

Assessment of steel industry in Bihar

Final report

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Contents

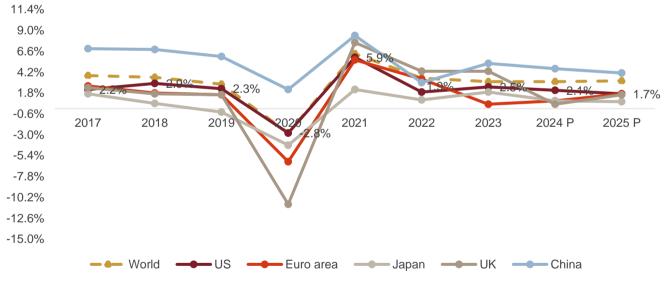
1	Glob	oal macroeconomic overview	3
	1.1	Global GDP growth to stay resilient, but to slow	3
	1.2	Inflation to ease after peaking in 2022	4
2	India	an macroeconomic overview	6
	2.1	India's GDP trend	6
	2.2	Performance of key macroeconomic indicators	7
	2.3	Correlation of steel demand growth with GDP growth	9
	2.4	Macroeconomic factors impacting the Indian steel sector	9
3	Biha	r macroeconomic overview	11
4	India	an steel industry overview	13
	4.1	Indian steel sector review and outlook	13
	4.2	Domestic TMT bar demand review and outlook	17
	4.3	Domestic GC sheets demand review and outlook	18
	4.4	Domestic coloured roofing sheets demand review and outlook	20
5	India	an PVC pipe industry overview	22
5	India 5.1	an PVC pipe industry overview Domestic PVC pipes overview & outlook	
5			22
	5.1 5.2	Domestic PVC pipes overview & outlook	22 24
	5.1 5.2	Domestic PVC pipes overview & outlook Key players	22 24 27
	5.1 5.2 ar ste	Domestic PVC pipes overview & outlook Key players	22 24 27 27
	5.1 5.2 ar ste 5.3	Domestic PVC pipes overview & outlook Key players eel industry Steel products market overview	22 24 27 27 29
	5.1 5.2 ar ste 5.3 5.4	Domestic PVC pipes overview & outlook Key players eel industry Steel products market overview. Assessment of the TMT reinforcement bars industry.	22 24 27 27 29 31
	5.1 5.2 ar ste 5.3 5.4 5.5	Domestic PVC pipes overview & outlook Key players eel industry Steel products market overview Assessment of the TMT reinforcement bars industry Assessment of the GC sheets industry	22 24 27 27 29 31 32
	5.1 5.2 ar ste 5.3 5.4 5.5 5.6	Domestic PVC pipes overview & outlook Key players eel industry Steel products market overview. Assessment of the TMT reinforcement bars industry Assessment of the GC sheets industry. Assessment of the GC sheets industry.	22 24 27 27 29 31 32 34
	5.1 5.2 ar ste 5.3 5.4 5.5 5.6 5.7	Domestic PVC pipes overview & outlook Key players Steel industry Steel products market overview. Assessment of the TMT reinforcement bars industry Assessment of the GC sheets industry. Assessment of the GC sheets industry. Assessment of the coloured-roofing sheets industry Assessment of galvanised plain sheets industry	22 24 27 27 29 31 32 34 35
	5.1 5.2 ar ste 5.3 5.4 5.5 5.6 5.7 5.8 5.9	Domestic PVC pipes overview & outlook Key players bel industry Steel products market overview. Assessment of the TMT reinforcement bars industry Assessment of the GC sheets industry. Assessment of the coloured-roofing sheets industry Assessment of galvanised plain sheets industry Assessment of prefabricated engineered buildings (PEB) industry	22 24 27 27 29 31 32 34 35 36
Bih	5.1 5.2 ar ste 5.3 5.4 5.5 5.6 5.7 5.8 5.9 Com	Domestic PVC pipes overview & outlook	22 24 27 29 31 32 34 35 36 37

1 Global macroeconomic overview

The global economy witnessed a long-period average growth of 3.8% during 2000-2019¹ before the pandemicinduced lockdowns brought economic activity to a standstill, resulting in the global gross domestic product (GDP) to contract 2.8% in 2020. This contraction was much lower than initially estimated, driven by stronger rebound in manufacturing activity, adaptation to newer ways of working and strong fiscal policy-driven support by larger economies. The vaccine-powered normalisation alongside continued fiscal support helped GDP growth to rebound to 6.3% in 2021. The global economy witnessed multiple challenges in 2022, including high inflation driven by supply constraints, tightening financial conditions in most regions and the Russia–Ukraine conflict, which resulted in a slowdown in global GDP growth to 3.5%. Global GDP grew by 3.1% in 2023.

1.1 Global GDP growth to stay resilient, but to slow

The International Monetary Fund (IMF) forecasts global GDP growth to continue to remain resilient at 3.1% in 2024 and 3.2% in 2025 driven by greater-than-expected resilience in the United States (US) and several large emerging market and developing economies, as well as fiscal support in China. The World Bank estimates global GDP at \$89.96 \$trillion for 2022 at constant 2015 prices. GDP growth is expected to pick up from 2025 through 2028 and remain range bound at 3.2% over the medium term, as per the IMF.



Global economic review and outlook

P: Projected

Source: CRISIL MI&A Consulting, IMF, World Bank

Real GDP	2017	2018	2019	2020	2021	2022	2023	2024 P	2025 P
World	3.8%	3.6%	2.8%	-2.8%	6.3%	3.5%	3.1%	3.1%	3.2%

1 IMF - World Economic Outlook Oct 2023

Real GDP	2017	2018	2019	2020	2021	2022	2023	2024 P	2025 P
US	2.2%	2.9%	2.3%	-2.8%	5.9%	1.9%	2.5%	2.1%	1.7%
Euro area	2.6%	1.8%	1.6%	-6.1%	5.6%	3.4%	0.5%	0.9%	1.7%
Japan	1.7%	0.6%	-0.4%	-4.2%	2.2%	1.0%	1.9%	0.9%	0.8%
UK	2.4%	1.7%	1.6%	-11.0%	7.6%	4.3%	0.5%	0.6%	1.6%
China	6.9%	6.8%	6.0%	2.2%	8.4%	3.0%	5.2%	4.6%	4.1%

Source: IMF

Overall macroeconomic growth outlook for the world can be further understood by deep diving into the estimated trajectories for some major economies:

US

Economy growth in the US is projected to fall from 2.5% in 2023 to 2.1% in 2024 and 1.7% in 2025 due to lagged effects of tightening of the monetary policy, gradual fiscal tightening and a softening in labour markets slowing the aggregate demand.

Euro area

Growth recovery in the euro area is expected to be driven by stronger household consumption, as the impact of the energy price shock fades away and inflation slows, underpinning real income growth. Growth is projected to rebound from a low rate of 0.5% in 2023, reflecting relatively high spillover effects from the Ukraine conflict, to ~0.9% in 2024 and ~1.7% in 2025. However, growth is projected to slow to 0.3% in 2024 compared with 2023, reflecting carryovers from the weaker-than-anticipated outcome in 2023.

Japan

Output in Japan is likely to remain above capacity as growth slows from 1.9% in 2023 to a projected 0.9% in 2024 and 0.8% in 2025, as one-off events that supported activity in 2023 are fading, such as a depreciated yen, pent-up demand and a pickup in business investment following earlier project delays.

United Kingdom (UK)

Growth in the UK is estimated to be 0.5% in 2023 and projected to be 0.6% in 2024 and 1.6% in 2025 as the long-term negative effects of high energy prices dissipate and disinflation begins to ease financial conditions and real incomes recover.

China

China's economic growth is projected at 4.6% in 2024 and 4.1% in 2025. The upward revision for 2024 reflects carryovers from stronger-than-expected growth in 2023, as well as increased government expenditure on capacity building in response to natural disasters.

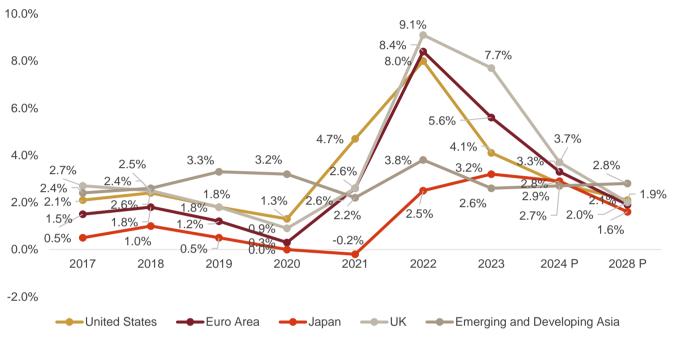
1.2 Inflation to ease after peaking in 2022

Inflation has peaked, but core measures have been sticky and remain well above central bank targets. The dynamics of inflation over the past two years have followed a common pattern. Non-core prices, led by fuels and



food, accelerated quickly, following the Russia-Ukraine conflict. Fuelled by a sharp change in demand for services, as well as generous government benefits, inflation spread to non-core items. Ongoing strong labour demand has contributed to sticky core inflation, and recent data suggests that the decline in inflation to target levels will be more gradual than the recent climb.

CPI inflation - review and outlook



P: Projected

The IMF expects the global headline inflation to decline from 6.8% in 2023 to 5.8% in 2024 and 4.4% in 2025. On average, global headline and core inflation are projected to be lower in 2024 for ~80% of economies. Among inflation-targeted economies, headline inflation is expected to be ~0.6 percentage points above the median economy's target in 2024, down from an estimated 1.7 percentage point gap in the fourth quarter of 2023. By 2025, most of these economies are projected to hit their targets or target range midpoints. In several large economies, a downward revision of inflation trajectories, combined with a slight pick-up in economic activity, suggests a milder-than-anticipated soft landing.

Source: CRISIL MI&A Consulting, IMF, World Bank

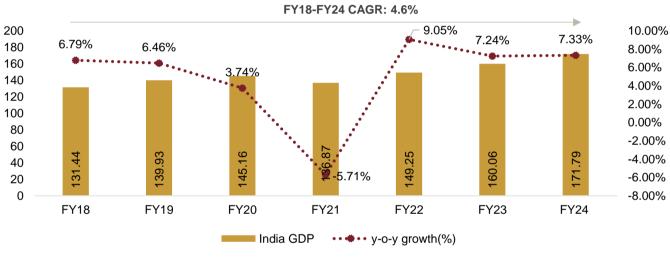
2 Indian macroeconomic overview

2.1 India's GDP trend

In 2015, the Ministry of Statistics and Programme Implementation changed the base year for calculating India's GDP to fiscal 2012 from fiscal 2005. Based on this, the country's GDP clocked 4.6% compound annual growth rate (CAGR) between fiscals 2018 and 2024 to reach Rs 171.79 trillion². While the pandemic-induced lockdowns led to GDP declining to 5.71% in fiscal 2021, the post-pandemic scenario proved positive for India. GDP rose 9.05% onyear in fiscal 2022, with manufacturing and construction witnessing the most sizeable rebound.

India's GDP trend

Rs trillion



P: Projected

The National Statistical Office's (NSO) first advance estimates project India's real GDP growth at 7.33% on-year for this fiscal compared with 7.24% in the previous fiscal. Overall GDP growth is robust, despite weak agriculture growth, displaying resilience of non-agriculture sectors. Growth is estimated to have been stronger in the first half (7.7%) compared with the second (6.9%). Despite weak agricultural growth, overall GDP growth is seen as robust, indicating that the surge in non-agriculture sectors has more than offset the agricultural slowdown.

On the demand side, investment emerged as the primary driver of growth (10.3% on-year this fiscal vs 11.4% previous fiscal), spurred by the government's infrastructure push. Government consumption expenditure was also higher this year (4.1% vs 0.1%) but punched less than its weight in the GDP.

However, private consumption growth, with almost 60% share in GDP, is estimated to have fallen short of overall GDP growth (4.4% vs 7.5% previous fiscal).

Source: Central Statistical Office (CSO), CRISIL MI&A Consulting

² Statistics from Provisional Estimates of National Income 2022-23 and Quarterly Estimates of Gross Domestic Product for the Fourth Quarter (Q4) of 2022-23



Net exports (exports minus imports) are likely to be a bigger drag this fiscal compared with the previous. Exports growth is expected to be much weaker this fiscal (1.4% vs 13.6%) relative to imports (13.2% vs 17.1%).

First half vs second: Growth is estimated to have slowed in the second half for private consumption (4.3% vs 4.5%), government consumption expenditure (3.0% vs 5.1%) and imports (12.8% vs 13.5%), and picked up for investments (11.1% vs 9.5%) and exports (4.5% vs -1.7%)

At constant 2011-12 prices	FY18	FY19	FY20	FY21	FY22	FY23	FY24
Private consumption	6.20%	7.1%	5.2%	-5.3%	11.2%	7.5%	4.4%
Government consumption	11.90%	6.7%	3.4%	-0.4%	6.6%	0.1%	4.1%
Gross fixed capital formation	7.80%	11.2%	1.6%	-7.7%	14.6%	11.4%	10.3%
Exports	4.60%	11.9%	-3.4%	-9.1%	29.3%	13.6%	1.4%
Imports	17.40%	8.8%	-0.8%	-13.7%	21.8%	17.1%	13.2%

Yearly demand-side real GDP growth

Source: CRISIL MI&A Consulting, CSO

On the supply side, agriculture and allied sectors sustained their momentum till fiscal 2023, while industry and services were severely impacted by the pandemic in fiscal 2021. In fiscal 2023, growth in manufacturing and service sectors slid, but accelerated in agriculture, construction, mining, and electricity. While manufacturing and industry saw remarkable growth in fiscal 2024, the agriculture and allied sector as well as services sector saw a decline.

On-year supply-side gross value added by economic activity

At basic prices	FY18	FY19	FY20	FY21	FY22	FY23	FY24
Agriculture and allied	6.61%	2.10%	6.16%	4.11%	3.51%	3.96%	1.82%
Industry*	1.09%	3.10%	-0.49%	-6.52%	8.46%	6.80%	8.17%
Manufacturing	7.53%	5.41%	-2.97%	2.91%	11.05%	1.34%	6.53%
Construction	5.22%	6.48%	1.62%	-5.73%	14.82%	10.00%	10.74%
Services^	6.34%	7.17%	6.43%	-8.23%	8.81%	9.46%	7.72%

* Industry includes mining and quarrying, electricity, gas, water supply and other utilities

^ Services include those related to trade, hotels, transport, communication, broadcasting, finance, real estate, public administration, defence, and professional and other services

Source: CRISIL MI&A Consulting, CSO

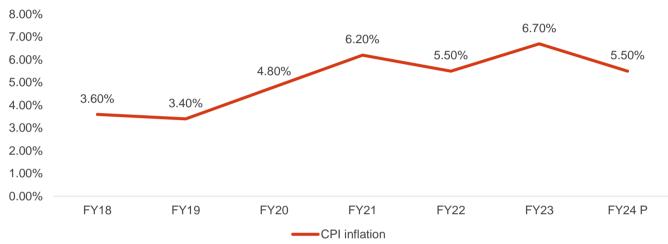
2.2 Performance of key macroeconomic indicators

India's average Consumer Price Index (CPI) inflation rate remained at an average of ~4.70% during fiscals 2018 to 2022. It increased to 6.70% in fiscal 2023 after moderating to 6.44% in February 2023, from 6.52% in January 2023. CPI inflation dropped a mild 15 basis points to 4.87% in October from 5.02% in September, led by a broad-based decline in core and fuel inflation. Food inflation remained steady, despite mixed underlying trends.



Easing input cost pressures on manufacturers and moderating domestic demand are expected to ease core inflation. However, tight global food supplies threaten food inflation. Oil prices remain an unknown and could potentially play a spoilsport if the Middle East conflict escalates. An adverse index base (inflation had seen a drop in the year-ago period) will somewhat restrict the downside in inflation for two months.

CRISIL expects the Reserve Bank of India (RBI) to remain vigilant, as the headline inflation remains above the Monetary Policy Committee's 4% target and risks to food and fuel inflation persist, thereby expecting an average inflation of 5.5% in fiscal 2024.



Trend in CPI inflation

P: Projected

Source: NSO, Ministry of Industry and Commerce, CRISIL MI&A Consulting

The Index of Industrial Production (IIP) averaged at 3.48% from fiscals 2018 to 2022 before increasing to 5.74% in fiscal 2023. Industrial output measured by the IIP slowed sharply to 2.4% on-year in November from 11.6% in October. Manufacturing, electricity and mining IIP slowed. Production declined on-year in consumer and capital goods and slowed considerably in infrastructure and construction goods. The months ahead are expected to see some sluggishness in industrial activity.





Source: NSO, Ministry of Industry and Commerce, CRISIL MI&A Consulting

2.3 Correlation of steel demand growth with GDP growth

Steel demand is closely related with GDP growth, with the steel demand to GDP growth multiplier varying across the years. India's steel demand growth has outpaced GDP growth during fiscals 2018 to 2023, except when the pandemic hit during end-fiscal 2020 and had a severe effect till fiscal 2021. The sector's growth suffered since demand slowed in key end-use sectors such as construction, infrastructure and automobiles. Once the country began to recover from the effects of the pandemic, the steel demand growth to GDP growth multiplier was at 1.85 in fiscal 2023



Finished steel demand growth vs GDP growth

Note: Figures in boxes represent steel demand growth to GDP growth multiplier P: Projected

Source: Industry, CRISIL MI&A Consulting

2.4 Macroeconomic factors impacting the Indian steel sector

India's steel industry is a key contributor to its economic growth, accounting for a significant share of the manufacturing sector. Its performance is influenced by macroeconomic factors such as GDP growth, inflation, exchange rates and gross fixed capital formation. The impact of these factors is analysed below:

GDP growth: Growth in the industry is closely linked to GDP growth. As GDP grows, demand for steel products from the construction, infrastructure and other manufacturing sectors also increases. Steel demand grew 11.44% in fiscal 2022 and 13.37% in fiscal 2023 and is expected to grow 11-12% in fiscal 2024, backed by government infrastructure spending, strong demand from the automotive sector, and demand from the consumer goods sector.

Inflation: Rising inflation also pushes up input costs associated with raw materials, energy and transportation, which can affect the profitability of steel manufacturers. It can also lead to increased interest rates, which can affect demand for steel products, given that borrowing costs become more expensive for businesses and consumers. The impact of rising inflation is also felt through low consumer spending, which affects key steel-consuming industries such as automotive and consumer goods.



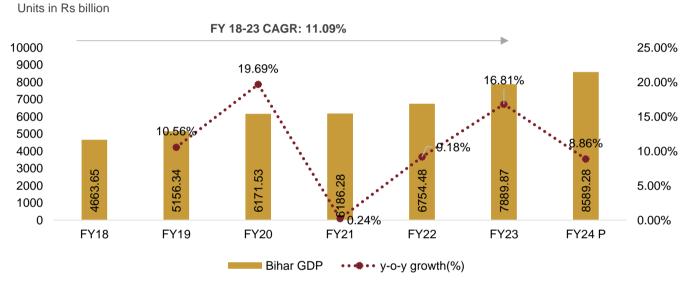
Exchange rates: The exchange rate of the Indian rupee against other major currencies affects the steel industry closely. A stronger rupee can lead to a decrease in the cost of imported raw materials, which can reduce the cost of production for steel manufacturers, and vice versa.

Gross fixed capital formation (GFCF): GFCF measures investment in fixed assets such as machinery, buildings and infrastructure. GFCF increased to Rs 54.34 lakh crore in fiscal 2023 from Rs 40.83 lakh crore in fiscal 2018. During 2018-2023, the Indian steel sector witnessed significant growth in terms of production and capacity expansion. This increase was primarily led by investments in capacity expansion, modernisation and technology upgradation.

3 Bihar macroeconomic overview

Bihar's GDP rose 11.09% CAGR between fiscals 2018 and 2023 to Rs 7,889.87 billion. While pandemic-led lockdowns resulted in GDP contracting 0.24% in 2021, the post-pandemic scenario proved positive for India as well as for Bihar. GDP rose 9.18% on-year in fiscal 2022 and further 16.81% in 2023, with the manufacturing and construction sectors witnessing the most sizeable rebound.

Bihar's gross state domestic product (GSDP) for fiscal 2024 (at current prices) is projected to be Rs 8,589.28 billion, amounting to 8.9% growth in fiscal 2023 (Rs 7,889.87 billion).



Bihar's GDP trend

Source: Bihar Economic Survey, CRISIL MI&A Consulting P: Projected

FY: Fiscal Year

One of the strongest agricultural states in the country, Bihar's percentage of population employed in agricultural production is ~80%, which is much higher than the national average. It is the fourth-largest producer of vegetables and the eighth-largest producer of fruits in India. Food processing, dairy, sugar, manufacturing and healthcare are some of the fastest-growing industries in Bihar. The state has planned initiatives for the development of sectors, such as education and tourism and provides incentives for information technology and renewable energy projects.

Bihar has a large base of cost-effective industrial labour, making it an ideal destination for a wide range of industries.

According to the Department for Promotion of Industry and Internal Trade (DPIIT), cumulative foreign direct investment inflows in Bihar were valued at \$214.50 million between October 2019 and June 2023.

Total merchandise exports from Bihar stood at \$2,308.60 million in fiscal 2021-2022 and \$1,258.97 in fiscal 2022-2023 (till August 2022).



As of September 2023, Bihar had a total installed power generation capacity of 7,927.00 MW, of which central utilities contributed 6,806.74 MW, state utilities 70.70 MW and private utilities 1,049.56 MW.

Coal-based plants accounted for the largest share with 7,396.74 MW of the total thermal power plant capacity.

Hydropower plants accounted for a power generation capacity of 110 MW, while 420.26 MW of installed power generation capacity was from renewable sources.

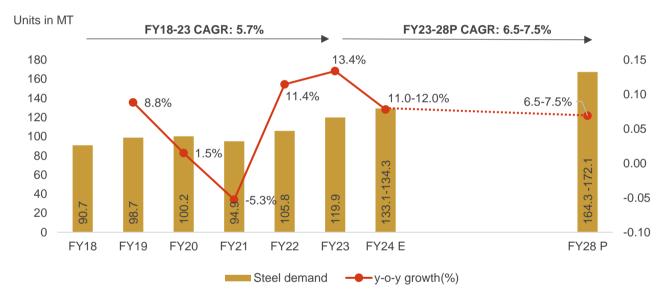
Bihar was allotted Rs 8,505 crore in the railway budget for fiscal 2024, nearly seven times more than the allocation made in the past. As many as 87 railway stations in Bihar will be redeveloped to modernise the infrastructure.

4 Indian steel industry overview

4.1 Indian steel sector review and outlook

The domestic steel demand has logged a significant 5.7% CAGR between fiscals 2018 and 2023. The industry logged a steady CAGR of 5.1% between fiscals 2018 and 2020. However, in fiscal 2021, the industry saw a 5.3% on-year decline due to the pandemic. The demand rebounded in fiscal 2022, growing 11.4% on-year with the revival of industrial activities, release of the pent-up demand and growth inducement in key end-use sectors.

Growth in steel demand registered a 13.4% increase from 90.7 million tonne (MT) in fiscal 2018 to 119.9 MT in fiscal 2023, owing to the aggregate effect of growth in the end-use sectors of steel, such as automobile, infrastructure and construction. and market volatility faced during the pandemic. The increase in demand is expected to accelerate at a CAGR of ~6.5-7.5% by fiscal 2028, rising to 164.3-172.1 MT.



Domestic consumption of steel

E: Estimated

P: Projected

Source: Joint Parliamentary Committee (JPC), CRISIL MI&A Consulting

Steel demand is expected to clock 6.50-7.50% CAGR between fiscals 2023 and 2027

This fiscal, demand is expected to increase 11.0-12.0% on-year, driven by 11.0-13.0% growth in infrastructure, in addition to a decent 5.0-7.0% expansion in housing, driven by government housing construction and private demand. Automobile production is also expected to rise 6.0-8.0%, driven by an increase in passenger and commercial vehicle production. Steel demand is likely to register 6.50-7.50% CAGR between fiscals 2023 and 2027, spearheaded by infrastructure projects, housing and construction sectors.

4.1.1 Infrastructure to drive maximum domestic/finished steel demand between fiscals 2023 and 2028

Building and construction (B&C), infrastructure and automobile sectors cover ~70.0% of aggregate finished steel demand, with B&C contributing to the maximum share of finished steel demand, followed by infrastructure and automobile sectors. Steel demand growth between fiscals 2023 and 2027 is expected to be spearheaded by the infrastructure projects, housing and construction sectors. Projects such as the Pradhan Mantri Awas Yojana (PMAY) and the National Infrastructure Pipeline (NIP) will help sustain the growth momentum in steel demand.

Segment	Share of steel consumption	Growth in FY19-23	Growth in FY24-28P	Positives for the sector
Building and construction	35-40%	0.4%	4.0–7.0 %	 Affordable housing Pick-up in rural housing (healthy rural sentiments) Commercialisation of Tier III and IV cities
Infrastructure	25-30%	11.0%	7.0–10.0%	 Budget capex for railways, a highly steel intensive sector, has seen ~15% increase in fiscal 2023 17% increase in aggregate budgetary capex complemented with 50-year interest-free loan to states Investments worth Rs 750 billion allocated for 100 critical transport infrastructure for last-mile and first-mile connectivity
Automotive	8-10%	1.1%	7.0 – 10.0%	 Government spending and robust replacement demand to drive 4-6% growth of commercial vehicles Passenger vehicles volume to grow ~6-8%, majorly driven by fast-paced infrastructure development

End use segment-wise breakup of steel consumption in India

Note: The above-mentioned segments are not exhaustive. Others (25.0-30.0%) comprise various industries, such as capital goods, consumer durables, construction equipment and machinery, among others Source: JPC, Ministry of Steel, CRISIL MI&A Consulting

B&C to continue dominating steel end-use mix and maintain range-bound growth

The B&C segment accounts for ~30% of the aggregate finished steel demand. For the next five years, steel demand from this segment is expected to clock 4.0-7.0% CAGR, driven by:

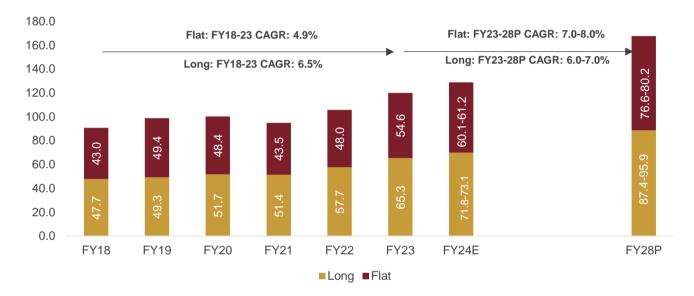
Government's focus on execution of affordable housing



- Robust rural housing demand against the backdrop of government's continued focus on rural development and higher minimum support prices
- Improvement in urban housing demand, owing to increased commercialisation of Tier III and IV cities, led by better infrastructure connectivity

4.1.2 Indian steel consumption by category (long vs flat products in million tonne per annum)

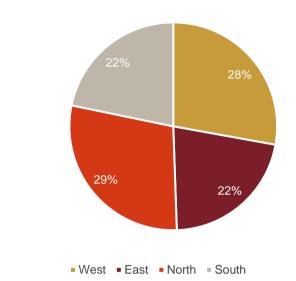
Demand for long steel increased 6.5% CAGR between fiscals 2018 and 2023, led by healthy growth in infrastructure and modest growth in the housing sector, while demand for flat steel rose 4.9% CAGR in the same period. This led to the share of long steel in the overall finished steel demand to increase from ~53% in fiscal 2018 to 54% in 2023.



Source: JPC, Industry, CRISIL MI&A Consulting

With the resolution of supply chain issues in the automobile segment and improving demand in construction and infrastructure segments, flat steel demand is expected to continue logging a healthy CAGR of 7-8% between fiscals 2023 and 2028. On the other hand, long steel demand is set to clock a CAGR of 6-7% between the same period, owing to positive sentiment in the private housing construction sector and government's robust push for infrastructure development.





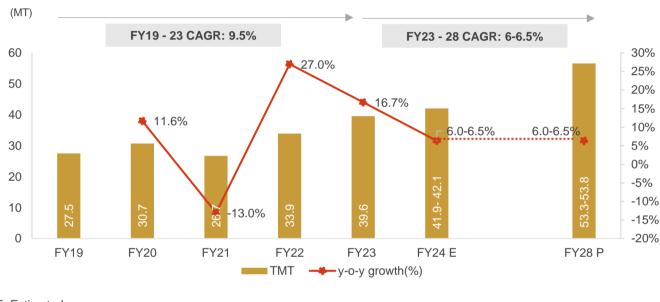
Indian steel consumption by region for fiscal 2023

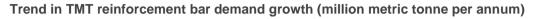
Source: JPC, Industry, CRISIL MI&A Consulting

In fiscal 2023, the west and north zones together accounted for ~57% of the overall steel demand. West zone's demand improved significantly from 22.4 MT in fiscal 2018 to 33.4 MT in 2023, logging a CAGR of 8.3%. This was led by increased infrastructure development activities, including construction of national highways, bridges, high-rises, statues, dams, metro and railway networks in the west zone states, such as Gujarat and Maharashtra. Steel demand in the east zone grew from 22.1 MT in fiscal 2018 to 25.9 MT in 2023, clocking a CAGR of 3.3%, mainly supported by government infrastructure development initiatives such as PM Gati Shakti and a high rate of housing construction in states such as Bihar and Jharkhand, owing to the mass return of labourers following pandemic-led lockdowns.

4.2 Domestic TMT bar demand review and outlook

Demand for TMT reinforcement bars rose from 27.5 MT in fiscal 2019 to 39.6 MT in 2023, owing to an uptick in housing and infrastructure development in the country. The demand is estimated to be within the range of 41.9-42.1 MT for the current fiscal. It is further expected to rise to 53.3-53.8 MT by fiscal 2028, on account of increasing private house construction, which is boosted by improved disposable incomes of individuals after the pandemic and increasing infrastructure budget allocation by the Centre and states.



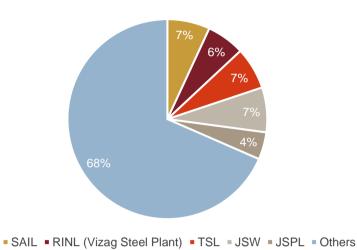


E: Estimated P: Projected

Source: CRISIL MI&A Consulting

Though the demand for TMT reinforcement bar logged 9.5% CAGR between fiscals 2019 and 2023, the growth is expected to see a slight moderation over the next five fiscals but maintain a healthy 6.0-6.5% CAGR.





Player-wise market share of TMT reinforcement bars (All India demand)

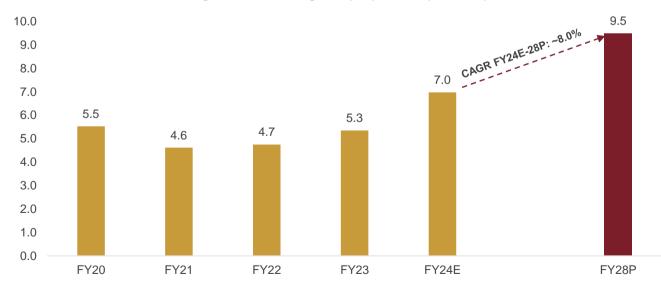
TMT market share FY 2022 - All India demand - 39.6 MTPA

JSWL: JSW Ltd; TSL: Tata Steel Ltd; RINL: Rashtriya Ispat Nigam Ltd; SAIL: Steel Authority of India Ltd; JSPL: Jindal Steel and Power Ltd

Source: Joint Plant Committee (JPC) and CRISIL MI&A Consulting

Among the major steel players, JSW, Tata Steel (TSL) and Steel Authority of India (SAIL) are market leaders (based on production) of TMT reinforcement bars in fiscal 2023, individually accounting for ~7% of the total market share.

4.3 Domestic GC sheets demand review and outlook



Demand review and outlook of galvanised corrugated (GC) sheets (in MTPA) – India

E: Estimated

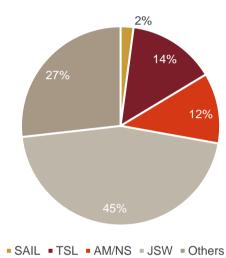
P: Projected

Source: Joint Plant Committee (JPC) and CRISIL MI&A Consulting

Domestic demand for GC sheets dipped more than 16% on-year in fiscal 2021, owing to pandemic-led disruptions. The demand, however, showed an improvement in the following fiscals from 4.6 MT in fiscal 2021 to 4.7 MT in 2022 and 5.3 MT in 2023, a 13% increase on-year.

Between fiscals 2024 and 2028, the demand for GC sheets is expected to plummet at a CAGR of ~8% to 9.5 MT, owing to the anticipated demand led by end use segments such as agriculture warehousing and construction.

Player-wise market share of GC sheets based on production (All India demand)



Market share FY23 - All India demand - 5.3 MTPA

JSW: JSW Ltd; TSL: Tata Steel Ltd; AM/NS: ArcelorMittal and Nippon Steel; SAIL: Steel Authority of India Ltd Source: Joint Plant Committee (JPC) and CRISIL MI&A Consulting

Among major steel players, JSW was the single largest producer of GC sheets in fiscal 2023, followed by TSL and AM/NS.



4.4 Domestic coloured roofing sheets demand review and outlook



Demand review and outlook for coloured roofing sheets (in MTPA)

E: Estimated

P: Projected

Source: Joint Plant Committee (JPC) and CRISIL MI&A Consulting

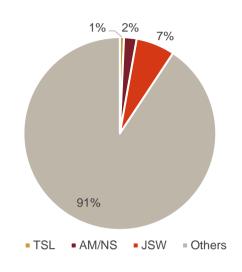
Demand for coloured roofing sheets saw an on-year dip of over 10.0% in fiscal 2021, due to the pandemic-led disruptions. However, it rebounded by over 16.0% from 2.1 million tonne in fiscal 2021 to 2.4 million tonne in fiscal 2022, because of improved sentiment, as more people started constructing houses and commercial properties led by increased disposable incomes after the pandemic. Demand increased 12.0% on year to 2.7 million tonne in fiscal 2023.

Demand for coloured roofing sheets is expected to remain stable over fiscals 2024 to 2028 as well, growing at a ~ 7.0% CAGR to 4.1 million tonne in fiscal 2028, as more consumers start installing these sheets due to increased product awareness.





Market share FY23 - All India demand - 2.7 MTPA



JSW: JSW Limited; AM/NS: ArcelorMittal and Nippon Steel; TSL: Tata Steel Limited Source: Joint Plant Committee (JPC) and CRISIL MI&A Consulting

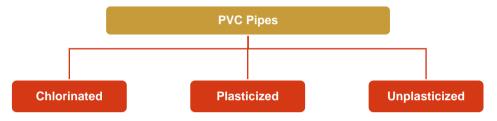
Among major steel players, JSW was the single largest player in the coloured roofing sheets segment (based on production) in fiscal 2023, followed by AM/NS and TSL.

5 Indian PVC pipe industry overview

5.1 Domestic PVC pipes overview & outlook

PVC (Polyvinyl Chloride) pipes are a type of plastic piping widely used in various applications in India. They are durable, corrosion-resistant, and easy to install, making them a preferred choice for plumbing, water supply, and sewage systems. In India, PVC pipes are extensively used in residential, commercial, and industrial construction projects, as well as in agricultural and infrastructure development. The growing demand for PVC pipes in India is driven by rapid urbanization, increasing infrastructure development, and government initiatives such as "Housing for All" and "Smart Cities Mission". Additionally, the need for efficient water management and sanitation systems in rural areas also contributes to the rising demand.

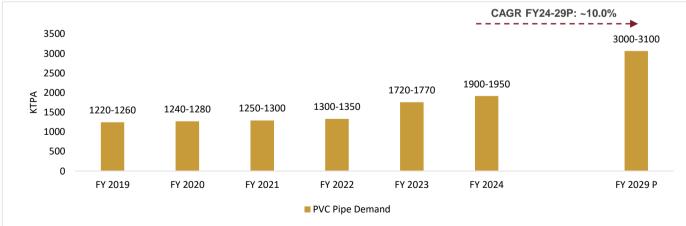
Types of PVC pipes



Chlorinated PVC (CPVC) pipes are enhanced PVC pipes treated with chlorine, making them more resistant to heat and chemicals, ideal for hot water distribution and industrial applications.

Plasticized PVC (also known as flexible PVC) pipes contain added plasticizers to make the material more flexible and softer. These pipes are used in applications like medical tubing, flexible hoses, and cable insulation.

Unplasticized PVC (uPVC) pipes, also known as rigid PVC, have no added plasticizers, making them strong, durable, and resistant to chemical corrosion. uPVC pipes are widely used in plumbing, sewage, and drainage systems due to their rigidity and long lifespan.



PVC pipes demand in India (KTPA)

Source: MI&A Consulting, Industry

Note: P-projected

The demand for PVC pipes has been assumed to be 50% of total PVC demand based on in

The demand for PVC pipes in India is on a strong upward trajectory, reflecting robust growth in infrastructure and agricultural development. From fiscal 2024 to fiscal 2029, the demand is projected to rise significantly from ~1,900 KTPA to ~3,000 KTPA, representing a compound annual growth rate (CAGR) of 9.9%. This substantial increase signals a major expansion in the sector, driven by heightened infrastructure projects and agricultural advancements. The data highlights a sharp surge in demand between fiscal 2022 and fiscal 2023, with a rise from ~1,300 KTPA to ~1,750 KTPA, indicating a rebound from the pandemic's economic impact and an acceleration in infrastructure development. By fiscal 2029, the demand for PVC pipes is expected to be nearly 2.5 times the level observed in fiscal 2019, underscoring a positive market outlook. This growth is largely fueled by government initiatives such as the "Jal Jeevan Mission", aimed at enhancing rural water supply, as well as extensive urban and agricultural projects and "Har Ghar Jal Yojna". The resilience of the PVC pipe sector, evident even during fiscal 2020-2021 period, underscores its critical role in India's development. As investments in water management, sanitation, and construction continue, the PVC pipe industry is set to benefit from increased demand and potential advancements in technology to meet the expanding needs.

For the budget 2024-25, an allocation of ₹11,11,111 crore for capital expenditure, which is 3.4 percent of GDP, has been made. For irrigation and flood mitigation in Bihar, the government will provide financial support for projects with an estimated cost of ₹11,500 crore through the Accelerated Irrigation Benefit Programme and other sources. The strong fiscal support for infrastructure is expected to have a positive impact on the economy, particularly in terms of boosting demand. Moreover, the focus on irrigation and flood mitigation projects in Bihar is expected to have a positive impact on the agricultural sector, which is a significant contributor to PVC pipes demand. Overall, the outlook for the India PVC pipes market is positive, driven by government support, policy initiatives, and a focus on self-reliance.



Gross value added (GVA) by agriculture & construction sectors

Source: National Statistical Office (NSO) Note: P- projected

The chart shows the Gross Value Added (GVA) and growth rates for the Agriculture & Allied and Construction sectors in India from FY20 to FY24P. This growth in both sectors is likely to drive up demand for PVC pipes. In agriculture, increased investment often leads to expanded irrigation systems, where PVC pipes are extensively used. An increase in agricultural GVA could potentially translate to an increase in PVC pipe demand for irrigation purposes. In construction, PVC pipes are crucial for plumbing and drainage systems. The sector's strong recovery, with a projected 9.9% growth in FY24, could lead to a corresponding increase in PVC pipe demand for construction applications. Government initiatives like the Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) for irrigation and the



Housing for All scheme are likely to further boost demand. The push for micro-irrigation systems could increase PVC pipe usage in agriculture by 7-10% over the next five years. Similarly, the construction of 20 million urban houses under the Housing for All scheme could drive up PVC pipe demand in the construction sector by 20-25%. In conclusion, the positive growth trends in agriculture and construction, coupled with supportive government initiatives, indicate a strong potential for increased PVC pipe demand in India, possibly growing at a CAGR of 7-10% in the coming years.

Application landscape

These are some applications of PVC pipes:

00000	Agriculture	Irrigation system piping Water supply pipes
	Construction	Plumbing in domestic and commercial buildings Drainage system pipes Sewer system
	Infrastructure	Water supply network pipes Stormwater pipes Wastewater treatment pipes Fire sprinklers pipes Borewell tubing Electrical conduit for electrical cables
	Industrial	Chemical handling Gas distribution system Ventilation system Cooling systems
× ±	Renewable Energy	Tubes for solar water heating systems Tubes for use in biogas plants
	Medical	Tubing for IV, catheter system and dialysis machine Tubing for respiratory equipment such as ventilators and oxygen delivery systems

5.2 Key players

Product Offering



Looking at the product offerings and can see that all 5 producers have a similar product offering, which cater to the all the industries which drive demand for PVC pipes.

S.no	Offerings	Supreme	Astral	Finolex	Ashirvad	Prince
1	Agriculture & Borewell pipes					
2	Plumbing & Drainage pipes					
3	Rainwater & Stormwater pipes					
4	Industrial pipes					
5	Fire protection pipes					
6	Electrical conduit					
7	Renewable energy piping					
8	Ventilation system pipes					
9	Chemical transportation pipes					
10	Process industry piping					

Source: Company website

Note: Agriculture & borewell pipes refer to irrigation system, water supply, tube well and borewell piping

Plumbing & drainage pipes refer to domestic & commercial plumbing, sewage systems and wastewater piping

The table is a comparison of product offerings by key PVC pipe producers in India: Supreme, Astral Pipes, Finolex, Ashirvad, and Prince. Analyzing the offerings, it's clear that most companies focus heavily on core segments like Plumbing & Drainage Pipes, Rainwater & Stormwater Pipes, and Agriculture & Borewell Pipes. These segments are fundamental to the Indian market, driven by both rural and urban infrastructure needs. Astral Pipes has an extensive product portfolio that covers nearly all segments, indicating a strategy aimed at market penetration across various industries. They seem to cater not only to general construction and water management needs but also to specialized areas like Industrial Pipes and Chemical Transportation Pipes, suggesting a focus on industrial needs as well.

Renewable Energy Piping, an emerging segment, is offered by companies like Finolex and Prince. This suggests a growing recognition of the importance of this market, likely driven by the increasing emphasis on sustainable infrastructure in India. The table also reflects the competitive nature of the Indian PVC market, where most players offer similar core products but differentiate themselves through niche segments. The data indicates a well-established market where most key players offer comprehensive product ranges, especially in high-demand segments like Plumbing & Drainage and Agriculture & Borewell Pipes.

	Unit	Supreme	Astral	Finolex	Prince	Ashirvad
Production Volume	MT	5,01,001	2,20,230	3,33,311	1,72,793	
Installed Capacity	MTPA	7,40,000	3,34,040	4,70,000	2,61,204*	2,00,000
Utilization	%	67.70	65.93	70.92	66.15	
Revenue from pipes	(% of total sales)		~73%	~64%		

Performance overview

Source: company website, annual reports Note:

1. Supreme production & capacity is total pipe production, Astral, Finolex & Prince capacity & production is for all pipes, fitting and water tanks, Ashirvad capacity is as of FY18

2. *Production capacity

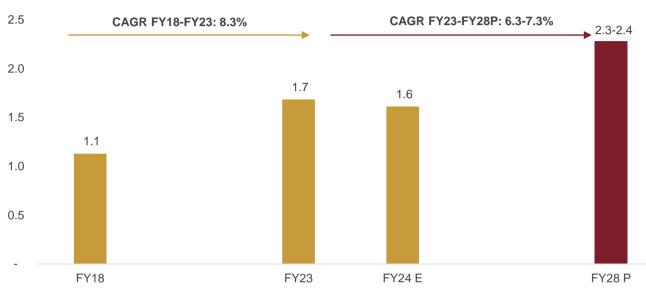


These five manufacturers are chosen for comparison because they are all leading players in the Indian PVC pipe industry, with a strong presence in the domestic market. They are known for their high-quality products, innovative solutions, and strong distribution networks.

The table provides a performance overview of major PVC pipe manufacturers in India, offering insights into their production volumes, installed capacities, utilization rates, and revenue contributions from pipes. Supreme emerges as the market leader with the highest production volume 501,001 MT and installed capacity 740,000 MTPA. It also maintains a healthy utilization rate of 67.70%. Finolex follows as the second-largest producer with 333,311 MT production and 470,000 MTPA capacity, boasting the highest utilization rate at 70.92%. Astral, while having a lower production volume 220,230 MT, shows strong performance with a 65.93% utilization rate and the highest revenue contribution from pipes at ~73% of total sales. Prince and Ashirvad have comparatively lower production volumes and capacities, but Prince maintains a competitive utilization rate of 66.15%. The varying utilization rates (65.93% to 70.92%) suggest a competitive market with room for growth. The significant revenue contributions from pipes for Astral (~73%) and Finolex (~64%) indicate their strong focus on this product segment. These figures imply a mature yet growing PVC pipe industry in India, with established leaders and emerging players.

Bihar steel industry

5.3 Steel products market overview



Steel demand review and outlook in Bihar (MTPA)

E: Estimated

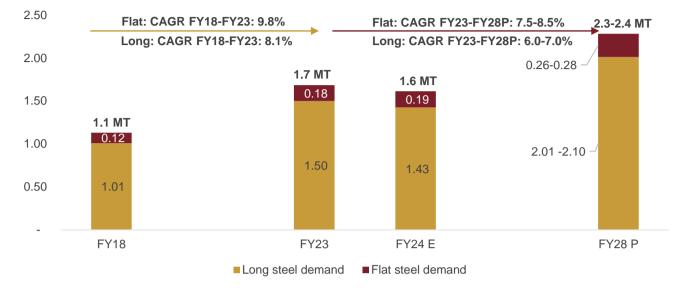
P: Projected

Source: Joint Plant Committee (JPC) and CRISIL MI&A Consulting

Steel demand in Bihar grew at a CAGR of 8.3% over fiscals 2018-23 to 1.7 million tonne because of a strong postpandemic recovery in infrastructure and house construction sectors. For fiscal 2024, Bihar's steel demand is expected to decline 4.2% to 1.6 million tonne because of poor sales of steel products and a decline in overall construction activity due to extreme weather.

Demand is expected to grow at a steady CAGR of 6.3-7.3% to 2.3-2.4 million tonne per annum over fiscals 2023-28, driven by increased focus on infrastructure development in the state in view of the Central government's schemes, such as PM Gati Shakti for eastern regions and Pradhan Mantri Gram Sadak Yojana.





Steel consumption in Bihar, by product (long vs flat) - MTPA

E: Estimated

Long steel accounted for over ~90% of the overall steel demand in Bihar over fiscals 2018-23, and the trend is expected to continue over the next five years. Demand for long steel increased at a CAGR of 8.1% to 1.50 MTPA in fiscal 2023 from 1.01 MTPA in fiscal 2018, driven by the government's push to develop infrastructure in the state. Demand for flat steel rose at a strong CAGR of 9.8% to 0.18 MT in fiscal 2023 from 0.12 MT in fiscal 2018.

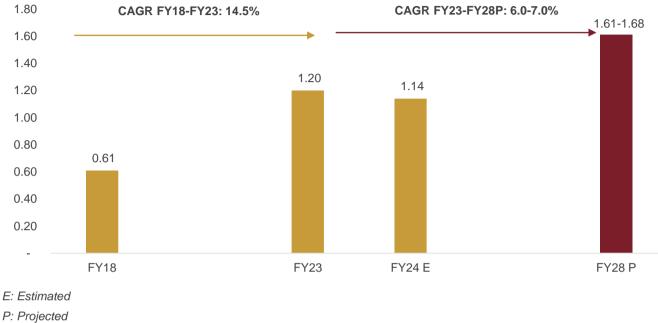
While demand for long steel is expected to expand at a CAGR of 6.0-7.0% to 2.01-2.10 MTPA in fiscal 2028, that for flat steel is expected to log a better CAGR of 7.5-8.5% to 0.26-0.28 MT in fiscal 2028. The government's schemes such as PM Gati Shakti for the eastern regions, Pradhan Mantri Gram Sadak Yojana and Bharatmala and an improving sentiment in the house construction segment, led by an increase in disposable income, are expected to drive robust demand growth in the long-steel segment over the next five years.

P: Projected

Source: JPC, Industry and CRISIL MI&A Consulting



5.4 Assessment of the TMT reinforcement bars industry



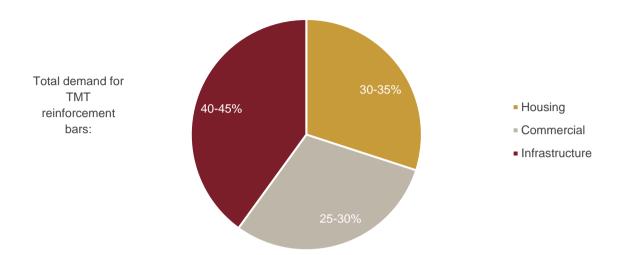
Demand for TMT reinforcement bars in Bihar - review and outlook (MTPA)

The TMT reinforcement bars industry in Bihar expanded at a robust CAGR of 14.5% over fiscals 2018-23 to 1.20 MT. The growth was driven by infrastructure development and increased building construction activities, led by the return of natives to Bihar after the announcement of lockdowns. However, demand for TMT reinforcement bars is expected to decline to 1.14 MT in fiscal 2024, due to a decline in construction activity this fiscal and low sales for the product.

Demand for TMT reinforcement bars is expected to increase at a CAGR of 6.0-7.0% over fiscals 2023-28. The expected improvement in infrastructure development in light of various government schemes, such as PM Gati Shakti for easter regions, Pradhan Mantri Gram Sadak Yojana, and Bharatmala, is likely to be the major driver of growth in the segment.

Source: Industry, CRISIL MI&A Consulting

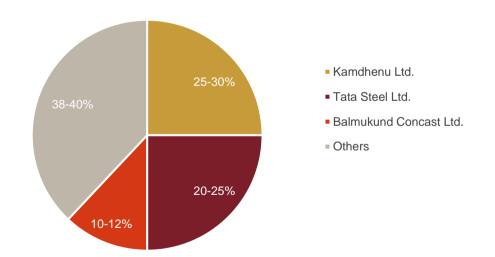
Demand for TMT reinforcement bars in Bihar, by end-use (FY23/24)



Source: Industry, CRISIL MI&A Consulting

In fiscal 2023, government-led infrastructure development projects accounted for 40-45% of total demand for TMT reinforcement bars in Bihar. The house construction and commercial property construction segments together constituted 55-65%.

Player-wise market share (TMT reinforcement bars – Bihar FY23/24)



Note: 'Others' includes JSW Ltd, Steel Authority of India Ltd, Shyam Metalics and other regional players like Magadh, Mahaveer etc.

Source: Industry, CRISIL MI&A Consulting

In fiscal 2023, Kamdhenu led the TMT reinforcement bar market in Bihar with over 30% share, followed closely by Tata Steel (20-25%).

5.5 Assessment of the GC sheets industry

GC sheets demand in Bihar - review and outlook (MTPA)



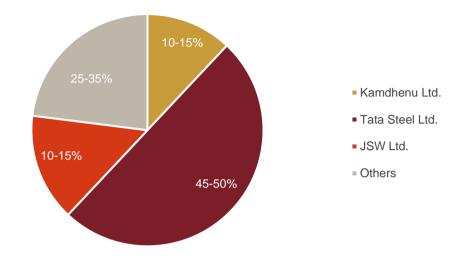
Source: Industry, CRISIL MI&A Consulting

The GC sheets industry in Bihar expanded at a CAGR of 10.8% over fiscals 2018-23 to 0.052 MT, driven by increased building construction activities, led by the return of the native people to Bihar after the announcement of lockdowns. Further, government-run subsidy programmes, such as Gramin Bhandaran Yojana and NABARD Warehouse, which encouraged the construction of warehouses for keeping agricultural produce supported the demand growth of GC sheets in Bihar over the past 3-4 years. For fiscal 2024, demand for GC sheets is expected to remain stagnant with ~0.050 MT, due to low sales and a shift in customer's preference from GC sheets to colour roofing sheets for house-roofing purposes.

The government's continued focus on developing agricultural warehouses in Bihar and an improved sentiment in the construction sector are expected to lead to a CAGR of 9.0-10.0% in GC sheets demand over the next five years.



Player-wise market share (GC sheets - Bihar FY23/24)



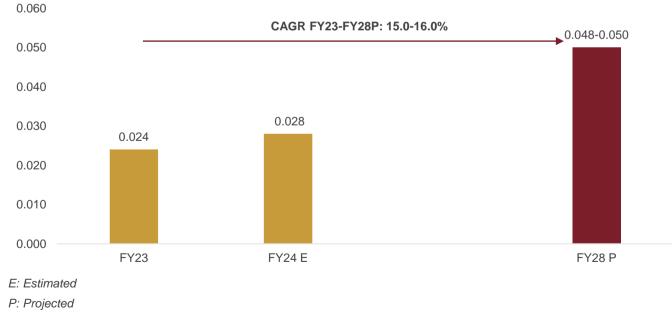
Note: 'Others' includes established players such as Steel Authority of India Ltd and Kamdhenu Ltd, and local players such as Surya Steel and Aarti Steels

Source: Industry, CRISIL MI&A Consulting

In fiscal 2023, Tata Steel Ltd was the single-largest seller of GC sheets in Bihar, with a market share of 45-50%, followed by JSW Ltd and Kamdhenu Ltd, with an individual share of ~10-15%.

5.6 Assessment of the coloured-roofing sheets industry

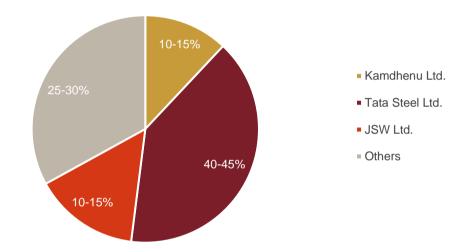
Coloured-roofing sheets demand in Bihar – review and outlook (MTPA)



Source: Industry, CRISIL MI&A Consulting

The coloured-roofing sheets industry in Bihar expanded at a CAGR of 14-15% over fiscals 2018-23 to 0.024 MT, driven by growing consumer preference to install coloured roofing sheets at homes and warehouses. Further, an uptick in building construction in Bihar, caused by a mass exodus of people to their hometowns in Bihar from other states after the announcement of lockdowns also contributed to growth in demand for coloured roofing sheets during the period. Demand for coloured roofing sheets is estimated at 0.028 MT for fiscal 2024.

Coloured roofing sheets are expected to continue to log a healthy CAGR of 15-16% over fiscals 2023-28. An expected increase in the number of warehouses in Bihar over the next few fiscals will also contribute to demand growth of coloured roofing sheets in the state.



Player-wise market share (coloured roofing sheets – Bihar FY23/24)

Note: 'Others' includes established players such as Steel Authority of India Ltd, and local players such as Surya Steel and Aarti Steels

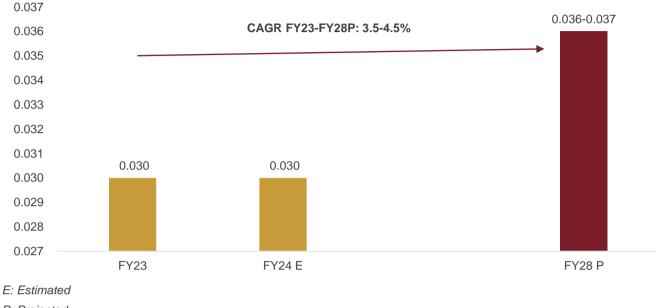
Source: Industry, CRISIL MI&A Consulting

In fiscal 2022, Tata Steel Ltd was the single-largest seller of coloured roofing sheets in Bihar, with a market share of 40-45%, followed by JSW Ltd (10-15%) and Kamdhenu Ltd (10-15%).



5.7 Assessment of galvanised plain sheets industry

GP sheets demand review and outlook in Bihar (MTPA)



P: Projected

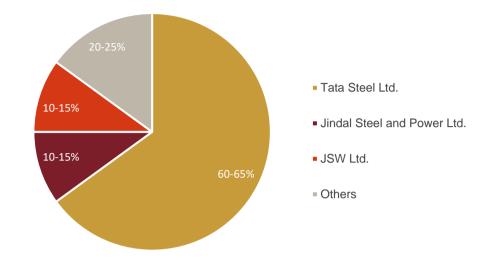
The galvanised plain (GP) sheets industry stood at 0.030 MT in fiscal 2023. Demand for GP sheets in Bihar is estimated to remain stagnant at 0.030MT for fiscal 2024.

GP sheets are expected to grow at a CAGR of 3.5-4.5% over fiscals 2023-28, driven by improved sentiment of construction, agricultural equipment and automobile sector in Bihar.

Source: Industry, CRISIL MI&A Consulting



Player-wise market share (GP sheets - Bihar FY23/24)



Note: 'Others' includes established players, such as Steel Authority of India Ltd, and local players, such as Surya Steel and Aarti Steels

Source: Industry, CRISIL MI&A Consulting

In fiscal 2022, Tata Steel Ltd was the single-largest seller of GP sheets in Bihar, with a market share of 60-65%, followed by JSW Ltd (10-15%) and JSPL (10-15%).

5.8 Assessment of prefabricated engineered buildings (PEB) industry

PEB demand outlook in Bihar (000's)



P: Projected

Source: Industry, CRISIL MI&A Consulting



Demand for prefabricated engineered buildings in Bihar is estimated at 24 thousand units for fiscal 2024. This demand is expected to grow at a CAGR of 10-12% to 35-38 thousand units in fiscal 2028, driven by an increase in demand for warehousing facilities and factory sheds in Bihar.

Farm produce is sold throughout the country and throughout the year. Warehousing facilities protect the crop from environmental and pest-related damage, thus acting as a catalyst for demand for prefabricated shed, currently being met from other states such as Punjab, Uttar Pradesh and Gujarat.

5.9 Assessment of the steel girders industry



Steel girders demand outlook in Bihar (MTPA)

P: Projected

Source: Industry, CRISIL MI&A Consulting

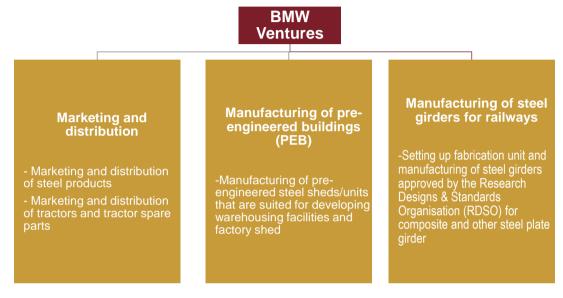
Demand for the steel girders industry is estimated at 0.060 MT in fiscal 2024 and is projected to increase at a CAGR of ~25-27% over fiscals 2024-2028 to ~0.146-0.156 MT in fiscal 2028.

The projected demand for 2028 is majorly driven by overall construction and infrastructure development in Eastern India, especially in Bihar due to higher spending on the projects in railways, including the construction of new railway bridges, overpasses, and other structures.

6 Company profile: BMW Ventures Ltd

Incorporated as a public limited company in Bihar, BMW Ventures Ltd obtained the certificate of commencement of business on October 19, 1994. It is promoted by Bijay Kumar Kishorepuria, Nitin Kishorepuria, Sabita Devi Kishorepuria and Rachna Kishorepuria.

Business segments



Source: Industry, BMW Ventures

In addition to the business segments mentioned above, the company also manufactures and trade in polyvinyl chloride (PVC) pipes and coloured sheets on a small scale.

6.1.1 Business segments

1. Marketing and distribution

<u>Steel products</u>: The company is the authorized distributor of long and flat steel products in over 29 districts (of 38 districts) in Bihar. It has established a strong marketing and sales network of over 910 dealers (both exclusive and non-exclusive) in the state over the years. Steel products in the company's portfolio include TMT reinforced bars, GC sheets, hot-rolled (HR) sheets, cold-rolled (CR) sheets, galvanised plain (GP) sheets, steel wires, steel hollow pipes, farm tools and equipment, and steel doors and windows. Its primary supplier is one of the leading steel and allied products manufacturer globally.

The company has also set up a processing unit at its stockyard, where stirrups, GP and HR sheets are cut to custom lengths and distributed to the dealers.

Note: The processing unit has been set up in line with the requirements of the company's principal supplier.



<u>Tractor Engines</u>: The company procures tractor engines from John Deere India Pvt Ltd and markets, distributes and sells in Bihar.

2. Manufacturing of PEBs

Given the increase in utilisation of PEBs across various end-user industries such as warehouses, industrial, infrastructure, and commercial and residential real estate in Bihar and other eastern states, the company strategically decided to enter the manufacturing business of PEBs. The company offers a range of services including design, engineering, fabrication, and installation. The structural components of PEBs are manufactured in a factory in the Purnea district of Bihar and transported to the construction site for assembly and installation. The commercial production started in April 2023 with a total installed capacity of 12,000 TPA.

3. Manufacturing of steel girders

In April 2023, the company commenced production of steel girders in Purnea with a total installed capacity of 12,000 TPA. Given the expansion projects in the railway sector, including the construction of new railway bridges, overpasses and other structures, the company's unit has been approved by the RDSO, making it the only and first approved vendor for the Indian Railways in Bihar.

4. Manufacturing of PVC pipes

The company manufactures and trades in PVC pipes on a small scale under the BMW Polytube brand.

6.1.2 Management Profile

A. Promoters/directors

1. Nitin Kishorepuria

Nitin, 45, is the promoter and was appointed managing director with effect from January 06, 2024. He completed a post graduate diploma course in business management (marketing and systems) from International School of Business & Media, Pune. He oversees the management of the business, with an emphasis on the formulation and execution of the sales and marketing strategies. He has ~19 years of experience in trading of iron and steel products and has been associated with the company since 2003.

2. Bijay Kumar Kishorepuria

Bijay Kumar, 72, is the whole-time director. He competed the second year of Bachelor of Commerce from Tilka Manjhi Bhagalpur University. He has been associated with the company since its inception. He was appointed to the company's Board on October 7, 1994, and reappointed as the director with effect from January 6, 2024. He has ~46 years of experience in trading of iron and steel products. He plays a proactive role in overseeing the company's daily operations, actively supporting top management in business expansion and initiatives.

3. Sabita Devi Kishorepuria

Sabita Devi, 68, is the whole-time director. She completed her intermediate from Baliram Sharma College of Banka district in Bihar. She has been on the company's Board since October 07, 1994. She handles the



corporate social responsibility (CSR) initiatives and plays an eminent role in women safety at the workplace. She was reappointed as Director with effect from January 06, 2024.

4. Rachna Kishorepuria

Rachna, 43, is the promoter and whole-time director. She completed her bachelor's degree in arts from Patna University. She has been on the company's Board since November 1, 2006. She oversees the human resource department and has been reappointed as director of the company with effect from January 06, 2024.

B. Independent directors

1. Yogesh Tulsyan

Yogesh, 68, is a non-executive independent director and holds a law degree from the University of Calcutta. He has been on the Board since December 23, 2017. He is a member of the Bar Council of West Bengal and specialises on taxation-related matters.

2. CA. Sourabh Ajmera

Sourabh, 33, is a non-executive independent director. He is a member of the Institute of Chartered Accountants of India (ICAI) and the Institute of Company Secretaries of India. He is a commerce graduate from Maharshi Dayanand Saraswati University, Ajmer. He specialises in startup advisory, internal audit and virtual CFO services. He is the managing partner at Ajmera & Ajmera, Chartered Accountants and an independent director of Dow Jones Consulting India Pvt Ltd. He is the regional council member of Western India Regional Council (WIRC), ICAI chairman of the Committee on MSME & Start-up and of the Committee of Valuation at WIRC. He has been on the Board of BMW Ventures since August 06, 2022.

3. CA. Ravi Kant Jagetiya

Ravi Kant, 36, is a non-executive independent director of the company. He is a member of ICAI, a registered and qualified member of Indian Institute of Corporate Affairs (IICA), is a commerce graduate. He is proprietor of R K Jagetiya & Co. He specialises in mentoring small and medium enterprises (SMEs) in fund raising through primary and secondary markets, cost re-engineering and operational viability, bank audits, internal and system audits, risk-based internal audits, and income tax assessment proceedings of corporates. He has been on the company's Board since August 6, 2022.

4. Arpit Kabra

Arpit Kabra, 36, is a practising-chartered accountant and company secretary. Currently, he is a partner at JCKCA, specialising in forensic services. He has over 15 years of experience in forensic audits, due diligence, private equity, international taxation and transfer pricing. He has provided a range of merger and acquisition services, including accounting and financial due diligence, vendor due diligence, vendor assist, financial advisory services to multi-national and large Indian corporates. His industry experience includes EPC and infrastructure, toll roads, power, jewellery, NBFCs, logistics and hotels. Arpit is an elected member of WIRC-ICAI.

6.1.3 Infrastructure details*

The company's storage facilities are detailed below:

Address	Area (sq ft)	Details (leased/owned/rented/licensed)
Mauza Rajiganj, Pragna Haveli, Thana Sadar no- 67, near Matia Chowk, opposite Tata Motors Ranipatra, Purnia, Bihar - 854337	544,600	Taken on a lease basis from Jagdamba Value Steel Pvt Ltd
Old Stockyard, N.H. 30, P.O. Baikatpur, p.s. Khusrupur, Fatuha, Patna, Bihar - 803202	147,936	Owned by the promoter and director, Bijay Kishorepuria, it has been granted on a lease basis
New Stockyard, 200 metre ahead of BP petrol pump, N.H. 30, P.O. Baikatpur, P.S. Khusrupur, Patna, Bihar – 803202	214,853	Owned by the promoter and director, Bijay Kumar Kishorepuria, Nitin Kishorepuria, Sabita Devi Kishorepuria, Rachna Kishorepuria and has been granted on a lease basis
8/1, Industrial Estate Road, Patliputra Patna, Patna, Bihar - 800013	16,485	Taken on a lease basis from Bihar Industrial Area Development Authority, Patna
9c, Patliputra Industrial Area Patna, Bihar - 800013	6,750	Taken on a lease basis from Bihar Industrial Area Development Authority, Patna
9c (part), Patliputra Industrial Area Patna, Bihar - 800013	8,250	Taken on a lease basis from Bihar Industrial Area Development Authority, Patna

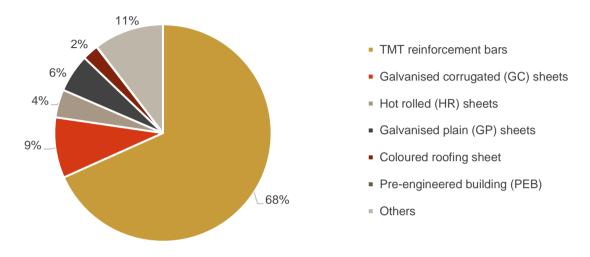
*The company is in the process of establishing an additional stockyard in Patna, encompassing a built-up area of 2,33,254.90 sq ft; expected to be completed by May 2024. The expansion aims to address the growing demand for its products. Source: BMW Ventures



6.1.4 Business verticals

Product segment-wise operating revenue

Total operating revenue of Rs 201,510 lakh in FY23



Source: BMW Ventures, CRISIL MI&A Consulting

TMT reinforcement bars is the company's largest product segment (Rs 138,077 lakh revenue in fiscal 2023), followed by GC sheets (Rs 18,044 lakh).

Based on the revenue split between the product segments, the key focus products are:

Product	FY23 annual sales (tonne)	YTD24 annual sales (tonne)		
TMT reinforcement bars	199,446	145,503		
GC sheets	20,333	14,106		
HR sheets	14,240	11,859		
Coloured roofing sheets	3,865	2,950		
GP sheets	15,105	10,402		

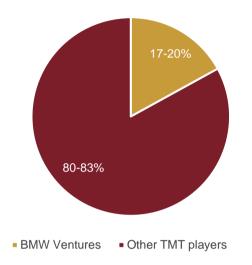
Source: BMW Ventures



6.1.5 Operational performance review

Focused product 1: TMT reinforcement bars

Market segregation

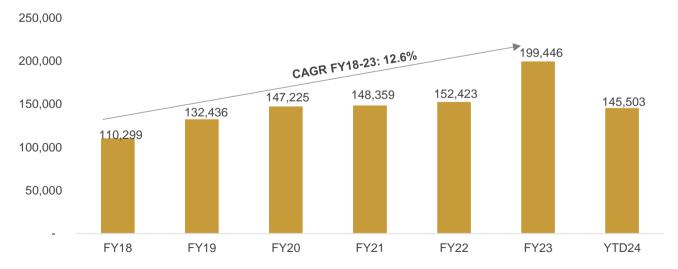


TMT reinforcement bar retail market segregation in Bihar in FY23: 1.20 MTPA

Source: Industry, CRISIL MI&A Consulting

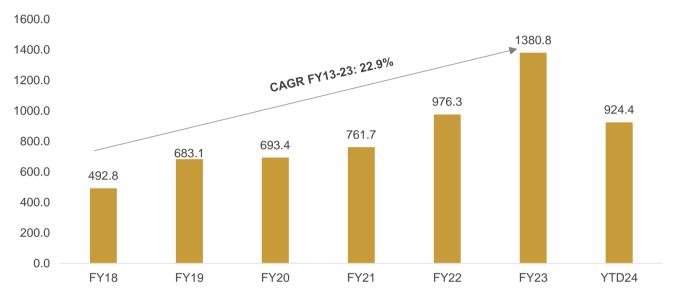
Of the ~1.20-million tonne per annum (MTPA) TMT reinforcement bar market in Bihar as of fiscal 2023, retail market demand was 0.80 MTPA. BMW Ventures accounted for ~17% share (~0.19 MTPA) of the TMT market in Bihar. The remaining ~83% (~0.96 MTPA) is occupied by other brand distributors such as Kamdhenu, Balmukund, Captain, etc.

TMT reinforcement bar sales volume (tonne)



Source: BMW Ventures, CRISIL MI&A Consulting

MT bars sales volume increased from 110,299 tonne in fiscal 2018 to 199,446 tonne in fiscal 2023, at CAGR of 12.6%. During this period, the overall sales volume has consistently trended up. The growth in sales volumes over the fiscals was led by increased infrastructure development under various government schemes for constructing national highways and railway networks in a bid to increase economic activity in the country, which had dipped in fiscal 2021. As of December, sales volume for the current fiscal totalled 142,308 tonne.





Source: BMW Ventures, CRISIL MI&A Consulting

Year Till December (YTD) means 9 months of fiscal 2024 ending on December 31,2023

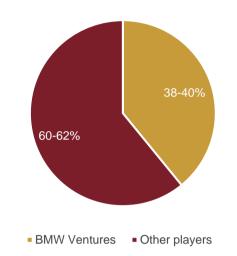
While sales volume increased ~12.6% during the period, value increased at a CAGR of over 22.9% owing to fluctuating prices of steel in the international and domestic markets. As of December, net annual sales for the current fiscal amounted to Rs 905.3 crore.



Focused product 2: GC sheets

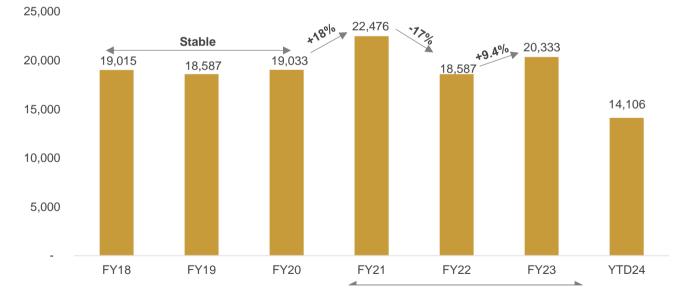
Market segregation

GC sheet market segregation in Bihar in FY23: ~0.052 MTPA



Source: Industry, CRISIL MI&A Consulting

Of the 0.052-MTPA GC sheets market in Bihar as of fiscal 2023, BMW Ventures accounts for 38-40% (~0.020 MTPA). The remaining 60-62% (~0.032 MTPA) is occupied by others brand distributors like such as Kamdhenu, 5Star, Aarti Bhushan (Nepal), and Jindal India (primary brand competitor).

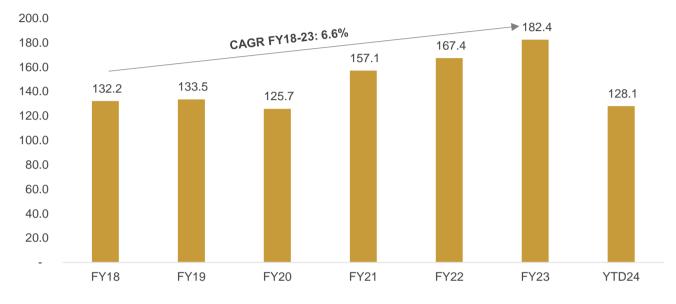


GC sheet sales volume (tonne)

Source: BMW Ventures, CRISIL MI&A Consulting Year Till December (YTD) means 9 months of fiscal 2024 ending on December 31,2023



BMW Ventures' GC sheet sales volume remained constant through fiscals 2018-2020. In fiscal 2021, however, sales volume improved by over 18% on-year owing to increase in house construction activities after people returned to their native places as a result of the lockdowns. In fiscal 2022, sales volume touched the pre-pandemic levels again after suffering an on-year dip of 17.3%. However, in fiscal 2023, sales increased 9.4% on-year to 20,333 tonne. As of December, sales volume for the current fiscal was 14,106 tonne.



GC sheet sales value (Rs crore)

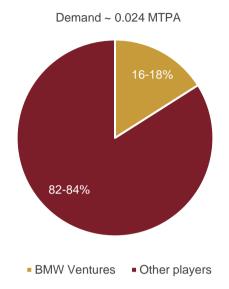
Source: BMW Ventures, CRISIL MI&A Consulting

Year Till December (YTD) means 9 months of fiscal 2024 ending on December 31,2023

The GC sheets segment's revenue increased at a CAGR of 6.6% between fiscals 2018 and 2023. Fiscal 2020 saw an on-year fall of over 6% even though sales volume increased slightly, owing to a sudden dip in the domestic steel prices in fiscals 2019-2020. As of December, revenue for the current fiscal totalled Rs 128.1 crore.

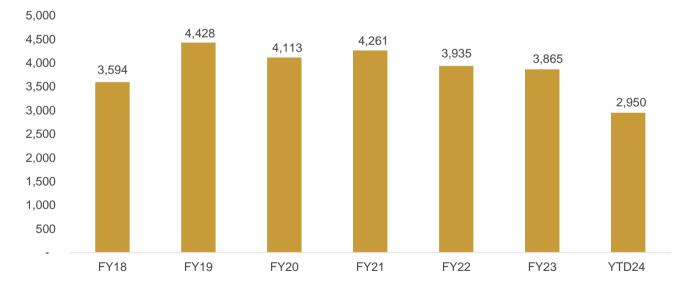
Focused product 3: Coloured roofing sheets

Coloured roofing sheet market segregation in Bihar (fiscal 2023)



Source: Industry, CRISIL MI&A Consulting

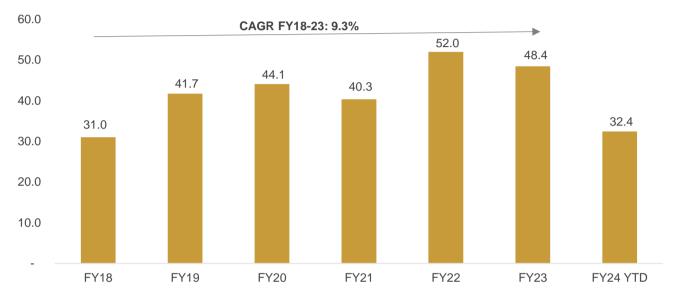
The coloured roofing sheets market in Bihar stood at around 0.024 million tonne per annum in fiscal 2023. Of this, BMW Ventures accounted for 16-18% (~0.004 MTPA). Other brands, such as Kamdhenu, Ultra Shine, Jindal etc., accounted for the balance 82-84% (~0.020 MTPA). Jindal was the market leader.



BMW Ventures' coloured roofing sheets sales over fiscals 2014-2024 (tonne)

Source: BMW Ventures, CRISIL MI&A Consulting

Annual sales of colour roofing sheets increased from 3,594 metric tonne to 4,428 metric tonne from fiscal 2018 to 2019 owing to the company's sharpened focus on the product. The sales volume dipped in 2020 to 4,113 metric tonnes, however, in fiscal 2021, the volume rose 3.6% on-year owing to a spike in construction activities with urban labourers returning to their native places during the Covid-19 lockdowns. The sales volume dipped slightly in fiscals 2022 and 2023. As of December, sales volume for the current fiscal was 2,950 tonnes.





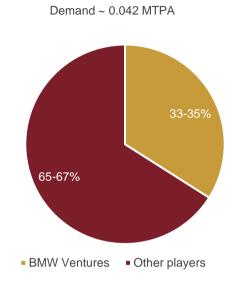
Source: BMW Ventures, CRISIL MI&A Consulting

Year Till December (YTD) means 9 months of fiscal 2024 ending on December 31,2023

Typically, the prices of coloured roofing sheets do not see sizable fluctuations. The company logged a CAGR of 9.3% in revenue from the segment between fiscals 2018 and 2023. Even though the sales volume declined marginally in fiscal 2022, a recovery in overall steel prices during the fiscal from the lows observed in the previous two fiscals boosted the revenue from the coloured roofing sheets segment over 29% on-year. In fiscal 2023, the revenue fell 6.8% even though the sales volumes decreased just by 1.8%. The revenue for the current fiscal until December stood at Rs 32.4 crore.

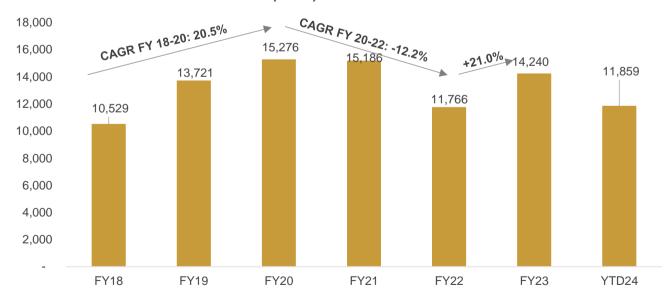
Focused product 4: Hot rolled (HR) sheets

HR sheet market segregation in Bihar (fiscal 2023)



Source: Industry, CRISIL MI&A Consulting

The HR sheets market in Bihar stood at around 0.042 MTPA in fiscal 2023. Of this, BMW Ventures accounted for 33-35% (~0.014 MTPA). Distributors of other brands such as Sail, Bokaro etc. accounted for the balance 65-67% (~0.028 MTPA).

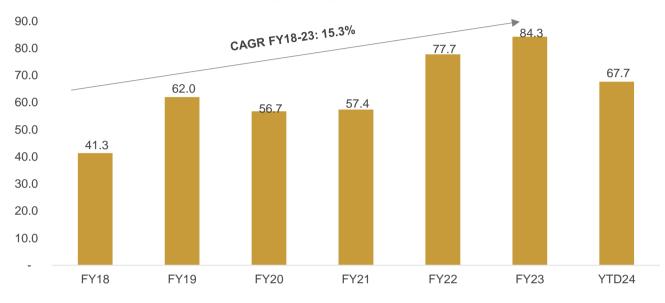


Sales of HR sheets over fiscals 2018-2024 (tonne)

Source: BMW Ventures, CRISIL MI&A Consulting



The company's sales of HR sheets rose from 10,529 tonne in fiscal 2018 to 15,276 tonne in fiscal 2020, logging a CAGR of 20.5%. However, during fiscals 2020-2022, the volume fell 12.2% on a compounded basis to 11,766 tonne, owing to pandemic-related demand disruption. The annual sales volume increased 21.0% on-year in fiscal 2023 to 14,240 million tonne. Sales volume for the current fiscal until December stood at 11,859 tonne.



Sales of HR sheets over fiscals 2014-2024 (Rs crore)

Source: BMW Ventures, CRISIL MI&A Consulting

Year Till December (YTD) means 9 months of fiscal 2024 ending on December 31,2023

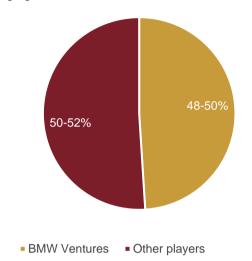
The company logged a CAGR of 15.3% in revenue from the HR sheets segment between fiscals 2018 and 2023. Even though the sales volume declined marginally in fiscals 2021 and 2022, the revenues witnessed an upward trend. In fiscal 2023, the revenue increased by 8.4% on year to Rs 84.3 crore. The revenue for the current fiscal until December stood at Rs 32.4 crore.



Focused product 5: GP Sheets

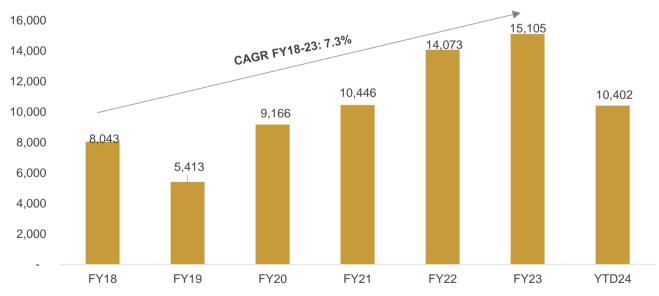
GP sheets market segregation in Bihar (fiscal 2023)

GP sheets market segregation FY23 - Bihar Demand ~ 0.030 MTPA



Source: Industry, CRISIL MI&A Consulting

The GP sheets market in Bihar stood at around 0.030 MTPA in fiscal 2023. Out this, BMW Ventures accounted for around 50% (~0.015MTPA). Small and local distributors accounted for the balance.

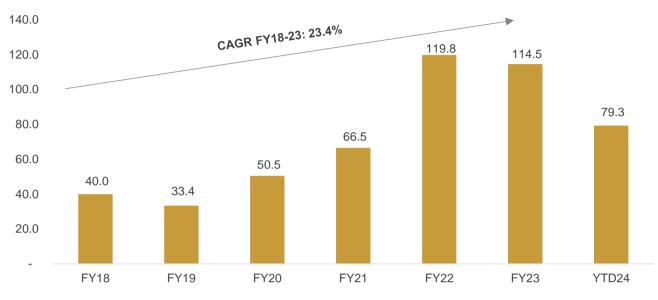


BMW Ventures' GP sheets sales over fiscals 2018-2024 (tonne)

Source: BMW Ventures, CRISIL MI&A Consulting



The company's sales of GP sheets rose from 8,043 tonne in fiscal 2018 to 15,105 tonne in fiscal 2023 logging a CAGR of 7.3%. Sales volume for the current fiscal until December stood at 10,402 tonne.



BMW Ventures' GP sheet sales over fiscals 2018-2024 (Rs crore)

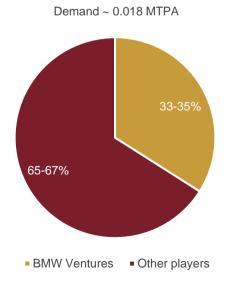
Source: BMW Ventures, CRISIL MI&A Consulting

Year Till December (YTD) means 9 months of fiscal 2024 ending on December 31,2023

The company's revenue from the GP sheets segment logged a CAGR of over 23.4% during fiscals 2018-2023. In fiscal 2019, revenue from the segment fell 16.5% with sales volume registering a 32.7% fall. In fiscal 2023, the revenue reached Rs 114.5 crore and stood at Rs 79.3 crore in the current fiscal until December.

Focused product 6: CR sheets

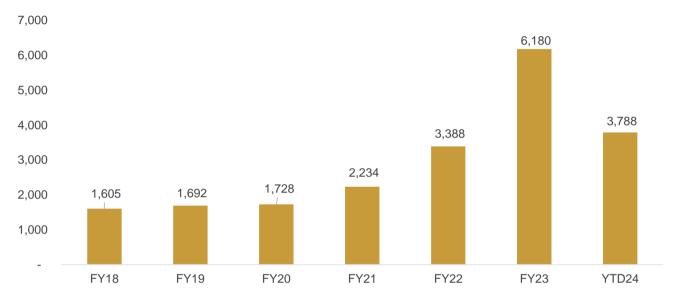
CR sheets market segregation in Bihar (fiscal 2023)





Source: Industry, CRISIL MI&A Consulting

The CR sheets market in Bihar stood at around 0.018 million tonne per annum in fiscal 2023. Of this, BMW Ventures accounted for around 34% (~0.062 MTPA). Brands such as SAIL, Bhushan Power etc. accounted for the balance 66% (~0.012 MTPA).



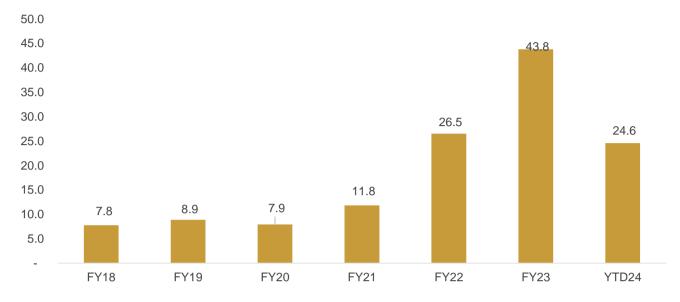
BMW Ventures' sales of CR sheets over fiscals 2018-2024 (tonne)

Source: BMW Ventures, CRISIL MI&A Consulting

Year Till December (YTD) means 9 months of fiscal 2024 ending on December 31,2023

The company's sales of CR sheets rose from 1,605 tonne in fiscal 2018 to 6,180 tonne in fiscal 2023 increasing many fold. In fiscal 2022, the sales volume stood at 3,388 tonne. This almost doubled last fiscal (2023) to 6,180 tonne. Sales volume in the current fiscal until December stood at 3,788 tonne.





BMW Ventures' sales of CR sheets over fiscals 2018-2024 (Rs crore)

Source: BMW Ventures, CRISIL MI&A Consulting

Year Till December (YTD) means 9 months of fiscal 2024 ending on December 31,2023

The company's revenue from the CR sheets segment increased from Rs 7.8 crore in fiscal 2018 to Rs 24.6 crore in fiscal 2023, mirroring the trend in CR sales volume over the period. In fiscal 2020, the revenue declined 10.6% onyear even though sales volume increased. In the current fiscal until December, the revenue stood at Rs 24.6 crore.

Value-chain analysis of BMW Ventures' focused products

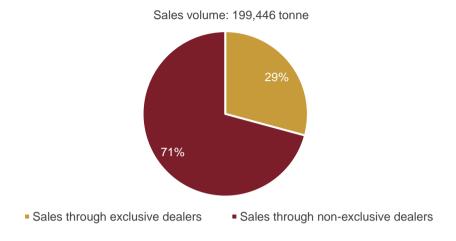
	No of districts in Bihar with BMW Ventures dealership in December'23 (total districts – 38)	No of dealers in Bihar in December'23			
Product category of BMW Ventures		Exclusive dealers	Non-exclusive dealers	Total dealers	
TMT reinforcement bars	29	128	782	910	
GC sheets	29	19	226	245	
GP sheets	31	-	160	160	
HR sheets and coils	38	-	160	160	
CR sheets and coils	31	-	150	150	
Coloured roofing sheets	29	-	220	220	

Source: BMW Ventures, CRISIL MI&A Consulting

The company's HR sheets and coils segment has dealerships in all the districts in Bihar. Of its six business segments, the TMT reinforcement bar segment has the highest number of dealers in the state — 910 as of December 2023, a sharp jump from 299 in fiscal 2013. Of the 910 dealers, 128 (14%) are exclusive and the balance 782 are non-exclusive.



Similarly, of its 245 GC sheets dealers in the state, 19 (8%) are exclusive. The company has 220 dealers for coloured roofing sheets in the state, 160 for GP sheets, 150 for CR sheets and 160 for HR sheets and coils.



TMT bars sales breakup across 29 districts in Bihar in fiscal 2023 (tonne)

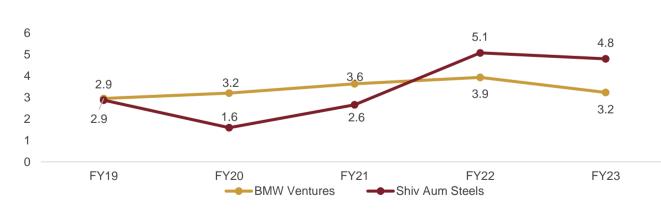
Source: BMW Ventures, CRISIL MI&A Consulting

BMW Ventures has TMT reinforcement bar dealerships in 29 of 38 districts of Bihar. The company sold 199,446 tonne of TMT bars in fiscal 2023. Of this, 58,260 tonne, or 29%, was sold by exclusive dealers.

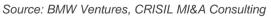
Competition benchmarking

To benchmark the performance of BMW Ventures, a comparison has been drawn across profitability, liquidity, and leverage parameters across its peer- Shiv Aum Steels Limited, involved in similar kind of business and having the operational capabilities in the comparable range of BMW Ventures along with similar product offerings.

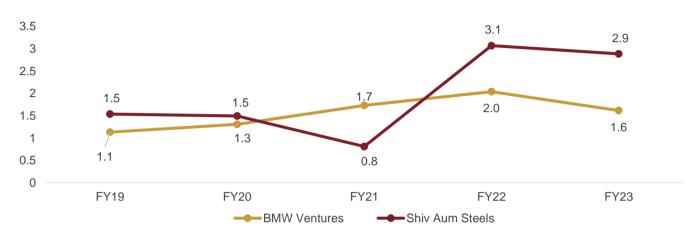
Profitability parameters



Comparison of operating profit margin (in %)



BMW Ventures has demonstrated notable resilience in maintaining its operating profit margin (OPM) over fiscals 2019 to 2023 and remained within a range of 2.9-3.9%. Over fiscals 2019 to 2023, BMW Ventures' OPM remained higher or at par when compared to its peer. This indicates that BMW ventures has effectively managed its performance metrics, outperforming its competitor in mitigating the impact on its operating profit margins in those years. The performance remained competitive during fiscals 2022 and 2023.



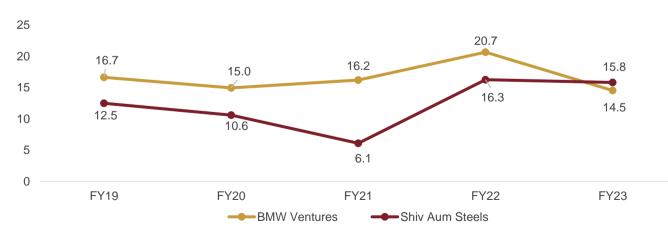
Comparison of net profit margin (in %)

Sources: Company financials, CRISIL MI&A Consulting

NOTE: For fiscals 2019, 2020 and 2021, PAT value has been taken as per the audited financials of BMW Ventures which has adjusted PAT post considering the provisions for CSR and stood at Rs.1,257 lakhs, Rs. 1,486 lakhs and Rs. 2,203 lakhs for fiscal 2019, 2020 and 2021 respectively.

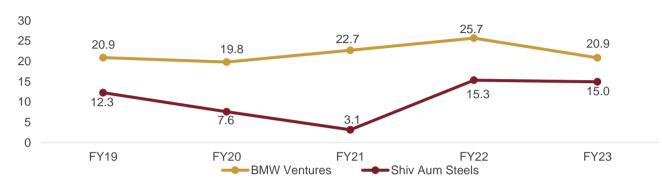
BMW Ventures net profit margin (NPM) increased from 1.1% in fiscal 2019 to 1.6% in fiscal 2023. The company has effectively managed to maintain its NPM within a range of 1.1-2.0%, showcasing effective financial management and resilience in challenging environment.

Comparison of return on capital employed (in times)



Sources: Company financials, CRISIL MI&A Consulting

BMW Ventures has consistently demonstrated superior performance in return on capital employed (ROCE) compared to its peer. In fiscal 2019, BMW Ventures' ROCE was 16.7 times, significantly higher than Shiv Aum Steels' 12.5 times. The company maintained its lead throughout fiscals 2019 to 2022. Despite a decline to 14.5 times in fiscal 2023, BMV Ventures remained competitive with its peer's 15.8 times. BMW Ventures' robust ROCE highlights its strong capital efficiency and superior financial management.

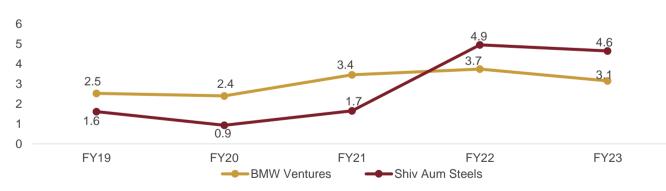


Comparison of return on equity (in %)

Sources: Company financials, CRISIL MI&A Consulting

BMW Ventures has shown superior performance in return on equity (ROE) over the years and have maintained a consistency in its ROE throughout fiscals 2019 to 2023, where its ROE remained with-in a range of 19.8-25.7%. In fiscal 2019, it's ROE was 20.9%, significantly ahead of Shiv Aum Steels' 12.3%. By fiscal 2023, BMW Venture's ROE demonstrated resilience, recording 20.9%, 5.9% points higher than Shiv Aum Steels' 15.0%. BMW Ventures' relatively stable ROE highlights its strong financial management and ability to generate returns for shareholders more effectively than its peer.

Leverage parameters



Comparison of interest coverage ratio (in times)

Sources: Company financials, CRISIL MI&A Consulting

BMW Ventures has demonstrated superior interest coverage ratios compared to its peer over fiscals 2019 to 2021. In fiscal 2019, BMW Venture's interest coverage ratio was 2.5 times, higher than Global Surfaces at 1.6 times. Throughout fiscals 2019-2023, the ratio remained stable within a range of 2.4-3.7 times demonstrating company's ability to comfortably cover interest expenses.

6.1.6 Financial analysis

Profitability estimates

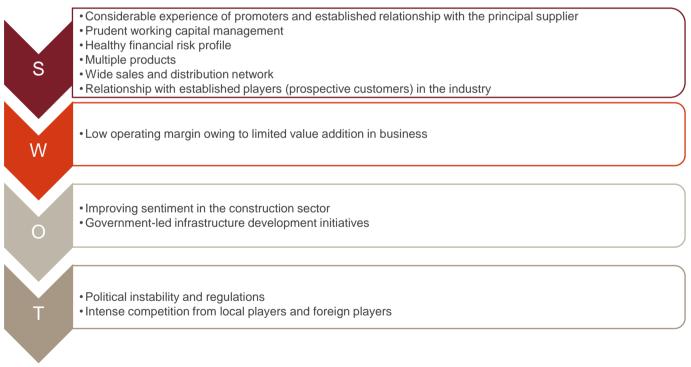
Particulars	Units	FY19	FY20	FY21	FY22	FY23
Total Revenue	(Rs lakh)	110,866	113,324	127,178	156,359	201,510
Ebitda	(Rs lakh)	3,297	3,623	4,547	6,168	6,549
Ebitda margin	(%)	3.0%	3.2%	3.6%	3.9%	3.3%
РАТ	(Rs lakh)	1,257	1,486	2,203	3,194	3,266
PAT margin	(%)	1.1%	1.3%	1.7%	2.0%	1.6%

Source: BMW Ventures, CRISIL MI&A Consulting

NOTE: For fiscals 2019, 2020 and 2021, PAT value has been taken as per the audited financials of BMW Ventures which has adjusted PAT post considering the provisions for CSR and stood at Rs.1,257 lakhs, Rs. 1,486 lakhs and Rs. 2,203 lakhs for fiscal 2019, 2020 and 2021 respectively.

Ebitda margin stood at 3.3% in fiscal 2023. The PAT margin, in fiscal 2023, stood at 1.6% improving from 1.1% in fiscal 2019.

SWOT analysis



Source: BMW Ventures, industry, CRISIL MI&A Consulting

6.1.7 Key strengths

6.1.8 Considerable experience of promoters, established relationship with principal supplier

BMW Ventures is the sole distributor of long and flat products for its primary supplier, catering to more than 800 dealers and large players in Bihar.

The promoters have been in the business for more than a decade and have a strong foothold in the company's markets. They have also expanded the company's presence into new regions. In fact, their strong understanding of the industry has helped it win several awards and recognitions. They are well-supported by qualified and experienced professionals across levels, with appropriate functional responsibilities.

Their experience and strong relationship with the primary supplier will continue to aid the business. The company also has a sizeable workforce of 593 employees, which is a supporting factor, too.

• Healthy financial risk profile

Net worth as on March 31, 2023, was estimated at a healthy Rs 156 crore. It supports capital structure. Its gearing ratio stood around 1.8 times in fiscal 2023 and total-outside-liabilities-to-total-net-worth ratio at 2.1 times. Debt protection metrices are also comfortable with interest estimated at 3.1 times as on March 31, 2023.

• Multiple products

The company has a wide product portfolio — from Tata Steel products to tractors of John Deere. This allows it to cater to diverse demands of customers/ dealers. It has also diversified into manufacturing pre-engineered buildings and steel girders for railways.

• Wide sales and distribution network

The company markets and distributes its wide range of products to diverse customers in Bihar. It has marketing arrangements through its dedicated sales and marketing teams, supported by its promoter and director Nitin Kishorepuria, who has ~15 years of field experience. The products are marketed and sold in Bihar through an established sales network. The company works on a two-way marketing strategy — a direct approach to customers and through sales agents/ dealers.

Relationship with established players in the industry

The company's customer base includes a diverse set of industries, including agriculture and real estate. The major customers, based on sales value of the products supplied in the year-ended March 31, 2023, are Shree Ranisati Enterprises, Neha Nidhi Steels, Manokaamna Infra Resources LLP, National Industrial Works, RK Steels, Basant Lal Agarwal, Sita Ram Om Prakash Hemkund Traders, North Bihar Coal Supplier and Maurya Motors Ltd. The company is poised to benefit from its strong relationship with industry players, enabling it to provide better services to customers.

Diversification into Manufacturing

The company has expanded into the production of pre-engineered building solutions and has established a manufacturing unit that is registered and approved by the Research Designs and Standards Organisation (RDSO) for composite and other steel plate girder. Both units are located in Purnea.



• Land bank for future expansion

The company has purchased 43 acres (35 acres registered) of land in Purnea, Bihar.

6.1.9 Key weakness

Low operating margin

In fiscal 2023, the company's operating margin was a low 3.2%. However, prudent inventory management could ensure stable margin despite volatility in steel prices.

To mitigate the weakness, the company can diversify into non-trading high-margin businesses to improve its profitability.

6.1.10 Key opportunities:

• Improving sentiment in the construction sector

As the economy starts recovering from the pandemic, it is expected that the construction sector will grow at a robust pace. Private construction, which suffered when the afflictions were spreading, is expected to bounce back as the world comes out of the pandemic. Further, people who now have high disposable income after the pandemic due to decreased expenses, will look to construct their own houses in the next few fiscals. This expected improvement in the construction industry will boost the demand for the company's products.

Government-led infrastructure development initiatives

Both the union and state governments are increasingly allocating higher funds to develop infrastructure in Bihar. Various schemes, such as PM Gati Shakti Yojana and others for development of highways, bridges, dams etc, are expected to boost demand for the products of the company. The company can leverage these opportunities to improve the sales of its products.

6.1.11 Key threats:

• Political instability and regulations

Changes in governments and regulations can increase the risks for the company and even hamper its operating efficiency and profitability margins.

The company would need to develop a dynamic set of standard operating procedures to be able to adjust under different political environments to mitigate this threat.

• Intense competition from local players and foreign players

As the industry is expected to grow, it is highly likely that high number of new local and foreign players will make an entry. As local players will know the localities better and foreign companies will have huge cash to burn, they might pose a threat to BMW Ventures. To overcome this challenge, it would need to regularly monitor the business and competitive environment and strategise accordingly.



7 Annexure

Details of licences and certificates

	Date of issue
PT 39708	3/10/1995
2195000295	6/7/1995
21RQ10AF	10/6/2021
21RQ10AE	10/6/2021
Application ID- 2771337	6/28/2019
4200011447001500	3/4/2010
BR/PT/7516 Appl No98/53	4/16/1998
-	-
	2195000295 21RQ10AF 21RQ10AE Application ID- 2771337 4200011447001500

Source: BMW Ventures

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Our strong benchmarking capabilities, granular grasp of sectors, proprietary analytical frameworks and risk management solutions backed by deep understanding of technology integration, make us the partner of choice for public & private organizations, multilateral agencies, investors, and governments for over three decades.

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It is India's foremost provider of ratings, data, research, analytics and solutions with a strong track record of growth, culture of innovation, and global footprint.

It has delivered independent opinions, actionable insights, and efficient solutions to over 100,000 customers through businesses that operate from India, the US, the UK, Argentina, Poland, China, Hong Kong, UAE and Singapore.

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