

UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT

REVIEW OF MARITIME TRANSPORT 2010

Report by the UNCTAD secretariat

Chapter 1



UNITED NATIONS
New York and Geneva, 2010



1



DEVELOPMENTS IN INTERNATIONAL SEABORNE TRADE

CHAPTER 1

The contraction in the global economy and in merchandise trade during 2009 has changed the landscape of the shipping industry dramatically. A global recovery is currently under way, but it is uneven, slower compared to the recoveries that followed previous recent recessions, and challenged by numerous uncertainties and fragile global economic conditions. As demand for maritime transport services derives from global economic growth and the need to carry international trade, shipping and its recovery remain subject to developments in the wider economy.

This chapter covers developments from January 2009 to June 2010, and where possible up to September 2010. Section A reviews the overall performance of the global economy in 2009, and points to some general trends influencing the outlook for 2010. Section B considers developments in world seaborne trade volumes – including tanker, dry bulk and container – and highlights some emerging global challenges which are affecting maritime transport and are growing in importance, such as security, environmental protection and climate change, and energy sustainability and affordability. Section C looks more closely at developments affecting energy-related bulk cargoes, namely oil, gas and coal, which have important implications for tanker trade, bunker fuel prices, maritime transport costs and climate change.

A. WORLD ECONOMIC SITUATION AND PROSPECTS

1. World economic growth¹

Following the global financial crisis of late 2008, the year 2009 recorded the first and deepest drop in global output since the 1930s, with world gross domestic product (GDP) contracting by 1.9 per cent (table 1.1).

The downturn was broad-based, with countries experiencing an exceptionally synchronized reversal in the trend of GDP growth (fig. 1.1 (a)). Developed economies and countries with economies in transition recorded the largest contractions, of 3.4 per cent and 6.3 per cent respectively. Developing economies have been affected too, with growth in these economies decelerating to 2.4 per cent – a much slower rate compared to 2007 and 2008. However, this figure conceals differences in the performance of individual countries. While GDP growth in China and India

Table 1.1. World economic growth, 2007–2010^a (annual percentage change)

| Region/country | 1991–2003 Average | 2007 | 2008 | 2009 ^b | 2010 ^c |
|---|-------------------|------|------|-------------------|-------------------|
| WORLD | 2.8 | 3.9 | 1.7 | -1.9 | 3.5 |
| Developed economies | 2.5 | 2.5 | 0.3 | -3.4 | 2.2 |
| <i>of which:</i> | | | | | |
| United States | 3.3 | 2.1 | 0.4 | -2.4 | 2.9 |
| Japan | 1.0 | 2.4 | -1.2 | -5.2 | 2.5 |
| European Union (27) | 2.3 | 2.8 | 0.7 | -4.2 | 1.1 |
| <i>of which:</i> | | | | | |
| Germany | 1.7 | 2.5 | 1.3 | -4.9 | 1.5 |
| France | 2.0 | 2.4 | 0.2 | -2.6 | 1.2 |
| Italy | 1.6 | 1.4 | -1.3 | -5.1 | 0.8 |
| United Kingdom | 2.9 | 2.6 | 0.5 | -4.9 | 1.1 |
| Developing economies | 4.6 | 7.8 | 5.4 | 2.4 | 6.9 |
| <i>of which:</i> | | | | | |
| China | 10.0 | 13.0 | 9.6 | 8.7 | 10.0 |
| India | 5.8 | 9.6 | 5.1 | 6.6 | 7.9 |
| Brazil | 2.5 | 6.1 | 5.1 | -0.2 | 7.6 |
| South Africa | 2.4 | 5.5 | 3.7 | -1.8 | 3.0 |
| Least Developed Countries (LDCs) | 4.2 | 8.4 | 5.4 | 4.7 | 5.7 |
| Transition economies | .. | 8.5 | 5.4 | -6.3 | 4.1 |
| <i>of which:</i> | | | | | |
| Russian Federation | .. | 8.1 | 5.6 | -7.9 | 4.3 |

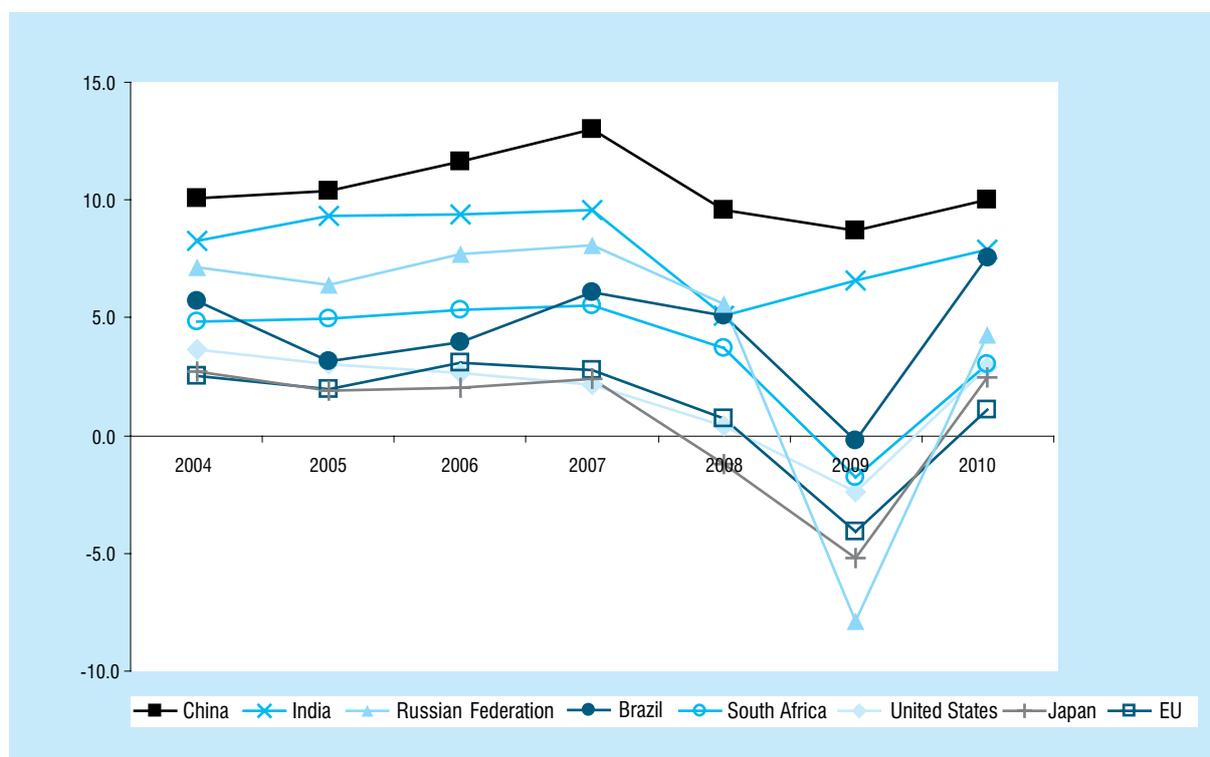
Source: UNCTAD. *Trade and Development Report 2010*. Table 1.1: World output growth, 1991–2010.

^a Calculations for country aggregates are based on GDP at constant 2000 dollars.

^b Preliminary estimates.

^c Forecast.

Figure 1.1. (a) World GDP growth, 2004–2010, selected countries (annual percentage change)



Source: UNCTAD. *Trade and Development Report 2010*. Table 1.1. World output growth, 1991–2010.

remained positive (8.7 per cent and 6.6 per cent respectively), other emerging developing economies, such as Brazil and South Africa, suffered GDP contractions. The least developed countries (LDCs) have fared better as their economies have continued to grow, albeit at a slower rate (4.7 per cent; down from 5.4 per cent in 2008), though still faster than the average growth over the period 1993–2001. For these countries, a decline in economic growth constitutes a considerable setback to the attainment of the Millennium Development Goals (MDGs), including the goal of poverty alleviation. By the end of 2009, developing countries had suffered an income loss of at least \$750 billion,² and, by the end of 2010, the crisis will have increased the number of people in extreme poverty by 64 million.³

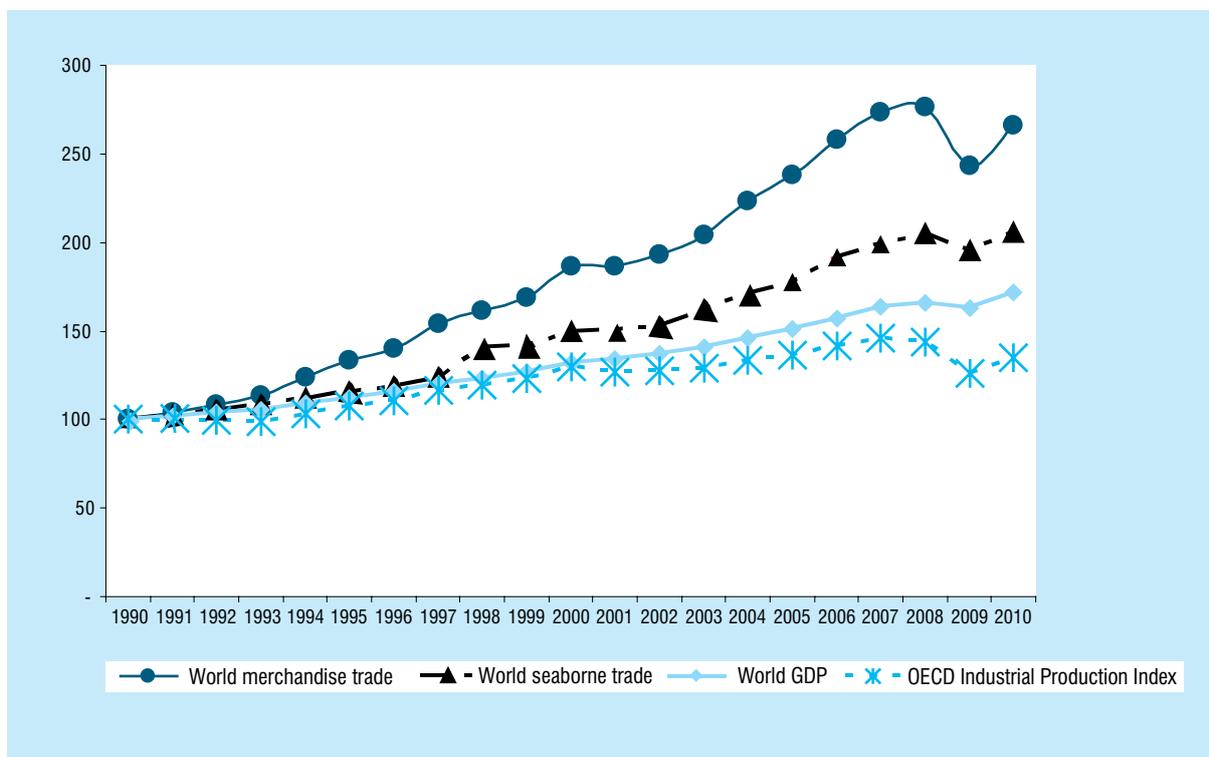
Global GDP is forecast to expand by 3.5 per cent in 2010, with the recovery by country varying in speed, and with the major drag on global growth coming from developed economies and related concerns about fiscal sustainability and large public debt (e.g. Greece and Ireland). In the United States, the larger scale of the fiscal stimulus is expected to help achieve a relatively better performance than in Europe and

Japan. The outlook for developing countries is much brighter, with China, India and Brazil leading the way. GDP in the transition economies is expected to grow, too, although it is still expected to lag behind developing regions and pre-crisis levels.⁴

Industrial production – also a leading indicator of demand for maritime transport services – has recovered from the fall in 2009 which dampened demand for raw materials and energy, both mainstays of demand for shipping services. The correlation between industrial production, economic growth, global merchandise trade and seaborne trade volumes is shown in figure 1.1 (b). Signs of a slow recovery can be observed, with the four indicators moving upwards in 2010.

By the first quarter of 2010, the Organization for Economic Cooperation and Development (OECD) Industrial Production Index had grown marginally (to 97.3, from 92.5 in 2009),⁵ reflecting, in particular, reduced consumer confidence and subdued employment in advanced economies. In contrast, industrial activity in emerging developing economies was expanding rapidly, at rates which – in some cases

Figure 1.1. (b) Indices for world GDP, the OECD Industrial Production Index, world merchandise trade and world seaborne trade, 1990–2010 (1990=100)



Source: UNCTAD secretariat, on the basis of *OECD Main Economic Indicators*, May 2010; the UNCTAD *Trade and Development Report 2010*; the UNCTAD *Review of Maritime Transport*, various issues; WTO's, *International Trade Statistics 2009*, Table A 1a, and the WTO press release issued in March 2010, entitled "World trade 2009, prospects for 2010". WTO merchandise trade data (volumes) are derived from customs values deflated by standard unit values and adjusted price index for electronic goods. The 2010 index for seaborne trade is calculated on the basis of the growth rate forecast by Clarkson Research Services.

– were surpassing the pre-crisis levels. Improved industrial confidence⁶ and heavy public spending in support of demand resulted in China's industrial production growing at an average of 16 per cent during the second quarter of 2010. By comparison, China's industrial production grew at an annual rate of 11.1 per cent in 2009, and 13.0 per cent in 2008.⁷ Activity in the Republic of Korea also expanded during the second quarter of 2010, with industrial production increasing at an average of 19.4 per cent, as compared with 3.3 per cent in 2008, and zero production growth in 2009.⁸ During the second quarter of 2010, the industrial production index for Brazil averaged 115.3 (100.8 in the second quarter of 2009), while the index for India averaged 147.7 (132.3 in the second quarter of 2009).⁹

In sum, a global recovery is under way, but it is uneven, slower compared to the recoveries that followed previous recent recessions, and challenged by the fragile conditions prevailing in most

advanced economies. With growth heavily driven by governmental fiscal and monetary intervention, the timing of the winding up of public stimulus packages is crucial to the sustainability of the global recovery. These developments have a direct bearing on global merchandise trade, including seaborne trade.

2. Merchandise trade¹⁰

The global financial crisis of late 2008 and the consequent economic downturn have been referred to as the "Great Trade Collapse".¹¹ The year 2009 recorded the sharpest trade decline in more than 70 years, with world merchandise export volumes estimated by UNCTAD to have plummeted by 13.7 per cent. In terms of value, world merchandise exports fell by 22.9 per cent. The total loss in world trade over 2008–2010, compared to what the situation would have been without the crisis (at the trend growth rates)

is estimated at \$5.0 trillion, or about 12.7 per cent of world output in 2009 (at constant 2000 dollars).¹²

While a contraction in trade was expected, the magnitude of the drop was unprecedented even in comparison with the Great Depression.¹³ The volume of merchandise exports dropped seven times more rapidly than global GDP, while existing estimates of trade/GDP elasticity ranged between approximately 2 (in the 1960s and 1970s) and 3.4 (in the 1990s).¹⁴ The multiplier effect relates, among other things, to globalized production processes and increased trade in parts and components, the deepening and widening of global supply chains, the product composition of the fall in demand (e.g. consumer goods and durables), and the limited trade finance. The rapid decline in trade volumes could also be explained by the fact that trade in goods drops faster than trade in services, with the latter accounting for a larger share of GDP.¹⁵ As to the role of shortages in trade finance in accelerating the drop, 10 to 15 per cent of the fall in trade volume was due to reduced trade finance.¹⁶

The trade volumes of major developed and developing economies fell in 2009 (table 1.2). All regions have suffered adverse trade shocks, either in terms of import demand volumes, exports, or terms of trade. The exception was the relatively steady growth in China's import volumes.

In 2009, merchandise trade (imports and exports) in developed countries – which are major importers of manufactures and consumer goods (carried in containers) – declined at a rate higher than the world average. Because of the high income elasticity of import demand for these goods, the deep recession in these countries reduced the demand for manufactures, consumer goods and durables, and depressed container trade volumes. This has spread quickly both to exporters of these goods and to providers of inputs and raw materials.

Developing and transition economies have also suffered a collapse in their merchandise trade. Developing countries have recorded a drop in export and import volumes of 11.7 per cent and 9.5 per cent respectively. East Asia, including China, has recorded a contraction in export volumes, although at a lower rate than the world average. The largest drop in total merchandise import volumes was recorded by oil and mineral exporters, including economies in transition (28.2 per cent) and Latin America and the Caribbean (17.1 per cent).

The crisis has emphasized the importance of South–South links (trade and investment).¹⁷ For example, trade from China to Africa increased,¹⁸ while at the fourth Forum on China–Africa Cooperation, held in November 2009, China doubled its initial commitment made at the 2006 summit and pledged \$10 billion in new low-cost loans to Africa over a three-year period.¹⁹ Greater inter-regional integration could also take place through outsourcing and commercial presence. For example, given that Chinese industry is likely to move up the value chain, opportunities may emerge for other developing regions such as Africa, with Chinese lower-value manufacturing companies being relocated in Africa along the lines of Chinese resource development and construction enterprises.²⁰

Other countries are playing a larger role, too. For example, Brazil is importing gas from the Plurinational State of Bolivia; South Africa is the main source of remittances to Mozambique and a destination for Mozambican exports; the Russian Federation is an emerging destination for exports from Cambodia, Ethiopia and the United Republic of Tanzania; and India is expanding its links with many African countries, both through foreign direct investment (FDI) and trade.²¹ South–South and North–South ties, as well as links between developing countries and economies in transition, are expanding through trade and investment channels. Examples of this are: (a) the customs union between Belarus, Kazakhstan and the Russian Federation; (b) the free trade agreement between the Association of Southeast Asian Nations (ASEAN) and China; (c) the free trade agreements between (i) ASEAN and Australia–New Zealand, and (ii) ASEAN and India; (d) the Comprehensive Economic Partnership Agreement concluded between India and the Republic of Korea; and (e) the free trade agreement between the European Union and the Republic of Korea; as well as other similar initiatives reported to be in the pipeline. These developments, and the role to be played by some countries and regions, have important implications for seaborne trade demand, flows, structure and patterns.

The prospects for 2010 are improving. Assuming no new upheavals in the global economy, and the confirmation of the nascent global recovery, the World Trade Organization (WTO) expects world export volumes to rebound and grow at 9.5 per cent in 2010. Developing countries and countries with economies in transition are expected to drive the recovery, with an annual growth rate of 11.0 per cent (7.0 per cent for developed economies). This reflects the increasing

**Table 1.2. Growth in the volume^a of merchandise trade, by geographical region, 2007–2009
(annual percentage change)**

| Exports | | | Countries/regions | Imports | | |
|------------------|------|-------|---------------------------------|---------|------|-------|
| 2007 | 2008 | 2009 | | 2007 | 2008 | 2009 |
| 5.8 | 3.0 | -13.7 | WORLD | 6.6 | 2.2 | -13.1 |
| 3.9 | 2.8 | -14.8 | Developed countries | 3.7 | 0.0 | -14.2 |
| <i>of which:</i> | | | | | | |
| 6.8 | 4.9 | -25.3 | Japan | 0.8 | -0.9 | -12.8 |
| 6.8 | 5.5 | -14.9 | United States | 1.1 | -3.7 | -16.5 |
| 3.2 | 2.5 | -13.7 | European Union | 4.8 | 1.1 | -13.7 |
| 8.6 | 0.8 | -15.5 | Transition economies | 26.1 | 16.0 | -28.2 |
| 8.7 | 4.2 | -11.7 | Developing countries | 10.6 | 5.3 | -9.5 |
| <i>of which:</i> | | | | | | |
| 4.8 | -2.8 | -10.0 | Africa | 11.2 | 11.6 | -2.4 |
| 2.4 | -0.6 | -9.7 | Latin America and the Caribbean | 11.6 | 8.6 | -17.1 |
| 15.6 | 7.3 | -10.2 | East Asia | 10.2 | 0.6 | -4.6 |
| 21.8 | 10.5 | -13.0 | <i>of which:</i> China | 14.1 | 2.4 | -0.2 |
| 6.3 | 14.9 | -18.9 | South Asia | 10.9 | 7.2 | -6.9 |
| 15.2 | 10.7 | -7.9 | <i>of which:</i> India | 16.9 | 10.4 | -7.5 |
| 6.9 | 2.1 | -9.7 | South–East Asia | 6.7 | 8.0 | -15.9 |
| 2.0 | 7.4 | -14.4 | West Asia | 16.7 | 8.4 | -12.8 |

Source: UNCTAD (2010). Table 1.2. Export and import volumes of goods, selected regions and countries, 2006–2009. In: *Trade and Development Report 2010*.

^a Data on trade volumes are derived from international merchandise trade values deflated by UNCTAD unit value indices.

role of developing regions – especially Asia and more specifically China – as engines of growth. China overtook Germany as the world's leading exporter in 2009, with a share of 10.0 per cent of world merchandise exports by value. China's strong import demand for raw materials has been boosted by a sizeable stimulus package, and will continue to be the driving force behind the global recovery.

The following section sets out some of the main developments that shaped international seaborne trade in 2009, and examines the effect of the global economic downturn and financial crisis on various seaborne trades (e.g. tanker, dry bulk and container). The large imbalance in the growth rates of ship supply and demand, the climate change challenge, piracy and maritime security, and energy and its implications for bunker fuel prices and for transport costs are highlighted as particularly important considerations for shipping.

B. WORLD SEABORNE TRADE

1. General trends in seaborne trade

Estimates based on preliminary data for 2009 indicate that world seaborne trade volumes fell by 4.5 per cent, suggesting, as noted by some observers, that 2008 marked the end of the "super cycle". In 2009, total goods loaded amounted to 7.8 billion tons, down from 8.2 billion tons recorded in 2008 (tables 1.3 and 1.4, and fig. 1.2).

Developing countries continued to account for the largest share of global seaborne trade (61.2 per cent of all goods loaded and 55.0 per cent of all goods unloaded), reflecting their growing resilience to economic setbacks and an increasingly leading role in driving global trade. Developed economies' shares of

global goods loaded and unloaded were 32.4 per cent and 44.3 per cent respectively. Transition economies accounted for 6.4 per cent of goods loaded, and 0.8 per cent of goods unloaded.

Taken on a regional basis, Asia continues to dominate, with a share of 41 per cent of total goods loaded, followed in decreasing order by the Americas, Europe, Oceania and Africa (fig. 1.3 (a)). Since 2008, Oceania has overtaken Africa as the fourth loading region, which reflects, in particular the rise in iron ore and coal shipments from Australia.

Over the past four decades, developing economies have consistently loaded (exported) more international cargo than they have unloaded (imported) (fig. 1.3 (b)). At the same time, the volume of cargo unloaded (imports) has been growing rapidly, catching up with the volume of goods loaded (exports). This development reflects – in particular – the evolution in the global production system which has seen production of manufactured products increasingly being outsourced to distant locations in developing countries, with a corresponding growth in intra-company trade – particularly trade in parts and components used as production inputs. Robust industrial growth in emerging developing countries and the associated demand for raw materials also have a role to play. Another factor is the income or wealth effect. Bigger incomes allow for the emergence of a middle class in developing countries, which drives changes in the scale and composition of consumer demand. This may involve increased demand for finished products and consumer goods, and more diversified and sophisticated food items.

As demand for maritime transport services derives from global economic growth and the need to carry international trade, shipping could not be sheltered from the contractions in the global GDP and merchandise trade. The following section reviews the main developments in seaborne trade in 2009, including by cargo type, and provides an outlook for 2010. It also considers a number of challenges that are facing the shipping industry and global seaborne trade.

2. Seaborne trade by cargo type²²

Crude oil, petroleum products and gas

Since the recession took hold in the second half of 2008, energy demand has tapered off, starting in late 2008 and continuing during 2009. Consequently,

world shipments of tanker trade volumes, including crude oil, petroleum products and liquefied natural gas (LNG) fell by 3.0 per cent in 2009. Total tanker cargoes loaded amounted to 2.65 billion tons, down from 2.73 billion tons loaded in 2008.

Crude oil shipments

In 2009, seaborne shipments of crude oil fell by an estimated 3.4 per cent to 1.72 billion tons. Major oil producers, including from the OPEC countries of Western Asia, were the largest loading areas for crude oil, together with the economies in transition, South and East Asia, Central Africa, South America's northern and eastern seaboard, North Africa, West Africa, and the Caribbean and Central America (see Section C for the major producers and consumers of oil and gas). The major unloading areas included North America, South and East Asia, Europe, Japan and South-East Asia. The strong growth in oil demand from China, India and Western Asia, and the resilient growth in Latin America, are being translated into proportionately growing shares of crude shipments being unloaded in those regions. With relatively high stocks of crude oil in developed economies and a depressed global demand for oil, major oil importers in advanced economies have recorded falls in their crude oil shipments and have reduced their import requirements.

After the exceptionally good times in the pre-2008 period, the tanker market faced difficult times in the first half of 2009. However, as the global outlook improved later in the year and optimism about future recovery took hold, conditions for the tanker trade improved. Cold weather in Northern Europe and China, coupled with an increasing propensity for low prices to prompt the use of tankers to store oil in anticipation of higher resale prices in the future, have helped support recovery in oil demand. As for supply, slippage and increased storage have helped to moderate the excess ship supply in 2009. Some 25 per cent of tanker capacity was not delivered to schedule in 2009 (to reduce supply), while as many as 34 very large crude carriers (VLCCs) were identified as having been used for storage.²³ Global storage of crude oil in VLCCs was estimated to have reached at least 80 million barrels in early 2009.²⁴

Looking ahead, and the effect of the downturn notwithstanding, the crude oil trade is set to reverse the 2009 trend and resume growth in 2010, albeit at a slow pace and against a rapidly growing fleet. Although 2010 is expected to mark the end of the

Table 1.3. Development of international seaborne trade, selected years (millions of tons loaded)

| Year | Oil | Main bulks ^a | Other dry cargo | Total (all cargoes) |
|-------------------|-------|-------------------------|-----------------|---------------------|
| 1970 | 1 442 | 448 | 676 | 2 566 |
| 1980 | 1 871 | 796 | 1 037 | 3 704 |
| 1990 | 1 755 | 968 | 1 285 | 4 008 |
| 2000 | 2 163 | 1 288 | 2 533 | 5 984 |
| 2006 | 2 698 | 1 849 | 3 135 | 7 682 |
| 2007 | 2 747 | 1 972 | 3 265 | 7 983 |
| 2008 | 2 732 | 2 079 | 3 399 | 8 210 |
| 2009 ^b | 2 649 | 2 113 | 3 081 | 7 843 |

Source: Compiled by the UNCTAD secretariat on the basis of data supplied by reporting countries as published on the relevant government and port industry websites, and by specialist sources. The data for 2006 onwards have been revised and updated to reflect improved reporting, including more recent figures and better information regarding the breakdown by cargo type.

^a Iron ore, grain, coal, bauxite/alumina and phosphate. The data for 2006 onwards are based on *Dry Bulk Trade Outlook* produced by Clarkson Research Services Limited.

^b Preliminary.

remaining single-hull tankers, even a scrapping of this entire capacity will not address the concerns about oversupply, as single-hull tankers have, in any case, been progressively less active. Additionally, increasing oil prices mean that the use of tankers for storage will decline, adding more ship tonnage capacity to the existing fleet. With the dry bulk sector also having suffered from the crisis, it makes much less sense to convert tankers into bulkers; in this context, achieving a balance between demand and supply will remain a major challenge.

Shipments of petroleum products

The year 2009 was also considered a poor year for the product tanker segment, as demand for petroleum products, in terms of scale, structure and geographical distribution, is also influenced by the wider global economic context. Demand for gasoline and diesel for cars declined, while demand for distillates and other products used for industrial purposes remained subdued. The depressed demand has led to a build-up of oil inventories, with significant volumes stored on tankers around the world. This was reflected in world shipments of petroleum products, which fell by 2.4 per cent to reach 924.6 million tons in 2009. Developed regions accounted for 38.4 per cent of world petroleum products loaded, and 55.3 per cent of world petroleum products unloaded. Developing economies accounted for 57.1 per cent of world products loaded, and 44.4 per cent of world products unloaded. Economies in transition accounted for the balance.

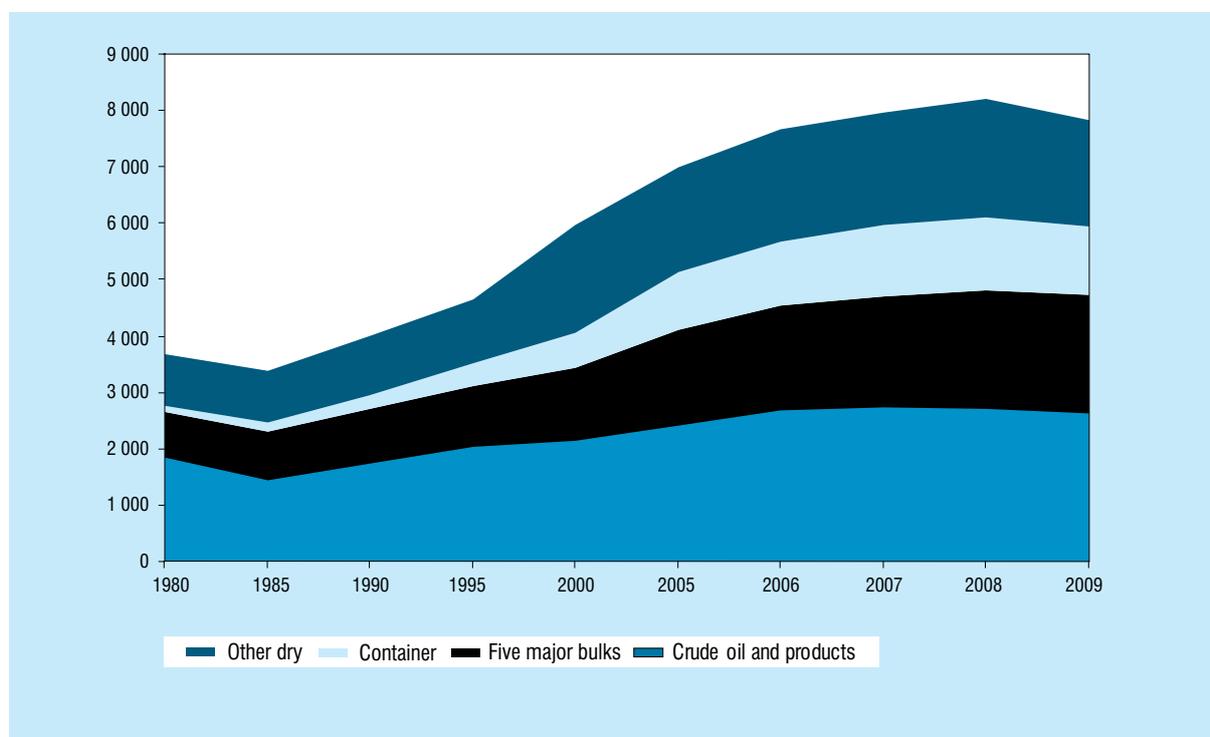
The outlook in 2010 for the petroleum products trade has improved with the improved global economic prospects and a projected growth in demand from non-OECD countries. Nevertheless, and as was the case for crude oil and the VLCC sector, this recovery is set against a significant product tanker capacity expansion.

Liquefied natural gas shipments

According to data from BP, the LNG trade grew by 7.2 per cent in 2009, taking the total volume of LNG shipped to 242.8 billion cubic metres (bcm). This contrasts with declining natural gas consumption and production levels, as well as diminishing shipments by pipeline. LNG imports into the United States increased by over 28 per cent in 2009, due to cold weather and to lower prices, which made gas compete with coal for power generation. Of particular note is the continuing growth in unconventional²⁵ gas production in the United States. This represents a major turnaround from previous production declines, and calls into question whether large-scale imports will be needed by the United States. Imports into Europe are expected to slowly recover in 2010, with the United Kingdom becoming a net importer in 2009, importing 10.2 bcm of LNG.

The large LNG importers in Asia – namely Japan, the Republic of Korea, and Taiwan Province of China – also recorded a fall. This trend is expected to be reversed due to the economic recovery and the rise in industrial demand. China remains a smaller energy market compared to these large Asian importers.

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



Source: *Review of Maritime Transport*, various issues. Container trade data obtained from Clarkson Research Services, *Shipping Review and Outlook*, spring 2010.

However, given its projected growth path, China is expected to emerge as an important new import market, as illustrated by the recent Memorandum of Understanding signed between Qatar and China providing for additional long-term supplies of LNG to China.²⁶

On the supply side, the main global exporters of LNG were located in developing regions, with Qatar being the largest, followed, in descending order, by Malaysia, Indonesia, Algeria and Nigeria. The depressed economic situation in 2009 resulted in setbacks to a number of LNG projects, with many being delayed due to difficulties in securing financing. Although financing problems existed even before the crisis, more challenging economic times have exacerbated the problem. Nevertheless, global LNG production is expected to expand in 2010, driven mainly by Qatar. The trade will be further dependent on new LNG liquefaction projects expected to start up in 2010–2016, and the proliferation of projects intended to use floating storage and gasification units. While the general outlook for LNG shipping may be positive, it is still necessary, in the short term, to restore balance in the market. Like other tanker segments, the LNG sector is suffering from overcapacity too, with many ships reported to be idle in 2010.

Dry cargo shipments: major and minor dry bulks and other dry cargo²⁷

In 2009, dry cargo volumes, including dry bulks, container cargo and other dry cargoes, recorded their first drop since 1983 (by 5.2 per cent) and stood at about 5.2 billion tons. The share of dry cargo in the total volume of goods loaded has been growing over the years, and continues to account for the lion's share of the total (66.2 per cent).

Major dry bulks: iron ore, coal, grain, bauxite/alumina and phosphate rock

In 2009, trade in the five major bulks increased by 1.6 per cent to 2.1 billion tons. The main drag on growth in the major dry bulk volumes resulted from the severe contraction in the volumes of bauxite and alumina (23.2 per cent) and phosphate rock (38.7 per cent). This drop was more than offset by the growing volumes of two major dry bulks, namely iron ore and coal. In 2009, the world dry bulk trade continued to hold strong, due in particular to China's \$586 billion stimulus package and massive infrastructure expenditure in support of domestic demand.

Table 1.4. World seaborne trade in 2006–2009, by type of cargo and country group

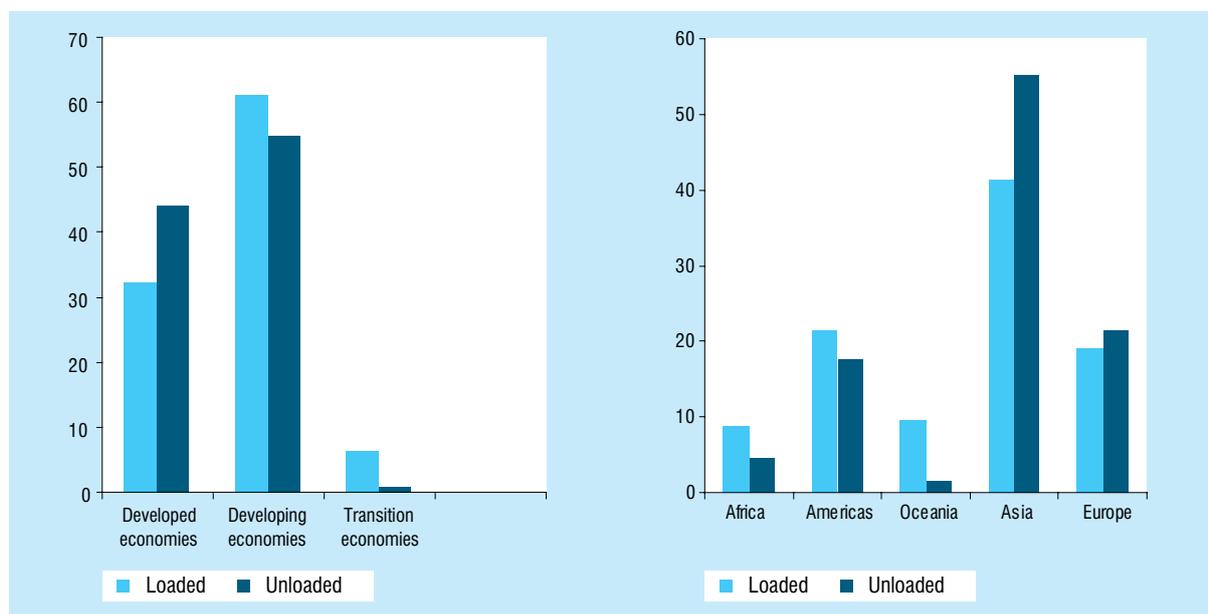
| Country group | Year | Goods loaded | | | | Goods unloaded | | | |
|----------------------|------|--------------|---------|----------|-----------|----------------|---------|----------|-----------|
| | | Total | Crude | Products | Dry cargo | Total | Crude | Products | Dry cargo |
| Millions of tons | | | | | | | | | |
| World | 2006 | 7 682.3 | 1 783.4 | 914.8 | 4 984.1 | 7 885.9 | 1 931.0 | 894.2 | 5 060.8 |
| | 2007 | 7 983.5 | 1 813.4 | 933.5 | 5 236.6 | 8 136.1 | 1 995.5 | 904.3 | 5 236.3 |
| | 2008 | 8 210.1 | 1 785.2 | 946.9 | 5 478.0 | 8 272.7 | 1 942.1 | 964.1 | 5 366.5 |
| | 2009 | 7 842.8 | 1 724.5 | 924.6 | 5 193.6 | 7 908.4 | 1 877.8 | 957.3 | 5 073.3 |
| 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 | 2 708.5 | 129.0 | 394.3 | 2 185.1 | 4 007.9 | 1 251.1 | 523.8 | 2 233.0 |
| | 2009 | 2 540.1 | 118.6 | 355.0 | 2 066.5 | 3 499.8 | 1 149.8 | 529.4 | 1 820.6 |
| 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 | 501.8 | 151.3 | 41.6 | 309.0 | 60.5 | 6.1 | 3.0 | 51.4 |
| Developing economies | 2006 | 4 811.5 | 1 527.5 | 537.1 | 2 747.0 | 3 650.6 | 643.4 | 355.5 | 2 651.6 |
| | 2007 | 4 966.6 | 1 553.9 | 530.7 | 2 882.0 | 4 068.9 | 742.2 | 376.8 | 2 949.8 |
| | 2008 | 5 070.2 | 1 517.9 | 515.9 | 3 036.4 | 4 175.5 | 684.7 | 436.5 | 3 054.3 |
| | 2009 | 4 800.8 | 1 454.6 | 528.0 | 2 818.2 | 4 348.1 | 721.9 | 424.8 | 3 201.3 |
| Africa | 2006 | 704.0 | 353.8 | 86.0 | 264.2 | 357.4 | 41.0 | 39.9 | 276.5 |
| | 2007 | 708.9 | 362.5 | 81.8 | 264.6 | 375.9 | 45.5 | 45.0 | 285.3 |
| | 2008 | 741.9 | 379.2 | 83.5 | 279.3 | 366.1 | 44.8 | 44.2 | 277.0 |
| | 2009 | 682.1 | 335.0 | 82.8 | 264.4 | 365.6 | 43.7 | 42.7 | 279.2 |
| Americas | 2006 | 1 030.7 | 251.3 | 93.9 | 686.5 | 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 | 1 112.2 | 234.6 | 93.0 | 784.6 | 433.8 | 74.2 | 66.9 | 292.7 |
| | 2009 | 1 050.6 | 219.4 | 89.6 | 741.7 | 387.0 | 74.2 | 65.4 | 247.5 |
| Asia | 2006 | 3 073.1 | 921.2 | 357.0 | 1 794.8 | 2 906.8 | 552.7 | 248.8 | 2 105.3 |
| | 2007 | 3 187.1 | 938.1 | 358.1 | 1 890.8 | 3 263.6 | 620.7 | 260.8 | 2 382.1 |
| | 2008 | 3 211.8 | 902.7 | 339.3 | 1 969.9 | 3 361.9 | 565.6 | 318.3 | 2 477.9 |
| | 2009 | 3 061.7 | 898.7 | 355.5 | 1 807.5 | 3 582.4 | 604.1 | 313.1 | 2 665.2 |
| 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 |

Table 1.4. World seaborne trade in 2006–2009, by type of cargo and country group (concluded)

| Country group | Year | Goods loaded | | | | Goods unloaded | | | |
|-----------------------------|------|--------------|-------|----------|-----------|----------------|-------|----------|-----------|
| | | Total | Crude | Products | Dry cargo | Total | Crude | Products | Dry cargo |
| Percentage share | | | | | | | | | |
| World | 2006 | 100.0 | 23.2 | 11.9 | 64.9 | 100.0 | 24.5 | 11.3 | 64.2 |
| | 2007 | 100.0 | 22.7 | 11.7 | 65.6 | 100.0 | 24.5 | 11.1 | 64.4 |
| | 2008 | 100.0 | 21.7 | 11.5 | 66.7 | 100.0 | 23.5 | 11.7 | 64.9 |
| | 2009 | 100.0 | 22.0 | 11.8 | 66.2 | 100.0 | 23.7 | 12.1 | 64.2 |
| Developed economies | 2006 | 32.0 | 7.4 | 36.8 | 40.0 | 52.8 | 66.4 | 59.9 | 46.4 |
| | 2007 | 32.7 | 7.5 | 38.9 | 40.3 | 49.0 | 62.4 | 57.9 | 42.4 |
| | 2008 | 33.0 | 7.2 | 41.6 | 39.9 | 48.4 | 64.4 | 54.3 | 41.6 |
| | 2009 | 32.4 | 6.9 | 38.4 | 39.8 | 44.3 | 61.2 | 55.3 | 35.9 |
| 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 | 4.7 | 0.9 | 0.4 | 0.4 | 1.3 |
| | 2008 | 5.3 | 7.7 | 3.9 | 4.7 | 1.1 | 0.3 | 0.4 | 1.5 |
| | 2009 | 6.4 | 8.8 | 4.5 | 5.9 | 0.8 | 0.3 | 0.3 | 1.0 |
| Developing economies | 2006 | 62.6 | 85.6 | 58.7 | 55.1 | 46.3 | 33.3 | 39.8 | 52.4 |
| | 2007 | 62.2 | 85.7 | 56.9 | 55.0 | 50.0 | 37.2 | 41.7 | 56.3 |
| | 2008 | 61.8 | 85.0 | 54.5 | 55.4 | 50.5 | 35.3 | 45.3 | 56.9 |
| | 2009 | 61.2 | 84.3 | 57.1 | 54.3 | 55.0 | 38.4 | 44.4 | 63.1 |
| Africa | 2006 | 9.2 | 19.8 | 9.4 | 5.3 | 4.5 | 2.1 | 4.5 | 5.5 |
| | 2007 | 8.9 | 20.0 | 8.8 | 5.1 | 4.6 | 2.3 | 5.0 | 5.4 |
| | 2008 | 9.0 | 21.2 | 8.8 | 5.1 | 4.4 | 2.3 | 4.6 | 5.2 |
| | 2009 | 8.7 | 19.4 | 9.0 | 5.1 | 4.6 | 2.3 | 4.5 | 5.5 |
| Americas | 2006 | 13.4 | 14.1 | 10.3 | 13.8 | 4.7 | 2.6 | 6.7 | 5.2 |
| | 2007 | 13.4 | 13.9 | 9.7 | 13.8 | 5.1 | 3.8 | 7.1 | 5.3 |
| | 2008 | 13.5 | 13.1 | 9.8 | 14.3 | 5.2 | 3.8 | 6.9 | 5.5 |
| | 2009 | 13.4 | 12.7 | 9.7 | 14.3 | 4.9 | 3.9 | 6.8 | 4.9 |
| Asia | 2006 | 40.0 | 51.7 | 39.0 | 36.0 | 36.9 | 28.6 | 27.8 | 41.6 |
| | 2007 | 39.9 | 51.7 | 38.4 | 36.1 | 40.1 | 31.1 | 28.8 | 45.5 |
| | 2008 | 39.1 | 50.6 | 35.8 | 36.0 | 40.6 | 29.1 | 33.0 | 46.2 |
| | 2009 | 39.0 | 52.1 | 38.5 | 34.8 | 45.3 | 32.2 | 32.7 | 52.5 |
| Oceania | 2006 | 0.0 | 0.1 | 0.0 | 0.0 | 0.2 | 0.0 | 0.7 | 0.1 |
| | 2007 | 0.0 | 0.1 | 0.0 | 0.0 | 0.2 | 0.0 | 0.8 | 0.1 |
| | 2008 | 0.1 | 0.1 | 0.0 | 0.0 | 0.2 | 0.0 | 0.7 | 0.1 |
| | 2009 | 0.1 | 0.1 | 0.0 | 0.1 | 0.2 | 0.0 | 0.4 | 0.2 |

Source: Compiled by the UNCTAD secretariat on the basis of data supplied by reporting countries and as published on the relevant government and port industry websites, and by specialist sources. The data have been revised and updated to reflect improved reporting, including more recent figures and detailed information regarding the breakdown by cargo type.

Figure 1.3. (a) World seaborne trade, by country group and region, 2009 (percentage share in tonnage)



Source: Compiled by the UNCTAD secretariat on the basis of data supplied by reporting countries and as published on the relevant government and port industry websites, and by specialist sources.

During the fourth quarter of 2008, the outlook for the dry bulk sector was looking bleak when the plummeting Baltic Exchange Dry Index (BDI) made the headlines. In tandem with the BDI, steel production – the main driver of dry bulk shipments (fig. 1.4 (a)) – fell sharply in 2009 (by 8.0 per cent); this brought total output down to 1,219.7 million tons (compared to 1,326.5 million tons in 2008).²⁸ At the same time, world demand for steel contracted by 6.7 per cent in 2009, with the total volume standing at 1,124.3 million tons.²⁹ Surprisingly, however, the dry bulk market, driven mainly by strong demand from China, did not perform as badly as expected, with volumes of iron ore – the key raw input material used for the production of steel – performing particularly well.

Iron ore shipments

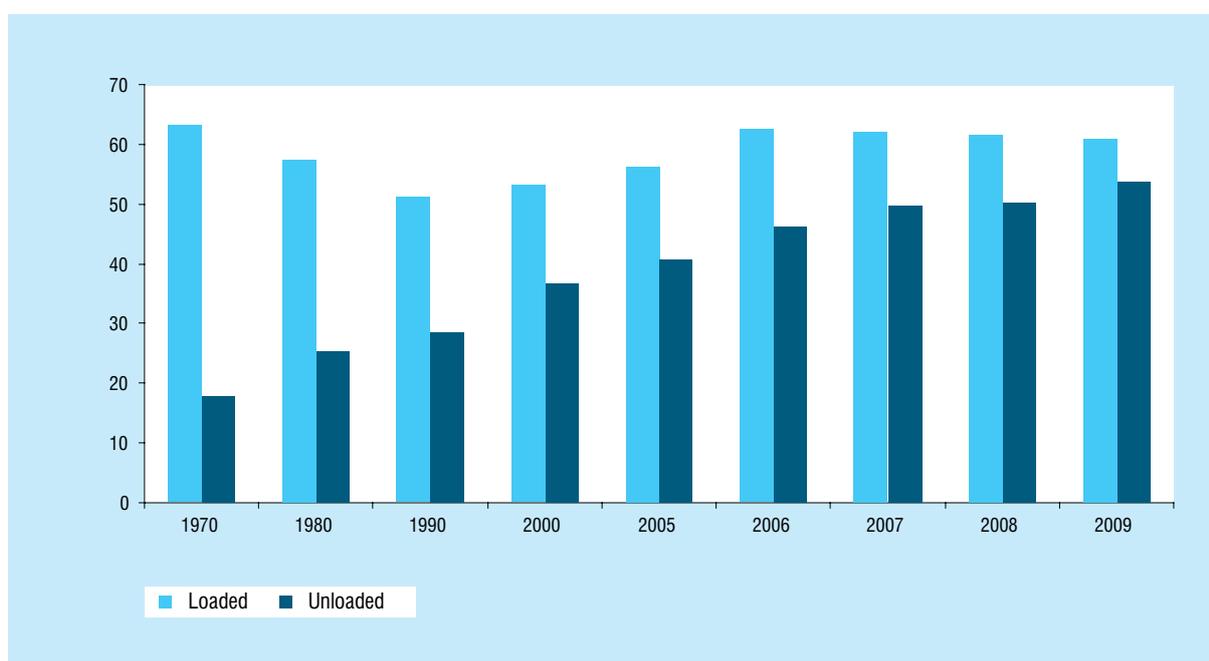
Together with coking coal, iron ore is the main ingredient used in the production of steel. The major iron ore producers include Australia, Brazil, Canada, China, India, the Russian Federation, South Africa, Sweden and the United States. The key players in the sector continue to be Vale in Brazil, BHP Billiton, and Rio Tinto (Australia/United Kingdom). With the failure of an earlier attempt by BHP Billiton to take over Rio Tinto, a non-binding agreement was signed between the two companies in 2009. The joint venture represents a major collaboration within the global iron

ore industry. Another important development relating to iron ore is the rapidly evolving pricing system, which will make the annually negotiated fixed contract prices less relevant in the future. Short-term quarterly benchmark prices are introducing a more dynamic pricing system and are replacing the annual contracts which prevailed for over 40 years.³⁰

The world's iron ore shipments were estimated at 907 million tons in 2009, an increase of 8.6 per cent over 2008. Major exporters included Australia, Brazil, India and South Africa, while smaller exporters included Canada, Mauritania, Peru and Sweden. Together, Australia and Brazil accounted for about 70.0 per cent of world iron ore exports; Australia remained the world's largest exporter with 362.4 million tons (an increase of more than 17.0 per cent compared to 2008). Exports from Brazil amounted to 266.0 million tons, a drop of 5.6 per cent measured against 2008. Figure 1.4 (b) highlights the main iron ore importers and exporters in 2009.

Surging iron ore imports into Asia more than offset the falling imports in other regions, and they help to explain the resilience shown by the dry bulk market in 2009. The engine of growth was China, whose iron ore imports increased dramatically (by 40.1 per cent over 2008), owing in particular to the Chinese Government's fiscal stimulus package, which boosted domestic demand for steel at a time when the export

Figure 1.3. (b) Developing countries' seaborne trade, selected years (percentage share in tonnage)



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

market was depressed. This was reflected in robust growth in China's steel production, which expanded by 13.5 per cent to reach around 568 million tons, and which allowed China to remain the world's leading steel producer. Other major importers included Japan (24.8 per cent less than in 2008), Western Europe (38.2 per cent less than in 2008) and the Republic of Korea (14.6 per cent less than in 2008). With the exception of Egypt, India, the Islamic Republic of Iran, and Qatar, all other smaller importers, such as Taiwan Province of China and Pakistan, reduced their iron ore imports.

Looking ahead, global iron ore trade volumes are expected to expand by 7.9 per cent in 2010. While China's exceptional performance in 2009 is not expected to be repeated in 2010, China will, nevertheless, continue to power growth in the global iron ore trade. As China continues to actively invest in overseas ventures in Africa, Australia and South America to provide raw materials to its growing economy, demand for bulkers and trade flow patterns are likely to be affected, including through potential increases in distances travelled and ton-miles.

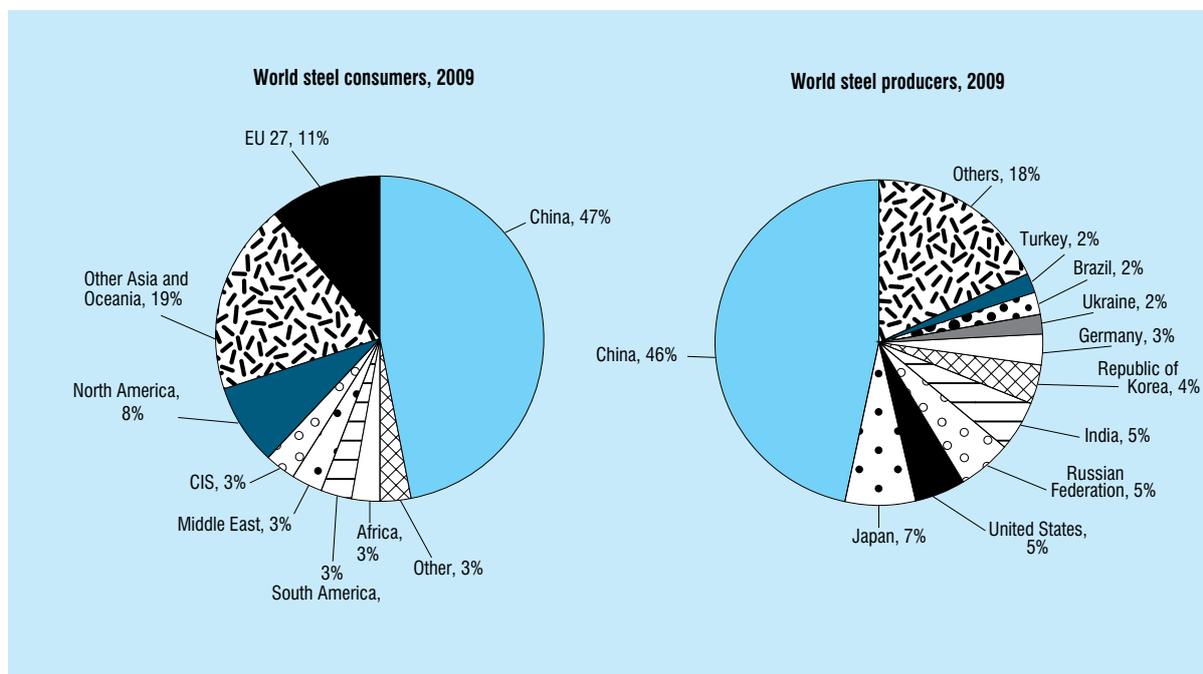
Coal shipments

In 2009, the volume of coal shipments (thermal and coking) totalled 805 million tons, a volume equivalent to the 2008 level (799 million tons). Thermal coal exports increased by around 2.1 per

cent and reached 590.0 million tons (73.3 per cent of world coal shipments). Shipments of coking coal, which is also used in steel production, fell by 2.7 per cent to 215 million tons. Together, Australia and Indonesia accounted for 62.2 per cent of the world's thermal coal shipments, with Indonesia remaining the world's leading exporter. Indonesia increased its thermal coal exports by a solid 16.8 per cent to reach 233.5 million tons, while Australia increased its thermal coal exports by around 7.1 per cent. Other major thermal coal exporters in 2009 included China, Colombia, the Russian Federation, South Africa and the Bolivarian Republic of Venezuela. Major coal importers and exporters are shown in figure 1.4 (c).

As regards coking or metallurgical coal used in steel production, Australia remained the world's largest exporter, with a total of 138 million tons – a marginal increase of about 1.0 per cent over 2008. Australia is well positioned to increase its share of global trade, given the number of mine expansions for coking coal scheduled to be developed over the next five years. These expansion plans suggest a firm commitment both by mines and by infrastructure operators and owners to support the long-term growth of Australia's export coking coal industry. To benefit from the significant export opportunities associated with these expansion plans, a number of major port infrastructure

Figure 1.4. (a) Steel consumers and producers in 2009 (world market share in percentages)



Source: UNCTAD secretariat, on the basis of data from the World Steel Association (2010), *Steel Statistical Yearbook 2010*.

projects are scheduled for the next decade, too. Other lesser exporters, such as Canada, China and the United States, have reduced their export volumes.

The main destinations for both types of coal exports (thermal and coking) are Europe and Japan, which together accounted for 42.7 per cent of the world's coal imports in 2009. However, over recent years, coal exporters have increasingly focused on Asia. For example, Colombia has started to ship cargo to the Pacific region. South Africa is also looking to intensify its coal exports to Asia. In 2009, India overtook the Netherlands and became the first export market for South Africa's coal. The growth in exports to China, Taiwan Province of China, and India was matched by a reduction in exports from South Africa to Europe and the United States. As noted above, an interesting development in 2009 was the impressive surge of coal imports into China. The total volumes of coking coal imports increased about tenfold, while thermal coal imports almost quadrupled, as the Government closed many domestic mines considered to be unsafe and as international coal prices became more attractive. Growing domestic energy requirements and low international coal prices have prompted China and other Asian countries, including India, to increase their imports. The surge in coal exports from Australia to

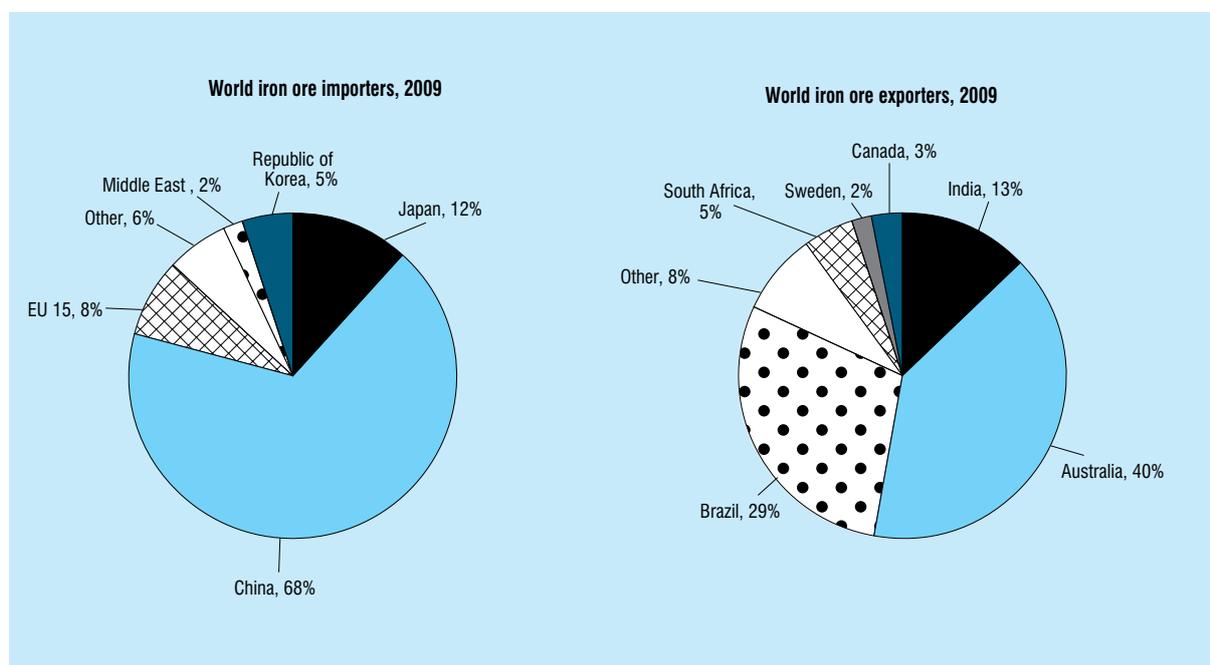
China caused port congestion and shipping delays, and increased freight rates.

These emerging trends, affecting the direction of coal shipments as well as their scale, are likely to shape the demand for bulk carriers and to alter bulk trade flows. World coal shipments are forecast to increase in 2010, with thermal coal volumes expected to increase at a slower rate than coking coal. An issue to monitor is the pricing system, which is rapidly evolving. Differential pricing is gaining ground, and an increasing share of sales is being priced on quarterly terms rather than annual benchmarks.

Grain shipments

For the calendar year 2009, world grain shipments are estimated to have fallen by 2.2 per cent to 316 million tons, with wheat and coarse grains accounting for about 75.0 per cent of the shipments. The global financial and economic crisis and the subsequent recession have badly hit demand for imported grain in several key importing regions, such as Asia. The use of wheat has been growing at a modest rate in some developing countries (e.g. India), and relatively lower market prices and ample supplies compared to recent years have supported the food demand for wheat. However, the use of wheat and maize for animal

Figure 1.4. (b) Major bulks: iron ore importers and exporters in 2009 (world market share in percentages)



Source: UNCTAD secretariat, on the basis of data from Clarkson Research Services, published in the September 2010 issue of *Dry Bulk Trade Outlook*.

feed has declined in many countries, along with the drop in demand for meat. Industrial use of maize and wheat, mainly to produce starch and ethanol, has also been subdued, due to the less favorable economic situation. With the recovery under way, however, the consumption of wheat and maize for industrial purposes is expected to grow. In some countries (e.g. in the European Union), reduced import demand has also reflected the improved weather conditions and better crop yields.

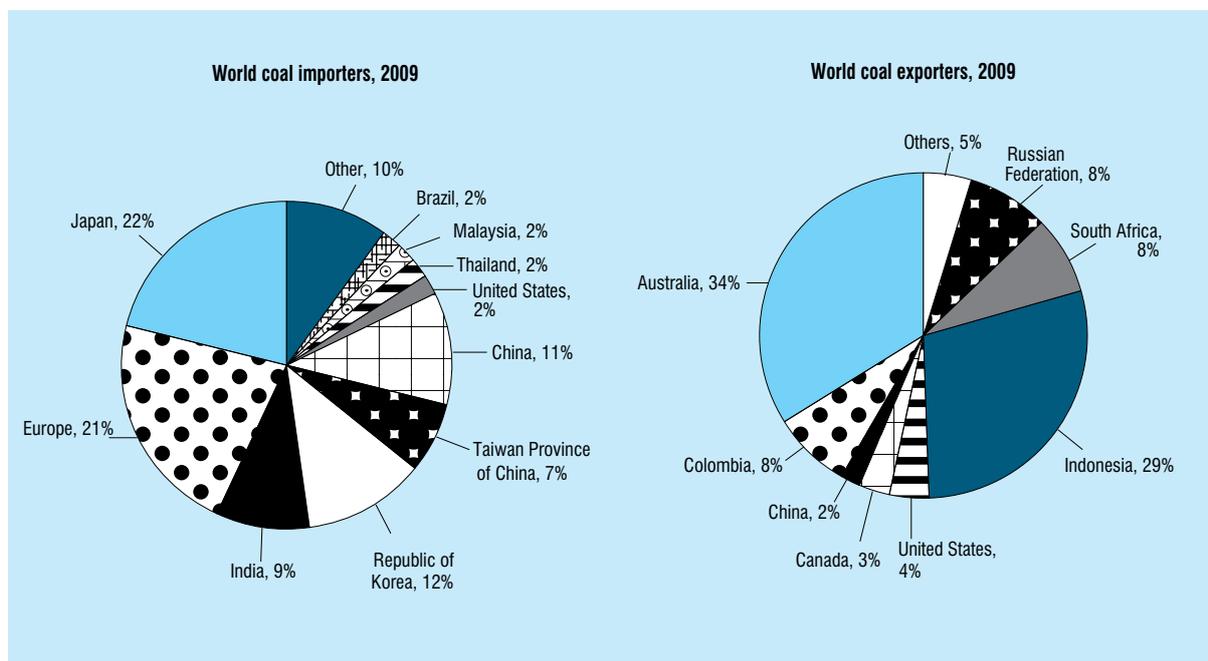
For the crop year 2009/10, volumes of wheat exports are expected to fall at a faster rate than coarse grains (8.7 per cent as compared with 1.7 per cent). Wheat exports from the world's five largest exporters (Argentina, Australia, Canada, the European Union and the United States) are expected to fall by 12.4 per cent. With a prolonged period of drought – considered to be the worst for 70 years – having a detrimental impact on its crop yields, Argentina is projected to record the sharpest drop in wheat exports (47.0 per cent). The five large exporters are expected to maintain their export volumes of coarse grains (with a marginal fall of less than 1 per cent). Exports from the European Union are expected to record the largest drop (49.0 per cent). In the United States, the April 2010 oil spill in the Gulf of Mexico and the difficulty of containing the oil slick caused concerns for the country's grain exporters, as over 50.0 per cent of all grains exports

from United States are shipped from the mouth of the Mississippi.

The drop in grain trade volumes is broad-based, spanning all regions (fig. 1.4 (d)). For example, grain import volumes (for the crop year 2009/10) are expected to fall in the Islamic Republic of Iran (50.3 per cent), the European Union (31.7 per cent), the Commonwealth of the Independent States (19.7 per cent), Morocco (19.6 per cent), Algeria (19.3 per cent), Tunisia (17.9 per cent), the Philippines (13.9 per cent), Cuba (12.5 per cent) and Thailand (11.8 per cent). Despite the projected declines, there are reports of wheat imports picking up in some countries, including China and India, owing to lower prices.

A fall in grain trade volumes will impact upon the demand for handymax³¹ ships, which, in addition to servicing the steel product trade, are the main grain carriers. The handymax fleet is growing, with shipping supply outpacing growth in demand. In the medium to longer term, developments and policy measures taken in some countries are also likely to reshape the demand for maritime transport services, where increased grain imports/exports in some parts of the world are likely to be offset by decreased grain imports/exports elsewhere. Examples of such measures include the efforts to preserve water supplies in Saudi

Figure 1.4. (c) Major bulks: coal importers and exporters in 2009 (world market share in percentages)



Source: UNCTAD secretariat, on the basis of data from Clarkson Research Services published in the September 2010 issue of *Dry Bulk Trade Outlook*.

Arabia, which implies the end of production of irrigated wheat, and increased imports. By contrast, Algeria is planning to cut its wheat imports by at least two thirds until 2014, and to boost domestic production.

From the perspective of developing countries – especially the most vulnerable countries and the LDCs – the grain trade is of particular importance, given their heavy reliance on food imports. The vulnerability of these countries to developments in the agricultural sector in general, and in the grain segment in particular, is further emphasized by the two recent major crises facing the world. The food crisis and the financial crisis and economic downturn constitute major setbacks to efforts aimed at enhancing food security and alleviating poverty, including in the LDCs. In spite of the expansion in the global production of grains recorded over the past decade, the growth in the world's population, with its associated needs, and, more recently, the sharp increase in the use of grains for biofuels and other industrial purposes, have the potential to usher in greater challenges. These may include supply shortages, ever-increasing food prices, malnourishment and poverty.³² Although lower than at their peak levels of 2008, and despite the effects of the economic downturn, food prices are still high by recent historical levels. In addition to the

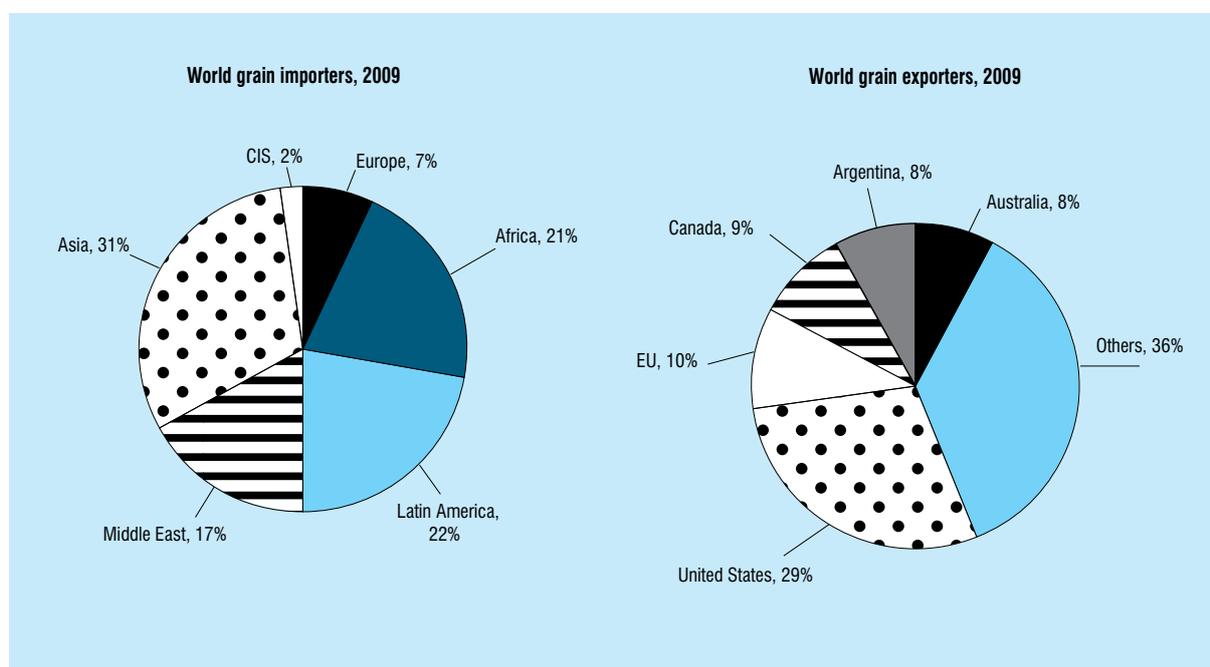
market volatility, due, among other things, to weather-related risks and their impact on production and supply levels, other emerging concerns – for example, climate-related impacts such as droughts, floods and water salination – are compounding the challenge.

Bauxite/alumina and phosphate rock

In 2009, world trade in bauxite and alumina fell sharply, by 23.2 per cent, and totalled 66.0 million tons. With Europe, North America and Japan being the main importers, the rapid contraction reflected, in particular, the effect of the crisis on the industrial production of those economies. The major loading areas for bauxite included Africa, the Americas, Asia and Australia. Australia was also a major exporter of alumina, accounting for about half of world exports, while Jamaica contributed a growing share.

Rock phosphate volumes declined sharply, too, from 31 million tons in 2008 to 19 million tons in 2009 – a severe drop of 38.7 per cent. This, in part, reflected the depressed demand in the United States, the main importer. The falling demand was due, in particular, to reduced grain production and demand for fertilizers, and to the impact of tighter credit on the sale of farm inputs such as fertilizers.³³ Phosphate rock volumes are expected to pick up in 2010, partly reflecting the

Figure 1.4. (d) Major bulks: grain importers and exporters in 2009 (world market share in percentages)



Source: UNCTAD secretariat, on the basis of data from Clarkson Research Services published in the September 2010 issue of *Dry Bulk Trade Outlook*.

expected expansion in production capacity. Plans are under way for the expansion of existing operations, for example in Brazil, China, Egypt, Finland, Morocco, the Russian Federation and Tunisia; while new mines are scheduled to open in 2010/11 in Australia, Namibia, Peru and Saudi Arabia. Any such expansion will likely affect supply and demand, as well as trade flows and the pattern of the minor bulk trade, and by extension, the handysize shipping market.

Dry cargo: minor bulks

In 2009, the minor bulk trades (manufactures, agribulks, metals and minerals) were badly hit by the economic downturn and fell by 12.6 per cent compared to 2008, down to 851 million tons. Manufactures accounted for the biggest share of the total minor dry bulks (44.6 per cent), followed by metals and minerals (27.7 per cent) and agribulks (27.5 per cent). The largest decline (19.0 per cent) was suffered by goods directly associated with the construction industry, namely metals and minerals, including coke, pig iron, scrap, manganese ore and cement. Trade volumes of manufactures, namely steel and forest products – also linked to the construction and housing sector – fell by 13.8 per cent. In contrast, agribulks suffered a relatively milder contraction – a 2.9 per cent fall as compared

with 2008. With the onset of the global recovery in world output, minor bulk volumes are expected to expand by a strong 10.0 per cent in 2010, with trade in manufactures, metals and minerals rising sharply.

Other dry cargo: containerized cargoes

The year 2009 proved to be the most challenging and dramatic year in the history of container shipping. After having grown at an impressive average annual rate of around 10.0 per cent over the last two decades, by far surpassing the growth in other seaborne trade segments (see fig. 1.5), container trade recorded its first absolute contraction ever, since containerization began. In 2009, container trade volumes fell sharply, by 9.0 per cent, with the overall volume totalling 124 million twenty-foot equivalent units (TEUs). Of the remaining 2.22 billion tons of other dry cargo (i.e. total dry cargo excluding major bulks and minor bulks), some 1.19 billion tons are estimated to be carried in containers.³⁴ Reflecting the historical dip, the share of containerized trade in the world's total dry cargo, which increased from 5.1 per cent in 1980 to 25.4 per cent in 2008, fell to about 24.3 per cent in 2009.

The global financial crisis and subsequent economic recession dented demand for consumer and manufactured goods, as well as for durables. As these

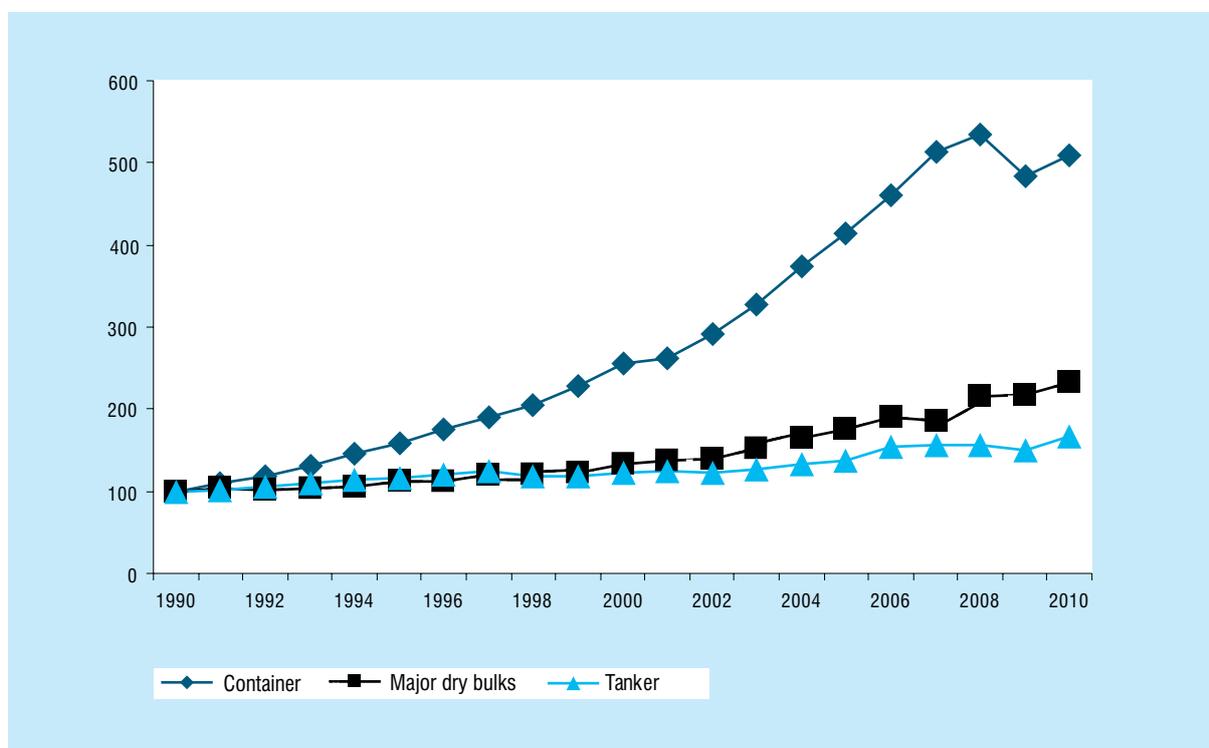
goods are mainly carried by container, and as major importers, namely the United States and Europe, were badly hit by the recession, container trade received a major blow. Container traffic along the three major east–west container trade routes, namely the trans-Pacific, Asia–Europe, and the trans-Atlantic, was the most significantly affected, with volumes recording double-digit declines on some of the major legs (table 1.5 and fig. 1.6)

In 2009, aggregate Asia–Europe volumes declined by 9.5 per cent, with the head haul segment from Asia to Europe contracting by 14.8 per cent. This contrasts significantly with the impressive annual growth rate of about 20.0 per cent recorded previously. Trade on the trans-Pacific route fell by 9.3 per cent, with peak leg volumes declining by 14.2 per cent. Trade between the United States and Europe slumped by 20.1 per cent, with volumes from the United States to Europe falling by 25.1 per cent. The transatlantic trade was badly hit by the combined effect of declining volumes, unsustainably low freight rates, and rising bunker costs. Other container trades have also contracted, albeit at a less dramatic rate than the three major trade

lanes. Volumes in intraregional trade fell by 11.3 per cent to around 50.6 million TEUs, while North–South container volumes contracted by 4.2 per cent to 20.7 million TEUs.³⁵

The scale of the problem is illustrated by the magnitude of the financial losses reported, and the extreme stress facing shipping lines, which, in some cases, have sought state aid for the refinancing and restructuring of operations.³⁶ A leading container carrier, Maersk Line, lost \$2.1 billion in 2009, compared to the \$583 million profit that it recorded in 2008.³⁷ This loss was incurred even after \$1.6 billion of savings had been achieved through restructuring, renegotiating supplier contracts, optimizing networks and reducing fuel consumption. Other carriers have also recorded losses, with the reported collective loss for 2009 estimated to be over \$20 billion.³⁸ The difficulties faced by the container sector were also reflected in dramatically lower container freight rates and containership charter rates, which collapsed earnings for shipowners and caused a gap between the pre-2009 and post-2009 value of container ships. Interestingly, and given that 2009 was the worst year

Figure 1.5. Indices for global container, tanker and major dry bulks volumes, 1990–2010 (1990=100)



Source: UNCTAD secretariat, based on *Review of Maritime Transport*, various issues; and on Clarkson Research Services, *Shipping Review and Outlook*, spring 2010.

Table 1.5. Estimated cargo flows on major East–West container trade routes, 2008–2009
(millions of TEUs and annual percentage change)

| | Trans–Pacific | Far East– North America | North America– Far East | Europe–Asia –Europe | Asia–Europe | Europe–Asia | USA–Europe –USA | USA– Europe | Europe– USA |
|------------------------------|---------------|----------------------------|-------------------------------|------------------------|-------------|-------------|--------------------|----------------|----------------|
| 2008 | 20.3 | 13.4 | 6.9 | 18.7 | 13.5 | 5.2 | 6.7 | 3.3 | 3.3 |
| 2009 | 18.4 | 11.5 | 6.9 | 17.0 | 11.5 | 5.5 | 5.3 | 2.5 | 2.8 |
| Percentage change | -9.3% | -14.2% | 0.1% | -9.5% | -14.8% | 4.3% | -20.1% | -25.1% | -15.1% |

Source: European Liner Affairs Association at <http://www.elaa.net> (accessed in September 2010); and *Containerization International*, August 2010.

on record for container shipping, profit margins for container terminals have been maintained.³⁹

In view of the falling demand, the significant supply of shipping and the large order book, carriers have taken measures to reduce capacity deployment. Ocean carriers have joined forces, and have shown their ability to manage capacity and to get rates increased without the protection previously enjoyed under the conferences system.⁴⁰ Measures taken have included cutting back on the number of services and in some cases suspending services, laying-up and idling ships, scrapping, cancelling orders, non-delivery, and slow/super slow steaming (at half speed of around 13 knots). According to some observers,⁴¹ slow steaming undermined schedule reliability on all major east–west trade lanes in the last quarter of 2009, and according to others, slow steaming is skewed towards the carrier in terms of savings on fuel costs and capacity absorption.⁴² Some observers remain skeptical about the use of slow steaming given the strain it places on machinery and the associated potential rise in bigger engine claims. Increased wear and tear and damage to ships' machinery may result from slow steaming, if the necessary adjustments and maintenance are not provided. Already, charterers are reported to be pushing for the inclusion of slow steaming clauses in charter parties.⁴³ Such clauses provide for the reimbursement of the increased maintenance costs and spare parts costs incurred by the charterer.

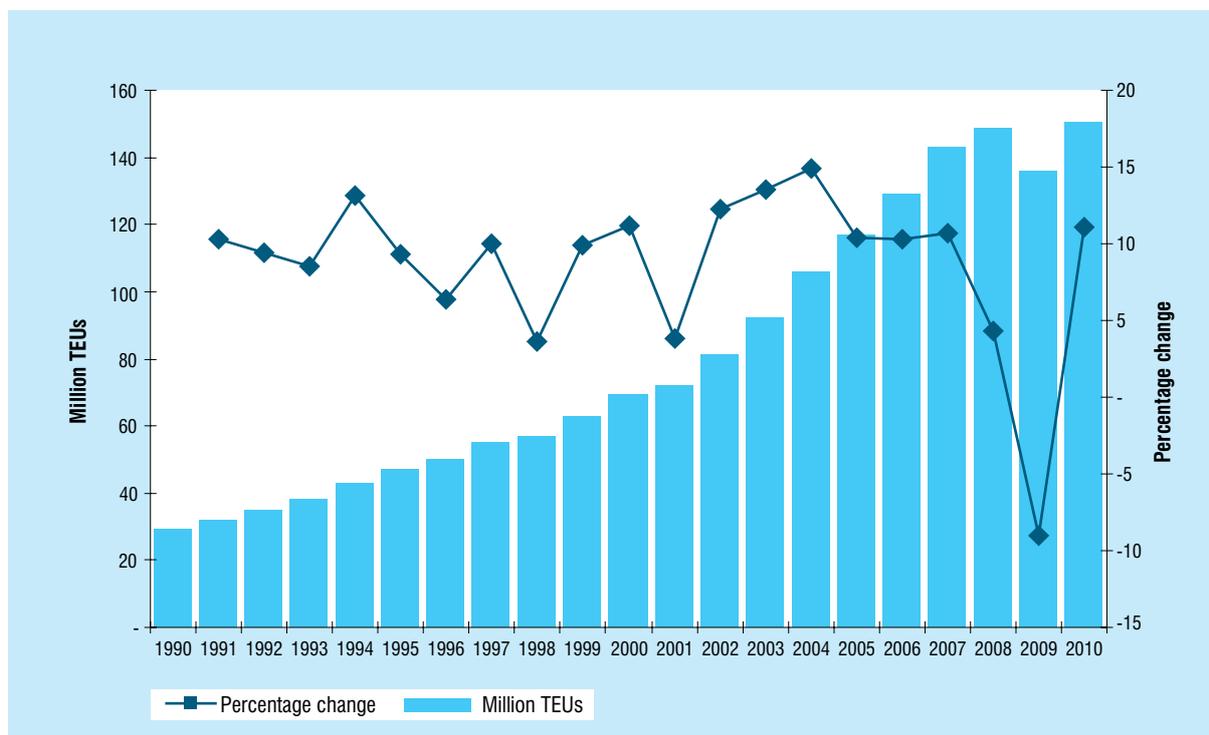
Despite these very challenging developments, container shipping is currently moving into more positive territory, with the global economic recovery on the way and with a turn in the inventory replenishment cycle. By late 2009, positive signs were emerging, with gradual growth in trade volumes being recorded across different trade lanes. By May 2010, several

service upgrades and new services had been launched in the intra-Asia trades to take advantage of the growing cargo flows, especially to and from China.⁴⁴ While container trade is forecast to increase by 11.5 per cent in 2010, in view of the large size of the ship order book and the slow pace of improvement, recovery remains fragile. Some observers maintain that resumption of significant growth is not likely until 2011, and more probably, 2012.

While awaiting the big recovery in demand and a tight reining in of the ship order book, the container trade might be already undergoing some changes brought about by the major bust in the cycle. Some of these changes include a narrowing or reversal of container trade imbalances (e.g. larger volumes shipped from Europe and the United States to Asia due to strong import demand from China), the potential relocation of low-manufacturing plants away from China to more cost-efficient locations such as Mexico, and, potentially, a change in the terminal portfolios of shipping lines (changes in terminal ownership and customer base).

In sum, seaborne trade volumes were significantly impacted by the falling global demand that followed 2009's historical contractions in world GDP and merchandise trade. All shipping segments have been negatively affected, with the exception of the major dry bulks which showed more resilience due to China's robust demand for coal and iron ore. Reflecting the emerging recovery in the global economy, seaborne trade volumes are expected to reverse the trend of 2009 and to resume growth in 2010. Nevertheless, there remains some uncertainty as to the strength and the duration of the recovery, due, among other things, to the fragile economic and financial position of some advanced economies.

Figure 1.6. Global container trade, 1990–2010 (TEUs and annual percentage change)



Source: Drewry Shipping Consultants, *Container Market Review and Forecast 2006/07* and *2008/09*; and Clarkson Research Services, *Container Intelligence Monthly*, September 2010.

Note: The data for 2008 to 2010 were obtained by applying growth rates estimated and forecast by Clarkson Research Services in *Container Intelligence Monthly*, September 2010.

3. Outlook and developments affecting seaborne trade

Supply and demand

The recovery on the demand side is a welcome development for shipping. Global GDP and international seaborne trade are expected to recover and grow in 2010, with developing economies, and China in particular, charting the course. China – with its insatiable appetite for raw materials and its incremental shift from being a major source of containerized trade to becoming a growing destination – remains the engine of growth. Other fast-growing Asian countries, including India and Indonesia, are adding further speed. Projections by Clarkson Research Services Limited indicate that global seaborne trade (i.e. goods loaded) is expected to reverse the trend of 2009 and to grow by 5.2 per cent in 2010.

For shipping, economic recovery and trade expansion are only part of the picture and do not tell the full story. A recovery on the demand side is not sufficient for

shipping to fully emerge from the “bust”. An important factor influencing the outlook is the demand and supply imbalance and its implications for shipping companies, freight markets and shipyards (see chapter 2). Significant fleet expansion, prompted by the promise of an extended boom period, is a major concern. The shipping industry is facing large-scale orders for ships, with a contract value, however, no longer consistent with the pre-crisis asset values, given the fall in ship prices. At the same time, shipowners and shipyards are still confronted with financing and cashflow difficulties. With falling trade volumes in 2009, and with growth in the supply of ships expected to outpace growth in the demand for ships, prospects remain difficult and uncertain for the shipping industry. Delaying and cancelling ship deliveries and orders, renegotiating contracts, laying-up and idling ships, and accelerating scrapping have helped to reduce the gap, and to some extent, to manage the imbalance.

Absorbing excess ship supply and restoring market balance is not a one-off exercise, and even halving the current ship order book would still leave a large fleet and capacity surplus. A strong and sustained growth

in global trade, as well as measures to reduce ship supply capacity – including an exceptional increase in scrapping and very low levels of ship deliveries – are key. Other measures could be envisaged to help the shipbuilding sector, for example converting shipbuilding facilities into repair facilities. This would also help meet the increasing demand for facilities able to receive larger ships, for which there is already a shortage of dry docks. In connection with helping shipbuilding, it should be noted that the issue of support measures in shipbuilding has resurfaced. The OECD Council Working Party on Shipbuilding has called for the resumption of the 2005 negotiations for a global shipbuilding agreement to provide limits on subsidies and other support measures. This was likely triggered by the stimulus packages, which although not benefiting shipbuilding directly, nevertheless included provisions on financial guarantees to help complete orders and assist in financing.

Some emerging global challenges affecting shipping

While the aforementioned considerations are fundamental to shipping, other issues are emerging which have some serious implications for the sector. These include but are not limited to (a) developments in the energy markets and their potential implications for transport costs and trade; (b) safety; (c) security; (d) labour/seafarers' considerations; and, increasingly, (e) environmental protection and sustainability, with the challenge of climate change currently the top priority.

The United Nations Climate Change Conference held in December 2009 under the auspices of the United Nations Framework Convention on Climate Change (UNFCCC) came to a conclusion having taken no specific decision regarding shipping. Therefore, the International Maritime Organization (IMO) has continued its work on some of the main issues under consideration, specifically: the mandatory application of technical measures developed by IMO's Marine Environment Protection Committee (MEPC) (e.g. the Energy Efficiency Design Index (EEDI)); and the adoption of market-based measures, such as imposing a levy or tax on ship bunker fuel, and emissions trading (see chapter 6 for more detailed information on the current negotiations). One unresolved issue is the need to strike the right balance between the principle of common but differentiated responsibilities (CBDR) under the UNFCCC, and the IMO approach based on uniform application of obligations. Whatever

the outcome of the negotiations, the shipping industry will be expected to play its role in addressing the climate change challenge. It should be noted that some shipping companies are already taking action, an example of this being A.P. Moller–Maersk's reduction of its CO₂ emissions by 9.0 per cent in 2008 (compared to 2007), which led to a saving of \$500 million through slow steaming, slippery hull coating, better propellers and other efficiency measures.⁴⁵ More recently, A.P. Moller–Maersk and Lloyd's Register have teamed up in a two-year pilot programme to test the use of biodiesel fuel. The ultimate objective for the company is to cut emissions by 50.0 per cent by 2020, and by 70.0 per cent by 2030. That being said, a new international regulatory scheme to address the climate change challenge in maritime transport would change the industry's regulatory landscape and would entail adjustments in operations, equipment, management, energy use, and technology uptake, as well as costs.

Security remains a major consideration for shipping. While enhanced security measures in transport and across supply chains are now part of doing business, some developments – especially at the national and regional level – have implications for a globalized industry such as shipping. One such current issue is cargo scanning, with its related questions of technical feasibility and economic viability, and, more importantly, the questions of trade-friendliness, balance, and the level playing field that should exist, especially for smaller players in developing regions. In this context, the United States' 100-per-cent container-scanning initiative, which requires foreign ports to scan all containers bound for the United States, is of particular concern, especially for trading partners of the United States, for the transport industry and for traders and shippers. Trials at a number of foreign ports show that the technology required to scan containers automatically and effectively does not yet exist.⁴⁶ The measure is also costly, as illustrated by the figures put forward by the European Commission, which estimate that investment until 2020 would require \$280 million, while operational costs would amount to \$270 million annually.⁴⁷ Recognizing these difficulties, the Department of Homeland Security announced in December 2009 that it would postpone the mandatory application of this requirement until 2014 (see chapter 6).

Another security concern for shipping is the surge in piracy. According to the International Maritime Bureau's Piracy Reporting Centre, there were 406 incidents of piracy and robbery in 2009, with Somalia

accounting for more than 50.0 per cent of the total. In addition to the human costs, the economic implications of piracy are escalating. In order to avoid piracy-prone areas, up to 74 per cent can be added to the length of a tanker ship's voyage from Kuwait to Rotterdam, and 44 per cent to the length of a container ship's voyage from Singapore to Rotterdam.⁴⁸ These costs constitute an additional burden for shipowners and can be expected to be passed on to shippers and trade.

Another emerging challenge for shipping relates to labour and manpower. Recognizing the importance of this issue, IMO designated 2010 as Year of the Seafarer, against a background of increasing concern about a looming global crisis in seafaring. The persistent shortage in skilled labour was documented in the 2005 BIMCO/ISF *Manpower Report*. A deficit in the number of qualified officers, together with a growing global fleet and a projected growth in global seaborne trade, are likely to pose a serious hurdle to shipping. An assessment of the extent of the challenge will be presented in the BIMCO/ISF *Manpower Report* scheduled to be released in December 2010.

Oil prices, energy security, investment and sustainability

Oil prices⁴⁹ increased from \$89.9 per barrel (pb) in January 2008 to \$133 pb in July, before falling by more than 70.0 per cent to \$39.7 in December 2008. By mid-2009, growth in oil prices had gained speed, with levels reaching \$71.4 pb in August and \$73.0 pb in December. During the first quarter of 2010, oil prices picked up further speed, increasing to \$82 pb in April. The strong rise in oil prices since 2009 reflects anticipation of a revival in demand, and positive sentiment about the global economy.

The evolution in oil prices is of relevance for importers and their import bills, for exporters and their earnings, and for transport costs, and also for future exploration and production projects and their viability. The Organization of the Petroleum Exporting Countries (OPEC) reports that low oil prices in particular have reduced producers' profitability and the cash flows for oil-producing companies, which, in turn, limits the prospects for investing in oil supply expansion projects, including non-conventional oil supply. Energy companies are reported to have reduced the drilling of oil and gas wells, and to have cut back spending on refineries, pipelines and power stations. For example, the number of oil and natural gas rigs operating in the

United States is reported to have fallen from 1,992 rigs on 7 November 2008 to 999 rigs in the week of 22 May 2009.

Many ongoing projects have been slowed, while some planned projects have been postponed or cancelled. Since October 2008, over 20 planned large-scale upstream oil and gas projects, involving around 2.0 million barrels per day (mbpd) of oil production capacity, have been deferred indefinitely or cancelled, with most of these projects involving oil sands in Canada. The International Energy Agency (IEA) estimates that global upstream oil and gas investment budgets for 2009 were cut by around 19.0 per cent, compared to 2008. There is a danger that these cutbacks in investment may have implications for future energy demand, which has been forecast to rebound strongly, driven mainly by the growing populations and economic expansion of developing countries.

Apart from investment requirements and how these are affected by oil price levels, geological constraints could undermine energy security. Views about the sustainability of oil vary, with some observers maintaining that oil is running out and becoming increasingly more difficult and costly to extract. The debate over a potential "peak oil" is gaining momentum, with the IEA warning that "the world is heading for a catastrophic energy crunch that could cripple a global economic recovery as most of the major oil fields in the world have passed their peak production."⁵⁰ According to the IEA, the oil crunch could occur in 2010, while "peak oil" could come in 2020.⁵¹ Oil exploration in less conventional and more difficult-to-reach locations and reservoirs – including offshore and deepwater locations – is not likely to solve the problem. In this respect, the oil spill caused by the April 2010 explosion of the Deepwater Horizon rig in the Gulf of Mexico illustrates the potential difficulties and risks, in terms of loss of energy production, shipment loss, and environmental damage.

A constrained oil supply, whether due to geology, technology or cost, coupled with a growing demand for energy and for climate change mitigation and adaptation, is likely to drive oil prices upwards. While advances in energy efficiency and the increased use of renewable and cleaner energy may help to moderate the rise, the fact remains that fossil fuels will continue to dominate the energy mix for many years. The IEA suggests that the price of oil will bounce back to \$100 pb as soon as the world economy recovers,

while the World Bank predicts that prices will stabilize at \$75 pb. The characteristic volatility of oil prices, and the record high levels achieved in mid-2008, at close to \$150 pb, suggest, however, that these predictions could well be at the lower end. If the oil price levels that were reached in mid-2008 are any guide, future oil prices can be expected to rise and to again reach or even surpass the record levels of 2008.

As far as shipping is concerned, these considerations are extremely important, both for maritime transport service providers and for trade. Oil dominates the global energy mix, supplying 95.0 per cent of the energy that fuels world transport. In common with other modes of transport, shipping relies heavily on oil for propulsion, and is not yet in a position to effectively adopt energy substitutes. The trends that have been observed indicate that higher oil prices are immediately translated into higher fuel costs. Reflecting a period of rising oil prices, bunker prices (Rotterdam 380 centiStokes (cSt)) averaged \$234 per ton in 2005, \$293 per ton in 2006, \$345 per ton in 2007 and \$472 per ton in 2008. Similarly, the rapid fall in oil prices in 2009 resulted in a drop of 25.0 per cent in the 2009 average bunker price (Rotterdam 380 cSt). This positive correlation could have serious financial implications for shipping companies and for their bottom lines, since fuel costs have been shown to account for up to 60.0 per cent of the total operating costs of a shipping company (depending on the type of ship and service)⁵². By extension, rising operating costs for shipowners entail a potential rise in transport costs paid by maritime transport users, namely shippers and trade.

To help clarify the effect of oil prices on maritime freight rates, UNCTAD conducted an empirical study to assess the effect of oil prices on containerized goods and on two selected commodities – iron ore and crude oil carried as cargo.⁵³ The elasticity of container freight rates to oil prices was found to range between 0.19 and 0.36; a similar elasticity (0.28) was estimated for crude oil carried as cargo. For iron ore, the elasticity was found to be larger, approximately equal to unity. Results have shown that since 2004, the elasticity of container freight rates to oil prices has been larger, suggesting therefore that the effect of oil prices on container freight rates increases in periods of sharply rising and more volatile oil prices. These results are of particular interest in view of the debate on “peak oil” and the oil supply constraints expected over the coming years and their effect on oil prices. The effect of oil prices on bunker fuel costs and

maritime freight rates is of great relevance to many developing countries, for which prohibitive transport costs already constitute an impediment to trade and competitiveness.

To sum up, in addition to shipping demand and supply considerations and the importance of narrowing the imbalance between the relevant growth rates, the maritime industry and international seaborne trade are facing a host of other challenges. More specifically, the nexus between energy security, oil and fuel prices, and transport costs – as well as the climate change challenge – are emerging as increasingly important considerations that need to be taken into account by shipping.

C. SELECTED SEABORNE TRADE SECTORS

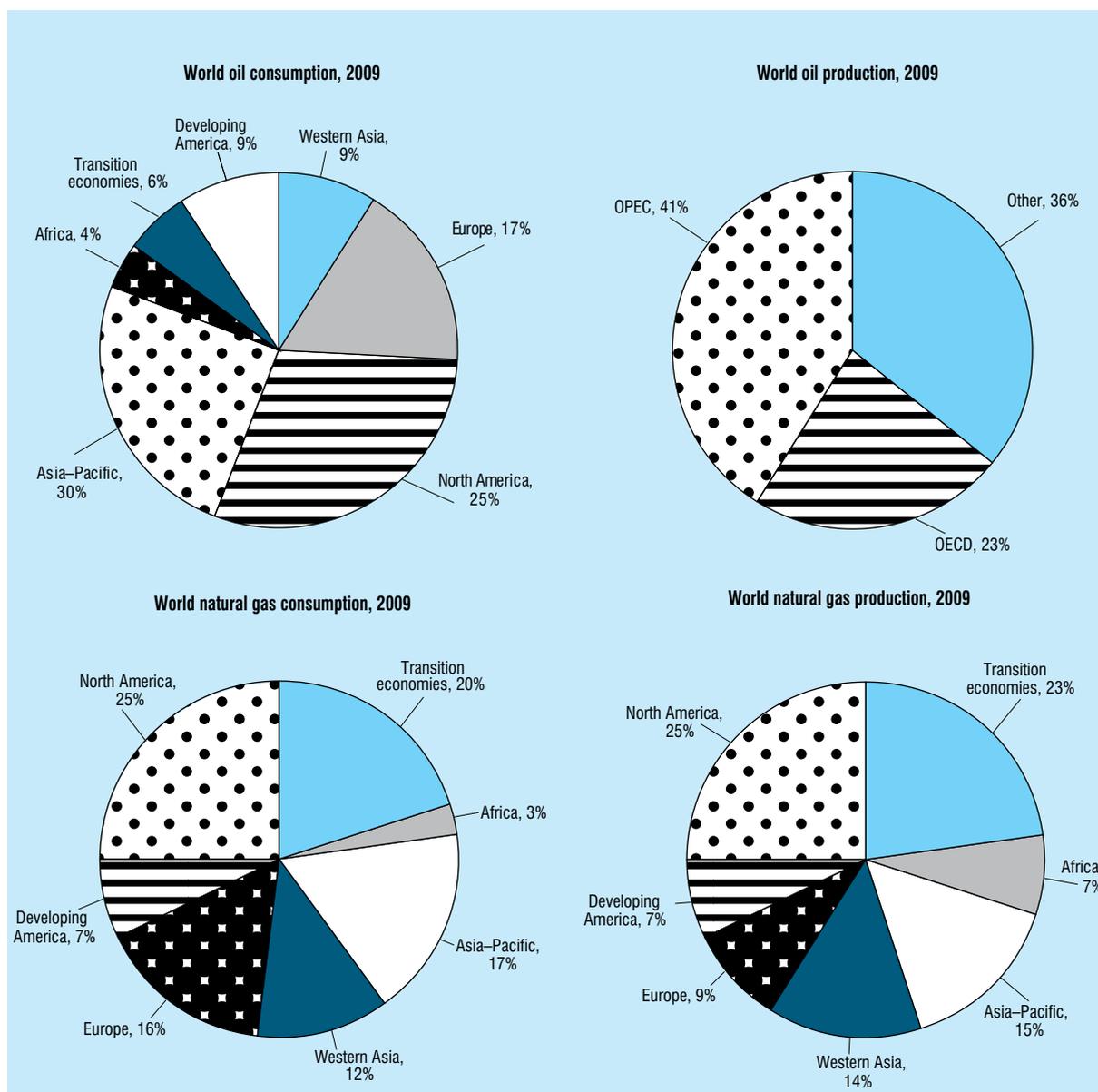
This section considers more closely some energy-related cargoes, namely crude oil and petroleum products, coal and gas. An overview of the supply/production and demand/consumption (fig. 1.7) of these cargoes is presented, given their importance in determining demand for tanker and bulker transport services as well as the scale and geography of tanker and coal trades. These cargoes are relevant too, given the pivotal role of energy in fuelling maritime transport and influencing maritime transport costs, and in the current debate on climate change.

Crude oil consumption⁵⁴

For the second time since 1983, world oil consumption contracted in 2009, falling from 85.2 mbpd in 2008 to 84.1 mbpd in 2009. Growth in demand reversed dramatically in late 2008, and continued to fall in 2009 as the global recession took hold. Diminishing industrial activity compressed demand for oil from the industrial sector, while cold weather supported demand for domestic and commercial heating. Demand for oil in OECD countries fell by 2.0 mbpd – equivalent to 4.8 per cent – a fourth consecutive year of decline. Outside the OECD, demand increased by 2.3 per cent, with growth originating mainly from Asia, led by China, India and Singapore, and followed by Western Asia (e.g. Kuwait, Qatar and Saudi Arabia).

IEA expects world oil demand to increase by 1.8 per cent in 2010 and to reach 86.5 mbpd (up by 1.6 mbpd), mainly because of increased demand in non-OECD countries, especially in Asia. Economic expansion and efficiency gains will contribute to

Figure 1.7. Oil and natural gas: major consumers and producers, 2009 (world market share in percentages)



Source: UNCTAD secretariat, on the basis of data published in BP's *Statistical Review of World Energy 2010* (June 2010).

Note: Oil includes crude oil, shale oil, oil sands and NGLs (the liquid content of natural gas where this is recovered separately). Excludes liquid fuels from other sources such as biomass and coal derivatives.

shaping future oil demand. Global oil intensity (total oil consumption per unit of GDP) is expected to decline faster than the historical trend, with a move by governments, especially in advanced economies, to implement environmental sustainability and energy security-driven policies (e.g. energy efficiency, and structural changes affecting transportation and the power generation sector).⁵⁵

Crude oil supply⁵⁶

In 2009, global oil production⁵⁷ fell by 2.0 mbpd (2.5 per cent), down to about 80.0 mbpd. Western Asia remained the main source of supply, together with certain transition economies, North America and Africa. Production in OECD countries remained virtually unchanged (-0.2 per cent), maintaining the grouping's share at 22.5 per cent of the world total.

In 2008 and 2009, OPEC reduced quota levels to support oil prices in the face of falling demand, with total production cuts amounting to 4.2 mbpd. Consequently, OPEC's total oil supply fell by 7.3 per cent, from 35.6 mbpd in 2008 to 33.1 mbpd in 2009. The cartel's share of total production went from 43.4 per cent in 2008 to 41.2 per cent in 2009.

Global production levels are expected to rise in 2010, driven mainly by a modest growth in non-OPEC supply, and by some OPEC members not fully complying with production targets. A factor that may discourage growth in production is the surpluses created by the crisis leading to high levels of commercial inventories, especially in OECD countries. Although countries have started to draw from their inventories due to limited OPEC production and relative growth in consumption, these inventories are estimated to be above the five-year average for the corresponding time of the year and to be equivalent to 58 days of forward cover.⁵⁸

The weaker demand outlook that follows the significantly depressed demand in 2009 also has implications for the oil industry's ability to expand capacity in the medium term, due, among other things, to rising costs, industrial bottlenecks, project delays, and the sharp fall in planned upstream projects. IEA reports that industry-wide upstream capital expenditure was 20.0 per cent lower in 2009 compared to one year earlier, with a portion of this drop reflecting cost reduction. While awaiting the big global recovery in demand, upstream project deferrals continue.

Petroleum products and refinery developments

Total global refinery throughput fell in 2009 to 73.5 mbpd, due to weakening oil demand. Refineries in Europe, Japan and the United States, which account for almost half of world production, have recorded the sharpest drop in utilization rates. In these regions, refineries are operated by independent refiners, who are, accordingly, more sensitive to market conditions. Where refineries are operated by national oil companies, the reduction in throughput was only marginal. In the meantime, capacity expansion is expected to continue in the next few years, with the addition of 7.6 mbpd of new primary distillation capacity over the period 2008–2014.⁵⁹ Developing Asia, with a lead from China, accounts for 50 per cent of this new distillation capacity, while Western Asia accounts for around 10 per cent of the increase.

There are concerns, however – especially in the wake of a weaker demand – that with new capacity coming online, there will be further excess capacity. Future expansion in refinery capacity in Western Asia could alter tanker trade flows by reducing product imports into the region. The changing distances between oil producers and refiners, brought about by the growth of refinery capacity in developing regions, will likely affect the geography of global tanker trade.

One major challenge for the product tanker sector relates to the need to ensure that funding for the requisite investment in capacity expansion is available, and that product requirements are consistent with the demand profile (e.g. in order to avoid a mismatch involving crude availability, refining capacity and the required product mix). The biggest challenge, however, is environmental, and includes the mandatory use of low-sulphur fuel in shipping and the question of adequate and timely supply, as well as the cost-effectiveness of low-sulphur fuel. More generally, there is an urgent need to address the challenge of climate change while meeting the ever-growing energy requirements of developing countries.

Natural gas: demand and supply

In 2009, world production of natural gas fell by 2.4 per cent compared to the previous year – to 2,987.0 billion cubic metres (bcm). Europe and the transition economies were the largest producers, with a market share of 32.5 per cent, followed by North America with a share of 25.3 per cent. The other producers included Western Asia (13.6 per cent) and the Asia-Pacific region (14.6 per cent) (see fig. 1.7). The reduced production in 2009 reflects falling gas prices, which undermined returns on gas developments. The strong growth recorded in Western Asia (by 6.5 per cent compared to 2008) could not offset the fall in the production levels of other producing regions. In 2009, world natural gas consumption contracted by 2.3 per cent to 2,940.4 bcm. Demand fell sharply in Europe, North America, developing countries in the Americas, Africa, and the countries with economies in transition, but increased in the Asia-Pacific region and in Western Asia. Production is expected to remain flat in 2010, reflecting the pace of the economic recovery, while consumption is expected to grow by 1.4 per cent.

World coal: demand and supply

The economic slowdown and the reduced demand for coal-fired power generation kept coal consumption levels in 2009 at nearly the same level as in 2008 (-0.2

per cent). Nevertheless, coal remains the fastest-growing fuel in the world. This is due to the growing share of coal in the energy mix of China and India, which together have accounted for over 80.0 per cent of growth over recent years. China – the world's largest consumer (with approximately a 50.0 per cent share) – increased its consumption by 9.6 per cent.

Coal-mining continues to raise a number of environmental concerns, and faces the challenge of reconciling urgent climate change policy action with the need to meet the growing energy requirements of the developing economies. A step in the right direction includes ensuring greater advances in clean coal technology, carbon capture and storage (CCS), and other alternative energy sources. In this respect, it should be noted that coal consumption fell sharply in the European Union and the United States not only because of reduced power-generation requirements, but also due to policies and initiatives concerned with curbing CO₂ emissions and supporting renewable energies. Other factors limiting Europe's coal consumption include the improved supplies of gas, and the expected fall in prices due partly to a surplus of LNG (high stocks). In Japan, a restart of nuclear plants will likely further reduce the demand for coal. In line with developments in the tanker and iron ore trades, Asia, and more specifically, China and India,

are likely to play an important role in fuelling growth in coal shipments.

On the supply side, global coal production grew by 2.4 per cent and reached 3,408.6 million tons of oil equivalent (mtoe), with much of global coal production being used in the country in which it was produced. This growth reflects the continued increase in China's production levels, and the sharp reduction in the Russian Federation's production levels (by 9.2 per cent in 2009 compared to 2008). China remained the world's largest producer, with a share of 45.6 per cent, followed by the United States, India, Australia, the Russian Federation, Indonesia and South Africa (see fig. 1.4. (c) earlier in this chapter for the major coal traders). A further increase in production is expected to result from growth in Asia and South Africa, and from a recovery in output in the Russian Federation.

To sum up, a better understanding of the developments affecting the various energy sources – oil, gas and coal – is essential in order to understand the changes in demand for maritime transport services, because of the effect of these developments on energy production and consumption patterns and on trade flows and composition. This is also crucial in view of the heavy reliance of shipping on oil for propulsion and the implications of this for transport costs and seaborne trade.

ENDNOTES

- ¹ For a more comprehensive overview of world economic development, see the *Trade and Development Report 2010*, available at <http://www.unctad.org/Templates/Page.asp?intItemID=3742&lang=1>.
- ² Overseas Development Institute (2009). The global financial crisis and developing countries: taking stock, taking action. Briefing paper. September.
- ³ United Nations Department of Economic and Social Affairs (2010). *World Economic Situation and Prospects 2010: Update as of mid-2010*. United Nations publication. New York.
- ⁴ For additional information on developments and prospects in the global economic situation, see, for instance, the following publications: (a) UNCTAD (2010). *Trade and Development Report 2010*. United Nations publication. Sales no. E.10.II.D.3. New York and Geneva; (b) United Nations Department of Economic and Social Affairs (2010). *World Economic Situation and Prospects 2010: Global Outlook*. United Nations publication. New York; (c) International Monetary Fund (2010). *World Economic Outlook: Rebalancing Growth*. April; and (d) Economist Intelligence Unit (2010). *Country Forecast*. Global outlook. May.
- ⁵ Ibid.
- ⁶ International Monetary Fund (2010). *World Economic Outlook: Rebalancing Growth*. April.
- ⁷ Clarkson Research Services (2010). *Dry Bulk Trade Outlook*. May.
- ⁸ Ibid.
- ⁹ Organization for Economic Cooperation and Development (2010). *Main Economic Indicators*. May.
- ¹⁰ Based, in particular, on the *UNCTAD Handbook of Statistics* and on information published by the World Trade Organization (2010) in "World trade 2009, prospects for 2010". Press release. March. Available at http://www.wto.org/english/news_e/pr598_e.pdf
- ¹¹ Escaith H, Lindenberg N and Miroudot S (2010). International supply chains and trade elasticity in times of global crisis. Staff working paper ERSD-2010-08. World Trade Organization. 1 February.
- ¹² United Nations Department of Economic and Social Affairs. (a) *World Economic and Social Survey 2010: Retooling global development*. United Nations publication. Sales no. E.10.II.C1. New York; and (b) *World Economic and Social Survey 2009: Promoting Development, Saving the Planet*. United Nations publication. Sales no. E.09.II.C.1. New York.
- ¹³ Ibid.
- ¹⁴ Freund C (2009). World trade drops nearly 4 times more than GDP fall. *Shipping and Finance*. 23 July. See also: WTO (2009). *International Trade Statistics 2009*.
- ¹⁵ Ibid.
- ¹⁶ Estimated by the World Bank. See: Beattie A (2009). Turnaround in global commerce defies the doomsayers. *Financial Times*. 6 October.
- ¹⁷ See, generally, the Overseas Development Institute. See also: UNCTAD (2010). *Economic Development in Africa Report 2010: South-South Cooperation: Africa and the New Forms of Development Partnership*. United Nations publication. Sales no. E.10.II.D.13. New York and Geneva.
- ¹⁸ Overseas Development Institute (2010). The global financial crisis and developing countries. Phase 2 synthesis. Working paper 316. See also: te Velde D (2010). The global financial crisis and developing countries: what happened, and what have we learned? 19 March.
- ¹⁹ Ibid.
- ²⁰ Zoellick R (2010). The end of the Third World? – Modernizing multilateralism for a multipolar world. 15 April.
- ²¹ Overseas Development Institute (2010). The global financial crisis and developing countries. Phase 2 synthesis. Working paper 316. See also: te Velde D (2010). The global financial crisis and developing countries: what happened, and what have we learned? 19 March.
- ²² UNCTAD secretariat, based on various specialized sources, including: (a) BP (2010). *Statistical Review of World Energy 2010*. June; (b) International Energy Agency (2009). *World Energy Outlook 2009*; (c) International Energy Agency. *Oil Market Report*. Various issues; (d) International Energy Agency (2009). *Medium-Term Oil Market Report*. June; (e) United States Energy Information Administration (2010). *Short-Term Energy Outlook*. June; (f) Organization of the Petroleum Exporting Countries (2010). *Monthly Oil Market Report*. June; (g) Organization of the Petroleum Exporting Countries (2009). *World Oil Outlook*; (h) Economist Intelligence Unit (2010). *World Commodity Forecasts: Industrial Raw Materials*. May; (i) Clarkson Research Services Limited (2010). *Shipping Review and Outlook*. Spring issue; (j) Dynamar. *DynaLiners*. Various issues; and (k) *Fairplay*. Various press articles.
- ²³ Mathews S (2009). Single hulls hold the key. *Lloyds Shipping Economist*. Volume 31. May.
- ²⁴ United States Energy Information Administration (2009). Current monthly energy chronology. February.
- ²⁵ In the broadest sense, unconventional natural gas is gas that is more difficult and less economically sound to extract, usually because the technology to reach it has either not been developed fully or is too expensive. For additional

- information, see, for example, <http://www.naturalgas.org>.
- ²⁶ Drewry Shipping Consultants Ltd. (2009). *Drewry Shipping Insight*. December.
- ²⁷ Based on information published by Clarkson Research Services in *Shipping Review and Outlook* (autumn 2009 and spring 2010), in *China Intelligence Monthly* (May 2010), and in *Dry Bulk Trade Outlook*, September 2010; by the Economist Intelligence Unit (May 2010) in World Commodity Forecast: Food, Feedstuff and Beverages, and in *World Commodity Forecast: Industrial Raw Materials*; by the World Steel Association (<http://www.worldsteel.org>); and by Goldman Sachs JBWere Investment Research (2010), Commodities. Iron ore and coking coal: price forecast upgrade. 9 March; in *Containerization International Magazine* (various issues); in *Containerization International Online* (<http://www.ci-online.co.uk>); in *Dynamar* in the *DynaLiners Trades Review* (various issues); in *Fairplay* (various articles); and on data and information supplied by Drewry Shipping Consultants.
- ²⁸ World Steel Association. World crude steel output decreases by 8.0 per cent in 2009. 22 January 2010.
- ²⁹ World Steel Association. World steel short range outlook. 12 October 2009 and 4 October 2010.
- ³⁰ BIMCO (2010). Bulletin no. 2. April.
- ³¹ See page xiv for a definition of vessel groupings.
- ³² For an overview of the issue of agricultural productivity and how to enhance food security in Africa through science and innovation, see UNCTAD's *Technology and Innovation Report 2010*.
- ³³ Macqueen J (2009). Major to minor. *Lloyd's Shipping Economist*. Volume 31. October.
- ³⁴ Data for the container trade volume is based on Clarkson Research Services (2010). *Shipping Review and Outlook* Spring issue.
- ³⁵ Clarkson Research Services (2010). *Container Intelligence Monthly*. September.
- ³⁶ See, for instance, Beddow M (2010). Pointing the finger. *Containerization International*. February.
- ³⁷ See, for instance, Bernard B (2010). A.P. Moller-Maersk plunges into red. *Journal of Commerce Online*. March.
- ³⁸ Drewry, based on BIMCO bulletin, volume 104, no. 6. A test of mettle for the container industry.
- ³⁹ See, for instance, a presentation by Bayne David from Drewry Shipping Consultants entitled "How has the global financial crisis affected the container port and shipping industry?" which was presented on 28 January 2010 at the Fourth Intermodal Asia 2010 Australia Conference.
- ⁴⁰ *Dynamar* (2010). Analysis and commentary on liner shipping. *Weekly News Summary*. 1 January.
- ⁴¹ Beddow M (2010). Schedule reliability worse in Q4 09. *Containerization International*. 16 March.
- ⁴² International Association of Ports and Harbours (2010). *Ports and Harbours*. Volume 55, number 3. May.
- ⁴³ IHS Fairplay. Slow steaming – not so fast. Running large engines at low engine loads remains controversial. Volume 369, issue 6583. 20 May.
- ⁴⁴ *Containerization International* (2010). MCC and OOCL add strings. 1 June.
- ⁴⁵ A.P. Moller–Maersk Group (2010). In a climate of change. *Sustainability Report 2009*.
- ⁴⁶ *Dynamar* (2009). Analysis and commentary on liner shipping. *Weekly News Summary*. 49/2009. 4 December.
- ⁴⁷ *Dynamar* (2010). Analysis and commentary on liner shipping. *Weekly News Summary*. 08/2010. 26 February.
- ⁴⁸ Kumar S (2010). *U.S. Merchant Marine and World Maritime Review*. Loeb-Sullivan School of International Business and Logistics at Maine Maritime Academy.
- ⁴⁹ United States Energy Information Administration. Weekly all-country spot price FOB weighted by estimated export volumes.
- ⁵⁰ International Energy Agency (2009). *World Energy Outlook 2009*. See also: Connor S (2009). Warning: oil supplies are running out fast, catastrophic shortfalls threaten economic recovery. *The Independent*. 3 August; and Tanaka N (2009). 2009–2010: non-OPEC oil production and biofuels will decline. *Shipping and Finance*. August.
- ⁵¹ *Ibid.*
- ⁵² World Shipping Council (2008). Record fuel prices place stress on ocean shipping. 2 May. Available at http://www.worldshipping.org/pdf/WSC_fuel_statement_final.pdf.
- ⁵³ The results of the study were published in 2010 in a technical report by the UNCTAD secretariat entitled "Oil prices and maritime freight rates: an empirical investigation". The report can be downloaded at <http://www.unctad.org/ttl/legal>.
- ⁵⁴ Unless otherwise specified, based on data and information published by BP (2010). *Statistical Review of World Energy 2010*. June.
- ⁵⁵ International Energy Agency (2009). *Medium-Term Oil Market Report*. June.
- ⁵⁶ Unless otherwise specified, based on data and information published by BP (2010). *Statistical Review of World Energy 2010*. June.
- ⁵⁷ Includes crude oil, shale oil, oil sands, and NGLs (the liquid content of natural gas where this is recovered separately) Excludes liquid fuels from other sources, such as biomass and coal derivatives.
- ⁵⁸ United States Energy Information Administration (2010). *Short-Term Energy Outlook*. June.
- ⁵⁹ International Energy Agency (2009). *World Energy Outlook 2009*.