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MARITIME TRANSPORT PRICE INDICES IN LATE 2006

Since the worldwide freight crisis that began in mid-2002, maritime transport prices have remained higher than pre-crisis levels and have proved to be fairly volatile.

This edition of the Bulletin is the first one of the year to analyse maritime transport markets. It covers price trends in three maritime transport markets: containers, bulk carriers, and petroleum and refinery byproducts.

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1. CONTAINER TRANSPORT

Figure 1 shows price trends for maritime container transport on selected routes from the first quarter of 2001 to the third quarter of 2006 (provisional data).

Figure 1



Source: Ricardo J. Sánchez, on the basis of information from ci-online, obtained from Bloomberg, for routes between Asia, the United States and Europe, and author's own research into the freight rates for container exports from Latin America. This is a Laspeyres-type index.

The prices used to construct the indices are for 20-foot dry containers and are divided into two groups. The first corresponds to information from ci-online on three of the main worldwide maritime trade routes (from Asia to the United States and Europe, and from Europe to the United States – stated directions only). Transport costs include the main charges and surcharges for instance Currency Adjustment Factor (CAF), Bunker Adjustment Factor (BAF), Terminal Handling Charge (THC)) and refer to the largest shipping companies operating along each route.

The second group of prices relates to container transport for exports from Latin America, and was collected by the authors for the same period. Prices include the main charges (the equivalent of total price of water transport), weighted according to the main destinations of exports from each of the three coasts of South America. For Central America and Mexico, provisional and casual measurements have been carried out to compare their performance with the systematic follow-up to South America. The results are similar to the price patterns for the north coast of South America.

In all cases, the index represents the percentage change in prices in relation to an initial period, which was fixed at the second quarter of 2002. This period was chosen as it came during the low point of the maritime cycle in terms of containers (see [FAL Bulletin No. 228](#), August, 2005).

For most of the routes analysed, the low point was reached in the second quarter of 2002. Generally speaking, prices then rose until the end of 2004. For Latin America, this meant an average increase of 57.5% in relation to the base period. Following that, prices tended to fall, albeit at different rates. Prices for the Europe to United States route, however, continued to climb. The downward trend was more acute for the Asia-Europe route and less pronounced for Latin American routes and Asia to the United States. As for routes out off Latin America, the trend changed in the first quarter of 2006: the west coast index went from 160.5 in the fourth quarter of 2004 to 139.9 in the first quarter of 2006. At those same points in time, the figures for the east coast were 154.8 and 139.9, and the figures for the north coast were 157.1 and 144.7. Comparing the first quarter and the end of the third quarter of 2006, this turnaround represented a relative increase of 5.2% for the west coast, 6.3% for the east coast and 2.9% for the north coast.

2. BULK CARRIERS

Unlike maritime container transport, which uses the regular services of shipping companies (with a high component of spot contract and prices), bulk carriers (dry and wet) are hired services (voyage and especially time charters nowadays). According to one renowned international shipping experts, bulk carriers should be called “tramp” services, and their prices are used to construct the most international recognized price indices.

First, there is the Baltic Dry Index (BDI), calculated by the Baltic Exchange (see www.balticexchange.com) on the basis of information of “tramp” freight contracts and the three types of ship that serve as bulk carriers (Capesize, Panamax and Handy).^[1]

An index is calculated for each of the three types of ship, using average weighted freight charges for each of the main routes for each ship. These indices are then combined to determine the Baltic Dry Index (BDI). The BDI (along with each of its three constituent indices) is therefore considered to be an accurate representation of the international shipping prices for bulk carriers. It should be pointed out that each of those three indices is extremely important in terms of Latin American maritime trade in non-petroleum bulk carriers.

The Capesize index is calculated using information from freight charges for 10 worldwide routes for a typical ship of 172,000 deadweight tonnes (dwt). Three of these ten routes originate in Latin America, which means they account for 30% of the total. The Panamax index is calculated on the basis of seven international routes for a typical ship of 74,000 tonnes dwt. The index for Handy vessels is based on a typical ship carrying 40,000 tonnes dwt, with routes involving Latin America representing 37.5% of the total.

BDI trends are shown in the following figure:

Figure 2

BALTIC DRY INDEX (1987-2006)



Source: Ricardo J. Sánchez, on the basis of information from the Baltic Exchange obtained from Bloomberg [online] www.bloomberg.com.

Price trends for bulk-carrier water transport (especially of minerals and agricultural products and by-products) seem fairly stable up to 2002, when a new era of completely different prices was ushered in. Between 1987 and late 2002, the index's historical average was 1,349 points, while this rose to 3,431 points between 2003 and 2006.

As shown in figure 2, prices rocketed from 2002 to stand at over 5,000 points for most of 2004, reaching a record 5,518 points in December 2004 (382% over the average for 2002).

The tables below show the annual averages and standard deviations for each of the four indices. Their patterns tend to be similar, with a striking increase from 2002 to 2004, followed by a decline in prices from 2004 to 2006, although these remain higher than initial levels.

Table 1

ANNUAL AVERAGE INDEX AND STANDARD DEVIATION (HANDY AND PANAMAX)

INDEX	Handy		Panamax	
YEAR	Average	Standard deviation	Average	Standard deviation
1999	(*)	(*)	1 065.43	168.84
2000	1 111.56	36.40	1 540.22	90.18
2001	936.05	111.65	1 247.67	312.00
2002	895.01	121.65	1 130.40	198.22
2003	1 661.42	522.42	2 543.97	974.71
2004	3 162.59	535.84	4 382.68	888.11
2005	2 402.88	578.08	3 128.07	1 006.39
2006	2 248.45	498.14	3 020.75	784.87

Note:(*) Unavailable, as the index was first calculated in 2000.

Source: Ricardo J. Sánchez and Alejandro Vargas, of the ECLAC Natural Resources and Infrastructure Division.

The price index for maritime transport using Handy ships rose by 253% between 2002 and 2004, before declining by 29% in 2006. The average for 2006 is nonetheless 151% higher than in 2002. Similarly, the Panamax index rose by 288% between 2002 and 2004, only to fall by 31% between 2004 and 2006. The average index for 2006 is nonetheless 167% higher than in 2002.

Table 2

ANNUAL AVERAGE INDEX AND STANDARD DEVIATION (CAPESIZE AND BALTIC DRY)

INDEX	Capesize		Baltic Dry	
	Average	Standard deviation	Average	Standard deviation
1999	1 315,76	394,07	802,95	26,93
2000	2 186,80	233,11	1 370,55	29,56
2001	1 468,59	412,37	1 565,95	28,62
2002	1 395,36	347,42	931,32	26,07
2003	3 662,59	1 567,55	1 693,86	74,11
2004	6 011,20	1 272,62	5 229,48	265,98
2005	4 602,85	1 320,83	4 501,90	158,92
2006	4 288,83	1 074,82	2 261,76	176,25

Source: Ricardo J. Sánchez and Alejandro Vargas, of the ECLAC Natural Resources and Infrastructure Division.

The average annual index for Capesize vessels rose by 331% between 2002 and 2004, and fell by 29% between 2004 and 2006. The 2006 figure is 207% higher than the level recorded in 2002.

Lastly, the Baltic Dry Index was 462% higher in 2004 than in 2002, and 57% lower in 2006 than in 2004. The 2006 index was nonetheless 143% higher than in 2002.

Price volatility was also high between 2002 and 2006.

An analysis of the complete series of the Baltic Dry Index from its first year of systematic processing (1985) to the end of 2006 shows regular patterns of annual price increases and decreases. In 17 of the 22 years analysed, the year's highest prices were recorded between December and March. In 21 of the 22 years, the highest prices were recorded between December and May. The lowest prices were recorded between June and September in 10 out of the 22 years.

In many cases, prices begin to increase in October and reach their maximum levels between December and March.

Figure 3

BALTIC DRY INDEX AVERAGE (2002-2006)



Source: Ricardo J. Sánchez and Alejandro Vargas, of the ECLAC Natural Resources and Infrastructure Division.

Figure 3 shows the average index over the past 60 months and the linear trend of the Baltic Dry Index. In 2004 and 2005, one can see the same pattern of strong price increases from the middle of the year and October, peaking in February and then falling off up to June. In 2006, however, prices began to rise in February and the increases continued gradually throughout the year (with prices remaining high in January 2007).

3. TRANSPORT OF OIL AND REFINERY BYPRODUCTS

Figure 4 shows liquid bulk freight charges for 2002-2006, according to the Baltic Exchange Indices based on the transport prices for crude and petroleum derivatives.

Figure 4

DIRTY TANKER INDEX COMPARED WITH THE CLEAN TANKER INDEX



Source: Ricardo J. Sánchez, on the basis of information from The Baltic Exchange obtained from Bloomberg [online] www.bloomberg.com.

Figure 4 shows that the trend is an upward one and that volatility levels have been high. The figures for ships transporting refined petroleum products (clean tankers) have less extreme patterns than those corresponding to the transportation of unrefined petroleum products (dirty tankers).

Table 3 shows average annual figures for both indices, and their standard deviation.

Table 3

AVERAGE ANNUAL INDEX AND STANDARD DEVIATION FOR CLEAN AND DIRTY TANKERS

INDEX	Dirty tanker		Clean tanker	
	Average	Standard deviation	Average	Standard deviation
YEAR				
2002	830.73	206.31	737.60	76.64
2003	1 335.31	388.26	1 043.18	172.27
2004	1 782.63	612.03	1 228.88	276.62
2005	1 497.35	373.36	1 318.32	274.42
2006	1 286.35	194.74	1 111.99	210.28

Source: Ricardo J. Sánchez and Alejandro Vargas, of the ECLAC Natural Resources and Infrastructure Division.

The annual averages for the Dirty Tanker Index show a rise of 114% between 2002 and 2004, while the figures for 2006 were 27% lower than in 2004. The average in 2006 was nonetheless 54% higher than in 2002.

As shown in figure 4 and table 3, there is considerable price variation as well as high levels of price volatility.

According to annual averages, the Clean Tanker Index rose by 79% between 2002 and 2005, while the figures for 2006 were 15% lower than in 2005. The average for 2006 was nonetheless 51% higher than in 2002.

This means that volatility is apparent here also, albeit to a lesser extent.

[1] Capesize ships are mainly used to transport minerals that are too large to pass through the Panama Canal and therefore go round the Cape of Good Hope (South Africa) and other routes. Some Capesize ships are used to transport grains, but to a lesser extent. Panamax are the largest ships that can pass through the Panama Canal . They are some 275 metres long and carry an average cargo of 70,000 tonnes. Handy ships are the smallest of the three categories, and are usually used to transport between 25,000 and 50,000 tonnes of grains and derivatives.

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