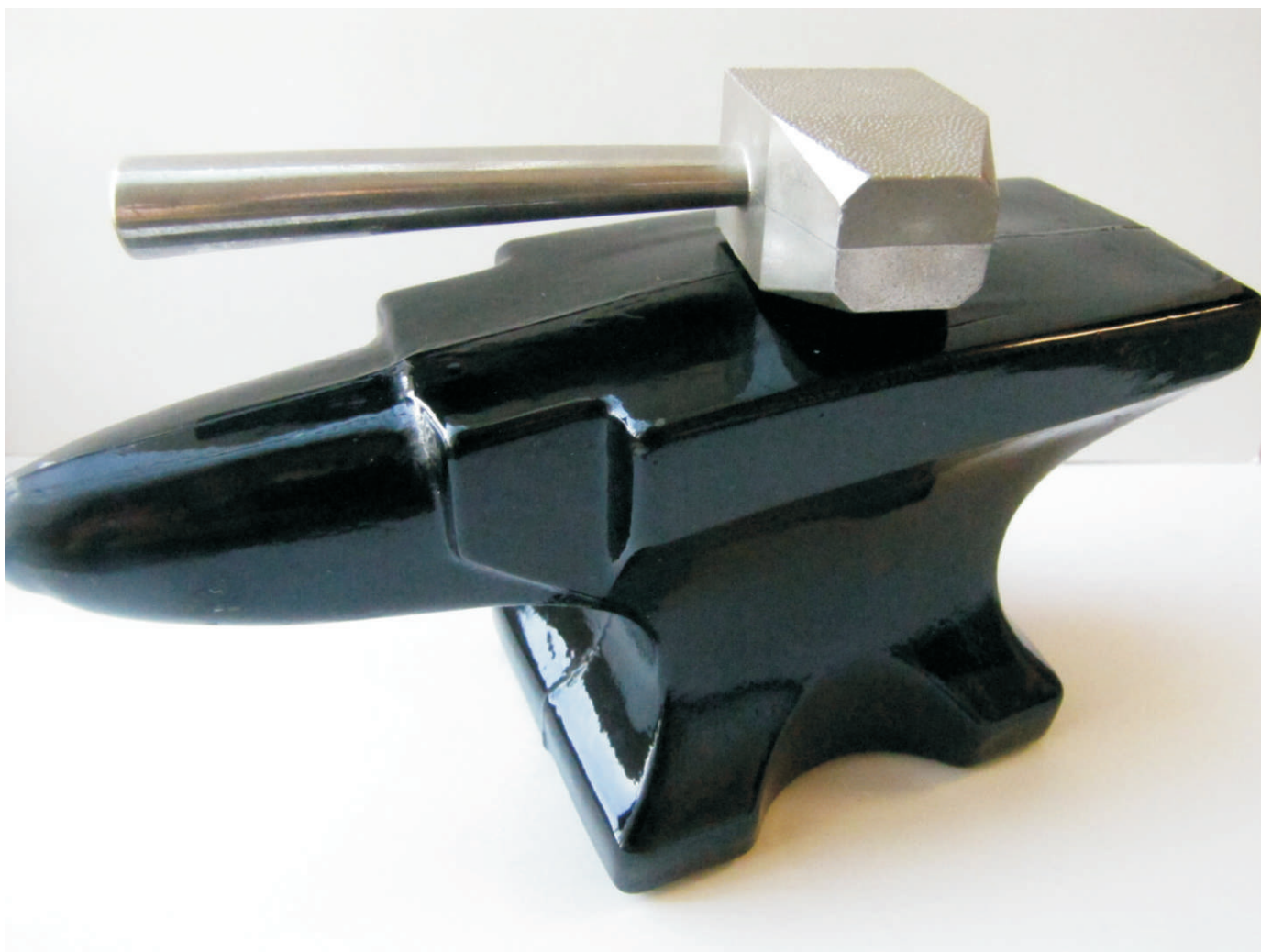




April 2012

## Bharat Forge Limited

### Forging ahead



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<b>Recommendation</b>	: BUY
<b>CMP</b>	: INR321
<b>Target Price</b>	: INR410
<b>Potential Return</b>	: 28%

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**Market data**

Sector	: Auto Ancillary
Market Cap (INRm)	: 75,193
Market Cap (USDm)	: 1,403
O/S Shares	: 233
Free Float (m)	: 179
52-wk HI/LO (INR)	: 365/230
Avg Daily Vol ('000)	: 580
Bloomberg	: BHFC IN

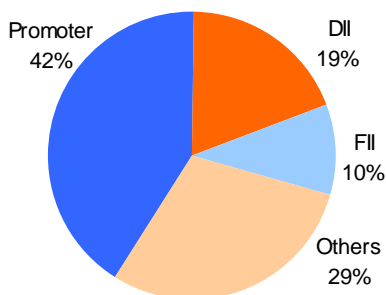
Source: Bloomberg

**Returns (%)**

	<b>1 m</b>	<b>3 m</b>	<b>6 m</b>	<b>12 m</b>
Absolute	5	9	12	(12)
Relative	6	10	13	(1)

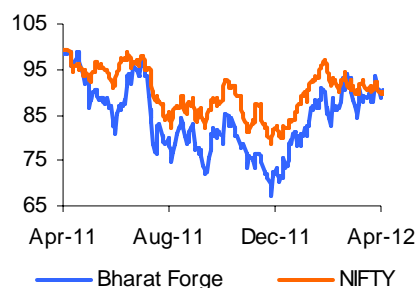
Source: Bloomberg

**Shareholding pattern**



Source: BSE

**Price performance vs Nifty**



Source: Bloomberg

**INITIATING COVERAGE**

# Bharat Forge Limited

## Forging ahead

### Investment rationale

#### Global scale and presence

Over the past decade, Bharat Forge Ltd. (BFL) has evolved into an Indian MNC with sizeable forging operations carried out in India, China, EU and US. With impressive capabilities, BFL services a multitude of clients across sectors and geographies. With relatively low geographical and client concentration, it has fortified operations in the aftermath of the economic downturn of FY09-10, by adding capacities and beefing up its product profile over the past two years to further de-risk its revenue and profits.

#### Domestic business to get stronger

Apart from augmenting its forging and machining capacity in India, BFL intends to improve its profitability by increasing revenues from machining, thereby capturing a larger part of the value chain. By playing the twin theme of economies of scale and value addition, its Indian operations are set to witness an increase in profitability.

#### International operations have turned the corner

Over the past 5-6 quarters, BFL has been relentlessly restructuring its international operations. The company has lowered its breakeven utilisation, pruned its workforce and rationalised its working capital systems, in order to achieve a cash neutral status at worst, thereby averting the danger of recapitalisation by the Indian parent.

### Valuation and outlook

At the CMP of INR321, BFL is trading at a PE of 11.4x and EV/EBIDTA of 5.3x discounting its FY14e earnings. The company's free cash flows are set to experience a marked improvement. Given the profile of its operations and its buoyant prospects, we firmly believe that BFL is comfortably placed to deleverage as well as invest in its promising new ventures like power equipment manufacturing. We initiate coverage on the stock with a BUY recommendation and our valuations provide us a with target price of INR410, which represents an upside of 28% from the current levels.

### Key financials

Year ended 31 Mar	2010	2011	2012e	2013e	2014e
Revenues (INR m)	33,276	50,873	57,696	66,560	74,105
EBITDA (INR m)	3,172	7,738	9,235	11,291	13,446
EBITDA Margin (%)	9.5	15.2	16.0	17.0	18.1
EBITDA growth (%)	(24.7)	144.0	19.3	22.3	19.1
PAT (INR m)	(634)	2,899	4,114	5,319	6,579
PAT growth (%)	-	-	41.9	29.3	23.7
EPS (INR)	(2.8)	12.5	17.7	22.8	27.5
EPS growth (%)	-	-	41.9	29.3	20.3
P/E (x)	-	25.2	18.2	14.1	11.4
P/BV (x)	5.1	3.8	3.2	2.6	2.1
EV/EBITDA (x)	23.2	10.3	8.8	6.8	5.3
RoE (%)	(4.9)	17.4	19.2	20.5	20.3

Source: Company, Antique;

## Company Profile

### Background

Incorporated in 1961, Bharat Forge Ltd. (BFL) is the flagship company of the Kalyani Group. It commenced forging operations in Pune, India in 1966, and today is one of the world’s leading manufacturers and suppliers of forged and machined automotive components. Its manufacturing facilities are located in India, US, Germany, Sweden and China. Currently, its Indian operations (including exports) constitute ~58% of the group’s overall revenues, with its international subsidiaries in EU, China and US contributing the rest.

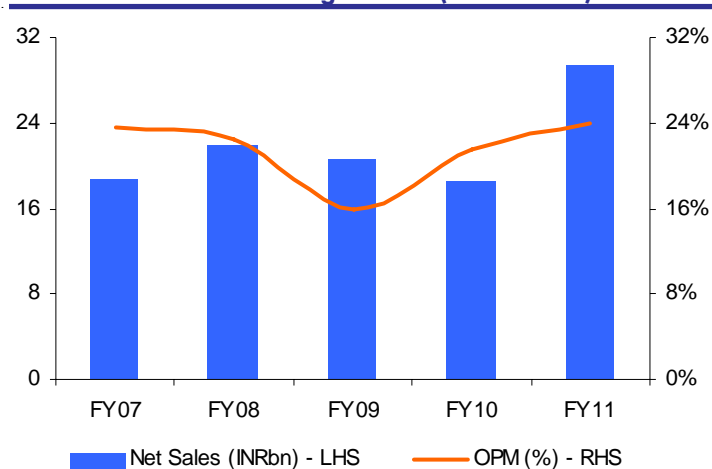
The company is renowned for its extremely strong design and engineering capabilities and partners several of its domestic and international customers in product development and validation.

BFL also produces forged and machined components for non-automotive industries, such as power generation (including wind energy), marine, oil and gas, railways, construction, etc. Over the past few years, the company has established its reputation in the non-automotive engineering space by forging and machining extremely large and complex components with critical application.

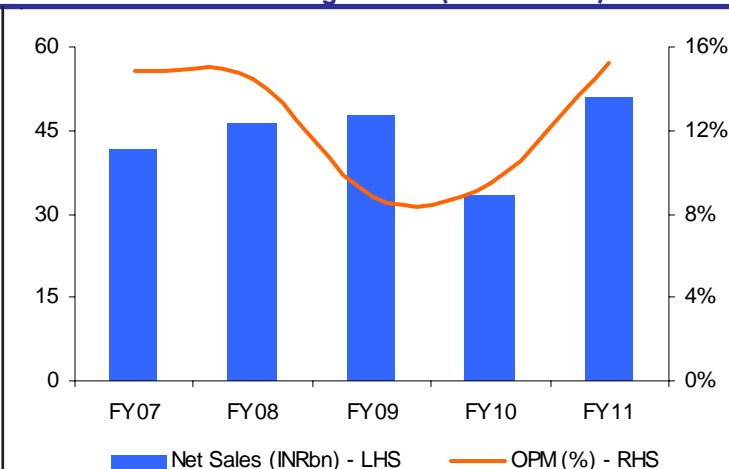
Currently, its supplies to the automobile industry contribute ~60% of BFL’s Indian revenues, with the remainder contributed by sales to non-automotive industries. With its ongoing diversification; BFL expects non-automotive sales to constitute ~45-50% of revenues by FY14e.

The company intends to pursue its revenue diversification plan by venturing into sectors like power equipment and gear box manufacturing, thereby leveraging its existing expertise in forging and machining heavy components for these sectors.

**Exhibit 1: Revenue and margin trends (Stand-alone)**



**Exhibit 2: Revenue and margin trends (Consolidated)**



Source: Company, Antique

## Product portfolio

### Automotive components

BFL’s product portfolio consists of several critical automobile engine components in the powertrain and chassis segments. These include crankshafts, front axle beams, steering knuckles, connecting rods, rocker arms, transmission parts, camshafts, etc.

Additionally, the company also collaborates with OEMs in the design functions, thereby increasing the margin profile of its operations as well as its bargaining power.

Till a few years ago, BFL supplied forged and machined components solely to domestic CV OEMs. However, tightening emission norms and higher demand for diesel cars have resulted in several PV OEMs opting for forged components as opposed to traditional castings, thereby opening a whole new market for the company.

Supplies of automotive components constitute ~63% of BFL’s revenues in India.

### Exhibit 3: Product profile - Automotive

Segments	Engine Components			Chassis Components	
	Crankshafts	Connecting Rods	Camshafts	Front Axles	STR Knuckles
Pass Car	10-30kg	<1kg	<5kg	NA	2-10kg
LCV/MCV	25-80kg	1-3kg	4-8kg	30-60kg	10-30kg
HCV	60-250kg	2-5kg	7-12kg	60-150kg	25-40kg

Source: Company, Antique

### Non-automotive components

In order to diversify its revenue streams and minimise client concentration, BFL ventured into forging of non-automotive components over a decade ago. Currently, the company supplies critical components to multiple sectors like railways, oil & gas, power (thermal, hydro & wind), mining, marine, etc.

The company’s complement of heavy presses and machining stations enables it to forge and machine extremely large and complex components of up to 70mt each. Additionally, its recently commissioned ring rolling facility enables it to manufacture large rings and blanks for a diverse set of industries.

Over the years, it has ramped up the capabilities of its non-automotive business, as a result of which its non-automotive sales in India constitutes ~37% of its revenues.

### Exhibit 4: Product profile - Non-automotive

Oil & Gas	Marine & Power Generation	Energy Sector - Windmill	Aerospace	Construction	Railways
Gate valve bodies	Crankshafts, Connecting rods	Main shafts	Engine components	Crankshafts, Connecting rods	Crankshafts, Connecting rods, pistons
Bonnets	Propeller shafts	Sun gear shaft - Gear boxes	Structural components	Ground engaging tips	Signaling equipment
Chokes		Spur gears - Gear boxes	Landing gears		Axle components
Wellheads					
Shells & Plugs					
Shaped forgings for both surface & subsea					

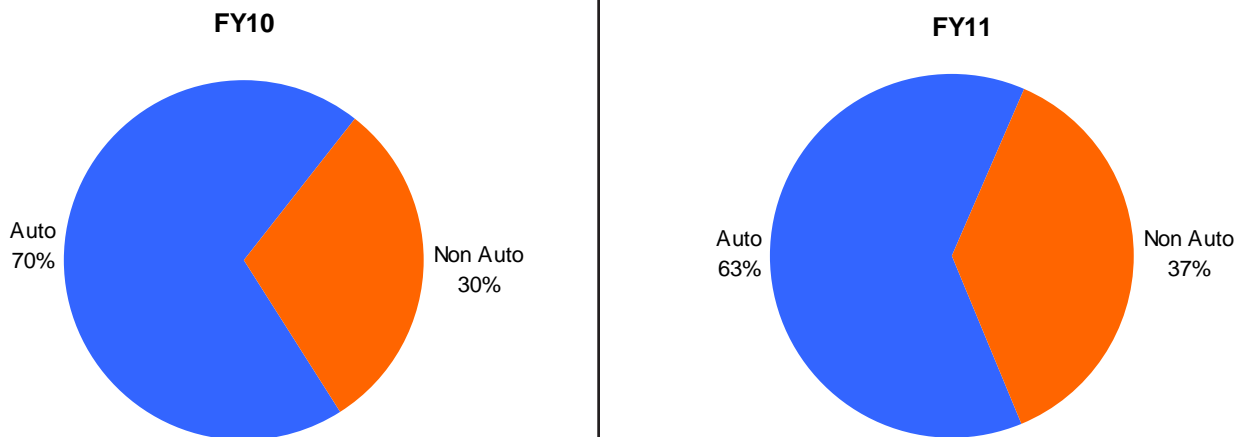
Source: Company, Antique

## Manufacturing operations

### Indian operations

BFL's Indian operations constitute ~60% of revenues and 90% of EBIDTA (FY11) and is the primary driver of cash flows for the company. As discussed earlier, BFL has a diversified and well-rounded product profile in India, with a significant portion of exports to Europe and USA.

Exhibit 5: BFL (SA) sectoral sales break-up



Source: Company, Antique

Exhibit 6: BFL (SA) sales break-up (INRbn)

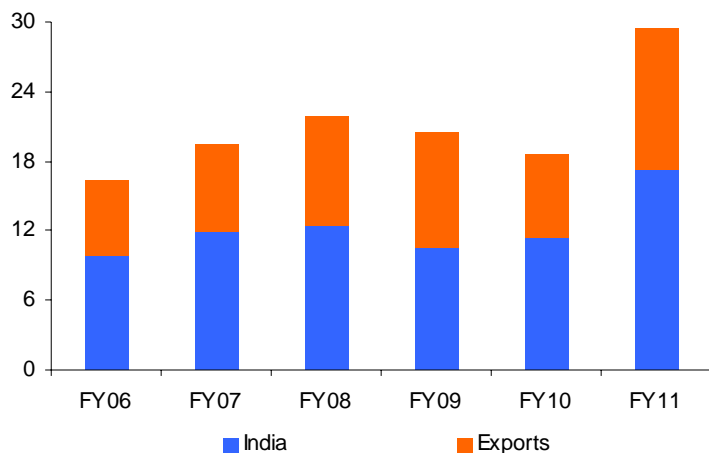
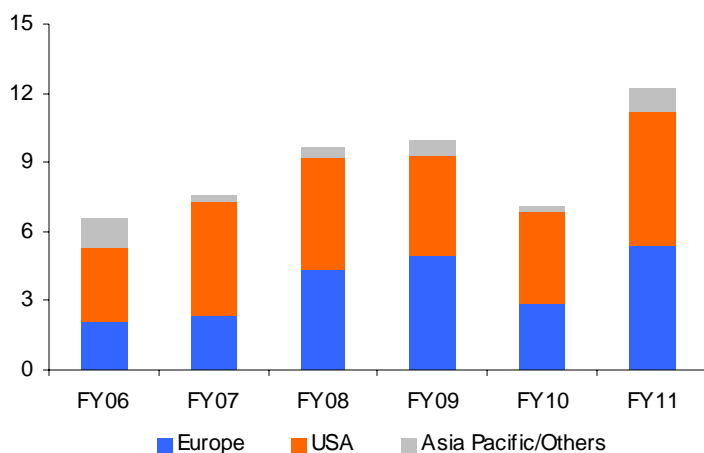


Exhibit 7: BFL (SA) export sales break-up (INRbn)



Source: Company, Antique

The company's manufacturing operations in India are carried out primarily from three locations:

**Mundhwa:** This is the company's flagship facility with 300,00mt pa forging capacity. Operating presently at ~70% CUF, BFL has over 11 fully automated press lines, ranging from 1,600mt to 16,000mt. This is complemented with machining facilities for 0.5m crankshafts and 0.5m front axle assemblies pa. This facility is the linchpin of BFL's automotive operations.

**Baramati:** BFL commissioned this facility in FY10 to manufacture non-automotive components at an outlay of ~INR3.5bn. It has a capacity to forge 40,000mt of closed die forged components for various sectors like power, oil & gas, marine, etc.

Additionally, the company also has the capacity to forge 45,000mt of large rings & gear blanks for various sectors.

**Chakan:** This facility serves solely as a machining unit for BFL’s automotive products and has a capacity of ~0.2m crankshafts and 0.2m front axle beams for CVs.

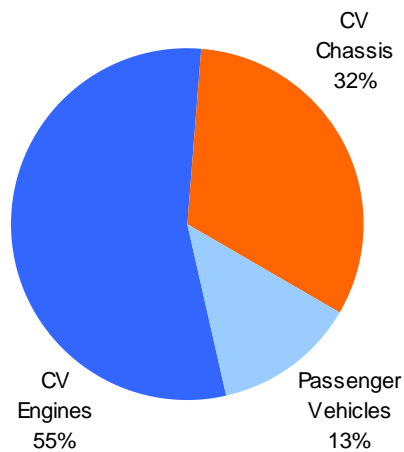
**International operations**

**Exhibit 8: BFL global manufacturing operations**



Source: Company, Antique

**Share in total standalone portfolio in auto segment**



Source: Company, Antique

**Exhibit 9: Global dual shore manufacturing capability**

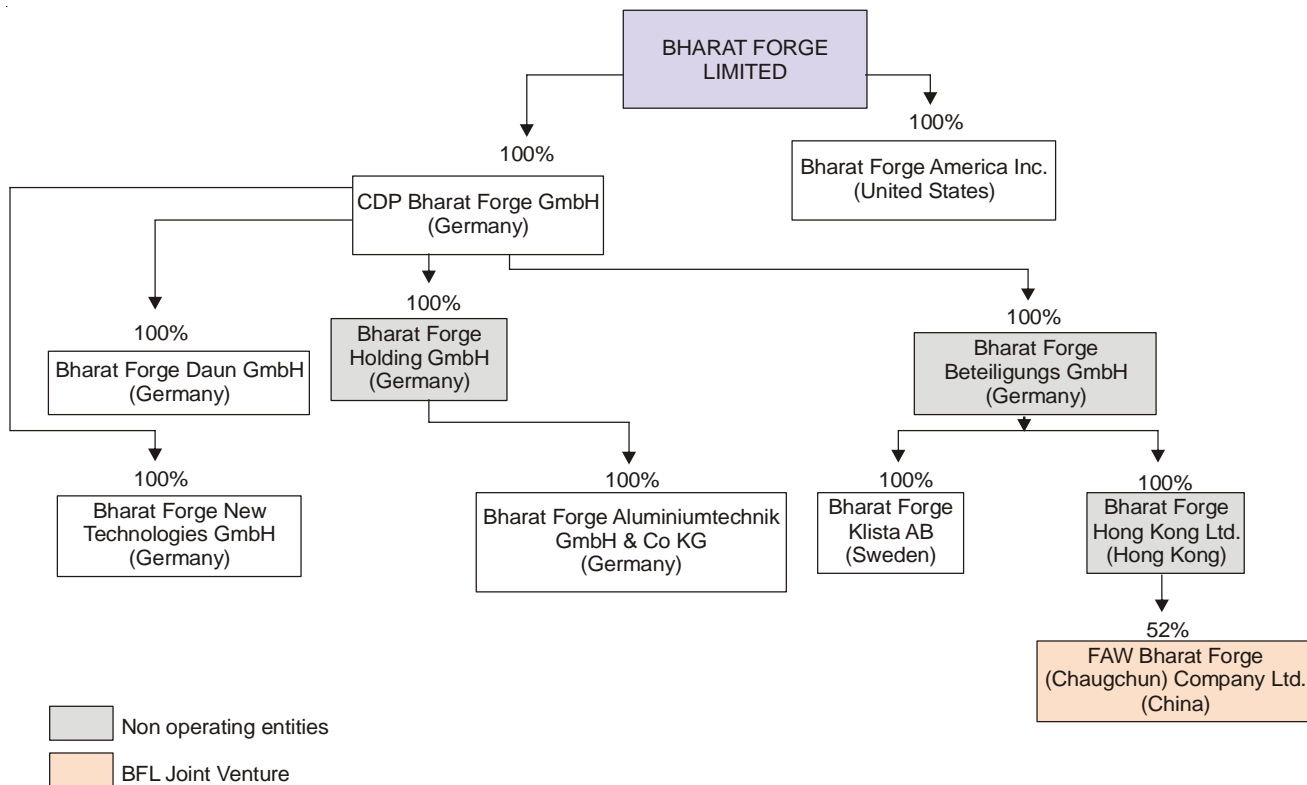
Key Products	India	Germany	USA	Sweden	China JV with FAW
<b>Passenger Vehicles:</b>					
- Engine Component	✓	✓	✓	✓	✓
- Chassis Component	✓	✓	✓	✓	✓
<b>M &amp; HCV</b>					
- Engine Component	✓			✓	✓
- Chassis Component	✓			✓	✓
<b>Light Truck Parts</b>					
- Engine Component	✓	✓	✓	✓	✓
- Chassis Component	✓	✓	✓	✓	✓
<b>Key Services</b>					
- Design & Engineering	✓	✓		✓	

Source: Company

Apart from India, BFL also has manufacturing operations in Germany, Sweden, Scotland, USA and China. With a combined forging capacity in excess of 760,000mt, the company follows a ‘Dual Shore manufacturing’ model, thereby enabling it to service all important

customers from at least two locations simultaneously. This not only assures auto OEMs of assured supplies without disruptions, but also gives them a closer servicing interface.

**Exhibit 10: BFL organisational structure**



Source: Company, Antique

**Exhibit 11: BFL international growth**

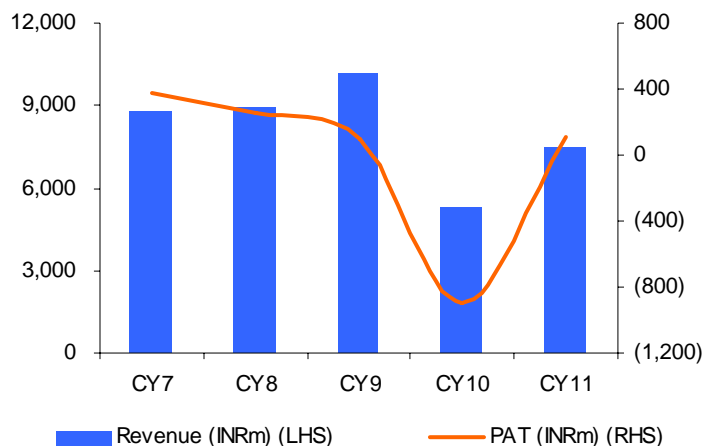
Overseas Acquisition	Country	Date	Consideration (INRm)
CDP Germany	Germany	Jan'04	2,200
CDP Aluminiumtechnik	Germany	Dec'04	400
Federal Forge Inc.	USA	May'05	400
Imatra Kilsta	Sweden	Sep'05	2,500
First Automotive Works (FAW)*	China	Mar'06	1,300
<b>Total</b>			<b>6,800</b>

Source: Company, Antique \*FAW is a Joint Venture operation

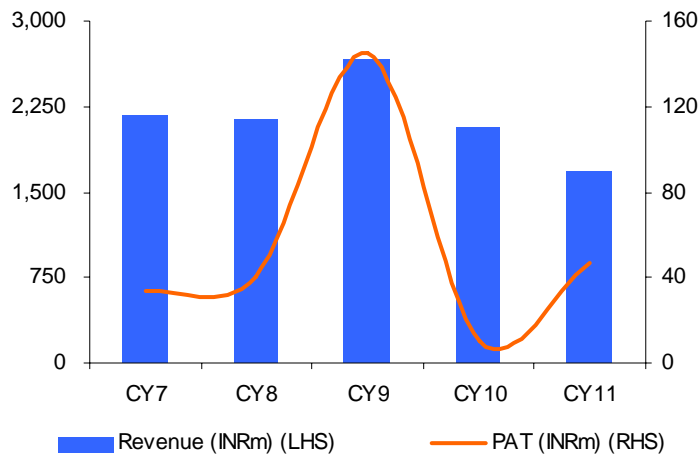
**CDP Bharat Forge GmbH, Germany (CDP)**

In an asset purchase in Jan'04 funded through internal accruals, BFL acquired 100% of the fixed assets, inventory, and business of *Carl Dan Peddinghaus* (CDP), Germany. Consequently, it secured its presence in the extremely mature European PV market, supplying chassis components and steering knuckles for cars. However, CDP faced severe headwinds in FY09-10 during the global financial crisis, as a result of which turnover nearly halved to INR5.3bn, while book profits slipped into the red. However, economic recovery in the EU and broadening of its product profile resulted in CDP recovering almost all lost ground in FY11. This entity registered revenues and profits of INR7.5bn and INR114m respectively, in FY11.

**Exhibit 12: CDP financial performance**



**Exhibit 13: BF-AL financial performance**



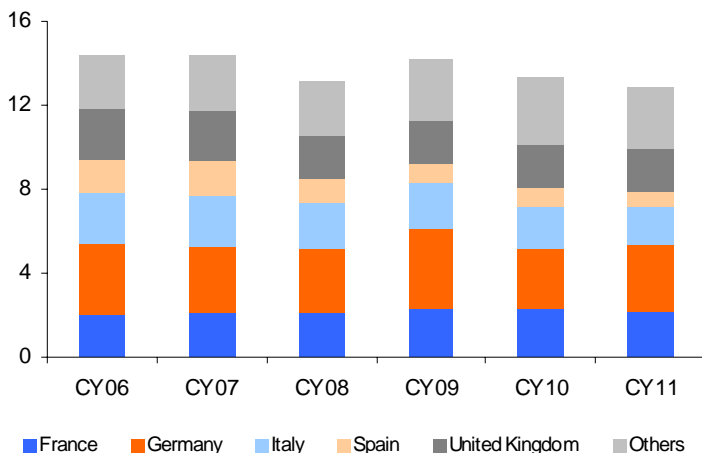
Source: Company, Antique

**Bharat Forge Aluminiumtechnik GmbH (BF-AL)**

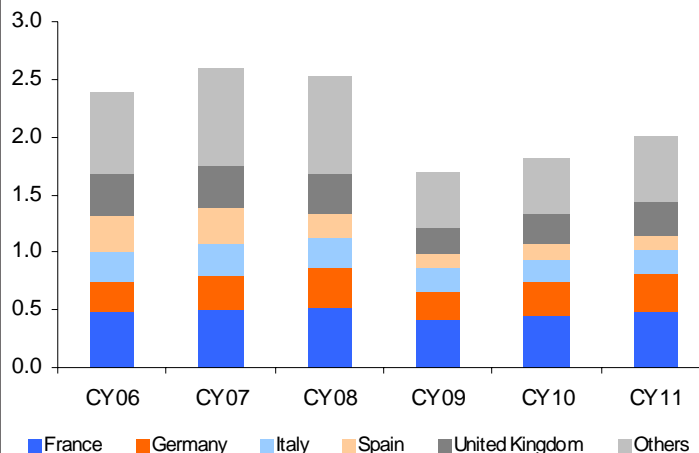
In Dec'04, BFL acquired BF-AL in an all cash deal worth ~INR400m. This facilitated its entry into aluminium forging of PV components, with supplies to most auto OEMs in the EU. In FY11, the company registered a turnover of INR1.7bn with a PAT of INR47m.

On a combined capacity of 100,000mt of forged components, CDP and BF-AL are currently operating at a CUF of ~60%.

**Exhibit 14: Europe Car Sales - Country-wise (m units)**



**Exhibit 15: Europe CV Sales - Country-wise (m units)**



Source: Company, Antique

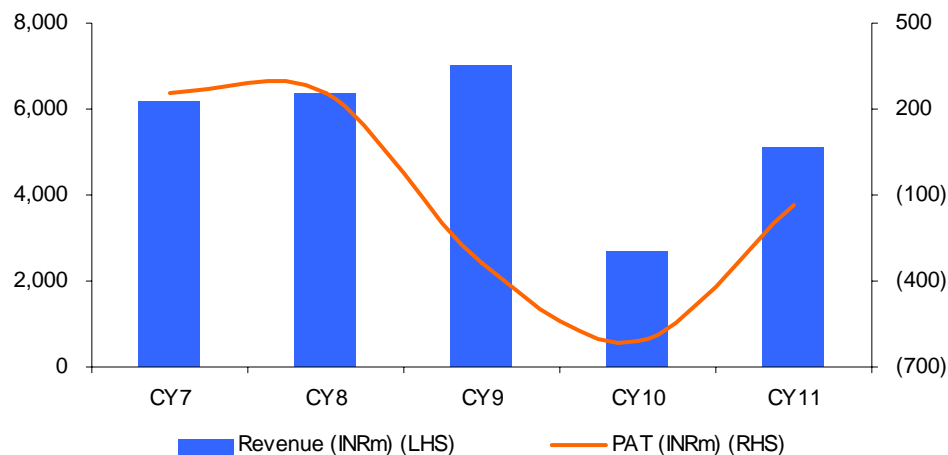
**Bharat Forge Kilsta AB Sweden (BF-K)**

In an all cash deal, BFL purchased BF-K in Sep'05 for ~INR2.5bn. The latter is the largest manufacturer of Front Axle Beams and the second largest manufacturer crankshafts producer in Europe, with facilities in Sweden and Scotland and a capacity of 80,000mt. During the financial downturn of FY09-10, the company wound up its Scottish facility, opting to operate solely from Sweden.

BF-K registered a relatively stable performance in FY11 by clocking revenues of INR5.1bn and a marginal net loss of INR138m. This entity is currently operating at ~50% CUF.



**Exhibit 16: BF-K financial performance**

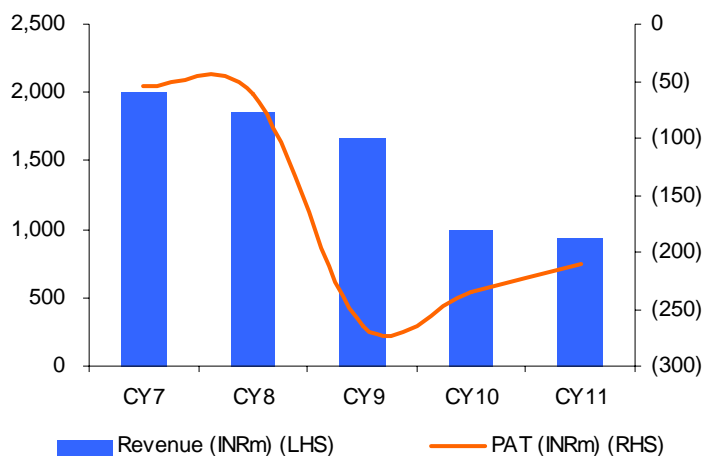


Source: Company, Antique

**Bharat Forge America Inc (BF-A)**

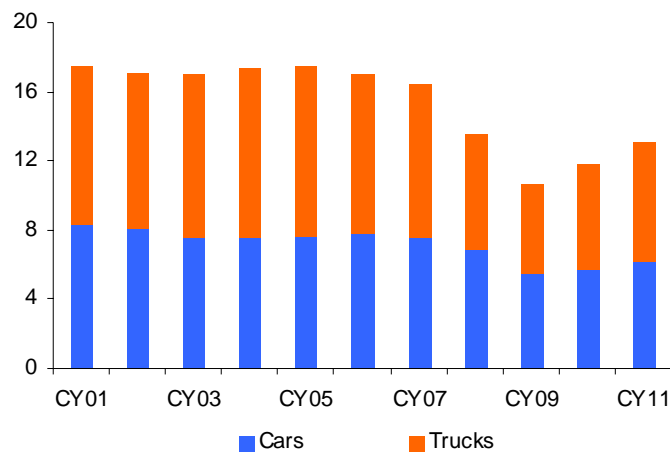
The erstwhile Federal Forge Inc (USA) was acquired by BFL in an all cash deal in May'05 for ~INR400m. With the aim of securing a manufacturing base in close proximity to its customers in the CV and PV space, BFL acquired BF-A, a market leader in components for in PV and LCV segments in USA, with a forging capacity of 60,000mt. However, BF-A's revenues declined progressively since FY07 on the back of poor demand for HVs in USA post FY08. From a peak turnover of INR2bn in FY07, the company's revenues stood at INR937m in FY11; similarly net losses for the company widened from INR55m in FY07 to INR210m in FY11.

**Exhibit 17: BF-A financial performance**



Source: Company, Antique

**Exhibit 18: US vehicle Sales (m units)**



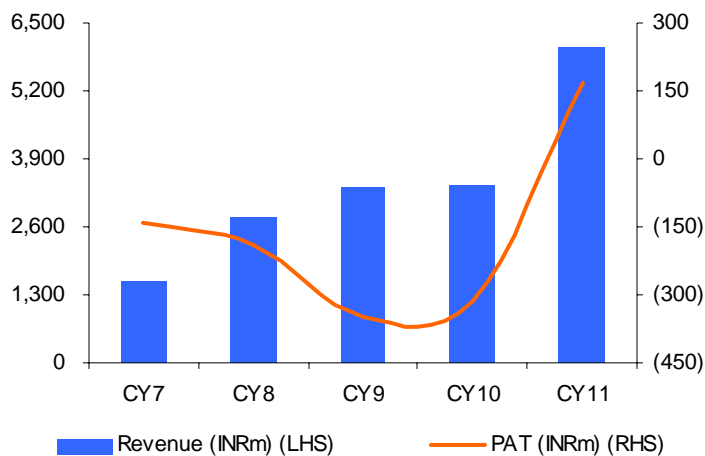
In response, BFL undertook massive restructuring in its American operations over the past 18 months. This included streamlining manufacturing operations, rightsizing its workforce and rationalising its working capital. Consequently, the breakeven threshold for this entity has been lowered, but at ~20% CUF presently, the company is still not breaking even at the EBIDTA level.

**FAW Bharat Forge (Changchun) Co. Ltd. (BF-FAW), China**

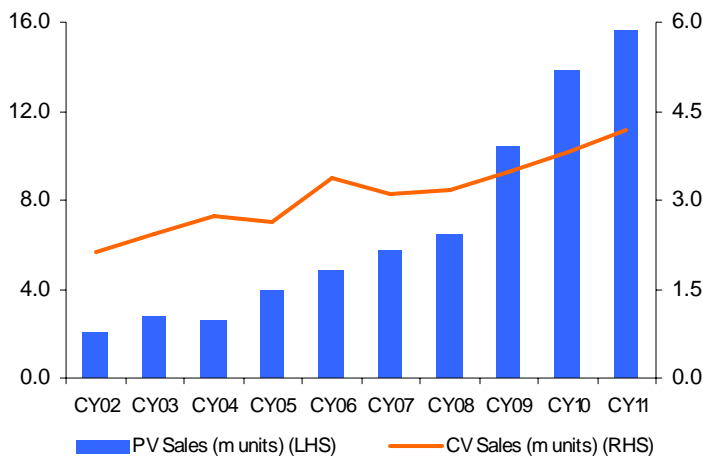
BF-FAW commenced operations in Apr'06, as a JV between BFL and First Automotive Works, Changchun, China. BFL has a 52% stake in the entity, which has a capacity of

140,000mt of forged components and supplies forged engine and chassis components for commercial vehicles, buses and light trucks and transmission parts for the Chinese passenger car industry. BFL invested INR1.26bn in this venture, which has continuously ramped up its revenue profile from INR1.6bn in FY07 to INR6bn in FY11. The company turned profitable at the PAT level in FY11, when it clocked profits of INR169m. BF-FAW is currently operating at a CUF of 50%.

**Exhibit 19: FAW BFL financial performance**



**Exhibit 20: China PV and CV sales**



Source: Company, Antique

### Capital raising

#### FCCBs

BFL had issued a series of FCCBs during CY05-06 in order to build a war chest to fund its inorganic growth plans as well as capex in India. In four successive tranches, the company issued FCCBs totaling USD199.9m, details of which are provided below:

**Exhibit 21: FCCB details**

Tranche	Issued (USDm)	Issued	Converted	Balance	Maturity	Premium on Redemption	Status
1	60.0	May-05	15.4	44.6	Apr-10	26.778%	Redeemed
2	60.0	May-05	-	60.0	Apr-10	29.939%	Redeemed
A	40.0	Jun-06	-	40.0	Apr-12	42.576%	Redeemed
B	39.9	Jun-06	-	39.9	Apr-13	56.481%	Pending
Total	199.9			184.5			

Source: Company, Antique

In Apr'10, BFL had to redeem a large chunk of Tranche 1 and the entire quantum of Tranche 2. This was refinanced entirely through internal accruals, post which it went in for fund raising through a QIP and issuing NCDs. Tranche A was redeemed recently in Apr'12 while Tranche B is outstanding and up for redemption in Apr'13. We believe that it will repay the second tranches through a mix of debt and internal accruals.

#### QIP and NCDs

In order to maintain a healthy cushion of liquidity for capex and debt repayment, BFL went in for a QIP in Apr'10, post redemption of Tranches 1 & 2 of its FCCBs. The company issued 10m equity shares at INR272 (FV: INR2, Premium of INR270) to institutional investors, thereby raising INR2.72bn in the process. Concurrently, it issued NCDs of INR1.76bn (Coupon 10.75%, Tenor of 6 years). BFL mopped up INR4.48bn,

resulting in the creation of adequate buffer for future repayments and capex in its core forging business and new ventures viz. Alstom JVs for power equipment.

Simultaneously, the NCD holders subscribed to 6.5m warrants (FV: INR2, Premium of INR270), valid from Apr'10 and exercisable in Apr'13, totaling to INR1.76bn.

While the entire cycle of fund raising and debt refinancing may not convey a flattering picture, we believe the same to be necessitated by the capital intensive nature of investments viz. inorganic growth, capex in India and foray into new businesses.

## Business model

### Manufacturing

With ~60% of its revenues in India coming from the supply of auto components, BFL liaises very closely with OEMs, in order to adhere to delivery schedules and maintain a tight working capital cycle. It usually gets an approximate annual production plan from its customers, enabling it schedule its production runs in advance. This gets supplemented by a 4-month rolling production plan, wherein it gets targets for the month ahead and variable production targets for the ensuing three months. It supplies both, raw and machined forgings. Currently, BFL machines ~50% of its own forgings, which has enabled to achieve higher profitability in its sales. In case of new products, BFL collaborates very closely with most of its customers on the design and development aspects. This is another driver of operating profits, as the company is able to leverage its existing engineering expertise at a very low cost or marginal utilisation of existing resources.

In the non-auto business, BFL largely leverages its prowess in open-die forging to manufacture large, complex components for its customers in the oil & gas, capital goods and marine industries. The cash conversion cycle is prolonged in this business due to prototyping and stringent validation procedures followed by clients. However, margins are significantly richer, given the complexity and criticality of products.

Internationally, BFL's various subsidiaries adhere to production schedules provided by clients. These vary from one month to three months in duration.

### Raw material sourcing

BFL is partially backward integrated, as it meets 80% of its requirement of speciality and alloy steels from group companies *Kalyani Steel Ltd.* and *Kalyani Carpenter Special Steels Ltd.* While procurement is done at the prevailing market price, BFL is assured of timely and adequate supplies, ensuring continuity of operations. Internationally, raw materials are procured in the countries of operation. BFL books raw material at the time of receiving the work schedule / Purchase Order from its auto/non-automotive customers, respectively. Any subsequent escalation in the price of the raw material is passed on to customers thereby locking in its EBIDTA/mt of metal forged and machined, thereby garnering visibility of cash flows.

### Working capital cycle

On the core working capital front in India and overseas, BFL and its subsidiaries have a net working capital cycle of a month. With debtors and inventory of 50 and 70 days, BFL enjoys 90-100 days of credit. However, it has a significant amount under 'Loans and Advances', which consists of prepaid taxes and advances for equipment.

## Future plans

### Automotive & non-automotive

In its core engineering business, BFL has outlined a capex of INR5bn for its Indian operations over the next 12-18 months. This includes augmenting its existing forging capacity of 360,000mt by 30,000mt and increasing its machining capacity by 300,000 units to 1,100,000 units. Additionally, it also plans to install critical balancing equipment to its existing lines and improve the quality of existing throughput.

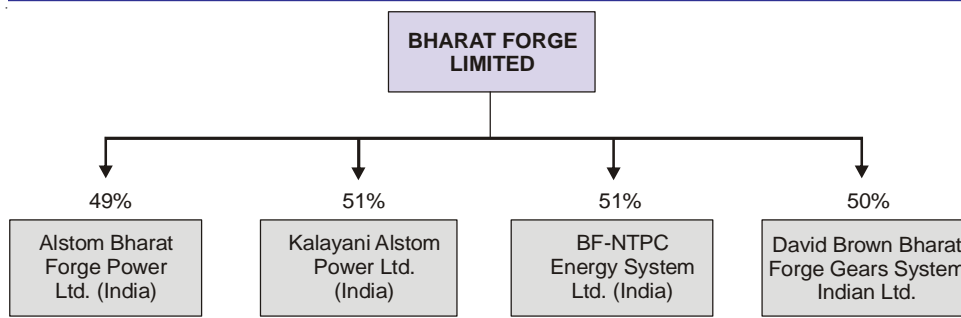
On the operational front, the company is striving towards increasing its output of machined components. At present, ~45-50% of BFL’s Indian output is machined in-house, while the remainder is sold as raw forgings. The cost benefit trade-off between incremental working capital and fixed assets deployed and the margins earned by selling finished machined components is significantly tilted in favour of the latter. BFL intends to increase the proportion of machined component in sales to ~54-55% over the next 18-24 months, which in our opinion, will be significantly margin accretive.

In its international forging operations, BFL is targeting improvement in its CUF to improve cash generation from these businesses. With plenty of headroom left for utilisation to improve, the company has no plans for immediate capex at these locations.

### New ventures

In an effort to move up the value chain, BFL ventured into allied verticals like capital goods. The company zeroed in some critical verticals like EPC services and critical components like turbine, generators (TG), pumps, high pressure valves, etc.

#### Exhibit 22: BFL joint ventures



Source: Company, Antique

### Power Equipment

In two separate JVs with Alstom, BFL incorporated *Alstom Bharat Forge Power Ltd* (ABFPL) and *Kalyani Alstom Power Ltd* (KAPL), in which the company holds 49% and 51% equity interest, respectively. The former has been set up to manufacture TG sets of 600-800MW rating for power plants, using super-critical technology while KAPL will focus on manufacturing auxiliaries for power plants like generator cooling equipment, generator high voltage systems, barring gears, etc. ABFPL has shortlisted to supplying 5 TG sets of 660MW rating to NTPC, worth ~INR43bn.

Work is currently underway to construct the manufacturing facilities for the 2 entities, at Mundra, Gujarat. The total capex for the same is expected to be ~INR15.6bn, with BFL’s equity contribution pegged at ~INR3bn across both JVs.

### Engineering, Procurement and Construction (EPC)

In order to tackle the existing gaps in the Indian EPC sector, BFL launched its wholly owned subsidiary to provide EPC services to power plants. The entity has a team of ~200 highly experienced professionals and has already bagged an order worth ~INR19bn for a power plant in eastern India, with a configuration of 3x150MW. The project is expected to be executed over the next 24-30 months.

### Miscellaneous JVs

- **NTPC:** BFL has a 51:49 JV with NTPC, *BF-NTPC Energy Systems Ltd.*, to manufacture forgings, fittings & high pressure pipings required for Balance of Plant (BOP) equipment for power plants and other industries. These include high pressure pumps & valves, critical piping and castings for turbine casings.
- **David Brown:** The company has set up a 50:50 JV in India, with the *David Brown* group, a leading global manufacturer of gearing products and services. This entity will manufacture heavy duty gear boxes and transmission systems as well carry out repair and after-sales services.

The above 2 JVs are in incubation stage, with business plans and feasibility studies being carried out. We do not foresee the company making any significant capex on these ventures for the next 12-15 months.

- **KPIT Cummins:** BFL formed a 50:50 JV with leading product engineering & IT consulting company *KPIT Cummins Infosystems Ltd*, to manufacture and market an indigenously developed hybrid technology solution for automobiles. The technology, dubbed 'Revolvo', enables both existing and new vehicles to increase fuel efficiency and engine performance, while decreasing greenhouse gas emissions. Currently, field trials for this product are underway with a domestic fleet operator. However, commercialisation of this product is still 24-30 months away.

Since most of BFL's JVs are long tailed investments, we have refrained from estimating any potential income or profits from the same. However, for the sake of conservatism, we have accounted for possible investments in power equipment JVs with Alstom.

## SWOT

### Strengths

- **Scale and product range:** As the largest forging company globally with a combined global capacity of 760,000mt, BFL has significant economies of scale to its advantage, enabling it to supply products across geographies at significantly competitive prices. Additionally, its vast repertoire of products and ability to forge and machine components ranging from 2kg to extremely large and complex components up to 35mt, makes it a preferred supplier for OEMs across segments in the automotive and non-automotive industries, viz. PV, CVs, power, marine, railways; thereby ensuring client stickiness.
- **Strong execution capability and technical expertise:** BFL's ability to deliver volumes while adhering to strict quality parameters and timelines has enabled it to ramp up its output over the years as well as increase its share in overall business sourced from individual customers. Additionally, its ability to collaborate on the design function with its various automotive and non-automotive clients fortifies its position as a premier component supplier with customers intent on lean manufacturing and product design practices.
- **Cientele:** BFL's client roster consists of marquee names in the automotive, engineering, oil & gas and marine industries. Consequently, the quality of output deliverable to them is superlative, enabling BFL to secure business in new geographies/verticals. Additionally, there is never a problem of delinquencies in payments, thereby ensuring a smooth cash conversion cycle.
- **Sectoral and geographical diversity in revenues:** The spread of operations in India, China, EU and US, has enabled BFL to mitigate the risk posed by geographical concentration of manufacturing operations. This was borne out by the company's financial performance during the economic crisis of FY09-10. Till FY09, BFL's international subsidiaries contributed a lion's share of the group's revenues. However, the global downturn resulted in revenues shrinking dramatically in EU and US, while the group's Indian operations kept it afloat.
- **Improving health of international operations:** Over the past 18 months, BFL has aggressively streamlined its international operations by improving throughput and lowering its breakeven threshold. Consequently, most subsidiaries have registered an improvement in OPM and have stopped bleeding cash, thereby obviating the need for re-capitalisation.

### Weakness

- **Capital raising and returns on capital:** The capital intensive nature of business and BFL's inorganic growth plans necessitated aggressive fund raising over the past few years. The ~USD200m of FCCBs raised during FY05-06 in addition to term loans pushed BFL's gearing to its peak of ~1.5x during FY09-10. Additionally, BFL raised funds totalling INR4.48bn in FY11 for repayment of debt and further capex in long tailed new ventures.

The base of capital and low utilisation levels, due to the financial crisis strained cash flows and utilisation levels. However, going forward, BFL's investment cycle is winding down and it now intends to monetise the same by ramping up utilisation. We therefore expect returns on capital to improve over the next 2 years.

- **Static international product profile:** Across its international subsidiaries, BFL doesn't have significant machining operations. Consequently, margins earned are on raw forgings, which are sedate and dependent on CUF. Going forward, upon improvement in the financial performance of international subsidiaries, cash flows from the same may be utilised to ramp up machining capabilities across locations.
- **Poor performance in America:** As discussed earlier, the performance of BF-A has been steadily deteriorating over the past four years. Things were exacerbated by the economic turmoil, wherein revenues had fallen 60% from their peak while net losses quadrupled. BFL has restructured the operations at BF-A, lowering the breakeven threshold to ~50%. With current CUF at 20% and inching northwards, the cash bleed in this geography should subside over FY13e.

### Opportunities

- **Scope for operating leverage at international locations:** With CUF in EU at 60%, China at 50% and USA at 20%, BFL's international units have plenty of headroom to increase output. With vehicle sales in US and China likely to post robust growth in FY13e, generation of operating leverage in these geographies looks likely, as does cash accretion.
- **Increasing outsourcing by auto OEMs:** With global OEMs laying greater emphasis on lean manufacturing and lowering the time and cost to launch products in the market, the practice of collaborating with component vendors on product design and development, prior to manufacturing, is gaining favour. By virtue of its engineering capabilities, manufacturing prowess and scale, BFL is in a sweet spot to capture incremental business emerging on this count.
- **Option value of JVs:** While all of BFL's JVs in its non-core businesses are still some time away from generating meaningful revenues and profits, any unexpected ramp up in the same could positively impact valuations for the company.

### Threats

- **Downturn in global economy:** The financial turmoil that roiled the global economy during FY09-10 is a case in point of how the credit squeeze put a halt on all capital expenditure worldwide. Utilisation, revenues and profits nosedived for all engineering and automotive component companies, including BFL. A repeat of the same would put pressure on BFL's cash flows and impact return ratios.
- **Failure in new ventures:** BFL has outlined a sizeable investment of ~INR8bn in its power equipment business viz. ABFPL and KAPL. The inability to secure further orders or sharper than expected losses in these entities could impair the financials of the parent by compressing return ratios and valuations.

## Valuation and recommendation

While the global downturn of FY09-10 impaired BFL's financial performance at home and abroad, we believe its performance has significantly improved ever since. The company's significant ramp up in output of complex and heavy duty non-automotive forgings was commendable. This enabled it to sustain profits and cash flows and ride out the economic slump. In FY11, the company renewed its focus on the design and delivery capabilities of its core business at home while restructuring its operations overseas.

The positive ramifications of the same are visible in its performance in 9MFY12, as the company has registered a growth of 27% in revenues, 25% improvement in EBIDTA and a creditable 46% jump in net profits (stand-alone). Things are also looking up in the international subsidiaries as the company's revenues and EBIDTA have risen 21% and 36%, respectively, during the same period.

We are extremely positive about the company's prospects in the near term, as BFL steadily ramps up utilisation levels at home, largely on the back of stable demand from the automotive segment and increasing sales to non-automotive clients. Operational profitability should climb as the proportion of sales of machined components in overall revenues increases, thereby fortifying cash flows. The focus on increasing its output of machined components also represents a significant stride up in the value chain which will also boost return ratios, as BFL earns higher profitability at a lower incremental cost. With major capex in India drawing to an end, we believe that the company will have sufficient cash to comfortably meet its debt repayment obligations arising in FY14e.

More importantly, with no capex lined up for its international subsidiaries and utilisation levels on the rise, these entities should be cash neutral, as opposed to burning cash. This will obviate the need for recapitalisation by BFL and any future capital raising by the company.

As mentioned earlier, we believe that BFL's cash generation in its core businesses will be utilised to capitalise the new, nascent ventures for manufacturing TG Islands and power plant auxiliaries. As it would take some time for these ventures to come to fruition, return ratios would dip in the interim, given the considerable size of the asset block involved. We feel that this is necessary and unavoidable, in the interest of revenue diversification and business de-centralisation. Despite the high scalability potential of these businesses, we have refrained from including any contribution to the same to the company's revenues and profits, while accounting only for the investment.

We expect BFL's revenues at ~INR43.9bn and INR49.8bn in FY13e and FY14e on a stand-alone basis. Production of 258,900mt and 278,620mt, respectively, is expected in FY13e and FY14e in India on the basis of our projections. We have factored in a steady increase in proportion of machined components in overall sales. Simultaneously, we expect revenues from international subsidiaries to settle at INR26.65bn (+2%) and INR24.3bn (7%) in FY13e and FY14e, respectively.

On the profitability front, the increasing prevalence of machining should enable the company to maintain margins of 23% in FY13e, with discernible improvement of ~100bps in FY14e to 24%. Consequently, we estimate the EBIDTA of Indian operations at INR10.2bn and INR11.9bn in FY13e and FY14e, respectively. Internationally, with



margins improving to 5% and 7% in FY13e and FY14e, respectively, we believe that the meagre generation of cash will give BFL's subsidiaries enough of a breather to retire some debt.

We expect the EBIDTA of BFL's international subsidiaries at INR1.1bn and INR1.3bn in FY13e and FY14e, respectively. On a consolidated level, we expect BFL's PAT to settle at INR5.3bn and INR6.5bn in FY13e and FY14e, respectively.

While the capital intensive nature of the business and subdued operating environment have resulted in lower return ratios previously, we believe that the company's focus on playing to its strengths viz. scale, technological prowess and depth of management bandwidth should bear fruit over FY13e and FY14e. With steady accretion in its cash hoard, we believe that the company will adequately capitalise to deleverage its balance sheet and simultaneously invest in its new ventures.

At the CMP of INR321, BFL is trading at a PER and EV/EBIDTA multiple of 11.4x and 5.3x respectively, discounting its FY14e numbers. We have valued the company by ascribing a 7x EBIDTA multiple to its FY14e numbers.

### **Exhibit 23: BFL valuation methodology**

EBIDTA (INRm)	13,946
<b>EBIDTA multiple (x)</b>	<b>7</b>
EV (INRm)	98,316
Net Debt (INRm)	2,788
Equity Value (INRm)	95,528
<b>Value/sh (INR)</b>	<b>410</b>

Source: Antiqua

Given its pedigree, world class operational scale and superlative technical skills, we are extremely confident of BFL's future prospects and initiate coverage on the company with a price target of INR410, with a 12-month perspective, which represents an upside of 28% from current levels.

## Financials

### Profit and loss account (INRm)

Year ended 31 Mar	2010	2011	2012e	2013e	2014e
Revenues	33,276	50,873	57,696	66,560	74,105
Expenses	30,104	43,135	48,461	55,269	60,660
<b>Operating Profit</b>	<b>3,172</b>	<b>7,738</b>	<b>9,235</b>	<b>11,291</b>	<b>13,446</b>
Other income	511	671	500	500	500
<b>EBIDT</b>	<b>3,683</b>	<b>8,410</b>	<b>9,735</b>	<b>11,791</b>	<b>13,946</b>
Depreciation	2,451	2,548	2,639	2,666	3,080
Interest expense	1,135	1,417	1,219	1,186	1,046
<b>PBT before EI &amp; MI</b>	<b>97</b>	<b>4,445</b>	<b>5,878</b>	<b>7,939</b>	<b>9,820</b>
Taxes incl deferred taxation	119	1,402	1,763	2,620	3,240
<b>PAT before EI &amp; MI.</b>	<b>(22)</b>	<b>3,043</b>	<b>4,114</b>	<b>5,319</b>	<b>6,579</b>
(-) Minority Interest	(132)	68	-	-	-
(-) EI & P/L from Association.	744	76	-	-	-
<b>PAT</b>	<b>(634)</b>	<b>2,899</b>	<b>4,114</b>	<b>5,319</b>	<b>6,579</b>
EPS (INR)	(2.8)	12.5	17.7	22.8	27.5

### Balance sheet (INRm)

Year ended 31 Mar	2010	2011	2012e	2013e	2014e
Share Capital	445	466	466	466	479
Reserves & Surplus	14,185	19,064	22,907	27,954	35,996
<b>Networth</b>	<b>14,630</b>	<b>19,529</b>	<b>23,372</b>	<b>28,420</b>	<b>36,475</b>
Debt	22,527	18,950	18,750	18,250	16,095
Deferred Tax Liability	959	1,321	1,321	1,321	1,321
Minority Interest & Others	795	1,542	1,542	1,542	1,542
<b>Capital Employed</b>	<b>38,911</b>	<b>41,342</b>	<b>44,985</b>	<b>49,532</b>	<b>55,432</b>
Gross Fixed Assets	41,340	44,976	48,045	49,545	51,045
Accumulated Depreciation	17,267	20,383	23,021	25,688	28,768
<b>Net Assets</b>	<b>24,073</b>	<b>24,593</b>	<b>25,023</b>	<b>23,857</b>	<b>22,277</b>
Capital work in progress	1,987	3,069	1,500	1,500	1,500
Investments	2,737	3,668	4,418	5,168	5,918
Goodwill and Others	5	34	34	34	34
<b>Current Assets, Loans &amp; Advances</b>					
Inventory	6,575	8,115	9,423	10,747	11,795
Debtors	5,044	7,539	8,707	10,044	11,183
Cash & Bank balance	5,977	3,110	3,411	7,416	13,307
Loans & advances and others	6,576	8,877	8,877	8,877	8,877
<b>Current Liabilities &amp; Provisions</b>					
Creditors	11,164	13,369	12,115	13,817	15,165
Other liabilities & provisions	2,898	4,706	4,706	4,706	4,706
<b>Net Current Assets</b>	<b>10,109</b>	<b>9,566</b>	<b>13,597</b>	<b>18,561</b>	<b>25,291</b>
Miscellaneous Exp (not w/o)	0	412	412	412	412
<b>Application of Funds</b>	<b>38,911</b>	<b>41,342</b>	<b>44,985</b>	<b>49,532</b>	<b>55,432</b>

### Per share data

Year ended 31 Mar	2010	2011	2012e	2013e	2014e
No. of shares (m)	223	233	233	233	239
BVPS (INR)	65.7	83.9	100.4	122.1	152.4
CEPS (INR)	8.2	23.4	29.0	34.3	40.4
DPS (INR)	1.0	1.0	1.0	1.0	1.0

### Margins (%)

Year ended 31 Mar	2010	2011	2012e	2013e	2014e
EBITDA	9.5	15.2	16.0	17.0	18.1
EBIT	3.7	11.5	12.3	13.7	14.7
PAT	(1.9)	5.7	7.1	8.0	8.9

Source: Company, Antique

### Cash flow statement (INRm)

Year ended 31 Mar	2010	2011	2012e	2013e	2014e
<b>PBT</b>	<b>(647)</b>	<b>4,369</b>	<b>5,878</b>	<b>7,939</b>	<b>9,820</b>
Depreciation	2,451	2,548	2,639	2,666	3,080
Interest paid	1,303	1,529	1,219	1,186	1,046
Other Adj.	(287)	2	-	-	-
Misc Exp w/o	113	75	-	-	-
Other Income	(359)	(391)	(500)	(500)	(500)
(Inc)/Dec in working capital	3,342	(4,158)	(3,730)	(959)	(839)
Tax paid	(494)	(567)	(1,763)	(2,620)	(3,240)
<b>CF from operating activities</b>	<b>5,422</b>	<b>3,407</b>	<b>3,742</b>	<b>7,712</b>	<b>9,366</b>
Capital expenditure	(1,700)	(4,255)	(1,500)	(1,500)	(1,500)
(Purchase) / Sale of Inv	(2,735)	(930)	(750)	(750)	(750)
Other Income	274	327	500	500	500
<b>CF from investing activities</b>	<b>(4,161)</b>	<b>(4,858)</b>	<b>(1,750)</b>	<b>(1,750)</b>	<b>(1,750)</b>
Inc/(Dec) in share capital	-	20	-	-	1,755
Inc/(Dec) in debt	1,880	(3,541)	(200)	(500)	(2,155)
Interest Paid	(1,336)	(1,487)	(1,219)	(1,186)	(1,046)
Dividend Paid	(261)	(272)	(271)	(271)	(279)
Minority Interest	(171)	759	-	-	-
Other Adjustments	(280)	3,104	-	-	-
<b>CF from financing activities</b>	<b>(168)</b>	<b>(1,416)</b>	<b>(1,690)</b>	<b>(1,958)</b>	<b>(1,725)</b>
<b>Net cash flow</b>	<b>1,093</b>	<b>(2,867)</b>	<b>302</b>	<b>4,004</b>	<b>5,891</b>
Opening balance	4,883	5,977	3,109	3,411	7,416
<b>Closing balance</b>	<b>5,977</b>	<b>3,109</b>	<b>3,411</b>	<b>7,416</b>	<b>13,307</b>

### Growth indicators (%)

Year ended 31 Mar	2010	2011	2012e	2013e	2014e
Revenue	(30.3)	52.9	13.4	15.4	11.3
EBITDA	(24.7)	144.0	19.3	22.3	19.1
PAT	(208.9)	(557.1)	41.9	29.3	23.7
EPS	(208.9)	(537.2)	41.9	29.3	20.3

### Valuation (x)

Year ended 31 Mar	2010	2011	2012e	2013e	2014e
PE	(97.6)	25.2	18.2	14.1	11.4
P/BV	5.1	3.8	3.2	2.6	2.1
EV/EBITDA	23.2	10.3	8.8	6.8	5.3
EV/Sales	2.6	1.7	1.5	1.2	1.0
Dividend Yield (%)	0.3	0.3	0.3	0.3	0.3

### Financial ratios

Year ended 31 Mar	2010	2011	2012e	2013e	2014e
RoE (%)	(4.9)	17.4	19.2	20.5	20.3
RoCE (%)	3.1	14.6	16.4	19.3	20.7
Debt/Equity (x)	1.5	1.0	0.8	0.6	0.4
EBIT/Interest (x)	2.8	5.5	7.6	9.5	12.9

Source: Company Antique

# Annexure 1

## BFL clients

### Non Automotive

Automotive Gen	Power Gen	Cement, Construction & Mining	Steel	Sugar	Oil & Gas	Pumps & Compress-ion	Material	Industrial Handling-Mining	Defence Fans	Railways	Aerospace
BMW	GE	Caterpillar	Bhushan	Utam Indl Engg	GE	BPC	Elecon	Flaktwoods	Walchandnagar	GE	HAL
Ford	Alstom	Thyssenkrupp	Remi Group	DSCI	Cameron	Dresser-Rand	TRF	Reitz India	L&T	Ghh_Valdunes	ISRO
GM	Hansen Trans	Metso Minerals	TRF	Thyssenkrupp	Halliburton	Ingersoll Rand	Thyssenkrupp	Yule	Indian Ordnance	Indian Railways	
Arvin Meritor	Andritz	Aditya Birla Grp	SAIL	KCP	Wg Wood Grp	KSB	Berg Propulsion	TU	Defence Research		
Renault	Suzlon	Jaypee Group	Essar	Walchandnagar	FMC Tech	Dresser Waukesha					
TVS	Cummins	Fis Midth	Tata Steel	Bajaj Hindustan	BHEL	Kirloskar					
Honda	RRB Energy	L&T	Jindal Sil & Pwr	Triveni Engg	Aker Solutions						
DANA	Rexroth-Bosch	Walchandnagar	Monnet	Isgec Grp							
SAAB	Elecon	Lafarge Cement	Wellsoun Corp								
MAN	TDPS	Liebherr	GPI								
Mahindra	WEG	Ambuja Cement									
Mitsubishi Fuso	Perkins										
MWM	Siemens										
Scania	Gamesa										
Detroit Diesel	NTPC										
Daimler	Dresser-Rand										
Valvo	Kirloskar										
Toyota	BHEL										
Volkswagen	Enercon India										
Audi	Vulcan Indl Engg										
Yuchai	Triveni Engg										
Swaraj Mazda											
DAF											
FAWDE											
Maruti Suzuki											
Ashtok Leyland											
IVECO											
Mahindra Navistar											
Eicher											
Force Motors											
Cummins											

Source: Company, Antique

# Anneuxre 2

## BFL: Forging Segment - Open die forging

Sugar Industry Fully/Semi Machined	Steel Industry	Oil & Gas	Fan & Pump Ind	Forging Ind	Cement Ind	Seamless Tube Ind	Mining	Marine	Wind Energy	Tools & Plastic Injection Moulding
Mill Roller Shafts	Blooming Mill Rolls	Shafts	Integral Flange Shaft	Die Blocks (DIN 2714 grade)	Pinion & Pinion Shafts	Piercing Mill Rows	Conveyor Shafts	Propeller Shafts	Wind Mill Shaft	P-20 Blocks for Plastic Injection Moulding
Pinion Shafts	Universal Couplings	Casing / Tubing Spools	Pump Casing	Crankshafts for upsetters	Kiln Support Rollers	Mandrel Bars and other toolings	Pinions	Rudder Stock		H-13 Tool Steel Blocks for Pressure Casting Tools
Tail Bars	Wobblers	Open Forge Valve Body/Well Head Blocks	Stainless Steel Pump Shafts	Container Assembly Assembly for aluminium extrusion	Tie Rods					
Shredder Shafts	Roll blanks for Cold Rolling Mills	Tube Sheets	Fluid Ends	Ready to assemble Hammer Spares like Rams/Tups/Sow Blocks	Crusher Shafts					
Cane Cutter Shafts	Hardened Hot Rolling Mill Rolls for slab, plate mills, etc.		Interconnecting							
Fibrizor Shafts	Trunnions									

Source: Company, Antique

## BFL: Forging Segment - Close die forging

	Capacity Forged	Capacity Machined	Weight Range
Crankshafts	5,000,000	650,000	2-2500 Kgs.
Front Axle Beams	700,000	500,000	50-200Kgs.
Steering Knuckle	1,000,000	750,000	2-50Kgs.
Connecting Rods	2,000,000	-	2-400Kgs.
Rocker Arm			0-3kgs.
Transmission Parts			.5-10Kgs.
Hubs			1-50Kgs.
Oil And Gas			15-500Kgs.

Source: Company, Antique

## Annexure 3

### BFL: Forging capacity

	Capacity (MT)	Capacity utilisation levels (%)
In India:		
- Mundhwa	300,000	60%
- Baramati	85,000	15%
<b>Total</b>	<b>385,000</b>	
Germany	100,000	60%
Sweden	80,000	60%
USA	60,000	20%
China	140,000	50%

Source: Company, Antique

### BFL: Machining capacity in India

	Capacity	Capacity utilisation levels (%)
Finished Machined Crankshaft ( Nos.)	518,100	84.3%
Front Axle Assembly & Components (Nos.)	533,600	61.0%
Finished Machines Crankshaft at Chakan (Nos.)	241,500	66.7%
Front Axle Assembly & Components at Chakan (Nos.)	219,600	44.1%
Machined Components at Baramati (Nos.)	120,000	40.7%
General Engineering Equipments (Nos.)	1,100	7.0%
Ring Rolling at Baramati (MT)	40,500	2.6%

Source: Company, Antique

## Annexure 4

### BFL: Manufacturing capabilities

#### Close Die Press

Press Size	No. of Press Lines	Weight Range (Kg)
16,000 MT	3	60-250
12,500 MT	2	60-250
8,000 MT	4	20-90
6,000 MT	3	20-50
5,500 MT	1	20-50
5,000 MT	3	10-20
4,000 MT	11	5-20
3,150 MT	4	3-10
2,500 MT	7	2-5
2,000 MT	4	2-5
1,600 MT	5	2-10

Source: Company, Antique

#### Open Die Press

Press Size	Ingot Weight Range
1,600 T	17 MT.
4,000 T	70 MT

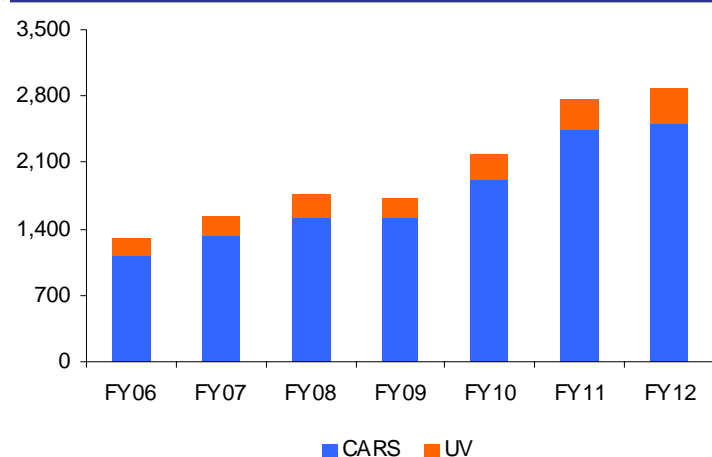
Source: Company, Antique

## Annexure 5

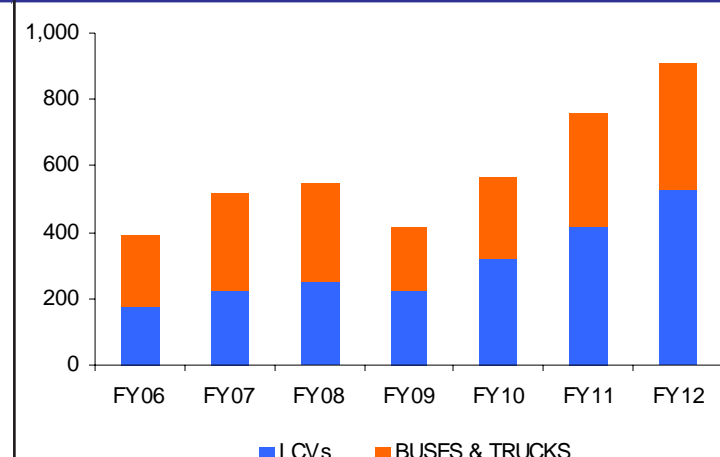
### Indian automobile component industry

The Indian auto components industry, valued at INR1.2tn in FY10, is amongst the fastest growing industries in the world. Factors like low costs, healthy domestic demand and plentiful supply of skilled labour have enabled it to sustain competition from peers situated in other competitive locations like China, Brazil, Argentina and Philippines. This has also enabled the country to emerge as a preferred manufacturing destination for global auto comps and OEMs to meet their domestic and global requirements.

Indian PVs sales (m units)



Indian CVs sales (m units)



Source: Crisil Research

### Long-term demand outlook

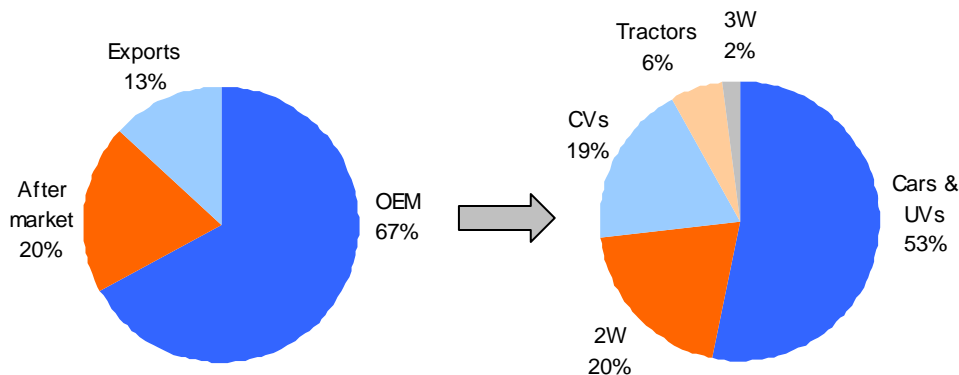
As per estimates of industry bodies like ACMA, Crisil Research (the Indian auto component industry) is expected to register a CAGR of 14-16% till FY15e, on the back of the following factors:

**OEM offtake:** Going forward, buoyant economic conditions are not only expected to result in higher purchases of CVs but also reduce uncertainty of income levels for buyers of passenger cars and UVs. This sustained growth in domestic automobile production should translate into healthy demand for auto components from the OEM segment, especially cars, UVs and CVs, which together constitute 72% of demand.

**Exports:** With international OEMs increasing their scale of operations in India, so is their sourcing from local component suppliers. Additionally, focus on improving cost efficiencies at the global level is resulting in these OEMs stepping up their procurement from approved local vendors for international operations. It is estimated that auto component exports from India would register 18-20% CAGR over the next five years to reach a value of INR369bn by FY15e.

**Replacement:** With increasing offtake across the automobile sector, replacement cycles for auto components are expected to shorten. Although domestic production for the replacement market will continue to face competition from imports, it is expected to show a moderate CAGR of 7% and reach a value of INR334bn by FY15e. While imports will continue into the country, these are expected to affect unorganised players to a greater extent, as compared to organised players.

**Composition of the auto component Industry by end-user**



Source: Crisil Research

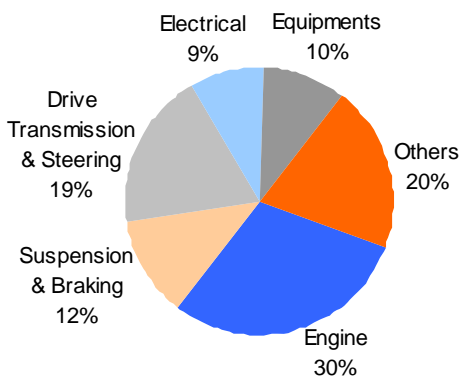
**Segments of automotive components**

Engine	Suspension & Braking	Drive Transmission & Steering	Electrical	Equipment	Others
Pistons & Piston Parts	Suspensions parts	Steering systems	Starter motors	Switches	Sheet metal parts
Fuel injection equipment & carburettors	Braking parts	Axle assembly	Generators & alternators	Horns	Seating systems
Powertrain components (viz. cylinder head & cylinder block)	Clutch assembly	Flywheel magnetos	Lights	Mirrors	
Engine Cooling systems		Wheels & wheel rims	Distributors & regulators	Wiring harness	Fuel tanks
Engine bearings & valves				Dashboards	Plastic moulded components
Exhaust systems					Rubber components
Gaskets, liners & filters					Ball & roller bearings

Source: Crisil Research

**Powertrain components**

**Value break-up: Auto components**



Source: Crisil Research

**Product description and function**

The powertrain component segment includes engine components like crankshafts, camshafts, connecting rod, timing chains, flywheel ring gears, with the most critical powertrain components being cylinder head and cylinder block. Powertrain components, in general, fall in the critical components category.

**Crankshaft:** This is the main driving shaft of an engine that receives reciprocating/linear motion from the pistons and converts it to rotary motion. Together, the crankshaft and the connecting rods transform the pistons' reciprocating motion into rotary motion. Crankshafts can either be forged from a steel bar or cast in ductile iron. Today, most manufacturers tend to favour the use of forged crankshafts due to their lighter weight, more compact dimensions and better inherent damping.

However, adoption of crankshafts of a particular material is part of the design specifications by OEMs. Nearly 95% of passenger cars and utility vehicles use steel-forged crankshafts in India. Only steel-forged crankshafts are being used for commercial vehicles and three-wheelers.

**Camshaft:** It is a shaft in the engine, which houses the lobes (cams) that operate the valves. The camshaft is driven by the crankshaft, via a belt, chain or gears, at one half of the crankshaft's speeds. One or more camshafts regulate the opening and closing of the valves in all piston engines.

**Connecting rod:** The main function of the connecting rod is to connect the piston with the crankshaft. They are not rigidly fixed at either end, so that the angle between the con rod and the piston can change as the rod moves up and down and rotates around the crankshaft. Connecting rods are made of steel in most cases.

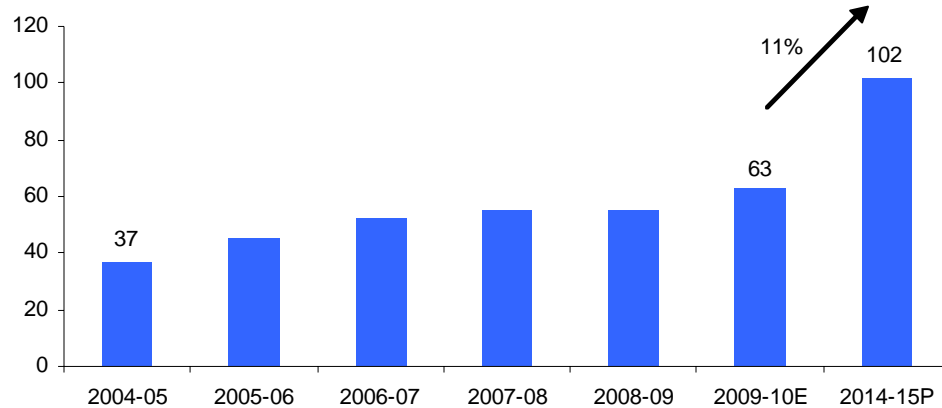
**Timing chain:** Timing chains are used to move the camshaft in congruence with the movement of the crankshaft such that the valves are opened by the cam as per the power need for power. Timing chains are in the form of chains or belts or gears and are usually made of steel.

**Flywheel ring gear:** When one starts the vehicle, the first point of starting is a starter motor. From there it goes to the flywheel ring gear assembly. This assembly is mounted on the crankshaft and it initiates the motion of the crankshaft. However, once motion commences, it becomes non-functional although it continues to rotate. In the Indian context, it generally has a life of 200,000 starts. Auto transmission vehicles do not have flywheel ring gear. Instead, they have a flexi plate. It is made of iron casting and requires machining too.

### Industry size and structure

The size of the powertrain components segment was estimated to be around INR63bn in FY10. The segment is expected to grow at a CAGR of 10% until FY15e and attain a value of INR102bn (*Source: Crisil Research*). This estimate excludes cylinder heads and cylinder blocks.

#### Powertrain components industry size



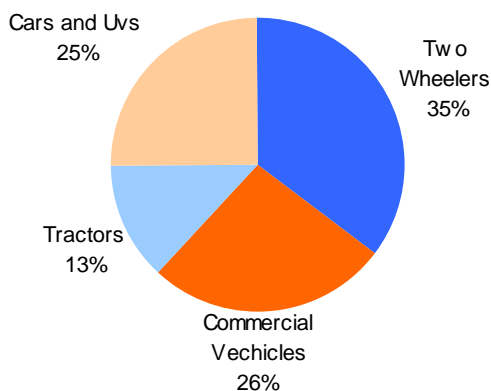
Source: Crisil Research

In FY10, two-wheelers led, in terms of share in demand, for powertrain components. Both CVs and cars have a similar share in demand of for powertrain projects.

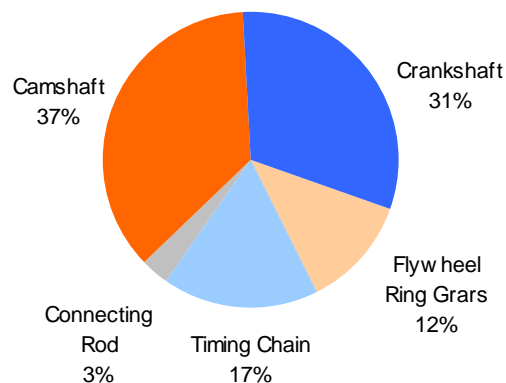


**Powertrain component industry**

**Segment-wise offtake (2009-10)**



**Product-wise offtake (2009-10)**



Source: Crisil Research

Machining is a very important aspect for most powertrain components. With higher end machining required for more precision-oriented components, cost varies with weight and the extent of machining. Of the total cost of a typical powertrain component, approximately 30% is added by machining.

**Powertrain components - Raw material and value addition**

Product	Material used	Machining
Crankshaft	Steel forged/Cast iron	Yes
Camshaft	Steel forged/SG iron	Yes
Connecting rod	Steel forged mostly/Aluminium	Yes
Timing chain	Rubber/Forged steel	No
Flywheel ring gear	Cast iron	Yes

Source: Crisil Research

The industry has major forging players who have forward integrated into manufacturing forged powertrain components. An existing forging player generally enters the value-added product segment by first entering into machining of these products. Like the forging industry, this segment also has a number of players manufacturing different powertrain components. Leading players in the industry have started to move from manufacturing only to a co-designing stage in the value chain, thus leading to an improvement in bargaining power.

The major players include Bharat Forge, Amtek Auto, Amforge Industries, Kalyani Forge, to name a few. Imports of crankshafts and camshafts are greater in the passenger cars segment. Steel and cast iron are the two main raw materials used for the products in this segment.

**Market structure**

The presence of unorganised players is negligible in the segment, as it operates in critical components which have very low replacement and niche specification requirement. If the products need to be replaced, they have to be procured from OEMs, as components vary across models as per the engine design.

## Market dynamics

- **Entry barriers:** Entry barriers in this segment are relatively high, as components are critical in nature and OEMs are uncomfortable with passing on designs to suppliers. Establishing a strong relationship with OEMs is a critical aspect and a key determinant of competitive positioning in that particular component. Also, leading domestic forging players who supply to OEMs in the global market have an edge over others in supplying to the Indian manufacturing bases of such global OEMs.
- **Pricing flexibility:** Most players in this segment have value-added components as part of their portfolio. Thus, the risk of cost escalation is mitigated to an extent with diversification. Besides, most players are large companies who have an ongoing relationship with OEMs and also fulfill their other steel forging requirements, which boost their bargaining power.
- **Future technology:** Unlike with fuel injections, players in this segment are not completely involved in the design stage. They need to manufacture products as per design specifications by the OEM and are not involved in significant technological improvements. However, larger forging players are gradually extending design services to OEMs, which should result in margins improving in the long run.

## Profitability and cost structure

Key raw materials (pig iron and steel) prices for the industry corrected sharply in FY10 after a spike in FY09. This led to significant improvement in operating margins. However, it is an industry wide practice to pass on the benefits of lower raw material cost to OEMs, as a result of margins which did not improve as dramatically as witnessed in FY08.

After registering an improvement till FY08, the industry's working capital cycle deteriorated in FY09-10 due to the global recession. Players in the segment witnessed a continuous deterioration in inventory days and collections. Further, bargaining power with suppliers reduced. Thus, a stretched working capital scenario was one of the primary reasons for increase in debt levels of the industry during this period.

The powertrain industry which was seeing healthy capacity utilisation levels till FY08, experienced a supply overhang in FY09-10. Capacity additions over the last two years coupled with slow demand led to low utilisation levels in FY09-10. Furthermore, lower profits, higher capital expenditure, increased debt levels impacted return on capital and return on equity of powertrain component players.

However, in FY10-11, a combination of improvement in utilisation levels, higher profitability, and equity infusion resulted in the financial state of most players in the sector becoming comfortable.

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