Management Discussion & Analysis

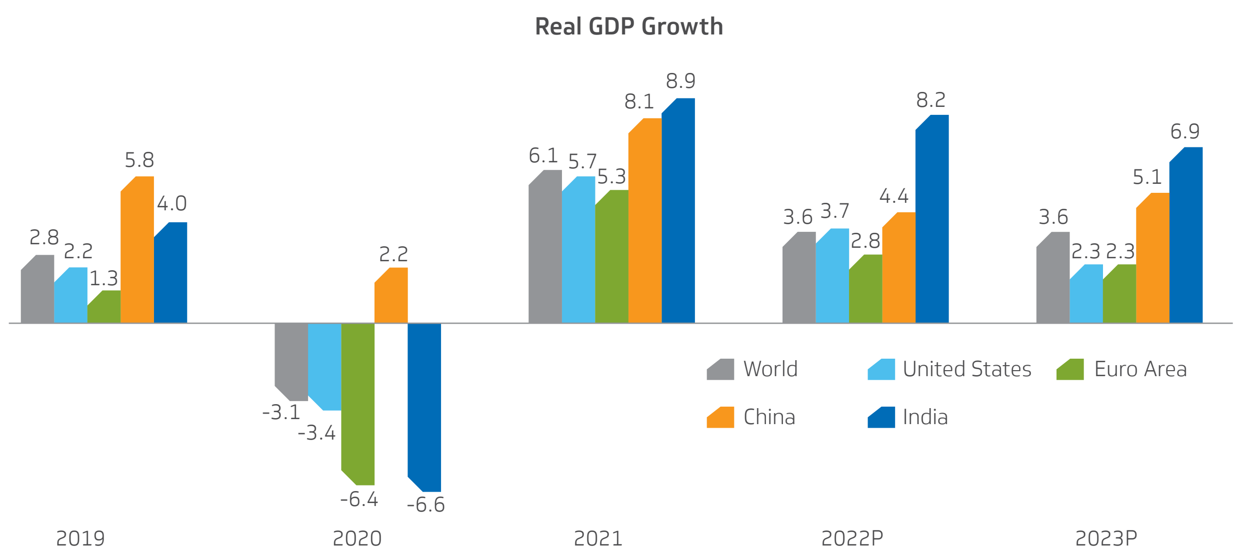
ECONOMIC REVIEW

Global Economy

The global economy rebounded strongly in CY 2021, post a period of recession in CY 2020. International collaborations in adapting functional health policies and vaccinations coupled with supportive fiscal and monetary policies globally led the recovery. In CY 2021, the global economy is estimated to have grown by 6.1%, compared to a contraction of 3.1% in CY 2020. The global recovery has been spearheaded by the Emerging Markets and Developing Economies (EMDE), which are estimated to clock an average gross domestic product (GDP) growth of 6.8%. China and India remained the biggest contributor amongst the developing economies with an estimated growth of 8.1% and 8.9% respectively during the year.

The United States is estimated to clock a GDP growth of 5.7% in CY 2021 compared to a contraction of 3.4% in 2020. Its recovery was driven by an annual increase in private consumer expenditure of 7.9%.

World Economic Output (%)



P = Projected
Source: IMF World Economic Outlook April 2022

Outlook

Against the backdrop of the Russia-Ukraine war renewed outbreaks of pandemic, and high inflation, there is high degree of uncertainty in global economy. The rising crude oil prices are also likely to have a bearing on most economies, especially those who have higher dependency on oil imports.

In line with the recent events, most of the global agencies have lowered their output projections. The global economy is forecasted to grow by 3.6% in both CY 2022 and CY 2023 which is 0.8 and 0.2 percentage points lower than earlier estimated.

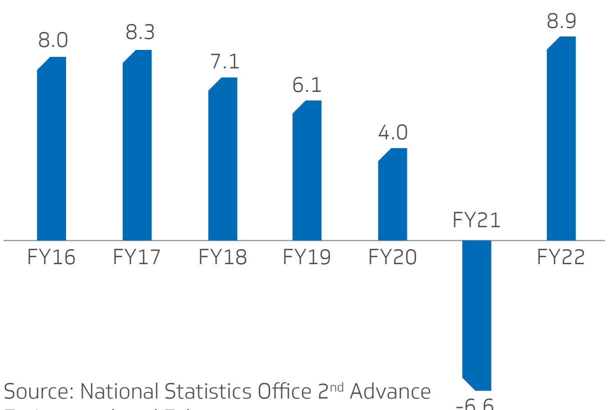
(Source: IMF World Economic Outlook April 2022)

Indian Economy

The Indian economy rebounded strongly in FY 2022, post the disruption caused by the COVID-19 pandemic. Though the year started with a severe second wave of the pandemic, the country has since witnessed quarter on quarter improvement across all performance indicators, supported by proactive measures to vaccinate most population and contain the spread of third wave of the pandemic. As a result, the consumer and market sentiments remained buoyant which together with the increased fiscal commitment of the Government led recovery.

This spending largely being towards infrastructure creation has been pivotal in restoring medium-term demand as well as driving supply-side reforms to position the economy for long-term growth. As per the second advance estimates of the National Statistics Organization (NSO), Indian economy is estimated to have grown at 8.9% in FY 2022 compared to a contraction of 6.6% in FY 2021.

India Economic Growth (%)



Source: National Statistics Office 2nd Advance Estimates dated February 28, 2022

India's real GDP is projected to grow at ~8.9% in FY 2023 and 7.1% in FY 2024, making it the fastest growing major economy in the world for all three years between 2021-22 and 2023-24.

Outlook

The outlook for the Indian economy remains strong. The increasing government funding in public infrastructure is expected to encourage growth and attract private investment through a strong multiplier effect in the industry. However, supply-side bottlenecks are expected to remain persistent with gradually rising crude oil and other commodity prices in FY 2023. The availability of budgetary space to ramp-up capital spending, advantages from supply-side reforms, regulatory relaxation, and continued export growth are also likely to contribute to growth. As per IMF's World Economic Outlook projections, India's real GDP is projected to grow at ~8.9% in FY 2023 and 7.1% in FY 2024, making it the fastest growing major economy in the world for all three years between 2021-22 and 2023-24.

(Source: RBI, National Statistics Organization, IMF World Economic Outlook April 2022)

BUSINESS ENVIRONMENT

Automobile Business

Global Automotive Industry

FY 2022 overview

The global automotive industry saw steady recovery in CY 2021 post a few years of challenging period as the industry went through significant shift towards emerging trends like EVs and the impact of pandemic. The year saw huge surge in ordering due to years of pent-up demand, though issues of semi-conductor crisis impacted production and thus sales.

The CY 2021 ended with the car sales increasing from 68.6 million in 2020 to 71.3 million led by North America and Asian regions which gained some ground post the pandemic. Europe markets though were weak and saw new car registration declining. EVs remained a bright spot in the entire automotive market, recording increased acceptance and thus a strong growth.

Outlook

For the coming years, the global automotive industry remains on a strong-footing with fundamentals such as strong order backlog and low cancelation rates.

For CY 2022, the car sales though earlier estimated to rally at 8.6% growth, is now estimated to contract due to unexpected Russia-Ukraine war and medical shutdowns in China. These are likely to make supply chain related issues more widespread, extending beyond shortage of semi-conductors to magnesium which is used for producing aluminum alloys and lithium and cobalt that are used by EV makers. These factors will lead to automotive prices remaining firm and only expected return to normalcy over the next two years with chip shortage ending and manufacturers witnessing over-capacity to meet demand.

The global car sales are projected to decline by 5% to 67.6 million in CY 2022 and that in Europe by 10.1%. Over the medium-term, the car sales are likely to grow gradually with sales improving to 70.8 million units in CY 2023, 73.4 million in CY 2024 and 75.4 million in CY 2025. The EV sales are estimated to further surge as carmakers increasingly shift towards it forced by more stringent regulations by global governments. China and Europe followed by the US are likely to lead EV adoption.

The US and European commercial vehicles market though slower continues to be fairly robust for the next two years with healthy order backlogs. Most of the OEMs have slots booked for the next 12 to 15 months. Though truck makers may face challenge of delivering due to supply chain issues. For CY 2022, the US class 8 truck sales are estimated at 244,500 units.

(Source: Germany's Center for Automotive Research; Economist Intelligence EIU; FTR Transport Intelligence; ACEA)

In FY 2022, the CV exports grew strongly by 79% from ₹ 9,595 million in FY 2021 to ₹ 17,149 million

Company Review of the Exports Auto Market

FY 2022 was a good year for the Company's automotive export business. It registered a broad-based growth with revenues growing across geographies (North America and Europe) and business segments (Passenger Vehicles and Commercial Vehicles).

Commercial vehicles (CV) segment

In FY 2022, the CV exports grew strongly by 79% from ₹ 9,595 million in FY 2021 to ₹ 17,149 million driven by strong ordering from the US Class 8 truck and European medium and heavy truck market. The Company's well-established relations with the global OEMs along with sustained collaborative efforts to product development has contributed to this strong performance. The trucking industry is not only cyclical in nature but also rangebound to a great extent, especially in the developed markets. Despite the rangebound nature of the truck segment in North America, our revenues has seen a steady outperformance as compared to the underlying market volumes. Since 2014 till 2021, constant currency revenues have grown by 8% while the Industry volume have grown by 1%.

Passenger vehicles (PV) segment

The PV exports grew 26% from ₹ 4,496 million in FY 2021 to ₹ 5,648 million in FY 2022. The segment, especially the premium segment, was impacted by chip shortage and supply chain issues. Despite this, the Company made progress winning orders from new customers, deepening engagements with existing customers and enhancing market share in the traditional powertrain segment. This business has been a key ingredient of our de-risking focus within the automotive space and has performed exceedingly well over the past 5-7 years. Since the resumption of active engagement in the PV space, the revenues have grown from ₹ 401 million in FY 2014 to ₹ 5,648 million in FY 2022, CAGR of 39.2%.

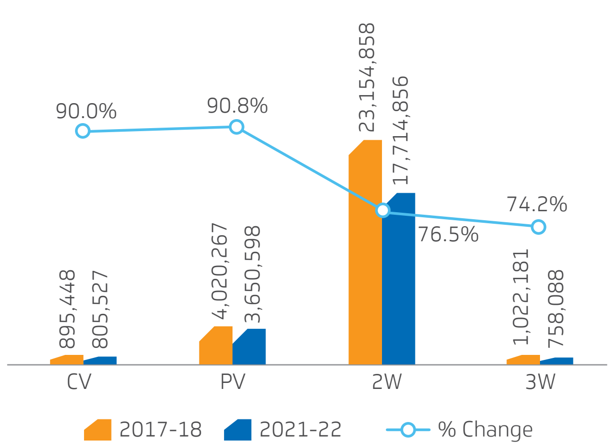
Indian Automotive Industry

In FY 2022, the performance of the automotive industry in India was resilient despite the challenges of supply chain issues, increased cost of ownership due to regulatory issues and high input cost inflation. The total automobile production increased marginally from 22.66 million units in FY 2021 to 22.93 million units in FY 2022.

Sales of the passenger and commercial vehicles segment were robust. PV sales increased 13.2% to 3.07 million units and the segment is witnessing an interesting trend of product upgrades driven by premiumization coupled and successful new launches from new OEMs. This is evident in the strong growth of 40.4% in the utility vehicle (UV) segment. The CV wholesale sales grew 26% to 0.72 million units as normalcy returned due to pick-up in the industrial activity and fleet utilization rates. Within the CV, the Medium and Heavy Commercial Vehicles (MHCV) segment grew fastest at 55.3%.

The past few years have been quite challenging for the Indian automotive industry across segments caused by various factors, be it changes in safety norms, increased cost of ownership due to regulatory changes, technological shift from ICE to EV especially in 2&3W etc. The segments from the peak levels registered in 2017-18 are down anywhere between 10% for CV's and 25% for 2W & 3W.

Production



Outlook

While the near-term outlook for the CV and PV segments remains challenging and uncertain, their overall trend is positive. The fundamentals of PV segment are positive with no dent in demand. The outlook for MHCV sector is strongly driven by healthy freight rates and improving fleet operators' profitability. The government's strong focus on infrastructure development including road construction is expected to drive positive momentum.

Company Review of the Domestic Auto Market

Commercial vehicles (CV)

The Company's performance in the domestic CV market has been in line with the market growth. The CV revenue increased 45% from ₹ 5,111 million in FY 2021 to ₹ 7,418 million in FY 2022. Given the strong opportunity for MHCV in India led by the infrastructure boom, the Company is continuously working with leading OEMs for new product development.

Passenger vehicles (PV)

The Company's PV business is witnessing increased traction and has grown faster than the industry with a revenue growth of 36% from ₹ 2,161 million in FY 2021 to ₹ 2,936 million in FY 2022. The Company has significantly strengthened its presence in the PV/UV segment with both new product and customer addition, and is well-positioned to capture the opportunities led by increasing premiumization.

INDUSTRIAL BUSINESS

In the industrial business, the Company engages in manufacture of components for Oil & Gas, Construction & Mining, Power and Aerospace sector. Oil & Gas is one of the major revenue contributors in the industrial business.

The renewable energy is another major opportunity where the Company is participating. The segment is pacing giving the rising global concerns on climate change, and the recent COP26 declarations whereby countries have targeted a more stringent target to contain temperature rise to 1.5ºC. Globally and especially in India there is a strong impetus to grow the share of renewables in overall energy basket. India targets to achieve 50% of renewable energy by creating a total capacity of 500 GW by 2030.

The construction segment is also estimated to witness immense opportunity. In the US, the government has passed a USD 1 trillion infrastructure bill towards modernizing its aging infrastructure. In India too, the Government targets to spend USD 1.4 trillion on various infrastructure creation to achieve its target of USD 5 trillion GDP by FY 2025.

Company Review of the Industrial Market

In FY 2022, the domestic industrial business grew 57% from ₹ 7,446 million in FY 2021 to ₹ 11,666 million which included revenue of ₹ 2,209 million for a one-time supply of Medical Oxygen Cylinders to the Indian government. The Company's strategic shift to focusing in areas having 100% import dependency, is likely to drive its growth given the immense opportunity expected from the AtmaNirbharta and the Government stimulus aimed at enhancing the share of manufacturing from 15% to 20% of GDP.

The international industrial business grew 150.3% to ₹ 13,906 million primarily led by the Oil & Gas segment which benefited from the recovery of shale gas drilling in

North America. The O&G revenues increased from ₹ 1,360 million in FY 2021 to ₹ 7,227 million in FY 2022. The high crude prices which support the drilling activities and the industry players' focus on financial disciplined along with the Company's solid portfolio of productivity enhancing components is likely to ensure sustained revenues.

Given the immense opportunities in the industrial business, the Company has made strategic inorganic investments to strengthen its competitive positioning. Last year, it had acquired Sanghvi Forgings which enhanced the overall capacity and portfolio of the Company. In FY 2022, the Company signed Share Purchase Agreement to acquire Coimbatore-based JS Auto Cast. This company is engaged in manufacturing critical and complex machined castings for diverse industries, the largest being wind renewable energy industry. It also caters hydraulic sector, off-highway and some specialty automotive segments. This acquisition will significantly widen Bharat Forge's portfolio and customer base, and enable it to become a more critical and strategic supplier to existing customers and move up the value chain. Having a strong portfolio in renewable segment, it will also allow Bharat Forge to strengthen its presence in this sector.

The Company won new orders worth ~ ₹ 10,000 million across automotive and industrial segments,. The new orders include a healthy mix of existing and new customers as well as traditional and new products.

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OVERSEAS BUSINESS

The Company's international business consists of the forging & machining operations of its subsidiaries in US and Europe. In CY 2021, the Company successfully turned around these businesses through investments towards optimizing costs and building new capacity in aluminum forgings.

In line with this, the Company successfully completed the capex and commercial production at its aluminum forging facility in North Carolina, US. The facility currently operates at low utilization rates, and is expected to stabilize and witness higher utilization rates in CY 2022. With this, the Company now has two operational aluminum forgings plants; one in the US and the other in Germany. Aluminum forgings currently account for ~25% of share of the revenues of international operations, and the Company intends to increase the same in the future. There is a strong focus on gaining new orders from new and existing customers, and drive growth of the international operations.

During the year, the international business secured new orders worth USD 150 million across steel and aluminum forging operations from marquee OEMs, providing growth visibility in the medium to long term.

Defence and Aerospace Business

Defence and Aerospace are a major opportunity for the Company driven by the Government's strong impetus on self-reliance. Until April 2022, the Government has released three positive lists of defence equipment indigenization. With this notification, over 300 sophisticated items ranging from complex weapon systems to critical platforms such as armored vehicles, combat aircraft, submarines etc. will be targeted for procurement from indigenous manufacturers only. Already, project orders worth ₹ 53,839 crore have been signed and Acceptance of Necessity for projects worth ₹ 177,258 crore have been accorded. Further, the Defence Ministry of India estimates projects worth over ₹ 293,000 crore in the next five to seven years.

Bharat Forge continues to make inroads in its defence business with several positive developments through FY 2022.

The Company made a breakthrough in its Advanced Towed Artillery Gun System (ATAGS) program, completing its final revalidation trial in May 2022 post five years of rigorous testing. It has successfully demonstrated seamless firing of the gun and its compliance against one of the most stringent specifications globally. DRDO-designed and Indian industry made, ATAGS has proved to be amongst the World's Best Artillery Gun in the 155mm/52cal category; no other guns of artillery players across the world have been able to demonstrate firing with Zone-7 charge.

The Company's KM4 armored vehicles became the only one in its category to successfully complete desert trials at Rann of Kutch. A multi-role platform, it enables quick mobility to armed forces in rough terrain and in areas affected by mine and IED threats. In FY 2022, the Company progressed on its productionalizing and shipment to Indian Army for UN Peacekeeping mission. It also continues to receive new demands for this product.

The Company also diversified into new areas of Command, Control, Communications, Computers (C4) Intelligence, Surveillance and Reconnaissance (C4ISR) by participating and winning the iDex challenge through subsidiaries and partners.

Aerospace: Taking Wings

FY 2022 has also been an exceptional year for the Company's aerospace business. It delivered a strong revenue growth following a challenging FY 2021 in which projects got delayed due to pandemic-led raw material unavailability issues. This year, the Company adopted a strategy of procuring raw material in advance to avoid long lead time.

During the year, the aerospace business successfully bagged new products in terms of new alloys which is a major leap ahead for it. It has already established competencies in various materials like titanium and super alloys for aerospace products, becoming one of the very few possessing such capabilities. New customers were also added, and the Company is now supplying engine and structural components to four tier 1 companies as well as four OEMs.

The progress in the aerospace business has been a result of the Company's multiple years of efforts towards putting in place necessary quality systems and establishing product development, manufacturing and digital capabilities. It now has capabilities in engine and aircraft parts and is further building competencies in part level and sub-assemblies for various helicopter and aircraft programs. This is in line with the Company's focus on progressing beyond making parts, and significantly growing the revenues from assemblies and platforms.

Digitalization is an area where the aerospace business has made significant strides. Its ability to digitally store entire product history data and easily retrieve such information are winning accolades from clients. Further, it's enabling cost reduction, achieving zero defect and high quality and alongside reducing the non-value added activities.

The Company also has significant competencies in gas turbines and turbomachinery, and given the vast scope in it, a separate turbomachinery division has been operating with dedicated teams. It has applied for AS-9100 certification. The division looks forward to work on rotating components of gas turbines, and target customers like railways and defence. Further, given the opportunities around indigenization, it targets to partner with OEMs to set-up facilities and have joints IPs.

During the year, the aerospace and turbomachinery divisions worked towards strengthening its teams. A competence framework exercise was undertaken to identify gaps and train people.

Given the strategic significance of Defence and Aerospace businesses, Bharat Forge is working towards consolidating all initiatives in these businesses under its 100% subsidiary – Kalyani Strategic System Limited. It is also participating in exhibitions to demonstrate its capabilities and strengthen global reputation. In FY 2022, the Company participated in North Tech Symposium, BIMSTEC Nations Exhibition and undertook Specialist Vehicles Induction by Chief of the Army Staff (COAS).

In FY 2022, the Company progressed on its productionalizing and shipment to Indian Army for UN Peacekeeping mission.

E-mobility Business

E-mobility is an area where the entire mobility industry worldwide is moving to address the challenge of climate change.

The Company has always been innovative and pioneering over decades, adaption of latest technologies to provide high quality and reliable products to our customers globally. In 2018, we had initiated expanding this portfolio which can cater to our customers in their endeavors of providing clean and zero emission transport solutions.

The Company's E-mobility venture is handled by a dedicated entity, Kalyani Powertrain Limited (KPTL), to ensure focused approach and clear growth strategy. Over the years, the Company has strengthened and built a solid portfolio across power electronics, control electronics components and systems and subsystems for EVs ranging from 48 to 800 volt.

This was followed by establishing dedicated R&D team building in-house capabilities for all relevant Hardware, Software and integration for Electric 2/3-Wheelers, Commercial vehicles for goods and passenger transport, Passenger cars and off-road equipment. Further to accelerate the initiatives, Bharat Forge also made strategic investments in Tevva Motors Limited, UK, Tork Motors Pvt Ltd, India and also established global 50:50 JV, REFU Drive GmbH with Prettl Group, Germany. In order to strengthen our efforts in zero carbon mobility solutions and to provide a unified approach in electric vehicle technology landscape catering to both local and global customers, we have now consolidated our electric mobility product streams into a single entity under the name of Kalyani Powertrain Limited as a wholly-owned subsidiary of Bharat Forge Limited. Kalyani Powertrain Limited also established its Technology Centre in USA in 2021 to understand and address the needs of Overseas customers in a faster way.

The seamless integration between Kalyani Mobility Inc, USA and REFU Drive GmbH in Germany together with its HQ in Pune India, is bringing unique advantages of enhancing development capability and customer experience through in-house and low-cost engineering, agile development, domestic value addition through local manufacturing in India.

2021-22 also witnessed many positive outcomes of the efforts put into this domain. Kalyani Powertrain received its maiden orders for products such High Voltage High Power DC-DC Convertors, Motor Controllers for 2W applications. Our Subsidiary Company Tork Motors launched its flagship product line of Electric Motorbike, KRATOS and KRATOS-R.

Skill development and ensuring Deep localization with dedicated plants for E-mobility products is under progress. Through domestic value contribution for these products such as Vehicle Control Units, DC-DC Convertors, Low Voltage and High Voltage Traction Invertors and Auxiliary Invertors through local manufacturing at its plants in India, Kalyani Powertrain believes that its customers will be benefited with high performance, reliable and robust products at affordable price. Bharat Forge Limited together with Kalyani Powertrain Limited are also among various Manufacturers of Automotive Advanced Technology Components under recently announced PLI scheme from Government of India.

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FINANCIAL REVIEW

Standalone

Analysis of Standalone Profit and Loss Statement (₹ in Million)

Particulars	FY 2022	FY 2021	% Change
Total Revenue	62,546.12	36,515.12	71.3%
Raw Material	25,525.97	14,144.54	80.5%
Manufacturing Expenses	9,212.70	6,153.62	49.7%
Manpower Cost	5,057.85	4,482.37	12.8%
Other Expenditure	5,951.45	4,386.81	35.7%
Total Expenditure	45,747.97	29,167.34	56.9%
EBITDA	16,798.15	7,347.78	128.6%
EBITDA (%)	26.86%	20.12%	674 bps
Depreciation	4,117.91	3,660.75	12.5%
Interest	1,073.01	779.15	37.7%
Other Income	1,675.02	1,404.57	19.3%
PBT	13,282.25	4,312.45	208.0%
Exchange Gain/(Loss)	359.17	(71.58)	-
PBT	13,641.42	4,240.87	221.7%
Exceptional Items	318.03	(91.83)	
PBT	13,959.45	4,149.04	236.5%
Taxation	3,181.40	1,028.13	
PAT	10,778.05	3,120.91	245.4%

Analysis of Standalone Balance Sheet Statement (₹ in Million)

Particulars	March 31, 2022	March 31, 2021
Long-Term Debt	17,834.42	20,643
Working Capital Loan and Bill Discounting	21,215.48	15,560
Equity	71,097.74	59,486
Cash	24,817.92	26,809
D/E	0.55	0.61
D/E (Net)	0.20	0.16
RoCE (Net of Surplus Funds)	17.2%	5.3%
RoNW	14.9%	5.2%

(D/E – Debt Equity, RoCE – Return on Capital Employed, RoNW – Return on Net Worth)

The Company delivered a strong performance in FY 2022 with a 71.3% growth in revenues from ₹ 36,515.12 million in FY 2021 to ₹ 62,546.12 million. The growth was driven by broad-based performance across all business segments and geographies led by a sharp recovery in end markets and pass-through impact of raw material inflation. The EBITDA increased 128.6% from ₹ 7,347.78 million in FY 2021 to ₹ 16,798.15 million in FY 2022. The EBITDA margins improved 674 bps to 26.84% driven by better utilization of capacities, cost optimization and improvement in product mix.

Key Financial Ratios

Key financial ratios along with the details of significant changes (25% or more) in FY 2022 compared to FY 2021 is as follows:

Particulars	FY 2022	FY 2021	Change	Formulae	Reason for Change
Debtors Turnover Ratio (in times)	3.06	2.25	36.0%	Revenue from operations / Average trade receivable	Increase in revenue and improvement in debtors collection cycle
Inventory Turnover Ratio (in times)	2.57	1.73	48.6%	Cost of raw materials and components consumed + Changes in Inventories of finished goods, Work-in-Progress, Dies and Scrap / Average Inventory	Increase in revenue and lower inventory levels
Interest Service Coverage Ratio (in times)	16.40	9.26	77.1%	EBITDA / Finance cost for the period	Improvement in ratio on account of higher operational EBITDA
Current Ratio (in times)	1.67	1.78	-6.2%	Current assets / Current liabilities	
Debt Equity Ratio (in times)	0.55	0.61	-9.8%	Total debt / Shareholders equity	
Operating Margin (%)	27.43	19.93	37.6%	Operating profit / Revenue from Operations	Increase in revenue which resulted in economies of scale along with cost reduction initiatives and productivity efficiencies
Net Profit Margin (%)	17.23	8.55	101.5%	Profit for the period / Revenue from Operations	Increase in revenue which resulted in economies of scale along with cost reduction initiatives and productivity efficiencies

Consolidated

Analysis of Consolidated Profit and Loss Statement (₹ in Million)

Particulars	FY 2022	FY 2021	% Change
Total Revenue	104,610.78	63,362.61	65.1%
Raw Material	42,159.62	26,341.56	60.0%
Manufacturing Expenses	16,586.77	10,754.73	54.2%
Manpower Cost	14,646.83	10,710.60	36.8%
Other Expenditure	11,407.54	6,922.17	64.8%
Total Expenditure	84,800.76	54,729.06	54.9%
EBITDA	19,810.02	8,633.55	129.5%
EBITDA (%)	18.9%	13.6%	530 bps
Depreciation	7,303.01	6,121.59	19.3%
Interest	1,604.05	1,077.29	48.9%
Other Income	1,959.00	1,688.98	16.0%
PBT	12,861.96	3,123.65	311.8%
Exchange Gain/(Loss)	349.33	-16.17	-
Exceptional Items	924.05	-3,062.28	-
Share of (Loss)/Profit of Associates and Joint Ventures	-329.30	-304.09	-
PBT	13,806.04	-258.89	-
Taxation	3,035.43	1,010.77	-
PAT	10,770.61	-1,269.66	-

Analysis of Consolidated Balance Sheet Statement (₹ in Million)

Particulars	March 31, 2022	March 31, 2021
Long-Term Debt	23,150.94	26,327.84
Equity	66,267.32	54,468.09
Cash	27,333. 44	28,755.46
Long-Term D/E	0.85	0.92
Long-Term D/E (Net)	0.44	0.39

On a consolidated basis, the Company's revenues increased 65.1% from ₹ 63,362.61 million in FY 2021 to ₹ 104,610.78 million in FY 2022 as demand improved across both domestic and international businesses. Profitability growth was stronger with EBITDA growing 129.5% to ₹ 19,810.02 million in FY 2022 as against ₹ 8,633.55 million in FY 2021. This was driven by the Company's strong focus on turning around the international operations and reducing costs.

HUMAN RESOURCES

Employee Safety and Welfare

With COVID–19 pandemic continuing into FY 2022 and marked by a more severe second wave, the Company continued to maintain strong focus on employee safety and welfare along with business continuity. Some of the key initiatives undertaken include:

Work from Home (WFH): Introduced in FY 2021, the WFH policy continued for a significant part in the year under review. All internal and external meetings and interactions continued to be carried out virtually. Employee trainings and sessions were also conducted online.

Safety at Workplace: The Company followed a strict 'no visitor' policy. Physical meetings or visitors in exceptional cases were allowed only with a negative RT-PCR report valid for 48 hours. Preventive measures like temperature screening, mandatory use of masks, daily monitoring of oxygen levels, disinfection of premises and vehicles, etc. also continued.

Support System: A robust support system as well as an extended family have been the driving pillars at Bharat Forge. During the testing times of the pandemic, this support was needed the most. The Company's teams ensured personal connect with all the employees suffering from coronavirus twice a week. Further, it also created a COVID war room, 24x7 manned helpdesk for employees to reach out in extreme circumstances. Doctor teleconsultation were made available and hospital tie-ups were done in Pune and Baramati to facilitate best medical facilities.

During the second wave, the Company lost a few of its employees. It undertook to provide financial support to the families of the deceased employees and reimbursed their children's educational fees and medical bills.

Vaccination Program: As per the government guidelines, the Company conducted mass vaccination drives in collaborations with reputed hospitals across all plant locations. ~100% of employees and other associates aged 18 years and above were vaccinated with both doses.

COVID Training and Re-Grouping: The Company has ensured the effective implementation of all the policy initiatives to enhance employee reach. Regular virtual meetings by HR departments and HODs were conducted to review the precautionary measures and exchange ideas to better tackle the pandemic. Weekly virtual interactive session was arranged with specialist doctors for employees and their families covering various aspects of COVID-19 and emerging variants.

Skill Development Program

Amidst the unprecedented times, the Company proactively focused on online training to enhance skills and competencies of its employees. Focused training was imparted pertaining to Industry 4.0, Sensor, Robotics, and Manufacturing Engineering, During the year, a total of 130 employees were trained on automation and 27 employees on CNC Programming. Skill development program was extended up to the grassroot level whereby training was imparted to 700 workmen in batches for a duration of 21 days.

The Company's THORS platform remained at the forefront of facilitating online learning, helping employees understand advance engineering concepts and put their knowledge into action.

The Company's THORS platform remained at the forefront of facilitating online learning, helping employees understand advance engineering concepts and put their knowledge into action. Further, online skill evaluation test was conducted for more than 1,600+ employees. It helped evaluate their technical and managerial skills, and identify necessary training needs which would be addressed in a planned manner in the coming times.

Harmonious Industrial Relations

The philosophy of industrial relations emphasizes on the involvement of workers and their representatives to ensure the implementation of peaceful wage settlements. The Company is currently negotiating a long-term wage settlement with its union i.e. Bharat Forge Kamgar Sangathana (CAM Baramati Plant) at the Baramati Plant. The Company is confident of achieving the same.

The Company also continued with Industry 4.0 training for its workers to build a digital workplace and improve their understanding of products and processes. It continues to partner with unions to ensure cordial and proactive industrial relations across all the plants.

INFORMATION TECHNOLOGY

Bharat Forge has always been an early adopter of technology having progressed towards Industry 4.0 and smarter and automated manufacturing. The Company's IT infrastructure was not only instrumental in enabling business continuity during the pandemic with high level of security, it ensures high level of productivity and efficiency.

Continuing with its focus on reinforcing capabilities, the Company in FY 2022 focused on implementing technologies to expedite new production development and drive higher efficiency across various all operations. Some of the key measures implemented include:

- **Digital-led business transformation:** Digital technology is increasingly penetrating global businesses and providing companies a competitive edge to manage operations and engage with customers. To stay ahead, Bharat Forge embarked upon its digital business transformation journey in FY 2022. A roadmap has been developed to achieve it, and the Company has progressed on it through SAP S4 HANA implementation in India operations. The deployment of SAP Business Planning & Consolidation has helped in reducing the time of 75 MIS' preparation from 12 days to 2 days. The Company intends to implement additional modules of Projects Management and Logistics Management.

  Presently, the Company is undertaking S4 HANA implementation at its German subsidiary Bharat Forge Aluminumtechnik which is expected to go live in June 2022.

- **Automating operations:** The Company initiated its journey in Robotics Process Automation with the core finance processes and targets to identify and automate major repetitive process over the years.

- **Digitalizing operations:** The Company upgraded its digital thread (for end-to-end integration in Aerospace business) with open-source capabilities making it API-ready for integration with other systems. This augmentation is now being carried out in the Turbocharger unit. This will ensure 100% traceability, paperless operations, and also break silos across all the operations.

  During the year, the Company also digitalized 44 processes using the newly-build Digitizer platform. This has helped to eliminate silos in these processes, brining efficiency and accountability in the systems.

- **Information security:** The Company follows a layered security approach and has deployed various new generation tools for advanced real-time threat prevention system across all layers.

  Going forward, the Company intends to continue its investment in enhancing the IT infrastructure. Digital business transformation including SAP implementation in remaining facilities, product lifecycle management process for global engineering center and manufacturing execution system in Kalyani Powertrain will be top priorities. The Company also looks to leverage data lake and analytics to enable insights-driven business decisions as well as shifting to cloud-based agile architecture.

CORPORATE SOCIAL RESPONSIBILITY

The Company strongly believes that change and development arises only out of persistent efforts. Through its meaningful and purposeful interventions, Bharat Forge strives to achieve inclusive growth of the marginalized masses and the communities in which it operates.

Village and community development, education, skill development and sports are the major focus areas of the Company. Aligned with this, the Company has been undertaking meaningful interventions across 100 target villages across five key development indicators – water availability, livelihood, education, health, and improved accessibility to enhance the livelihoods of rural people. Over the years, more than 174,492 lives have been positively touched through these interventions.

The Company's efforts on environmental sustainability include tree plantation projects, waste management, water harvesting, and installation of solar lamps, among others. Its community development program aims at empowering women and youth of underprivileged regions by providing vocational training, business enterprise support, and other resources to promote entrepreneurship. Education program focuses on imparting of knowledge and skills to children through group activities, knowledge-sharing, and so on. The sports focus includes supporting and mentoring underprivileged sports talents from across the country to facilitate the overall development of an individual.

In FY 2022, the Company also undertook several measures for increasing awareness among the communities about the COVID-19 pandemic. It distributed PPEs, relief materials, and medical equipment, and helped strengthen the infrastructure of the Primary Health Care units of the surrounding villages.

RISK MANAGEMENT

Bharat Forge is engaged in a business which is marked by cyclicality and is presently undergoing significant transformations. These are changing the dynamics of the risks and operations in the operations. To mitigate these risks and ensure consistent business growth and success, the Company continually scans the external and internal environment to identify new risks, track them and devise effective steps to mitigate them. The Company also continues to takes measures to further strengthen its risk management mechanism to stay ahead of these risks and capture on opportunities.

Some of the key risks facing the Company's operations include:

Macro-Economic Risk

A slowdown in macro-economy of the region or the industry in which the Company operates or any unfavorable change in regulatory scenario may impact its revenue generation.

Mitigation Strategy

Over the years, the Company has strategically diversified its operations both geographically and across industries to mitigate dependence on any single location or industry. In terms of geography, the Company has extended its presence in North America and the European markets through its subsidiaries. In FY 2022, these locations accounted for ~40% of the Company's total revenues. The current scenario of high inflation and Ukraine-Russia war do pose some risks to these international operations. The Company's efforts to establish aluminum forgings capacity in these locations to help auto OEMs move towards light-weighting is progressing well and generating steady opportunities.

In terms of sectors, the Company has presence across Automotive, Defence, Oil & Gas, Mining and Construction, Power including Renewable Energy, Aerospace & Defence and E-mobility segments. The Company's recent extension in areas of automobile light-weighting, e-mobility and renewable energy provide significant opportunities as they are the key focus areas globally for addressing climate change problems. The defence business is gaining momentum driven by the government's increased focus on indigenization.

This diversification provides significant stability and long-term scalability. The Company continues to explore newer geographies and newer customers to further strengthen portfolio.

Raw Material Risk

Inability of the Company to obtain critical raw materials at competitive prices may impact its operational continuity and profitability.

Mitigation Strategy

Steel is the primary raw material used by the Company, which is procured through a group company, thereby ensuring its steady availability and competitive prices. Though in recent years, the Company has also expanded to aluminum forgings and castings which diversifies its raw material requirements.

The Company has ensured efficient use of materials through its patented in-house manufacturing which ensures zero scrappage. The Company also practices entering orders with a price pass-through clause to mitigate the risks of high input costs.

However, in the present scenario, the Company faces heightened raw material risks given the supply chain disruption and volatility in prices due to the Ukraine war and shutdowns in China. Despite this, the Company is maintaining sustained production and continues to maintain vigil on the situation.

Foreign Exchange Risk

A significant portion i.e. 58.68% in FY 2022 of the Company's standalone revenues is generated from exports and involve foreign currency exposure. Any unfavorable movement in the exchange rates may adversely impact its profitability.

Mitigation Strategy

The Company undertakes hedging and enters into simple forward contracts on a rolling basis to mitigate exchange rate fluctuations. The Company also maintains foreign currency borrowing which is less than its exports to ensure natural hedge.

Technology Risk

The Company's primary business segments i.e. automobile is amidst a radical transformation with increased focus on CASE (Connected, Autonomous, Shared and E-mobility). Further, with the rising competitive intensity, the Company needs to drive more automation, efficiency and innovation led by technology to remain a preferred partner. Inability of the Company to evolve its product line and modernize may lead to its product getting irrelevant and may also damage its reputation.

Mitigation Strategy

Bharat Forge has remained at the forefront of these changes through its early investments in e-mobility and light-weighting technologies and infrastructure. The Company already has a headstart with competencies established and several products developed in these areas, and is witnessing increasing inquiries from major global OEMs.

The Company has also invested in modern technologies like Industrial Internet of Things (IIoT) and Industry 4.0 which are driving greater productivity and making its operations more reliable. Additionally, it has prepared a roadmap for digital-led business transformation whereby it has implemented SAP ERP, robotic process automation, digital thread and analytics among others. These investments are fortifying the Company's position and making it future-ready.

Funding Risk

The nature of Company's operations necessitates sustained investments in innovation, technology and in daily operations. This entails availability of funds at competitive rates. The need for such funds is even more critical in the present uncertain high risk operating context with possibility of scale-up of war, high inflation and supply chain issues to remain prepared for any exigencies.

Mitigation Strategy

Bharat Forge is strongly positioned in terms of its fund position. The Company has a strong cash and cash equivalent position at ₹ 24,818 million as on March 31, 2022 supported by its cash flow accreting business model. The Company's prudency in working capital management and capex allocation has also enabled it to reduce debt. As on March 31, 2022, the Company maintained a healthy net debt/equity at 0.20 and a net debt/EBITDA of 0.85 despite having committed a capex of ₹ 3,784 million in FY 2022. This provides headroom to source external funds, if required. The Company also maintains sharp focus on reducing its fixed costs.

Talent Risk

The Company's business involves high level of intellect and thus necessitates it to attract, retain and enhance human capital to ensure staying ahead of the industry evolution and ensure sustained manufacturing.

Mitigation Strategy

The Company practices a people-centric and performance driven culture. Multiple programs are undertaken to ensure health and safety, engagement and skill development of the people. Trainings are provided on future-ready skills including in Industry 4.0, sensor, robotics and manufacturing engineering. Further, the Company undertakes to pay employees in line with the industry. These actions make the Company one of the best workplaces for engineers and thus ensures low attrition levels. The Company's innovation wing KCTI and KCMI are also regarded as amongst the best and attract talented people.

Cybersecurity Risk

The Company works with large amount of sensitive and confidential information. With increasing digitalization, it faces the risks of cyberattacks as well as unauthorized use of these data. Inability to ramp-up security measures and protect data and lead-to-lead to litigation issues and losses.

Mitigation Strategy

Bharat Forge alongside its investment in digitalization has ramped up its cybersecurity measures. The Company is certified for information security management system ISO 27001:2013 and ensures stringent adherence to the controls stated in it. The Company's layered security approach supported by new generation tools ensures real-time threat prevention. Additionally, the Company regularly conducts Voluntary Product Accessibility Template (VAPT) and independent third-party validations which helps in identifying actionable for enhancing IT infrastructure. Further, awareness sessions and trainings are conducted for employees to strengthen security measures.

INTERNAL CONTROL SYSTEMS AND THEIR ADEQUACY

The Company has in place a well-framed internal control system that authorizes, records, and reports transactions to safeguard assets and protect against loss from unauthorized use or disposition. The internal controls ensure the reliability of data and financial information to maintain accountability of assets. They are supplemented by extensive internal audits, management review, and documented policies, guidelines, and procedures.