UPDATE

IT Services

India

Sector View: **Neutral** NIFTY-50**: 24,144** **August 14, 2024**

ERD services: Auto pulse–challenges ahead

Our analysis of global auto OEMs' and Tier-1 suppliers' R&D spend outlook suggests some caution on spends on electrification initiatives. OEMs' R&D spend growth remained healthy albeit decelerating in 1HCY24. However, some OEMs have indicated that software development programs related to new platform launches are on track. We believe spends on programs related to new architecture development would be relatively stable but would significantly reduce closer to launch timelines, mostly CY2026-27. Spend outlook of Tier-1 suppliers' and CV OEMs' is influenced by a weakening market.

Significant cuts to electrification programs across several OEMs

Most OEMs had initially set aggressive targets on BEV production to (1) meet evolving customer preferences and (2) adhere to stricter emission norms. However, bottlenecks such as (1) higher battery costs and suboptimal efficiency and (2) limited availability of charging infrastructure resulted in slower-than anticipated adoption of BEVs. Further, OEMs are faced with pricing pressures and lower profitability of BEVs due to various factors including sub-scale production. These aforesaid factors have culminated in sharp reduction in EV programs of several OEMs. ZF indicated that CY2025 EV programs are 50% lower as of June 2024 as compared to six months ago.

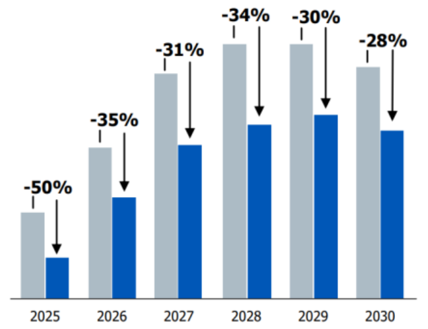
A few OEMs continue elevated R&D spends

R&D spends at a few auto OEMs including JLR, BMW, Volkswagen and Renault continued to grow at a healthy rate during 1HCY24 driven by continued spends on new architectures and software initiatives (see Exhibits 2-3). BMW and Volkswagen have indicated that R&D spend intensity would peak in CY2024. BMW's medium-term R&D intensity target of <5% is materially lower than current spend intensity of 5.8%. Volkswagen indicated that cumulative R&D spends during CY2025-29 would be below EUR170 bn (as compared to EUR180 bn spends over CY2024-28). Renault's R&D spend intensity increased 100 bps yoy to 7.9% in 1HCY24 but remains lower than CY2024 outlook of ~8%. Overall, R&D spends of global passenger car OEMs grew at 6.4% yoy in 1HCY24, as compared to 14.3% growth for the cohort in CY2023. Commercial vehicle OEMs' R&D spend growth was strong but challenging market conditions pose threat to sustainability.

Investments in new architecture unlikely to be recurring at a similar intensity

Investments by OEMs as part of journey toward SDV and new platform development have been the key areas of growth. Some Indian ERD players have benefitted more than others led by capabilities and client-specific engagements. Passenger car OEMs continue to invest in these programs to meet launch timelines (CY2026 for most). OEMs plan to launch common platforms that can be scaled and reused across their portfolio as against current practice of maintaining multiple platforms for various segments. We believe this would help in significantly lowering spends in future years despite increased complexity. For instance, Renault targets 25% reduction in software spends from SDV as compared to traditional approach by CY2030. We do not envisage current level of spend intensity continuing over the medium term. We retain our cautious stance on disconnect between moderating growth outlook and expanding valuations.

Electric vehicle programs of several OEMs; Dec 2023 (left) vs Jun 2024 (right)



Source: ZF Friedrichshafen AG

Prices in this report are based on the market close of August 14, 2024

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Some caution with increased focus on R&D efficiency

GM expects R&D spends on technology transformation initiatives to align with market evolution. The company has delayed opening its battery electric truck plant by 6 months due to slower-than-expected customer adoption. Ford expects supply-chain partnerships would enable in lowering cost of production and improve profitability. Ford indicated that its ambition to partner on EVs is at record high. According to Ford, auto OEMs need to start focusing equally on the one-time cost investment in electrical architectures and transition to digital products rather than investing primarily in infotainment. Stellantis is lowering its investment spends by at least EUR1 bn in 2HCY24 in comparison to 1HCY24. It indicated that benefit of having a dedicated EV platform is marginal to customers. Further, the company is also focused on improved free cash generation to honor commitments to shareholders in terms of repurchases and dividends. Mercedes-Benz indicated that investments would peak in CY2024-25 and some of the technology initiatives for product launches in CY2025 are nearing conclusion. Absolute spends (and spend intensity) would decline from CY2026. Tier-1 suppliers in general remain selective on investments with higher focus on efficiencies. Paccar lowered its R&D spend outlook for CY2024.

Disruption to tier-1 suppliers' businesses evident from tempered outlook and measured R&D spends

Most Tier-1 suppliers also indicated challenging market conditions due to general slowdown in automotive volumes for sluggish performance. R&D spends reflected business challenges, growing at a modest low single-digit rate in 1HCY24 at large tier-1 suppliers (see Exhibit 4).

Most tier-1 suppliers lowered CY2024 guidance while a few also tempered their medium-term aspirations, uncharacteristically, mid-year. Forvia expects revenues and margins to be at the lower-end of guided band for CY2024. For CY2025, it lowered revenue guide by ~5-7%. ZF lowered its CY2024 sales outlook by ~4% and maintained R&D spend flat yoy in 1HFY24. Denso marginally lowered its FY2025 outlook due to weaker-than-expected June 2024 quarter. Lear lowered its revenue outlook by ~3% and capital investments by ~4% for CY2024. Valeo lowered its revenue guide for CY2024 and CY2025 by ~4%. The company had already significantly cut CY2025 revenue (~9%), margin and FCF guidance at the beginning of the year. Magna lowered its CY2024 revenue and profitability outlook and also cut medium-term (CY2026) aspirations across metrics including capital spends due to (1) lower BEV adoption, (2) OEMs recalibrating their portfolios leading to program delays or cancellations and (3) geopolitical uncertainty. It also lowered capital investments by US$200 mn (down ~8%) since beginning of the year due to lower spends on EV programs. The company targets to cut gross engineering investments by up to US$500 mn in megatrend areas and capex by US$600 mn (~28% lower) over CY2024-26.

Alliances between OEMs to jointly develop SDV platforms, lowering burden of spends

Multiple OEMs have entered into alliances for joint software development. Volkswagen-Rivian, Volkswagen-Xpeng, Honda-Nissan and Volvo AB and Daimler Truck in CY2024, to name a few. Volkswagen and Xpeng will be jointly developing zonal E/E architecture to turn pure electric models of VW brands into software-defined vehicles in China from CY2026. The partnership with Rivian is to develop vehicle E/E architecture and scalable systems platform (SSP) for global markets. CARIAD will drive cross-functional issues such as infotainment, connectivity, etc. in both engagements. Honda and Nissan too have announced alliance for software development. While this is still in early stages, Honda indicated that the aspiration is to jointly develop platforms, which can be used by both OEMs, effectively splitting the costs equally.

Commercial OEMs too have announced similar moves. For instance, Volvo AB and Daimler Truck announced to develop a common software-defined vehicle platform and dedicated truck operating system, providing the basis for future software-defined commercial vehicles. The JV would lead in development of standardized hardware and software. This technical basis would enable Volvo and Daimler Truck and potentially other partners to provide differentiating digital vehicle features, ultimately enhancing customer efficiency and experience. The companies aim to close the transaction in 1QCY25.

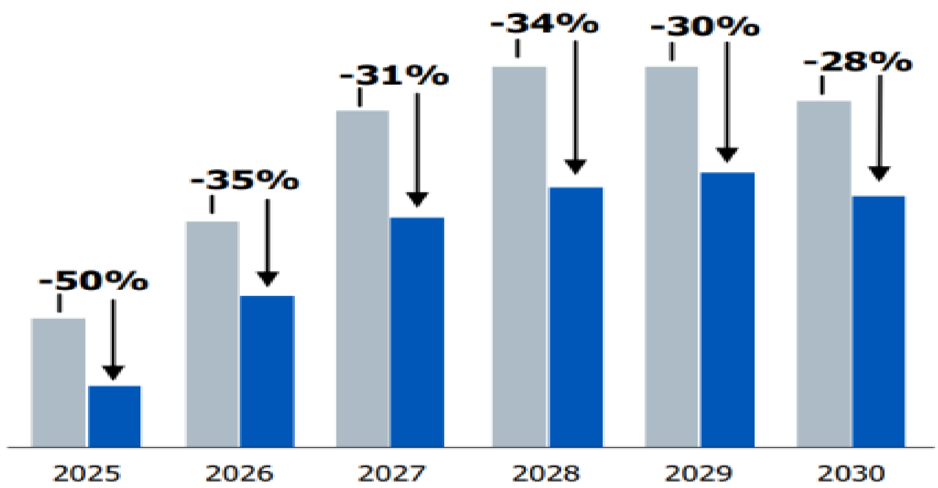
We believe there would be some opportunity from software integration, testing and validation activities from joint software development but this is likely to be lower than in a scenario of independent and parallel development programs by OEMs.

Addressable market in industrial & commercial equipment segment is only a fraction of passenger cars

Industrial and off-highway OEMs too are undergoing a similar transition as automotive but with a lag of few years. Companies are investing in connected, autonomous and new energy initiatives. However, we note that the business cycles are deeper in the segment and addressable opportunity is only a fraction of that of automotive OEMs (see Exhibit 6). This is in contrast to historical trend with activity skewed toward traditional engineering. KPIT indicated investments in adjacencies to partly offset any impact from slowdown in automotive. We note that among pure-play auto OEMs, LTTS, TELX and TTL have some presence in the market but the scale of the practice is lower as compared to automotive practice.

Sharp reduction in electric drive programs by passenger car OEMs during 1HCY24

Exhibit 1: Electric vehicle programs of several OEMs; Dec 2023 (left) vs June 2024 (right)



Source: ZF Friedrichshafen AG

Exhibit 2: Commentary on R&D spend outlook by major auto OEMs and Tier-1 suppliers

Company	Commentary
BMW	R&D and capex intensity will peak in CY2024, as planned due to upfront investments to ensure long term success. R&D intensity is currently at 5.8%, as against mid-term target of <5%.
Ford	Ford, alongside Rivian and Tesla, are really the only non-Chinese OEMs controlling software across all the vehicle domain. Most companies are doing OTAs on vehicle entertainment. Ford now has multi-year experience on updating powertrains, braking, the fundamental performance of the vehicle and connectivity. targeting US$1 bn revenue from software for next year. Capex target range remains at US$8-9 bn and focused on delivering at the lower end. The ambition at Ford for partnering on EVs is record-level high. Few OEMs are using Chinese low-cost platforms but Ford's partnership strategy will be on the component side, going deep into supply chain for IP that is critical and unique. Many Chinese players in lower-cost have affordable batteries but don't have the most efficient design outside of that on other EV components. Auto OEMs need to start focusing equally on the one-time cost investment in electrical architectures and transition to digital products. Most competition is basically investing on infotainment.
General Motors	Over the next few years, third-party forecasters now see the EV market growing steadily but more slowly than it did over the last few years. As a result, we are adjusting our spending plans to make sure we're capital efficient and moving in lockstep with customers. Decided to open a battery electric truck plant in mid-2026, six months later than expectation at the start of CY2024. China market has over-supply as OEMs are focused on production over profitability.
Honda	With alliance with Nissan, purely based on volumes, development costs can be shared equally. JPY2 trn spend on software over next 10 years could be halved. However, the details have not been decided and any immediate benefits are unlikely but the logic is that advantage of development costs can be split. EV market in US is stalling as customers do not see these cars as having good value to own.
Mercedes-Benz	On the technology side, it feels like we're a little bit on the final stretch here for what's going to be kicked off in CY2025. Currently, well advanced on the EU7 on powertrain renewal. Investments are currently at peak over CY2024-25E. But sometime in CY2026, investments will come down from current levels.
Nissan	Accelerated R&D spending to JPY147.9 bn (+10.3% yoy) and capex to JPY100.8 bn (+56.5% yoy) during the quarter to ensure investment for future. FY2024 R&D spending outlook of JPY665 bn (+7.2% yoy) and capital investment of JPY620 bn (+27.5% yoy) remain unchanged. There is a pull-forward of investments to ensure future product road-map.
Renault	R&D and capex intensity increased 100 bps yoy to 7.9% in 1HCY24 but lower than guided 8%. EV market is quite sluggish in Germany as subsidies were rolled-back.
Stellantis	1HCY24 was disappointing due to three major factors - (1) Dynamic of R&D, capex and M&A expenses proved to be too high and fixing that, (2) internal operational flaws and (3) marketing tactics in US market did not deliver expected results. Europe is under heavy pressure from Chinese offensive and also facing a slowdown in BEV demand making the business more challenging. Looking at lowering investment spending by atleast EUR1 bn in 2HCY24 as compared to 1H. The benefit of having a dedicated EV platform is marginal in the eyes of the consumer from everything we have studied with our engineers.
Toyota	Chinese OEMs are very aggressive in the market, especially newer ones playing in the volume segment and competing on price is not the right strategy. Some OEMs such as BYD have significantly lowered pricing of their offerings leading to lower residual value for customers that already purchased these vehicle.
Volkswagen	CY2024 will be the peak year of investments. A stronger focus on leveraging group synergies, more efficient R&D process as a reduction of this year's peak level of ICE investment as well as benefits from partnership with Rivian will drive reduction in expenditures going forward. Clear ambition to reduce investment in R&D and Capex to well below EUR170 bn in planning round from CY2025-29 (EUR180 bn in CY2024-28). Continue to monitor global sales, BEV sales expectations and are prepared to adjust capacity and capex plan further, if necessary. Xpeng and VW will jointly develop zonal E/E architecture to turn pure electric models of VW brands into software-defined vehicles in China. From CY2026, China electronic architecture will be used in all locally produced VW brand models based on China main platform and the MEB platform. R&D spends increased by EUR1.2 bn in 1HCY24 due to accelerating transformation, total electrification and digitalization and focus on ramp-up of new platforms for Audi and Porsche. Adopting a flexible SDV strategy with Xpeng and Rivian partnerships. Will work on zonal architecture with Xpeng to market from CY2026 and SSP with Rivian. CARIAD will drive cross-functional issues like infotainment, connectivity etc.
Volvo cars	Electrification is the tip of the iceberg and more profound change in the industry can be summarized as software, silicon, connectivity and data. CY2024-25 will have very high levels of investment in new technology, manufacturing footprint, new platforms and new cars. But from CY2026 onwards, will be able to harvest those investments, taking down investment levels in absolute and even more so relative to revenue. Capex is currently at elevated level due to high upfront investments in battery and software.
Cummins	Investing in in future growth, bringing sustainable solutions to decarbonize our industry. Capital investments will be in US$1.2-1.3 bn (unchanged) to make critical investments in new products and capacity expansion.
Paccar	Expect US$460-480 mn R&D spend in CY2024 (US$460-500 mn earlier). The investments include a full suite of high-quality clean diesel and zero-emission powertrains, innovative advanced driver assistance systems, and new connected vehicle services that enhance customers' operational efficiency.
Traton	Customers are becoming cautious in Europe and North America and the demand is normalizing after two very strong years. Chinese players are advancing rapidly on technology side which is also evident in passenger cars.
Continental	Increasingly looking at R&D efficiency, rightsizing and bundling locations. R&D intensity is down 30 bps yoy excluding restructuring charges. Tough to judge the consequence of VW-Rivian JV but have been in discussion with VW and Cariad and involved as well in high power computers used in SDVs.
ZF	Market conditions proved challenging, amid sluggish purchasing activity and signs of recession. R&D spends continue to remain elevated impacting earnings.

Source: Companies, Kotak Institutional Equities

R&D spend growth remained at healthy levels but are decelerating in 1HCY24

Exhibit 3: R&D spends of major auto OEMs, calendar year ends, 2016-1HCY24 (US$ bn)

	2016	2017	2018	2019	2020	2021	2022	2023	1HCY23	1HCY24	Change yoy (%)
Volkswagen (a)	15.1	14.8	16.1	16.0	15.9	18.4	20.0	23.7	11.0	12.3	11.9
Toyota	9.6	9.6	9.5	9.4	10.5	9.7	8.3	8.3	2.2	2.0	(9.3)
Mercedes-Benz (a)	8.4	9.8	10.8	10.8	9.8	10.8	9.1	10.9	5.3	4.9	(6.9)
General Motors (b)	8.1	7.3	7.8	6.8	6.2	7.9	9.8	9.9			
Ford	7.3	8.0	8.2	7.4	7.1	7.6	7.8	8.2			
BMW (a)	5.7	6.9	8.1	7.2	7.2	8.1	7.6	8.5	3.7	4.5	22.9
Stellantis (a)	NA	NA	NA	NA	7.1	6.9	7.1	8.2	3.9	3.9	(0.6)
Honda (a)	6.0	6.6	7.4	7.5	7.4	7.2	6.3	6.7	1.4	1.5	5.8
Nissan	4.5	4.5	4.7	5.0	4.8	4.3	3.8	4.2	1.0	0.9	(2.3)
Renault (a)	2.8	3.3	4.2	4.1	3.1	2.8	2.4	2.8	1.4	1.6	11.5
Volvo cars (a)	1.4	1.6	1.5	1.6	1.6	2.2	2.2	2.6	1.3	1.3	0.7
JLR (a)	2.3	2.7	2.7	2.3	1.6	1.8	2.0	2.9	0.7	0.9	30.7
Hyundai	2.0	2.2	2.5	2.6	2.6	2.7	2.6	3.0	1.3	1.4	9.9
Total	**73.4**	**77.4**	**83.4**	**80.8**	**84.8**	**90.5**	**89.1**	**99.8**	**33.1**	**35.2**	**6.4**

Notes:

(a) R&D expenditure includes capitalized portion.

(b) General Motors's R&D expenses exclude cost-sharing arrangements with third-parties from CY2017.

(c) Toyota, Honda, Nissan and JLR have March fiscal year ends and compared on 1Q.

(d) Figures in currencies other than US$ have been converted to US$ based on average exchange rates.

(e) Total R&D spends include Stellantis from CY2020.

Source: Companies, Kotak Institutional Equities

Tier-1 suppliers' spends were muted, influenced by business challenges

Exhibit 4: R&D expenditure of major auto tier-1 suppliers, calendar year ends, 2016-1HCY24 (US$ bn)

	2016	2017	2018	2019	2020	2021	2022	2023	1HCY23	1HCY24	Change yoy (%)
Bosch	7.9	8.4	7.3	7.0	7.0	7.5	7.9	8.2			
Continental	3.2	3.5	3.9	3.9	3.9	3.0	2.9	3.1	1.7	1.8	4.5
ZF	2.2	2.5	3.0	3.0	2.9	3.6	3.6	3.9	1.9	1.9	0.2
Magna international	0.5	0.5	0.6	0.6	0.8	0.6	0.6	0.9			
Forvia	1.1	1.3	1.3	1.5	1.4	1.4	2.2	2.4	1.2	1.2	0.2
Total	**14.8**	**16.3**	**16.0**	**16.0**	**15.9**	**16.2**	**17.3**	**18.5**	**4.8**	**4.9**	**1.7**

Source: Companies, Kotak Institutional Equities

Most CV OEMs continue to spend at healthy rate on new energy initiatives

Exhibit 5: R&D expenditure of major commercial vehicle OEMs, calendar year ends, 2016-1HCY24 (US$ bn)

	2016	2017	2018	2019	2020	2021	2022	2023	1HCY23	1HCY24	Change yoy (%)
Cummins	0.6	0.8	0.9	1.0	0.9	1.1	1.3	1.5	0.7	0.7	1.9
Paccar	0.6	0.7	0.7	1.1	0.8	0.8	0.8	1.1			
Traton	1.5	1.6	1.7	1.5	1.3	1.7	2.0	2.4	1.1	1.3	12.9
Volvo AB	1.7	1.8	1.9	2.1	1.8	2.2	2.4	2.7	1.4	1.5	9.7
Iveco	NA	NA	0.5	0.5	0.5	0.6	0.7	1.0			
Daimler Trucks	NA	NA	1.9	1.9	1.8	1.9	1.9	2.1	1.0	1.1	16.2
Total			**7.6**	**8.1**	**7.1**	**8.3**	**9.1**	**10.8**	**4.2**	**4.7**	**10.7**

Source: Companies, Kotak Institutional Equities

Moderate R&D spend growth in IHM segment

Exhibit 6: R&D expenditure of major industrial machinery and construction equipment OEMs, calendar year-ends, 2016-1HCY24 (US$ bn)

	2016	2017	2018	2019	2020	2021	2022	2023	1HCY23	1HCY24	Change yoy (%)
John Deere	1.4	1.4	1.7	1.8	1.6	1.6	1.9	2.2	1.0	1.1	5.3
Caterpillar	1.9	1.8	1.9	1.7	1.4	1.7	1.8	2.1	1.0	1.1	5.5
AGCO	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.4	0.3	0.3	4.0
CNH Industrial	0.9	1.0	1.1	1.0	0.9	0.6	0.9	1.0	0.5	0.5	(7.0)
Kubota	0.4	0.4	0.5	0.5	0.5	0.6	0.7	0.7			
Claas	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3			
Komatsu	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7			
Total	**5.7**	**5.8**	**6.4**	**6.3**	**5.8**	**5.8**	**6.5**	**7.5**	**2.8**	**2.9**	**3.0**

Source: Companies, Kotak Institutional Equities

Exhibit 7: Valuation summary of ERD companies under coverage

	14-Aug-24		Mkt cap.		EPS (Rs)			P/E (X)			EV/EBITDA (X)			RoE (%)		
Company	Price (Rs)	Rating	(Rs mn)	(US$ mn)	2024	2025E	2026E	2024	2025E	2026E	2024	2025E	2026E	2024	2025E	2026E
Cyient	1,735	BUY	192,445	2,293	66.3	65.7	79.3	26.2	26.4	21.9	14.3	14.8	12.3	18.3	15.4	17.1
KPIT Technologies	1,788	SELL	490,046	5,838	21.3	28.5	37.0	84.0	62.7	48.3	48.6	38.2	29.8	30.4	31.4	31.9
L&T Technology Services	4,917	SELL	520,347	6,199	123.5	129.5	147.0	39.8	38.0	33.4	25.6	24.9	22.1	25.4	24.0	23.9
Tata Elxsi	6,828	SELL	425,208	5,065	127.2	137.2	163.2	53.7	49.8	41.8	39.1	34.7	29.2	34.5	32.1	33.8
Tata Technologies	992	SELL	402,585	4,796	17.0	17.5	21.6	58.2	56.7	45.9	41.6	38.8	31.4	22.3	20.9	23.1

	Target	O/S shares	EPS CAGR (%)	EPS growth (%)			Net Profit (Rs mn)			EBITDA (Rs mn)			Sales (Rs mn)		
Company	Price (Rs)	(mn)	2024-26E	2024	2025E	2026E	2024	2025E	2026E	2024	2025E	2026E	2024	2025E	2026E
Cyient	2,050	111	9.4	28.6	(0.9)	20.7	7,349	7,282	8,791	13,029	12,446	14,768	71,473	74,878	85,437
KPIT Technologies	1,150	273	31.9	51.9	33.8	29.9	5,811	7,779	10,107	9,913	12,579	15,877	48,715	59,553	71,533
L&T Technology Services	4,400	106	9.1	11.4	4.8	13.6	13,036	13,668	15,521	19,189	19,505	21,816	96,472	103,443	115,665
Tata Elxsi	5,500	62	13.3	4.9	7.8	19.0	7,924	8,544	10,165	10,466	11,726	13,851	35,521	39,496	46,574
Tata Technologies	650	406	12.6	10.8	2.7	23.4	6,914	7,104	8,769	9,412	10,033	12,314	51,171	54,505	63,306

Source: Companies, Kotak Institutional Equities estimates

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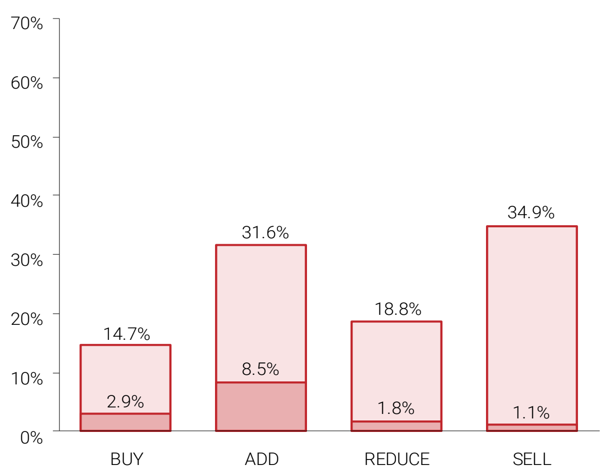

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Source: Kotak Institutional Equities

As of June 30, 2024

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