

# Waving Market – Where To Go?

Cycle position in the worlds most speculative market



*Calamities sent by Heaven may be avoided,  
but from calamities brought on by one's self  
there is no escape.*

*Cheng Shui*

*COCCO World Shipping China Summit  
"Riding the Wave"  
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*Dr Martin Stopford, Managing Director, Clarkson Research*

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*COSCO SUMMIT, Tienjin*

*1<sup>st</sup> November 2007*

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*We are still enjoying a shipping market which outshines any other cyclical peak in the last two centuries in terms of its length and the number of vessels which have benefited from exceptionally high rates. Nobody forecast such an extreme cycle, and it would be foolhardy to project precisely how long it will last or what will follow. But it is clear that in this boom the equity sucked out of the business in the 1980s has returned. It is not over yet and taking positions on the last few years remains one of the most interesting investments available to global speculators today.*

### **Part 1. Shipping Today**

Good morning ladies and gentlemen. It is a great honour to be addressing you. It has been an amazing four years in the shipping markets and although we all know from long experience that shipping booms cannot last for ever, this one seems different from its predecessors. So what is going on?

If we start with the freight market, the Clarksea index in Figure 1 shows the average earnings for

the four main market driven segments (tankers, bulkers, container ships and gas). It is clear that something changed in 1999. Until then the average earnings was around \$11,000 a day, but since then, the market has spent most of its time in the \$20-30,000 a day band and today it is up at \$38,000/day. It just keeps on going and I expect you're all feeling as confused as I am. Is it a bubble that will suddenly "pop"? Or is it a structural change which may have at least a couple more years to run as China and S. Asia expand their demands on the shipping market?

Well these are the big questions and my aim in this short paper is to try and put these questions into perspective, discussing why this "Wavy Cycle" is so extreme and what we actually know with some degree of certainty about its future. But I will start with an overview of where we are today, and how we got here.

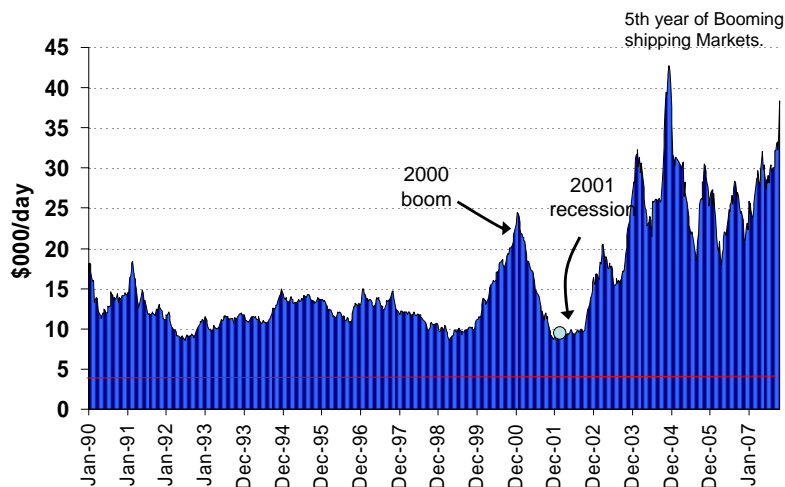
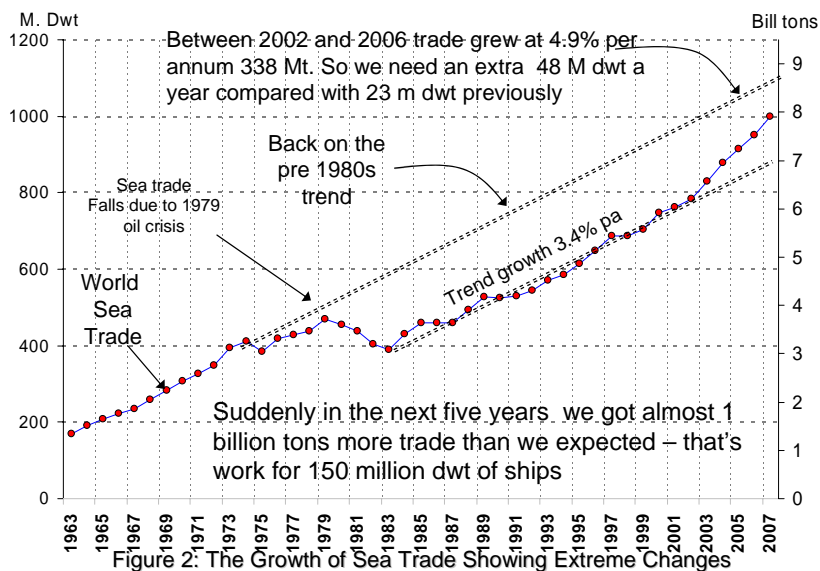


Figure 1: The Clarksea Index (tankers, bulkers, containers, gas)

### Part 2 Shipping Demand Trends 1977 to 2006

I believe the amazing market we have today can be traced back to the appalling market we had 20 years ago in the 1980s.

Between 1979 and 1983 there was a significant decline in trade, caused principally by the oil price shock of 1979. This is shown in Figure 2 which shows the world sea trade growth trend from 1963 to 2007. For 20 years between 1983 and 2000 the trend was very steady, growing at an average of 3.4% per annum. However in the late 1990s China started to grow much faster than in the past. This supercharged trade growth, but the effect was hidden by the two world economic recessions of 1997 (the Asia Crisis) and 2001 (The Dot.Com crisis), As a result during the last seven years the trend growth of seaborne trade has changed, moving up from the 3.4% per annum trend of the previous two decades to 5% per annum. This is highlighted by the dotted lines in Figure 2.



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As a result by the end of this year world sea trade will be 800 million tons higher than the 1983-2002 trend suggested. So it is easy to see why the shipping industry was taken by surprise. In looking ahead the key issue is to judge how the surge of growth 2000-2007 will develop in future. Since it was largely generated by the Chinese economy and in particular the steel industry, in considering future trends we must look closely at the structural changes that are likely to take place in the Chinese economy in the coming decade.

### Part 3 Shipping Supply Trends and Dynamics 1977 to 2006

It took over 15 years for the supply side of the shipping industry to adjust to the extreme decline in demand in the early 1980s, during which time it was operating with chronic surplus capacity. This is important because during such a long period the industry became used to chronic over-supply and started to treat it as normal.

#### 20 years of under-investment in ships

However during this period the adjustment process was going on. It involved the gradual reduction of shipbuilding capacity and the resumed growth of sea trade. If we now examine to the supply-side, shown in Figure 3, and compare the growth of supply (the bars) with the growth of demand (the line) it is clear that during the 1990s the merchant fleet was growing more slowly than demand. The reason for this was that the market was still soaking up the tail end of the massive surplus created in the 1980s. To put numbers on this, between 1990 and 2000 sea trade grew by 2.9 percent per annum (a slightly below average decade), but the fleet grew by only 2.1 percent per annum.

Because surplus was being absorbed during the 1990s and the fleet built during the 1970s "bubble" deliveries was ageing, by the end of the 1990s the shipping industry was (though we did not know it at the time) under investing. In retrospect this is clear from Figure 3 which shows that between 1989 and 1999 the merchant fleet grew significantly more slowly than sea trade - evidence of under-investment.

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### *China growth coincides with tight market*

The other ingredient to the super-boom is the timing of China's surge of maritime growth. The big expansion of China's imports and exports, started to become significant just as supply and demand tightened (if it had happened a decade earlier nobody would have noticed because there was plenty of spare ships). As a result supply was very slow to respond to the tight market and for the last three years has struggled to keep up, as can be seen from Figure 3 which shows the demand line finally push ahead of supply between 2002 and 2006 for the first time since the mid 1960s.

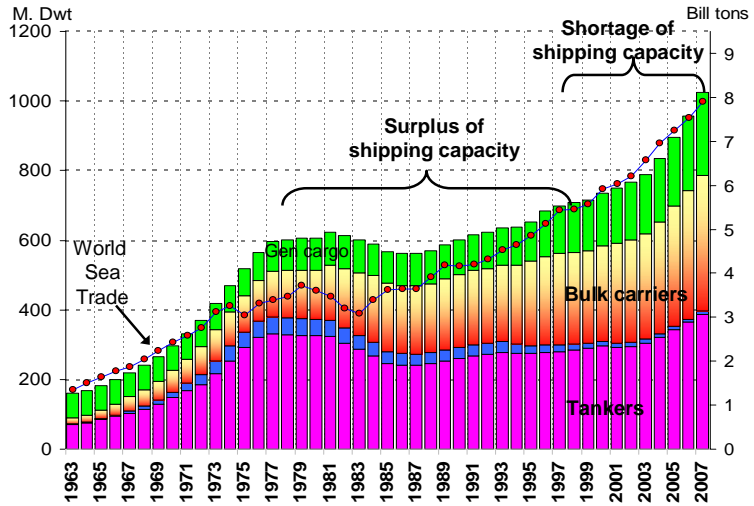


Figure 3: Supply Compared With Demand, Showing Surplus and Shortage

This closing of the supply demand gap triggered a shortage of ships and freight rates and second-hand prices started to increase in 2002, more than doubling. At the same time shipyards were able to double new building prices, creating massive financial incentives to increase capacity. For example an Aframax tanker increased from \$33 million in 2002 to \$67 million today.

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So that is my explanation of why the boom has lasted so long - 20 years of pessimism and scar tissue made the industry very cautious about "gearing up" for the China boom and as a result it has become very wealthy.

### *1980s losses repaid in the 2000s*

One final point of interest is the relationship between the financial losses incurred during the structural recession of the 1970s and 1980s, and the profits made during the 2000 boom. To investigate this point, I calculated the earnings of a Capesize bulk carrier and a VLCC during the period 1971 to 2007. The result of this analysis is very interesting, and is shown in Figure 4, which is a stacked area chart. Over the 36 year period the average earnings was \$41,223 per day. During the 1970s and 1980s recession, which for the purposes of this analysis was assumed to last from 1974 to 1988, the ships earned revenue which

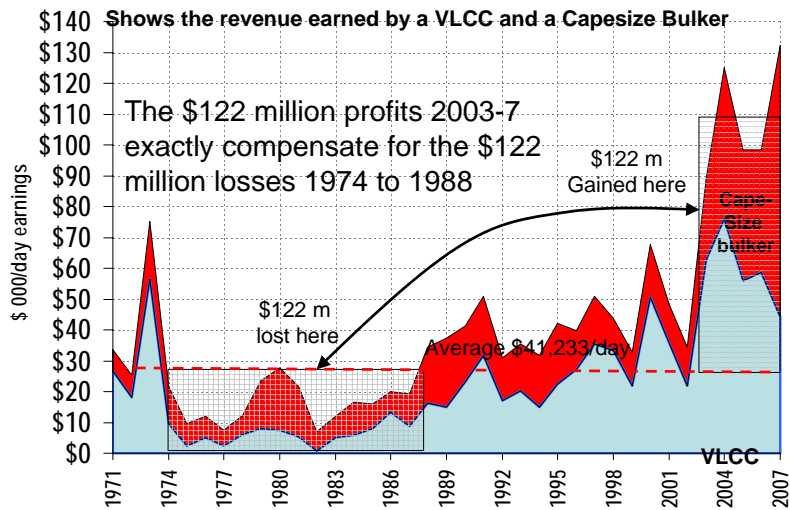


Figure 4: Analysis of earnings of VLCC and Capesize against 36 year average

was \$122 million lower than they would have earned had they been chartered out at the 36 year average of \$41,000 per day. By coincidence, during the boom from 2003-2007 they have so far made \$122 million more than they would have made had they been chartered out at the 36 year average. So as things stand at the moment, the present boom has returned all the cash which has lost in the 1980s. Surely this is the ultimate proof that shipping does comply with the "mean reversion" principle, provided investors are willing to wait long enough.

But looking ahead, we are in a position that is more like poker than economics. Like all the best gambling games, we know quite a lot about some aspects of the future; assert amount about others; and virtually nothing about the remainder. So what happens next is very much a matter of personal judgment.

**Part 4: Globalisation**

One of the positive features for the future is Globalisation. China has made an enormous impact on the shipping market recently, but it is important to see this in context. For the shipping industry the growth

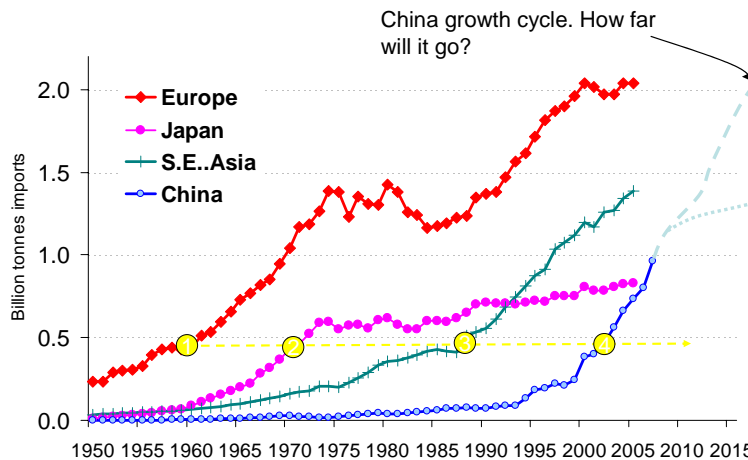


Figure 5 Seaborne imports 1950-2005, showing regional development cycles

of Chinese imports, dramatic though it has been, is no more dramatic than the growth of European and Japanese imports during the 1960s and early 1970s, particularly if you consider the two as happening simultaneously. This is illustrated in Figure 5 which shows trade development cycles over the last 60 years, with Europe and Japan growing rapidly in the 1960s and China taking the lead in the 1990s. There are two messages here.

*Firstly* these development cycles sometimes change trend quite suddenly. In the early 1970s the problem was that Japan and Europe were growing so rapidly that they put pressure on world resources, leading to the oil crises and commodity price inflation. This was the time of concern about the limits to growth which resulted in the Club of Rome, and escalating commodity price inflation, most importantly the price of oil which increased tenfold in three or four years. That brought growth to a halt for quite a few years. Could it be happening again?

*Secondly* globalisation is an ongoing process and even if China moves to a more mature and less resource intensive phase of growth (we do not know quite when that will happen, but it is bound to happen in due course), the process of globalisation will not end. We have South Asia; the Middle-East; Central Asia; Russia; Eastern Europe; South America and even Africa still to go. So the note of caution that China's growth rate could suddenly slow is tempered by the more optimistic message that the globalisation bandwagon is still rolling and has a way to go – we may be only half way through the process.

**Part 5: The World Economy**

*Four years of record economic growth*

One thing that will certainly effect the “wavy cycle” in the next three years in the world economy. During the last four years we have seen very positive growth and this is certainly a major factor driving the growth of the shipping market today. The chart in Figure 6 shows the percentage growth of world GDP on the right hand axes. During the last two years it has grown at over 5% per annum, the highest since the 1970s and forecasts still predicts similar growth rates for 2008. The IMF introduced its October 2007 forecast by observing “The World Economy has entered an

uncertain and potentially difficult period...still the situation at present is one of threats rather than actual major negative outcomes". However there are two cautions which must be made when reviewing the outlook for the world economy.

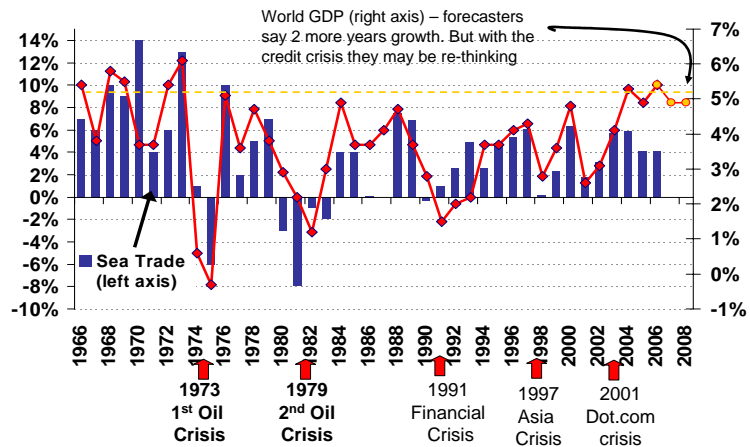


Figure 6 World GDP cycles 1966 to 2007 and recent forecasts for 2008

*The history of financial crises*

Firstly the growth rates for the world economy shown in Figure 6 include a major down cycle every 8 years on average. Most of these were associated with some sort of crisis in the world economy - the 1973 oil crisis; the 1979 oil crisis; the 1991 financial crisis; the 1997 Asia crisis; and the 2001 dot com crisis. These crises correlate closely with cycles in sea trade, shown by the blue bars in Figure 6. It is now seven years since the last crisis broke, so we need to keep an eye open (but no guarantee of regularity).

Secondly the credit crisis which started to blow up in the banking sector during August 2007 looks like a prime candidate for this sort of disturbance. Admittedly we do not know how far it will extend, or whether central bankers will be able to isolate the problem and prevent it harming the world economy. But a prudent assessment says that the risk of recession driven by a loss of confidence and high capital costs has increased significantly over the last couple of months.

Thirdly oil prices are now over \$80 a barrel and it is widely anticipated that further increases will occur in 2008. This is certainly what the IEA believes might happen and recently Goldman Sachs published a paper making the same prediction. So far high oil prices do not seem to have damaged the world economy and have had only a small effect on oil demand, but research suggests that there is likely to be a small negative short-term impact of high prices and much larger medium term effect as the world economy adjusts - indeed it would be astonishing if this were not the case.

So the economic outlook remains positive at this point in time, but the risks of an economic downturn that would damage the shipping market, particularly given the supply scenario outlined in the previous section, are now much higher when they were a year ago.

**Part 6 : China's Growth Trends**

*China approaches 1 billion tons imports*

China's growth is very well documented, and I believe imports will reach 1 billion tons in 2008 (Figure 7). There are several points to make at a macro level. The first is that China's bulk trade is very focused on the steel and construction industries. As a result Iron-ore; steel imports; steel exports; and cement exports have dominated China's trade growth over the last five years.

*The outlook for China's oil & LNG imports*

In comparison energy imports have been more predictable and have grown less rapidly. When Europe and Japan went through their development cycles in the 1960s, they both switched from coal, their traditional fuel, to oil as the primary energy source, which resulted in rapidly growing oil imports which account for a large proportion of the trade growth of these two countries we saw in Figure 5.

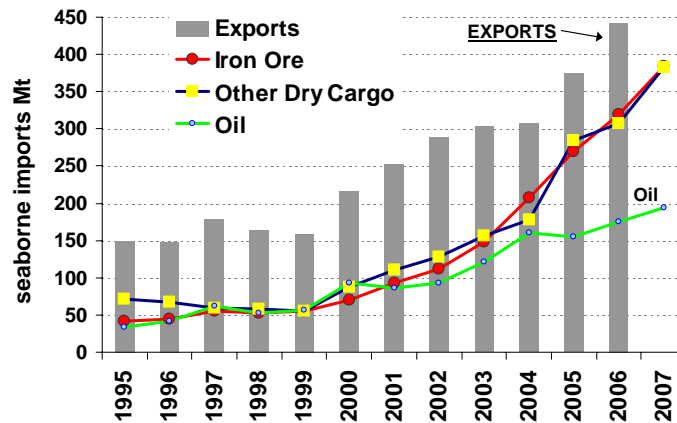


Figure 7 Chinese imports & exports with forecast for 2007

China's strategy today is very different. Their plan to use coal for all core energy applications and only import oil for markets where coal cannot be used, transportation being the main one. This makes economic sense, despite the environmental issues it raises. China has 13% of the world's coal reserves and the seams are easily accessible. Of equal importance coal mining provides jobs in the poor inland provinces where the government is particularly keen to develop the economy (China even explored producing oil from coal). As a result, after a brief surge in 2004, China's oil imports are growing by the amount needed to service the transport market, about 300,000 – 400,000 barrels a day each year at the moment and the trade has lagged way behind the growth of iron ore (see Figure 7). So long as this position lasts it restricts the trade growth potential. One last point. Coal imports have been edging up and exports declining. This could be a temporary trend but is a potential upside for the dry bulk business.

*Outlook for China's dry cargo imports – peak out possible?*

So for the shipping industry China's development cycle has been in mostly about dry cargo. Looking ahead the major issue today is when China's construction boom will "peak out". It has come a long way in the last five years. Steel production has reached 500 mt, more than twice as much as Europe, Korea and Japan combined. As a result China's per capita steel consumption has shot up to 320 kilograms per capita, similar to Europe and the United States. However the per capita income in China is much lower and whilst the development of the economy will certainly continue, it is questionable whether steel production capacity really needs to continue to expand at this rate. A sign that domestic demand is peaking out is the surge of steel exports to almost 100 million tons a year and a reduction in imports. So we could be in the maturing stages of the great China steel boom, but with an economy the size of China it is impossible to be sure about the timing.

*Will changing Chinese economy effect container volume?*

The major export is manufactured cargo shipped by container. The expansion of Chinese manufacturing has had a massive impact on container business and again is a model we are familiar with from the development cycles of Japan and South Korea. But because China adopted an open door strategy and permitted inward investment, the whole thing developed much faster than in those economies. In the short term this trade is vulnerable to a slowdown in major markets of Europe and North America and also to any revaluation of the currency which effects competitiveness.

Finally a comment on why Chinese growth has affected the shipping industry so much more profoundly than the European and Japanese development cycles. At least part of the explanation is the difference between the development model employed by Europe and Japan in the 1960s and China's growth model today. European and Japanese businesses planned their transport strategy meticulously. Major importers treated shipping as part of the industrial operation, building

fleets of ships and covering the balance of their needs with timecharters to independent shipowners. The approach of the Chinese could hardly have been more different. They adopted a free enterprise economy, devoted little attention to planning transport and relied on the spot market to provide ships when needed. I suspect the rapid growth of import and export cargo and the high cost of freight was as much of a surprise to cargo owners as it was to the shipping industry. But shipping is just a minor component in the Chinese development model and the high cost of freight is easily affordable (and will not last for ever).

### Part 7 Shipbuilding Capacity and Demolition

#### Shipbuilding output to surge 2008-2010

Predictably as the economic wheels turned, the available supply of shipyard capacity has gradually increased. Figure 8 shows that shipbuilding capacity was 40 million deadweight in 1999, and increased to 75 million deadweight in 2004, adding 35 m dwt of capacity. However the doubling of newbuilding prices over the last four years made shipbuilding very profitable, especially for new entrants like China with low production costs. As a result over the last three years many new shipyards

have been commissioned and plans put in place to expand existing facilities. Investment in new ships is filling all this capacity. Orders for new ships quadrupled between 2002 and 2006. In 2006 investment totalled \$120 billion, compared with average annual investment of \$20 billion a year in the 1990s. Already in the three quarters of 2007 \$115 billion of orders have been placed. These are very large sums and about half

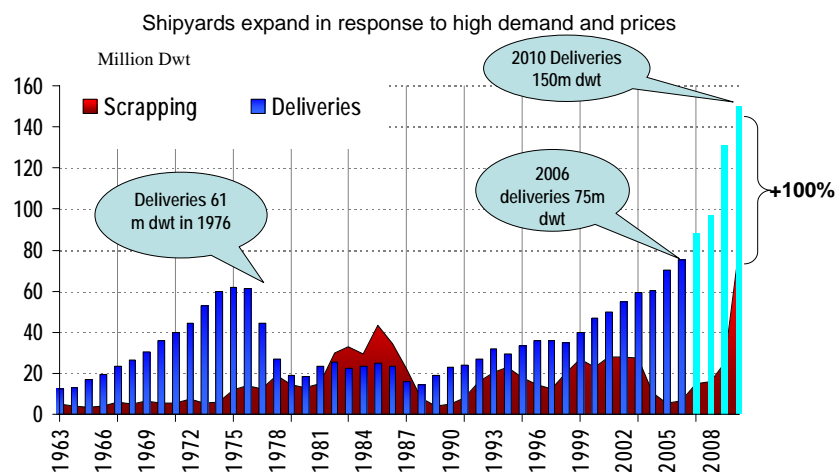


Figure 8: Shipbuilding output expected to double in five years

of the increase in investment is due to volume and the other half to higher prices. Figure 8 shows output reaching 130 million dwt in 2009, and even if we allow for some slippage of deliveries it seems likely that there will be a further increase to 150 million deadweight in 2010.

Since the amount of replacement investment will not increase very much (the industry is now demolishing ships built in 1980s, a period of when shipbuilding production was very low) that means that by 2009 the fleet will grow at around 100 million deadweight a year. That may seem worrying but we economists know it's what it is all about – ensuring that there are plenty of ships to carry world trade. The fact that shippers are prepared to pay so much for them today is evidence of how important they are.

#### The fleet growth multiplier – new record

In economic terms this is very understandable. If you can build a ship for \$90 million and sell it for \$140 million it would be folly not to “make hay while the sun shines”. Shipyards have not made much money over the years, so who can blame them for not making the most of the market. Most of the immediate expansion will come from South Korea, the current undisputed market leader, and China the new challenger. Both have expanded existing capacity and are building new shipyards to take advantage of the high prices. Our estimate is that the capacity of each will increase by 5 m CGT over the next four years, whilst Japan seems to be holding its position.

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From a global perspective the main point is to weigh up the effect of this capacity growth on the industry's ability to expand the merchant fleet. How will the tonnage of ships being ordered measure up to the future requirements of the world merchant fleet? To demonstrate the extent of the change which is taking place, I calculated the "fleet growth multiplier" (FGM) over the period 1967 to 2007 and the result is shown in Figure 10. This simple statistic expresses the net new orders each year as a percentage of the fleet at the beginning of that year (net after deducting demolition in the year from the orders) divided by the average annual percentage trade growth over the previous five years. Normally you would expect the FGM to average out at a value of one, since ordering should match trade growth. The previous peak value of the FGM was 4 in 1973, but this previous record was matched in 2006 and in 2007 if current trends continue, it will end the year at a new record of five. In other words investment is running at five times the trend rate of trade growth.

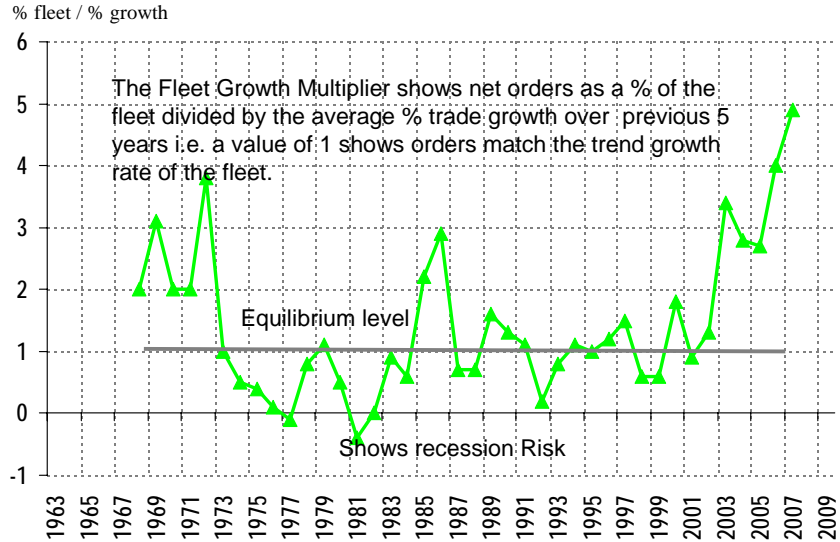


Figure 9 Fleet growth multiplier showing orders related to net trade growth

### Part 8 Where Next for the Wavy Cycle?

Which brings us back to the original question - where is the wavy cycle going next? In this paper I have argued that there are some things we know a great deal about, mainly on the supply side of the market. Four years of extreme freight rates have motivated a the shipbuilding industry to double its capacity, and until 2010 at least there is sufficient investment to fill this new capacity.

If all goes well and the yards deliver the vessels on time, shipyard production could reach 150 million deadweight in 2010. In that year there may be heavy scrapping of single hull tankers, but even if that is subtracted, the fleet will grow by around 90 million deadweight tonnes. Figure 10 shows the development of the world fleet, which is likely to reach 1,240 million deadweight by the end of 2010. That represents fleet growth of around 7.5 per cent per cent in 2008; 9 per cent in 2009; and 3.8 per cent in 2010, assuming all the single hull tankers are scrapped.

This is a challenging target for trade. To keep up with supply trade will need to follow Case

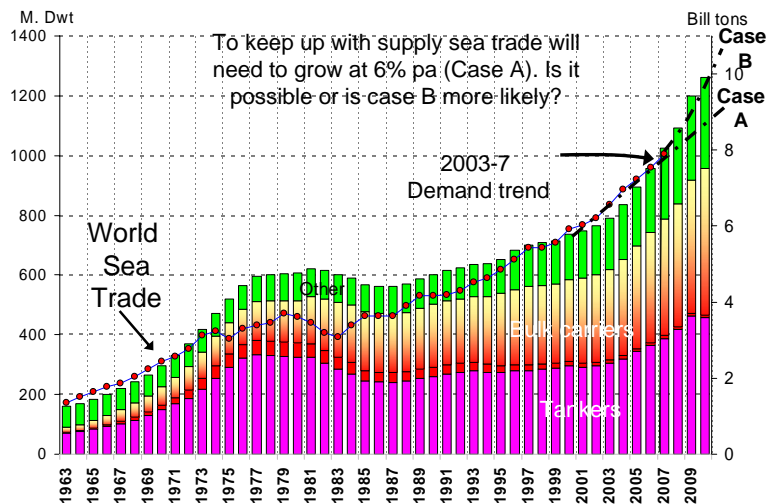


Figure 10 Supply- demand trends projected forward to to 2009

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B line in Figure 10 – about 6% per annum compound growth. This is not impossible. If the global economy continues to grow uninterrupted and globalisation in south-east Asia; South Asia; Central Europe and eastern Europe take a hold, then it might just be possible for demand to keep up with supply. But that would require China to continue expanding its steel industry at the current rate, which seems unlikely - by 2010 Chinese annual steel consumption would be far above European levels. But again it is not impossible. However even if the world economy does well in the next three years, the Case B trade scenario seems the more likely.

All of which explains why shipping today is such a fascinating gambling game. There is plenty of money on the table and we know as much about the future as any professional poker player knows about the cards he will be dealt in the rest of the game. It is up to each investor to sift the information and place his bets on where the wavy cycle goes next. All I can do is wish you good luck, good judgment and good gambling.

Martin Stopford  
Friday 1<sup>st</sup> November 2007

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