

### 3. CONTAINER TRADE GROWTH

#### 3.1 Economic Assumptions

Growth in the container trade is ultimately driven by economic growth. An underlying assumption of this study is that, for the next decade at least, the structural relationships between the growth in container trade and economic growth will remain basically unchanged.<sup>10</sup> The starting point for our analysis was therefore expectations of future economic growth.

The study has relied as far as possible on the projection of IMF to underpin our estimates. The IMF projection provides estimates for major economies. The IMF projections however extend through only to 2009, whereas the study period runs through to 2015. In extending the forecast period, a very simple method was adopted in general: the average growth rate for the period during which the IMF projections provided explicit forecasts was applied for the remainder of the forecast period. For some countries other sources available were also referred in estimating the GDP growth rates for the years beyond 2009. This was done for each economy independently.

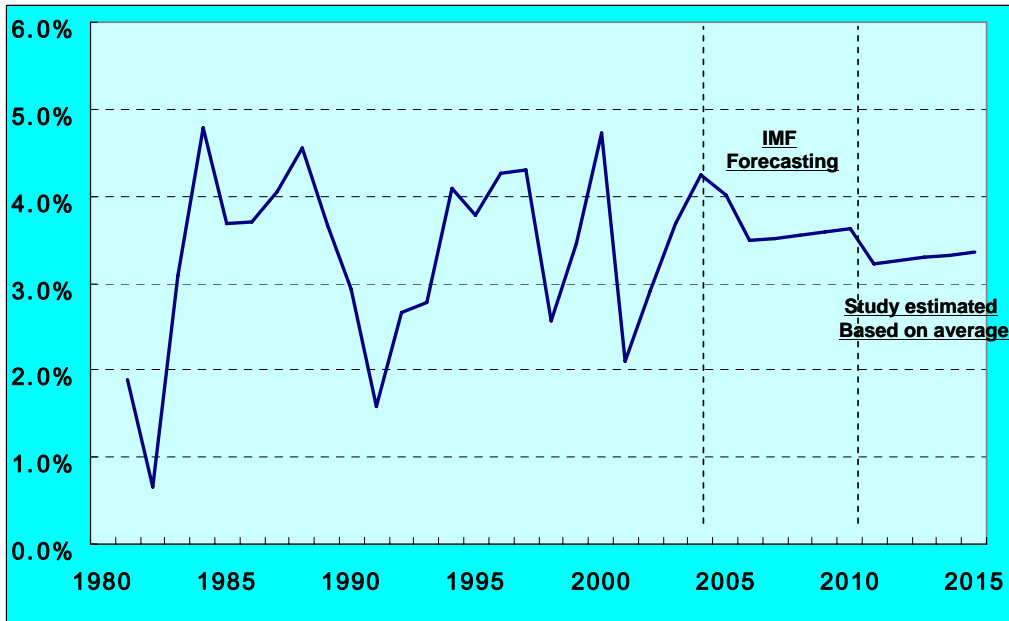
The consequent economic growth estimates are shown in Figure 3-1. They embody a view of future economic growth that is reasonably optimistic: the average growth rate in the short term is similar to that of the recent past if the economic downturn of the early 2000's is ignored, and in the medium term is approximates the long-term cumulative average growth rate for the world economy over the last 30 years.

The horizon for these forecasts is medium term – 10 years from now – and it is impossible to predict the timing of economic cycles which will inevitably occur during that period. The economic growth assumptions underlying the present study may therefore be interpreted as hypothesizing that growth will continue along a path similar to that of the recent past, and that, although there may be good years and bad years within the forecast period, there will not be a major, prolonged economic slowdown on the scale of that of the early 1990s.

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<sup>10</sup> The economic relationship between GDP and trade volume is considered useful in forecasting the development of the container sector, although the relationship is not considered a sufficient explanation of the growth. There are a wide range of factors that impact on the volume of container imports and exports, including exchange rate fluctuations, changes in economic structure etc. However, for forecasting purposes it is necessary to use very simplified relationships, because many of the causal variables are themselves even harder to predict than container volumes. Container imports and exports are, for instance, undoubtedly greatly affected by exchange rate movements. However, the uncertainties involved in estimating exchange rates are immense. The forecasting relationships used in this study in fact are simple, linear relationships between container volumes and GDP. In most cases, the regression analysis provided a surprisingly good fit for these simple relationships. Further testing indicated that this was not simply because both variables tended to rise over time.

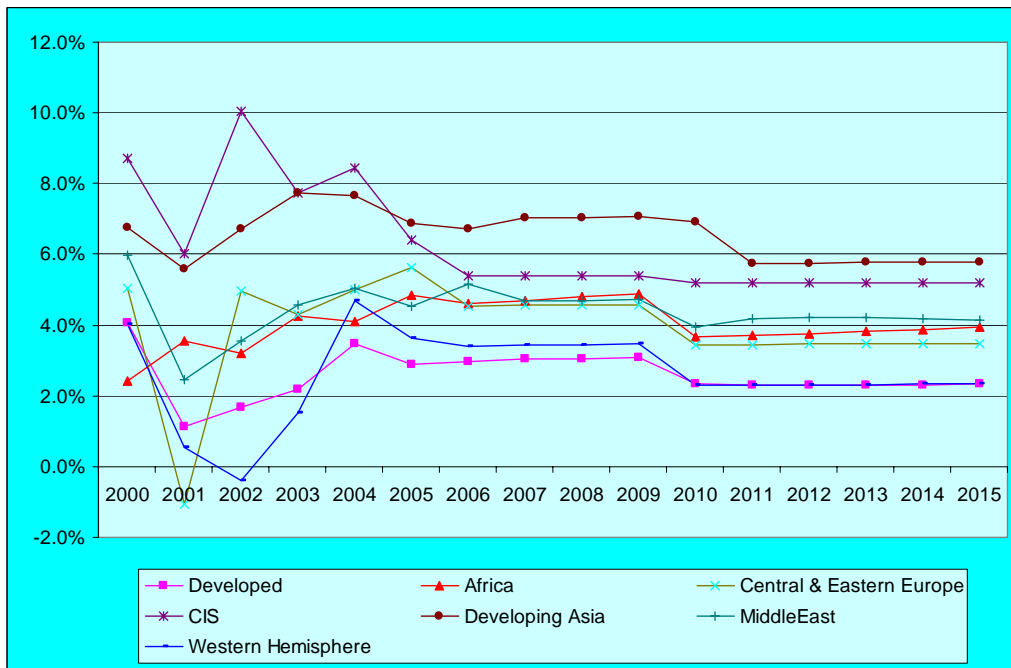
**Figure 3-1: Economic growth estimates underlying container forecasts**



Source: Study estimates based on IMF and other sources.

Figure 3-2 shows a breakdown of forecast economic growth rates by economic grouping.

**Figure 3-2: Forecast GDP growth by economic group**



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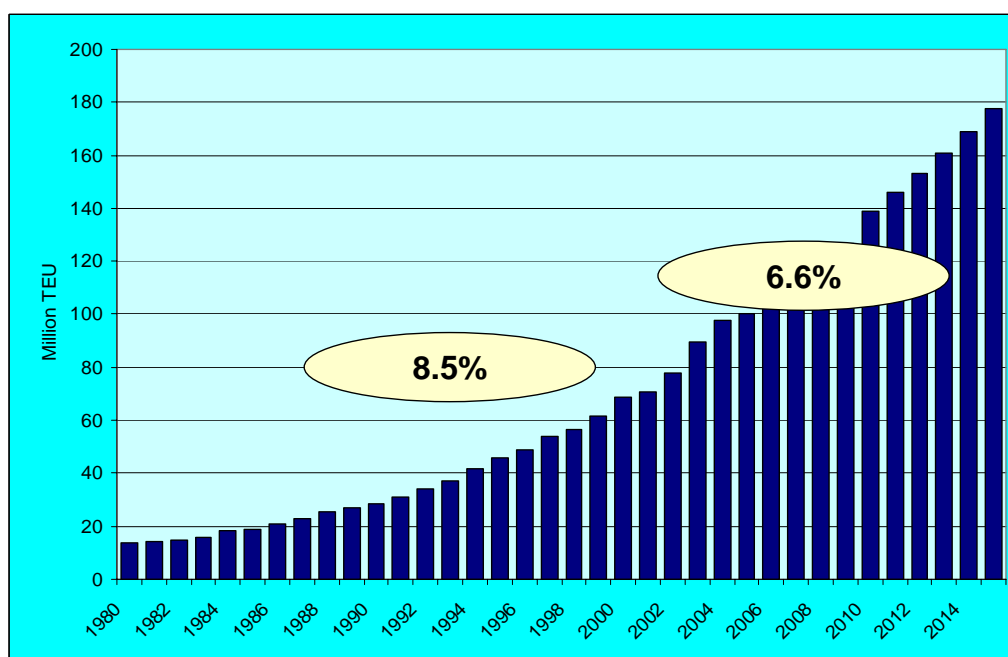
GDP growth rate of most of developed economy in the future will be low relatively. Developing countries in Asia will continue to keep their strong economic growth pattern. It is expected that China will keep their strong growth trend until the next decade. The forecast also embody a positive outlook for the two regions that suffered the greatest economic difficulties during the 1990s: Africa and Eastern Europe. Many economists point out that The Russian Federation will keep their current economic growth pace.

### 3.2 Global Container Forecasts

The next step in the forecasting process was the conversion of economic growth rates into projected full container volumes. Imports and export volumes were estimated from independent equations for individual countries.<sup>11</sup>

Figure 3-3 shows the global container forecasts that result from this process. The volumes shown in the figure are full origin-destination containers only: that is, empty containers are not included, and each container is counted only once during its entire journey, regardless of how many times it may be handled.

**Figure 3-3: Past and forecast global container volumes (1980–2015)**



<sup>11</sup> This was done by estimating separate forecasting equations for individual countries in the ESCAP region. For the countries outside of ESCAP, separate equations were estimated for each 'region', which was defined as a group of countries. In a number of cases, however, the historical time series data was simply not able to support a formal regression process. This is the case in particular where the country is still in the very early stages of containerization. In such cases, there was little alternative but to use professional judgement, informed by an examination of the history of containerization in similar countries during a similar phase of economic development.

The total number of full containers shipped internationally is expected to grow to 177.6 million TEU by 2015, up from an estimated 77.8 million TEU in 2002, but at a slower rate of 6.6 per cent per annum compared to 8.5 per cent per annum during 1980-2002. Average growth in the first half of the 2010's is expected to be lower than in the 2000's: 7.5 per cent per annum is expected during the period of 2002-2010, falling to 5.0 per cent per annum in the following five years.

These comparisons are summarised in Table 3-1. Comparison of the study's forecasts with those provided by private consulting firms suggest that these global level estimates lie within the range of expert opinions, but slightly towards the more conservative end of that range.

It should be noted that these forecasts depend critically on the assumptions that are made about future world economic growth. Analysis conducted during the course of the study suggests that, for every 1 per cent per annum increase or decrease in estimated global economic growth, the rate of growth in container volumes will change by approximately 1.5 per cent per annum.

**Table 3-1: Estimated and forecast growth rates for container trade (1980–2015)**

| <i>Year</i> | <i>Container volumes (million TEU)</i> | <i>Compound average growth rate over previous period</i> |
|-------------|--|--|
| 1980        | 13.5                                   | -  |
| 1990        | 28.7                                   | 7.8%   |
| 2000        | 68.7                                   | 9.1%   |
| 2010        | 138.9                                  | 7.3%   |
| 2015        | 177.6                                  | 5.0%   |

*Source:* Study estimates

### 3.3 Geographical Distribution of Container Volumes

Figure 3-4 shows the estimated contribution made to total global container flows by each major geographical region<sup>12</sup> in the year 2002. The chart has been constructed by summing up the full import and export containers for each region, and computing the total as a percentage of total world imports plus exports. Figure 3-6 shows that East Asia is the most important driver of the global container trade, generating 24 per cent

<sup>12</sup> In this analysis, the countries in the ESCAP region are grouped into the following subregions: East Asia (China including Hong Kong, China and Taiwan Province of China); North Asia (Democratic People's Republic of Korea, Japan and Republic of Korea); South-East Asia (Brunei Darussalam, Cambodia, Indonesia, Malaysia, Myanmar, Philippines, Singapore, Thailand and Viet Nam); and South Asia (Bangladesh, India, Pakistan and Sri Lanka). Islamic Republic of Iran and Turkey are included in South Asia, and Pacific Coast of the Russian Federation is included in North Asia.

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of total trade, with Europe the next most important region with 22 per cent of the total. North America generates a volume that is slightly smaller, accounting for 17 per cent of the total trade. North Asia and South-East Asia account for 10 per cent each of global volumes.

**Figure 3-4: Distribution of container volumes – 2002**

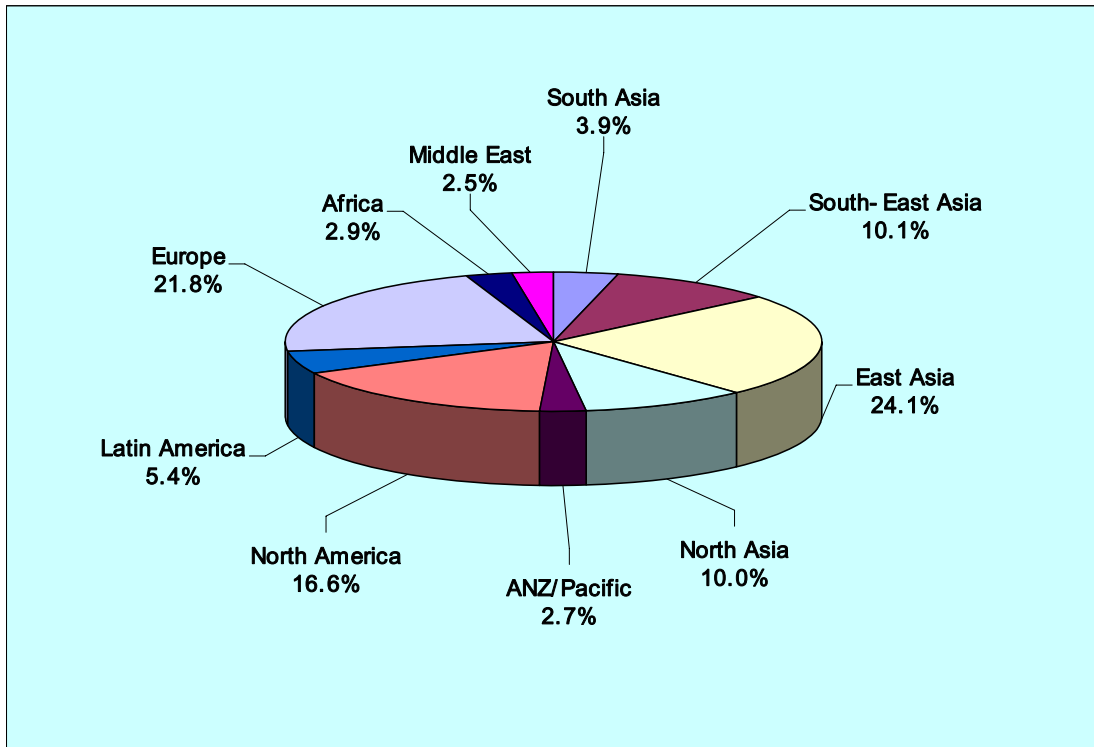
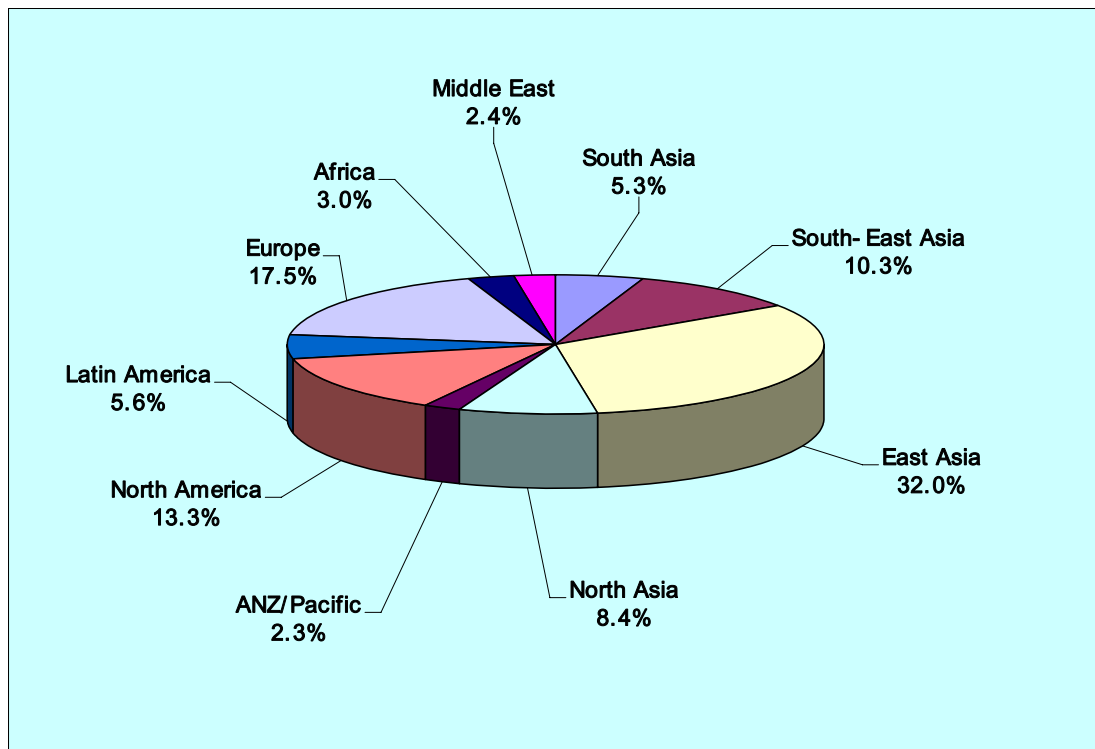


Figure 3-5 indicates how these contributions are expected to change by 2015. By this time, it is expected that East Asia will enhance its role as the biggest driver of the global container trade, with an increased share of 32 per cent of the total. The shares of Europe and North America are expected to decline to 18 per cent and 13 per cent, respectively. Stronger growth over the period will also allow the volumes generated by South-East Asia to surpass those from North Asia. The South Asian countries are also expected to increase their share of the global total.

Looking closely at Asia, exports from North Asia are expected to grow more slowly than exports for the world as a whole, due largely to subdued growth in containerized exports from Japan. North Asia's share of imports is also expected to fall over the forecast period, but to a less marked extent.

**Figure 3-5: Distribution of container volumes – 2015**

Container traffic to and from other parts of Asia is expected to grow more rapidly than the world average. Expansion is expected to be particularly rapid in China, continuing the trend of the last five years, and solid growth is expected in South Asia. South-East Asia is also expected to increase its share of world container traffic over the forecast period.

Taken together, Asia's share of containerized exports is expected to rise from 55 per cent of the world total in 2002 to 64 per cent in 2015; the share of containerized imports is expected to rise by a similar from 46 per cent to 53 per cent.