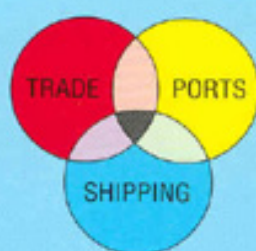


Regional Shipping and Port Development Strategies

Under a Changing Maritime Environment



MPPM

ESCAP/UNDP
MARITIME POLICY PLANNING MODEL



UNITED NATIONS

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SUMMARY

STUDY OBJECTIVE

This study is based on the application of the Maritime Policy Planning Models (MPPM) developed and maintained by the Transport, Communications, Tourism and Infrastructure Development Division of ESCAP. Its objective is to provide a planning context for informed decision making by governments, shipping lines and port authorities in the ESCAP region. It does this by providing detailed, quantified and internally consistent forecasts of the structure of the maritime container transport system serving the ESCAP region through to the year 2011.

These forecasts cover three broad areas: the volume and direction of container flows, the shape of the shipping network, and the port facilities required to service the trade.

ECONOMIC ASSUMPTIONS

The currency crisis of 1997 brought an abrupt halt to the long run of rapid growth that had been enjoyed by a number of Asian economies. Although most economies have displayed considerable resilience in the aftermath of the crisis, growth rates during the coming decade are not expected to match the very high rates experienced the early 1990s.

Nevertheless, in all of the major Asian economies other than Japan, growth is expected to continue to exceed the world average. China will continue to be the growth leader in the region, but as the decade proceeds, the fruits of recent economic changes in India will become evident as the country enters a period of sustained economic growth. The economies of South-East Asia are also expected to record solid, if unspectacular growth.

SCENARIOS

It has become increasingly clear that there are no insurmountable technical barriers to the future increase in size of containerships. Concept designs already exist for ships up to 18,000 TEU. The limits to growth, if there are any, will be market-determined.

Nevertheless, there is a significant divergence of views amongst competent and experienced analysts as to how large containerships will grow, and how rapid the increase in size is likely to be over the next decade, and the issue of container ship size has become one of the most hotly debated topics in the container shipping world at the present time.

Some analysts take the view that the search for economies of scale is inexorable, and will drive vessel sizes up through 12,000 TEU and even beyond within the next decade, despite the challenges in terminal handling that will need to be overcome.

SUMMARY AND KEY FINDINGS

According to this view, the move to larger and larger ships, driven by an inexorable search for economies of scale, will continue and, if anything, accelerate. The need to maximize the utilization of these large vessel will in turn drive a radical reduction on the number of port calls on major routes, and feed the development of global mega-ports served by fully integrated global networks.

Other analysts point out that the gains from each increment in size grow smaller as vessels grow larger, and argue that we have already reached or surpassed the point at which additional feeder and inventory costs would outweigh any further savings in slot costs on main line vessels. According to this view, although vessel size will continue to increase, it will do so at a slower rate, as shipping lines try to balance the slot cost reductions available from larger vessels with the cost and marketing advantages of maintaining a wide network of direct port calls. Other pressures – notably environmental opposition to dredging and resistance to ever-increasing concentration of containers on the land transport system – will also tend to limit ship size growth.

The study seeks to add some light in this issue, and on its implications for the region. The MPPM model suite provides a tool that can be used to analyze the plausibility of these competing hypotheses. The interactive nature of the models allows the analyst to modify the shipping system of the future to reflect alternative futures. However, the cargo assignment procedures, which mirror the observed choices made by shipping system users, can provide feedback on whether the proposed services are in fact likely to attract the cargo volumes required to make them sustainable.

The ‘base case’ explores a relatively conservative hypothesis. This is that the growing demand for the carriage of containerized cargoes will be met by a continuation of the slow ‘creep’ in ship size similar to that which characterized the 1970s and 1980s. This is combined with an increase in the number of ‘strings’ (as each service offered by a consortium of liner shipping companies has come to be known) that are operated in each of the major trades. The number of ports included on each string is similar to the number included on the major services of today.

The alternative ‘big ships’ scenario starts from a different assumption. At the core of this hypothesis lies the assumption that the major carriers will attempt to exploit further economies of scale, and deploy vessels of 10,000-12,000 TEU on the major trade lanes. In line with current thinking of how shipping patterns will evolve if these very large vessels come to dominate, it begins with the assumption that these ships will operate on radically simplified routes, calling at only one or two ports in Asia. The sustainability of these services is examined, and the implication for the major trans-shipment hubs explored.

KEY FINDINGS**TRADE**

The compound annual growth rate for global container volumes from 1999 to 2006 is estimated to be 6.5 per cent. This is expected to fall very slightly to 6.0 per cent per annum between 2006 and 2011.

As the level of containerization of the major trades approaches the practical limit, the rate of increase in containerization will tend to decline. The shift towards a greater proportion of high-valued commodities will also tend to dampen container growth rate.

Offsetting these influences, the container trades will be boosted by trade liberalization and an increase in the share of international trade that is represented by manufactured goods.

The net result is expected to be that container trade growth rate during the study period will be somewhat below the average growth rate of 8.4 per cent per annum that was achieved during the last decade. The average growth rate through to 2006 has been estimated at 6.5 per cent per annum. For the following five years, the growth rate is expected to decline slightly to 6.0 per cent.

Asia's share of containerized exports is expected to rise by 5 per cent points from 46 per cent of the world total in 1999 to 51 per cent in 2011; the share of containerized imports is expected to rise by a similar percentage from 40 per cent to 44 per cent.

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.

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,

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