

Best catalyst of Korean yards

Since 2008, the key driver of Korean yards has changed from Chinese growth to oil. For this reason, the price of oil is now regarded as the best indicator of the stocks, as it is related to rising demand for offshore structures and LNG-related products. Furthermore, we see the fuel efficiency of commercial vessels as an even more important driver. Korean yards are playing a critical role in the global energy industry and are becoming solution providers. We maintain our OVERWEIGHT stance on the sector.

- » Best correlation found in oil prices
- » Solutions to the global energy crisis
- » Contracts just delayed; they have not disappeared
- » OVERWEIGHT stance maintained

Best correlation found in oil prices

Since the economic crisis in 2008, stocks of Korean yards have shown a strong correlation with oil prices. There are two clear reasons for this: Firstly, strong oil prices invited stronger demand for offshore structures, such as drill ships and FPSO. Since oil prices hit U\$60/barrel in the middle of 2009, drill ship orders began to explode by the end of 2010; a year and a half year later. Usually, offshore structure orders lag oil prices by 1-2 years; we thus expect further strength in new orders for the next several years to come.

Secondly, strong oil prices led to a higher LNG prices, followed by increased investments in LNG-related infrastructure and LNG carriers. Furthermore, Japan's earthquake/tsunami disaster triggered a sharp recovery in the LNG market and invited a longer-term rally (see our report of 17 March; 'California déjà-vu') and greater demand for LNG-related products.

Lastly, we see an even more important driver in the commercial vessel segments, due to the rising importance of fuel efficiency. For shipping companies, the fuel cost burden rose to 25-30% of revenue in 2011E; up from 17-19% in 2010 and 8-12% in the early 2000s. Fuel efficiency began to determine the profitability of most shipping companies from 2011E. In our view, the survival of shipping companies will be determined by how many fuel-efficient vessels they can secure.

The fuel efficiency issue explains everything that is currently happening in the shipbuilding and shipping industries, including (1) the increasing market share of Korean yards, with their outstanding fuel efficiency; (2) an increase in ship scrapping, due to the higher fuel consumption of older vessels; and (3) slow steaming being applied to every type of vessel, followed by an increase in BDI. The move of major shipping lines toward mega-sized containerships is explained by the fuel efficiency issue. Figure 2 tells the importance of fuel costs to the operation of a containership.

[See the last page of this report for important disclosures](#)

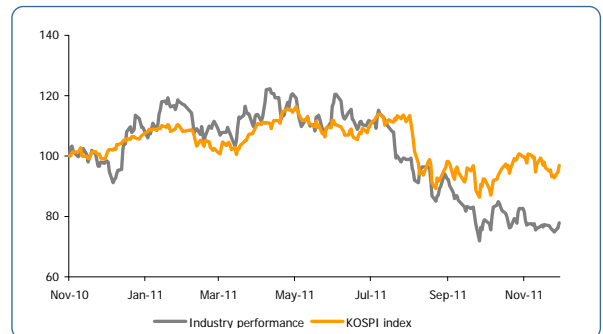


Stocks for action

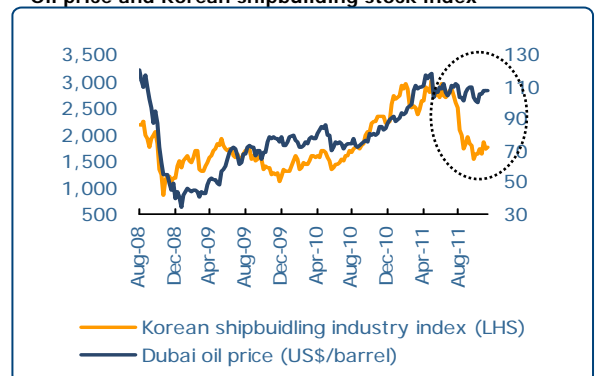
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Hyundai Mipo	010620 KS	BUY	118,500	390,000
Daewoo Shipbuilding	042660 KS	BUY	29,800	53,000
Samsung Heavy	010140 KS	BUY	31,450	52,400
STX O&S	067250 KS	BUY	14,050	62,000
Hanjin Heavy	097230 KS	Buy	19,350	59,000

Note: Prices are in KRW as of 1 December 2011

Performance



Oil price and Korean shipbuilding stock index



Source: Company data, Mirae Asset Research

Sokje Lee, Analyst

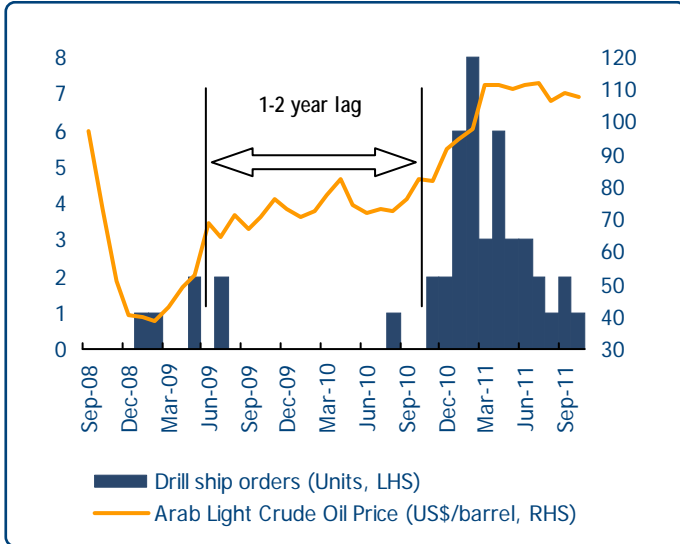
82 2 3774 1781 sokje@miraeasset.com

Source for above data: Bloomberg, companies, Mirae Estimates

Meanwhile, old analytical tools, such as (1) new order volume; (2) new building prices and (3) quarterly earnings of yards began to lose their power to explain the movement of share prices of Korean ship yards. Until year 2007, these factors were partially effective, as Korean shipbuilding stocks moved together with the ship demand originating from Chinese economic growth. But now, these factors have become useless, as the industry is driven by new driver: Oil price.

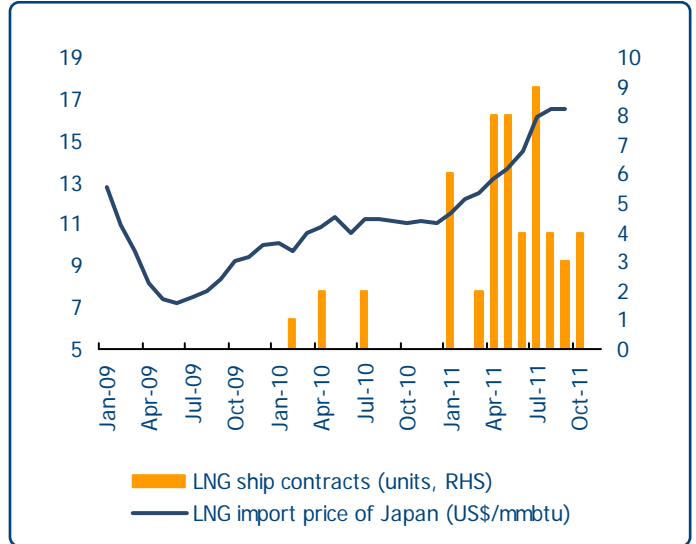
Old tools are already out of fashion

Figure 1.1 Oil price and drill ship order trends



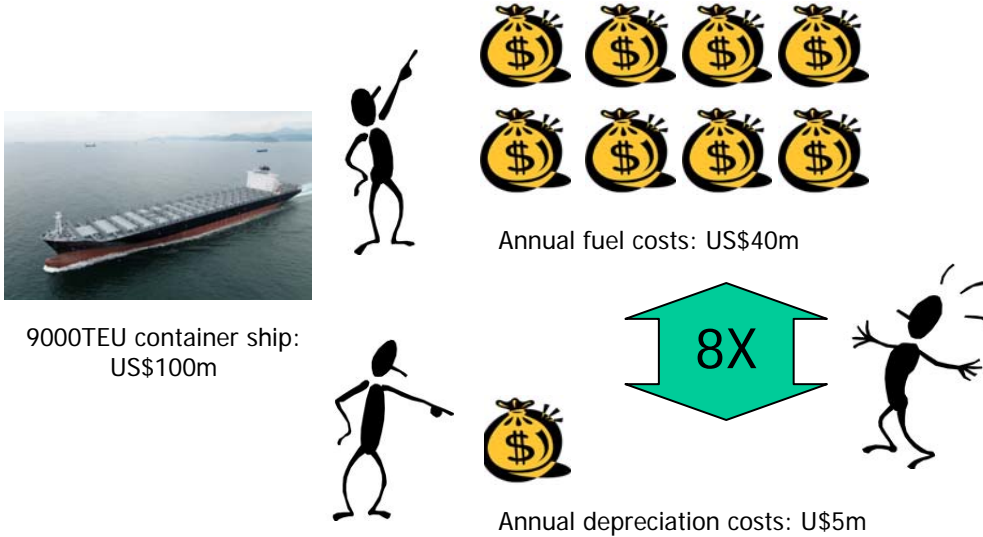
Source: Clarksons, Mirae Asset Research

Figure 1.2 LNG price and LNG carrier contracts



Source: Clarksons, Mirae Asset Research

Figure 2. Cost of ship operations (US\$m)



Source: Mirae Asset Research

Solutions to the global energy crisis

The market is preoccupied with the European debt crisis these days, but we believe the global energy outlook to be a greater - and longer-term - concern. Despite the current financial turmoil, we focus on the fact that oil prices have remained stable. Oil reserves on land are being depleted and massive investments in offshore structures are now required. Developing countries are consuming more oil; offsetting the decrease in oil consumption by developed countries. All of the oil majors - except for Petrobras - have been reporting oil production falling by more than 10% from their recent peak production of several years ago. New energy resources need to be developed; otherwise, the global economy may face a significant energy crisis.

Korean yards have begun to contribute significantly to the global energy business. What would happen to the global energy industry without Korean yards? We can imagine significant delays in new oil field development, or a massive hike in oil prices. This is because (1) since 2000, 88% of drill ships have been supplied by Korean yards, with an 81% market share in new building contracts for the past three years; without Korean yards, we may face a limited number of new offshore oil reserves; (2) the US is preparing for LNG exports from shale gas and they need to find transportation tools - LNG carriers, in other words - to realize their business plan (since 2006, Korean yards have delivered over 77% of all global LNG carriers); and (3) all commercial vessels are now required to reduce CO2 emission by 20% per ton-mile by 2020. Korean yards are supplying newly-designed, fuel efficient vessels; reporting newly developed vessels that can save 10-20% in fuel costs, when compared with existing vessels.

We believe Korean yards are the solution to a potential energy crisis. Their role is not confined solely to new oil field development and LNG-related structures, but also to commercial vessels. It is impossible to draw a picture of the long-term global energy outlook without Korean yards, in our view. Many players in offshore structures have gone out of business since the mid-1980s, but Korean yards have maintained their positions and honed their skills; finally emerging as the key solution providers to the global energy industry. This also explains why the stock prices of Korean yards have recently begun to show a stronger correlation with oil prices.

Contracts just delayed; they have not disappeared

Since the European debt crisis, the market has been focusing on ship financing issues, followed by the slowdown in new orders. But we have a very clear stance that new orders have just been delayed; they have not disappeared. The six major players of Korea are still enjoying a decent inflow of inquiries about slots, but are temporarily suffering from delayed signings, due to the financial crunch. New ship orders should come, as ship owners have eschewed new shipbuilding contracts for the past three years. The falling order book-to-fleet ratio proves the potential for new order flows. The possibility of finding desired vessels in the secondhand market is limited, while ship owners' replacement demand continues to grow, as time goes by.

Also, we believe the financial crisis will not be a burden to these top-tier players. The crisis will result in an accelerated restructuring of the global shipbuilding industry and top-tier players will enjoy improved bargaining power and bigger market shares, as limited financing opportunities will be given only to proven top-tier yards.

We expect further expansion of market shares by Korean yards toward 2012E. Amid high oil prices, ship owners have become very keen on fuel efficiency and have thus begun looking to Korean yards, even for general commercial vessels, such as bulk carriers and tankers. Prices for bunker fuel - the main fuel for ships - have recovered to 90% of their historical high prices of 2008, while crude oil prices have recovered to only 78% of their previous highs. Also, YTD average oil prices will be recorded as the historical yearly high.

Increasing importance of offshore oil and LNG

88% of drill ships and 77% of LNG carriers are made by Korean yards

Key solution providers to the global energy industry

Contracts delayed; they have not disappeared

An opportunity to accelerate the restructuring of the industry

Wider gap between oil price and share price; OVERWEIGHT

We see a strong correlation of Korean yards with oil prices, but the recent stock corrections have resulted in a wider gap between these two factors (see Figure 3). Current share prices can only be justified if oil prices should fall below US\$60/barrel within 6-12 months. If they do not, we believe the current gap will provide the best buying opportunities.

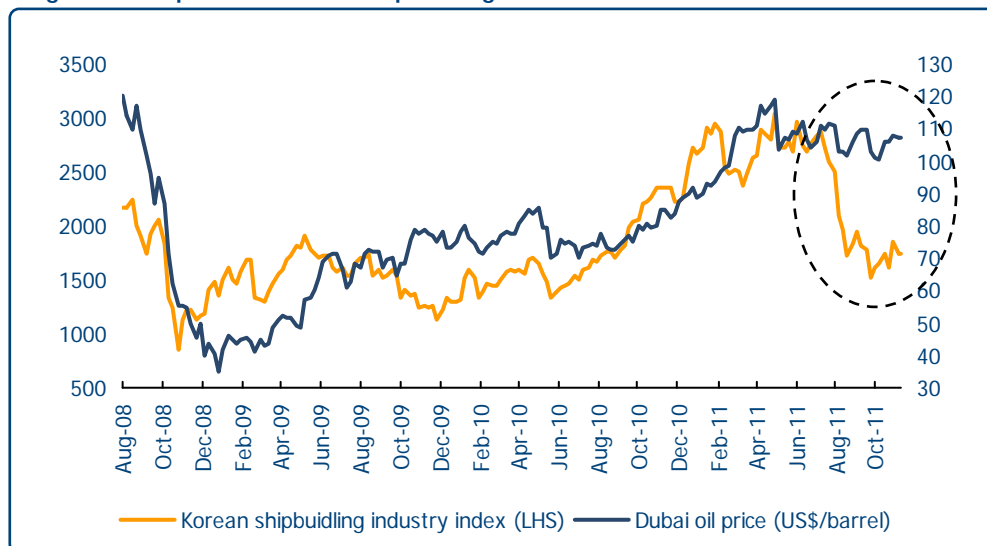
In other respects, the industry is now completely different, when compared with the crisis in 2008. Korean yards are now trading at similar or lower PB multiples than the bottom multiples seen during the Lehman crisis. In the middle of 2008, we saw historical high figures for shipbuilding prices, freight rates and global order books. There were many downside risks in those figures, as well as threats of cancellation, but the current situation is completely different from that time. We now have rock-bottom shipbuilding prices, lower freight rates and depressed order books. There is no downside risk in sector-related figures, in our view.

We maintain our OVERWEIGHT stance on the sector.

The biggest gap from fundamentals

Completely different from the Lehman crisis

Figure 3. Oil price and Korean shipbuilding stock index



Source: Bloomberg, Mirae Asset Research

Recommendations

By stock (12 months)

Buy: A target price + 10% or more above the current price,
 Hold: Target price within - 10% to +10% of the current price
 Reduce: A target price of -10% or less below the current price

By industry

Overweight: over +10% of the current industry index
 Neutral: -10% to +10% of the current industry index
 Underweight: -10% or less than the current industry index

Earnings quality score

Earnings Quality Score = $0.70 \times (\text{Historical Earnings Stability}) + 0.15 \times (\text{Consensus Forecast Certainty}) + 0.15 \times (\text{Consensus Forecast Accuracy})$

1. Historical Earnings Stability

- The variability of the net profit growth rate (YOY) over the last 20 quarters was translated into percentage terms.
- Earnings growth variability was calculated based on MAD (Median Absolute Deviation), rather than SD (Standard Deviation) in order to minimize distortion from outliers.
- The lower the earnings growth variability, the higher this indicator.

2. Consensus Forecast Certainty

- The gap between analysts' views on 12-month forward EPS was translated into percentage terms.
- The gap is calculated by dividing the SD of 12-month forward EPS with the average value.
- The narrower the gap, the higher this indicator.

3. Consensus Forecast Accuracy

- The median value of absolute EPS surprise over the last 3-year was translated into percentage terms.
- EPS surprise was calculated based on "the actual figure at the end of the year / the consensus estimate at the beginning of the year - 1".
- The lower the absolute EPS surprise, the higher this indicator.

* Reference

- 1) Consensus Forecast Certainty and Consensus Forecast Accuracy were applied only to companies with more than 5 years of EPS estimates.
- 2) We gave the average score of 50 to cases in which the aforementioned indicators could not be produced.

REMARK: Korean analyst is only responsible for Korean securities and relevant sectors only

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[Analyst: Sokje Lee]

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