CHAPTER 2

GLOBALISATION – THE MARITIME NEXUS

Jan Hoffmann* and Shashi Kumar†

1. INTRODUCTION: GLOBALISED BUSINESS IN A GLOBALISED ECONOMY

“Globalisation” means different things to different people. For some, it is the raison d’être for poverty and global financial crisis; for others, it is a sine qua non for economic development and a rise in standard of living. Even “When did globalisation begin?” (O’Rourke and Williamson, 2000) is a disputed topic. For us, in this chapter about maritime economics, it is simply a concept that describes a trend in international trade. It means (a) that trade is growing faster than the world’s GDP; and (b) that this trade is not only in finished goods and services, but also increasingly in components and services that are used within globalised production processes. Maritime transport is growing because it is required to move traded goods and components, and trade in maritime services is itself taking place on an ever more global scale.

Transport is one of the four cornerstones of globalisation. Together with telecommunications, trade liberalisation and international standardisation, the increased efficiency of port and shipping services has made it even easier to buy and sell merchandise goods, raw materials and components almost anywhere in the world. International standards and homogenous products foster global competition. Trade liberalisation allows the efficient international allocation of resources. Finally, telecommunication and transportation are the necessary tools to transfer information and goods. “Despite all the headlines and political bluster surrounding the World Trade Organisation, NAFTA and other trade pacts, the real driving force behind globalisation is something far less visible: the declining costs of international transport” (The Journal of Commerce, 15 April 1997).

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2 Globalisation – The Maritime Nexus

At the same time, maritime business itself is probably the most globalised industry. Most maritime transport is provided between two or more countries, and the service providers no longer need to be nationals of the same countries whose cargo they move. In fact, a simple commercial transaction may easily involve people and property from a dozen different countries: A Greek-owned vessel, built in Korea, may be chartered to a Danish operator, who employs Philippine seafarers via a Cypriot crewing agent, is registered in Panama, insured in the UK, and transports German made cargo in the name of a Swiss freight forwarder from a Dutch port to Argentina, through terminals that are concessioned to port operators from Hong Kong and Dubai. International standardisation, an important component of globalisation in general, also affects shipping: without standardised containers globalised shipping and intermodal networks would not be possible. Equivalently, international operators are now in a position to take a concession of a container terminal located in any port in the world, suppliers of port and ship equipment produce and sell globally, and ISO and IMO standards concerning quality, safety and training apply equally on all international waters.

The remainder of this chapter will look at the mutual relationship between maritime business and globalisation. Section 2 discusses how trends in international maritime transport affect globalisation, and section 3 looks at the same relationship, but from the opposite direction, i.e. how the maritime business is affected by globalisation. Section 4 provides summary and conclusions.

2. MARITIME TRANSPORT AND ITS RELEVANCE
FOR GLOBALISATION

2.1 Global trade, and how it is being moved

2.1.1 The share of the maritime mode of transport

Shipping continues to be the dominant mode of transport for international trade. World seaborne trade has grown almost continuously since World War II, with tonne-miles increasing more than three-fold since 1970 (UNCTAD, 2009).

Seaborne trade accounts for 89.6% of global trade in terms of volume (tonnes) and 70.1% in terms of value. Airborne cargo has a share of just 0.27% of trade volume and 14.1% of trade value, whilst overland and other modes (including pipelines) account for the remaining 10.2% of volume and 15.8% of trade value (See Figures 1 and 2). In 2008, total world seaborne trade, including intra-European Union trade, is estimated to amount to about 8.17 billion tons (UNCTAD, 2009).

The shares of the different modes tend to remain stable in terms of volume, but fluctuate much more when analysing the trade value. During the seven years 2000–2006, the share of seaborne trade volume has fluctuated only between 89.04 and 89.82% (a range of 0.78 percentage points), while its share in trade value fluctuated seven times more – between 64.48 and 70.07% (a range of 5.59 percentage points). The main reason for those differences lies in the fact that the share in trade value is strongly influenced by the price of the traded commodities. In particular, the rising price of oil, but also that of other commodities, has contributed to the rise in the share of seaborne trade – albeit only its value and not its volume. Another trend that leads to an increase in the share of maritime trade value is the changing composition of global maritime trade, which includes increasingly manufactured and intermediate goods.
Maritime transport and its relevance for globalisation 3

Figure 1: Modal split of international trade in goods, $ billion and %, 2000–2006

<table>
<thead>
<tr>
<th>Year</th>
<th>Airborne</th>
<th>Seaborne</th>
<th>Overland and other</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>809</td>
<td>2,028</td>
<td>859</td>
</tr>
<tr>
<td>2001</td>
<td>728</td>
<td>2,877</td>
<td>847</td>
</tr>
<tr>
<td>2002</td>
<td>698</td>
<td>2,955</td>
<td>875</td>
</tr>
<tr>
<td>2003</td>
<td>770</td>
<td>3,478</td>
<td>917</td>
</tr>
<tr>
<td>2004</td>
<td>910</td>
<td>4,448</td>
<td>1,102</td>
</tr>
<tr>
<td>2005</td>
<td>1,040</td>
<td>5,207</td>
<td>1,216</td>
</tr>
<tr>
<td>2006</td>
<td>1,198</td>
<td>5,958</td>
<td>1,347</td>
</tr>
</tbody>
</table>

Figure 2: Modal split of international trade in goods, million metric tonnes and %, 2000–2006

<table>
<thead>
<tr>
<th>Year</th>
<th>Airborne</th>
<th>Seaborne</th>
<th>Overland and other</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>14</td>
<td>4,848</td>
<td>580</td>
</tr>
<tr>
<td>2001</td>
<td>14</td>
<td>4,784</td>
<td>528</td>
</tr>
<tr>
<td>2002</td>
<td>14</td>
<td>4,787</td>
<td>567</td>
</tr>
<tr>
<td>2003</td>
<td>14</td>
<td>4,981</td>
<td>599</td>
</tr>
<tr>
<td>2004</td>
<td>16</td>
<td>5,759</td>
<td>631</td>
</tr>
<tr>
<td>2005</td>
<td>17</td>
<td>6,045</td>
<td>665</td>
</tr>
<tr>
<td>2006</td>
<td>19</td>
<td>6,319</td>
<td>717</td>
</tr>
</tbody>
</table>

Source: Global Insight, not including intra-European Union trade
4 Globalisation – The Maritime Nexus

As regards the unit values by transport mode, in 2006, the average value per tonne of cargo of seaborne trade was $943, versus $63,184 per tonne of airborne trade and $1,878 per tonne of trade transported overland or by other modes, such as pipelines (Table 1). In other words, a tonne of airborne cargo was on average 67 times more valuable than a tonne of seaborne cargo.

2.1.2 The geography of seaborne trade

The major loading areas for seaborne trade today are developing regions (60.6%), followed by developed economies (33.6%) and countries with transition economies (5.9%). Asia’s share of seaborne exports is 40%, followed in descending order by the Americas, Europe, Africa and Oceania (UNCTAD, 2009).

Figure 3 reflects the evolving participation of developing countries in global imports and exports. In 1970, developing countries still imported mostly high-value/low-volume manufactured goods and exported above all low-value raw materials; as a result, they exported almost four times as many tonnes of seaborne cargo than they imported. Today, developing countries participate much more in globalised production processes. Especially China, India and other Asian countries have become important importers of commodities such as iron ore, bauxite and grains, while at the same time increasing their share in manufactured exports. This is an interesting trend, as it illustrates that the classical distribution of trade between developed and developing countries is no longer valid.

2.1.3 The composition of seaborne trade

Approximately two thirds of seaborne trade are dry cargoes and one third liquid bulk (Figure 4). Dry cargoes are increasingly being carried in containers. The majority of containerised cargo is made up of manufactured goods and high-value bulk commodities, such as time- and temperature-sensitive agricultural products. Since 1990, containerised trade has increased by a factor of five – an average annual growth rate of almost 10%. In 2008, global container trade was estimated at 137 million TEUs (UNCTAD, 2009).

<table>
<thead>
<tr>
<th>Average value per tonne of cargo ($)</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airborne</td>
<td>56,624</td>
<td>51,241</td>
<td>50,445</td>
<td>54,415</td>
<td>55,503</td>
<td>59,710</td>
<td>63,184</td>
</tr>
<tr>
<td>Seaborne</td>
<td>625</td>
<td>601</td>
<td>617</td>
<td>698</td>
<td>772</td>
<td>861</td>
<td>943</td>
</tr>
<tr>
<td>Overland and other</td>
<td>1482</td>
<td>1606</td>
<td>1542</td>
<td>1531</td>
<td>1746</td>
<td>1827</td>
<td>1878</td>
</tr>
<tr>
<td>All modes</td>
<td>863</td>
<td>836</td>
<td>843</td>
<td>923</td>
<td>1008</td>
<td>1109</td>
<td>1205</td>
</tr>
</tbody>
</table>

Source: UNCTAD (2008), based on data from Global Insight, not including intra-European Union trade
Maritime transport and its relevance for globalisation

Figure 3: Developing countries’ share in seaborne trade (tonnes)

<table>
<thead>
<tr>
<th>Year</th>
<th>Loaded</th>
<th>Unloaded</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>63.30%</td>
<td>17.80%</td>
</tr>
<tr>
<td>1980</td>
<td>57.50%</td>
<td>25.50%</td>
</tr>
<tr>
<td>1990</td>
<td>51.20%</td>
<td>28.60%</td>
</tr>
<tr>
<td>2000</td>
<td>53.20%</td>
<td>36.80%</td>
</tr>
<tr>
<td>2008</td>
<td>60.60%</td>
<td>49.70%</td>
</tr>
</tbody>
</table>


Figure 4: International seaborne trade for selected years – tonnes and % of tonnes

<table>
<thead>
<tr>
<th>Year</th>
<th>Containerised and other</th>
<th>Five major dry bulks</th>
<th>Crude oil and products</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>676</td>
<td>448</td>
<td>1,442</td>
</tr>
<tr>
<td>1980</td>
<td>1,037</td>
<td>796</td>
<td>1,871</td>
</tr>
<tr>
<td>1990</td>
<td>1,285</td>
<td>968</td>
<td>1,755</td>
</tr>
<tr>
<td>2000</td>
<td>2,533</td>
<td>1,288</td>
<td>2,163</td>
</tr>
<tr>
<td>2008</td>
<td>3,322</td>
<td>2,097</td>
<td>2,749</td>
</tr>
</tbody>
</table>

Source: Authors, based on data from UNCTAD, Review of Maritime Transport 2009, Geneva, 2009
6 Globalisation – The Maritime Nexus

Although maritime transport has historically been associated with the carriage of high-volume low-value goods (e.g. iron ore and coal), the share of low-volume, high-value containerised trade has been growing continuously since the container was invented half a century ago. Today, manufactured goods account for over 70% of world merchandise trade by value. They include consumption goods as well as intermediate goods, parts and semi-finished products that have expanded in tandem with intra-company trade, international outsourcing and globalisation.

2.2 Trade and transport in economic theory

2.2.1 International trade and economic growth

Allowing and facilitating trade has obvious positive impacts on economic growth. If Chile can produce bananas only under glass, and Ecuador can grow grapes only on an inaccessible highland, then both countries’ populations can eat more bananas and grapes (i.e. achieve measurable economic growth) if they specialise and trade – as long as the shipping services are less expensive than the savings in production costs.

Going a step further, even if one country could produce both commodities with less land or manpower than the other country, according to David Ricardo’s (1817) theory of the comparative advantage, it still makes sense for both countries to specialise and trade. Ricardo’s example uses the production of cloth and wine, where Portugal has an *absolute* advantage concerning both: It needs 80 man-months to produce X litres of wine and 90 man-months to produce Y metres of cloth, whereas England needs 120 and 100 man-months respectively. England has a *comparative* advantage concerning cloth, and a rational decision of Portugal and England will imply that the first specialises in growing wine and the latter in producing cloth, consequently leading to English exports of cloth to Portugal and Portuguese exports of wine to England. This type of specialisation, and thus also the resulting trade, can partly be explained by the “Factor Proportions Model”, which was developed by Eli Heckscher and Bertil Ohlin in the 1920s (Ohlin, 1933). This model expands Ricardo’s basic version by including differences in the endowment of resources. Linking both models thus allows to explain trade flows by differences in available technology, capital, manpower and natural resources.

Today, the academic discussion on why and how much countries trade with each other is far developed. The impetus for new trade theories came from the limitations of the classical models because of their relatively simplistic assumptions and also their empirical weaknesses. This was illustrated by the Leontief Paradox (1953) when the Factor Proportions Model, discussed earlier, was applied to the US. The empirical analysis did not support the theory’s prediction that a nation’s abundance in a particular factor of production would dominate its exports. New contributions in the post-World War II era include Vernon’s product life-cycle theory of the mid-1960s, the new trade theory of the 1980s (Krugman, 1981; Lancaster, 1980) and Porter’s (1990) national competitive advantage trade theory. The product life cycle theory explained the international trade patterns of the 1960s when the US dominated the global economy and most new products originated in that country (Vernon and Wells, 1986). As demand for the product increased gradually in other developed nations, it was initially met through US exports until the production itself moved to those countries because of higher US labour costs. Furthermore, once the product became standardised, US production was
typically replaced with exports from other developed nations first and, in the long-run, exports from developing countries. However, the limitations of this theory are far too many in the contemporary global economy where production is dispersed to different parts of the world simultaneously and no one particular nation is in a position to claim hegemony in international trade.

The new trade theory is based on the increasing returns to specialisation that arise in an industry when it is characterised by high economies of scale. The presence of such economies of scale in production would lead to the existence of only a limited number of global players in the market. Those firms that are *first-movers* may benefit from their early entry and establish themselves, erecting entry barriers for others. It has been argued that to be successful in such an environment, in addition to the firm being lucky, entrepreneurial, and innovative, the nation itself must have a strategic, pro-active trade policy that facilitates first-mover advantage in key and newly emerging industries (Hill, 2000). Porter’s national competitive advantage theory postulates the existence of a diamond that consists of factor endowments, demand conditions, related and supporting industries, and firm strategy, structure and rivalry. The diamond will be favourable when the four components are in place along with an element of luck and favourable government policies as was the case for the Japanese automobile industry in the 1980s (Porter, 1990).

In practice, the different theories of international trade obviously complement each other and make their own contributions. They apply as much to trade in goods as to trade in services – including maritime transport services: Flag registries, for example, surely benefit from economies of scale, shipyards require an endowment of capital and labour, and London was a “first mover” concerning insurance and finance. Later on, we will look in more detail at this specialisation in different maritime sectors.

And what does trade mean for economic growth and well-being? Under almost any model, it is “potentially possible to find a free trade consumption point and an appropriate lump-sum compensation scheme such that everyone is at least as well-off with trade as they had been in autarky” (Suranovic, 2002). And, accordingly, “international economic integration yields large potential welfare effects” (Anderson and Wincoop, 2001). The posterior distribution of these benefits within society is a different matter, beyond the scope of this chapter.

### 2.2.2 Mainstream economics and its consideration of transport

How does transport fit into this analysis of trade and economic development? Standard Economics text books, if they include it at all, do so by considering it as part of the overall transaction or arbitrage costs. Trade will take place if price differences between two countries are higher than the total transaction costs.

Until the early 1970s, transport and transport-related infrastructure played an important role in location theories and development economics, including the lending policies of the World Bank and bilateral technical cooperation. It was assumed that by simply providing for infrastructure such as ports, roads and bridges, developing countries would soon become more competitive and catch up with the industrialised nations. This changed for two main reasons: first, as transport costs declined and connectivity and efficiency improved, it was assumed that further improvements in transport were no longer relevant for trade and development. Secondly, the relationship between transport and economic growth is quite complex, and impacts of changes
Globalisation – The Maritime Nexus

were – and still are – difficult to measure. Some of the measurable results of infrastructure investments were actually disappointing or even contrary to the expected and desired impact. For example, if imports suddenly became more competitive, port investments actually led to a closure of local industries (Pedersen, 2001; Hilling, 1996; Simon, 1996).

(Only) once a Nobel Memorial Prize in Economics has so far been given to authors who worked – partly – on transport-related topics; that was in 1993, when the prize was won by Robert Fogel and Douglass North. Fogel’s main contributions included research on the role of the railways for the development of the national economy in the United States. Douglass North worked, inter alia, on the economic development in Europe and the United States before and in connection with the industrial revolution, including the roles of sea transport and changes in the pattern of regional specialisation and interregional trade.

Nowadays, most trade models include transport costs or some related variables, such as distance and common borders, to explain the geographical distribution of international trade flows. In empirical research, measurable reductions in transport costs are taken as a given exogenous trend, driven by technological advances, that obviously promotes trade. O’Rourke and Williamson (1999), for example, analyse how in different historical periods trade grew as a result of reductions in freight rates.

Yet still, “there isn’t nearly as much trade as standard trade models suggest that there should be. Formal trade barriers such as tariffs and quotas are far too low to account for much of the missing trade while changes in tariffs and quotas in the last 50 years explain too little of the growth in trade. Transport costs help explain the missing trade, but distance and other location variables are far too important in their trade suppressing effects to be accounted for by the effect of distance and measurable transport costs. Fall in measured transport costs do not fully explain the growth in trade. These anomalies have until recently been ignored by the profession” (Anderson, 1999).

Whether transport costs have fallen or not is surely debatable, and we shall briefly discuss this question later on. What is true, however, is that by considering only transport costs and not the other aspects (such as connectivity, safety, security, reliability, speed, or port facilitation), many trade analysts have not been too impressed with the advances in the field of transport and their impact on trade growth. And what has long been ignored altogether is how increased trade influences transport costs.

2.3 Trade and its transport: A mutual relationship

2.3.1 Rediscovering transport as a determinant of trade

Any answer to the question of “why do nations trade (so little)” (Anderson, 1999) needs to look at transport costs and shipping connectivity. Since the late 1990s, in the context of globalisation and the analysis of its causes and impacts, transport has moved back to the mainstream of economics and related sciences. Thompson (2000), from the World Bank, writes he is “delighted to see the general economics profession rediscovering the importance of transportation costs and geography in international trade considerations”, and Pedersen (2001) explains that “during the 1990s transport and communication appear slowly to be on their way into the mainstream again, but now transformed into a much broader concept of logistics, which has become an increasingly important element in the organisation and restructuring of the globalising economy. From being
Maritime transport and its relevance for globalisation

an external factor, transport has become an integrated part of the production and distribution system”.

Initial empirical research which incorporates transport into trade and economic policy analysis includes Limao and Venables (1999), who conclude that “halving transport costs increases the volume of trade by a factor of five”. In a related paper (Venables and Limao, 1999), the same authors highlight that a “theory of trade that ignores transport costs will yield systematically incorrect predictions about trade patterns, industrial structure, and factor incomes”.

To redeem such shortcomings, several authors have in recent years incorporated measures of transport costs into trade models. An overview is provided by Korinek and Sourdin (2009), who specifically analyse maritime transport costs as determinants of international trade and conclude that a 10% increase in maritime transport costs is associated with a 6 to 8% decrease in trade, other things being equal. Wilsmeier and Sanchez (2009) look specifically at food prices and conclude that any debate on food policy “requires a good understanding of the functioning of transport markets and their role in food transport chains”, while Disdier and Head (2008) find a “puzzling persistence of the distance effect on bilateral trade”.

Several international organisations are now paying increased attention to this issue, IADB (2009), for example, concludes that “transport costs have assumed an unprecedented strategic importance” for Latin America and the Caribbean. OECD (2008) sets out an ambitious research agenda (a) to examine the impact of transport costs on trade; and (b) to examine the impact of different components of transport. World Bank (2009) analyses transport costs in Africa because “(it) is well known that weak infrastructure can account for low trade performance”. UNCTAD (2004) concludes that “Improved transport services for developing countries are key determinants of the new international trade geography, including South–South trade and increased merchandise exports of developing countries. However, not all developing countries are so far benefitting from this new trade geography and further efforts are required to improve transport services and infrastructure especially for least developed and also landlocked countries. The challenge for policy makers is to initiate a virtuous cycle where better transport services lead to more trade, and more trade in turn helps to encourage improved transport services.”

2.3.2 What are the determinants of maritime transport costs?

Limao and Venables (1999) and also Radelet and Sachs (1998) not only use transport cost data to explain trade, but also undertake regressions to explain transport costs. The explanatory variables used in their analysis are basically related to distance and connectivity, such as if countries are land locked, or if trading partners are neighbours, and to country characteristics such as GDP per capita. García Menéndez et al. (2002) investigate the determinants of maritime transport costs and the role they play in allocating trade across countries for the case of the ceramic sector (tiles). They include a discussion on the sensitivity of trade flows and transportation costs to the existence of back haul, and suggest that higher distance and poor partner infrastructure increases transport costs notably. Inclusion of infrastructure measures improves the fit of the regression, corroborating the importance of infrastructure in determining transport costs. Higher transport costs significantly deter trade, and distance does not appear to be a good proxy for transport costs, at least not in the ceramic sector. For Latin America, continuing
10 Globalisation – The Maritime Nexus

work by Micco and Pérez (2001), Sanchez et al. (2002) analyse the impact of port reform on transport costs, and also possible determinants of the port reforms themselves. Hummels (1999a, 1999b, and 2000) discusses if “international transport costs have declined”, and he introduces “time as a trade barrier”. One of his conclusions is that that “each day saved in shipping time is worth 0.5 percent ad valorem, approximately 30 times greater than costs associated with pure inventory holding” (Hummels, 2000). Fink et al. (2001) analyse how liberalisation in trade in transport services leads to further reductions in transport costs, which in turn lead to a further promotion of trade in goods. Although criticised in its methodology and specific conclusions concerning liner shipping’s anti-trust immunity (World Shipping Council, 2001), there is no doubt that the liberalisation and globalisation of the maritime business (see section 3 of this chapter), have led to a reduction of transport costs, which is contributing to the globalisation of trade and global production.

What was still missing in the earlier literature was a more thorough consideration of the mutual relationship between trade volumes, transport costs, and the quality of transport services. For example, higher quality of service implies higher transport costs, yet also promotes trade. Economies of scale from high trade volumes have a strong negative (i.e. decreasing) impact on transport costs. Therefore, it appears that the strong relation between trade and transport costs detected by Limao and Venables (1999) quoted above does not only reflect the elasticity of trade towards transport costs, but also almost certainly reflects the economies of scale through which higher volumes lead to lower costs of transport.

Research on the determinants of maritime transport costs has advanced significantly during the current decade. The basic findings of the regressions we first presented in the earlier version of this chapter (Kumar and Hoffmann, 2002) are confirmed by numerous subsequent studies. Based on results from Sanchez et al. (2003), Wilmsmeier et al. (2006), and Wilmsmeier and Hoffmann (2008) as well as the literature review provided by OECD (2008), six key determinants of freight costs, i.e. the price charged to the shipper, for maritime transport can be summarised as follows.

(1) **Distance**: Surely distance plays some role as a longer journey requires more fuel and other operating expenses. This impact is stronger for bulk shipping than for containerised liner shipping. For the latter it is found that doubling the distance increases freight rates by only 15 to 25%, and distance on its own will usually statistically explain just one fifth of the variance of container freight rates.

(2) **Economies of scale**: Larger trade volumes and bigger individual shipments reduce unit transport costs. The largest 13,000 TEU container ships cost half as much to build per TEU than vessels of 2,500 TEU, and employ the same number of crew. Larger trade volumes and shipments are also correlated with other determinants of transport costs, such as port infrastructure and competition between services providers.

(3) **Trade balances**: On many trade routes, volumes moving in one direction are higher than those moving in the opposite direction. As carriers then have empty ships and containers available for the return trip, freight rates for the return trip may be just half of the rate of the outbound trip. Even if individual
countries have a more or less balanced trade (e.g. Chile and Korea), the freight rate from Korea to Chile may still be far higher than the rate from Chile to Korea, because the overall trade balance on the route is determined by the Chinese surplus with the United States.

(4) **Type and value of traded goods:** Obviously transport costs vary depending on the type of commodity traded, i.e. dry bulk, oil, containerised cargo, or break bulk. If insurance costs are included in the overall transport costs a higher value per tonne of the commodity will also increase freight charges. Interestingly, it is found that for containerised trade, even if insurance costs are excluded, freight charges per TEU are still higher for higher value goods than for less costly commodities. Carriers used to say that the freight rate is “what the market can bear” – and the market for transporting toys can bear a higher freight rate per TEU than the market for waste paper. Put differently: The demand for transporting low-value waste paper has a higher price elasticity and, hence, waste paper will only be put into a container if freight rates are low.

(5) **Competition and transport connectivity:** Competition among carriers and competition between different transport modes reduces transport costs, i.e. the freight rates charged to the shipper. If countries are neighbours and can trade by road, rail or pipeline, freight rates for sea-borne trade are lower. If countries are not connected to each other through direct liner shipping services, but instead containerised trade between them requires as least one transhipment port, freight rates also tend to be higher. Interestingly, it is found that once there are more than four carriers providing direct services, freight rates decrease even further – a possible interpretation is that if there are only up to four providers we are confronted with an oligopoly.

(6) **Port characteristics and trade facilitation:** Better port infrastructure, private sector investment, perceived port efficiency and shorter waiting times at Customs have all been found to lead to lower freight rates. Although better infrastructure may actually lead to higher port costs charged to the carrier, the latter will still reduce his freight rate charged to the importer or exporter, because the gained time and reliability more than offsets the possible payments to the port. As regards trade facilitation as measured for example by shorter Customs clearance times, these tend to be correlated with lower maritime freight rates for imports. The efficiency of a port is closely correlated with a country’s per capita GDP and it is found that richer countries also tend to benefit from lower freight rates for their exports. A country’s “maritime nexus” to globalised trade through its seaports is thus two-fold: better ports help countries to connect and develop – and at the same time more developed countries are better positioned to invest and reform their ports.

### 2.3.3 A note on transport and regional integration

If it is true that international transport (unit-) costs are declining, and distance has a decreasing impact on these transport costs, why then apparently regional trade is growing (even) faster than inter-regional trade? Intra-Asian container traffic is growing
Globalisation – The Maritime Nexus

faster than global container traffic. Intra-European or intra-MERCOSUR trade has been increasing at a higher rate than trade between these two regional blocks.

Some of the intra-regional trade growth certainly has less to do with transport but rather with language barriers, historical trends, trade facilitation at common borders, and lower intra-regional tariffs. But some of the reasons do have a relation with transport costs and options: as shown above, due to larger traded volumes, unit transport costs decline (economies of scale) and frequencies and even possibly speed increases. Also, on a regional level, more options (road, rail) are available. This in turn reduces delivery times, allows for more just-in-time delivery, and thus increases the demand for goods and components. In other words, more trade leads to better and less expensive transport services, which in turn again lead to more intra-regional trade.

The impact of better and less expensive transport on trade is equivalent to the impact of lower tariffs, and the relatively faster growth of intra-regional trade does not contradict the previous statement that goods and components are increasingly purchased globally. A large part of the growth of intra-regional trade replaces previous national “trade”, i.e. between counties or regions of the same country, and is not a diversion of imports or exports that would otherwise be bought from or sold to countries outside the region. Just as “most analyses of Free Trade Agreements, including most importantly by far the European Union, conclude that trade creation has dominated trade diversion” (Bergsten, 1997), improved transport costs and services on a regional level are to be seen as a result and a component of the entire process of globalisation.

Just as in the relation between globalisation and international transport, the relation between regional integration and regional transport is also two-fold: Less expensive and better intra-regional transport services lead to further regional integration, and at the same time regional integration also affects the markets for transport services. Within the European Union, maritime cabotage services are liberalised for European registered vessels, trucks from all Member States are at liberty to move national cargo in all other countries, and common standards help to create not only a common market for goods, but also a common market for transport services.

2.4 Outlook

Trade, and its transport, will continue to shape the world’s economic development. Historically, when transport costs were prohibitive for most products, each country, or even town, would produce its own goods. Most countries made their own toys, furniture, watches and even cars. Then came the international economy; as transport costs went down and delivery times and reliability improved, many national industries died out and production became concentrated in a few, specialised places, from where world markets were being served. Cars and car parts were made in Detroit; watches, and batteries, in Switzerland; furniture, and the required wood, were made in Sweden.

At present, we are observing how the international economy gives rise to globalisation. As transport costs decrease even further, and delivery times and reliability continue to improve, production is again becoming less concentrated, albeit in a different manner: cars may still be designed in Detroit, yet car parts may be made in Mexico and assembly takes place in Malaysia; watches may still be marketed as “Swiss”, yet most components are likely to be imported; and a Swedish producer of furniture will franchise his name and design, to produce local furniture with imported materials and components from wherever these are provided at the best price and quality.
Globalisation and its relevance for maritime business

The same applies to shipping. A ship may be registered in Antigua and Barbuda, but its owner can be German, and the “components” of the shipping service, such as insurance, equipment, the work of seafarers, or certificates of classification societies, are very likely to have been purchased in many different countries. “The claim that ‘trade follows the flag’, often used in the past to justify support for national fleets, has become primarily an argument of special interest groups seeking support for maritime sector enterprises. It is agreed that access to efficient maritime transport is a key variable in economic development. This does not necessarily imply fleet ownership or government control” (Audigé, 1995). The next section will look in more detail at how globalisation affects maritime business.

3. GLOBALISATION AND ITS RELEVANCE FOR MARITIME BUSINESS

3.1 The global supply chain

3.1.1 Global supply chain management

Although globalisation is sometimes referred to as being Janus-faced for its inequitable distribution of benefits among nations of the world, the perceptible impact that it has had on international production and marketing are beyond cynicism. Porter (1985) thinks of the firm as a value chain composed of a series of value creation activities, some of them (such as production and marketing) being primary activities and the others (such as logistics services that include shipping movements) being support activities. As firms tend to focus more on their core competencies and maintain their competitive advantage in the global marketplace, the orientation towards procuring raw materials and sub-assemblies from sources all over the world, based on optimal purchasing arrangements, becomes even more crucial. This, along with the reduction in numerous trade barriers (because of the role of the World Trade Organisation) and the apparent diminution of ideological conflicts between leading nations of the world have led to greater levels of outsourcing and thus, the diffusion of the value chain across the oceans, and hence, the evolution of global supply chains.

Mentzer et al. (2001) argue that firms must have a supply chain orientation to effectively manage the supply chain that could result in lower costs, increased customer value and satisfaction, and competitive advantage. Leading edge logistics firms have recognised that it is the supply chain of a firm that is in competition with that of its competitors rather than the firms themselves (Christopher, 1992). The establishment of such a supply chain requires the formation of strategic alliances with channel members that include transportation service providers, shipping companies being one among those. Integration of transport activities is essential for the success of a supply chain and a well-integrated transportation system’s contributions to the supply chain could include time compression, reliability, standardisation, just-in-time delivery, information systems support, flexibility and customisation (Morash and Clinton, 1997). Although the emphasis on building supply chain partnerships is a relatively new trend in corporate strategy, it is not a novel concept in the maritime business, two early examples being the evolution of the open registry concept and that of the ship management industry.
Globalisation – The Maritime Nexus

The objective of outsourcing non-core activities in search of efficiency and adding value to the end customer is potentially advantageous and adds to societal welfare – as long as the functions are being performed at acceptable levels of quality which in today’s lexicon for product standards is one of “zero defects”. The ship owner’s effort to create a “least cost system” in the maritime business is tantamount to designing a global supply chain based only on least cost channel members.

Whereas this may lead to a loss of market share and corporate profits for the channel members of a supply chain, deficiencies of the least cost maritime system could have more drastic consequences, ranging from loss of life to global climate change and environmental degradation that impacts society at large besides the more traditional commercial losses of the business enterprise. Hence, while the temptations of using the cheapest crew and registering the ship in a lax ship registry might be appealing to the business acumen, the likely catastrophic magnitude of a mishap would make the ship owner think hard before making such choices. Globalisation and its underlying market forces appear to provide some guidance in this regard as there are perceptible specialised markets for virtually any aspect of the maritime business today that parallel the developments in specialisation in a broader context.

3.1.2 Specialisation in maritime business

Readily observable examples of specialisation exist in ship construction, technical management of ships, ship repairs and dry-docking, ship registration, crewing, shipping finance, ship chartering and brokering, and marine insurance. Analogous to the economic philosophy driving the new trade theory in international business, some areas of specialisation in shipping are an outcome of pro-active trade policies in combination with luck, entrepreneurship and innovation that created a new breed of first-movers in areas like open registries and ship construction and repairs. However, the socio-economic conditions of the leading nations (in specific areas of maritime specialisation) have also contributed toward their evolution as global leaders.

Examples of this include small service economies that have specialised in open registries (such as Panama, Cyprus, the Bahamas, or Bermuda), and large populous Asian nations that provide seafarers (such as the Philippines, India, and Indonesia). Norway, combining tradition and financing from its oil exports, is strong in shipping finance. London is a leading supplier of insurance and brokering services in general, including shipping. Korea and Japan are highly industrialised countries that build most of the world’s shipping tonnage. And then there is China, not only the backbone of global commerce today but also the primary stimulus for the unprecedented shipping boom that we witnessed prior to the worldwide economic meltdown in 2008. China’s unique style of unbridled capitalism combined with centralised planning has elevated the nation to a position of extraordinary relevance and abundance in shipping milieu. Overall, there appears to exist a close relation between a country’s endowment of resources and general specialisation in services or industrial production and its specialisation in specific maritime sectors, whereas the relation between the different maritime sectors themselves appears to be increasingly weak.

The other side of that same coin is of course “concentration”; as countries specialise, the market share of the major players is increasing (Hoffmann, 1998). Between January 2001 and 2008, Panama’s share of the world fleet (Gross Tons, GT) has further grown.
Globalisation and its relevance for maritime business  

from 21 to about 23%. Maersk now controls 15% of the world’s container carrying capacity, up from around 6% in 1997. One out of every three seafarer in 2008 was an Asian national and one out of every two, either an Asian or an Eastern European. One out of every two ships is registered in one of the top five registries (UNCTAD, 2009). If the world were still divided into “maritime nations” and others, non-maritime nations that do not participate in the maritime business, then the same countries where carriers are based would also build and register the ships and provide the seafarers. A cross-country comparison based on indicators for these maritime activities would produce very high correlation coefficients. The reality under globalisation, however, is quite different.

3.1.3 Specialisation and clustering: The participation of Asian countries in globalised maritime business

Many Asian countries have become important players in different maritime businesses. Bangladesh and Pakistan have their highest market shares in ship scrapping; Indonesia and the Philippines in the provision of ratings (seafarers other than officers); Republic of Korea in container ship building; and Hong Kong (China) and Singapore in international port operations through Hutchison’s and PSA’s operations domestically and also abroad. Overall, Asian countries have a greater participation in many maritime sectors than Asia’s GDP or international trade would suggest (Figure 5).

Figure 5: Asian maritime profile – Asia’s participation as percentage of world total

Source: Authors, based on data from different sources. Data is estimated for 2004
16 Globalisation – The Maritime Nexus

Different maritime businesses are not necessarily located in the same countries. Table 2 provides the correlation coefficients for different industry sectors. Note that a high and positive correlation should not be confused with a direct causality. The data base includes many small and landlocked countries that have zero participation in most sectors.

As could be expected, port throughput and operation is closely correlated with foreign trade. Ship operation, ownership and registration are also relatively strongly correlated, as are the participation in P&I Clubs and Classification. Seafarers, especially ratings, tend to come from countries with a long coastline, which may be due to a seafaring tradition, which cannot be found in landlocked regions or countries. Ship scrapping takes place in countries that have relatively little participation in other maritime sectors, and thus the correlation coefficients get close to zero or even negative.

What maritime sectors are located in what (type of) countries? As a first preliminary exercise, we have computed the weighted average GDP per capita of the countries that are host to different maritime sectors (Figure 6).

Almost all sectors are more commonly found in countries with a GDP per capita above the Asian average and also above the world average. Only ship scrapping and seafarers (especially ratings) are supplied by countries with a relatively low GDP per capita. Officers are more likely to come from countries with a higher GDP per capita than ratings. The service sectors of classification and insurance are those located in the Asian countries with the highest GDP per capita.

Figure 6: The GDP per capita in relation to different maritime sectors in Asia

Note: The 0% line indicates the average GDP per capita for 51 Asian countries, which is strongly influenced by the GDP per capita of its two most populous countries, China and India. The global average GDP per capita is 131% above the Asian average.
Globalisation and its relevance for maritime business

Table 2: Partial correlation between different maritime sectors, per capita indicators

<table>
<thead>
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<th></th>
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<th>Register</th>
<th>Scrapping</th>
<th>Building</th>
<th>P&amp;I</th>
<th>Class</th>
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<th>Port through</th>
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<th>Owners</th>
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Note: The correlation coefficients are calculated between per capita indicators for 51 Asian economies. To compute the per capita indicators, for each country, its market share in each sector was divided by its share of the world population.
Globalisation – The Maritime Nexus

Most port and ship-related business activities are based in countries whose weighted average GDP per capita is five to nine times above the Asian average. There probably exist mutual causalities. A country needs a certain level of income and development to be able to become a strong player in certain industries. At the same time, being able to maintain a high market share in different shipping sectors also contributes to a higher GDP per capita.

Understandably, most countries’ policy makers would wish their country’s “maritime” market shares to grow. At the same time, the trend of concentration and specialisation in the maritime industry leads to new challenges and opportunities. As the world can no longer be divided into maritime and non-maritime nations, policy makers (and interested researchers and international organisations) should attempt to find out which countries are more likely to specialise in which maritime sectors, and why.

As globalisation in maritime business has led to increasing levels of specialisation in the industry, this has had varying impacts on nations. Along with the traditional maritime nations, a number of new maritime players have evolved, some of which have very little maritime history or even a coastline. A good example is Switzerland, a land-locked nation, which is home to the world’s largest freight forwarder and to Mediterranean Shipping Company, one of the top five liner shipping companies in the world. According to UNCTAD (2008), there are 258 Swiss ships – 29 flying the national flag and the rest open-registry – that constitute 1.3% of the world fleet. The meteoric growth of the Chinese maritime enterprise in the new millennium was discussed earlier. The following sub-section discusses salient policy developments in traditional maritime nations as well as newcomers that have shaped the course of maritime business.

3.2 Policy issues

3.2.1 The decline of traditional maritime nations

The globalised economy and the relatively invisible role played by the maritime sector in facilitating it have led to predictable outcomes for the sector in general. No one attaches the same prominence to shipping today as Sir Walter Raleigh did in the early 1600s when he linked the command of the sea to the possession of the riches of the new world. The irony is that the relative decline of the maritime political power is partly because of the sophistication of contemporary shipping operations wherein a cargo movement from Argentina to Zimbabwe or Mumbai to Marseilles is as predictable as a commute to the suburbs. Thus, shipping operations have become literally invisible in the global chain of commerce, albeit still important and unavoidable. Accordingly, the declining importance given to maritime issues is understandable.

Lovett (1996) provides an excellent discussion of the rise and fall of various maritime empires, from the Greeks and Phoenicians (480 BC) to the British, West European and the US merchant fleet as of the early 1990s, and makes a strong argument for a resurgence of maritime policy-making in the United States. Maritime economists have offered remedial measures to stem the flow of maritime business interests of developed nations like the US (e.g. Kumar, 1994). However, two powerful forces, in combination, have solidified the ongoing decline of traditional maritime nations. One is the power of the market forces driving the global economy and specialisation in general, discussed earlier, and the other, the political reality at the bargaining table.
The political reality in the developed economies today is such that shipping-related issues are subservient to the trade needs of those nations. The balance of power has swung visibly in favour of the cargo owners from that of the transportation service providers (Kumar, 1987) as illustrated by the declining relevance of revered shipping practices like the liner conference system. This has impacted current transport policymaking, in the maritime sector as well as in other modes. Sletmo (2001) captures the contemporary maritime policy-making trend by emphatically placing the supremacy of global trade perspectives over maritime issues. Accordingly, mode-specific transportation policy has become a doctrine of the past in developed market economies, most of who were the major maritime nations of the past. Although one could argue that air movements are still an exception because of the extensive use of bilateral negotiations involved in air transportation, major developed nations today advocate an integrated transport policy that favours seamless multimodal freight movements in general.

These nations have thus assumed a more holistic approach in national transportation policy-making that is conducive to the facilitation of a seamless movement of its commerce. Accordingly, the emphasis today in many developed nations is not in the size of their fleet or their tonnage, but on eradicating barriers to the through movement of cargoes. An excellent example of this is the United States, the world’s largest trading nation and the home of many former prestigious shipping companies. Today, it is left with relatively very little presence in the deep-sea fleet, in spite of the Jones Act and other measures that oblige carriers to use US flagged, built and manned vessels for cabotage services.

Figure 7 shows the maritime engagement of traditional maritime nations as of end 2008. It is to be noted that all the traditional maritime nations with the exception of Germany and Japan have a greater share of world trade in value than their percentage share of world fleet in deadweight. Figure 8 (maritime engagement of newly emerging maritime nations) however shows quite the contrary for the newly emerging maritime nations most of who possess higher percentage of owned fleet than their value share in international commerce. For Hong Kong and Singapore, the percentage flag-share exceeds both the value share.
Globalisation – The Maritime Nexus

Figure 8: Maritime engagement of emerging new maritime nations, 2008

Source: UNCTAD, Review of Maritime Transport, 2009

and world fleet share in dwt. Figure 9 shows a precipitous decline in the shipping fleet registered in developed market economy nations, most of who also fall under the traditional maritime countries category. The decline in the fleet of these nations during the past 30 years is in direct contrast to the gains made by fleets registered in open registry nations and developing countries. Presently, four out of every five merchant ships are registered either under an open registry flag or in a developing country, and owners from developed countries are more likely to choose a foreign flag than those from countries with a lower GDP per capita (Hoffmann et al., 2005).

Many countries’ trade profiles in some way match their fleet profiles. Among the countries with the largest shares of oil exports are Kuwait (93% of its exports are fuels and mining products), Saudi Arabia (90%) Islamic Republic of Iran (88%), Russia (68%), United Arab Emirates (53%) and Indonesia (38%), and all of them also have the highest share of their nationally controlled fleets in oil tankers. Among the countries with the highest shares of agricultural exports are Brazil (29% of its exports are agricultural products), Vietnam (21%), Indonesia (18%), Thailand (16%), India (12%) and Turkey (10%). Among those countries, Thailand, Turkey and Vietnam also have

Figure 9: Ship registration trends

Source: UNCTAD, Review of Maritime Transport, 2009
the highest shares of dry bulk carriers, and the other three countries also have important dry bulk fleets. In China, Hong Kong (China), Republic of Korea and Taiwan (Province of China) the dry bulk fleet has the highest share, reflecting the large import demand of iron ore, grains and other dry bulk products (UNCTAD 2008b, pp. 41ff).

A different picture emerges if we look at manufactured goods, which are mostly traded in containerised liner shipping services. These services call in numerous countries' ports, unlike oil tankers and bulk carriers, which are usually employed on direct port-to-port voyages. Many container ships are operated by companies different from the vessel owner (the latter charters the ship to the company that provides the actual liner shipping service). All these aspects may explain why there does not appear to exist a correlation between a country’s trade in manufactured goods and its nationally controlled container ship fleet. Even China, which accounts for about 25% of world containerised exports, has only a very small share of containerships among its nationally controlled fleet.

The largest nationally controlled fleets that also fly the national flag include oil tankers from Brazil, India, Kuwait and Thailand; dry bulk carriers from Hong Kong, India, Republic of Korea and Thailand as well as general cargo ships from Indonesia, Russia, Thailand and Vietnam. In several cases, these nationally flagged and nationally controlled ships are employed in cabotage trades that often mandate the use of the national flag, or they are nationally flagged as a consequence of some public involvement in the vessel owning companies.

3.2.2 The rise of a new order in maritime business

While the traditional maritime nations in general are losing their supremacy in the business, a new group of nations have proactively enacted maritime policies that favour their shipping base. A 1996 attempt to classify nations based on their attitude towards shipping in general listed these new centres of maritime business as shipping-friendly whereas the policies of many of the traditional maritime nations were listed under the shipping-hostile category (Lovett, 1996). Examples of the shipping-friendly category include nations such as South Korea, Taiwan and Singapore, all of which appear prominently in Figure 8. The ascendancy of these nations is usually focused on specific aspects of the shipping business, such as ship operation and construction in South Korea, or ship registration in smaller service economies. Some, such as Singapore, Brazil and China, do apparently pursue all-out efforts to build the entire shipping milieu. It is entirely conceivable in the near future that China will not only have the world’s largest shipping companies but also the largest shipyards, busiest ports, biggest maritime universities and the most envied maritime infrastructure.

It is noteworthy that despite the efforts by shipping and seafarer organisations from some traditional maritime nations, the open registry fleet has continued its spectacular growth during the last two decades (Figure 9). Furthermore, the open registry nations have also encountered increasing competition from some traditional maritime nations like Norway and Denmark that have established international ship registers to stem the outflow of their domestic tonnage to foreign registries if not attract some of the previously lost tonnage back to the national fleet.

Governmental interference in shipping has a long history (Farthing, 1993). Ever since the British enacted their restrictive Navigation Acts in the mid-1600s the global maritime business has never operated in so liberal a commercial environment
Globalisation – The Maritime Nexus

as it exists today. A rational justification for this new wave of liberalism is the impact of globalisation. As maritime policies have become subservient to the overall trade policies of major trading nations, the crux of the issue is not the flag of registration but the overall fit of shipping services in the global supply chain. Under such circumstances, the specialisation referred to earlier has led to a new breed of maritime players where nationality is once again irrelevant. As an example, the concept of giving away one’s flag to a ship owned by a foreign entity (although not pro bono) and staffed by foreign crew is an illustration of high shipping liberalism.

A cursory examination of the current breed of ship owners will show relatively few of the historic shipping families but more so of investment firms, pension funds and business conglomerates, none of which have any significant shipping heritage. Thus, it is ironical that globalisation has led to a certain loss of identity and respectability for the industry. A perfect example of this irony is the high public attention that the industry receives when there is a shipping accident, but the total lack of coverage that it receives from the media when it performs normally. The average citizen today is more aware of the mistakes made by the maritime industry rather than its contribution to the global commerce and our standard of living. The following subsection examines issues related to safety at sea and employment conditions. It suggests that the neo-liberalism in shipping policies has not meant a decline in operating standards but on the contrary, a general improvement in the safety of ships and the environment.

3.3 Safety and employment: the victims of globalisation?

3.3.1 Safety at sea

The increasing environmental awareness of the global community is vividly marked in all aspects of life today including maritime business. Given the inherent operating environment of merchant ships and their propensity to be a major environmental polluter, the increasing safety and environmental regulations imposed on the industry are only to be expected. Major shipping accidents in sensitive locations and the subsequent investigations, such as the ones that followed the Erica and Prestige incidents have also tightened the maritime operational environment.

The International Maritime Organization (IMO), established under the auspices of the United Nations to promote safety standards in shipping and cleaner seas, has a number of provisions aimed toward these objectives. Although some of these conventions date back to the 1960s and 1970s, they have been amended extensively to enhance the overall safety standards in a globalised operating environment. Two recent developments are particularly noteworthy, those being the ISM (International Safety Management) Code Amendment to the Safety of Life at Sea Convention and the Amendments to the STCW (Standardization of Training, Certification and Watchkeeping) Convention. The ISM Code for the Safe Operation of Ships and Pollution Prevention extends the scrutiny of shipping operations and management to the shore office and the decision makers therein. This is a drastic change from prior efforts and aims to establish an all-encompassing safety management system in compliance with legislative and company requirements. The amended STCW Convention introduced globally accepted minimum standards for maritime training, evaluation criteria and assessment mechanisms. Given the diversity in national origin
of seafarers today and their varying levels of skill and proficiency, the amendments have been propitious and timely.

There is a concerted multilateral effort now for ongoing scrutiny of the hardware and software of the maritime business. Some multilateral efforts originated as a unilateral initiative to enhance safety and prevent pollution (such as the US Oil Pollution Act of 1990 that made double-hulls mandatory for oil tankers and certain other ships calling at US ports and was subsequently matched by the IMO through amendments to the multilateral MARPOL Convention). The Prestige incident off the Spanish coast and the pressure from the EU led to rapid amendments to the MARPOL Convention in 2003. Accordingly, single hull tankers that were to be phased out gradually by 2015 would face an accelerated phase-out scheme by 2010. This does not preclude a flag-state from extending the deadline up to 2015 for tankers 25 years and younger on a case-by-case basis. However, other nations will have the right to ban such ships from entering their ports. The amendments also include new double hull requirement for the transportation of heavy grade oil such as heavy crude oil, fuel oil, bitumen, tar, and their emulsions that came into effect from 5 April 2005. Furthermore, the Condition Assessment Scheme—enacted subsequent to the Erika disaster off the Brittany coast of France in 1999 whereby flag-state administration would review and confirm the results of a survey on a single hull tanker conducted by a classification society to assess the condition of the ship concerned—has been expanded. The new CAS requirement would apply to single hull tankers (5,000 dwt and above) when they are 15 years old, in contrast to the previously established 25-year age threshold.

Aside from these, individual nations have signed agreements to enforce safety standards by inspecting the ships that call their ports. Such Port State Control agreements cover all major ship operating areas today and the respective national enforcement authorities arrest ships that do not meet the accepted minimum safety standards. As a further embarrassment (and incentive to scrap unsafe ships), some national authorities (e.g. the UK) publish a list of “rogue” ships in the trade media. Equasis (www.equasis.org) publishes inspection results from many P&I Clubs, classification societies, and port state control organisations on a global level.

Along with the governmental agencies, a number of non-governmental agencies such as labour organisations (e.g. the International Transport Workers’ Federation), ship owners’ association, ship charterers, classification societies, marine insurance firms and others have also raised the barriers and discourage the operation of substandard ships. The overall effect of these multi-pronged initiatives is visible in the following charts that show the trend in maritime casualties, both ships lost as well as oil spilled by ships (see Figures 10 and 11). Despite the increase in global shipping tonnage and maritime activities in general, and despite the diffusion of ship registration (in the neo-liberal maritime environment) to open registry and developing nations, the safety record of the industry is laudable. Even one life lost at sea is one too many, and the authors are not arguing that the current level of safety at sea is beyond improvement, but quite the contrary. However, all numbers strongly suggest that maritime safety is optimistic especially in light of the growing volumes of trade. Another important point to note is that the time lag between the incidence of a shipping catastrophe in a sensitive region with political clout (such as the EU) and the enactment of a new legislation aimed at preventing such a catastrophe is becoming increasingly short. If such regulatory steps are adopted as expeditiously (as in the
regardless of where the next shipping disaster occurs, it would be truly spectacular progress toward safer sailing and cleaner oceans.

3.3.2 The seafarer dilemma

Any discussion of the impact of globalisation on maritime business will be incomplete if the human element is not included. Various technological advances have helped reduce the number of crew required on board a ship compared to the period before the 1980s. This has by no means diminished the role of seafarers in the maritime business; on the contrary, crewing costs still constitute a major component of the operating cost of a ship (Moore Stephens, 2008), and crew-related issues remain relatively complex (IMO – Globalisation and the Role of the Seafarer 2001). The impacts of globalisation on seafaring serve as excellent illustrations of the pros and cons of globalisation in general.
Seafaring is a glorious profession and has no room for error or negligence. Indeed the education of a young sailor is incomplete if it does not include indoctrination for facing calamities at sea or in port. Successful seafarers are unique individuals. The uniqueness comes not from the possession of any extraordinary intellectual capacity but from the possession of simple commonsense (euphemistically referred at sea as behaving in a “seaman-like manner”) and from the willingness to subject oneself to the rigors of self-discipline of the highest order and separation from near and dear ones for prolonged periods of sailing. It also comes from the individual’s mental and physical aptitude to face the unknown, be that hurricane force winds, pirates, or militant stevedores pilfering cargo in port. The sea is certainly no place for incompetence, negligence or complacency for it can be tranquil one day, and ruthless another. The only way a seafarer can gain respect from fellow shipmates is by knowing his/her job and carrying it out in the most professional manner. These skills are by no means restricted to any particular nationality, race, religion or creed. On the contrary, well-trained seafarers from a poor country can do the same job as effectively as their well trained, colleagues from a developed nation at drastically reduced cost to the ship owner. Herein lies the dilemma – globalisation has opened up avenues of opportunity for seafarers from developing countries at the expense of those from traditional maritime countries such as the North European nations, the United States and Japan. An example of this is the recent Maersk decision to replace 170 Danish deck officers with “foreign competent officers at a much lower price” (Journal of Commerce, 1 October 2009).

Today’s labour market for seafarers is perhaps the most globalised; standards and minimum wages are agreed globally. These trends have created a schism and ruptured the historic common bondage among seafarers of the world, built over the years based on their professional pride and their wider view of the world that their land-based colleagues often did not fathom. We live in an era today where seafarer organisations in developed nations look upon those from poorer nations as a potential threat to their livelihood, and as a result, lobby for protectionist policies that restrict the mobility of foreign crew members within their national borders.

During the last few decades, we have witnessed a tarnishing of the image of some seafarers, in particular those from less developed countries who crew a majority of the open registry and international registry vessels (Ships of Shame 1992). However, it is important to differentiate between the cause and the symptom. How many seafarers truly want to go to sea and work on board an unsafe ship without the expectation of coming back to their near and dear ones? So, the fault does not lie with the seafarers who crew substandard vessels, but with those responsible for putting them on such ships without adequate training and proper quality control in the first place. Furthermore, the argument that seafarers from developing countries are responsible for all maritime disasters does not appear to be true as a number of maritime casualties in the recent past involved ships that were crewed by seafarers from developed nations (an example being the grounding of the Exxon Valdez off Alaska in the US).

Another dilemma facing the global seafarer, especially those working on board open registry vessels, can be attributed to the declining number of traditional ship owners discussed earlier. As ship ownership and operation shift from traditional ship owners to pension funds and conglomerates that seek instant gain from the sale and purchase market (for ships) or from certain tax exemption loopholes, the seafarers’ roles and functions have been marginalised and their loyalty made meaningless. With the increasing number of open registry vessels and the outsourcing of ship and crew management
Globalisation – The Maritime Nexus

(discussed earlier), the relationship between the management entity and the ships’ crew may sometimes not exceed the length of a contract today unlike the life-long relationship of the bygone pre-globalisation era. Furthermore, ship managers providing the crew for open registry vessels as well as other fleets often find themselves in a highly competitive market where there is little room for the ongoing training of seafarers, especially given the tendency of some of their principals to switch their management companies frequently. This is truly ironic as the challenges of seafaring have never been more than what they are now, despite all the technological advances made by humankind.

Currently there are close to 1.5 million seafarers worldwide of which 44% come from Asian countries. It is estimated that there is a worldwide shortage of 33,000 officers presently and that it will worsen in future years. Recruiting seafarers has become a huge challenge even in traditional seafarer export nations like India where changing macroeconomic conditions have taken away the charm of a career at sea. Adding fuel to the fire is the tendency to criminalise mariners irrationally. The collision involving *Hebei Spirit*, a VLCC off the coast of South Korea that was hit by an errant heavy-lift crane barge in 2007, is a good illustration of the seemingly reverse burden of proof standard imposed on innocent seafarers. Although the actions of the ship’s Captain and Chief Officer were endorsed as extraordinarily prudent and seamanlike by virtually every professional association of seafarers, they were given tough jail sentences and released only after prolonged worldwide protest. The Captain of the *Erika*, the infamous 1999 tanker casualty off the Brittany coast, was incarcerated immediately without trial. Nine years later in 2008, he was found innocent and released. Such callous treatment of seafarers does not support initiatives to recruit the younger generation such as through IMO’s Go to Sea campaign that began in late 2008 or its observing 2010 as the year of the seafarer.

3.4 Outlook

The conflicting nature of public arguments regarding the impact of globalisation in general was mentioned earlier. There is a strong sentiment in the media that multinationals and their home nations (typically, developed countries) would benefit more than the developing countries who are likely to suffer from the abuses of globalisation ranging from exploitation to cultural degradation. It is remarkable that the arguments are quite the contrary when one looks at the impact of globalisation on maritime business. The traditional maritime nations appear to be on the losing end in terms of national tonnage and loss of shipping-related jobs, and perceive the new centres of shipping business (and specialisation) as potential threats to their maritime interests. Developing and newly industrialised nations, on the contrary, appear to be the winners with increasing number of ships under their control and better career opportunities for their seafarers. This trend will continue in the neo-liberal era of maritime policies and business environment.

The most encouraging outlook from our perspective is the increasing level of safety at sea which we hope will continue to improve. This means that, so far, the improvements in the quality, frequencies, reliability and costs of maritime transport have not implied an increase in negative externalities. The challenge for policy makers will be to observe and monitor potential future monopolistic abuses in a concentrating industry, and to
assure adequate standards of training, working conditions and pay levels for seafarers, the pioneers on the world’s most globalised labour market.

4. SUMMARY AND CONCLUSIONS

As trade in merchandise and unfinished goods increases, so does the demand for maritime transport services. These services form part of the global logistics chain that determines a good’s competitiveness.

At the same time, the maritime business is itself strongly affected by globalisation. Trade in maritime services is one of the most liberalised industries, and its “components” such as vessels, flag registration, class inspections, insurance and the work of seafarers are purchased globally.

The results of these two trends are manifold, and some may even appear to be contradictory:

- The market for maritime transport services is growing. Nevertheless the specialisation of countries in certain maritime areas has implied that today there are fewer remaining players in individual maritime sectors.
- A country’s national shipping business has ever less to do with its national external trade. Whereas in the past, for historic reasons and due to protectionist cargo reservation regimes, foreign trade was mainly moved by vessels registered and owned by companies of the trading partners themselves, who employed national seafarers and nationally constructed vessels, today most carriers earn their income transporting other countries’ trade, and the trade of most countries is largely moved by foreign shipping companies.
- We observe increased concentration in the maritime industry, yet at the same time the intensity of competition has not declined. This does not mean that fewer suppliers are per se good for competition, but the impact of globalisation leads to both – fewer suppliers and more competition.
- Transport unit costs decline, and yet the incidence of maritime transport costs in the final value of a good increases. The value of the final good not only includes its transport costs from origin to destination, but also the transport costs of all the components that have been purchased internationally.
- Lower transport costs are closely related to more trade. This is partly because lower prices (freight rates) obviously encourage demand, and also because economies of scale lead to lower unit transport costs.
- Ever more cargo is being moved across the oceans, benefiting from better maritime transport services and lower costs. This has generally not been at the cost of safety at sea, but, on the contrary, the globalisation of standards by the IMO and ILO help to reduce the negative externalities of shipping.

“Transport undoubtedly belongs to the most complicated, and therewith fascinating economic sectors” (Verhoef et al., 1997). As mainstream economists attempt to tackle the causes and impacts of globalisation, international transport is re-entering the debate on trade models and development theories. As maritime transport is the true
Globalisation – The Maritime Nexus

nexus between all trading nations, the role for maritime economists (and IAME) in this ongoing debate is clear and beyond doubt.

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30 Globalisation – The Maritime Nexus