



## BULLETIN

## FAL

## FACILITATION OF TRANSPORT AND TRADE IN LATIN AMERICA AND THE CARIBBEAN

# The maritime cycle and the post-crisis ups and downs

## Summary

The maritime cycle has affected the history of shipping with unfailing regularity, and is clearly linked to the overall business cycle. In particular, the financial and economic crisis which shook the world from 2008 onwards affected both world trade and levels of economic activity, with serious consequences for maritime transport.

Although this document focuses on the container segment, the impact on international maritime transport was widespread. The effects have varied in terms of intensity and upward or downward movement over the past three years. Initially, the impact was strongly negative, and the industry adopted a cautiously optimistic strategy, with the dual goal of avoiding the negative impacts as well as it could and being in a good position to enjoy a future upturn in trade. Subsequently there was a recovery phase which confirmed that the measures adopted had been effective, but the industry was too quick to adopt an optimistic stance. Lastly, a new downturn began, particularly following the third quarter of 2010; this intensified in the early months of 2011.

## Introduction

Levels of activity in the shipping industry are usually determined by the interaction of two factors: the business cycle and the shipping cycle.

*"Business cycles are a type of fluctuation found in the aggregate economic activity of nations that organize their work mainly in business enterprises: a cycle consists of expansions occurring at about the same time in many economic activities, followed by similarly general recessions, contractions, and revivals which merge into the expansion"*

This edition of the FAL Bulletin analyses the maritime cycle and its impact on the overall business cycle. In particular, it considers the financial and economic crisis which shook the world from 2008 onwards, affecting both world trade and levels of economic activity, with serious consequences for maritime transport. Although this document focuses on the container segment, the impact on maritime transport was widespread. The authors of this document are Georgina Cipoletta Tomassian and Maricel Ulloa Sepúlveda, of the Infrastructure Services Unit of ECLAC. For additional information please write to [trans@cepal.org](mailto:trans@cepal.org)



Summary



Introduction



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phase of the next cycle.”<sup>1</sup> The business cycle is an oscillating phenomenon of fluctuations which systematically and simultaneously affect a number of variables (co-movement), such as aggregate product, price levels, sectoral products, monetary aggregates, interest rates and business profit margins. The sequence of expansions, downturns, contractions and recoveries repeats itself, but not periodically. Although the occurrence of the cycles is repeated, it follows no fixed pattern; thus, this fluctuation differs from others such as that of the seasons, which recur with a steady rhythm, and structural and contingent changes, which have neither repetition nor rhythm.

Similarly, the maritime cycle can be defined as a certain temporal sequence of balances and imbalances in supply and demand for the services of maritime markets, which is assimilated in economic theory to a spider's web in which prices and products behave cyclically: during a certain period, the price is above the balance level, causing the level of supply during the next period to be above the balance level. Next, when the latter occurs, it will cause the price to fall below the balance level, and so on.<sup>2</sup>

The maritime cycle combines the action of price incentives and the typical supply inelasticity of that market. In fact, the cycle works because there is no simultaneity between shipbuilding (changes in supply) and growth in exogenous demand (reactions in price changes, output and trade). In other words, faced with a situation of low prices (low freight rates), the maritime sector constructs fewer ships and scraps more; thus, when demand increases and more transport services are needed, it turns out that supply (numbers of ships and availability of effective transport capacity) is unable to respond promptly, causing freight rates to rise, and shipbuilding resumes. This subsequently leads to excess supply, freight rates fall, and so on.

Clearly, the fluctuations of the business cycle have a significant impact on movements in the maritime cycle, since they determine the volume of trade which constitutes the demand for transport.

That sequence of events has occurred many times in economic history, and has been studied in macroeconomics and maritime economics. The latest international episode began in mid-2008, when the world was then shaken by a series of historic events which affected the economies of all countries and disrupted growth in the maritime sector. Since then, over a period of three years, the economy and the transport sector in general suffered the ups and downs of the worldwide crisis which had begun in the most developed countries, a crisis which intensified and became worldwide from early 2009. This occurred during an expansionary phase in the maritime sector,

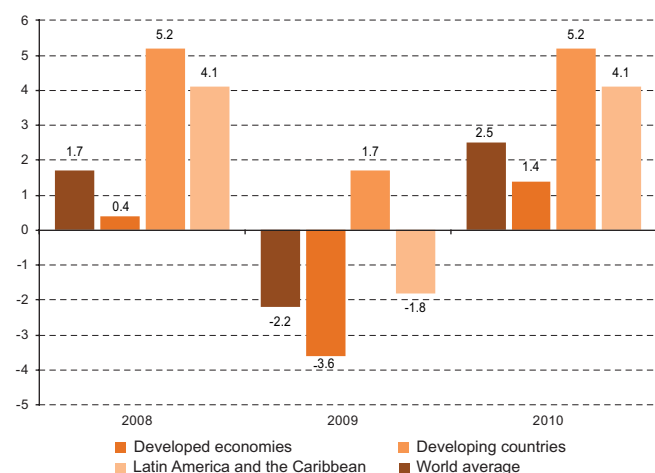
with major investments in equipment and infrastructure following considerable growth in demand for transport and logistical services in the preceding years. With the crisis —especially after early 2009— there were signs of over-tonnage, most port expansion projects were revised or suspended, prices fell sharply in the sector and the proportion of ships laid up and idle increased; all this led to great concern regarding prospects for the near future.

## I. The global economic crisis and its effects on transport demand

In 2009, the world was shaken by the impact of the crisis begun in 2008, which had widespread effects on all the world's economies and disrupted the growth trend in the maritime sector. The economy, including the whole transport sector, were hit hard by the ups and downs of the global crisis which had started in the most highly developed economies. Its gravity and extent were considerable in 2009, continuing the process which had begun in mid-2008.

Figure 1 shows GDP growth for 2008-2010 in different parts of the world. Contrasting with generally positive growth in 2008, the 2009 figures show the heaviest impact of the crisis, a fall in world economic activity on the order of 2.2%, with particularly severe effects for the developed economies (down 3.6%). Growth remained positive in the developing countries as a whole, at 1.7%; however, if the contributions of India and China were not included, the developing world would have shown a contraction of 0.9%. Latin America and the Caribbean declined by 1.8%. GDP growth returned to positive figures in 2010 for all the regions reflected in figure 1.

Figure 1  
GDP BY REGION, 2008-2010



Source: Economic Commission for Latin America and the Caribbean (ECLAC), 2010.

<sup>1</sup> Burns, A., and W. Mitchell (1946).

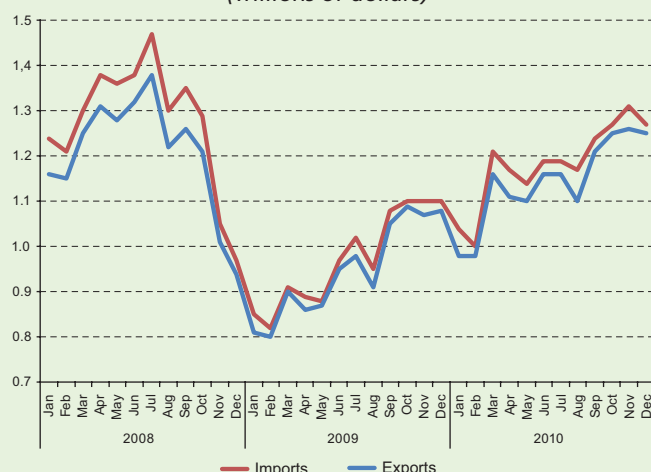
<sup>2</sup> Sánchez, Ricardo (2004). For more references, see also: Sánchez, Ricardo J. and Bart Boon (2006) and Scarsi, Roberta (2007).

The fall in economic activity caused a large downturn in world trade

In 2009, total trade in goods by value totalled US\$ 12.4 trillion, measured by the FOB value of exports at each country's border; this was down 22.4% compared to 2008. The largest exporter in 2009 was China, with a total of US\$ 1.2 trillion, followed by Germany (which had previously been the world's biggest exporter) with US\$ 1.13 trillion, and the United States with US\$ 1.06 trillion. The United States was the world's biggest importer, with US\$ 1.6 trillion in 2009, and had a 2009 trade deficit of US\$ 549 billion, while China and Germany had trade surpluses of US\$ 198 billion and US\$ 200 billion, respectively.

Trade recovered strongly in 2010 following its fall in 2009, as can be seen in Figure 2, which shows the monthly variation of trade in value terms.

**Figure 2**  
**TOTAL MONTHLY TRADE IN GOODS<sup>a</sup>, 2008-2010**  
(Trillions of dollars)<sup>b</sup>



Source: Maricel Ulloa, on the basis of information from the World Trade Organization (WTO).

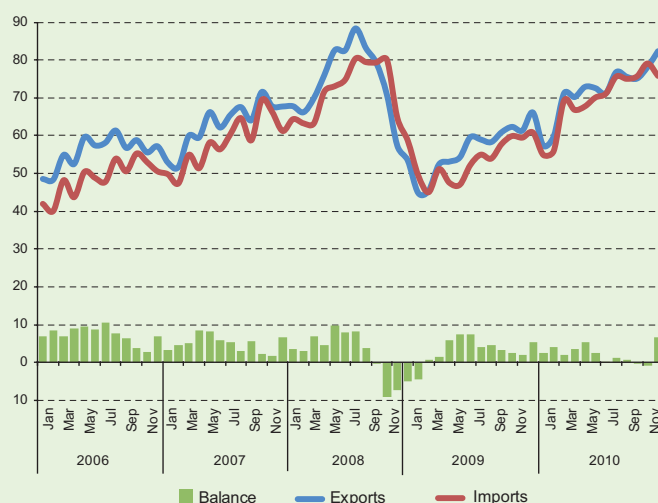
<sup>a</sup> Total for 70 countries.

<sup>b</sup> One trillion dollars = US\$ 1 x 10<sup>12</sup>, or US\$ 1,000,000,000,000.

Figure 2 shows that the value of trade was up about 17% in the last quarter of 2010 compared with the same quarter in 2009, according to information available from around 70 countries representing over 90% of world trade in goods. In late 2010 the value was above the pre-crisis level of December 2008.

Figure 3 shows the current variation of trade in goods (imports and exports) of Latin America and the Caribbean from 2006 to late 2010, demonstrating the sharp contraction during the latest crisis and the subsequent recovery.

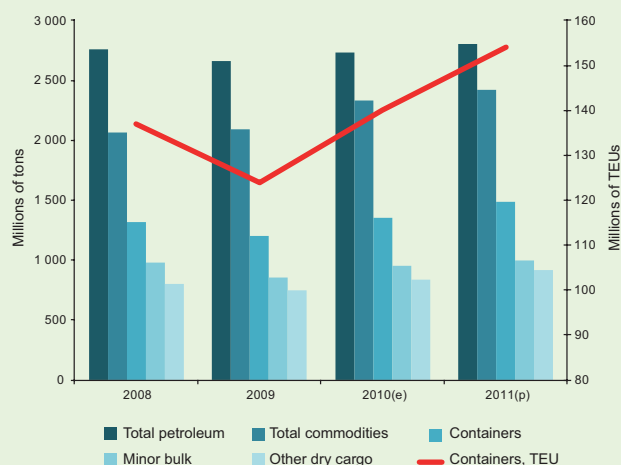
**Figure 3**  
**TRADE BY VOLUME, LATIN AMERICA AND THE CARIBBEAN, 2006-2010**  
(Billions of dollars)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), International Trade and Integration Division (DCII).

The worldwide volume of maritime trade has increased since 2010 (figure 4), with a strong recovery in the container sector and a smaller one for other cargo. Nonetheless, there was growth in all the categories.

**Figure 4**  
**GLOBAL MARITIME TRADE, TONS, 2008-2011**



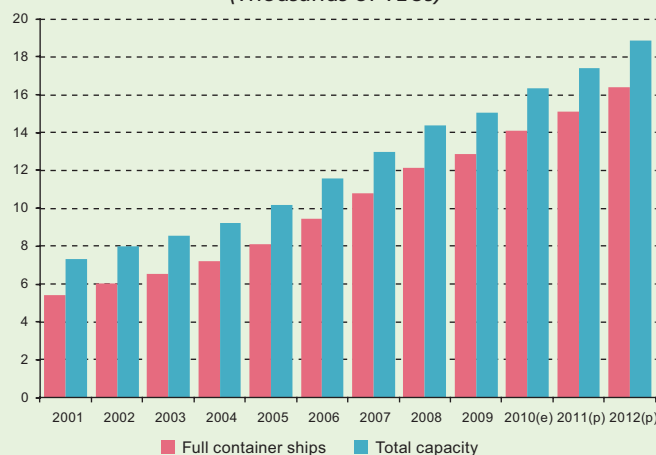
Source: Ricardo Sánchez and Maricel Ulloa, on the basis of Clarksons publications, various issues.



## II. Supply: a growing fleet

The supply of container-based maritime transport in terms of the total capacity available has risen sharply in recent years, as can be seen in figure 5.

**Figure 5**  
CAPACITY OF THE CONTAINER FLEET, 2001-2012  
(Thousands of TEUs)



Source: Ricardo J. Sánchez on the basis of the ci-online database.

Table 1 provides information on the operational fleet as of 31 December 2010, for the worldwide container fleet. For the latter, only cellular ships are counted, with 4,849 units and a static transport capacity of 14.28 million TEUs.

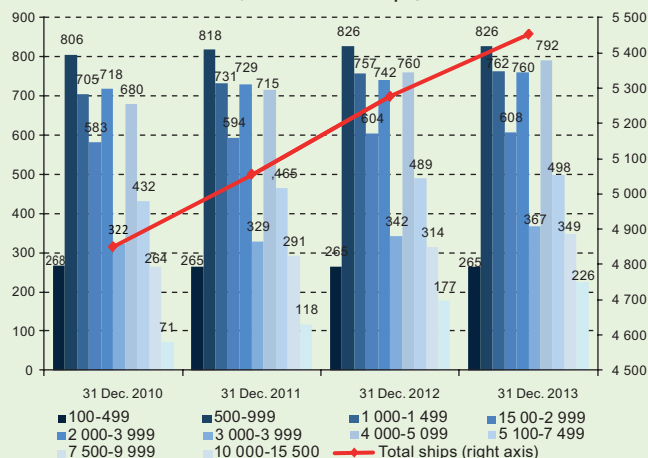
**Table 1**  
OPERATIONAL FLEET AS OF 31 DECEMBER 2010

Containers	Ships	% of total	Capacity (TEU)	% of total
100-1 999	2 362	48.7	2 498 216	17.5
2 000-2 999	718	14.8	1 821 452	12.8
3 000-3 999	322	6.6	1 098 580	7.7
4 000-5 099	680	14.0	3 074 686	21.5
5 100-7 499	432	8.9	2 637 656	18.5
7 500-10 499	264	5.4	2 262 471	15.8
10 500-15 500	71	1.5	884 798	6.2
<b>Total</b>	<b>4 849</b>		<b>14 277 859</b>	

Source: Ricardo Sánchez and Maricel Ulloa, on the basis of the publication *Alphaliner*, various issues. Information updated to April 2011.

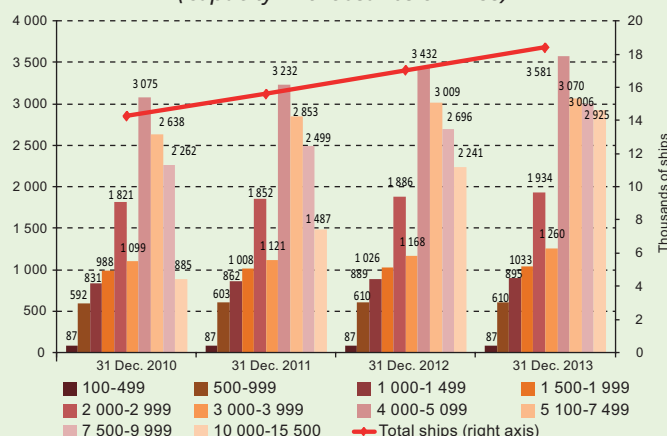
The fleet will continue to grow significantly in future, in terms of both numbers of ships and transport capacity. On the basis of current shipbuilding orders at April 2011, figures 6 and 7 show the expected size of the container fleet up to 2013, not taking scrapping into account.

**Figure 6**  
CONTAINER FLEET FORECAST AT THE END OF EACH PERIOD  
(Number of ships)



Source: Ricardo Sánchez and Maricel Ulloa, on the basis of the publication *Alphaliner*, various issues. Information updated to April 2011.

**Figure 7**  
CONTAINER FLEET FORECAST AT THE END OF EACH PERIOD  
(Capacity in thousands of TEUs)



Source: Ricardo Sánchez and Maricel Ulloa, on the basis of the publication *Alphaliner*, various issues. Information updated to April 2011.

Those two figures clearly illustrate the expected addition to the worldwide fleet of many new ships expected in the coming years.

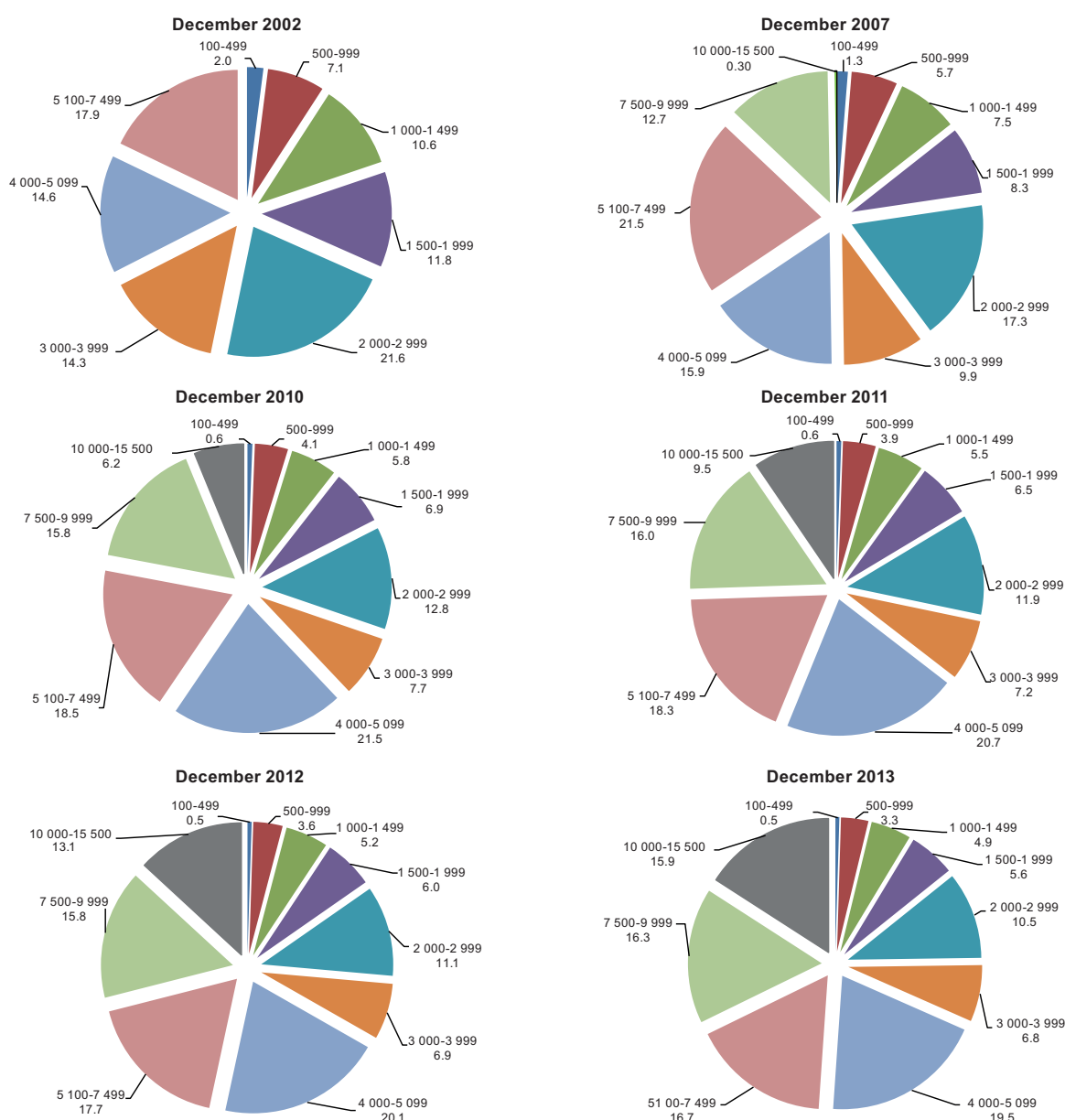
The worldwide fleet will be 21.3% larger in late 2011 than it was in the first year of the crisis (2008) and 104% larger than it was at the beginning of the previous boom period (2003). This means that the fleet grew by a yearly average of 9.3% between 2003 and 2011.

It is also expected that it will have grown from 5,055 ships in December 2011 to 5,453 in December 2013 and that, during the same period, transport capacity will have risen from 15.6 million to 18.4 million TEUs.

Figure 8 shows the trend in the size of the fleet as of 2002, 2007 and 2010 and the fleet size expected for the following three years. It also shows how the concentration of capacity by ship size is increasing. It can be seen that, from 2007 onwards, new ships were being added with capacities well in excess of existing ones; the latter made up less than 0.5% of the total

in 2007. It is expected that by late 2011, for ships of this type (10,000 TEUs and over) this proportion will have risen to 9.5%, and that by 2013 it will be close to 16% of the total fleet. In the case of ships with smaller capacities, the proportion is expected to have fallen between 1.5% and 11.1% between 2002 and 2013, depending on the type of ship.

**Figure 8**  
**EXPECTED TRENDS IN FLEET COMPOSITION**  
(Tons)



Source: Ricardo Sánchez and Maricel Ulloa, on the basis of the publication *Alphaliner*, various issues. Information updated to April 2011.

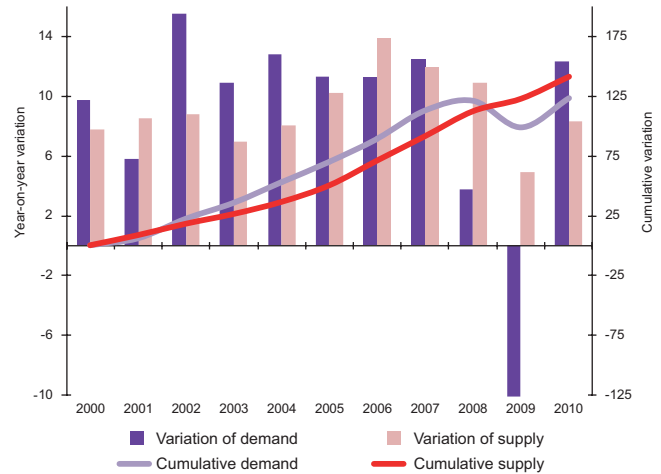


### III. Supply, demand and maritime container freight rates

This section will show the historic relationship between supply of and demand for transport capacity, and its expected future development in terms of year-on-year variations and cumulative figures. Table 2 summarizes the trends in supply and demand.

Firstly, figure 9 shows the year-on-year variation of container transport supply and demand between 2000 and 2010 in percentage terms. It also shows the cumulative change in the two variables in relation to 2000. It is clear that the growth of cumulative supply exceeded demand up to 2003. Thereafter, transport demand accumulated growth over the following five years (which is compatible with the price rises for fleets which are shown in figure 10). It can be observed that the two curves converge in 2008. Supply exceeds demand from 2009 onwards, reflecting the beginning of excess supply in container transport.

Figure 9  
CONTAINERS: SUPPLY AND DEMAND IN 2000-2010  
(Percentages)



Source: Ricardo Sánchez and Maricel Ulloa, on the basis of Clarksons publications, various issues.

Table 2  
SUPPLY AND DEMAND  
(Updated to February 2011)

Trade/transport demand (millions of TEUs)	2005	2006	2007	2008	2009	2010	2011(p)	2012(p)
Transpacific route	18.4	20.2	21.1	20.5	18.4	20.3	22.1	23.8
Far East-Europe	12.2	14.5	16.9	16.8	15.2	17.1	18.6	20.0
Transatlantic route	5.9	6.1	6.5	6.3	5.0	5.5	6.0	6.2
North America/Europe/Far East and Middle East/ISC	9.7	10.5	12.8	14.3	14.4	16.0	17.6	18.9
North-south routes	17.6	18.7	20.6	22.4	21.1	24.0	26.6	28.3
Other routes	41.9	47.5	53.1	56.3	50.4	56.5	62.1	69.3
Total	106	118.0	131.0	137.0	124.0	140.0	153.0	167.0
%variation	10.60%	11.2%	11.4%	4.3%	-8.9%	12.1%	10%	8.8%
Capacity/transport supply (thousands of TEUs)	2005	2006	2007	2008	2009	2010(p)	2011(p)	2012(p)

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