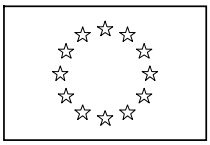

COMMISSION OF THE EUROPEAN COMMUNITIES

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SECOND REPORT FROM THE COMMISSION TO THE COUNCIL

ON THE SITUATION IN WORLD SHIPBUILDING

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SECOND REPORT FROM THE COMMISSION TO THE COUNCIL

ON THE SITUATION IN WORLD SHIPBUILDING

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Executive summary

Under Council Regulation 1540/98 establishing new rules on aid to shipbuilding the Commission is required to report on the situation of the world shipbuilding market. The first report (COM(1999) 474 final) was presented to the Council in October 1999 and was the subject of Conclusions by the Council in November, which invited the Commission to continue its examination of the situation. This is the second such report.

The world market for merchant ships continues to be in crisis. Supply clearly outstrips demand and there are only few indications that this situation may improve.

Consequently the comparatively stronger demand for ships in the period 1998 to 1999 has had no positive impact on prices. Rather prices for nearly all shiptypes have continued to decline. The on-going depression in prices is caused by extremely low offer prices from Korean yards and at current price levels EU and Japanese market shares continue to shrink, although this effect is less pronounced for the EU.

The new detailed cost investigations for shipbuilding orders reported in this document have once more revealed the extent of the losses which Korean yards are willing to take in order to assure market share and cash flow. The calculated losses are between 11% and 32% of the actual building costs. This is slightly less than for the cost investigations contained in the Commission's first report on the situation in the shipbuilding market (COM (1999) 474 final) where losses were calculated to be between 13% and 40%, although this slight decrease is likely to be a result of a different selection of investigated orders. Moreover, with the exception of cruise vessels, all market segments are targeted by Korean yards, leaving only small domestic orders and highly specialised tonnage to EU yards. Therefore, this second report by the European Commission on the situation in the world shipbuilding market confirms the findings from the Commission's first report.

All lines of action to address the problem (as requested by the European Council of Ministers in its meeting of 9 November 1999) are currently being pursued (see chapter 1). In particular, strenuous efforts have been made by the Commission to secure binding commitments from the Korean Government in relation to its non-intervention in the financing of shipbuilding activities. After several rounds of consultations, the European Commission and the Korean Government finalised their talks and initialled on 10 April 2000 "Agreed Minutes relating to the World Shipbuilding Market". These Agreed Minutes are focusing on non-subsidisation, banking, financial transparency (with regard to international accounting standards), commercial pricing practices and an effective consultative mechanism. The overall aim is to promote fair and competitive market conditions in the world market and to work together to stabilise the market and thereby help raise the level of ship prices to ones that are commercially sustainable.

The evidence gathered within the framework of the market monitoring undertaken by the European Commission has helped the EU industry to compile sufficient elements which could lead to a complaint under the Trade Barriers Regulation and industry has recently announced its readiness to file such a complaint. The European Commission will continue with its market monitoring exercise.

It is recommended to

- continue to exercise pressure on Korea to fully implement the "Agreed Minutes" and assume responsibility to work towards an improvement of the market situation, in particular concerning price levels and newbuilding capacities;

- full apply the provisions of the "Agreed Minutes" once they have entered into force, invoking the consultation mechanism whenever necessary;

- collect further and more detailed evidence on possible injurious pricing and other non-market oriented behaviour in order to launch and support a complaint under the Trade Barrier Regulation if required;

- keep the IMF informed about the findings and request that the promised industrial restructuring in Korea is closely monitored and assessed;

- encourage the EU shipbuilding industry to further improve its competitiveness.

1. INTRODUCTION

This report by the European Commission on the situation in the world shipbuilding market is the second of a series and it presents a follow-up and extension of the first report which was submitted to the European Council of Ministers on 9 November 1999 as COM (1999) 474 final. This initial report responded to Council Regulation (EC) No. 1540/98 establishing new rules on aid to shipbuilding which requires the European Commission to present to the Council a report on the market situation and appraise whether European yards are affected by anti-competitive practices. If it is established that anti-competitive practices of any kind are causing injury to industry, the European Commission is, where appropriate, to propose to the Council of Ministers measures to address the problem.

The second report is based on the approach and the findings of the first report. Therefore certain elements of the first report are not repeated. These references cover the longer term supply and demand analysis, general remarks on the nature of shipbuilding contracts and on the underlying study works, the analysis of the financial sector in South Korea, details of certain investigated shipyards and the description of the applied methodology. However, the information contained in the first report is updated where appropriate. This concerns in particular the detailed cost investigations for shipbuilding orders awarded to Asian yards as the underlying cost model is re-run each time new or better information is obtained.

The key findings of the first report were the following:

– Significant over-capacities in the shipbuilding market exist and are very likely to grow due to both decreasing demand and increasing supply.

– South Korean capacity expansion, especially in the period 1994 to 1996, has been the main reason for the continuing and growing imbalance between supply and demand, and Korean yards have great difficulties in attracting a sufficient number of orders to secure cash flow. Nevertheless further capacity expansion is undertaken in Korea.

– Ship prices have plummeted by 15% to 30% since 1998, in particular for ship types for which Korea competes, bringing forward demand and shifting market shares to Korean yards.

– The shipbuilding market monitoring study has provided a stable cost model which is suited to analyse the true costs of shipbuilding in Korean yards (the only ones investigated in the first report).

– None of the 9 investigated orders for new vessels was clearly profit making and there are convincing indications that Korean yards offer ships at below cost price.

– Two Korean yards, both under bankruptcy proceedings since 1997, exhibit business behaviour which would be considered as unacceptable in the EU. Of particular concern are past and current debt forgiveness and debt moratoria, as well as advantageous interest rates, fresh credits and guarantees for new ship construction projects.

– The financial system in South Korea, as far as it is used for the financing of shipyards and shipbuilding projects, remains opaque and, as there is substantial scope for government intervention with large parts of the banking sector being owned by the state, interference in financial and organisational matters could have occurred.

This second report from the European Commission extends the price investigations to shipyards in the People's Republic of China which have achieved a significant increase in market shares in 1999. Four particular orders are analysed and the findings are presented in chapter 3. Although China is widely considered as an important shipbuilding country in the future, the economic structures in China in general and in the shipyards in particular seriously constrain industrial competitiveness. Therefore, Chinese yard activities are still limited to shiptypes where labour costs are a dominating factor and currently Chinese yards do not appear to pose a general threat to EU yards, similar to that from Korean yards. More detailed information on the structure of the Chinese shipbuilding industry is provided in the annex.

1.1. Follow-up to the First Report from the European Commission on the Situation in World Shipbuilding

The Industry Council took note of the Commission's first report during its meeting on 9 November 1999 and called on the Commission, Member States and industry to pursue four lines of action, namely:

– To engage representatives from the Republic of Korea in bilateral talks with a view to halt the unfair competition.

– To collect as much detailed evidence as possible of the alleged anti-competitive behaviour, in order to take appropriate action under the WTO.

– To urge the IMF to continue to investigate whether the conditions and assumptions under which the IMF-led rescue packages are given, are fully respected.

– To pursue the efforts to establish a level playing field for the sector in the appropriate international fora, including the OECD, in order to enforce without any delay fair competition rules.

The European Commission, Member States and the shipbuilding industry have responded to these requests and related activities are currently pursued. Interim results can be summarised as follows:

– Three rounds of bilateral talks with the Korean Government and industry were held in December 1999, February and March 2000. The European Commission and the Korean Government finalised their talks and initialled on 10 April 2000 "Agreed Minutes relating to the World Shipbuilding Market". These Agreed Minutes are focusing on non-subsidisation, banking, financial transparency (with regard to international accounting standards), commercial pricing practices and an effective consultative mechanism. The overall aim is to promote fair and competitive market conditions in the world market and to work together to stabilise the market and thereby help raise the level of ship prices to ones that are commercially sustainable.

– Evidence to support a possible complaint under the Trade Barrier Regulation (EC) No 3286/94 is being actively collected and industry has announced its readiness to file a complaint in the absence of a recognisable improvement in Korean business practices. This could lead to a complaint under WTO later. The Japanese shipbuilding industry has announced that it considers to file a complaint of its own against Korean competition practices to the WTO. The Shipbuilders Council of America (SCA) representing ca. 50 smaller US shipyards has requested the US Trade Representative to support the EU efforts, because US yards are increasingly losing export contracts for small navy vessels and offshore constructions to Korean yards. Although no detailed investigations have been made in these market segments Korean offer prices are considered unrealistically low.

– Two meetings were held with IMF representatives, one on the request of the German Government with the Director of the IMF Asia and Pacific Department, and one in Korea between the Commission and the local IMF representative. In both meetings the IMF representatives repeated the IMF's official position, namely that the IMF does not monitor sectoral activities and therefore had no evidence of unfair competition practices, directed lending or hidden subsidies to shipyards in Korea. On the contrary, the IMF is convinced that Korea has shown a remarkable recovery from the crisis in 1997 and that market-oriented economic restructuring is basically on track. As agreed the European Commission provided additional information to the IMF together with more specific questions which could help the IMF to investigate the soundness of financial arrangements between Korean yards and crediting banks. A reply from the IMF is awaited.

– The current situation in world shipbuilding was also subject of the OECD Working Party 6 meeting in December 1999 in Paris. Despite the efforts by the delegation of the European Commission to come to a common understanding of the problems with Korea no discernible progress was made. Discussions will be taken up again in a further session in spring 2000, based on a proposal by Japan to explore ways and means to stabilise the world shipbuilding market. The European Commission supports this initiative by Japan.

2. GENERAL MARKET ANALYSIS

As regards the analysis of the existing gap between supply and demand in shipbuilding capacities little progress has been made since the first report. The three major shipbuilders' associations AWES (Association of European Shipbuilders and Shiprepairers) and SAJ (Shipbuilders' Association of Japan) on the one hand, and KSA (Korean Shipbuilders' Association) on the other, do not agree on the extent of this gap, and predict future demand and supply at different levels. However, both sides agree that the gap between supply and demand will widen in the coming years due to increased yard productivity, the conversion of some repair yards to newbuilding and the entrance into the market by new competitors such as the People's Republic of China.

Whether this additional capacity can be partly compensated by increased demand is extremely difficult to forecast. While the age structure of the existing fleet or the up-coming European legislation on the earlier phasing out of tanker tonnage that is considered technically unsafe seem to indicate rising future demand, this could be offset by slow growth of the world economy or the US economy losing momentum. Moreover, it cannot be assumed that all tonnage of a certain age will be replaced as the construction of some of these ships was based on speculation and these ships should never have come into operation. As mentioned in the first report the huge decline in ship prices since 1997 has again led to speculative orders and it is obvious that this additional tonnage will reduce future demand. Another important factor would be the oil price which at a certain level may trigger energy saving measures and thus reduce the need for sea transport.

The total new building capacity worldwide currently amounts to ca. 21 Mio. cgt (compensated gross tonnes, a measurement combining ship size and shiptype-specific building effort; source: OECD and AWES). Total new shipbuilding production was 16.4 Mio. cgt in 1999 after 17.2 Mio. cgt in 1998 and 16.4 Mio. cgt in 1997 (source: Lloyd's Register of Shipping) which indicates that demand is indeed considerably lower than supply and a significant increase in newbuilding prices due to higher demand cannot be expected, at least in the short term.

2.1. Market shares

A complete analysis of the market situation in shipbuilding requires to look a three sets of data:

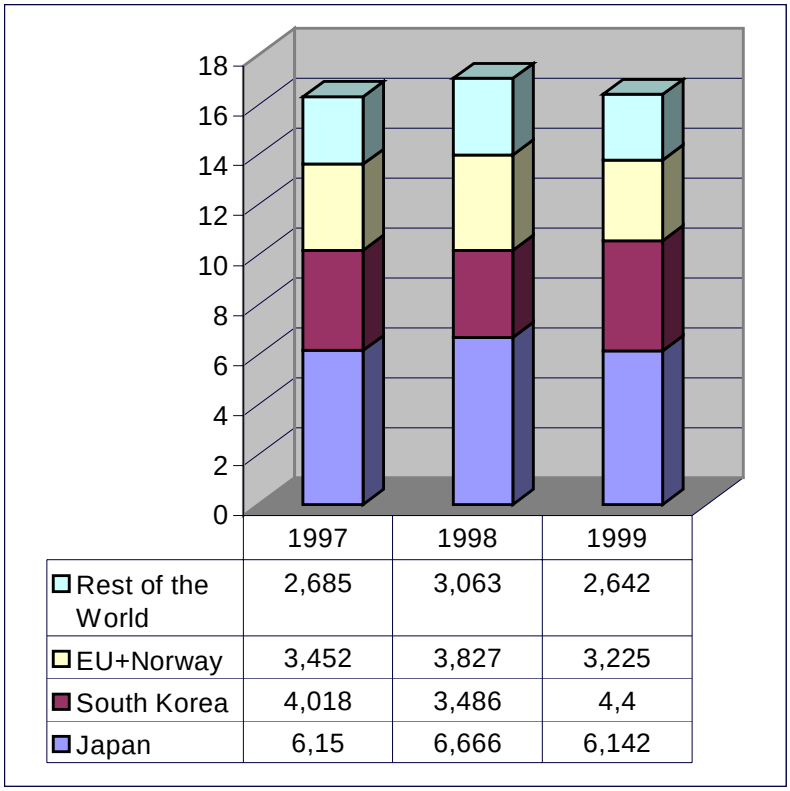
- Completed and delivered ships, as the indicator for the actual shipbuilding output. These production related figures represent the execution of past orders;
- Orderbooks, as the indicator for the expected mid-term output. These figures show the yards' confirmed workload in the next 1 to 2 years; and
- New orders, as the indicator for the expected long-term output. These figures reflect the actual situation in the market, including for example speculative movements, and can be used to analyse shifts in market shares.

As this report cannot cover the full history of the shipbuilding market, this specific analysis is limited to the period 1997 to 1999 when the impact of the massive

expansion of Korean shipyards and the ensuing economic crisis began to be felt in the world market.

The following graphs provide information on the development of deliveries, orderbooks and new orders, based on cgt and per major shipbuilding region. Each graph is followed by a short analysis.

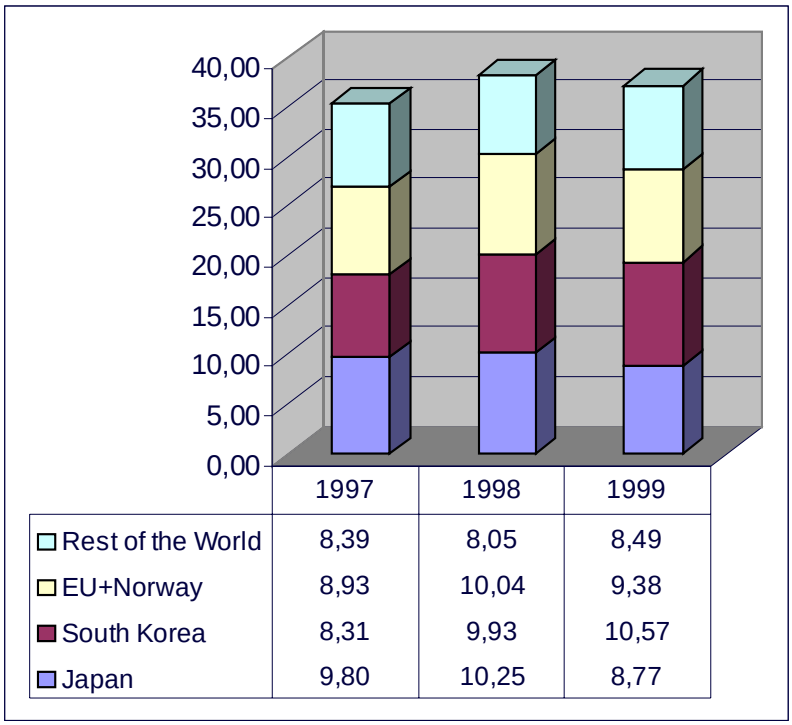
Fig. 1 - Completions 1997-1999 in Mio. cgt and per region (Source: Lloyd's Register of Shipping)



	1997	1998	1999
Rest of the World	2,685	3,063	2,642
EU+Norway	3,452	3,827	3,225
South Korea	4,018	3,486	4,4
Japan	6,15	6,666	6,142

As already mentioned in the first report 1998 was an exceptional year for world shipbuilding as the financial crisis in South Korea hampered ship production and order intake in Korea. However, the trend in completions appears to be an increasing share for Korea while overall production output is comparatively stable but nowhere near the estimated shipbuilding capacity of ca. 21 Mio. cgt. The "surplus capacity" has to be seen at about 20 - 25% of the actual production.

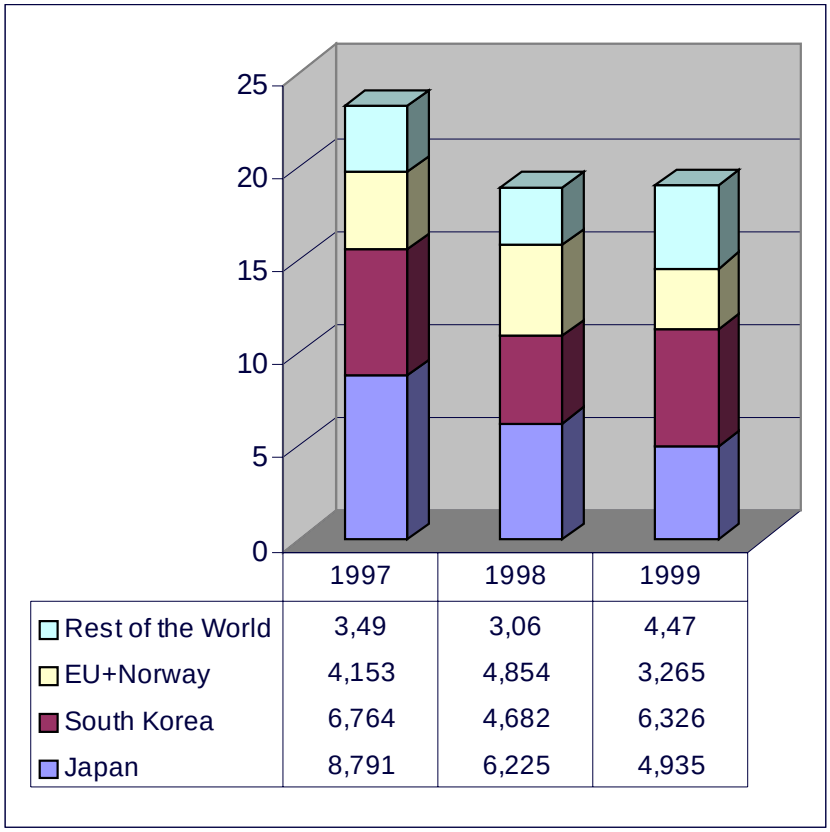
Fig. 2 - Orderbooks 1997-1999 in Mio. cgt and per region (Source: Lloyd's Register of Shipping)



	1997	1998	1999
Rest of the World	8,39	8,05	8,49
EU+Norway	8,93	10,04	9,38
South Korea	8,31	9,93	10,57
Japan	9,80	10,25	8,77

Between 1997 and 1999 the overall volume of orderbooks has increased by ca. 5% and it can be said that this increase has basically only benefited Korean competitors. Japan is confronted with shrinking orderbook volumes while the EU has been able to keep its share at a comparatively high level. Korea, however, has seen an increase in the volume of orderbooks by some 27% while EU yards saw an increase in their orderbooks along the general trend only in the period in question. A shrinking in the volume of orderbooks is an indicator for a worsening business situation in the mid-term future and if the additional information on new ordering is included, conclusions on the prospective commercial situation can be drawn.

Fig. 3 - New orders 1997-1999 in Mio. cgt and per region (Source: Lloyd's Register of Shipping)



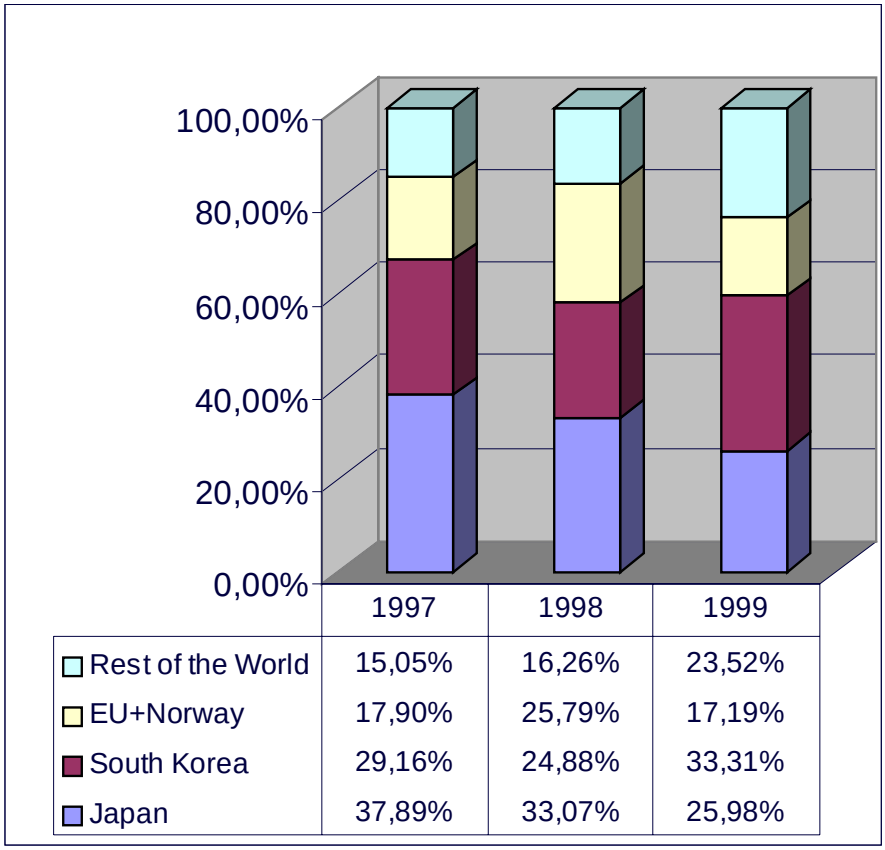
	1997	1998	1999
Rest of the World	3,49	3,06	4,47
EU+Norway	4,153	4,854	3,265
South Korea	6,764	4,682	6,326
Japan	8,791	6,225	4,935

As regards reported new orders which are the key indicator for the actual market situation the picture changes significantly: in particular Japan has lost market share to Korea with fewer orders even in the exceptional year 1998 when Korean yards had problems to compete for orders. The general trend clearly indicates that Korean shipbuilders have conquered market shares in new orders and this has been mainly at the expense of Japan (minus 44% in cgt in the period 1997-1999) while the EU saw a decrease in new orders similar to the general development (minus 18% in cgt in the same period). While EU yards may still have some "breathing space" due to their comparatively good orderbooks (although the situation is very different for different yards) and the lower value of the euro in relation to the US Dollar, Japanese yards are generally facing a situation where orderbooks are increasingly running empty and new orders are not received on a sufficient scale to maintain production at the previous level. This would indicate a longer-term shift in market shares from Japan to Korea and, to a lesser extent, from the EU to Korea.

It is obvious that the booming production of cruise vessels with their comparatively high cgt values has stabilised the overall situation of the EU shipbuilding industry but it needs to be noted that currently only 9 EU yards (out of some 150) are active in this field and the number of yards which could easily turn to cruise ship construction is limited by technical and commercial constraints. Moreover it is known that Korean and Japanese yards are actively pursuing cruise ship orders (with Japan appearing to try to compensate for orders lost to Korea in other market segments). Once the market is confident that Asian yards can produce cruise ships in time and in sufficient quality this European market niche will certainly be challenged and overall EU market shares may shrink further. While the above analysis seems to indicate that EU yards still have

a comparatively good position (although this does not necessarily mean that operations are profitable), the situation in particular Member States and for particular shipyards may be dramatically different, depending on their product portfolio. Most threatened are small to medium sized yards that have a focus on the production of merchant cargo ships such as container ships, product tankers or gas carriers. These yards typically do not have the option to compensate a loss in market share through the construction of large cruise ships or navy contracts, even if their general competitiveness in terms of productivity may be good, and some insolvencies have already occurred. The recent developments at Harland and Wolff in Belfast indicate that bigger shipyards are facing similar problems, especially when certain strategic orders cannot be secured and other market segments have become inaccessible due to Korean competition.

Fig. 4 - Market shares in new orders in percent and based on cgt, 1997 - 1999 (Source: Lloyd's Register of Shipping)



	1997	1998	1999
Rest of the World	15,05%	16,26%	23,52%
EU+Norway	17,90%	25,79%	17,19%
South Korea	29,16%	24,88%	33,31%
Japan	37,89%	33,07%	25,98%

Looking at the development in market shares expressed in cgt-percentages the sharp rebound of South Korea after the problematic year 1998 is obvious. The EU yards were not able to maintain their 1998 position when they benefited from the financial insecurity in Korea. China has also taken more market share, but this has been selective as discussed in the next chapter. In 1999 South Korea achieved 33.3% of all new orders, Japan had 26.0%, the EU stood at 17.2% and the rest of the world had 23.5%. This makes South Korea now the world's largest shipbuilding country by far.

In January 2000 Korea saw an even more dramatic increase in order intake: 65% of all world ship orders in January were awarded to Korean yards, representing 72% of the entire cgt volume. The EU achieved a mere 7% in cgt terms and Japan stood at 10% (source: Lloyd's Register of Shipping). In February 2000 the situation for the EU

improved significantly (29% market share in cgt) due to a number of orders for specialised tonnage. Japan, however, was not able to gain more market share and it should be noted that total ordering activity went down by 44% as compared to January. The orders mainly concern Postpanamax container ships, a shiptype which has been invented in Europe in 1988 and which until recently was a domain of EU and Japanese yards. This shiptype is widely seen as the "work horse" of future container shipping and it represents a new economic dimension in global sea trade due to its size and efficiency. It should be in the EU's strategic maritime interest to maintain the competence for the construction of these vessels. Moreover Postpanamax container ships are a product of the EU's most modern and technologically advanced shipyards and if these yards cannot attract these orders the reasons must be sought beyond the question of industrial competitiveness as such.

2.2. Price developments

Table 1 - Evolution of prices for newly built ships (yearly averages in Millions of US Dollars)

	1997	**1998**	**1999**
Panamax Container Carrier	53.0	42.0	38.0
1100 TEU Container Carrier	20.0	18.0	17.5
Very Large Crude Oil Carrier (VLCC)	83.0	72.5	70.0
Capesize Bulk Carrier	40.5	33.0	37.0
Panamax Bulk Carrier	27.0	20.0	22.8
Tweendecker 15,000 dwt	16.5	14.0	13.0

Source: Clarkson World Shipyard Monitor.

Table 2 - Evolution of prices for newly built ships (annual changes in percent)

	1997/1998	**1998/1999**	**1997/1999**
Panamax Container Carrier	-20.75%	-9.52%	-28.30%
1100 TEU Container Carrier	-10.00%	-2.78%	-12.50%
Very Large Crude Oil Carrier (VLCC)	-12.65%	-3.45%	-15.66%
Capesize Bulk Carrier	-18.52%	12.12%	-8.64%
Panamax Bulk Carrier	-25.93%	14.00%	-15.56%
Tweendecker 15,000 dwt	-15.15%	-7.14%	-21.21%

Looking at the average prices for certain important shiptypes in the years 1997 to 1999 it is clear that the increased demand from 1998 to 1999 (see Fig. 3) generally had no positive impact on prices. On (numerical) average prices for new ships have declined by 17% since 1997.

The notable exceptions are Capesize and Panamax bulk carriers which have seen a slight price increase since 1998 by 12% and 14%, respectively. Nevertheless prices for these shiptypes are still considerably lower than in 1997. The reasons for this movement in prices for bulk carriers could be seen in the situation of the South Korean

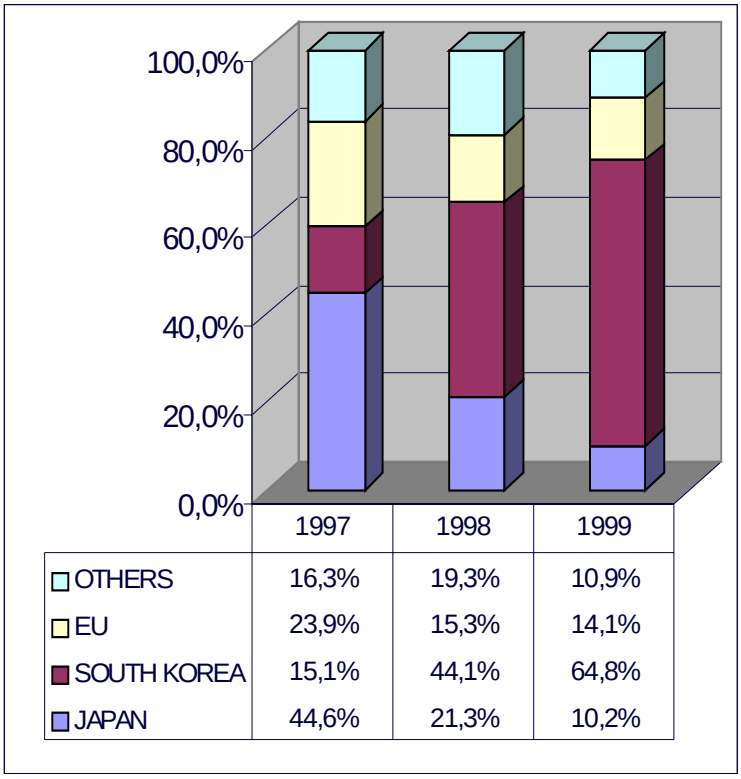
Halla yard which has a focus on the production of these vessels. Halla has played the role of a price leader, offering extremely low prices in order to fill the massive capacities created at the Samho production site. As elaborated in Annex II of the first report Halla has been in financial difficulties since 1997. To solve these problems and save the yard, the Hyundai group has agreed to a management co-operation scheme in which Hyundai would take over management responsibility in return for a fixed share of future profits. Moreover, Halla would receive more debt reduction through the domestic creditors (mostly government-controlled banks) before Hyundai would take over Halla fully. In this context Hyundai has demanded from Halla to renegotiate ship prices which were considered as too low even by Korean standards. It is not known in how far Halla has been successful in the re-negotiation but this could have had an impact on prices for these particular shiptypes.

All other important shiptypes have seen further price erosion and prices for the end of 1999 are again lower than the yearly averages for some shiptypes (Capesize bulk carrier: 35 Mio. USD; Panamax bulk carrier: 22 Mio. USD; VLCC: 69 Mio. USD [prices for December 1999; source: Clarkson World Shipyard Monitor]).

2.3. The market segment of containerships

As discussed in the first report, container vessels represent the largest market segment in commercial shipbuilding in terms of cgt and container ships have been a major product of Japanese and EU yards in the past. The first report also stated that Korean yards have made very significant inroads into the market for container vessels since 1997. This trend has continued and concerning this particular market segment the situation presents itself as follows:

Fig. 5 - Market shares in new orders for containerships in percent and based on cgt, 1997 - 1999 (Source: Lloyd's Register of Shipping)



	1997	1998	1999
OTHERS	16,3%	19,3%	10,9%
EU	23,9%	15,3%	14,1%
SOUTH KOREA	15,1%	44,1%	64,8%
JAPAN	44,6%	21,3%	10,2%

South Korea has consolidated its dominant position in the building of containerships and has further cut into EU and Japanese market shares. It has also taken market share from the group of "others" which in this segment is represented by countries such as China, Taiwan and Poland. Although most of the market share gained seems to be at the expense of Japanese yards it should be noted that most of the orders in question come from EU operators. In the meantime price levels have further deteriorated as described above which has led two Japanese operators of container lines (K-Line and NYK) to place major orders in Korea. Given the traditional preference of Japanese owners for domestic ordering this clearly shows that Korea's low offer prices have been changing the market dramatically. The EU position seems to weaken constantly in this market segment, only slightly offset by the 20% decrease in the value of the euro since January 1999. As the Yen has seen a significant appreciation in the past year this has added to the problems encountered by Japanese yards. It should be kept in mind that an appreciation of the euro would quickly bring the EU shipbuilding industry into an equally dramatic situation as the yards in Japan. On the other hand an appreciation of the Korean Won may not necessarily shift market share away from Korea if it is not accompanied by a behavioural change on the side of the Korean shipyards.

2.4. Conclusion

The general market analysis within this second report from the European Commission confirms the findings of the first report, namely that

– Over-capacities in the shipbuilding market exist but there is no agreed analysis between Japan and the EU on the one side and Korea on the other about the extent of these over-capacities and their impact on the market situation. However, in the "Agreed Minutes" Korea for the first time acknowledges the necessity to address the problem.

– South Korean capacity expansion, especially in the period 1994 to 1996, has been the main reason for the continuing and growing imbalance. Although three Korean chaebols active in shipbuilding (Hyundai, Daewoo and Samsung) have recently announced reductions in their exposure to shipbuilding in order to focus more on other industrial activities and "improve the groups' profitability" this does not mean cuts in production capacity, according to the Korean Shipbuilders Association. At least for Hyundai Mipo the indications point in a different direction with repair capacity increasingly being used for ship newbuilding. Moreover Hyundai will expand capacity further through the inclusion of the ailing Halla / Samho yard in the group's shipbuilding activities. It was recently announced that Samho would re-open its second building dock following strong demand for certain shiptypes.

– Prices have declined further, in particular for ship types for which Korea competes aggressively, bringing demand forward and massively shifting market shares to Korean yards. Most significant is the shift in market shares with regard to container vessels where Korea now holds a dominant position, in particular as far as the biggest and technically most advanced vessels are concerned.

– Korean expansion has been at the expense of all other major shipbuilding regions, with Japan taking the biggest losses. The situation of the EU

shipbuilding industry remains critical, only slightly offset by the cruise ship boom, the comparatively good orderbooks and the devaluation of the euro against the US Dollar.

3. DETAILED MARKET MONITORING AND ANALYSIS

3.1. Study on shipbuilding market monitoring

In order to collect the necessary data, the European Commission has recourse to consultants whose ongoing study has defined a cost breakdown model, including all relevant cost components both of the direct ship production and the shipyard in general. The model is based on cost elements covering direct costs (materials, labour, equipment, etc.) and indirect costs (financing of the ship and of the production equipment, overhead, insurance, etc.). The calculated building price also includes a 5% profit margin. More details of the cost model can be found in Annex I of the first report.

The cost model does not represent an *extrapolation* of EU shipbuilding costs, as has been suggested by the Korean shipbuilding industry and the Korean Government. It is rather a methodical *cost reconstruction* for particular orders in particular yards. Comparison data provided by the Korean shipbuilding industry on wage levels, overheads or yard productivity confirm the assumptions used in the cost model. While, for example, the Korean Shipbuilders' Association gives the average level of overheads for Korean yards as 13% of operating costs, the cost model uses specific figures for each investigated yard which are between 7.5 and 18%. For the major Korean shipyards the overhead is estimated to be in the range of 10.2 to 10.9% (i.e. lower than assumed by the Korea Shipbuilders' Associations itself).

As the study develops, additional information is gathered and used to validate previous cost investigations. Consequently, the nine orders covered in the first report have been recalculated where necessary and the updated findings are given below. As already stated in the first report all parameters are kept on the "safe side" to ensure that calculated minimum costs for particular projects cannot be challenged. Currently the cost model does not include an assessment of inflationary effects as this would be highly speculative for orders made now but executed in the coming years (which is typical for shipbuilding contracts). However, any confirmed changes in labour costs, exchange rates or the debt situation of yards under investigation are taken into account. This is particularly relevant for yards which have benefited from debt forgiveness and moratoria (e.g. Daewoo Heavy Industries or Halla Engineering and Heavy Industries [now operating under the name Samho Heavy Industries]).

It is not within the scope of the study or this report to assess whether Korean or other Asian shipyards are generally profitable. Given the limited availability of consolidated accounts for Korean shipyards a statement of this kind is almost impossible to make. To assume, however, that the continued operation of Korean yards is ipso facto proof of profitability would be equally wrong as the structure of the Korean economy in general and the chaebols in particular have offered many possibilities to cover up losses. The proper implementation of newly introduced accounting practices could, however, contribute to enhancing transparency. Only where companies are solely engaged in shipbuilding and where the investigations cover the entire yard portfolio (shiptypes produced) a statement on the overall

profitability can be made. This is the case for Halla and Daedong Shipbuilding Co., both yards being under court receivership since 1997 and not having shown any profits since then. For more details on these two shipyards reference is made to Annex II of the first report.

3.2. Update of previous investigations

In the context of report COM (1999) 474 final the following orders placed at South Korean shipyards were investigated:

- Cable layer (series of 13 ships), 9,280 cgt, to be built at Hyundai Mipo yard
- 3,400 TEU container ship (series of 5), 27,750 cgt, to be built at Samsung Heavy Industries
- Passenger Ro/Ro ferry (series of 2), 25,200 cgt, to be built at Samsung Heavy Industries
- 6,800 TEU container ship (series of 2), 52,390 cgt, to be built at Hyundai Heavy Industries
- 3,500 TEU container ship (series of 2), 28,500 cgt, to be built at Halla Engineering and Heavy Industries
- Panamax bulk carrier, 19,500 cgt, to be built at Halla Engineering and Heavy Industries
- Panamax bulk carrier, 22,600 cgt, to be built at Daedong Shipbuilding Co. Ltd.
- Product carrier, 19,074 cgt, to be built at Daedong Shipbuilding Co. Ltd.
- Very Large Crude Oil Carrier (VLCC), 47,100 cgt, to be built at Daewoo Heavy Industries

The findings from the detailed investigations are summarised in the table below, the updated figures are given in bold.

Table 3 - Comparison of order prices and calculated construction prices for selected new ships (update)

	Reported order price in Mio. US Dollars	Calculated building price in Mio. US Dollars	Loss/gain in percent of calculated building price	Comments
Cable layer (Hyundai)	37.3	45.4	-17.84%	Price of 31 Mio. USD also reported. If confirmed the calculated loss would amount to 31.7%.
Container ship 3.400 TEU (Samsung)	36	56.4	-36.17%	Price of 33 Mio. USD also reported. If confirmed the calculated loss would amount to 41.5%
Passenger Ro/Ro ferry (Samsung)	69.5	90.9	-23.54%	
Container ship 6.800 TEU (Hyundai)	73.5	86.9	-15.42%	
Container ship 3.500 TEU (Halla)	38	52.3	-27.34%	
Panamax bulk carrier (Halla)	18.9	31.8	-40.56%	
Panamax bulk carrier (Daedong)	18.5	24.9	-25.70%	
Product carrier (Daedong)	21.5	24.9	-13.65%	
VLCC (Daewoo)	68.5	84.3 **(86.3)**	-18.74% **(-21.11%)**	Based on recent financial data for the yard the contribution to debt servicing for this order is calculated at 18.0 Mio. USD instead of 16.0 Mio. USD

There has been some criticism from the Korean Government and the Korean shipbuilding industry of the validity of the above findings. It is claimed that for most orders there is no genuine competition between the EU and Korea as both sides would operate in different market segments. In practice this may be the result of Korean pricing practices and unfair competitive behaviour but the above orders have in part been selected because EU yards tendered and did not win the contracts.

The Korean side also claims that the basic assumptions in the investigations are incorrect and would not take into account the competitive advantages of Korean yards (e.g. wage cuts, favourable Won/USD exchange rate, lower material costs). However, all these elements have been factored in, using most recent data. Figures provided by the Korea Shipbuilders' Association on lower wages (minus 4% from 1997 to 1998) or a decreasing workforce (minus 3.2% from 1997 to 1998) are either misleading (1998 was a particular year for Korean shipbuilding as explained in chapter 2 and the previous report; wages have actually increased in 1999 and it is doubtful that the Korean figures reflect the full extent of bonus payments) or are insufficient to explain the considerable gaps between production costs and offer prices.

3.3. New investigated orders

In addition to the nine orders investigated for the first report, 13 more orders have been analysed for this report. Nine of these orders were placed at six different South Korean yards, four orders were placed at four yards in the People's Republic of China (PRC). The Commission assured a balanced selection of cases while taking into account the overall objective of the exercise, the relative urgency of the matter and the availability of meaningful data for comparison. The new orders investigated are:

- Capesize bulk carrier, 25,680 cgt, to be built at Halla (now Samho Heavy Industries)
- Product / chemical tanker, 22,597 cgt, to be built at Daedong Shipbuilding Co. Ltd.
- Passenger Ro/Ro ferry (series of 2), 22,500 cgt, to be built at Daewoo Heavy Industries
- Chemical tanker (series of 2), 5,980 cgt, to be built at Il Heung Shipbuilding and Engineering Ltd.
- Panamax bulk carrier (series of 4), 19,000 cgt, to be built at Daewoo Heavy Industries
- 5514 TEU container ship (series of 3), 42,835 cgt, to be built at Samsung Heavy Industries
- Liquefied Natural Gas (LNG) carrier (series of 2), 88,500 cgt, to be built at Hyundai Heavy Industries
- 5500 TEU container ship (series of 5), 43,875 cgt, to be built at Hyundai Heavy Industries
- 5551 TEU container ship (series of 2), 43,875 cgt, to be built at Hyundai Heavy Industries
- Very Large Crude Oil Carrier (series of 5), 46,800 cgt, to be built at Dalian New Shipyard, PRC
- Ethylene carrier (series of 2), 10,320cgt, to be built at Jiangnan Shipyard Co. Ltd., PRC
- Ro/Ro paper trailer carrier (series of 6), 11,445 cgt, to be built at Jinling Shipyard, PRC
- Passenger Ro/Ro ferry (series of 2), 27,000 cgt, to be built at Guangzhou Shipyard International, PRC

Not all of the selected projects are confirmed orders and in some cases the financing may not yet be in place, which could lead to higher or lower order prices, depending on the particular situation. The European Commission is, however, convinced that the information entered into the analysis is at present the best available.

The following table summarises the findings for the above 13 orders.

Table 4 - Comparison of order prices and calculated construction prices for selected new ships

	Reported order price in Mio. US Dollars	Calculated building price in Mio. US Dollars	Loss/gain in percent of calculated building price
Capesize bulk carrier (Halla/Samho)	32	47.25	-32.28%
Product/chemical tanker (Daedong)	24.5	29.5	-16.95%
Passenger Ro/Ro ferry (Daewoo)	80	96.1	-16.75%
Chemical tanker (Il Heung)	10.5	12.3	-14.63%
Panamax bulk carrier (Daewoo)	22.5	27.3	-17.58%
5514 TEU container ship (Samsung)	55	69	-20.29%
LNG carrier (Hyundai)	165	186	-11.29%
5500 TEU container ship (Hyundai)	54.3	64.2	-15.42%
5551 TEU container ship (Hyundai)	56	69.5	-19.42%
VLCC (Dalian New)	70	76.1	-8.02%
Ethylene carrier (Jiangnan)	22	not available*	-
Ro/Ro paper trailer carrier (Jinling)	22	28.5	-22.81%
Passenger Ro/Ro ferry (Guangzhou)	56	61.4	-8.8%

* The financial data needed to calculate the vessel's contribution to debt servicing for the building yard could not be retrieved. Total operating costs for this order are calculated at 19.7 Mio. USD which would give some margin for debt servicing and a small profit. Therefore, it appears that the vessel has been appropriately priced.

The results from the above case investigations are fully in line with the findings from the first report. Korean yards continue to offer ships at prices well below cost. Low prices are offered again by those yards which are in the most critical financial situation (Daewoo, Halla / Samho and Daedong).

It is noteworthy that fierce competition between Korean yards continues to be a factor that keeps prices down. As all Korean shipyards carry massive debts and ensuring cashflow is extremely important for their survival, none of them can afford to raise prices unilaterally. Where intra-Korean competition is limited, due, for example, to licensing arrangements (as it is the case for the investigated LNG carrier) Korean yards

maintain higher price levels (the LNG carrier order would, according to the cost calculations, not yield a profit but neither would it incur a considerable loss).

It appears that costs resulting from debt servicing are typically not included in the price calculations. Prices seem to be set at levels where owners find it hard not to place orders in Korea, and Korean shipyards apparently rely on favourable debt settlement conditions later. With large parts of the Korean commercial banking sector under Government control it is highly likely that the Korean Government has a decisive influence on the financing operations related to one of Korea's major exporting industries. The role of "commercial" banks in Korea needs further scrutiny as the case of Daewoo in particular has shown. To avoid a bankruptcy of the Daewoo group domestic banks have accepted huge losses on their outstanding loans and foreign creditors were pressured to follow suit. Recent reports indicate that the government-owned Korea Development Bank will assume 37% (other sources speak of 60%) of the assets when the shipbuilding part of Daewoo is spun off. This would de facto amount to a partial nationalisation of the Daewoo shipbuilding activities.

The analysis of contracts placed in China is significantly more complicated than for Korea. The reasons are to be seen in the industrial structure and the absence of market principles (see also annex). More investigations will be required to gain a better insight. The four investigations made do not provide a consistent picture. One offer seems clearly loss making, probably due to the technical sophistication of the vessels in question and the lack of experience of the shipyard in this field. The other three orders may be profitable, but again not all conditions of the orders are fully known. In the case of the VLCC a barter agreement seems to be part of the contract (the National Iranian Tanker Company paying for the ships partly with oil deliveries); the exact conditions of this agreement, as well as the specific payment terms for this protracted build programme, may have a severe impact on the profitability of the order for the building yard.

3.4. Impact on EU yards

As in the case of the first report on the situation in world shipbuilding, a negative impact on EU yards is assumed when the order is made at a price which does not cover costs and which is low enough to keep the order out of reach of EU yards. This is particularly true if the owner has traditionally placed orders with EU yards. However, even where Asian competitors had significant market shares in the past the depressing effects of this pricing policy will have a negative effect on the market in general and, on this basis, the price may be perceived to be injurious. Whilst an individual contract may not take work directly from an EU builder there will be a "trickle down" effect in the market as a whole, which will have a detrimental effect on shipbuilding in the EU. As the facilities and skills to build ships for market segments that have already been lost in the past are still available in EU yards, an increase in prices would enable such yards to acquire contracts in these markets as well.

Of the nine orders placed in Korea, covered in this report, six can be seen to have an impact on EU yards. The other three orders concern shiptypes in which EU yards were strong in the past but which are now rarely produced in Europe. The key elements for the six cases are as follows:

– The passenger Ro/Ro ferries to be built at Daewoo Heavy Industries will operate in the Mediterranean for an Italian owner who previously had not ordered ships in Korea. The shiptype is new to the building yard and intra-Korean competition for these orders has been fierce. This resulted in a very low price which is seen some 15% lower than the nearest European bid. This order has also symbolic value for the building yard as the Mediterranean ferries segment has been a European domain in the past.

– The chemical tanker to be built at Il Heung Shipbuilding and Engineering Ltd. for a Norwegian owner represents a smaller specialised vessel (with 3.650 dwt only). The yard has not been active in the export business for this type of ship and tried to gain access to the European market through a low-price offer. So far the construction of these vessels has been the domain of smaller specialised EU shipyards which find it difficult to diversify their portfolios.

– The 5514 TEU container ship order at Samsung Heavy Industries has been placed by a German owner. The ship will later be operated by a major European container line. It is one of the Postpanamax container ships for which Korean yards actively tender because these orders are seen as more profitable than orders for bulk carriers or tankers. As this particular investigation shows it is difficult to see this order being profitable.

– LNG carriers are highly specialised and expensive vessels. Considerable know-how is required for the construction of the cargo tanks and the ship's machinery, and EU yards have been a key player in this market segment in the past. Looking at the period 1990 to 1998, 63% of all LNG carrier orders were placed in Japan, with the EU holding 27% of the market and Korea standing at 10%. Currently the LNG carrier orderbooks show 43% for Japan and 57% for Korea. No orders are placed in the EU. This is another example of Korea making inroads into a high-value market segment previously held by Japan and the EU and although the order could be marginally profitable the erosion of another EU market niche should raise concern. It is noteworthy that the same yard is building similar ships for the state-owned Korea Gas Corporation at a reported price of 212 Mio. USD, compared to the price of 165 Mio. USD to the non-Korean customer.

– The two orders for Postpanamax container ships at Hyundai Heavy Industries (5500 and 5551 TEU, respectively) have been placed by a Japanese and a Taiwanese owner. The order from Japan is clearly at the expense of Japanese yards (this is the first order this owner has placed outside Japan). The Taiwanese owner has traditionally placed orders in Japan and at China Shipbuilding Co. in Taiwan. His newbuildings at Hyundai will use a design from China Shipbuilding Co. and the resulting fees explain the higher building costs as compared to the Japanese order. While it can be assumed that even at higher price levels these particular orders would have been placed in Asian yards, it should be noted that some of the most advanced EU shipyards would be keen competitors for this shiptype if price levels reflected building costs appropriately.

3.5. Conclusion

– The shipbuilding market monitoring study commissioned by the European Commission continues to produce tangible results. The cost model employed is stable and suited to analyse the true costs of shipbuilding in Korean yards. For the People's Republic of China more investigations are needed to arrive at a consistent picture. This concerns in particular the financial situation of Chinese shipyards.

– The cost investigations now cover 22 orders (18 placed in South Korea, 4 in the PRC) which - excluding options for additional ships - represent 65 vessels (50 in Korea, 15 in the PRC) with a calculated value of 4.29 bn USD (3.616 bn USD in Korea and 0.674 bn USD in the PRC).

– None of the investigated orders for new vessels placed in Korean yards is clearly profit making and there are now even more convincing indications that Korean yards offer ships at below cost price; in many cases prices do not even cover operational costs, let alone the servicing of debts. Losses taken are calculated between 11% and 32% of the normal price (breakeven price + 5% profit margin). For orders placed in China conclusions cannot be drawn yet: of the three investigated orders two appear to be profitable and one is very likely to be loss-making.

– Korean yards continue to pursue orders in all market segments, in particular those for large container ships and other high-value tonnage, but also smaller specialised tonnage is sought. This leaves only cruise ships as a market niche for EU yards. As many European yards are not active in this segment they are now left without a sufficient volume of new orders.

– The functioning of Korea's financial system with regard to the financing of shipyards and shipbuilding projects, remains opaque and, as there is substantial scope for government intervention with large parts of the banking sector being owned by the State, public involvement in financial and organisational matters is likely. Credits and guarantees given to shipyards do not follow global business practices, and such commercial risk assessment as has been undertaken does not seem to follow the laws and logic of a market economy.

4. CONCLUSIONS AND RECOMMENDED ACTIONS

The world market for merchant ships continues to be in crisis. Supply clearly outstrips demand and there are few indications that this situation may improve (e.g. through regulatory schemes in the area of maritime safety that would foster tanker newbuilding). Indeed, the opposite is more likely: all shipyards in South Korea continue to operate, even those which have been under bankruptcy proceedings since 1997. Moreover Korean shipbuilders have announced the re-opening of idle dock capacity, apart from converting repair facilities to newbuilding. The pending re-structuring of the ailing Daewoo Group also does not seem to lead to any capacity decrease. It should, however, be noted that the Government of the People's Republic of China has announced a ban on yard newbuilding and on capacity expansion to avoid further over-capacities.

The comparatively strong demand for ships in the last 2 - 3 years has had no positive impact on prices. On the contrary prices for nearly all shiptypes have continued to decline. This shows that normal market mechanisms do not apply in world shipbuilding. The on-going depression in prices is caused by extremely low offer prices from Korean yards which initially may have targeted Japanese and EU market shares. Recent developments, however, have shown that intra-Korean competition, in particular with regard to orders for large containerships, has a strong effect on attainable prices. At current price levels EU and Japanese shipyards clearly cannot compete.

The detailed cost investigations have once more revealed the extent of the losses which Korean yards are willing to take in order to assure market share and cash flow. Despite a certain narrowing of the gap between true costs and offer prices, the calculated losses are between 11% and 32% of the building costs. Moreover, with the exception of cruise vessels, all market segments are targeted by Korean yards, leaving only small domestic orders and highly specialised tonnage to EU yards.

Therefore this second report by the European Commission on the situation in the world shipbuilding market confirms the findings from the Commission's first report.

All lines of action to address the problem (as requested by the European Council of Ministers in its meeting of 9 November 1999) are currently pursued. In particular, strenuous efforts have been made by the Commission to secure binding commitments from the Korean Government in relation to its non-intervention in the financing of shipbuilding activities. After several rounds of consultations, the European Commission and the Korean Government finalised their talks and initialled on 10 April 2000 "Agreed Minutes relating to the World Shipbuilding Market". These Agreed Minutes are focusing on non-subsidisation, banking, financial transparency (with regard to international accounting standards), commercial pricing practices and an effective consultative mechanism. The overall aim is to promote fair and competitive market conditions in the world market and to work together to stabilise the market and thereby help raise the level of ship prices to ones that are commercially sustainable.

The evidence gathered within the framework of the market monitoring undertaken by the European Commission has helped the EU industry to compile sufficient elements which could lead to a complaint under the Trade Barriers Regulation and industry has

recently announced its willingness to file such a complaint. Therefore, the Commission will continue with its market monitoring exercise.

Contacts with IMF representatives so far have not led to results which could be used to end unfair competition practices shown by Korean shipyards. It should be noted that Korea is re-paying its IMF loans ahead of schedule, thereby limiting the IMF's ability to influence Korean policy.

It is recommended to

– continue to exercise pressure on Korea to fully implement the "Agreed Minutes" and assume responsibility to work towards an improvement of the market situation, in particular concerning price levels and newbuilding capacities;

– fully apply the provisions of the "Agreed Minutes" once they have entered into force, invoking the consultation mechanism whenever necessary;

– collect further and more detailed evidence on possible injurious pricing and other non-market oriented behaviour in order to launch and support a complaint under the Trade Barrier Regulation if required;

– keep the IMF informed about the findings and request that the promised industrial restructuring in Korea is closely monitored and assessed;

– encourage the EU shipbuilding industry to further improve its competitiveness.

5. LIST OF TABLES AND GRAPHS

6. REFERENCES

Report from the European Commission to the European Council of Ministers on the situation in world shipbuilding, COM (1999) 474 final

Council Regulation (EC) No 1540/98 of 29 June 1998 establishing new rules on aid to shipbuilding, Official Journal L 202, 18/07/1998 p. 0001 - 0010

Council Regulation (EC) No 3286/94 of 22 December 1994 laying down Community procedures in the field of the common commercial policy in order to ensure the exercise of the Community's rights under international trade rules, in particular those established under the auspices of the World Trade Organization, Official Journal L 349, 31/12/1994 p. 0071 - 0078

ANNEX: THE SHIPBUILDING INDUSTRY IN THE PEOPLE'S REPUBLIC OF CHINA

The shipbuilding industry in China is diverse but the majority of shipyards are state-owned, primarily within the China State Shipbuilding Corporation (CSSC). State-owned enterprises do not publish detailed accounts and it is questionable whether or not individual shipyards actually know their true costs. Many of the state-owned yards are also heavily diversified and it is difficult to analyse the businesses concerned even from on site.

1999 saw a massive re-structuring of CSSC that came about because the industry is not developing according to expectation. While only a few years ago Chinese yards were seen as a global threat, this threat has largely failed to materialise. he simple fact is that wages and costs have risen considerably in recent years without the necessary performance improvement to ensure competitiveness. The industry is characterised by over-manning and poor performance and the total cost of building a ship in China is regarded by some analysts as being higher than in both Japan and South Korea.

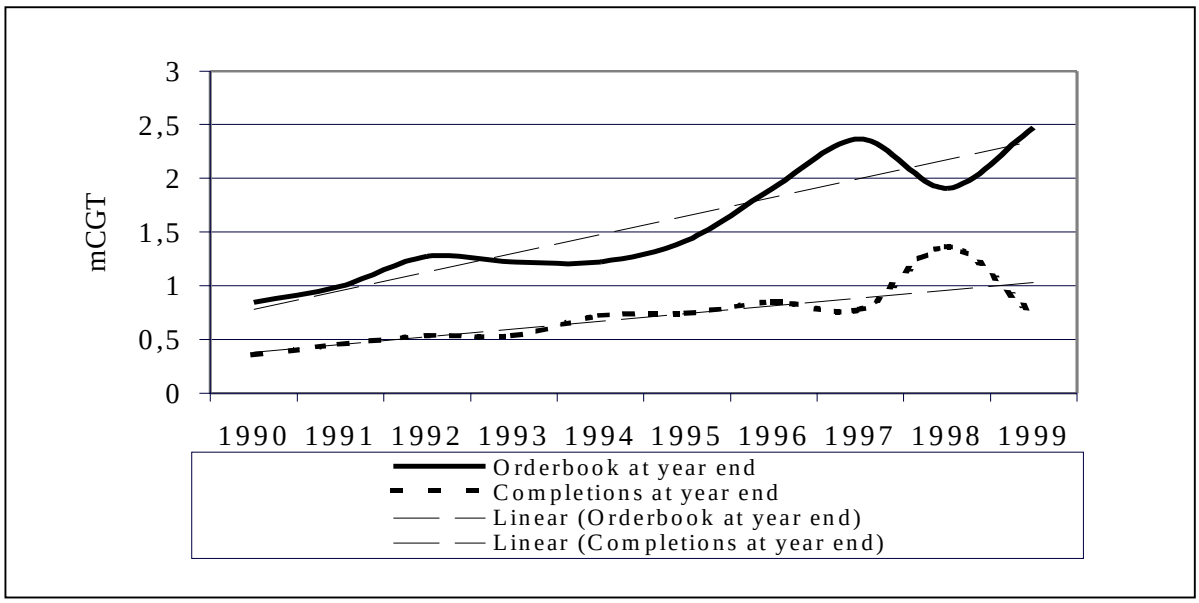
In 1996, CSSC stated that their plan was to double world market share by 2000 from 5% to 10%, achieving an export value of between $1.2 and $1.5 billion. In 1999 the actual share achieved of both gt and cgt was 7%, although it appears that the revenue target may have been accomplished. This is illustrated in the following table using statistics from the Chinese Shipbuilding Industry Association.

Table A.1 Newbuilding orders in Chinese yards (Source: Lloyd's Register of Shipping)

	1997	**1998**	**1999**
Orders from abroad	2.07 Mio. dwt	1.712 Mio. dwt	4.48 Mio. dwt
Total orders placed	2.29 Mio. dwt		8.55 Mio. dwt
Total ship export revenue	1.5 bn USD	1.73 bn USD	1.8 bn USD

Between the end of 1996 and 1999 the orderbook rose from 1.4 Mio. cgt to 2.5 Mio. cgt, an increase of almost 80%. This is illustrated in the following chart presenting the orderbook since 1990 in terms of cgt and showing the rate of delivery of new tonnage over the same period.

Fig. A.1 - Orderbook and output in Chinese shipyards (Source: Lloyd's Register of Shipping)



Whilst the increase in the orderbook appears impressive it should be seen in context. China has a massive shipbuilding industry (reputedly over 800 shipyards in total, including repair yards) but the orderbook is only marginally ahead of that of Italy (2.1 Mio. cgt) or Germany (2.0 Mio. cgt). It is also an order of magnitude behind the giant orderbooks of South Korea (10.6 Mio. cgt) and Japan (8.6 Mio. cgt). The industry is still many years away from being the global threat that many perceive it to be.

The difference in the rate of increase between the orderbook and deliveries should also be noted from the above graph. Over the period shown, the trend line for increase in the orderbook shows a growth rate of about 17.5% per annum, while for deliveries growth has been about 7.2%. It is concluded from this that the ability to deliver increased tonnage lags the ability to generate increased orders and this is likely to constrain expansion of the industry. It is also likely to lead to production problems with growing backlog and inventory putting increasing pressure on shipyards.

There has been significant capacity expansion in recent years both through the construction of new facilities and the upgrading of existing shipyards. The new facilities are generally finding orders hard to attract due to difficult market conditions and in particular very low prices. A good example is the new VLCC facility at Dalian that has only just managed to attract its first VLCC order, despite trying to get into the market for a number of years. The Chairman of Dalian New Shipyard has lobbied strongly for the devaluation of the Yuan to try to improve competitiveness and help his yard gain orders. These difficulties have not stopped the expansion process, however, including a proposal to build what will be one of the world's largest shipyards at Wai Gao Qiao. There are reportedly five major shipyard projects under construction and a further five in the planning stage.

Investment in new technology has not achieved the gains envisaged. Many shipyards have installed automated panel lines and new construction equipment. The problem is that the shipyards are not yet at a sufficient level of technology to be able to use such sophisticated equipment. Such attempts to buy a way to lower costs are doomed to failure and equipment is not the answer to over-manning and poor management, which are the root causes of low performance in Chinese shipbuilding.

The industry in China is generally characterised by shortage of work and difficulty in attracting new orders. In this respect it should be noted that Chinese shipyards are just as much victims of aggressive Korean capacity as are shipyards in Europe and Japan. Having said this, even without the Korean element it is likely that the yards in China would be short of orders due to inefficiency.

1996 targets for the development of the industry have failed in one further respect of significance to cost investigations. It was stated in that year that by 2000 the use of domestically sourced equipment would account for 80% of equipment used on ships constructed in Chinese shipyards. This has simply not happened, however, with the actual use of Chinese equipment being very limited. Even for vessels built for domestic owners the very poor quality of Chinese equipment means that imported materials are used to a large extent, although import taxes preclude this to some extent.

In summary, the industry in China is in a state of turmoil and actions are being proposed to tackle the problems being faced. The Chinese government has recently announced measures to ensure that ships for domestic operation are built in home shipyards, along with an abolition of taxes and duties previously levied on ships and equipment, to support the industry. However, until the fundamental problems of efficiency are tackled, the industry is unlikely to achieve its true potential.

Restructuring of CSSC

CSSC was founded in 1982 to run the shipyards formerly grouped separately under the 6th Machinery Ministry and the Ministry of Communications (MOC). MOC retained responsibility for a number of smaller yards producing coastal vessels and repairing ships, while CSSC undertook management of the major sectors of the industry.

Although accounts are not published, sources have confirmed that the main thrust behind the restructuring of the state-controlled industry has been huge losses incurred since entering the international market in the early 1980s. The main reasons behind this situation are seen (by the Chinese authorities) to be:

– Poor productivity due to the centralised system;

– Poor management;

– Inefficient planning;

– Lack of knowledge of international practice;

– Corruption.

The support of losses has been the main form of subsidy to the industry in China and the Government has recognised that it needs to adopt truly commercial operations to achieve its aims. To some degree this conflicts with ideology, such as that which precludes the shedding of labour, and there is a long way to go to achieve the aims of the industry. There is also still a long way to go in understanding commercial activity, particularly in state-owned enterprises. For example, it is common practise to hire low cost subcontract labour to work on contracts rather than using more expensive in-house labour, even though the workforce may be under-utilised.

Until the middle of last year, the state-owned industry was primarily, although not solely, under the control of the monolithic CSSC. The industry was basically run by civil servants as a branch of the Government. Following restructuring, the industry will be split into two main groups:

– China State Shipbuilding Corporation (CSSC – southern shipbuilding group, incorporating yards in Guangdong, Jiangxi, Anhui and Shanghai);

– China Shipbuilding Industry Corporation (CSIC – northern shipbuilding group, incorporating yards in Yunnan, Hubei, Tianjin, Shanxi and Liaoning).

These Corporations are ultimately answerable to the Chinese cabinet and will be regulated by the Committee of Science, Technology and National Defence. The larger of the two units is the Bejing based CSIC, having assets of Yuan 9.5 bn (ca. 1.15 bn USD). CSIC holds forty-eight industrial enterprises including Dalian, Dalian New, Qingdao Behei, Liaoning Shipyard and Tianjin Shipbuilding Corporation. This Corporation also operates twenty-eight science, design and research units.

CSSC has assets estimated at Yuan 6.4 bn (ca. 0.8 bn USD). It operates thirty industrial enterprises including Jiangnan, Hudong, Shanghai, Guangzou Guangdong Shipping and Shanghai Global Container.

The main benefit of restructuring will be the subdivision of the industry into more manageable groups. The main disadvantage is the introduction of competition between the groups and it is not at all clear how this will be resolved. The reforms divide the industry broadly along north/south lines. While the two groups have been given responsibility for managing and increasing asset values for the State, it is left to individual units to determine their product mix and pricing policies. The umbrella groups will not conclude contracts on behalf of the members and will not intervene in day-to-day business unless an activity is deemed to be damaging to the overall industry.

Outside the two main groups there are other commercial shipyards (mainly smaller and local yards) which come under the control of the following organisations:

– Shipbuilders operating under the Ministry of Communications;

– Local shipyards operated by provincial governments in Jiangsu and Fujian;

– Joint venture shipyards (Kawasaki-COSCO, Raffles-Shangdong and Samsung-Ningbo).

In addition, there are a small number of privately owned yards, the main example being Guangzhou Shipyard International. The Government has been reluctant to relinquish control through privatisation and sales and has also been very reluctant to set up joint ventures, having had a number of difficult experiences in this in the past.

There are essentially three main shipbuilding centres in China. Around 50% of shipbuilding output is constructed by yards in the Shanghai region. At the present time, shipyards in Shanghai are limited to building up to about Panamax size due to air-draught restrictions on the Huang Pu river. The alleviation of this restriction is one of the main motivations for the development of the new shipyard at Wai Gao Qiao, outside the restrictions imposed by the river. Dalian is the second most important centre and was chosen as the site of the country's first VLCC yard. Guangzhou is the third important geographical centre and there are other

yards located at various sites around the country. The geographical distribution of shipyards is important with regard to costs because costs differ significantly from region to region in China, with Shanghai and Guangzhou being the highest cost locations in the country.

The cost base in Chinese shipbuilding

Labour costs, working practices and performance

China has long been regarded as a low cost country, in particular with respect to wages. This advantage has been eroded in recent years, however, due to increasing wages and standards of living. Inflation has been relentless. Between 1980 and 1998 the annual increase in average wage of staff in manufacturing across the whole country was 16% (source: China Statistical Yearbook) and in absolute terms wages rose by over 400% in the decade between 1988 and 1998.

Wage inflation has not been uniform, however, and variation between regions is very large, with the average earnings in Shanghai being around 90% higher than in Liaoning. There is also a significant variation between different types of company (state-owned or other such as joint ventures, private enterprises and wholly owned foreign enterprises). Of these, organisations with an element of foreign ownership tend to attract the highest payment premiums.

It should further be noted that there is a big difference between rural and urban centres. For example in 1996 average wages in urban centres were almost four times the average in rural areas.

No official productivity statistics have been identified for industry as a whole in China. However statistics on output per capita for eight major industries are available (source: China Statistical Yearbook), which suggest that productivity has increased over the last decade by only about 3% per annum. In other words, the development of productivity has lagged the increase in the cost base by a significant amount and output prices have therefore risen.

In response to these economic changes and increasing standards of living, in particular in urban centres, costs and prices have risen over the past two decades. The average year-on-year rise in the consumer price index between 1988 and 1998 was 8% (source: China Statistical Yearbook). Again, however, the overall average masks a significant split between rural and urban areas, with the average rise in urban areas over the same period being 10%. In absolute terms consumer prices rose by 2.5 times between 1988 and 1998. Increases have slowed recently due to increased competitive pressure. 1998 saw the first fall in prices on record with a 3% fall in consumer prices in general, although the fall was much less marked in urban areas where a drop of only 1% was seen.

The ex-factory price of industrial goods has also risen in response to the rising cost base. In the ten years between 1988 and 1998 factory gate prices rose by almost 100%, at an average of 9.3% per annum (source: China Statistical Yearbook).

Chinese shipyards tend to be major employers. A typical traditional yard may employ 9000 to 12000 persons. Not all of these workers will be involved directly in shipbuilding, with many yards being diversified, although even given this fact these are huge shipyards in the modern context. Idle time is typically very high (measured recently at around 17% of hours paid in one of the more productive yards) and this, along with inefficiency, means that Chinese yards are in general substantially over-manned. This situation is not helped by the fact that it is not

possible under labour law restrictions to lay-off staff as required. The actual rate of over-manning depends on the level of orderbook. If it is assumed that the current relatively high orderbook is associated with an appropriate level of manning, analysis shows that state-owned yards have suffered from levels of over-manning up to double the required number of workers in recent years. The over-manning is further exacerbated by the common use of low cost subcontract labour (typically at about 60% of the cost of using the company's own labour) to take the place of higher cost shipyard workers to reduce the level of direct costs against contracts. This is often done without shedding the labour that is being replaced.

Material costs

China is a major producer of steel and the majority of mild and high tensile steel is sourced locally. Special steels may be imported from Japan or South Korea. Steel prices have been rising steadily within China at an average annual rate of 6% over the last decade. The current price for Grade A steel as used in shipbuilding is probably higher than the price at which steel could be purchased from Korean mills but under the centrally planned system, shipyards are often directed to purchase from local mills, in some cases irrespective of whether the steel is needed or not. This has led to a situation where many of the traditional yards in the state sector are choked with inventory and steel stocks.

Efforts to increase the amount of domestically produced equipment on ships built in China have so far been fruitless. Chinese manufactured equipment, whilst cheap, is not regarded as sufficiently reliable by most shipowners (including Chinese owners) and its inclusion is seen as seriously jeopardising resale values. For this reason the vast majority of equipment is imported. Equipment from Europe and Japan is favoured, with imports from South Korea, with the exception of main engines, being limited. Research is ongoing to evaluate precisely the level of cost advantage enjoyed by Chinese yards. Research to date indicates that domestically sourced equipment is about 30% cheaper than imported, but its use is limited, primarily to basic equipment and equipment built under licence.

Interest rates

The government aims to maintain economic growth at around 8% per annum and is trying to create economic conditions to promote this, including measures to boost consumer spending and infrastructure development. In light of this, and bearing in mind that prices have fallen slightly, the People's Bank of China (PBC) has continuously lowered interest rates in recent years. Rates for working capital loans for state-owned enterprises have declined from about 10% to around 6% since the end of 1996. At January 2000 PBC rates for working capital were 5.85% on a 12-month basis and 5.60% on a 6-month basis. Interest rates for privately owned companies attract a premium of about 30 points, currently standing at about 7.25%.

Exchange rates

Exchange rates have been steady in recent years, almost to the point that the rate between the USD and the Yuan has appeared pegged. There has been a very gradual strengthening in the currency against the dollar, however, which has further reduced competitiveness. Exchange rate movements have, at least in dollar terms, provided little relief from rising costs despite calls from exporting industries (including shipbuilding) to devalue. Loss in competitiveness has been much more marked when the Yuan is measured against the currencies of Japan and South Korea.