

12 Aug, 2008

Key Data	INR
CMP	310
Target Price	390

Key Data	
Bloomberg Code	BHSL IN
Reuters Code	BHAR.BO
BSE Code	532609
NSE Code	BHARTISHIP
Face Value (INR)	10
Market Cap. (INR mn.)	8436.4
52 Week High (INR)	865
52 Week Low (INR)	260
Avg. Daily Volume (6m)	28375
Beta (Sensex)	0.5

Shareholding	%
Promoters	36.3
Mutual Funds / Bank/ FI	35.8
Foreign Institutional Investors	13.7
Bodies Corporate/Individuals/ Others	14.2
Total	100.0

Particulars	FY08	FY09E	FY10E
Net Sales (Rs. mn)	6,998.0	10,108.8	15,159.4
EBIDTA (Rs. mn)	1,914.6	2,607.0	3,822.3
EBIDTA (%)	27.4	25.8	25.2
PAT (Rs. mn)	1,073.3	1,286.0	1,783.7
PAT(%)	15.3	12.7	11.8
EPS (Rs.)	38.9	40.1	55.7

Bharati Shipyard Ltd

Bharati Shipyard Ltd (BSL), established by Mr. P C Kapoor and Mr. Vijay Kumar in 1973, is one of India's leading private sector shipyard. BSL builds offshore support vessels, bulkers, rigs, tugs, cargo ships and tankers. BSL operates through 4 yards and is building two yards at Mangalore (Karnataka) and Dabhol (Maharashtra). Company's current order book stands at Rs 48.7bn (contract value) with execution pending to the tune of Rs 36.63 bn as of 30th June 2008.

Investment Rationale

- **Bright Outlook for Offshore sector:** Rapidly rising demand for hydrocarbons and surging oil and gas prices are providing strength to Exploration & Production (E&P) sector. Total global investment in offshore sector is expected to increase from USD 235 bn in 2007 to USD 275 bn in 2011 (Source: Douglas Westwood survey). Increase in E&P expenditure along with ageing fleet will lead to strong demand for offshore vessels.
- **Presence in offshore segment:** Approximately 70% of BSL's order book constitutes of offshore vessels. Worldwide BSL ranks seventh in terms of order book for offshore vessels and it is the sole Indian player with order of an oilrig.
- **Robust order book:** BSL has a robust order book with contract value of Rs. 48.70 bn as of 30 June 08. Current order book is 7.6x times FY08 revenues and is to be executed over FY08-FY11, leading to strong revenue visibility.
- **Capacity expansion:** BSL is undertaking two Greenfield project worth Rs 10.5 bn at Dabhol and Mangalore, expected to be completed by FY11. According to the company, once fully operational, Mangalore yard would be able to generate 3.5x and Dabhol yard 4x of the current turnover at 100% capacity utilization. These yards would be major contributors towards incremental revenues and facilitate faster execution of orders.

Valuation and Recommendations

Considering the opportunities in the offshore E&P and BSL's expansion plans, we expect its sales to grow at a CAGR of 47% and PAT to grow at a CAGR of 29% from FY08 to FY10E. At the CMP of Rs.310, BSL is trading at 8x its FY09E EPS and 5.6x its FY10E EPS. We initiate coverage on Bharati Shipyard Limited with **BUY** recommendation and a target price of Rs. 390, which is equivalent to a forward P/E of 7x to its FY10E EPS of Rs. 55.7.

Analyst

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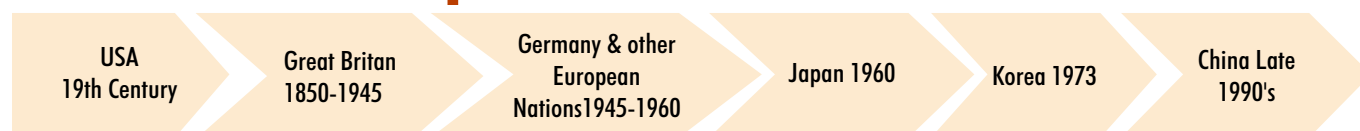
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Ship Building Industry

History

The shipbuilding industry is a global industry and has been witnessing dramatic changes in global leadership. At the beginning of the 19th Century, USA was the world leading shipbuilding nation. Great Britain became the world leader (in 1882 it captured 80% of world market) during 1850- 1945. After the Second World War Germany and other European countries took over leadership from Britain.

In the late 1960s, European shipyards began to face increased competition from shipyards in countries such as Japan. Due to high labor cost in Europe, a significant shift in market share began to occur from shipyards in European countries to shipyards in developing countries in Asia with lower cost of labor. In the 1960's Japan became the world leading shipbuilding nation. Since 1973, South Korea has built up and expanded its shipbuilding industry and from late 1990's, China has emerged as a major shipbuilding nation.



Source: KPMG-CII

Global Shipbuilding Snapshot

Market Share

Country	Market share (%)	
	2006	2007
Korea	36.00%	38.00%
China	23.50%	29.60%
Japan	26.20%	20.00%

(Source: Barry Rogliano Salles)

At present, Korea, Japan and China are the major global shipbuilding hubs, controlling approximately 87.6% of the total market. Korea is the market leader with 38% of market share. China, which had 23.5% of the market share in 2006 rose to 2nd position with a market share 29.6% in 2007, as their yards managed to deliver 35% more output. With huge expansion plans in line, it is now quite possible that China will become the world's leading shipbuilder well before 2015, a goal set only a few years back by Chinese authorities.

Presence

Particulars	Containership	Bulkers	Tankers	LNG	Car carriers	Cargos	Ro-Ros	Cruises	Offshore
Korea	29.5	25.7	14.7	2.8					
China	6.8	47.8	8.2			3	3		
Japan	1.6	20.4	4.1	0.5	2.3				
Philippines	-	-							
Europe	1.7		1.1			0.6		2.6	0.6
Taiwan	-								
Vietnam		0.9	0.3			0.1			
India		1.9				0.1			0.1

(Source: Barry Rogliano Salles)

(Numbers denotes new orders (million gt) for the year 2007) (Annexure I: Gross tonnage (gt))

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**India is primarily present in
 Bulkers & Offshore Vessels
 segment**
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**Yards in Korea, China,
 Philippines, Vietnam and
 India are undertaking major
 expansion**
 ”

Korea, the market leader has its presence in segments constituting majority of world's fleet (Annexure II) like container, bulkers, tankers and LNG. China and Japan also have their presence in similar segments.

Europe is primarily in cruise segment. However it also has its presence in containership and offshore segment. Norway (Europe) is the market leader for offshore vessels.

India is primarily in bulkers and offshore vessels.

Plans across the globe

Country	Plans
Korea	All Players have expansion projects to improve productivity, either in their Korean sites or abroad, through new dry docks, new floating docks, dock extensions, new production block factories, new assembly techniques.
China	Investments in both new and existing shipyards are multiplying. It is now quite possible that China will become world leading shipbuilder well before 2015.
Japan	Japanese yards are not undertaking any significant expansion plans.
Philippines	Due to foreign investment, and in particular the involvement of Korean and Japanese builders Philippines has prospered.
Europe	Players have greatly suffered from shift of production to Asia.
Vietnam	Vinashin, The main Vietnamese shipbuilder, is pursuing an ambitious investment program, which envisages raising the number of building sites to 23 between now and 2010/2012.
India	Indian shipbuilding industry has also gained from world ship building boom as they managed to offer attractive delivery dates and competitive prices. Almost all major private players are on expansion phase.

(Source: Barry Rogliano Salles)

Order Book

Rank	Country	Order book mn gt		New orders mn gt	
		2006	2007	2006	2007
1	Korea	85.6	134	39.5	76.6
2	China	48.9	104.8	28.3	69
3	Japan	62.7	71	25.5	29.4
4	Philippines	2	5.5		
5	Germany	4.5	4.2		1.3
	Europe	22	22	5.9	8.7
6	Taiwan	2.6	3.2	1	1.2
7	Vietnam	2.2	3.1		1.4
8	India	0.84	2.7	0.3	2.1

(Source: Barry Rogliano Salles)

In terms of order book too Korea, China and Japan lead the market. Order book of both Korea and China has increased by more than 50% in 2007, with China in fact registering a growth of more than 100%. Chinese shipyards have benefited in 2007 mainly from strong demand for bulk carriers. They have taken more orders in this sector than Korea and Japan combined.

India ranks 8th in terms of order book. Indian order book has significantly increased from 0.84 mn gt in 2006 to 2.7 mn gt in 2007, a 221.4% yoy growth. India prospered as it was able to offer new possibilities to owners looking for competitive prices and attractive delivery dates, especially with yards in Korea, China and Japan booked till 2012.

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World Order book has increased at a CAGR of 31% from 2003 to 2007
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Order book Growth



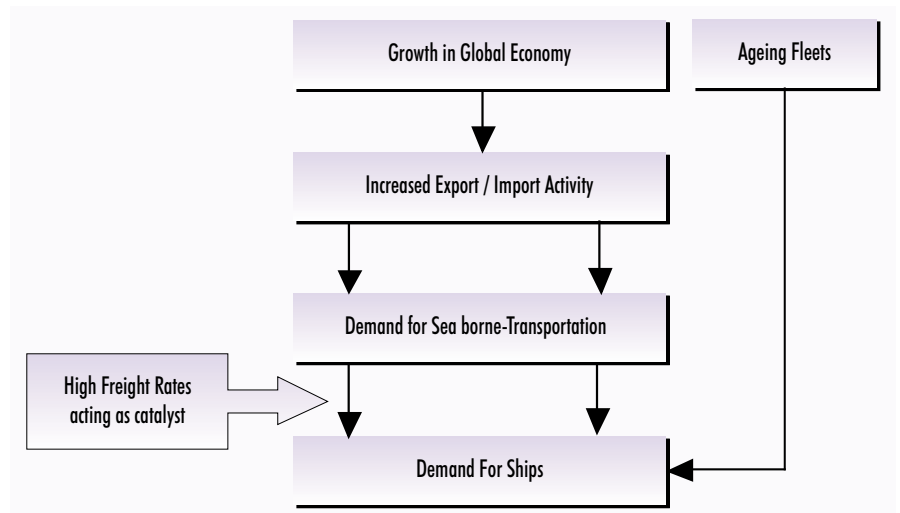
(Source: R.S. Platou)

Order levels were fairly stable from between 1998-2003. However, from 2003 order book has witnessed a strong growth. Orders book increased from 109.5 mn dwt in 2002 to 164.8 mn in 2003 and this growth in order book has continued till 2007. Order book has increased at a CAGR of 31% in period of 2003 to 2007.

Current world order book (2007) stands at 488.5 mn dwt, constitutes 47% of world’s fleet and is spread over several years, with few players booked till 2012-2013.

Growth in order book is mainly attributed to

- Growing Global economies
- High freight rates
- Regulations & Ageing Fleets

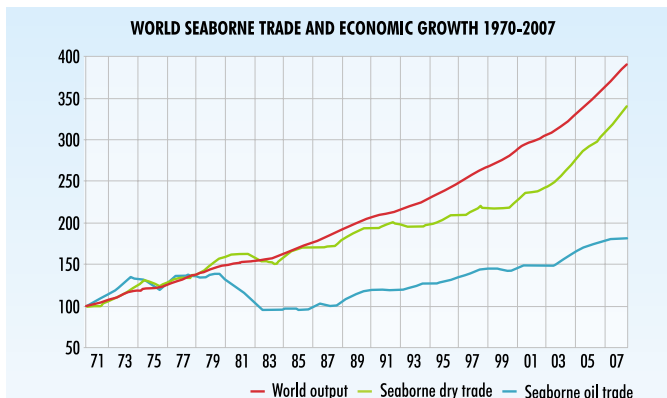
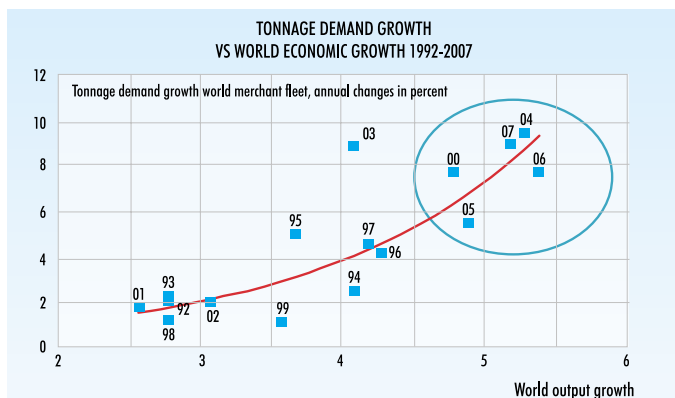


Source: ACMIIL Research

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World output growth since 2004 has been in excess of 4.5%
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• **Growing Global economies**

One of the prime reasons for surge in order book since 2004 has been strong world wide economic growth. World output growth since 2004 has been in excess of 4.5%. This strong growth has resulted in strong demand for tonnage, as there is a positive co relation between world output and Sea borne trade. Tonnage demand growth of world merchant fleet has been in excess of 5%, which was never the case in past.



Source: R S Platou

“
High ordering activity in 2007 cannot be expected to continue at the same levels
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- **High freight rates**

Strong demand for tonnage has resulted into accretion in freight rates around the globe. Higher realization allows repayment of owner’s investments in shorter and shorter time and encourages owners to make investments.

- **Regulations & Ageing Fleets**

Regulations & Ageing fleets have also contributed to order book growth.

To avert potential accidents regulators fix age limit/ criteria’s on ships whereby ships are not allowed to operate after crossing a particular age limit or certain criteria. Eg: The International Maritime Organization (IMO) has prescribed a phase out timetable setting 2010 as the principal cut-off date for all single hull tankers. This had created a strong replacement demand for ship in 2006. The Directorate General of Shipping has fixed the age limit at 25 years for all cargo vessels other than gas carriers, oil or product tankers and dredgers. For gas carriers, the limit is 30 years. This acts as demand driver for yards around the globe

Ships are also generally scrapped as they get old, because rising maintenance cost makes them unfeasible to operate. For last two years of the total bulkers fleet, 27% constituted ships built before 1987. The same has resulted into sharp rise in orders for bulk carriers in previous years.

Global outlook for 2008

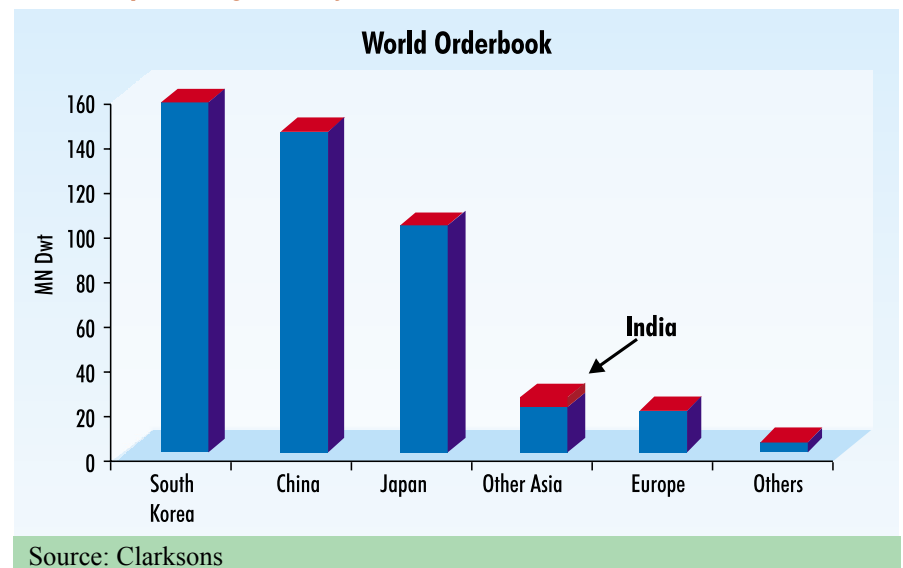
Consensus forecast for 2008, indicate a global economic growth of 4.7 percent, down from last year’s 5.2 percent Based on the order books at the beginning of the year and assumptions for scrapping and conversions, fleet growth could be of 9 percent for 2008, a little higher than the 8.4 percent recorded last year. (Source: R.S. Platou).

A fleet growth of 9 percent will require a world economic growth of more than 5 percent. If the most recent consensus forecast of 4.7 percent is correct, tonnage demand will grow by 6 to 7 percent, leading to a moderate decline in utilization rate and profitability for ship owners. (Source: R.S. Platou).

For 2008, a moderate decline in the utilization rate and profitability for the world ship owners indicates that the high ordering activity in 2007 cannot be expected to continue at the same level.

However, if the current turmoil in financial markets seriously affect the real economy the demand for new buildings will suffer. Estimates shows that should demand drop significantly from the 2007 levels; new building prices will also decline.

Indian Ship building Industry



At present, India has only about 0.4% of the global shipbuilding market share. However, with growth in domestic manufacturing sector and the improving skill profile of its labor force, Indian corporate and shipyards plan to invest over Rs. 170 bn over next 5-7 years which has the potential to take India's share to over 3% to 5% of the global shipbuilding market.

India has 25 shipyards. However, nine yards dominate the system. Seven of these are in the public sector, with the remaining two being privately owned. Four of the public sector yards are under the administrative direction of the Ministry of Transport; the Ministry of Defense administers the remaining three.

Ministry of Transport:

- Cochin Shipyard, Ltd, Cochin
- Hindustan Shipyard, Ltd, Visakhapatnam
- Hoogly Dock and Port Engineers, Kolkata
- Central Island Water Transport Kolkata

Ministry of Defense:

- Garden Reach Shipbuilders and Engineers, Kolkata
- Goa Shipyard, Ltd, Goa
- Mazagon Dock, Ltd, Mumbai

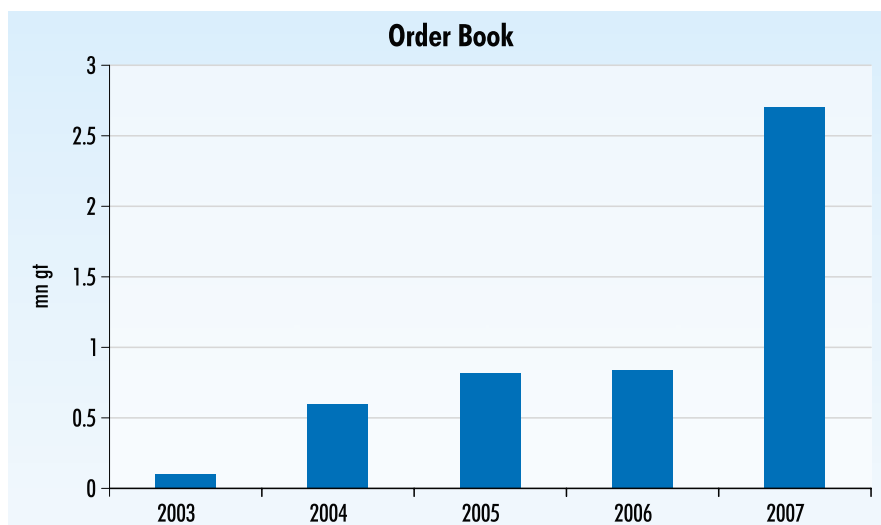
Private Yards

- ABG Shipyard Group, Mumbai
- Bharati Shipyard, Ltd, Mumbai

Indian Order book

As of 31st December 2007, Indian order book stood at 2.7 mn gt, which is miniscule when compared with Korea Japan and China. However, Indian order book has shown a tremendous growth, when compared with its past. Order book has jumped from 0.11 mn gt in 2003 end to 2.7 mn gt in 2007 end. New orders represented 2.1 mn gt in 2007, against only 0.3 mn gt in 2006.

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**Indian Order book has grown
 at a CAGR of 109% from 2003 to
 2007**
 ”



Source: Barry Rogliano Salles

Upsurge in Order book.

- World Major shipyard orders stretched till 2012:** Global shipyard being booked till 2012 has been one of the prime reasons for orders flowing towards Indian yard. Korea, the market leader, has its yards books for over four years. Numbers of shipyard have also started selling their 2013 capacities. Japanese yards also have scheduled some orders for delivery in 2013 and 2014.

Indian Shipyards took advantage of this situation as they managed to offer attractive delivery dates and competitive prices.

- Subsidy advantage**

Subsidies either direct or indirect has been an important feature of the international ship building industry. In 2002, the Government of India (“GOI”) introduced a shipbuilding subsidy for a period of 5 years, ending on August 14, 2007. The amount of subsidy is 30 % of the sale price of the ship, subject to fulfillment of conditions. This was one of the prime reasons; which boosted the order book of Indian yards.

- Labor Cost:**

Shipbuilding is a labor-intensive industry. When compared with global peers, like Korea, Japan, Norway and others, India’s labor cost is lowest.

Country	Relative Labor rates	Country	Relative Labor rates
India	1	Canada	11
China	0.5 to 1.5	Japan	12
Singapore	3	Italy	13
Hong Kong	3	France	13
Taiwan	5	Denmark	13
Korea	6	Norway	14
U.K.	10	Sweden	14
U.S.A.	10	Finland	15
		Germany	15

Source: Vice Admiral Rajeshwar Nath: Towards Modern Ship

Design and Shipbuilding in India, Security Research Review, Vol. 13

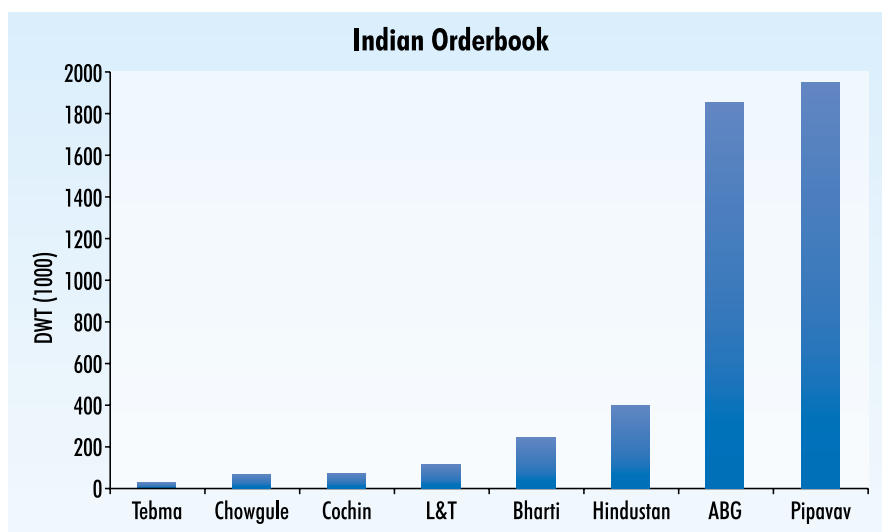
This provided Indian shipyards with the opportunity to increase their market share in the global shipbuilding industry.

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**Indian shipbuilders are mainly
 in Offshore Vessels and
 Bulkers segment**
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Order book break up

Order book break up reveals that Indian shipbuilders have their prime presence in bulk carriers, offshore units and conventional cargo. As of 2.1 mn new orders received in 2007, bulk carriers consist of 1.9 mn gt, offshore vessels 0.1 mn gt and conventional cargo of 0.1 mn gt.

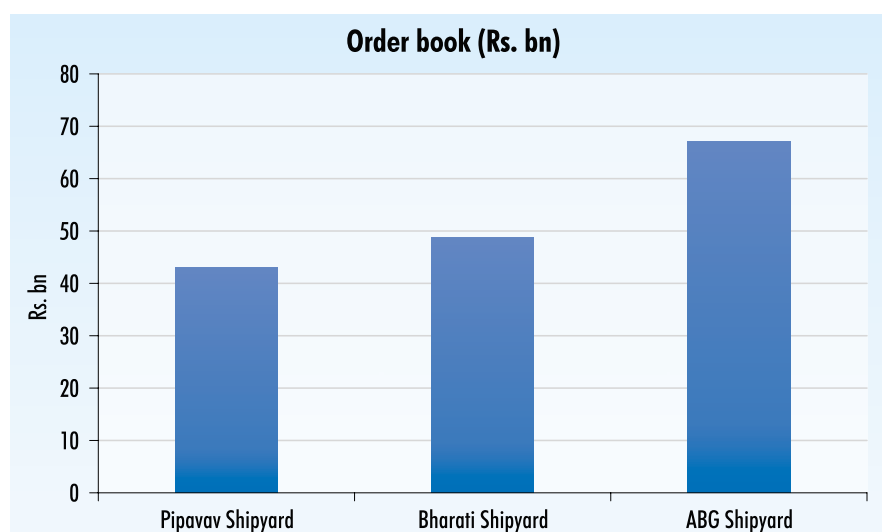
This performance was possible by the arrival in 2007 of the private shipyard Pipavav (PSL) in Gujarat, which alone took 26 orders of bulk, carries of 75000dwt. These ships will be delivered between 2009 and 2012. ABG shipyard, previously specializing in building offshore units, took 24 orders for Handysize bulk carriers (32,000 to 35,000 dwt) in 2007, plus 10 orders for Handymax bulker (54,000 dwt). Bharati shipyard was able to bag orders for offshore vessels and bulk carriers.



Source: Company, Industry

Order book when compared in terms of rupees, ABG shipyard has the highest order book of Rs. 67 bn followed by Bharati shipyard (Rs. 48bn) and Pipavav Shipyard (Rs. 43 bn).

There is a wide difference in ranking when we compare rupees with dwt, as players like Bharati Shipyard are mainly into offshore segment. Offshore Vessels command high realization but in term of Dwt they range between 1000 – 5000 dwt as compared to a bulkers ship that begins from 20,000 dwt.

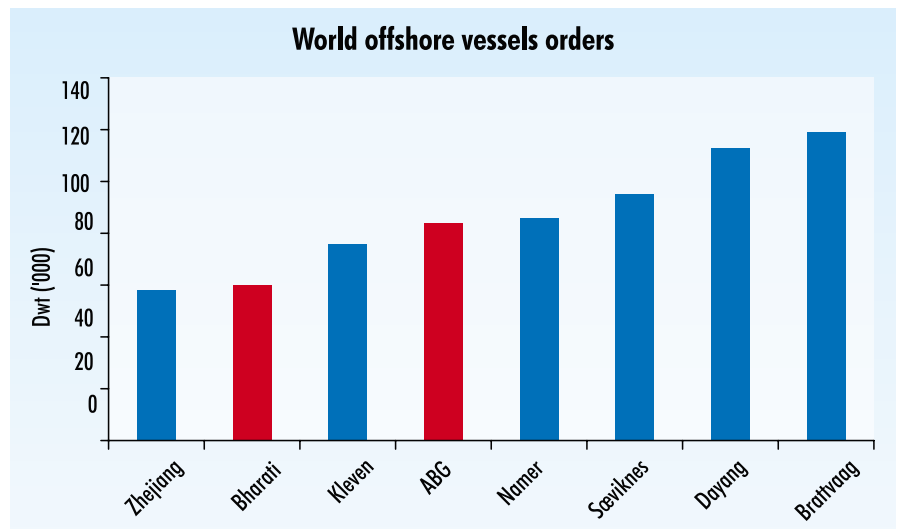


Source: Company, Industry

“
Both ABG and BSL stand among top ten offshore players across the globe
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Prominent Player in offshore Segment

India is a prominent player in offshore segment. Both ABG and Bharati Shipyards stand in top 10 (order book wise) among world player. Offshore vessels orders are customized in nature with specification differing from client to client and they also require superior quality of engineering. Major players like China, Korea and Japan are booked for deliveries till 2012-13, these players also have yards with large capacities.. For yards with large capacities it is more viable / economical to focus on bulk carriers, tankers and containership than Offshore vessels. Offshore vessels also require high degree of technological skill sets than vessels like tankers, bulkers and others. India’s labor work force is not only cheapest when compared to its global peers but also rich in technical skills. Both of these factors make India a preferred choice for offshore service providers.

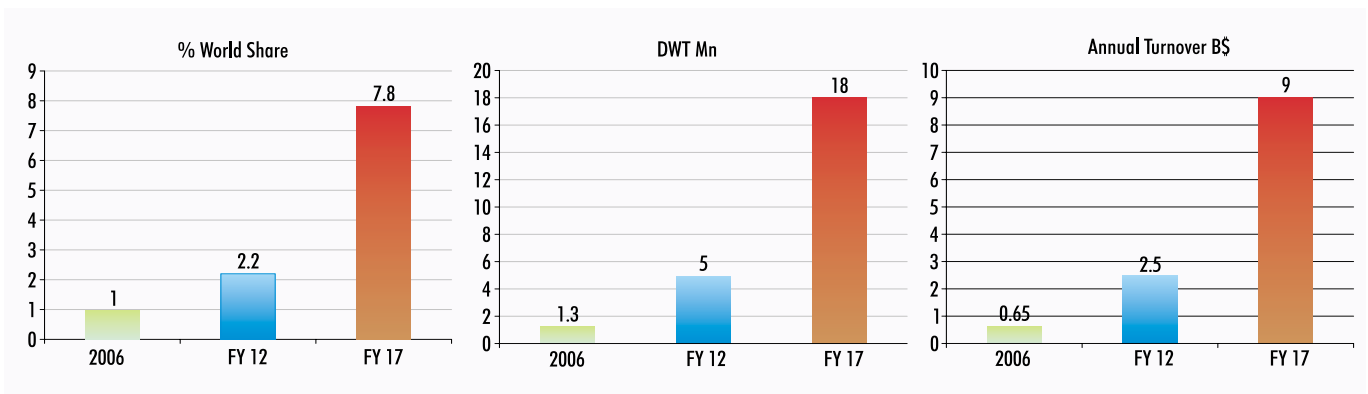


Source: Company, Industry

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Indian ship building industry is expected to attain 7.5% of global order book by 2017
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Future Prospects - Indian Shipbuilding

The Indian Shipbuilders Association estimate Indian shipbuilding industry to grow at a rate of more than 30% and this momentum can be maintained to reach a level of XI Plan of Rs. 5 mn dwt order book as against 1.3 million in the X Plan. With this, shipbuilding industry would also be able to achieve a world share of 2.2% and an annual turnover of Rs. 180 bn (2.5 Billion \$) in the last year of 11th Plan. It is expected that by the time the shipbuilding industry matures by 2017 it would have attained more than 7.5% of global order book and will have a turnover of Rs 405 bn (USD 9 bn).



Source: Ministry of Shipping

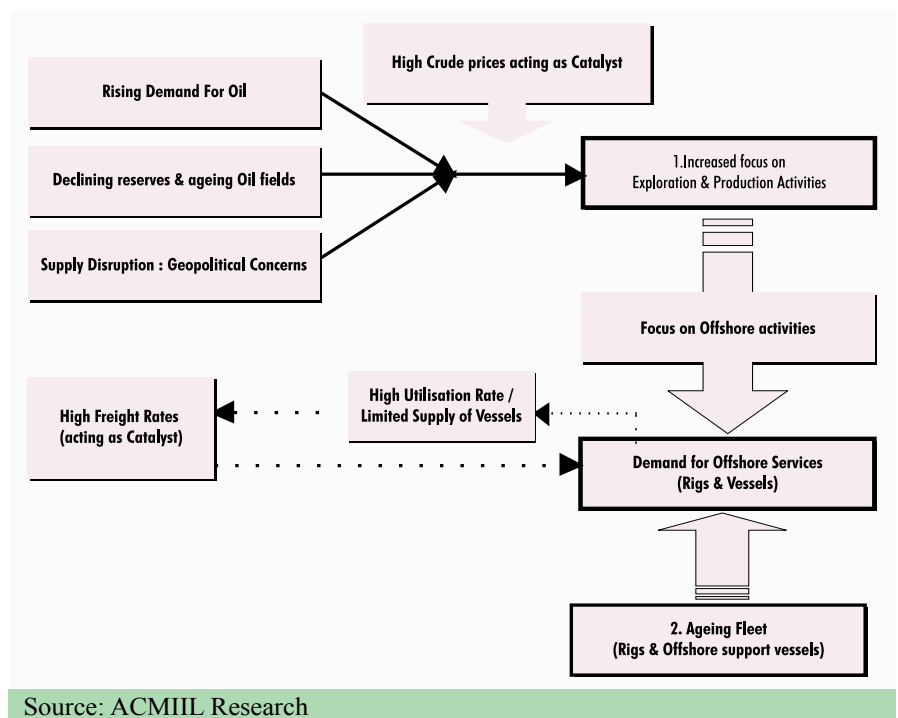
Projected order book turnover

	2006-07	2007-12	2012-17
Order Book (Mn DWT)	1.3	5.00	18.00
Global Order Book (Mn DWT)	231.2	231.2*	231.2*
India's Share Of Global Order Book	0.4%	2.2%	7.8%
Delivery (Mn DWT)	0.65	2.50	9.00
Tuenover (US \$ Bn)	0.65	2.50	9.00
Shipbuilding Industry % of GDP	0.04%	0.16%	0.27%
Total Employment	12,000	78,000	2,52,000

(Source: Ministry of Shipping)

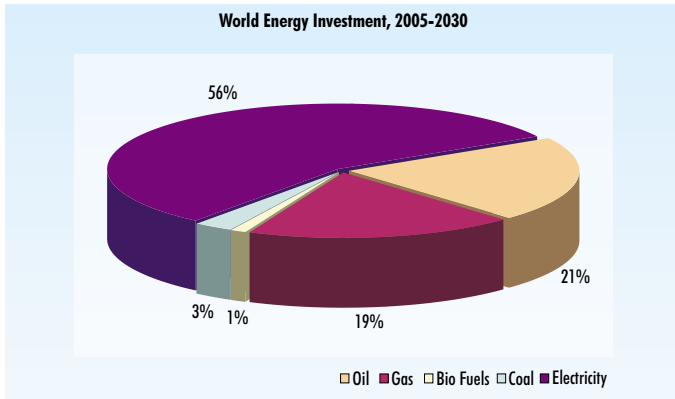
Offshore Services

For last few years there has been increased focus/ investment in offshore segment. Rising demand for Oil, declining reserves & ageing oil fields along with supply disruption have forced economies around the globe to increase focus on exploration and production activities with concentration on offshore activities. A high crude price is also aiding investment in E&P activities, as exploration & production on offshore locations has now become economically feasible. Focus towards offshore production has stimulated a strong demand for offshore vessels like drillships, support vessels and rigs, which are essential to oil exploration. In addition to this ageing fleets of offshore support supply vessels as well as rigs has augmented demand for offshore vessels. Higher freight rates are also acting as a catalyst for ship owners to place orders for new ships, as higher realization allows repayment of owner's investments in shorter time and encourages owners to make investments.

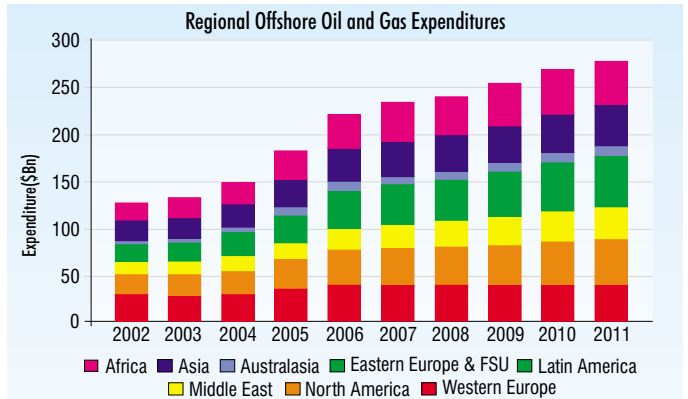


Source: ACMIIL Research

I. Focus on E&P activities



Source: IEA

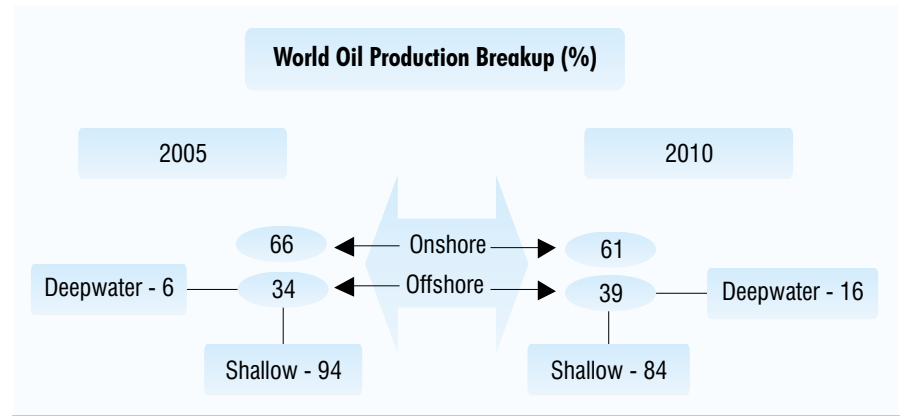


Source: Douglas Westwood Ltd

“ USD 5.2 tn is expected to go in E&P by 2030 ”

In 2007E, the total investment in Exploration & Production (E&P) by the industry reached \$400bn, up from \$200bn in the year 2000 an increase of 100%. The International Energy Agency (IEA) (“World Energy Outlook 2006”) expects investment in the Oil and Gas sector to reach at \$8.3 trillion (tn) in 2030 out of the total investment of \$20.2 tn in all energy sources. From the total investment of \$8.3tn, around \$5.2tn is expected to go into Exploration and development. On the basis of the Douglas Westwood survey, the major Offshore oil and Gas investment would be seen in North America, Latin America and Eastern Europe & former Soviet Union by 2011

Future Outlook of Oil production Breakup (%)

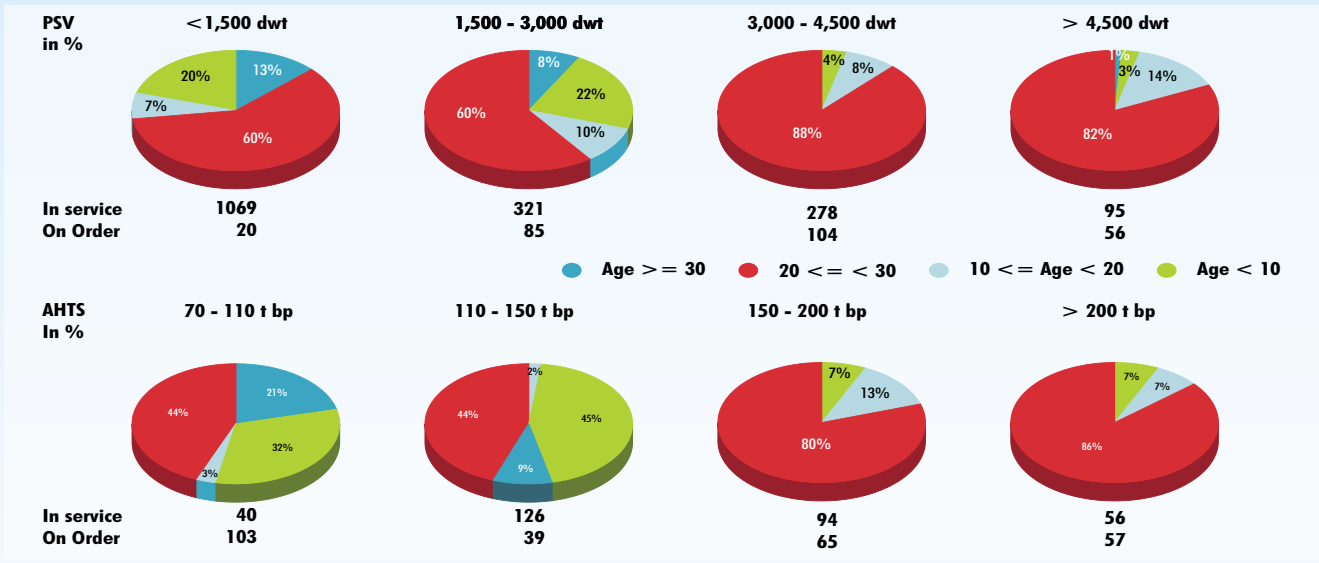


Source: Bourbon

Future Oil production is expected to take place in the offshore area. If we compare oil production in 2010 with 2005, we can see 5% drop in onshore production activity but during the same period offshore activity will show 5% growth in production. The reduction in onshore activity will be mainly due to depleting oil reserves. Thus shift towards offshore production would be the prime demand driver for Offshore Vessels.

II. Ageing Fleet

PSV AND AHTS FLEET BREAKDOWN END 2007



Source: Barry Rogliano Salles (Annexure III: Classification of Offshore Vessels and Rigs)

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Out of 1763 PSV, 50% are more than 20 years old. However orders in place constitutes just 15% of current fleet
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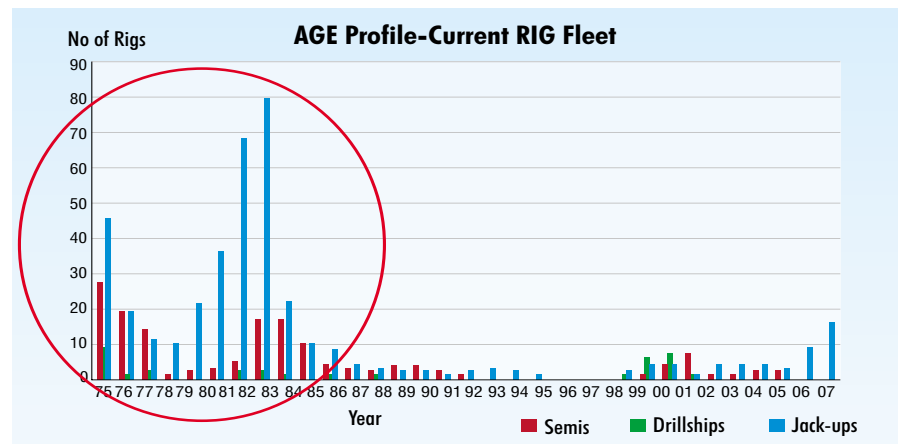
Platform Supply Vessels (PSV)

When we look at the present age of PSV across different categories and their respective order book. 71% of 1069 PSV with carrying capacity of < 1500 dwt are more than 20 years old, whereas PSV on order are just 20. When we consider total fleet size across categories, out of 1763 PSV in service 50% are more than 20 years old (41% in range of 20 to 30 years) and on the other hand only 265 PSV are on orders, i.e just 15% of current fleet.

Anchor Handling Tugs Supply Vessels (AHTS)

From a shipyard point of view picture is not as rosy for AHTS manufacturers as it is for PSV manufacturers. However scenario is still quite favorable, if we look at 70- 110 t bp category 53% (i.e. 213AHTS) of the fleet size of 401 have their age greater than 20years, while orders in place are just 103. When we consider 110-150 t bp category 46% (i.e 58 AHTS) of the fleet size of 126 have their age greater than 20years, while orders in place are just 39. However, when we consider total fleet size across categories, out of 677 AHTS in service 42% are more than 20 years old and 293 AHTS are on order, i.e 43% of current fleet.

Rigs



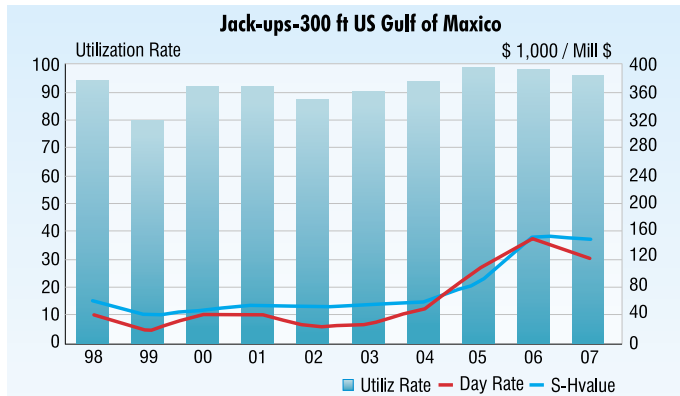
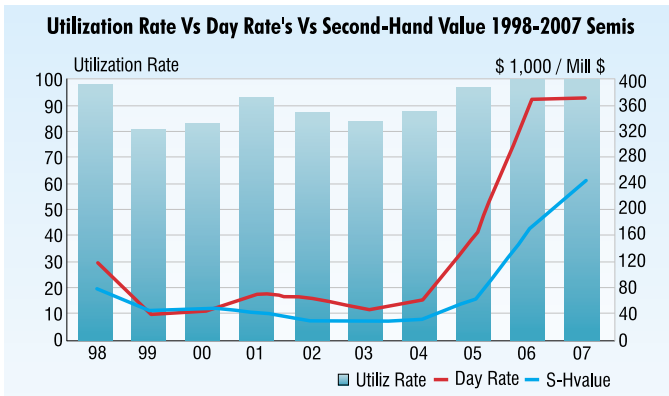
Source: R.S. Platou

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Majority of rigs were built in between 1975 to 1983
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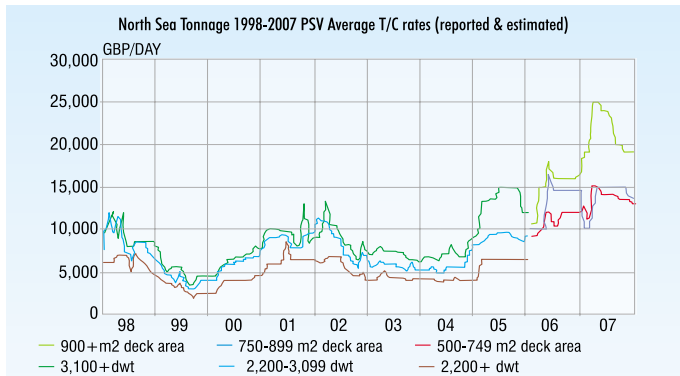
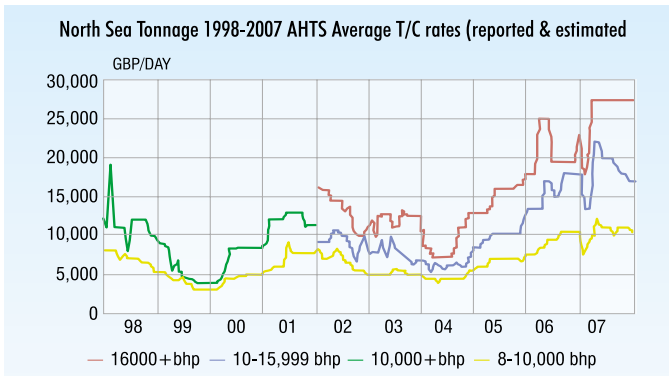
The average age of mobile offshore drilling rigs worldwide was estimated at 22 to 25 years. Majority of the rigs (Jack up) were built in between 1975 to 1983. Older age of rigs lead to higher maintenance cost to the rig manager. Therefore there is a growing demand to renew rigs either through a life enhancement program or by phasing out the older rigs with new built ones.

High Freight Rates/ Utilizations Rates

Average utilization of the whole North Sea supply vessel fleet was more than 90% for last 2 years. PSV enjoyed average utilization rate of 97 % for last two years, while AHTS enjoyed utilization rate of 97% and 86% for 2006 and 2007 respectively. High utilization rate over 90% indicates limited supply of vessels in the global market. For rigs too utilization rates were more than 90% for last three years, indicating limited supply of Rigs in the market.



Source: R.S. Platou



Source: R.S. Platou

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High freight rates have acted as a catalyst for order book growth
”

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ONGC will deploy USD 18 bn in E&P during the XI five-year plan
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Average day rates for rigs as well as offshore vessels have surged in last few years. Diagram above indicate that average day rate for AHTS as well as PSV has surged from 2004 onwards. An average day rate for rigs has also gone up drastically. Average day rate for rig has shoot up from USD 40,000 per day in 2004 to USD120,000 per day in 2007. Similar is the case for semi submersible, where day rate has gone up from USD 60,000 per day in 2004 to 360,000 per day in 2007. These high freight rates due to limited supply has acted as a boost for order book growth for yards and is expected to continue in future.

India's Offshore Industry Scenario

Exploration and Production in India

In India, the demand for rigs and other offshore assets is set to soar following the surge in exploration activities. India possesses sedimentary basins with an area of 3.14mn sq. km and prognosticated reserves of 28 billion of tonne of oil equivalent of gas (boe). Only 18% of area has been extensively explored and 25% of the prognosticated reserves have been established till 2007. Almost 59% of the Indian

sedimentary basin accounts for offshore fields (Source: DGH). During the 11th five-year plan (2007-12), \$18 bn would be deployed in the E&P activity by ONGC. Going forward, new prognosticated reserves and E&P investment activity by ONGC and other private players, domestic exploration activity will show accretion in production level in the future.

New Exploration Licensing Policy (NELP) to Boost E&P investment in India

The development in E&P sector has been significantly boosted through NELP which permitted 100% FDI and thus opened the sector for private and foreign investment. Prior to NELP (i.e. 1993-2000), the total investment made on exploration was \$0.78bn and only 28 discoveries were made. After the implementation of NELP (i.e. 2000-06), the total investment made on exploration was \$ 1.5bn and 40 discoveries have been made.

	Onshore	Offshore		Total
		Deep water	Shallow Water	
NELP I	1	7	16	24
NELP II	7	8	8	23
NELP III	8	8	7	23
NELP IV	10	11	-	21
NELP V	12	6	2	20
NELP VI	25	24	6	55
NELP VII	29	19	9	57
Total	92	83	48	223

(Source: DGH)

Till now, NELP have awarded 223 exploration blocks (including 57 blocks of NELP-VII), which consists of 92 blocks of onshore, 48 blocks of shallow water and 83 blocks of deepwater (including NELP-VII) (Source: DGH). On the basis of the NELP, almost 59% of the Indian sedimentary basins account for offshore field, which would lead to the demand for Oil field services Industry.

Opportunities for Indian offshore Industries

- ONGC is planning to invest Rs.90bn in the redevelopment of the Bombay high region with the objective to restrict declining production from the field and increasing recoverable reserves from 31% to 41%. The exercise also includes the development of 17 new wells and two new process platforms. These fields are expected to produce 12-15 million standard cubic meters of natural gas per day (mmscmd) and around 6 moe p.a. by 2012, leading to an increase in the demand for rigs.
- Large private sector players like Reliance, Cairn Energy, Niko, Hardy Exploration, British Gas, GAIL, and GSPL are entering the exploration sector.
- Recent Reliance gas reserves find has resulted in a spurt in global interest in the Indian Oil sector.
- The shift from shallow waters to deepwater and more challenging exploration environments creates opportunities for international companies to partner with Indian offshore services providers in capitalizing this requirement effectively.

NELP has stimulated a huge amount of upstream work, which will escalate demand significantly over the coming years.

Company Background

BSL is engaged in design and construction of sea-going, coastal, harbor, inland crafts and vessels. The company initially used to manufacture simple inland cargo barges, deep-sea trawlers and dredgers but now has upgraded facilities capable of building bulkers, tugs, cargo ships, tankers and support vessels rigs required for the offshore industry. BSL operates through 4 yards located at Ratnagiri, Ghodbunder, Goa and Kolkatta and is building new yards at Mangalore (Karnataka) and Dabhol (Maharashtra).



Yard	Area	Capacity
Ratnagiri	16 acres	Up to 15,000 Dwt
Ghodbunder	12 acres	Feeder yard to Ratnagiri yard
Goa (Pinky Shipyard)	2.5 acres	Up to 10,000 Dwt
Kolkatta	7 acres	Up to 10,000 Dwt
Mangalore		Up to 60,000 Dwt
Dabhol	250 acres	Up to 100,000 Dwt

(Source: Company)

Ghodbunder and Ratnagiri yard work together as a unit. Ghodbunder manufactures the body of the ship (hull), which is towed to Ratnagiri. Ratnagiri does the major portion of the work. However, Ratnagiri can also construct the ship right from the beginning. Ratnagiri has a dry dock of 176*3 mtrs, which is capable of constructing ships upto 170 mts, two jetties of 120 mtrs and 35 mtrs and slipway 18 mtrs wide and 200 mtrs long. The yard has an open fabrication area of size 50 mtrs.× 50 mtrs.

Dabhol yard is under construction, when completed it will have capacity to manufacture vessels up to 100,000 Dwt. BSL is setting up machinery that it acquired from Swan hunters Shipyard at its Dabhol facility to save on time. Dabhol being a deep-water port is capable of constructing rigs. It can also construct semi submersible rigs and other rigs as fair amount of draft available at Dabhol. Current order of jack up rig from Great Offshore is also being executed at Dabhol.

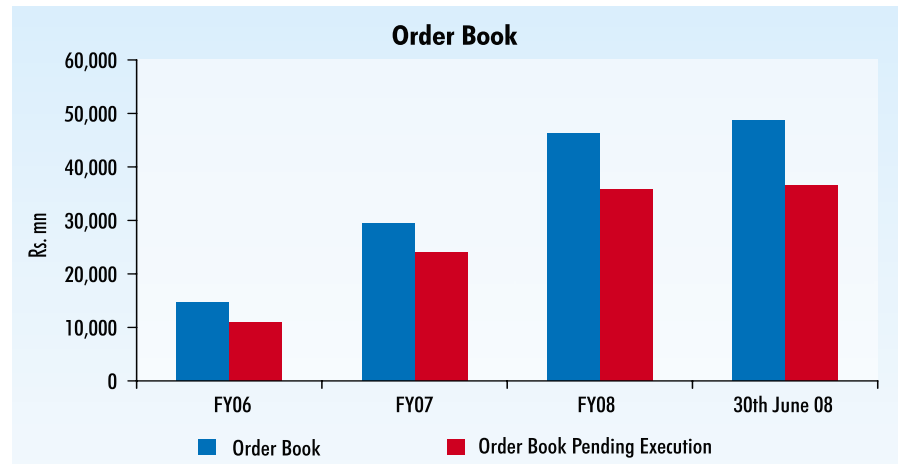
Mangalore yard is also under construction, when completed it can build 5 to 6 vessels per year up to 60,000 Dwt. It expects to build tankers, bulk carriers, containership, chemical carries and other vessels at the yards. The new shipyard is expected to have a slipway of 160 x 62 meters in size, which will be used as a building berth as well as for launching vessels, a dry dock of 210 x 42 meters in size, which will be used as a building berth as well as for dry docking vessels for repairs and a deep water jetty which is 220 meters in length. (Annexure IV: Shipbuilding process).

Strengths

• **Growing Order Book**

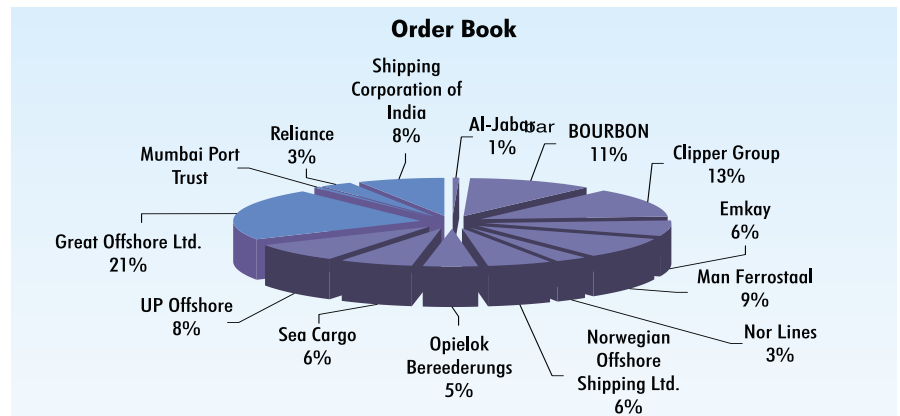
BSL has a robust order book with contract value of Rs. 48703.9 mn as of 30 June08. Order book grew from Rs.14, 637.7 mn in FY06 to Rs. 46,353.6 mn in FY08 at CAGR of 78%. Current order book is 7.6x times FY08 revenues and is spread for execution over FY08-FY11, implying a strong revenue visibility.

“
Order book has grown at a CAGR of 78% from FY06 to FY08
”



Source: Company

International orders constitutes approximately 70 % of the order book, with player like Bourbon, Emkay and others placing repeat orders. BSL has managed to receive repeat orders from Indian players like Great offshore, Reliance and others.

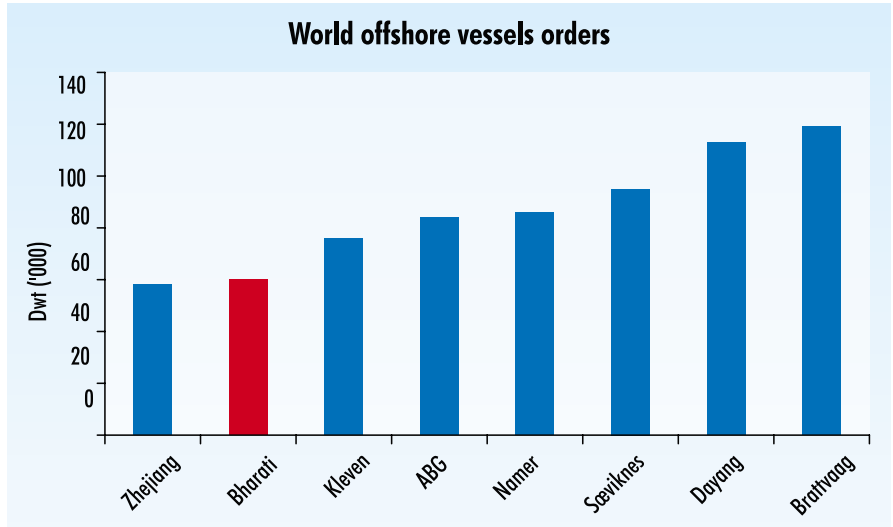


Source: Company

• **Presence in Offshore Segment**

Offshore support vessels constitute AHTS, PSV, MSV and others. Building of such vessels requires superior quality engineering, attention to details, as these orders are customized with specifications differing from client to client. Approximately 70% of its order book constitutes of Offshore Vessels reflecting its strong hold in this segment. BSL has earned its name in offshore vessels segment by delivering customized vessels and receiving repeat orders from prominent players like Bourbon, Great offshore & others. Order book wise BSL ranks seventh when compared to other major offshore players in the world.

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BSL ranks 7th among global offshore players
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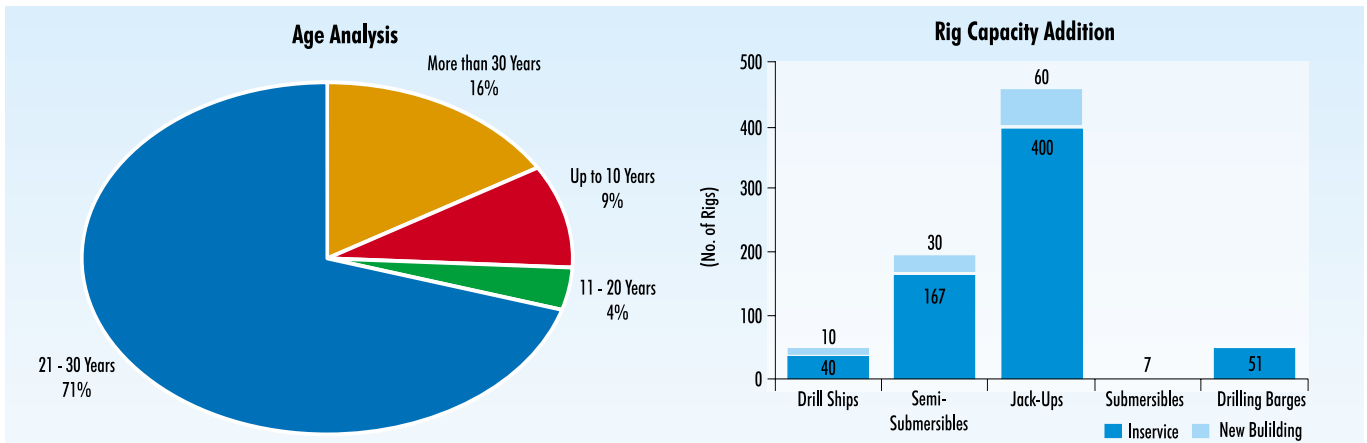
Source: ACMIL Research

• **Focus on Construction of Rigs**

BSL has received an order of self- elevating jack up drill rig from Great offshore, first of its kind received by an Indian private shipyard. BSL is constructing 350-foot rig jack up drill rig schedule to be deliver in the first quarter of FY09. The company has tied up with US based drilling major Le Tourneau Inc for the same.

This order has opened a new door for BSL, as it now has a first mover advantage in rig construction with order of rig from Great offshore. Now with experience of rig construction BSL expects more orders of rigs to come.

Coming years are certainly the right time to be into rig construction business considering 17% of the current fleet of 665 rigs are over 30 years old and 70% of the current fleet is in range of 21-30 years, while rigs under construction are 100 (15% of current fleet)



Source: Company, Industry

“
87% of Jack up rig are more than 20 years old, while only 15% of current fleet is on order
”

When it comes to Jack up rigs, there are 400 rigs that are operational, of which 87% are more than 20 years old, while only 60 rigs i.e. 15% of current fleet are under construction. Above statistics thus suggests there will be a strong demand for construction of rigs in the years to come.

• Expansion Plans

Currently BSL is undertaking two green field capital expansion plans at Mangalore and Dabhol. Company expects these projects to be fully operational by CY2010. According to the company, when these yards would be fully operational, Mangalore would be able to generate 3.5x and Dabhol 4x of the current turnover at 100% capacity utilization.

BSL has raised FCCB worth Rs. 4500 mn and rest would be funded by raising additional debt and through internal accruals.

Particulars	Capex (Rs. mn)	Funding
Mangalore Yard	4,500	FCCB- Rs. 4,500 mn, Internal Accruals and Additional Debt
Dabhol Yard	6,000	

Incremental revenues would mainly come from Dabhol and Mangalore yard.

Key Concerns

- **Cyclical Industry:** Shipbuilding is a cyclical industry and due to this there is an uneven workflow at shipyards. Ship owners tend to order most new ships when freight rates and market expectations are on the ascendancy. Due to the cyclical nature of the industry, yards may get excess orders when there is a boom and may have few orders when there is a downturn in the Industry
- **Subsidy:** There are two concerns regarding subsidy.
 - Currently no shipbuilding subsidy policy is in force
 - BSL has not received any subsidy from GOI, when the subsidy scheme was active. Unrecognized subsidy as of March 08 was Rs.1,600 mn. Subsidy has remained unrecognized due to cumbersome disbursement procedure followed by GOI. (Source: Company).

There is no assurance that the GOI will provide any subsidy or other incentives in the future. If no subsidy or other incentives are provided then it would adversely affect the earnings of the company.

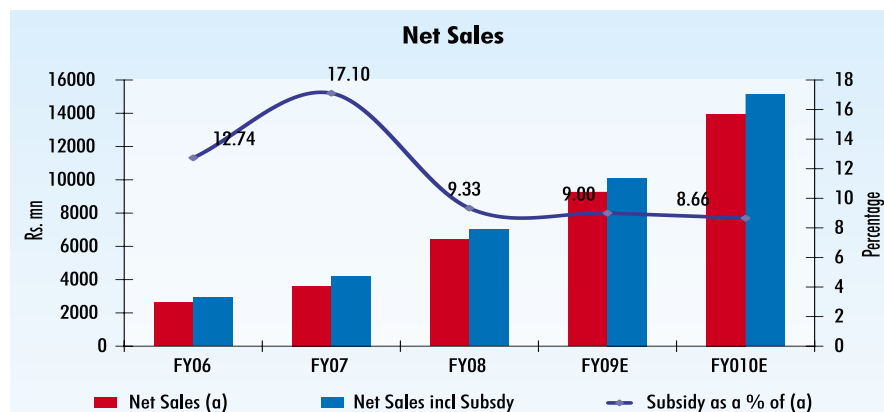
- **Execution Delays:** Over the years there have been delays in execution of ships orders. Any Delays in execution would affect BSL's performance and could also lead to performance guarantee being revoked.
- **Turmoil in Financial markets and Credit Crisis:** If the current turmoil in financial markets and credit crisis seriously affect the real economy the demand for new buildings will suffer. Fall in demand will also lead to decline in price of ships. Bulklers, Tankers and Containership are more susceptible to global slowdown than Offshore Vessels. Current credit crisis has also resulted in cancellation of few orders around the globe

Financials

Net Sales

Net sales have grown from 2,940.3 mn in FY06 to Rs. 6,998.0 mn in FY08, at a CAGR of 54.3 %. Net Sales excluding subsidy have grown from Rs. 2,608.2 mn in FY06 to Rs. 6,400.9 mn in FY08. Subsidy is booked when vessels are nearing to completion i.e. when the vessel is more than 70% complete. Sales have grown over the years due to capacity addition at Ratnagiri, Goa yard becoming fully operational and contributions from Dabhol at the end of FY08.

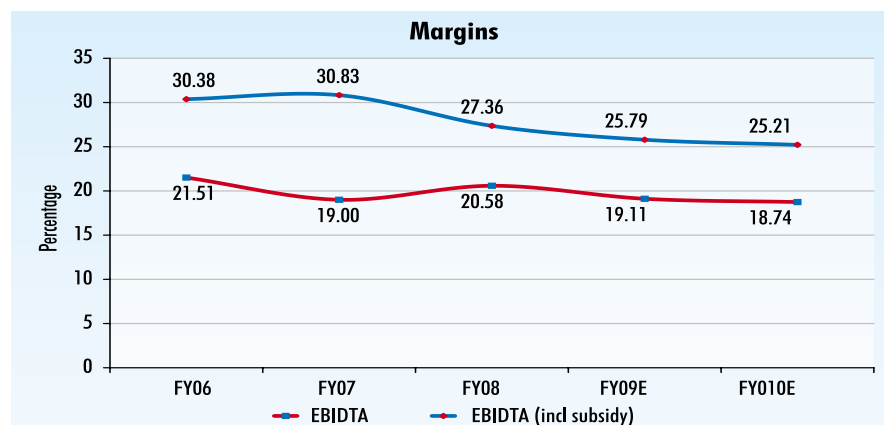
“
Mangalore and Dabhol yard
would be major contributors
toward incremental revenues
”



Source: ACMIIL Research

Net Sales (including subsidy) are expected to grow from Rs. 6,998.0 mn in FY08 to Rs. 15,159.4 mn in FY10E at a CAGR of 47.2 %. Mangalore yard and Dabhol yard would be major contributors towards incremental revenues. Subsidy is expected to be around 9% of Net Sales in FY09E and FY10E.

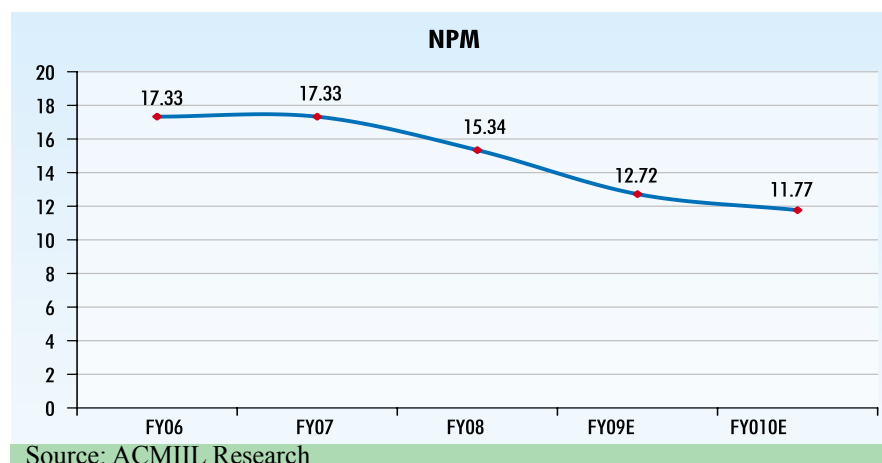
EBIDTA Margins



Source: ACMIIL Research

EBIDTA margins excluding subsidy have been range bound between 19% to 21% during the period FY06 and FY08. We expect EBIDTA margins to be around 19% in FY09E and FY10E as we expect employee cost and other manufacturing cost to increase.

Net Profit Margins



Net profit margins reduced from 17.3% in FY07 to 15.3% in FY08, in spite of increase in operating margins (excluding subsidy) mainly due decrease in subsidy.

Going ahead we expect net profit margins to reduce further to 11.8 % in FY10E on account of higher interest cost, as raising of debt would fund significant portion of capital expansion at Dabhol and Mangalore.

Capital Structure

BSL had issued a FCCB worth 100 mn USD with two tranche in 2005.

Tranche I: Zero Coupon Convertible Bonds USD 15 mn with Green Shoe Option of additional USD 5 mn issued on 12th Dec 2005. The Bondholders have an option to convert FCCB in to ordinary shares at an initial conversion price of Rs. 421.94 per share at a fixed exchange rate of conversion of Rs. 45.85, from Jan 2006 to Dec 2008. Till date outstanding FCCB are of Rs. 64.18 mn of Rs. 917 mn

Tranche II: Zero Coupon Convertible Bonds USD 70 mn with Green Shoe Option of additional USD 10 mn issued on 12th Dec 2005. The Bondholders have an option to convert FCCB in to ordinary shares at an initial conversion price of Rs. 497.89 per share at a fixed exchange rate of conversion of Rs. 45.85, from Jan 2006 to Dec 2010.

Till date outstanding FCCB are of Rs. 2150.37 mn of Rs. 3668 mn.

On full Conversion Equity share Capital will increase from 27.57 mn in FY08 to 32.04mn in FY10.

We have considered both scenarios full conversion of outstanding FCCB as well as redemption of outstanding FCCB.

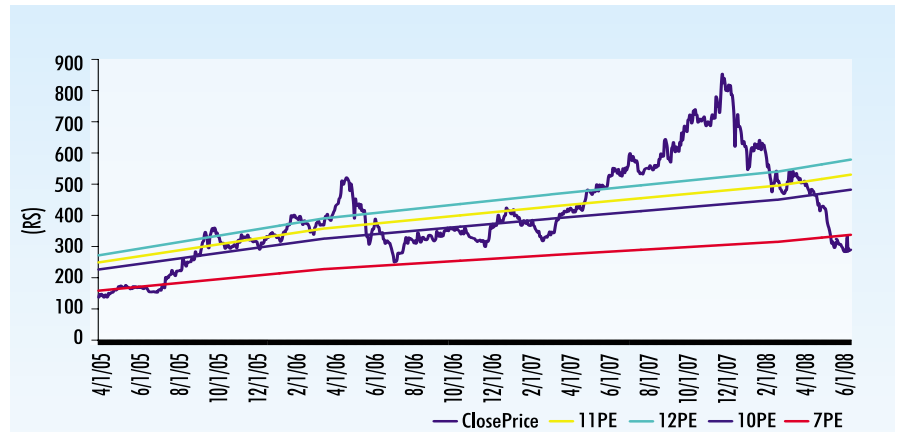
Particulars	Conversion of FCCB		Redemption of FCCB	
	FY09E	FY10E	FY09E	FY10E
Interest Cost (Rs. mn)	450.00	768.75	609.45	928.20
PAT (Rs. mn)	1,286.02	1,783.68	1,180.79	1,678.45
EPS (Rs.)	40.14	55.67	42.83	60.88
Share Capital (Rs. mn)	320.40	320.40	275.69	275.69
Book Value Per Share (Rs.)	286.72	338.94	249.63	307.06

Source: ACMIIL Research

For Valuation purpose we have taken a conservative estimates of the two scenarios.

Valuation & Recommendation

Considering the opportunities in the offshore services sector and looking at company's expansion plans, we expect BSL's sales to grow at a CAGR of 47% and PAT to grow at a CAGR of 29% from FY08 to FY10E. At the CMP of Rs.310, BSL is trading at 8x its FY09E EPS and 5.6x its FY10E EPS.



Source: ACMIIL Research

Considering the historical one-year forward P/E trend and future prospects of the company, we assign a multiple of 7x to its FY10E earnings of Rs.55.7 and arrive at a price of Rs. 390.

Shipbuilding industry being cyclical in nature we have also considered Price /Book Value (P/BV) valuation method. BSL's global peers are trading at an average P/BV multiple of 1.8x FY10E book value. BSL being a smaller player in comparison to its global peers, we assign a multiple of 1.3x (30% discount to average industry multiple) to its FY10E book value of Rs. 307.6 and arrive at a price of Rs. 399.

Particulars	P/BV (FY10E)
Abg Shipyard Ltd	1.3
Yangzijiang Shipbuilding	1.5
Cosco Corp Singapore Ltd	3.0
Hyundai Heavy Industries	2.0
Daewoo Shipbuilding & Marine	2.1
Samsung Heavy Industries	2.2
Stx Shipbuilding Co Ltd	1.1
Hanjin Heavy Indus & Const	1.1
Average	1.8

(Source: Bloomberg Brokers Consensus Estimates)

Considering above two methods, we recommend a BUY for Bharati Shipyard with a target price of Rs. 390.

Profit & Loss Account							Rs. mn
Particulars	FY04	FY05	FY06	FY07	FY08	FY09E	FY10E
Net Sales	1,216.6	1,926.0	2,608.2	3,610.1	6,400.9	9,274.1	13,951.5
Subsidy	0.0	0.0	332.2	617.5	597.1	834.7	1,207.8
Total	1,216.6	1,926.0	2,940.3	4,227.6	6,998.0	10,108.8	15,159.4
Total Expenditure	1,042.5	1,468.3	2,064.7	2,956.4	5,116.8	7,535.2	11,370.5
Other Income	0.8	3.8	17.6	32.1	33.5	33.5	33.5
EBIDTA (Excluding Subsidy)	174.9	461.5	561.1	685.9	1,317.5	1,772.3	2,614.5
EBIDTA	174.9	461.5	893.2	1,303.4	1,914.6	2,607.0	3,822.3
Depreciation	4.0	4.4	14.7	51.1	80.5	208.5	351.0
EBIT	170.9	457.1	878.5	1,252.3	1,834.1	2,398.5	3,471.3
Interest	77.7	82.1	97.7	143.8	215.5	450.0	768.8
PBT (Excluding subsidy)	93.2	375.0	448.6	491.0	1,021.5	1,113.8	1,494.7
PBT	93.2	375.0	780.8	1,108.5	1,618.6	1,948.5	2,702.5
Taxes	33.2	101.4	270.9	376.2	545.3	662.5	918.9
PAT	60.0	273.6	509.6	732.5	1,073.3	1,286.0	1,783.7
Growth in sales (%)		58.3	35.4	38.4	77.3	44.9	50.4
Growth in EBIDTA (%)		163.9	21.6	22.3	92.1	34.5	47.5
Growth in PAT (%)		356.3	86.3	43.8	46.5	19.8	38.7
EBIDTA Margin (Excluding Subsidy) (%)	14.4	24.0	21.5	19.0	20.6	19.1	18.7
EBIDTA Margin (%)	14.4	24.0	30.4	30.8	27.4	25.8	25.2
Net Profit Margin (%)	4.9	14.2	17.3	17.3	15.3	12.7	11.8

Source: ACMIIL Research, Company

BALANCE SHEET							Rs. mn
Particulars	FY04	FY05	FY06	FY07	FY08E	FY09E	FY10E
Sources of Funds							
Share Capital	92.4	225.0	225.0	225.0	275.7	320.4	320.4
Reserves and Surplus	243.1	1,146.3	1,586.3	2,222.8	5,520.7	8,866.1	10,539.2
Total Shareholders Funds	335.5	1,371.3	1,811.3	2,447.8	5,796.4	9,186.5	10,859.6
Total Loan Funds	222.0	229.5	5,475.2	5,555.3	3,714.6	4,500.0	7,500.0
Minority Interest	0.0	0.0	10.7	10.9	10.9	10.9	10.9
Net Deferred Tax Liability	7.9	8.2	152.9	287.4	287.4	287.4	287.4
Total Capital Employed	565.4	1,609.0	7,450.0	8,301.4	9,809.2	13,984.7	18,657.9
Application of Funds							
Gross Block	227.7	236.6	926.9	1,668.9	3,000.0	6,950.0	11,700.0
Less: Accumulated Depreciation	97.3	107.9	128.8	186.2	266.7	475.2	826.2
Net Block	130.4	128.7	798.0	1,482.8	2,733.3	6,474.8	10,873.8
Capital Work in Progress	0.0	67.0	297.4	974.7	1,200.0	1,000.0	200.0
Goodwill	0.0	0.0	3.0	3.0	3.0	3.0	3.0
Investments	0.0	65.1	10.0	20.0	20.0	20.0	20.0
Net Current Assets	435.2	1,294.5	6,292.7	5,782.3	5,813.8	6,447.7	7,521.9
Miscellaneous Expenses not w/off	0.0	54.2	48.9	39.1	39.1	39.1	39.1
Total Assets	565.4	1,609.0	7,450.0	8,301.4	9,809.2	13,984.7	18,657.9

Source: ACMIIL Research, Company

CASHFLOW STATEMENT							Rs. mn
Particulars	FY04	FY05	FY06	FY07	FY08E	FY09E	FY10E
Pre tax profit	93.2	375.0	780.8	1,108.5	1,618.6	1,948.5	2,702.5
Add							
Depreciation	4.0	4.4	14.7	51.1	80.5	208.5	351.0
Interest Exp	77.2	82.1	97.7	143.8	215.5	450.0	768.8
Profit before working capital changes	179.4	466.6	887.9	1,314.7	1,914.6	2,607.0	3,822.3
Working capital changes	60.2	-528.2	-690.6	666.2	-997.5	-433.7	465.7
Less Taxes	-19.4	-0.2	-48.0	-3.9	-545.3	-662.5	-918.9
Net Cash flow from operating activities	220.2	-61.9	149.4	1,977.0	371.8	1,510.8	3,369.1
Net Cash flow in investment activities	-181.1	-565.6	-1,123.8	-2,528.2	-2,534.8	-4,992.0	-5,728.2
Net Cash flow from financing activities	-36.8	638.8	5,142.9	-152.7	376.1	2,439.5	2,120.7
Net increase /(decrease) in cash	2.3	11.3	4,168.4	-703.8	-1,786.8	-1,041.8	-238.4
Op. balance of cash and cash equivalents	5.5	3.1	549.2	4,721.5	4,016.3	2,229.5	1,187.7
Cl. balance of cash and cash equivalents	3.1	6.5	4,721.5	4,016.3	2,229.5	1,187.7	949.3

Source: ACMIIL Research, Company

Ratios							
Particulars	FY04	FY05	FY06	FY07	FY08E	FY09E	FY10E
Profitability Ratios							
EBIDTA Margin (%)	14.4	24.0	30.4	30.8	27.4	25.8	25.2
EBIDTA Margin (Excluding Subsidy) (%)	14.4	24.0	21.5	19.0	20.6	19.1	18.7
PAT Margin (%)	4.9	14.2	17.3	17.3	15.3	12.7	11.8
RONW (%)	17.9	19.9	28.1	29.9	18.5	14.0	16.4
ROCE (%)	30.2	28.4	11.8	15.1	18.7	17.2	18.6
Per Share Ratios							
EPS (Rs.)	6.5	12.2	22.6	32.6	38.9	40.1	55.7
CEPS (Rs.)	6.9	12.4	23.3	34.8	41.9	46.6	66.6
BV Per Share (Rs.)	36.3	60.9	80.5	108.8	210.3	286.7	338.9
Valuation Ratios							
P/E (x)					8.0	7.7	5.6
P/CEPS (x)					7.4	6.6	4.7
Capital Structure Ratios							
Debt/Equity	0.7	0.2	3.0	2.3	0.6	0.5	0.7
Current Ratio	2.0	3.3	5.0	2.5	2.1	1.8	1.6
Turnover Ratios							
Inventory Turnover	2.8	2.4	1.3	1.4	1.5	1.5	1.5
Debtors turnover ratio	10.7	7.9	3.8	2.6	3.2	3.3	3.5
Fixed Asset Turnover	9.3	15.0	3.7	2.9	2.6	1.6	1.4

Source: ACMIIL Research

ANNEXURE I: Gross tonnage and Deadweight tonnage

Gross tonnage (often abbreviated as GT, G.T. or gt) is a unitless index related to a ship's overall internal volume. Gross Tonnage is not a measure of the ship's displacement (mass) and should not be confused with terms such as deadweight tonnage, net tonnage, or displacement. Gross Tonnage is calculated based on "the moulded volume of all enclosed spaces of the ship".

Deadweight tonnage (also known as deadweight and variously abbreviated as DWT, D.W.T., d.w.t., or dwt) is a measure of how much mass or weight of cargo or burden a ship can safely carry. Deadweight tonnage is not a measure of the ship's displacement and should not be confused with terms such as gross register tonnage, net tonnage, or displacement.

Deadweight tonnage at any given time is defined as the sum of the weights or masses of cargo, fuel, fresh water, ballast water, provisions, passengers and crew. The term is often used to denote maximum deadweight. This is the deadweight tonnage when the ship is fully loaded, such that its Plimsoll line is at the point of submersion.

ANNEXURE II: World Fleet

Gross tonnage (often abbreviated as GT, G.T. or gt) is a unitless index related to a ship's overall internal volume. Gross Tonnage is not a measure of the ship's displacement (mass) and should not be confused with terms such as deadweight tonnage, net tonnage, or displacement. Gross Tonnage is calculated based on "the moulded volume of all enclosed spaces of the ship".

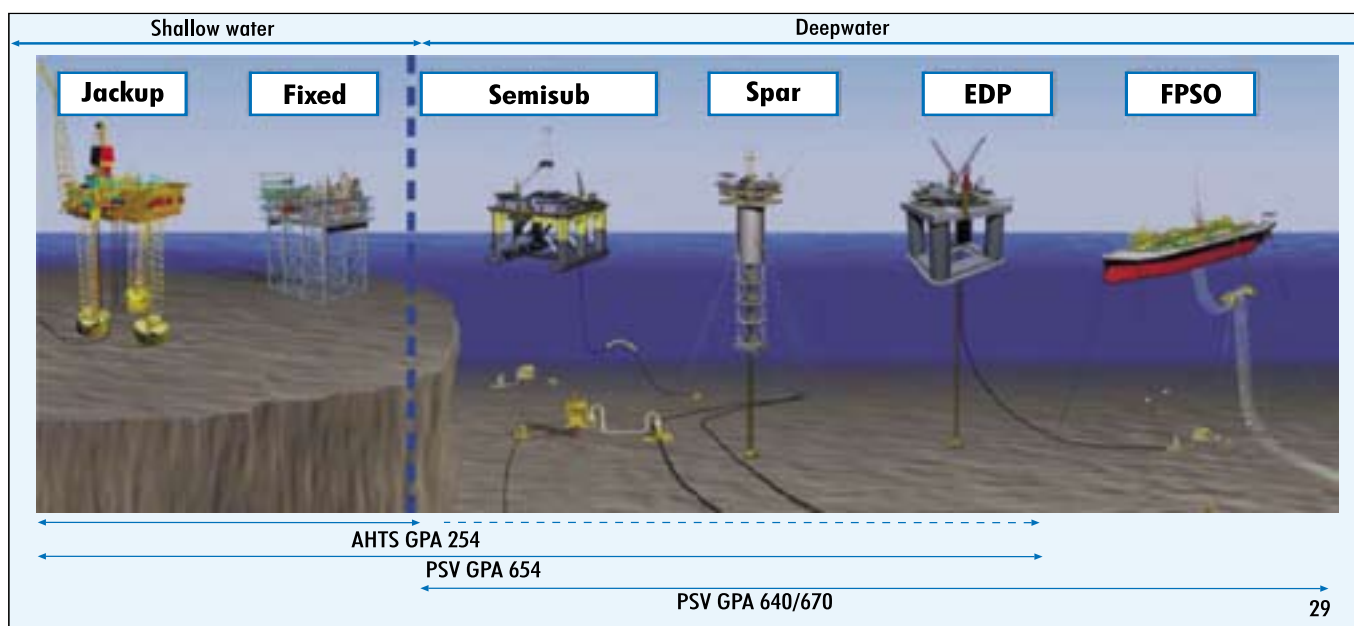
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World Fleet Development						Mill. dwt
Start	Tankers	Chemical Carriers	Bulk Carriers	Combined Carriers	Others	Total
1998	268.5	11.0	260.7	16.9	155.3	712.4
1999	273.2	11.9	260.4	16.1	160.9	722.6
2000	276.0	13.5	264.8	15.2	166.7	736.2
2001	281.3	15.0	274.0	14.6	169.3	754.3
2002	274.9	15.0	287.4	13.8	174.7	765.9
2003	278.8	15.4	295.0	12.6	181.2	783.0
2004	287.9	17.3	303.3	12.2	189.6	810.3
2005	304.1	18.0	320.7	11.7	200.5	855.0
2006	326.9	19.2	341.9	11.7	213.3	913.0
2007	344.4	21.4	365.1	11.3	232.0	974.3
2008	362.1	24.4	392.9	11.3	251.8	1042.5

ANNEXURE III: Classification of Fleet

Vessels Name	Capabilities
AHTSV	It can supply oil rigs, tow them to location, anchor them up and, in a few cases, serve as an Emergency Rescue and Recovery Vessel (ERRV).
PSV	A primary function of a platform supply vessel is to transport supplies to the oil platform and return other cargo tanks to shore. Cargo tanks for drilling mud, pulverized cement, diesel fuel, potable and non-potable water, and chemicals used in the drilling process comprise the bulk of the cargo spaces. Other product like Fuel, water, and chemicals are almost always required by oil platforms and certain other chemicals must be returned to shore for proper recycling or disposal. Some of the PSV's are equipped with firefighting capability as well as Seismic Cable Technology.
MSV	Multi Support Vessels has more capabilities of work than AHTSV and PSV.
AHT	Anchor Handling vessel specially designed to handle anchoring/ mooring of offshore rigs and work barges. Also used for maritime towage and salvage.
Barge	A floating vessel propelled or otherwise used for storing purposes, offshore construction and pipe laying.
Harbour Tug	A vessel available at a port/terminal to give assistance to ships entering or departing from their berth or moorings.
Diving Support Vessels	Vessel engaged in supporting diving activities offshore.
Offshore Support Vessels	Vessels engaged in carrying fuel, fresh water and other provisions between shore base and offshore installations.
Drill ship	A drillship is a maritime vessel that has been fitted with drilling apparatus. It is most often used for exploratory drilling of new oil or gas wells in deep water. Drillships are able to drill in water depths of 2000 to 3660 meters.
Jack up	Jackup rigs are typically used in water depths up to 400 feet, although some designs can go to 550 feet depth.
Semi submersible	Semi-submersibles can be used in water depths from 200 to 10,000 feet (60 to 3,050 m).
FPSO	A Floating Production, Storage and Offloading vessel (FPSO) is a type of floating tank system used by the offshore oil and gas industry and designed to take all of the oil or gas produced from a nearby platform (s), process it, and store it until the oil or gas can be offloaded onto waiting tankers, or sent through a pipeline.



ANNEXURE IV: The Shipbuilding Process

Depending on the type, size and complexity of each ship, construction of the ship takes anywhere between 2.5 year and 3 year. Although the number of phases varies by the terms of the contract, there are typically 5 stages in the shipbuilding process: contract signing, keel laying, hull construction/launching, machinery installation and delivery. The following chart illustrates the phases of the shipbuilding process:

Once a contract has been awarded to us, a project manager is assigned to supervise and coordinate all aspects of the project from the date of execution of the contact through delivery of the vessel. The project manager oversees the engineering department’s completion of the ship’s drawings and supervises the planning of the ship’s construction. The project manager also coordinates the purchasing of all supplies and equipment needed to construct the vessel, as well as the actual construction of the ship.

Each ship is constructed primarily from steel, which is fabricated into the necessary shapes to construct the ship’s hull and superstructure. Once the hull is completed, main engines and component parts, such as propulsion systems, hydraulic system and generators, auxiliary machinery and electronic equipment are installed on the ship. Prices for component parts are usually negotiated via purchase orders with suppliers simultaneously with the negotiation and execution of contracts with customers in order to give a certain degree of certainty for us regarding component part costs for each ship. All of the component parts are purchased on a per ship basis and only a few and very small component parts are purchased in bulk. A modular structure of building ships is followed. With the assistance of computers, separate manufacturing drawings and bills of materials are provided for each module, and each module is separately built. The modules are then assembled into a hull. This process enables to simultaneously build different ships, depending on the size of the vessels. Activities such as piping, electrical wiring and installation of engines, other equipment and ventilation systems are then carried out. Once these processes are completed, the ship is ready for launching. All of the equipment installed on the ships are tested during the basin and harbor trials and when the ships are launched, all components are again tested during actual operations. Thereafter, final delivery of the vessel is given to the customer.

Dry Dock: It is used as a building berth as well as for dry docking vessels for repairs.

Standard Vessel-Shipbuilding Process



Wet basin: It is used for the outfitting of vessels.

Jetty: It is used to berth ships for trials after launching.

Slip way: A slipway, boat slip or just a slip, is a ramp on the shore by which ships or boats can be moved to and from the water. They are used for building and repairing ships and boats.

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1. Analyst ownership of the stock	NO
2. Broking Relationship with the company covered	NO
3. Investment Banking relationship with the company covered	NO
4. Discretionary Portfolio Management Services	NO

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