

UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT
Geneva

***REVIEW OF MARITIME
TRANSPORT
2008***

Report by the UNCTAD secretariat

**UNITED NATIONS
New York and Geneva, 2008**

Chapter 4

TRADE AND FREIGHT MARKETS

This chapter describes conditions and trends in trade and freight markets, covering the major tanker, bulk cargo and liner sectors. Overall, 2007 was a good year for all tanker market segments compared to the previous year and in some cases even surpassing the highs achieved in 2005. As with the previous year, 2007 experienced a strong dry-bulk cargo freight market fuelled mainly by buoyant steel production in Asia and the corresponding demand for iron ore. The containership market showed its resilience despite the downward pressure resulting from higher fuel costs, a weakening United States dollar, a strengthening euro and an increased supply of newbuildings coming online.

A. CRUDE OIL AND PETROLEUM PRODUCTS SEABORNE FREIGHT MARKET⁷²

Introduction

In addition to being the main source of fuel which propels the ships, crude oil and petroleum products are also transport commodities. The world's tanker fleet carried approximately one third of the total world seaborne trade for the year 2007. Thus, understanding the oil industry gives the reader not only a good indication of one of the main cost elements in transport, but also of shipping as a whole.

1. Seaborne trade in crude oil and petroleum products

The price of oil continued upwards in 2007 from around \$54 per barrel at the start of the year to \$96 per barrel by the year end. In early 2008, a barrel of oil crossed the long-anticipated threshold of \$100 as a result of a combination of weak supply growth coupled with a tight spare capacity. This marked a significant growth from a

decade earlier, when in 1998 the price was at a mere \$11 per barrel. The previous recorded high was in April 1980 when the inflationary adjusted figure put the price of oil at the equivalent of \$102.81 per barrel.⁷³ Even the discovery of new supplies of oil did little to either dampen the price of oil, which slipped below \$90 per barrel in January and February, nor prevent it from surpassing \$145 in July 2008. Some analysts attributed the continued demand for oil to speculative investors using the commodity as an alternative to holding the weakening United States dollar and by speculators who treat commodities like assets, i.e. banks and hedge funds. This occurred because the credit crunch wiped out the mortgage backed paper market and collateralized debt market. Commodities were seen as a more tangible safer heaven. However, other reasons – such as low Organization of the Petroleum Exporting Countries (OPEC) production, refining capacity shortages and geopolitical turmoil – all have a part to play in fuelling the uncertainty which drives the price up. Falling production in the Russian Federation, the world's second largest producer, combined with resilience from the world's number one producer, OPEC, to increase production also contributed to the record high prices.

However, the Government of Saudi Arabia – a member of OPEC – did announce its intention to increase production by 300,000 barrels a day, or 3.3 per cent, to 9.45 million barrels a day in June 2008. This helped to slightly ease the price of oil. Oil production in the Russian Federation had peaked at 9.9 million barrels per day, about 11 per cent of the consumption, in October 2007, but has been declining since. The main reason behind the Russian Federation's declining production, analysts claim, is the punitive tax situation which discourages production of oil from new wells over older fields.⁷⁴

The rising price of oil is also having an effect upon supply capacity as holders of stock seek to cash in on the rising value of their inventory. Spare capacity in oil supply has been dwindling since the highs of around 8.4 mbpd in 2002 to around 2.8 million mbpd in 2008. Approximately 2 million of this is held by Saudi Arabia and the United Arab Emirates. Delays in completing projects such as Saudi Arabia's 500,000 barrels per day (bpd) Khursaniyah, pipeline outages, weather-related disruptions in the North Sea and Australia, and attacks to oil installations in Nigeria and Iraq, illustrate market vulnerability and the need for a bigger supply cushion. Heightened tensions in the global markets became evident when in April 2008 a Japanese tanker was attacked with a rocket in the Middle East and militants blew up a Royal Dutch Shell pipeline in Nigeria.⁷⁵ Also in Nigeria, a strike at Exxon Mobil halted production of approximately 200,000 bpd while in April 2008 workers at British Petroleum's Grangemouth, United Kingdom plant walked out in protest over pensions. In the United States, an explosion in February 2008 at the Alon USA Energy Inc. refinery in Texas also contributed to uncertainty. Should an increase in production be required, some analysts believe countries which will struggle to increase short-term production include Indonesia, Iraq, Nigeria and the Bolivarian Republic of Venezuela.

In 2007 Petrobras, Brazil's partly State-owned oil firm, announced the world's biggest oil discovery since 2000, the Tupi field, believed to hold between 5 billion and 8 billion barrels. There are possibilities of other big discoveries as analysts assess finds at two nearby fields named Carioca–Sugar Loaf and Jupiter. All three fields

The time charter earnings for modern VLCCs (very large crude carrier) averaged \$102,000 per day for the first quarter of 2008, compared to \$58,900 for the same period in 2007.

are in an area far below the seabed and beneath a thick layer of salt, making extraction costly. The cost of operating an oil rig has risen from around \$200,000 per day in 2003 to \$600,000 in 2008.⁷⁶ While most analysts agree that the cost of extracting oil is rising, the estimates vary. Some put the cost of extraction in many developing countries at below \$10 per barrel, others in the range \$10–\$30, with offshore production at \$64.⁷⁷ Estimates put the demand for oil in 2008 at around 87.2 mbpd, up 1.5 per cent from 2007, but lower than previously forecasted.

The time charter earnings for modern VLCCs (very large crude carrier) averaged \$102,000 per day for the first quarter of 2008, compared to \$58,900 for the same period in 2007. OPEC raised oil production in November 2007 to take advantage of the high price. This – combined with low stock levels in Europe and the Far East – gave rise to a spectacular rise in freight rates towards the end of the year. This price increase reflected the strong demand for oil. Also reflecting the strong demand for oil was the order book for new tankers for the next four years, which equates to about 37 per cent of the existing fleet. Due to more stringent environmental regulations by many nations, single-hulled tankers are expected to be converted or scrapped. Presently these account for around 22 per cent of the existing fleet.

OPEC production cuts in 2007, combined with sluggish growth in non-OPEC supply, tightened oil markets in the upstream sector. The downstream market was characterized by under-capacity. A number of United States refineries suffered unplanned shutdowns resulting in utilization rates below 90 per cent, compared to 92.6 the previous year. Product stocks averaged 701 million barrels in 2007, compared to 744 million in 2006.

2. Tanker freight rates

In 2007, the average year freight indices for tanker ships continued their downward path from which they embarked at the beginning of 2005 (see table 29). However, within this general trend, there was considerable movement. The five freight indices remained relatively static in the first half of 2007 before dipping slightly as a prelude to an impressive gain from

September to December. However, the first month of 2008 saw a decline in rates so that year-on-year growth was nominal or marginally negative.

The major exception was in the VLCC sector, where ships of 200,000 dwt-plus climbed from 63 points in January 2007 to a high of 201 in December, falling back to 112 in January 2008. The rise in demand for VLCC was largely attributable to the discounting of crude prices by some Middle Eastern countries, thereby creating a higher demand for tankers. The Baltic Tanker Clean Index ended the year virtually unchanged from the beginning, at 1,184 points.

Tables 29 and 30 show a return to normal from the reverse trend noticed in 2006. The average freight rates decreased during the first two quarters and climbed during the last quarter of the year. Table 30 presents the average freight rates measured in *Worldscale* (WS),⁷⁸ a unified measure for establishing spot rates in the tanker market. (When reporting a *Worldscale* freight rate, the prefix WS is always cited). The table focuses on traditional benchmark routes and is not intended to be exhaustive. The main loading areas indicated in the table are the Persian Gulf, West Africa, the Mediterranean, the Caribbean and Singapore, while the main unloading areas are in the Far East, South Africa, North-West Europe, the Mediterranean, the Caribbean and the East Coast of North America. The growing West Africa to China route, relying on large ships, has not been included in the table.

The largest increases for 2007 came towards the end of the year. For VLCC vessels from the Persian Gulf to Japan, rates in December climbed to 195 points from 71 the previous month. This route is also the most frequently traded Asian tanker derivative. From the Persian Gulf to the Republic of Korea, rates climbed to 189 points from 86 the previous month. From the Persian Gulf to Europe, December saw the rate double to 163 points, up from 82 the previous month. On the route from the Persian Gulf to the Caribbean/East Coast of North America, the rate climbed from 55 points in November to 159 in December.

The first month of 2008 saw a decline in rates so that year-on-year growth was nominal or marginally negative.

The VLCC market in 2007 started weak and, despite a couple of gains in March and May, the year was characterized by uncertainty.

Freight markets during 2008

The start of 2008 saw a downward correction in all sectors of the tanker freight market. This was largely attributable to increased supply of tonnage following the New Year holiday season, better weather conditions in the Bosphorus and lower crude runs in

the Atlantic basin.⁷⁹ In the first quarter of 2008, daily time charter rates for a 1990/91-built VLCC averaged \$80,000 per day. Although this was higher than 2007, it was on par with previous highs seen in 2004.

Although average spot rates for most tanker sectors at the beginning of 2008 were higher than in 2007, there was still persistent volatility. The major exceptions were on the Aframax⁸⁰ North-West Europe–North-West Europe, Mediterranean–North-West Europe routes, on the handysize Caribbean–East Coast of North America/Gulf of Mexico, and for both types of vessels on the Mediterranean–Mediterranean routes. The overall picture that emerges from table 30 is one where average spot earnings continued to fluctuate. September, however, marked the turning point for most routes with strong growth for the remainder of the year.

The biggest month-on-month decrease was for Aframax vessels on the Mediterranean–Mediterranean route in February, where rates dropped from 231 in January to 121. Elsewhere with Aframax vessels, the Mediterranean–North-West Europe rate dropped from 188 to 110 in the same period. Again on the Mediterranean–Mediterranean route, rates dropped from 173 in May to 107 in June for both the Aframax and handysize.

More detailed information about developments in 2007 in relation to the various categories of tanker segments is provided in the following sections.

Very large and ultra large crude carriers

Representing some of the world's largest ships, VLCCs and ULCCs offer the best economies of scale for oil transportation where pipelines are non-existing. The VLCC market in 2007 started weak and, despite a couple

Table 29

Tanker freight indices, 2006–2008
(monthly figures)

	Lloyd's Shipping Economist				Baltic Tanker		
	>200	120–200	70–120	25–70	Clean	Dirty Index	Clean Index
2006							
October	87	147	190	213	217	1 281	1 095
November	74	118	133	199	194	1 223	853
December	66	136	189	210	251	996	931
Average	93	141	164	228	247	1 295	1 112
2007							
January	63	124	187	209	219	1 316	1 185
February	65	116	159	237	226	1 190	907
March	81	112	145	220	282	1 094	1 065
April	63	122	145	229	264	1 398	1 096
May	79	108	161	235	244	1 236	1 045
June	63	110	113	211	242	1 006	1 151
July	59	91	128	216	208	1 026	941
August	52	85	97	185	174	977	900
September	51	77	102	170	158	801	770
October	57	104	134	180	170	902	767
November	72	126	148	205	198	1 089	812
December	201	232	214	279	239	1 535	1 184
Average	76	117	144	215	219	1 131	985
2008							
January	112	124	178	205	215	1 914	1 083
February	97	119	141	182	195	1 174	938
March	108	156	175	202	197	1 164	946
April	110	187	217	239	234	1 482	873
May	182	239	247	271	279	1 701	1 192
June	182	210	237	324	326	1 921	1 388

Source: UNCTAD secretariat based upon Executive Summary in *Lloyd's Shipping Economist*, several issues; Baltic Tanker indices reported for the first working day of the month. Ship sizes are expressed in deadweight capacity.

of gains in March and May, the year was characterized by uncertainty. The most notable event in the 2007 VLCC tanker freight rates came at the end of the year, when rates reached their highest levels since the highs of 2004. The key drivers behind this increase were low global oil stocks at the start of winter, increased refinery throughput following a heavy autumn maintenance schedule, a 0.5 mbpd increase in OPEC oil supply from 1 November 2007, and completion of field maintenance

at a major oilfield in the Middle East. External factors such as fog-related delays in the United States Gulf of Mexico and rising transit delays in the Bosphorus Strait helped increase demand further and push up the average earnings to a new record of \$230,000 per day in December 2007.⁸¹ Rates afterwards dropped to an average of around \$80,000 per day for the first quarter of 2008. The global VLCC fleet at the end of 2007 stood at 489 vessels with an expected 40 new deliveries in 2008.

Table 30

Tanker market summary: clean and dirty spot rates, 2007–2008
(Worldscale (WS))

Vessel type	Routes	2007												% change 2007/2006	2008					
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec		Jan	Feb	Mar	Apr	May	Jun
VLCC/ULCC (200,000 dwt+)	Persian Gulf–Japan	58	59	82	50	81	63	63	56	54	57	71	195	236.2%	122	96	97	109	212	204
	Persian Gulf–Republic of Korea	58	55	81	53	72	60	55	53	52	53	86	189	220.3%	127	99	88	102	167	190
	Persian Gulf–Europe	54	52	66	45	69	60	50	45	42	42	82	163	181.0%	135	88	84	69	160	145
	Persian Gulf–Caribbean/East Coast of North America	53	48	73	49	63	60	45	45	43	43	55	159	189.1%	85	86	84	95	132	142
	Persian Gulf–South Africa	57	..	..	55	97	..	..	54	..	..	..	220	243.8%	..	..	..	160	..	..
Suezmax (100,000–160,000 dwt)	West Africa–North-West Europe	130	107	126	128	105	108	96	78	79	93	117	237	94.3%	149	124	173	200	237	199
	West Africa–Caribbean/East Coast of North America	129	116	116	113	108	112	99	79	79	93	114	251	93.1%	135	125	157	175	249	190
	Mediterranean–Mediterranean	154	113	136	124	110	113	87	78	75	125	138	223	38.5%	165	113	224	226	273	214
Aframax (70,000–100,000 dwt)	North-West Europe–North-West Europe	169	168	138	139	129	105	128	87	104	125	140	190	25.8%	163	128	159	196	240	206
	North-West Europe–Caribbean/East Coast of North America	167	185	130	170	178	124	126	97	..	114	125	190	-5.0%	170	138	173	194	258	246
	Caribbean–Caribbean/East Coast of North America	174	211	187	156	170	140	170	105	115	153	166	299	29.4%	204	168	240	226	288	309
	Mediterranean–Mediterranean	231	121	157	146	173	107	117	94	106	145	150	205	15.2%	183	146	192	251	263	222
	Mediterranean–North-West Europe	188	110	161	140	142	103	115	91	117	135	133	193	-6.8%	187	137	174	240	265	218
	Indonesia–Far East	149	124	125	156	142	143	129	112	120	114	141	237	55.9%	180	143	140	164	210	226
Handy-size (less than 50,000 dwt)	Mediterranean–Mediterranean	281	273	247	216	233	150	230	..	156	205	199	260	36.8%	198	180	191	211	235	300
	Mediterranean–Caribbean/East Coast of North America	200	213	195	203	..	..	200	167	148	153	177	262	50.6%	200	174	187	212	279	290
	Caribbean–East Coast of North America/Gulf of Mexico	212	205	214	207	198	161	176	161	158	154	168	334	37.4%	194	159	221	236	275	344
All Clean Tankers	Persian Gulf–Japan	156	133	146	135	133	132	137	153	140	115	142	195	13.4%	198	150	135	141	172	260
	Persian Gulf–Japan	185	161	182	172	185	168	184	188	175	163	172	236	21.6%	224	171	182	166	207	288
	Caribbean–East Coast of North America/Gulf of Mexico	209	222	288	233	223	242	201	155	133	145	177	203	-28.0%	216	190	189	227	298	302
	Singapore–East Asia	303	257	276	223	313	246	292	294	302	243	218	322	6.6%	287	224	260	221	220	306

Source: UNCTAD secretariat based upon *Drewry Shipping Insight*, various issues.

Note: Two dots (..) means that no rate was reported. The classification of ship size in this table reflects the source used and may vary when compared to other parts of this publication

However, the phasing out of single-hulled tankers under regulation 13G of MARPOL annex 1 by 2010 is having an effect upon the fleet, and a similar number of ships will be taken out of the fleet and converted mainly to very large ore carrier (VLOC) and some to floating storage and offloading FSO/floating production, storage and offloading (FPSO) during 2008.

Rates for VLCCs trading on the Middle East–eastbound long-haul route remained weak due to lower tonnage demand because of quick turnarounds times in Asian refineries and a steady increase in the tonnage supply. Similarly, rates for VLCCs moving volumes on the Middle East–westbound route came under pressure by OPEC's cut in production and the easing of geopolitical concerns in the region. Rates for VLCCs picked up at the end of April on increasing imports by the United States, in preparation for the summer driving season and the continued decline in gasoline stocks.

One year time charter rates for modern VLCCs climbed by 13 per cent in March 2008 as other classes weakened.

During 2007, average rates for the route from the Persian Gulf to Japan closed at a yearly high of WS195, having recovered from a low of WS54 just two months earlier, in September. In terms of returns, the annual average time charter equivalent earnings for owners of VLCCs on this route were \$41,200, compared with \$51,550 for 2006, \$59,070 in 2005 and \$95,250 in 2004.

As reported in the *Review of Maritime Transport 2007*, freight rates on VLCCs for the routes mentioned in table 30 are uncertain because of a number of factors, including IMO rules on the phasing out of single-hull tankers. The situation is not clear as regards importers in the East while exporting countries in the Middle East are expected to strictly enforce the new regulations after the 2010 deadline. The United States and the European Union⁸² have already taken measures to ban the trading of single-hull tankers. The high prices of oil in 2007 were reflected in a drop in demand for OECD crude oil imports by 16 million tons – from 1.616 billion tonnes to 1.632 billion in 2006, 1.629 billion in 2005, and 1.626 billion in 2004.⁸³ One operator of a VLCC tanker fleet reported that net revenues earned, after broker commission, averaged \$45,700 per day in 2007, down from \$56,800 in 2006.

One operator of a VLCC tanker fleet reported that net revenues earned, after broker commission, averaged \$45,700 per day in 2007, down from \$56,800 in 2006.

Suezmax tanker tonnage

Suezmax ships offer economies of scale combined with flexibility. Suezmax ships require less lightering than VLCCs and are able to attract more cargo when ship size may be a constraining factor. A fully loaded Suezmax must be capable of transiting the Suez Canal, which is presently 16m deep, although they do not necessarily only operate on this route. Suezmax vessels play an important role in trading from West Africa to North-West Europe and to the Caribbean/East Coast of North America, as well as across the Mediterranean. Rates on the West Africa–North-West Europe route dropped in February 2007, and regained before falling in August and September, to reach a high of 237 in December. The same was largely true for the West Africa to the Caribbean/East Coast of North America route. For the first quarter of 2008, rates for these routes dropped from their December high in January and February before climbing again in March. No doubt due to high oil prices, rates in the Suezmax market did not follow the usual seasonal variations, i.e. a drop in March and April, when the winter peak demand ends, followed by a rise in May, as the summer season begins (air conditioning units, United States summer driving season, etc). The Suezmax market is less likely than the VLCC/ULCC markets to be affected by IMO regulations with regard to the phasing out of single-hull tankers, since this sector has fewer single-hull ships; also, the sector is less influenced by markets in the West (the United States and European Union), where single-hull tankers are already being banned from trading. Demand for Suezmax tonnage is expected to increase

– especially in the Black Sea to Mediterranean, Bosphorus and West Africa – owing to increased oil production. Average rates for trade from West Africa to Europe started the year at WS130, reached their lowest point in August (WS78) and ended the year significantly higher at WS237.

On the West Africa–Caribbean/East Coast of North America route, the annual average time charter equivalent earnings were \$37,000 per day in 2007, compared with \$46,000 per day in 2006, \$47,550 per day in 2005, and \$64,800 per day in 2004. During 2007, the highest average rates were at the end of the year and the lowest point was in August and September.

Aframax tanker tonnage

Regarded as very versatile vessels, Aframax tankers are usually deployed for trading within and between the following regions: North-West Europe, the Caribbean, the East Coast of North America, the Mediterranean, Indonesia and the Far East.

Average rates on all routes dipped in August and then climbed to end the year higher, except within the Mediterranean. A year-on-year comparison with the month of December shows that all routes, except for the Mediterranean–North-West Europe, climbed in 2007.

As shown in table 30, freight rates in the Mediterranean and North-West Europe declined sharply in February, because of a reported lowering of refinery activity brought about because of the Chinese New Year, which served to increase supply of tankers and depress rates. Again in July 2007, rates took a tumble on all routes due to limited cargo availability, except on the Indonesia–Far East route. Improved United States refinery utilization rates – which rose steadily from 90 per cent to 93.6 per cent in June and July – boosted trade activity in the United States Gulf of Mexico. The average rates on all routes except for trade in North-West Europe and in the Mediterranean started the year at lower levels compared with the end of 2006. In terms of earnings, the average annual time charter equivalent earnings continued their downward trend; for example, on the cross-Mediterranean route, it dropped from \$43,915 in 2004 to \$39,000 in 2005, \$31,750 in 2006, and \$27,100 in 2007.

On the Mediterranean route, rates varied from a high of WS232 in January to a low of WS94 in August 2007. For a ship of 80,000 dwt, these were equivalent to time charter earnings of \$63,500 per day in January against a mere \$8,100 in August.

On the Caribbean to other destinations in the Caribbean and to the East Coast of North America, rates peaked at WS299 at the end of the year, from a low of WS105 in August. These translated into time charter equivalent earnings of \$67,700 per day in December from \$12,000 per day in August. The highest average rate for traffic across the Mediterranean was WS231 in January, while the lowest point (WS121) was reached immediately during the following month. This corresponded to a drop

in time charter equivalent earnings from \$63,500 per day to \$22,600 per day for a ship of 80,000 dwt. This drop occurred principally because of a reduction in delays transiting the Turkish straits removed the premium previously factored in by the market.

Handysize tanker tonnage

The handysize tankers are the most versatile of the tanker fleet, capable of calling at destinations with limited draft and length restrictions. Table 30 shows the freight rates for these types of ships deployed for trades across the Mediterranean, for trades originating in the Mediterranean with destinations in the Caribbean and the East Coast of North America, and trades from the Caribbean to the Gulf of Mexico and the East Coast of North America.

Freight rates on two of the three routes shown in table 32 climbed from the end of 2006 to the beginning of 2007 and maintained this level until May 2007, when in the Mediterranean there was a sharp drop. The second half of the year remained volatile and, as with all the other tanker sectors and previous years, December saw a large increase in rates over the preceding month. Nowhere was this more evident than on the Gulf of Mexico and the East Coast of North America route, where the onset of the winter season saw rates almost double, from WS168 in November to WS334 in December. For example, the time charter equivalent earnings for the Caribbean to the East Coast of North America were, for a ship of 60,000 dwt, \$41,900 per day in January 2007 (WS212), \$24,200 per day in November 2007 (WS168) and \$66,600 per day in December (WS334).

As with the other tanker freight rates, January 2008 brought about a downward correction. When comparing freight rates for all handysize tankers for the first quarter of 2007 over 2008, it can be seen that the average rate for all routes decreased around 17 per cent.

All clean tankers

The average time charter equivalent earnings for product tankers continued its downward slide. For example, average annual time charter equivalent earnings on the Caribbean–East Coast of North America/Gulf of Mexico route were \$17,700 per day in 2007 compared with \$21,400 per day in 2006 and \$25,240 per day in 2005.

The average rates on all routes except for trade in North-West Europe and in the Mediterranean started the year at lower levels compared with the end of 2006.

Rates fluctuated in line with seasonal trends as well as because of variations in demand. Rates on all routes peaked in December due to the usual seasonal trends, except on the Caribbean–East Coast of North America/Gulf of Mexico route, which reached its peak in March as a result of an increase in product demands across the main consuming regions. In the United States, oil deliveries in March stood at 100,000 bpd higher than the previous month due to the demand for transport fuels. October saw the lowest average freight rates on the Persian Gulf–Japan route for vessels of between 70,000 and 80,000 dwt (WS115). Likewise, the smaller clean tankers (50,000 to 60,000 dwt) trading on the same route saw the rate drop to WS163, similar to 2006, where November also marked the yearly low point of WS155.

Tanker-period charter market

In 2007, total chartering activity reached 28.04 million dwt which although equated to an average of 2.3 million dwt per month, the actual monthly figures show large fluctuations. For six months of the year (May, July and September until December) chartering activity was less than 2 million dwt. Vessels chartered varied from a high in March with 4,261 million dwt against a low in September of 514 million dwt. This contrasts with 2006 when the peak month was November with 3.94 million dwt, against a corresponding figure of 1.36 million dwt for 2007.

About 46 per cent of total chartering activity in 2007 was made up of long-term charters of 24 months or more, down from 58 per cent in 2006. As with 2006, the next most active sector of time chartering was for the period of less than 6 months (26 per cent) and those with duration of one to two years (24 per cent). Very large tankers (ULCC/VLCC) accounted for about 32 per cent of total chartering activity, down from 54 per cent for 2006. Tankers at the lower end of the range (10,000–50,000 dwt) accounted for over 12 per cent. Chartering activity in the first quarter of 2008 declined significantly to 6.4 million dwt from 12.3 million dwt for the same period in 2006. Rates varied little throughout most of the year, except for an increase in December of around 17 per cent over the previous month. For example, estimated tanker one-year

time charter rates for a five-year-old ship of 280,000 dwt went from \$52,000 per day in January 2007 to \$62,000 per day in January 2008. The first quarter of 2008 saw a continuation of this trend, so that by March the rate stood at \$71,000 per day.

B. DRY BULK SHIPPING MARKET⁸⁴

Introduction

The dry bulk shipping market represents around 40 per cent of the total volume of cargo transported by sea. Understanding this segment of the shipping sector enables the reader to grasp what is happening to the raw materials, which affects our modern lives so much, but which often goes unnoticed by the general public. From the iron ore that is smelted and refined into consumer goods to the phosphates that are used to fertilize the crops we eat, this sector covers the five main bulks (iron ore, grain, coal, bauxite/alumina and phosphate).

1. Dry bulk trade

The dry bulk market has been riding high for the last four years and in 2007 this trend continued.

In 2007, China imported 380 million tons of iron ore, up from 148 million tons in 2003. The demand for coal in Asia has been increasing around 30 to 40 million tons annually during the same period. The Drewry dry bulk earnings index recorded a rate of less than 4,500 points at the beginning of the year, to a close of over 11,000 points. The year started with increased levels of period chartering largely on the back of iron ore price settlements. This confidence spread into the dry bulk newbuilding market, with some 5 million dwt ordered. The demand for dry bulk carriers can be seen in the rise in price of a five-year-old Capesize vessel, which averaged a mere \$30.3 million in 2003 to reach \$105.7 million in 2007. The Capesize vessel *Anangel Happiness* was reported to have secured a hire rate which would repay her purchase cost in a mere five years, while the working life of such a vessel could be 25 years. In April 2007, the average earnings for a modern Capesize stood at \$93,260/day; by May they had broken through the \$100,000/day barrier, reaching \$102,916/day.⁸⁵ In some cases, it was

The dry bulk market has been riding high for the last four years and in 2007 this trend continued.

The Capesize vessel *Anangel Happiness* was reported to have secured a hire rate which would repay her purchase cost in a mere five years, while the working life of such a vessel could be 25 years.

reported that the freight rate per ton exceeded the value of the cargo. The driving force behind Capesize demand was the growth in world steel production, up 10.2 per cent in the first quarter of 2007 over the previous year to reach 318.3 million tons. A decline in steel production in North America in March 2007 compared with the same period the previous year was offset by increases mainly in Asia, so that the first quarter of this year saw a 16.3 per cent rise over the same period in 2006. In the first quarter of 2007, China imported a total of 100.19 million tons of iron ore. Delays at Australian ports for loading coal reached up to 50 days. The demand for new Capesize vessels saw order books in 2007 equal to 87 per cent of the existing fleet. VLOC (very large ore carriers) boomed, with 65 new ships ordered, twice that of the existing fleet. The demand for new bulkers saw order books grow from 90 million dwt at the start of the year to 240 million dwt at year's end.

First in May 2007 and then again in December, the Chinese Government raised export taxes on steel as a response to balance of trade issues with Europe and the United States. Also in December, the Chinese Government introduced a new import tax on iron ore. In May 2008, the *Capesize* market was on parallel with that of November 2007, signifying another good year for shipowners. The roaring dry bulk market reached an unprecedented record of just over \$300,000 per day to charter a large *Capesize* vessel. The 203,512 dwt, 2006-built carrier China Steel Team was booked at a rate of \$303,000 per day for a voyage to carry iron ore from Brazil to China. That was three times more than its last fixture a month prior, when Swiss Marine paid \$95,000 per day.

Driving this demand was the failure of Chinese importers to agree on freight rates for Australian commodities. Commodities extractors BHP Billiton and Rio Tinto Group were locked in negotiations with Chinese steelmakers over the 2008 contract price for iron ore. BHP Billiton and Rio Tinto Group were holding out for a freight premium because of their geographical advantage over their main competitor, Brazil. Brazil's Vale had previously won an increase of 65 per cent, but as Australia is closer to China than Brazil. Australian commodity miners wanted a larger increase to reflect the freight savings; this they eventually achieved in June 2008 with an increase of 96 per cent. To illustrate the argument, shipping iron ore from Australia to China costs around \$45 per ton, compared with \$107 from Brazil. With longer voyage times from China–Brazil than China–Australia, more *Capesize* tonnage is tied

up going this route, thus further driving up the transport costs. A roundtrip voyage between Brazil and China takes on average about 74 days compared with a roundtrip voyage from Australia to China, which takes about 30 days. A 170,000 dwt *Capesize* requires 0.59 vessels to carry 1 million metric tons/year from Australia to China, compared to 1.27 vessels for Brazil.⁸⁶ Theoretically, this means one *Capesize* vessel can make either five return trips from Brazil to China in one year against 12 return trips from Australia to China. Despite the standoff between Chinese steels mills and Australian commodity exporters, Australia exported 26.5 million tons of iron ore in March 2008, up 30.4 per cent from the previous month and 57.7 per cent on the same period in 2007. Australia's cumulative iron ore exports in the first quarter of 2008 were 74.1 million, up 26.4 per cent on the first quarter of 2007. In the first quarter of 2008, exports to China increased 35.3 per cent to 41.7 million tons, some 56 per cent of the total exports.⁸⁷ However, this did not prevent a major drop in the dry freight rates, mostly for the *Capesize* tonnage at the beginning of 2008. This was due largely to the Chinese New Year, which normally sees rates soften, and the closure of the iron ore terminal in Brazil for repairs. The largest effects, however, were caused by the price negotiations between Brazilian iron ore miner Vale and Asian steel mills, which postponed a number of iron ore stems. The long drawn-out dispute resulted in a number of vessels that sailed in ballast from China to Vale's terminal with no cargoes to load.

Reflecting the increased demand for bulk trade, at the end of 2007, shipping capacity increased, with the world dry bulk fleet growing by 6.4 per cent (23 million dwt) to reach 391.1 million dwt. In total, there were 315 dry bulk carriers delivered in 2007, with a combined tonnage of 24.7 million dwt. As reported in chapter 2, the tonnage of dry bulk ships on order at the end of 2007 outstripped those for any other vessel type. The dry bulk tonnage order book represents 57 per cent of the existing dry bulk fleet and 87 per cent of the existing *Capesize* fleet.

2. Dry bulk freight rates

2007 was yet another good year for dry bulk, the Baltic Dry Index (BDI) performed spectacularly moving up from 4,421 points in January to end the year at 9,143. The highest level was reached in mid November at 11,039 points. The upward trend reached a peak in May 2008 when the BDI achieved an all time high of 11,793 before falling significantly. The average Baltic Dry Index for 2007 was 7,276, more than double the

3,239 average for the previous year. The Baltic Panamax Index (BPI) averaged 7,133 points in 2007 over 3,070 in 2006. The Baltic Capesize Index (BCI) also increased significantly from 4,385 to 10,299.

As with 2006, the monthly indices for dry cargo tramp time- and trip-charters in 2007 showed a substantial rise over the course of the year (see table 31). Most months on both indices recorded a growth from the previous month. In December 2007, the dry cargo tramp time-charter had reached 926 – an increase of 88 per cent from its January 2007 level. The dry cargo tramp trip-charter almost doubled over the same period to reach 1,251 points.

Dry bulk time-charter (trips)

Unlike 2006, freight rates continued to rise for *Capesize* tonnage chartered for transatlantic round trips throughout 2007. Rates started the year at \$73,628 and

reached a high of \$187,045 in November, before settling back to end the year at a monthly average of \$165,680. Rates at the end of the year were more than double the January 2007 level and the outlook for 2008 is that rates will stay above the \$100,000 mark for most of the year. Rates on the Singapore–Japan to Australia route showed a trend similar to that observed on the transatlantic route. For *Capesize* tonnage deployed on the Singapore–Japan to Australia route, freight rates rose significantly in 2007, with owners of relevant ships receiving \$66,630 at the start of the year, compared with \$25,840 per day for the same period in 2006, and \$177,889 by the end of 2007. The route showing the most gain was on Europe to the Far East, which saw rates increase from 185 per cent from December 2006 over 2007. From a low of \$85,040 in January 2007, rates peaked at \$235,990 per day in November 2007, before settling back to \$216,940 at year's end. Rates for handymax tonnage deployed on routes from Northern Europe to the Far East grew significantly in 2007. In January, freight on this route

Table 31

Dry cargo freight indices, 2005–2008

Period	Dry cargo tramp time-charter (1972 = 100)				Dry cargo tramp trip-charter (1985 = 100)			
	2005	2006	2007	2008	2005	2006	2007	2008
January	505	302	491	812	677	294	632	1 018
February	481	298	480	657	715	292	577	908
March	530	327	550	810	565	321	644	1 221
April	507	326	576	795	624	325	707	1 080
May	440	323	671	1 055	552	304	712	1 544
June	373	331	626	1 009	412	359	759	1 250
July	313	360	673		342	421	875	
August	290	417	718		285	475	920	
September	328	447	828		352	518	1 078	
October	379	450	985		391	522	1 044	
November	346	447	1 013		376	463	1 280	
December	320	484	926		332	594	1 251	
Annual average	401	376	711	856	469	407	873	1 170

Source: UNCTAD secretariat based upon various issues of *Shipping Statistics and Market Review*, Institute of Shipping Economics and Logistics in various issues.

Note: All indices have been rounded to the nearest whole number.

equated to \$34,560 per day to end the year at \$67,920 per day.

Dry bulk time-charter (periods)

Estimates of rates for 12-month period charters (prompt delivery) indicate that rates for the first half of 2007 remained fairly constant. Rates picked up in the second half of the year, peaking in November before dipping slightly at year's end. *Capesize* ships of 170,000 dwt aged one to five years fetched \$63,000 per day in January 2007, against \$34,000 for the same period in 2006, and peaked at \$165,000 in November. January 2007 over January 2006 saw a 98.4 per cent growth in rates for a one to five year-old *Capesize* of 170,000 dwt. This compares with only a 50 per cent increase in a 10–15 year-old vessel of 150,000 dwt reflecting a higher demand for modern larger ships. Freight rates for *Panamax* ships in the range 70,000 to 75,000 dwt aged one to five years started at \$31,000 per day in January, up from \$17,800 in January 2006, and ended the year at \$73,000 per day. Freight rates for handymax tonnage aged 5 to 10 years saw rates of \$24,500 per day in January 2007 compared to \$14,000 for the same period in 2006. The average daily freight rates for this type of vessel ended the year up at \$50,375. Handysize tonnage aged 10 years followed a similar trend, with earnings at the beginning of the year of \$15,500 per day, ending the year almost double at \$29,500. During the first half of 2008, earnings for all ship sizes, irrespective of age, continued to grow.

Dry bulk trip-charter

The *Capesize* tonnage witnessed an upward trend in 2007, peaking in November. Iron ore freight rates from Brazil to China started the year at \$35.50 per ton, up from \$22 per ton in January 2006, and ended the year at \$86.35. The year-on-year increase for January 2007/2008 equalled a rise of just over 80 per cent. The best performing route was with grain cargo on the USG–ARA (Amsterdam/Rotterdam/Antwerp) route, with 50,000–65,000-dwt vessels, which experienced a January 2007–2008 year-on-year increase of 183 per cent. At the other end of the scale, bulk carriers of 60,000–70,000 dwt on the Richards Bay to Mediterranean route saw a year-on-year increase of just over 20 per cent. In summary, all bulk carriers on the

major routes saw an increase in freight rates, as was also the case for 2006 over 2005.

C. THE LINER SHIPPING MARKET⁸⁸

Introduction

The liner shipping market represents around a quarter of the total volume of international cargo transported by sea. It carries mainly refined goods, i.e. the consumer goods which have become so prevalent in modern society such as televisions, clothes and refined foods. Understanding this sector helps the reader gauge how well merchantable trade is doing.

January 2007 over January 2006 saw a 98.4 per cent growth in rates for a one- to five-year-old *Capesize* of 170,000 dwt.

1. Developments in liner markets

General developments

The liner shipping sector in 2007 proved a much stronger year than was anticipated at the end of 2006. Despite the global credit crisis continuing to dampen demand in the United States for Asian goods, the effect on the global consumption was muted. A slower volume increase on the United States West Coast was mitigated by strong growth of cargo demand from Asia to Europe. More efficient operation of vessels by carriers in reaction to the high fuel costs also helped absorbed capacity through the need to apply more ships in order to maintain schedule. The strong euro is expected to sustain the current pace of outsourcing to Asia. Combined with the fiscal and monetary stimulus measures in the United States and United Kingdom, 2008 is expected to be broadly similar to 2007 in terms of trade pattern and growth. 2008 saw further changes afoot in the liner shipping industry with the liner shipper Hapag-Lloyd, put up for sale by its parent company TUI.⁸⁹

As reported in chapter 2, the total seaborne container carrying fleet capacity, including fully cellular capacity, stood at 13.3 million TEUs in the middle of 2008. With a high percentage of newbuildings ordered in 2006 expected to be delivered in 2008, the fleet is set to continue its growth. Very little tonnage was reported broken up in 2007, around 21,000 TEUs. January 2008 saw the entry into service of the last in a series of eight behemoth containerships from Maersk Line's, the *Eugen Maersk*, for trading between China

and Europe. This ship is officially recorded as having a capacity of 12,508 TEUs, with stowage for 22 rows across, four more than the next-largest existing containerships, and some industry analysts predict it could carry 15,212 TEUs at full capacity.⁹⁰ On the seas are four other larger ships in excess of 10,000 TEUs and owned by COSCON of China. As mentioned in chapter 2, in May 2008 there were 54 ships on order, with a capacity of 13,000 TEUs and above. The largest containerships on order are eight 13,350-TEU units ordered by COSCON (China) for delivery between December 2010 and 2012.

Concentration in liner shipping

Over the course of 2007, the carrying capacity of the top 10 global containership operators increased by 15.7 per cent, to 6.6 million TEUs. This is somewhat lower than the exceptionally high gains of 26.5 per cent achieved in 2006 (see table 32). Overall, the share of the top 20 liner operators increased by 15.5 per cent and reached 8.8 million TEUs. Together, the 20 leading operators accounted for about 70 per cent of the total container capacity deployed. Whilst the list of the top 20 liner shippers stayed the same, there was significant

Table 32

Twenty leading service operators of containerships at the beginning of 2008 (Number of ships and total shipboard capacity deployed (TEUs))

Ranking	Operator	Country/territory	No. of ships in 2008	TEU capacity in 2008
1	Maersk Line	Denmark	446	1 638 898
2	MSC	Switzerland	359	1 201 121
3	CMA-CGM Group	France	238	701 223
4	Evergreen	Taiwan Province of China	177	620 610
5	Hapag Lloyd	Germany	142	491 954
6	COSCON	China	141	426 814
7	CSCL	China	122	418 818
8	APL	Singapore	117	394 804
9	OOCL	Hong Kong (China)	84	351 542
10	NYK	Japan	87	331 083
Subtotal			1 913	6 576 867
11	MOL	Japan	104	325 030
12	Hanjin	Republic of Korea	74	321 917
13	K Line	Japan	91	293 321
14	Yang Ming	Taiwan Province of China	83	276 016
15	Zim	Israel	84	243 069
16	Hamburg Sud	Germany	76	196 632
17	HMM	Republic of Korea	45	194 350
18	PIL	Singapore	72	140 135
19	Wan Hai	Taiwan Province of China	75	125 393
20	CSAV	Chile	48	108 927
Total 1-20			2 665	8 801 657
World container cellular fleet at 1 January 2008			8 762	12 657 725

Source: UNCTAD secretariat, *Containerisation International Online*, Fleet Statistics, www.ci-online.co.uk.

jostling between positions. Evergreen made the most advances – from ninth to fourth place – by increasing its fleet size by some 65 per cent to a total capacity of over 620,000 TEUs. Whilst the CMA-CGM Group made the second-highest gain of 35 per cent, it stayed in third place at just over 700,000 TEUs. OOCL performed well, with a 27 per cent increase in its fleet helping to push it rankings up from 12th to 9th position, with a total capacity of just over 350,000 TEUs. While Maersk Line, MSC and the CMA-CGM Group maintained their positions at the top of the list, their collective share of the world's total container capacity rose to 28 per cent, up from 26.5 per cent in 2006. Maersk Line maintained its lead position with a rather weak growth of just 4.2 per cent over the previous year to hold a still-sizeable individual market share of 12.9 per cent. The gap between first and second position was narrowed, with MSC growing by 17.8 per cent over 2006. While most liner shipping companies in the top 20 grew in 2006, two witnessed a decline in fleet size – Hanjin, which saw a fleet reduction of 4.6 per cent; and CSAV, which saw a 7.6 per cent reduction.

Financial performance of the major liner shipping companies varied widely. Maersk Line's container and terminals business had a loss of \$198 million in 2007 after a loss of \$568 million the previous year. The outlook for the first quarter of 2008 did not bode too well for the liner companies, with a reported loss of \$47 million. In an effort to turn around the company's recent poor performance, Maersk unveiled a new strategy to cut between 2,000 and 3,000 jobs worldwide. This represents a reduction of nearly 10 per cent of its current workforce. Globally, the A.P. Moller Group, of which Maersk is a part, employees some 110,000 people. CMA-CGM achieved a return of \$966 million, up from \$611 million the previous year. CMA-CGM made three acquisitions in the last year – Cheng Lie Navigation (Taiwan Province of China), Comanav (Morocco) and US Lines (United States). OOIL announced net profits of \$461 million, up from \$386 million in 2006, for its liner shipping division. The selling of its terminal division to Ontario Teacher Pension Fund also boosted profits for the group by an additional \$1.99 billion, giving the company a significant reserve to concentrate upon other areas of its business. NOL reported a 183 per cent increase in first-quarter 2008 profits, defying sceptics about the contraction in container volumes into the United States West Coast and soaring fuel costs. MOL also posted significant results for fiscal 2007, with its container shipping business profit growing by 118.5 per cent year-on-year. K-Line saw revenues

increase by 22.6 per cent for the 2007 fiscal year. The Russian Federation's FESCO announced that profits rose by 58 per cent to reach \$103 million for fiscal 2007. Hapag-Lloyd reported an operating profit (EBITA) of €24 million in the first quarter of 2008. Hyundai Merchant Marine also announced that its container shipping business posted an operating profit of won 37.7 billion in Q1 2008, up from a loss of won 11.7 billion in Q1 2007.

2. Freight level of containerized services

Chartering of containerships

German shipowners dominate the global liner shipping market, with Hamburg brokers controlling about 75 per cent of containership charter tonnage available. Since 1998, the Hamburg Shipbrokers' Association (VHSS) has published the "Hamburg Index", which provides a market analysis of containership time charter rates of a minimum duration of three months. Table 33 presents the average yearly and monthly charter rates for containerships published by VHSS.

Unlike 2006, when charter rates for all types of containerships fell by between approximately 16 and 37 per cent, 2007 represented a change in fortune, with 7 of the 10 types of vessels listed in table 33 climbing. The rates for geared/gearless containerships in the range 1,000–1,299 TEUs, which recorded the largest fall in 2006, continued their decline in 2007 to reach \$13.69, from their peak of \$22.58 in 2005, per 14-ton slot per day. Also continuing their decline were ships in the 300–500 and 600–799 TEU range. The containership sector showed its resilience by recording the smallest drop in 2006 and its saw the largest gain in 2007, viz: the smaller gearless type in the range 200–299 TEUs. While all rates were short of the peaks reached in 2005, nowhere was this more pronounced than in the 1,000–1,299 range, where rates in 2007 stood at around 60 per cent of their high. During the first quarter of 2008, monthly average rates mostly continued to climb. By April 2008, rates for geared and gearless ships in the 200–299 TEU range had almost regained their 2005 highs.

Freight rates on main routes

NOL reported that its overall average container freight rate, across all trades, had increased 16 per cent to \$2,934 per 40-foot equivalent unit (FEU) in the first quarter, compared to the same period a year earlier. Average rates in the Americas were \$3,486 per FEU,

Table 33

Containership time-charter rates
(\$ per 14-ton slot/day)

Ship type	Yearly averages							
	2000	2001	2002	2003	2004	2005	2006	2007
Gearless								
200–299	15.71	15.74	16.88	19.57	25.02	31.71	26.67	27.22
300–500	14.52	14.72	15.14	17.48	21.73	28.26	21.67	22.27
Geared/Gearless								
2,000–2,299	10.65	7.97	4.90	9.75	13.82	16.35	10.51	11.68
2,300–3,400 ^a			5.96	9.29	13.16	13.04	10.18	10.74
Geared/Gearless								
200–299	17.77	17.81	17.01	18.93	27.00	35.35	28.04	29.78
300–500	14.60	14.90	13.35	15.55	22.24	28.82	22.04	21.34
600–799 ^b			9.26	12.25	19.61	23.70	16.62	16.05
700–999 ^c			9.11	12.07	18.37	21.96	16.73	16.90
1,000–1,299	11.87	8.78	6.93	11.62	19.14	22.58	14.28	13.69
1,600–1,999	10.35	7.97	5.67	10.04	16.08	15.81	11.77	12.79

Ship type	Monthly averages for 2007											
	1	2	3	4	5	6	7	8	9	10	11	12
Gearless												
200–299	26.52	28.35	28.01	27.76	27.08	26.90	27.58	25.92	28.25	26.20	28.10	27.00
300–500	19.29	21.91	22.59	24.23	20.83	21.80	23.20	23.17	24.84	23.00	24.60	22.90
Geared/Gearless												
2,000–2,299	8.96	9.60	10.06	10.84	11.21	11.15	12.92	12.92	12.44	12.81	13.61	21.10
2 300–3,400 ^a	9.15	9.51	10.50	10.95	9.98	10.18	11.04	11.04	10.82	10.62	12.53	12.53
Geared/Gearless												
200–299	26.43	28.96	29.34	30.08	28.27	28.71	31.05	29.75	32.66	30.50	30.30	29.00
300–500	21.42	19.88	20.38	19.07	21.32	19.91	21.23	24.63	23.49	24.50	19.10	21.30
600–799 ^b	13.97	15.66	16.54	15.43	16.94	17.56	16.60	16.65	16.44	13.59	16.62	16.00
700–999 ^c	14.20	15.70	15.86	16.18	16.55	17.17	16.79	18.08	17.33	18.24	17.33	16.60
1,000–1,299	11.52	12.72	13.24	12.70	13.03	14.08	14.21	15.11	14.98	14.48	13.94	13.60
1,600–1,999	10.43	10.99	11.56	11.87	11.97	12.82	14.06	14.05	14.05	13.64	14.38	12.70

Table 33 (continued)

Ship type	Monthly averages for 2008						
	1	2	3	4	5	6	7
Gearless							
200–299	29.23	28.49	30.16	27.96	28.77	29.10	29.87
300–500	22.37	23.77	24.49	23.34	21.88	23.04	23.82
Geared/Gearless							
2,000–2,299	13.18	13.10	12.59	12.78	11.98	10.15	10.15
2 300–3,400^a	12.53	12.53	10.97	11.31	10.82	10.82	10.48
Geared/Gearless							
200–299	32.39	33.61	33.35	35.78	35.78	35.85	35.85
300–500	23.66	27.60	24.03	22.51	23.37	18.75	21.52
600–799^b	16.47	17.59	17.94	18.27	17.43	17.43	15.77
700–999^c	18.42	18.74	17.39	18.18	17.63	17.21	17.63
1,000–1,299	14.58	15.04	15.49	15.80	15.29	15.04	13.48
1,600–1,999	13.68	13.84	13.75	13.09	12.48	11.36	10.51

Source: Compiled by UNCTAD secretariat from Hamburg Shipbrokers' Association, http://www.vhss.de/hax2006_001.pdf, Institute of Shipping Economics and Logistics in *Shipping Statistics and Market Review*, Volume 52 No. 1/2 2008 pp 54–55 and *Dynaliners Trades Review* 2008, Fig. 18 pp. 33.

^a This category was created in 2002. Data for the first half of the year correspond to cellular ships in the range 2,300–3,900 TEUs sailing at 22 knots minimum.

^b Sailings at 17–17.9 knots.

^c Sailings at 18 knots minimum.

up 7 per cent over 2007. For Europe, average rates were \$3,216 per FEU, up 25 per cent over 2007. For Asia and the Middle East, they were \$2,014, an increase of 24 per cent over 2007.

By the end of 2007, the level of all-in freight rates of the three main containerized routes (Pacific, Asia–Europe and transatlantic) were all above the end of 2006 levels (see table 34). Thus, 2007 marked a recovery from 2006, when all routes experienced a drop. For most routes, however, rates were still below their peak in 2005, except on the Asia–Europe and United States–Europe routes, which surpassed their 2005 highs. The routes experiencing the most significant gains were the Europe–Asia routes, which saw a 14.3 per cent increase in the fourth quarter 2007 over the same period the year before, despite the appreciation of the euro against most major currencies. However, the largest gain was on trade

moving in the opposite direction. Rates for Asia-to-Europe increase by 32.9 per cent in the fourth quarter, emphasizing the purchasing power of the euro. The picture which is beginning to emerge for 2008 is that, whilst growth is continuing on the Europe–Asia route traffic, moving in the opposite direction is decreasing despite the high purchasing power of the euro.

The transpacific and the Europe–Asia routes are the primary container trade routes that link East to West. On the transpacific route, despite a poor start in 2007, rates increased overall to end the year up 2.2 per cent for both the dominant eastbound leg (linking Asia to North America) and the westbound leg. For 2008, rates picked up on both routes but more pronounced on the United States–Asia route as the dollar slipped to its all-time lows, making its goods attractively priced to buyers from Asia.

Table 34

Freight rates (market averages) per TEU on the three major liner trade routes
(\$ per TEU and percentage change)

	Transpacific		Europe-Asia		Transatlantic	
	Asia-USA	USA-Asia	Europe-Asia	Asia-Europe	USA-Europe	Europe-USA
2006						
First quarter	1 836	815	793	1 454	995	1 829
Change (%)	- 2	- 1	- 4	- 15	- 1	1
Second quarter	1 753	828	804	1 408	1 010	1 829
Change (%)	- 5	2	1	- 3	2	0
Third quarter	1 715	839	806	1 494	1 041	1 854
Change (%)	- 2	1	0	6	3	1
Fourth quarter	1 671	777	792	1 545	1 066	1 762
Change (%)	- 3	- 7	- 2	3	2	- 5
2007						
First quarter	1 643	737	755	1 549	1 032	1 692
Change (%)	- 2	- 5	- 5	0	- 3	- 4
Second quarter	1 675	765	744	1 658	1 067	1 653
Change (%)	2	4	- 1	7	3	- 2
Third quarter	1 707	780	777	1 952	1 115	1 725
Change (%)	2	2	4	18	4	4
Fourth quarter	1 707	794	905	2 054	1 147	1 766
Change (%)	0	2	16	5	3	2
2008						
First quarter	1 725	861	968	2 021	1 193	1 700
Change (%)	1	8	7	- 2	4	- 4
Second quarter	1 837	999	1 061	1 899	1 326	1 652
Change (%)	6	16	10	- 6	11	- 3

Source: UNCTAD secretariat based upon *Containerisation International Online*, www.ci-online.co.uk.

Notes: The freight rates shown are all-in, that is they include currency adjustment factors and bunker adjustment factors, plus terminal handling charges where gate/gate rates have been agreed, and inland haulage where container yard/container yard rates have been agreed. All rates are average rates of all commodities carried by major carriers. Rates to and from the United States refer to the average for all three coasts.

On the transatlantic route, United States–Europe freight rates climbed on the back of a weak dollar to end the fourth quarter 7.2 per cent higher than the previous year. However, the opposite route, Europe–United States, increased a mere 0.2 per cent in the fourth quarter of 2007. The Europe–United States route was the worst-performing of the three major containerized routes. This continued into 2008, with a further 3.7 per cent reduction in rates while trade in the opposite direction grew 4 per cent.

3. Supply and demand in respect of main liner services

Over the last two decades, global container trade (in tons) is estimated to have increased by 10.8 per cent, to reach 143 million TEUs in 2007 (see chapter 1). The share of containerized cargo in the world's total dry cargo is estimated to have increased from 7.4 per cent in 1985 to 24 per cent in 2006.

Developments along the major container trade routes illustrate this trend (table 35). In 2007, the Pacific trade is estimated to have reached 20.3 million TEUs. The dominant leg, Asia–United States trade, was estimated at 15.4 million TEUs, up by 2.8 per cent over the previous year. Trade in the opposite direction, United States–Asia, grew by 3.0 per cent and is estimated to have reached 4.9 million TEUs. The imbalance between the eastward and westward traffics seems to have levelled off in 2007, with the Asia–United States cargo flows exceeding those in the reverse direction by 10.5 million TEUs, compared to 10.3 million in 2006 and 8 million TEUs in 2005.

The Asia–Europe trade route expanded at a faster rate, with trade estimated to have reached 27.7 million TEUs in 2007. Cargo flows on the dominant leg from Asia to Europe are estimated at 17.7 million TEUs in 2007, compared to 15.3 million TEUs in 2006. In comparison, traffic moving in the opposite direction grew at a slower rate of 9.0 per cent, to an estimated total of 10.0 million TEUs. The Far East Freight Conference (FEFC) is a major player in the Europe–Asia container trade, accounting for around 72 per cent of total capacity. The total trade from Asia to Europe carried by FEFC members reached about 9.5 million TEUs in 2007, up by around 39.4 per cent. This can be largely attributable to MSC joining the conference in late 2006. Discount MSC's involvement in the FEFC growth in capacity on this route is estimated at around 15 per cent over 2006. Table 36 shows the share of major lines and their market share as a percentage of the world liner capacity. The market share for these alliances declined slight in 2007, from 48.6 per cent to 47.8 per cent. This happened as a prelude to the

forthcoming lifting of liner conference block exemption from competition regulations by the European Union.

Trade on the transatlantic route linking Europe with North America is estimated to have reached 7.1 million TEUs in 2007. Trade on the dominant leg of the trade lane – Europe to North America – increased to a total of 4.4 million TEUs. Flows in the opposite direction also expanded, reaching 2.7 million TEUs. In 2007, 20 new container services came into operation on the East–West trades, employing a total of 149 ships, with a total carrying capacity of 4 million TEUs.

The North–South containerized trade saw 26 new container services launched in 2007, deploying some 121 ships with a combined total capacity of 2 million TEUs. Cargo flows from Europe to West Africa were estimated at 0.7 million TEUs, while trade in the opposite direction amounted to 0.4 million TEUs. The latter expanded at a faster rate than the former, with estimated growth rates of 3.2 and 2.1 per cent respectively. Traffic on the Europe–East and Southern Africa route were estimated at 0.7 million TEUs, while trade in the opposite direction amounted to 0.5 million TEUs. The former expanded at a faster rate than the latter, with estimated growth rates of 7.3 and 3.2 per cent respectively.

Traffic on the East and Southern Africa–Far East route was estimated at 0.3 million TEUs, while trade in the opposite direction amounted to 1.1 million TEUs. The former contracted by approximately 7 per cent on the previous year, while trade in the opposite direction grew at around 22.7 per cent, reflecting a higher demand of Asian products.

Table 35

Estimated cargo flows on major trade routes
(Million TEUs and percentage change)

Year	Transpacific		Europe–Asia		Transatlantic	
	Asia–USA	USA–Asia	Asia–Europe	Europe–Asia	USA–Europe	Europe–USA
2006	15.0	4.7	15.3	9.1	2.5	4.4
2007	15.4	4.9	17.7	10.0	2.7	4.5
% percentage change	2.8	3.0	15.5	9.0	7.3	1.6

Source: Compiled by UNCTAD secretariat from *Containerisation International*.

Table 36

Percentage of world slot capacity share by line/grouping ^a
(Percentage share)

Operator	2006	2007
Maersk Sealand	18.2	16.6
CHKY	11.7	11.9
Grand Alliance	10.8	11.8
New World Alliance	7.9	7.5
Total	48.6	47.8

Source: C. Sys (2007) Measuring the degree of concentration in the container liner shipping industry, University College Ghent – Faculty of Applied Business, Ghent, Belgium, available online at <http://www.feb.ugent.be/sococo/sherppa/members/christa/documents/paper1.pdf> accessed 30/5/2008.

^a The Grand Alliance comprises trades in the transatlantic, transpacific and Europe–Far East routes. MISC participates only in the Europe–Far East trade. Since February 2006, the Grand Alliance has comprised Hapag-Lloyd, NYK Line, OOCL and MISC Bhd. The last participates solely in the Europe–Far East trades. The New World Alliance (APL, MOL and HMM) covers the transpacific, Asia–Europe and Asia–Mediterranean trades, cooperating with Yangming in the last. APL and MOL were members of the Global Alliance until the replacement New World Alliance was formed in 1997. The NWA additionally has a slot charter agreement with Evergreen, covering the United States–Asia market.

Traffic on the West Africa–Far East route was estimated at 0.1 million TEUs, while trade in the opposite direction amounted to 0.7 million TEUs. Reflecting a similar pattern with East and Southern African, exports to the Far East declined by around 18 per cent while imports increased by 26.4 per cent. The general picture which emerges for West, East and Southern Africa is that while the imports of containerized goods from Europe and the Far East amount to approximately 3.2 million TEUs, exports are only at 1.3 million TEUs. This highlights the general pattern of shipping to and from the continent, with the import of consumer goods in containers against exports of raw materials, which tends to be undertaken by bulk carriers.

The picture that emerges for the analysis of the major trade routes is that they rank in the following order: (a) Far East to Europe; (b) Far East to North America; (c) Europe to Far East; and (d) Europe to North America. The market share of imports and exports of the three main regions show that Far East trade represents about 42.4 per cent of containerized trade, Europe 32.6 and North America 25 per cent.

Container trade between Europe and Oceania is estimated to have increased by 6.3 per cent, to reach 0.8 million TEUs in 2007. The larger trade routes linking

North America and Europe with developing America are estimated at 2.7 million TEUs and 5.8 million TEUs, respectively. Imbalances affecting these cargo flows are more pronounced, with northbound trade amounting to double southward trade.

Interregional services saw an increase of 84 new container services in 2007. The region of largest growth was the Far East, which took a 52 per cent share of the new services and some 1.9 million TEU capacity. Intra-African trade saw just four new services, while there were just two new intraregional services in both the Indian subcontinent and the Middle East.

4. Liner freight index

Table 37 indicates the development of liner freight rates on cargoes loaded or discharged by liners at ports of the German coastal range for the period 2005–2007. The average overall index for 2007 decreased by 7 points from the 2006 level, to reach 93 points (1995 equals the base year of 100). The average homebound index increased by 4 points to 97 over the year to reach the same level as 2005. The monthly figures indicate a gradual strengthening of rates, with some fluctuations. In the outbound trade, the average level in 2007 declined significantly to 88 points, a reduction of 18 points.

Table 37

Liner freight indices, 2005–2007
(Monthly figures: 1995 = 100)

Month	Overall index			Homebound index			Outbound index		
	2005	2006	2007	2005	2006	2007	2005	2006	2007
January	96	104	88	89	95	89	101	113	88
February	95	105	88	88	95	89	102	113	87
March	95	106	86	88	97	88	102	114	85
April	98	105	87	91	96	91	105	113	84
May	103	101	88	97	92	92	108	110	85
June	108	104	92	101	94	96	114	113	88
July	108	105	94	102	96	101	115	113	87
August	106	98	95	100	92	103	111	103	88
September	106	96	98	100	92	106	112	100	90
October	109	95	97	102	93	105	116	97	89
November	111	91	97	104	89	101	118	93	93
December	110	87	100	103	86	104	117	88	96
Annual average	104	100	93	97	93	97	110	106	88

Source: Compiled by UNCTAD secretariat on the basis of information published by the Institute of Shipping Economics and Logistics, *Shipping Statistics and Market Review*, vol. 52, no. 3, March 2008: 60–61.

5. Liner freight rates as percentage of prices for selected commodities

Table 38 provides data on liner services freight rates as a percentage of market prices for selected commodities and trade routes in certain years between 1970 and 2007. For rubber sheet, the increases in freight rates were lower than the average f.o.b.⁹¹ price increases and resulted in a lower freight ratio of 6.3 per cent for 2006. The f.o.b. price for jute remained steady, while freight rates moved up by 22 per cent. This explains the increase in freight ratio to 37.2 per cent for 2006. The price of cocoa beans shipped from Ghana increased by 3.5 per cent, while the increase in the freight rate was 1.6 per cent. Therefore, the freight ratio dropped slightly to 3.9 per cent in 2006. The c.i.f. price of coconut oil recorded a drop of 1.6 per cent in 2006, while corresponding freight rates increased by 12.4 per cent. As a result, there was an increase in the corresponding freight ratio, from 12.7 per cent in 2005 to 14.5 per cent in 2006. The ratio of liner freight to f.o.b. price for tea increased marginally, from 9.2 to 9.3 per cent, owing to an increase of 12.8 per cent in freight rates, combined with an increase of 11.7 per cent in prices during 2006. The price for coffee shipped

from Brazil to Europe increased by 1.5 per cent, significantly lower than the impressive 49 per cent recorded in 2005. As freight rates decreased by 8.4 per cent, the freight ratio also declined from 5.7 per cent in 2005 to 5.1 per cent in 2006. The price of Colombian coffee exported to Europe from Atlantic and Pacific ports increased marginally by 1.1 per cent, a much lower rate than the 39 per cent growth rate recorded in 2005. Freight rates for Brazilian coffee loaded at Atlantic ports decreased by 2.4 per cent, while that loaded at Pacific ports decreased by 9.1 per cent. As a result, the freight ratios decreased to 3 and 3.7 per cent, respectively.

D. CONTAINER PRODUCTION⁹²

Introduction

As mentioned earlier, the liner shipping market represents around a quarter of the total volume of cargo transported by sea. However, for goods moved by other modes of transport – such as barges, trains and trucks – the container is also widely used. Thus, understanding the world fleet of containers enables the reader to gauge how merchantable trade is performing.

Table 38

Ratio of liner freight rates to prices of selected commodities
(Percentages)

Commodity	Route	Freight rate as percentage of price ^a						
		1970	1980	1990	2004	2005	2006	2007
Rubber	Singapore/Malaysia–Europe	10.50	8.90	15.50	7.50	8.00	6.30	6.50
Jute	Bangladesh–Europe	12.10	19.80	21.20	27.60	30.50	37.20	44.20
Cocoa beans	Ghana–Europe	2.40	2.70	6.70	3.70	4.00	3.90	3.50
Coconut oil	Sri Lanka–Europe	8.90	12.60	n.a.	10.10	12.70	14.50	12.02
Tea	Sri Lanka–Europe	9.50	9.90	10.00	8.60	9.20	9.30	13.36
Coffee	Brazil–Europe	5.20	6.00	10.00	6.50	5.70	5.10	..
Coffee	Colombia (Atlantic)–Europe	4.20	3.30	6.80	2.30	3.10	3.00	2.50
Coffee	Colombia (Pacific)–Europe	4.50	4.40	7.40	2.60	4.10	3.70	3.60

Sources: UNCTAD secretariat on the basis of data supplied by the Royal Netherlands Shipowners' Association (data for 1970–1989) and conferences engaged in the respective trades (data for 1990–2006).

Note: Two dots (..) means that no rate was reported.

^a Coffee (Brazil–Europe and Colombia–Europe) and coconut oil prices are based on c.i.f. (cost, insurance and freight). For cocoa beans (Ghana–Europe), the average daily prices in London are used. For tea, the Kenya auction prices are used. For the remaining commodities, prices are based on f.o.b. terms. The freight rates include, where applicable, bunker surcharges and currency adjustment factors, and a tank cleaning surcharge (for coconut oil only). Conversion of rates to other currencies is based on parities given in the Commodity Price Bulletin, published by UNCTAD. Annual freight rates were calculated by taking a weighted average of various freight quotes during the year, weighted by their period of duration. For the period 1990–2006, the prices of the commodities were taken from UNCTAD's Commodity Price Bulletin (see UNCTAD website).

In recent years, the global container fleet grew on average by 9 per cent per annum (see table 39) to reach a total of more than 25 million TEUs by the end of 2007. This is more than a 50 per cent increase since the end of 2002. While the main growth was largely led by the ocean carriers, lessors have now taken the lead. For instance, ocean carriers' share of the world container fleet (see table 39), which stood at 58.8 per cent in 2007, was 0.9 per cent higher than in 2006, down from a 1.6 per cent growth the previous year and 1.9 per cent in 2005. Conversely, in 2007 the lessors purchased 1.5 million TEUs, 36.4 per cent more than the previous year, making it the largest purchase made by lessors over the previous four years. While the new investment was partly influenced by the new upward trend in new box prices and rental rates, a good portion of the purchase was allocated to replace old and damaged boxes. A

breakdown of the world container production can be seen in table 40. The share of container fleet owned by lessor was 41.2 per cent in 2007 and 41.10 per cent in 2006.

As global trade in 2007 continued to place a significant demand on the production of new containers, the industry responded with higher output and capacity. The global production of new containers

reached 3.9 million TEUs by the end of 2007, an increase of more than 25 per cent from the level produced a year earlier (see table 40). This increase is higher than the 20 per cent increase experienced during 2006, when the total produced was

2.6 million TEUs. Container production capacity expanded in 2007 to an estimated 5.7 million TEUs. This means current production is operating at less than 70 per cent capacity. The increased capacity

As more than 90 per cent of the container production industry is located in China, market changes there may have a major impact upon future pricing.

Table 39

World container fleet
(thousands of TEUs)

Year	Global	Lessor	Sea carrier fleet
2003	17 960	8 370	9 590
2004	20 005	9 125	10 880
2005	21 455	9 370	12 085
2006	23 345	9 830	13 515
2007	25 365	10 440	14 925

Source: UNCTAD secretariat based upon *Containerisation International*, August 2007: 36-39.

resulted from the opening of new manufacturers and the replacing of old factories with new ones. However, this excess capacity may not be enough to drive down prices in light of the global pressure on raw material and higher wage demands. As more than 90 per cent of the container production industry is located in China, market changes there may have a major impact upon future pricing.

During 2007, the price of new boxes was largely stable. The price of a 20-foot dry box, for example, started the year at a peak at \$2,050 on average in the first quarter of 2007, and then fell gradually toward \$1,850 in the third quarter, before recovering to \$1,950 by the end of the year (see figure 17). This modest fluctuation could be explained by the stable cost of material and resources in 2007. For instance, the price of Corten steel was practically set at about \$600 per ton that year.

In the first half of 2007, lessors continued to exercise restraint in their investment strategies. Both prices of new boxes and daily rental must be taken into account in formulating optimal investment strategy. Since the

Table 40

World container production
(thousands of TEUs)

	2006	2007
Dry freight standard	2 710	3 480
Dry freight special	85	90
Integral reefer	176	195
Tank	14	16
Regional	115	119
Total	3 100	3 900

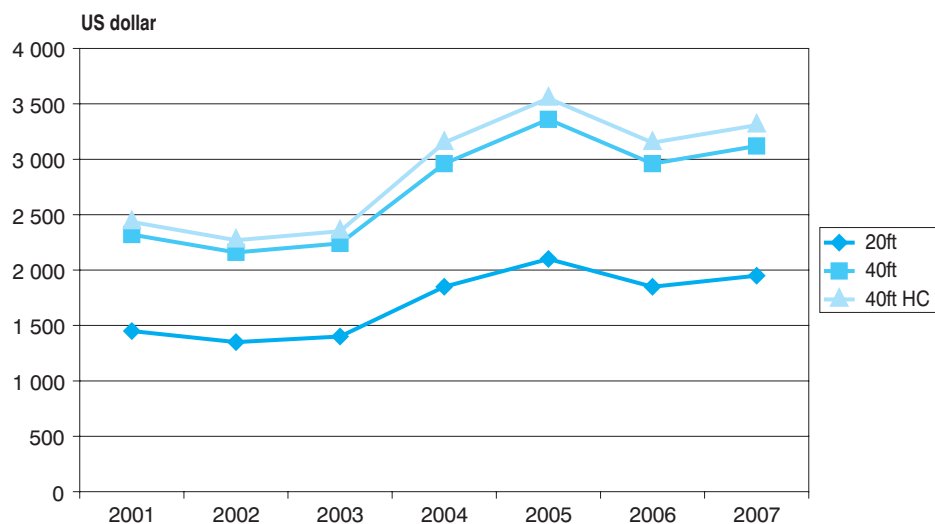
Source: UNCTAD secretariat based upon *Containerisation International*, February 2008, online.

peak in the third quarter of 2006, the rental rates fluctuated modestly, with a slight downward trend that ended with an upward turn in the third quarter of 2007 (see figure 18). The rental rate of 20-foot leased containers, for example, was \$0.6 per day, an 18 per cent drop from its level a year earlier. The rate reached a modest \$0.62 per day in the fourth quarter of 2007 and accelerated up to a rate of \$0.7 per day in the opening quarter of 2008. This new upward trend was consistent with the hike of the new box prices over the same period.

In the first quarter of 2008 a sharp increase in cost of materials drove up prices of new boxes. The cost of Corten steel reached \$850 per ton by the end of the first quarter, making the price of a 20-foot container rise to \$2,200. Supplies of Corten steel became scarce as a result of increased demand from other economic sectors within China and the surrounding region. Although unclear, there was also some indication for higher labour costs originating from the scarcity of general skilled labour and the possible introduction of new labour rules and regulations on stricter working hours and wage.

Figure 17

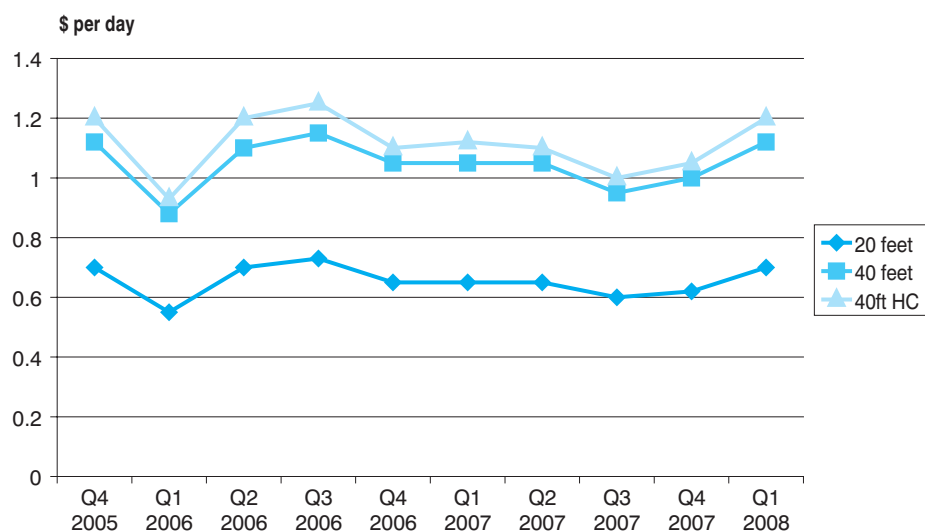
Evolution of prices of new containers
(\$ per box)



Source: UNCTAD secretariat based upon *Containerisation International*, August 2006, February 2007, and May 2008.

Figure 18

Evolution of leasing rates
(\$ per day)



Source: *Containerisation International*. August 2006, February 2007, and May 2008.