016). With regard to phosphate rock (used as fertiliser or industrial input), following an estimated growth of 1.0 per cent in 2015, global shipments are estimated at 29.8 million tons. Some projects are planned for 2019, including in Algeria, Australia, Brazil, China, Egypt, Jordan, Kazakhstan, Peru, the Russian Federation and Tunisia. Offshore mining projects are planned in Namibia for after 2019. Current projects in Africa are not expected to begin production until after 2020 (United States Department of the Interior and United States Geological Survey, 2016).

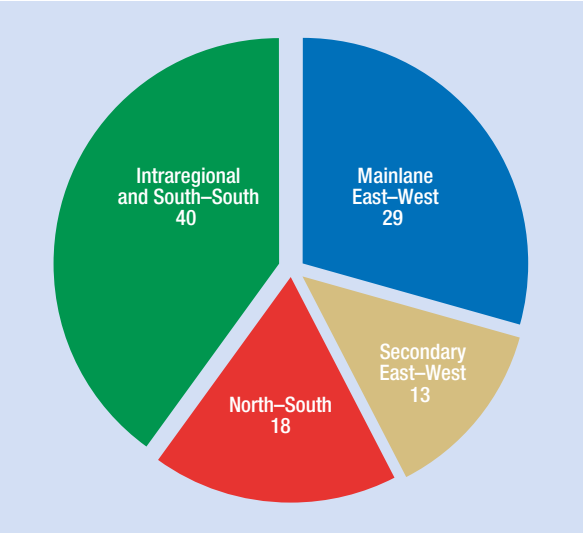
(v) Minor bulk commodities

In 2015, trade in minor bulk commodities increased at an estimated 0.4 per cent, with total volumes reaching 1.74 billion tons. Manufactures (steel products and forest products) accounted for 43.0 per cent of the total, followed by metals and minerals (37.1 per cent) and agribulks (19.9 per cent). While shipments of manufactures and agribulks increased, by 1.9 per cent and 2.9 per cent, respectively, shipments of metals and minerals declined, by 2.4 per cent. Growth in manufactures reflected the increase in steel production in China and exports to China, and the weakened domestic demand for steel. Protectionist measures in some importing countries such as India and in the European Union may have affected exports of steel products from China. Exports of metals and minerals fell as nickel ore volumes dropped (-21.4 per cent), and the effect of the export ban imposed on nickel ore from Indonesia in January 2014 continued to be felt. With regard to imports, demand from China weakened with the reduction in stainless steel consumption and the introduction of pollution control measures.

(vi) Containerized trade

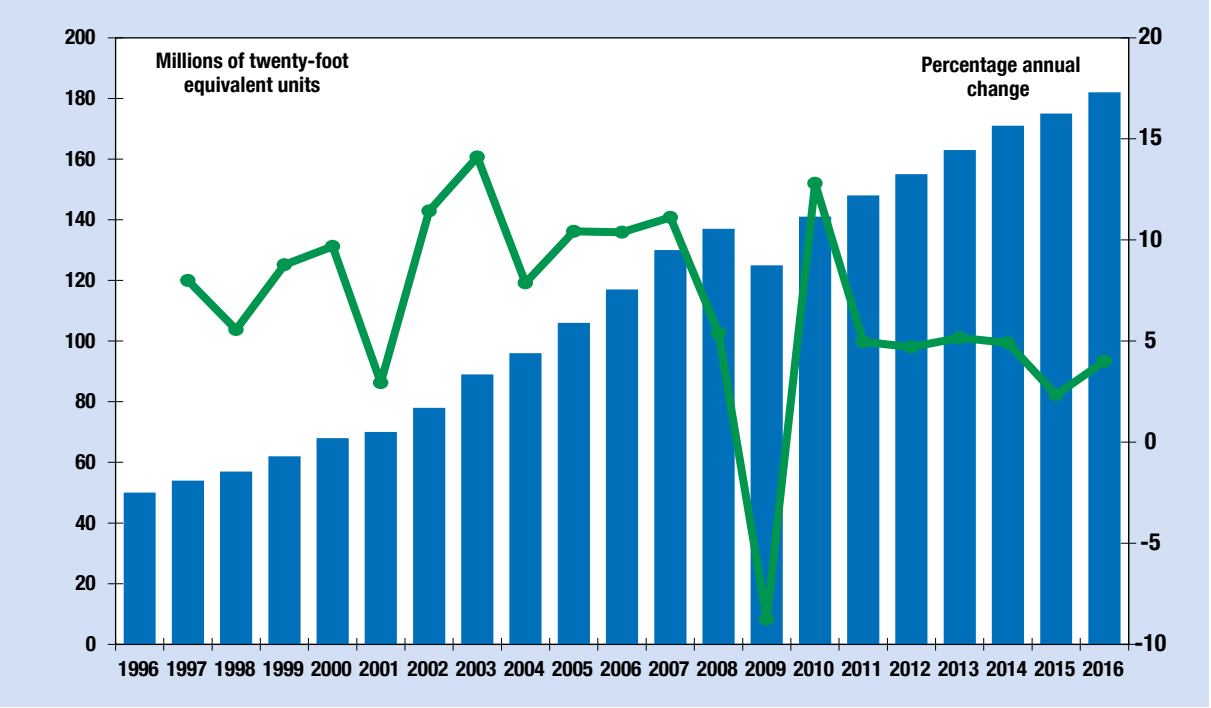
In 2015, total containerized trade across the mainlane East–West, secondary East–West, intraregional, South–South and North–South routes recorded a significant slowdown, with volumes increasing by 2.4 per cent to reach 175 million TEUs (figures 1.5 and 1.6). Three main factors combined to limit containerized trade growth, namely, the decline in volumes on the headhaul of the Eastern Asia–Europe trade route; the limited growth of North–South trade, owing to the impact of low commodity prices on the terms of trade and purchasing power of commodity-exporting countries; and the pressure on intra-Asian trade resulting from the slowdown in China (table 1.7).

Figure 1.5 Global containerized trade by route, 2015 (Percentage share in twenty-foot equivalent units)



Source: UNCTAD secretariat calculations, based on Clarksons Research, 2016b.

Figure 1.6 Global containerized trade, 1996–2016 (Millions of twenty-foot equivalent units and percentage annual change)



Source: UNCTAD secretariat calculations, based on Clarksons Research, Container Intelligence Monthly, various issues, and Drewry Shipping Consultants, 2008.

Table 1.7 Estimated containerized cargo flows on major East–West container trade routes, 2014–2015 (Millions of twenty-foot equivalent units)

	Trans-Pacific		*Europe–Asia*		*Transatlantic*	
	Eastern Asia–North America	*North America–Eastern Asia*	*Asia–Europe*	*Europe–Asia*	*Europe–North America*	*North America–Europe*
2014	15.8	7.4	15.2	6.8	3.9	2.8
2015	16.8	7.2	14.9	6.8	4.1	2.7
Percentage change, 2014–2015	6.6	-2.9	-2.2	0.0	5.4	-2.4

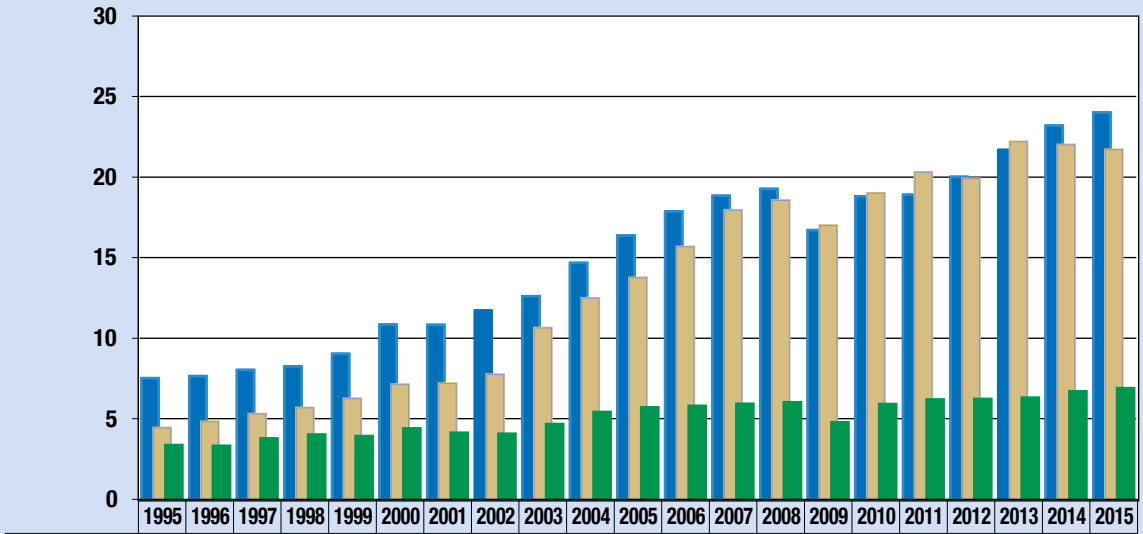
Source: UNCTAD secretariat calculations, based on the MDS Transmodal world cargo database.

Volumes on the mainlane East–West route increased by about 1.2 per cent in 2015, reaching 52.5 million TEUs (figure 1.7). Growth was constrained by negative performance (-2.2 per cent) on the headhaul of Europe–Asia trade, which reflected weaker import demand in Europe, adjustments in retail inventories, a weak euro and the negative impact of unilateral coercive measures on import volumes into the Russian Federation.

The decline in 2015 of European containerized trade seems inconsistent with data indicating that, during the year, intra-European trade growth outpaced the growth of trade between the European Union and the rest of the world. While intraregional imports grew by 1.4 per cent, imports from the rest of the world remained flat. The share of intraregional imports of total European imports increased from 60 per cent in 2007 to 65 per cent in 2015 (Danish Ship Finance, 2016). Combined with statistics showing a relatively strong demand in Europe for consumer goods during the year, it has been argued that a shift may be unfolding towards regional and closer-to-end-market sourcing of goods.

On the trans-Pacific trade route, firm demand in the United States supported trade volumes, with an overall growth of 3.6 per cent in 2015. However, while growth on the headhaul was particularly strong – estimated at 6.6 per cent – trade on backhauls declined by 2.9 per

Figure 1.7 Estimated containerized cargo flows on major East–West container trade routes, 1995–2015 (Millions of twenty-foot equivalent units)



	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Trans-Pacific	8	8	8	8	9	11	11	12	13	15	16	18	19	19	17	19	19	20	22	23	24
Europe–Asia	4	5	5	6	6	7	7	8	11	12	14	16	18	19	17	19	20	20	22	22	22
Transatlantic	3	3	4	4	4	4	4	4	5	5	6	6	6	6	5	6	6	6	6	7	7

Source: UNCTAD secretariat calculations, based on Clarksons Research (2009–2013), Container Intelligence Monthly, MDS Transmodal world cargo database (2009–2015 figures) and United Nations Economic Commission for Latin America and the Caribbean, 2010.

cent. A strong dollar and rising consumer spending boosted United States imports from China and Viet Nam. Key developments affecting this route in 2015 included the opening of the new Panama Canal and congestion in ports on the west coast of the United States. The congestion in 2015 caused delays and a drop in container port throughput, which in turn resulted in cargo diversion benefiting ports on the east coast (Clarksons Research, 2015b).

Volumes on the North–South trade route increased by 1.4 per cent in 2015, reaching 30.8 million TEUs. Limited growth reflected the weak container import demand in Africa and Latin America resulting from, among other factors, political unrest in a number of North African countries, the recession in Brazil and the negative impact of eroding terms of trade on the purchasing power of commodity-exporting developing economies in the two regions (Danish Ship Finance, 2016).

Intraregional container trade expanded at an estimated 3.1 per cent in 2015. Intra-Asian trade – accounting for over two thirds of the total – expanded by 2.9 per cent, down from 6 per cent in 2014. The deceleration reflected the situation in China and the decline in imports in other economies in Asia, such as Indonesia and Japan. Intra-Asian trade continued to be supported, however, by the relocation of manufacturing centres from China to other areas in Asia and by increased imports to the Philippines, the Republic of Korea and Viet Nam, as well as by robust growth on the Asia–South Asia route (Clarksons Research, 2016g).

Overall, in 2015, containerized trade continued to face the upsizing of container ships (see chapters 2 and 3). The average ship size in the global fleet increased at a cumulative annual growth rate of 1.9 per cent in 2001–2009 and 18.2 per cent in 2010–2015 (Davidson, 2016).

One study has noted that container ship size increases of up to 18,000 TEUs were likely to result in maximum cost savings for shipping and ports by only 5 per cent of total network costs, and that the economics of scale diminished as vessel sizes increased beyond 18,000 TEUs (Batra, 2016).

Some observers maintain that the costs of ever-larger ships may outweigh their benefits. The disadvantages include reduced service frequency, higher peaks in

container traffic, greater pressure on the operations of cargo-handling services, rising terminal capital and operational costs, reductions in options available to shippers and higher supply chain risks with the concentration of trade in larger but fewer ships, as well as environmental effects arising from dredging deeper channels and expanding yard area. There will likely be a need for ports and lines to further cooperate, including, for example, through terminal operator alliances, mergers and acquisitions, and joint ventures between the shipping industry and port terminals (Davidson, 2016). In 2015, consolidation activity heightened in the container shipping sector, leading to greater speculation about the future (see chapter 2). An immediate consequence of consolidation is the tendency for alliances to focus on reducing transit times and increasing reliability to attract shippers, at the expense of services and port calls (King, 2016).

With regard to containerized trade, on 1 July 2015, a weight verification requirement was adopted under the International Convention for the Safety of Life at Sea (SOLAS), requiring shippers to verify the gross mass of shipped containers by weighing either the containers and contents combined or individual items in a container (see chapter 5). Some observers expect the charges associated with the new requirement to increase ocean freight transport costs by over 10 per cent (Waters, 2016).

Finally, while speculating about the impact of the decision by the United Kingdom to leave the European Union may be premature, some analysts contend that the effects on container shipping will not be dramatic, as the United Kingdom accounts for only 1.4 per cent of global container volumes and its share of global container port throughput has declined, from 3 per cent in 2000 to 1.2 per cent in 2013. Its importance as a maritime centre for container shipping has gradually diminished, and its shares with regard to controlled container ships and capacity operated are marginal (Baker, 2016).

C. OTHER DEVELOPMENTS AFFECTING SEABORNE TRADE, AND POTENTIAL OPPORTUNITIES FOR DEVELOPING COUNTRIES

Maritime transport and seaborne trade face other developments that involve both challenges and opportunities and could redefine the sector's operating landscape. In addition to the already noted continued macroeconomic uncertainty and apparent shift in the trade–GDP relationship, demand for maritime transport as measured by seaborne trade is subject to other fast-evolving trends. A number of observed developments have the potential to stimulate growth, boost merchandise trade, lift seaborne trade volumes and generate opportunities for developing countries, both as users and providers of maritime transport services. Such developments are increasing and may potentially be game-changing for the maritime transport sector in the long term. They include infrastructure development initiatives, developments in trade policy and liberalization, population growth and urbanization and the growing use of e-commerce. The implications for maritime transport of other parallel trends, such as the fourth industrial revolution, shared and circular economy concepts and reduced fossil fuel use, may be less certain. The fourth industrial revolution involves, in particular, the expansion of the digital revolution into production processes, including technology, innovation, big data and the Internet of Things (UNCTAD, 2016c). While such developments may benefit trade and shipping through improved efficiencies and productivity gains, they may also bring about a shift in global production, consumption and transportation structures and patterns, and potentially reduce demand for maritime transport services and constrain seaborne trade volumes.

1. Transport infrastructure investment, development and expansion

In 2015, a number of infrastructure development and expansion projects were announced, launched or completed, with a view to improving connectivity, enhancing access to suppliers and consumers and enabling trade and regional integration. Such initiatives included the construction, expansion and improvement of logistics infrastructure and physical assets such as the Panama Canal and Suez Canal, as well as the One Belt, One Road Initiative in China and the joint Japan–Asian Development Bank Partnership for Quality Infrastructure. The latter two initiatives have the potential to stimulate growth, boost trade and drive up demand for transport and logistics services.

(a) Panama Canal and Suez Canal

A landmark development in 2015 was the completion of the $8.2 billion expansion project of the Suez Canal, from the original 60 km to 95 km. The expanded Canal is expected to allow for the transit of 97 ships per day, for two-way traffic in some parts and for larger ships in

others. The aim is also to cut transit and waiting times. Another milestone was reached in June 2016 when the expanded Panama Canal opened for operations (see chapter 2 and UNCTAD, 2014a). The Canal will allow for the passage of larger neo-Panamax ships that, in turn, may result in Panamax ships being redeployed on intraregional routes.

(b) One Belt, One Road Initiative

A recent development with potentially significant implications for seaborne trade is China's One Belt, One Road Initiative. Launched in 2013, this initiative aims to establish new trading routes, links and business opportunities by further connecting China, Asia, Europe, Africa and countries with economies in transition along five routes. The implementation process was initiated in 2015, and full implementation across all the countries involved is a long-term endeavour (China–Britain Business Council, 2015). If the initiative is fully implemented, the expected benefits are likely to be broad-based and to span a number of areas and various countries and regions. The initiative envisages the construction of a trade and transport infrastructure network involving 60 countries (table 1.8), accounting for 60 per cent of the world's population and representing a collective GDP equivalent to 33 per cent of the world's total (China–Britain Business Council, 2015). The surface transport component focuses on linking China to Europe through Central Asia and the Russian Federation; China with Western Asia through Central Asia; and China with South-East Asia, South Asia and the Indian Ocean, while the maritime transport component focuses on linking China with Europe through the Indian Ocean and China with the southern Pacific Ocean (Hong Kong [China] Trade Development Council, 2016). Six international economic cooperation corridors have been identified.

In China, the initiative is expected to help revitalize domestic industries; bring higher returns for Chinese capital and higher demand for Chinese goods and services; absorb China's labour; and use China's excess industrial capacity, such as cement for ports and roads and steel for rails and trains, among others (Zhu and Hoffman, 2015). China's western region is expected to benefit through the building of hinterland connections and infrastructure, and the generation of demand for high value-added steel products, such as for pipelines and high-speed railways (Zhu and Hoffman, 2015). Greater energy security for China may also be achieved by making use of alternative routes to the Straits of Malacca though Pakistan, Myanmar and Thailand.

Beyond China, the initiative may help reduce transport costs, increase trade flows and open new markets to all involved countries, as well as promote the development of emerging industries (China–Britain Business Council, 2015). Another important expected contribution is to closing the persistent infrastructure gap in developing regions, especially in transport. Infrastructure investment needs for Asia are estimated at $50 billion per year through 2020 and for Africa are estimated to exceed $93 billion (*Bloomberg Brief*, 2015). Beyond the initiative, China has already committed over $10 billion in investment to develop the Bagamoyo port in the United Republic of Tanzania and has contracts to build railways connecting the ports of Dar es Salaam and Mombasa, with inland countries (Bohlund and Orlik, 2015). Such investments may stimulate trade, as shown in Africa, where a tripling of China's investment value in 2008–2013 was associated with a doubling of exports, from $55 billion in 2008 to $116 billion in 2014 (Bohlund and Orlik, 2015).

From the transport sector perspective, the success of the initiative rests heavily on optimization of the transport infrastructure and services, including shipping and logistics, required to support connectivity in China and beyond. In turn, the transport sector may benefit from the trade growth opportunities generated by the initiative and growth in volumes stemming from reduced transport costs, greater market access and connectivity, and infrastructure and industrial development. With regard to shipping, these may provide an additional boost to lift volumes and reverse the recent trends of weak demand and slowly growing trade, and help bring balance to the market, which currently faces a mismatch between supply and demand, as well as continued excess capacity (see chapter 2). Maritime connections linking China to the Port of Piraeus, Greece, through the Indian Ocean and Suez Canal are expected to provide an alternative to ports such as Antwerp, Belgium; Hamburg, Germany; and Rotterdam, the Netherlands, while cutting 10 days off the journey to Central or Eastern Europe (Pong, 2015). The expanded Suez Canal is likely to benefit from the new traffic to be generated by the initiative, the trade flows from the Islamic Republic of Iran stemming from the removal of international sanctions and the oil trade expected to result from the growing importance of the refinery market in India (*Safety4Sea*, 2016). Surface transport offers alternative logistics options for business and trade, especially for high value added and time-sensitive goods (Pong, 2015). Several railways that already operate between China

Table 1.8 One Belt, One Road Initiative: Projected infrastructure investments by China

Bangladesh	Studies for Bangladesh–China–India–Myanmar corridor; deepwater port, Payra
Belarus	Mining and processing infrastructure, Starobinskoye ($1.4 billion); Sino-Belarus Industrial Park, Minsk ($5 billion)
Fiji	Hydroelectric plant ($158 million)
Georgia	International economic zone, Tbilisi ($150 million); deepwater port, Anaklia ($5 billion)
India	High-speed rail cooperation; industrial parks, Gujarat and Maharashtra
Indonesia	Jakarta–Bandung high-speed railway; coal mining and transport infrastructure, Papua and Kalimantan ($6 billion); road and port infrastructure, Kalimantan ($1.1 billion); ferronickel plant, Sulawesi ($5.1 billion)
Kazakhstan	China–Kazakhstan oil pipeline; development of special economic zone Khorgos-East Gate at Kazakhstan–China border
Kyrgyzstan	China–Kyrgyzstan–Uzbekistan highway; China–Uzbekistan railway ($2 billion); power grid upgrades, southern Kyrgyzstan; power plant refurbishment, Bishkek; transport and logistics cooperation
Lithuania	Encouraging investment in joint railway and port projects; China Merchants Group letter of intent with port of Klaipeda
Malaysia	Malaysia–China Kuantan Industrial Park, including deepwater container port, steel and aluminium plants and palm oil refinery ($3.4 billion)
Myanmar	Bangladesh–China–India–Myanmar transport network, including roads, railways, waterways and airports; Kyaukphyu–Kunming oil and gas pipelines; Myanmar–Yunnan optical cable
Pakistan	China–Pakistan economic corridor, roads and railway ($46 billion); Lahore–Karachi highway; port upgrades, including airport, power plant and roads, Gwadar; coal mine and power plant, Gadani; 720,000 kW Karot Hydropower Plant; soft loans for two nuclear power plants near Karachi ($6.5 billion)
Sri Lanka	Deepwater port in Hambantota ($600 million); China Merchants Holdings International investment in Port of Colombo ($500 million)
Russian Federation	Kazan–Moscow high-speed railway; Siberian gas pipelines to supply China
Thailand	Kra Isthmus Canal ($28 billion); Kunming–Bangkok highway; railway between Nong Kahi, Bangkok and proposed China–Lao People's Democratic Republic railway
Tajikistan	Central Asia–China gas pipeline; 500kV power substation reconstruction, Tursunzoda; Dushanbe–Chanak highway upgrades ($280 million)
Turkmenistan	Islamic Republic of Iran–Kazakhstan–Turkmenistan road and rail network
Uzbekistan	Uzbekistan–China gas pipeline
Viet Nam	Port upgrades, Haiphong; Lang Son–Hanoi highway
Africa	Agreement with African Union to help build railways, roads and airports; coastal road, Nigeria ($13 billion); Nairobi–Mombasa railway, Kenya ($3.8 billion); Addis Ababa–Djibouti railway ($4 billion)
Central and South America	Pledged investment to region ($250 billion); proposed transcontinental railway between coasts of Brazil and Peru ($10 billion); natural gas development, pipelines, power generation facilities, highways, ports and telecommunications
Europe	Upgrade of Port of Piraeus, Greece ($260 million); Hungary–Serbia high-speed railway ($3 billion); China–Spain cargo railway (12,875 km)

Source: UNCTAD secretariat calculations, based on Australia Department of Foreign Affairs and Trade, 2015; and Hong Kong [China] Trade Development Council, 2016.

and Europe provide an advantage with regard to average travel days, which hover at 15 compared with 30–40 by sea. In addition, rail compares favourably with air with regard to shipping costs, and constitutes a more environmentally friendly mode of transport.

(c) Partnership for Quality Infrastructure

The Partnership for Quality Infrastructure aims to promote infrastructure investment in collaboration with other countries and international organizations. Japan, through its economic cooperation tools, including official development assistance, as well as by collaborating with the Asian Development Bank, is expected to provide $110 billion to finance quality infrastructure development in Asia over the next five years (Japan Ministry of Foreign Affairs, 2015). The initiative is expected to meet infrastructure demand and achieve quality and quantity in infrastructure by mobilizing further financial resources and know-how from the private sector. Examples of related projects include the Delhi Metro, India; Ulaanbaatar railway fly-over, Mongolia; and Viet Nam–Japan Friendship Bridge.

2. Trade policy and liberalization developments

Government policies and interventions contribute to shaping international trade patterns, including seaborne

trade. While addressing the weakness in global demand caused largely by stagnant real wages is essential to boosting trade, a number of actions may potentially support a recovery in global aggregate demand and support trade, including, for example, a rollback on restrictive measures and implementation of the Agreement on Trade Facilitation, which could potentially increase trade by up to $1 trillion (World Trade Organization, 2016). Efforts to further liberalize trade through regional agreements are being pursued. Some initiatives have the potential to create large markets and cover a large share of global GDP when fully implemented. For example, the Trans-Pacific Partnership adopted in 2015, which brings together 12 countries, is expected to create a market of 800 million people with over 40 per cent of world GDP (United Nations Department of Economic and Social Affairs, 2016). In addition, negotiations are ongoing for the Regional Comprehensive Economic Partnership, which would cover more than 3 billion people (The Economist Intelligence Unit, 2016b). Negotiations are also ongoing for the Transatlantic Trade and Investment Partnership, which, together with other broad economic agreements among a group of countries that together have significant economic weight, is likely to have a major impact on investment patterns; the three regional groupings each account for a quarter or more of global flows of foreign direct investment (UNCTAD, 2014b). In addition, the Association of Southeast Asian Nations Economic Community, launched in December 2015, could generate a market covering over 622 million people and worth $2.6 trillion (King, 2015). As part of the One Belt, One Road Initiative, China is also reported to be planning to negotiate a free trade agreement with 65 countries. According to the Ministry of Commerce, by the end of 2015, China had established 53 economic cooperation zones in 18 countries along One Belt, One Road Initiative routes, with associated investments of over $14 billion, and had signed free trade agreements with 11 countries and bilateral investment agreements with 56 countries. China is also pursuing trade facilitation initiatives through customs cooperation with neighbouring countries.

3. Population growth and urbanization

Seaborne trade continues to be influenced by growth in the global population and urbanization, and is likely to be further defined by demographic shifts, such as the ageing population in traditional consumer markets in developed regions (including in the United States and Europe) and China, as well as the rise of consumers with lower purchasing power in developing regions (Danish Ship Finance, 2016).

4. Growing cross-border e-commerce trade

Asia–Pacific is the world's biggest and fastest growing business-to-consumer e-commerce region, recording $877.61 billion in retail e-commerce sales in 2015. E-commerce in the region is expected to grow to over $1.89 trillion by 2018 (DHL, 2016). In 2015, China surpassed the United States as the world's largest e-commerce market, with online revenue projected to double to $1.1 trillion by 2020. India's e-commerce turnover, on a par with that of Australia and the Republic of Korea, is projected to grow fivefold by 2020 (DHL, 2016). E-commerce provides a significant growth opportunity, as it enables trade, supply chain capacity and logistics. In developing countries, potential business opportunities and gains may be considerable, as e-commerce alters consumption patterns and consumer shopping behaviour and allows access to a wider selection of goods and brands at a relatively reasonable cost. By boosting and reshaping consumption patterns and enabling small and medium-sized enterprises to reach new markets overseas, e-commerce also generates greater trade volumes. While such developments have the potential to generate higher demand for shipping, ports and logistics services, the actual impact on maritime transport has yet to be fully assessed, as e-commerce may pose some challenges to the shipping sector. For example, shipping may not be able to capture the full trade potential arising from e-commerce, as large retailers (such as Amazon and Wal-Mart Stores) increasingly optimize travel distances, including by expanding their networks of warehouses, positioning inventory and warehouse centres closer to consumption markets and developing their own ship-carrying capacities to avoid the costs of external shipping companies (Subramanian, 2015).

5. Fourth industrial revolution

The fourth industrial revolution, through digitization and the leveraging of innovation, technology, data and the Internet of Things to shift established modes of production and consumption, may generate welfare and productivity gains and offer new opportunities (UNCTAD, 2016c). Innovation, technology and big data may help increase efficiency and productivity, reduce transport costs, enhance the performance of supply chains and shorten travel distances. However, they may disrupt production processes based on vertical

specialization and the international fragmentation of production. By cutting the length of supply chains and potentially limiting (such as through the use of three-dimensional printing and robotics) the ability of countries to generate employment opportunities on the scale experienced in China, which in turn may hinder the emergence of a middle-income class, the fourth industrial revolution has the potential to reduce demand for maritime transport services and constrain growth in world seaborne trade volumes (Danish Ship Finance, 2016).

6. Shared or circular economy

The concepts of shared economy (for example, renting and swapping) and circular economy are increasingly attracting attention. A shared economy through, among others, new technology and platforms that allow for asset management, service delivery and information access, could alter demand as well as supply chains and modify patterns of feedback loops across connected industries (Danish Ship Finance, 2015). A circular economy, by promoting the effective use of resources, greater resource conservation and a reduced reliance on fossil fuels and raw materials, allows for sustainable production and consumption patterns in line with the Sustainable Development Goals. However, the associated savings and efficiency gains could also lower demand for maritime transport services. For example, applying circular economy principles in the automotive industry, where the trend is reported to be gaining traction, may affect demand for automobile carriers (Danish Ship Finance, 2015).

7. Reduced global use of fossil fuels

While the global climate action agenda is expected to further shape tanker trade patterns, advances in renewable energy and energy storage could affect global end-user oil demand (Danish Ship Finance, 2016). Related technologies may reduce demand for crude oil and petroleum products, as well as coal and liquid natural gas, and thereby affect demand for tankers, gas carriers and bulk carriers (Danish Ship Finance, 2015). The attractiveness of gas as a possibly more environmentally friendly alternative to oil and coal implies that trade in liquid natural gas may be expected to benefit, at least in the short and medium terms, from global action on climate change-related effects. In addition, in the renewable energy market, developing countries have the opportunity to increase their importance, as both users and producers. The potential for growth is significant. In 2015, globally, wind energy, which remained the largest source of renewable electricity throughout the year, increased by 17.4 per cent, while solar power generation grew by 32.6 per cent (British Petroleum, 2016). Most developing countries are endowed with renewable energy resources, including for solar energy, wind power, geothermal energy and biomass, as well as the human resources required to manufacture the relatively labour-intensive systems associated with renewable energy production.

D. OUTLOOK

The outlook for seaborne trade remains uncertain and subject to downside risks, including weak global demand and investment, political uncertainties, such as the ongoing migration crisis, doubts about the future pace and direction of European integration and a further loss of momentum in developing economies. UNCTAD forecasts world GDP growth to dip below the 2.5 per cent recorded in 2014 and 2015 and grow by 2.3 per cent in 2016. According to World Trade Organization data, world merchandise trade volumes are projected to remain steady and expand at the same pace as in 2015.

Prospects in developing countries remain generally weak. Lower commodity prices are estimated to cut almost 1 percentage point annually in 2015–2017 from the average rate of economic growth in commodity-exporting countries, compared with the rate in 2012–2014. The negative impact on the growth of energy-exporting countries is estimated to be greater, at about 2.25 percentage points on average over the same period (International Monetary Fund, 2015). In developed economies, the weak performance recorded since the 2008–2009 economic and financial crisis is set to continue. In addition, the long-term consequences of the decision by the United Kingdom to leave the European Union have yet to be fully understood.

Negative signals in the macroeconomic framework are increasingly dampening maritime cargo volumes. While some estimates indicate a slight improvement in 2016, the projected growth rates remain below the UNCTAD estimated average of over 3 per cent in 1970–2014. Major dry bulk commodities are projected to grow marginally, reflecting a continued drop in coal trade, while containerized trade volumes are expected to recover marginally in 2016. Tanker trade, including gas trade, is projected to grow by an

estimated 3.6 per cent in 2016, supported in part by growth in China's crude oil imports and refineries and continued stock-building activity (Clarksons Research, 2016a). Although positive, this rate remains below the level in 2015, reflecting the diminishing positive effect of lower oil prices on demand, lower trading activity and moderation in stock-building. In addition to the potential impact of China's ongoing economic transition and geopolitical tensions in various parts of the world and the potential disruptions to oil supply, tanker trade is also shaped by infrastructure developments such as the expansion by 2020 of the Eastern Siberia–Pacific Ocean pipeline that links China and the Russian Federation (Danish Ship Finance, 2015).

Although many signals are negative, seaborne trade continues to grow, with volumes exceeding an estimated 10 billion tons in 2015. While a slowdown in China is bad news for shipping, developing countries other than China are increasingly entering the shipping scene and have the potential to drive further growth. The lifting of some sanctions on the Islamic Republic of Iran is expected to stimulate crude oil trade, as well as non-oil sectors.

With the continued observed shift in the trade–GDP relationship, it is increasingly evident that projecting seaborne trade flows based on a linear extrapolation from GDP and merchandise trade growth may no longer be valid. Forecasting methods need to be reconsidered, and to reflect variables other than GDP, including fiscal and environmental policies, as well as transport costs and regulatory aspects. Such considerations should be taken into account when projecting future growth and trade flows with a view to planning future transport infrastructure and capacity development, and devising strategies and policies aimed at supporting supply chains and industrialization through manufacturing and greater participation in regional and global value chains. Additionally, better understanding of the new trade–GDP relationship provides an opportunity for developing countries to consider ways in which they may increase participation in global production processes and trade networks. While vertical specialization and the fragmentation of production in China and the United States may have peaked, there remains scope to enhance the international division of labour by integrating regions that have been at the margin of global supply chains, such as Africa, South America and South Asia. Developing countries may benefit by exploring untapped potential and opportunities.

At the same time, and while South–South trade is gaining momentum and regional trade liberalization agreements are being negotiated or concluded, planned initiatives, such as the One Belt, One Road Initiative and Partnership for Quality Infrastructure, and the expansion of transit passages and sea bridges, such as the Panama Canal and Suez Canal, also have the potential to stimulate trade and reshape world shipping networks and trade routes, as well as to redefine hubs and networks. The growth potential associated with such developments may be significant. If fully implemented, the One Belt, One Road Initiative, for example, may boost trade, increase demand for maritime transport services, raise seaborne trade volumes and provide opportunities for developing countries to strengthen their position both as users and providers. Globally, developing countries already account for 60 and 62 per cent, respectively, of goods loaded and unloaded.

Technology, innovation, the data revolution and e-commerce can significantly transform and disrupt the shipping industry, generating both challenges and opportunities, including with regard to efficiency gains, new business models, use of the Internet, digitization, efficient logistics, effective asset management and the greater integration of small and medium-sized enterprises. Developing countries may leverage related trends to cut costs, raise productivity, develop capacity – including skills and knowledge – and enable access to new businesses opportunities.

How these trends will materialize on a broader scale remains unknown, yet it is nevertheless important for all countries – in particular in developing regions – and their transport industries to keep these developments in mind, monitor their evolution and assess their particular implications for their transport and logistics sectors and, more broadly, for their economies, societies and environments. An improved understanding of the trends and their implications may help countries ensure that these are effectively integrated into relevant planning and investment-related decision processes, and aligned with the 2030 Agenda for Sustainable Development.

Finally, the international climate agenda can be expected to further shape the maritime transport operating landscape, as the sector faces the dual challenge of climate change mitigation and adaptation (for a more detailed discussion of the climate change–maritime transport nexus, see the *Review of Maritime Transport*, 2012, 2013, 2014 and

2015). Future trends in emissions from international shipping remain uncertain and subject to international efforts and commitments to curb greenhouse gas emissions including the efforts under the frameworks of the International Maritime Organization (IMO) and the Conference of the Parties to the United Nations Framework Convention on Climate Change. Curbing greenhouse gas emissions from international shipping is an imperative, as freight transport, including maritime transport, grows in tandem with the global population, consumption needs, industrial activity, urbanization, trade and economy. Despite the current slowdown in the growth of world seaborne trade, maritime freight volumes and demand for maritime transport services are expanding. At the same time, shipping's heavy reliance on oil for propulsion translates into significant emissions of airborne pollutants and greenhouse gases. According to IMO data, carbon dioxide (CO_2) emissions from international shipping were estimated at 2.2 per cent of total emissions in 2012 and are projected to increase by 50–250 per cent by 2050, depending on economic growth and the global energy demand. As the Paris Agreement under the United Nations Framework Convention on Climate Change does not refer to emissions from international shipping, continued work under the frameworks of IMO and the United Nations Framework Convention on Climate Change is of critical importance. The twenty-second session of the Conference of the Parties, to be held from 7 to 18 November 2016, offers a renewed opportunity for shipping to advance the work on climate change mitigation. This, in turn, entails both challenges and opportunities for the sector, as it can emerge as a key player in implementing effective climate change policy action and the sustainable development agenda. Supporting this objective, UNCTAD has been increasingly considering climate change, as part of its ongoing work in the field of trade logistics, and carrying out substantive work to improve the understanding of issues at the interface of maritime transport and the climate change challenge (see http://unctad.org/en/Pages/DTL/TTL/Legal.aspx and http://unctad.org/en/Pages/DTL/TTL/Infrastructure-and-Services/Sustainable-Transport.aspx).

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ENDNOTES

[1] Breakdown by cargo type and related growth rates (unless otherwise indicated) based on Clarksons Research, 2016a, 2016b and 2016c.