

Neutral

Tesla Inc. (TSLA)

Framing the market size for lower cost vehicles

Tesla announced with its 1Q24 earnings report that it would adjust its future vehicle development plan. It will now seek to introduce new models, including more affordable options, that use elements of its next generation vehicle platform (where Tesla had been seeking to lower COGS from ~\$40K to ~\$20K per vehicle) but also elements of current platforms and make them within its existing manufacturing lines. Tesla believes that while this would reduce the total cost savings per vehicle it might be able to reach compared to an all new vehicle entirely using the third generation platform, it would lead to efficiencies in terms of capex and time to market. Tesla was previously targeting 2H25 to begin production of a vehicle with the third generation platform). In 2023 Tesla shipped about 1.8 mn vehicles, and Tesla estimates that its current factories have a potential maximum capacity of close to 3 mn vehicles per year. Tesla said it could begin shipping new model(s) in late 2024 or 2025 with this updated approach.

Given the tight timeframe that Tesla is targeting to introduce new models, and its plan to utilize its existing manufacturing lines, we assume that new lower cost models will utilize design elements from Models 3 and/or Y, but with some potential body and interior/design changes (e.g. a smaller version of the Model 3 that uses the lower cost powertrain from the third generation platform). At its annual shareholder meeting on 6/13, Tesla had a slide of current and future products that included three vehicles under a sheet that still gave an idea of the body shape, and we believe hinted at one being a smaller version of Model 3, another perhaps a van or larger version of Model Y, and the last a robotaxi.

As we detail in this note by looking at annual volumes of key models and market segmentation data, while Tesla may somewhat cannibalize sales of the current 3/Y with new

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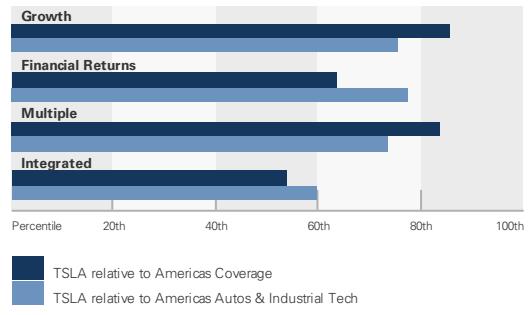
Key Data

Market cap: \$652.7bn
Enterprise value: \$639.9bn
3m ADTV: \$15.3bn
United States
Americas Autos & Industrial Tech
M&A Rank: 3

GS Forecast

	12/23	12/24E	12/25E	12/26E
Revenue (\$ mn)	96,773.0	99,845.5	121,388.1	142,949.8
EBITDA (\$ mn)	16,633.0	16,279.1	23,677.6	31,297.1
EBIT (\$ mn)	8,891.0	7,509.7	12,410.4	17,845.4
EPS (\$)	2.60	1.90	3.20	4.45
P/E (X)	83.5	98.5	58.6	42.1
EV/EBITDA (X)	40.6	36.0	24.5	18.3
FCF yield (%)	0.6	0.1	1.6	2.0
Dividend yield (%)	0.0	0.0	0.0	0.0
Net debt/EBITDA (X)	(0.9)	(0.8)	(0.9)	(1.1)
	3/24	6/24E	9/24E	12/24E
EPS (\$)	0.34	0.40	0.55	0.60

GS Factor Profile



*Source: Company data, Goldman Sachs Research estimates.
See disclosures for details.*

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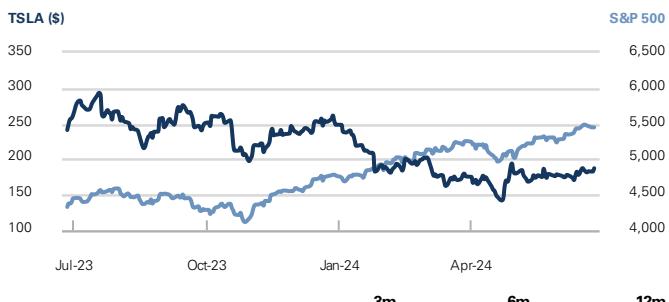
Rating since Jun 25, 2023

Ratios & Valuation

	12/23	12/24E	12/25E	12/26E
P/E (X)	83.5	98.5	58.6	42.1
EV/EBITDA (X)	40.6	36.0	24.5	18.3
EV/sales (X)	7.0	5.9	4.8	4.0
FCF yield (%)	0.6	0.1	1.6	2.0
EV/DACF (X)	46.2	46.5	30.7	22.7
CROCI (%)	33.2	20.7	25.5	28.9
ROE (%)	16.9	10.0	14.5	17.0
Net debt/EBITDA (X)	(0.9)	(0.8)	(0.9)	(1.1)
Net debt/equity (%)	(22.5)	(17.8)	(26.0)	(33.2)
Interest cover (X)	57.0	29.3	51.7	74.4
Inventory days	61.1	65.5	61.6	63.7
Receivable days	12.2	15.5	16.0	15.4
Days payable outstanding	68.5	67.2	60.9	57.3

Growth & Margins (%)

	12/23	12/24E	12/25E	12/26E
Total revenue growth	18.8	3.2	21.6	17.8
EBITDA growth	(22.1)	(5.0)	53.4	37.3
EPS growth	(28.2)	(27.0)	68.1	39.2
DPS growth	NM	NM	NM	NM
Gross margin	18.2	17.1	18.0	19.3
EBIT margin	9.2	7.5	10.2	12.5

Price Performance

Source: FactSet. Price as of 25 Jun 2024 close.

Income Statement (\$ mn)

	12/23	12/24E	12/25E	12/26E
Total revenue	96,773.0	99,845.5	121,388.1	142,949.8
Cost of goods sold	(79,113.0)	(82,804.1)	(99,532.2)	(115,402.1)
SG&A	(4,800.0)	(5,008.5)	(4,895.1)	(5,037.5)
R&D	(3,969.0)	(4,523.3)	(4,550.4)	(4,664.7)
Other operating inc./exp.)	—	—	—	—
EBITDA	13,558.0	12,874.6	19,747.6	27,117.1
Depreciation & amortization	(4,667.0)	(5,364.8)	(7,337.2)	(9,271.7)
EBIT	8,891.0	7,509.7	12,410.4	17,845.4
Net interest inc./exp.)	910.0	1,309.0	1,810.0	2,060.0
Income/(loss) from associates	—	—	—	—
Pre-tax profit	9,975.0	8,968.7	14,220.4	19,905.4
Provision for taxes	(926.0)	(2,252.4)	(2,844.1)	(3,981.1)
Minority interest	23.0	(57.5)	(70.0)	(90.0)
Preferred dividends	—	—	—	—
Net inc. (pre-exceptionals)	9,072.0	6,658.8	11,306.3	15,834.3
Net inc. (post-exceptionals)	9,072.0	6,658.8	11,306.3	15,834.3
EPS (basic, pre-except) (\$)	2.86	2.08	3.52	4.90
EPS (diluted, pre-except) (\$)	2.60	1.90	3.20	4.45
EPS (ex-ESO exp., dil.) (\$)	--	--	--	--
DPS (\$)	—	—	—	—
Div. payout ratio (%)	0.0	0.0	0.0	0.0
Wtd avg shares out. (basic) (mn)	3,173.5	3,194.5	3,214.8	3,234.8
Wtd avg shares out. (diluted) (mn)	3,482.8	3,502.2	3,538.0	3,559.8

Balance Sheet (\$ mn)

	12/23	12/24E	12/25E	12/26E
Cash & cash equivalents	17,189.0	15,682.6	25,039.6	37,083.7
Accounts receivable	3,508.0	4,948.0	5,704.3	6,374.1
Inventory	13,626.0	16,081.0	17,493.2	22,764.8
Other current assets	15,541.0	18,151.0	18,151.0	18,151.0
Total current assets	49,864.0	54,862.6	66,388.1	84,373.7
Net PP&E	33,905.0	39,638.2	42,380.9	44,189.2
Net intangibles	431.0	367.0	287.0	207.0
Total investments	0.0	0.0	0.0	0.0
Other long-term assets	22,666.0	22,790.0	22,890.0	22,990.0
Total assets	106,618.0	117,409.8	131,698.0	151,511.9
Accounts payable	14,431.0	16,081.0	17,112.9	19,122.4
Short-term debt	—	—	—	—
Current lease liabilities	2,373.0	2,461.0	2,461.0	2,461.0
Other current liabilities	11,944.0	12,267.0	12,267.0	12,267.0
Total current liabilities	28,748.0	30,809.0	31,840.9	33,850.4
Long-term debt	2,857.0	2,899.0	2,899.0	2,899.0
Non-current lease liabilities	—	—	—	—
Other long-term liabilities	11,404.0	11,694.0	11,694.0	11,694.0
Total long-term liabilities	14,261.0	14,593.0	14,593.0	14,593.0
Total liabilities	43,009.0	45,402.0	46,433.9	48,443.4
Total common equity	62,634.0	71,205.8	84,462.1	102,266.4
Minority interest	975.0	802.0	802.0	802.0
Total liabilities & equity	106,618.0	117,409.8	131,698.0	151,511.9
BVPS (\$)	17.98	20.33	23.87	28.73

Cash Flow (\$ mn)

	12/23	12/24E	12/25E	12/26E
Net income	14,974.0	6,631.8	11,306.3	15,834.3
D&A add-back	4,667.0	5,364.8	7,337.2	9,271.7
Minority interest add-back	—	—	—	—
Net (inc)/dec working capital	(2,248.0)	(2,414.0)	(1,136.6)	(3,931.9)
Others	(4,137.0)	1,853.0	1,950.0	1,970.0
Cash flow from operations	13,256.0	11,435.6	19,456.9	23,144.1
Capital expenditures	(8,898.0)	(10,673.0)	(10,000.0)	(11,000.0)
Acquisitions	(6,686.0)	(2,307.0)	—	—
Divestitures	—	—	—	—
Others	0.0	(79.0)	(100.0)	(100.0)
Cash flow from investing	(15,584.0)	(13,059.0)	(10,100.0)	(11,100.0)
Dividends paid	—	—	—	—
Share issuance/(repurchase)	—	—	—	—
Inc/(dec) in debt	2,580.0	185.0	—	—
Others	477.0	38.0	—	—
Cash flow from financing	2,593.0	117.0	0.0	0.0
Total cash flow	265.0	(1,506.4)	9,356.9	12,044.1
Free cash flow	4,358.0	762.6	9,456.9	12,144.1
Free cash flow per share (basic) (\$)	1.23	0.21	2.94	3.75

Source: Company data, Goldman Sachs Research estimates.

variants depending on the degree of differentiation, net net as new model(s)/variants fully ramp we'd expect them to add at least 100K to Tesla's annual volumes (based on this analysis, as well as our prior price elasticity report).

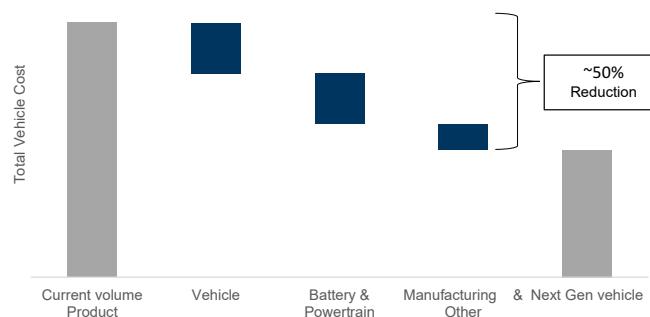
We believe investors will be interested in any updates Tesla may share about these new vehicle models at upcoming events including the 2Q24 earnings call and 8/8 robotaxi unveil.

How much could Tesla lower cost per vehicle?

Recall at Tesla's March 2023 investor day the company highlighted that for its next gen vehicle it was targeting to reduce the next gen vehicle COGS by ~50% per vehicle, from about \$40K USD to about \$20K USD Exhibit 1. While Tesla will no longer use the new "unboxed" manufacturing approach it had discussed (where assembly of parts of the vehicle would be worked on in a more parallel manner), we believe elements of the lower-cost powertrain and new vehicle electronic architecture could be used (e.g. a drive unit with 75% less silicon carbide and no rare earth metals, and a simplified electronic architecture with less wiring). Tesla may also be able to utilize a smaller vehicle size (e.g. a smaller Model 3) and/or more casting.

If Tesla is able to reach about a quarter to a third of its original target, this would imply roughly \$5K to \$7.5K of cost reduction per vehicle when scaled to higher volumes.

Exhibit 1: Tesla previously believed it could lower its next gen platform cost by 50%



Source: Company data

Tesla Model 3 and Model Y are currently offered starting at ~\$39k and ~\$45k respectively in the US, and for about \$32K USD and \$34 USD respectively in China.

If Tesla were able to lower cost by a net of \$5-\$7.5K, it would imply a Model 3 for sub \$35K in the US and sub \$30K in China, and a Model Y that may start in the US for sub \$40K.

Market segmentation

To help contextualize the market opportunity for Tesla's lower cost model variants we looked at IHS sales price class data, as well as regional data.

IHS breaks vehicles into three classes. Class 1 is for entry and mid-level offerings, Class

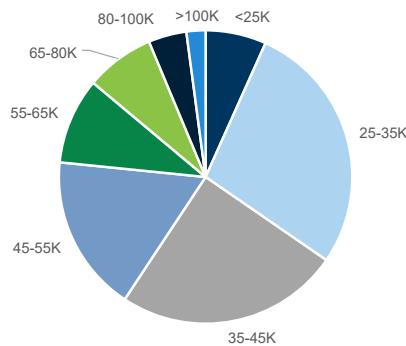
2 is premium, and Class 3 is for luxury vehicles. Globally in 2023 ~85% of the vehicles were mainstream, ~14% were premium and 1% were luxury. Regionally, the split is roughly 81%/18%/1% in the US, 80%/19%/1% in Europe, and 82%/17%/1% in China.

Model 3, Y, S and X all currently fall into the premium class per IHS.

Our industry discussions suggest that ~15% of the US market is in the \$30-35K price range and ~13% is in the \$35-40K segment, compared to ~12% at \$40-45K and 10% at \$45-50K.

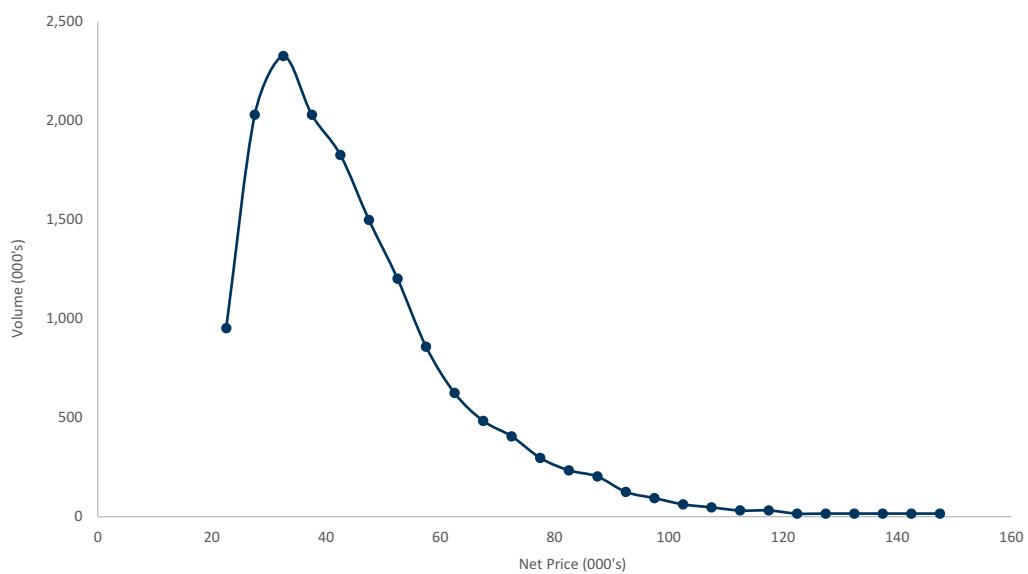
For the US market we show light vehicle volume by price band for 2023 in [Exhibit 2](#) and an illustrative graph of pricing vs volumes in [Exhibit 3](#).

Exhibit 2: US Light Vehicle pricing by price band 2023



Source: Goldman Sachs Global Investment Research

Exhibit 3: Illustrative price to volume overview of US auto market

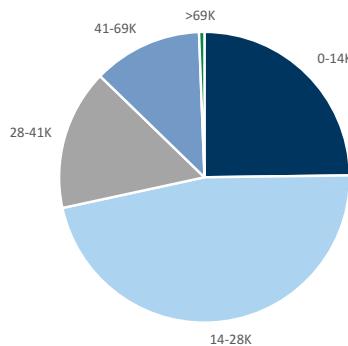


Source: Goldman Sachs Global Investment Research

In China based on the passenger vehicle price by pricing band data from the CPCA in 2023, 40-50% of vehicles are in the equivalent of the ~\$14-28K USD equivalent price

band, as shown in [Exhibit 4](#). Tesla could start to compete in this segment with a lower cost model(s).

**Exhibit 4: China passenger vehicle retail pricing by price band 2023
(converted to USD)**



Source: CPCA, Data compiled by Goldman Sachs Global Investment Research

Illustrative annual volumes of lower cost vehicles

Several vehicles in the ~\$25-\$35K starting price range, such as the VW Golf and Ford Escape/Kuga, sold ~200-400K vehicles annually in 2023 per IHS.

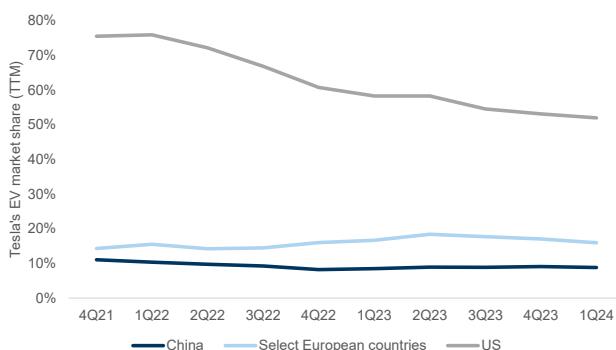
Furthermore, small to mid-size crossovers such as the RAV4 and Honda CR-V with MSRPs that start in the US at just under \$30K but typically retail with options in the low to mid \$30K range each sold over 800K units globally in 2023 per IHS.

We believe a lower cost smaller version of the Model 3 could directly compete at these price points (although if it uses LFP batteries for cost, it is unlikely to be eligible for IRA credits given the foreign supply chain for those cells).

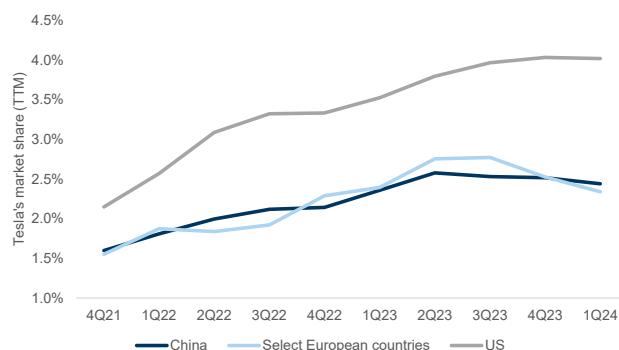
While Tesla may somewhat cannibalize sales of 3/Y with new variants depending on the degree of differentiation, net net as new model(s)/variants fully ramp we'd expect them to add at least 100K to Tesla's annual volumes (based on this analysis, as well as our prior price elasticity report). New and/or refreshed variants is a part of our view as to why we believe Tesla's volume growth in 2025 will improve. We model growth picking up from -1% yoy in 2024 (with an estimate of 1.785 mn deliveries) to +18% yoy in 2025 to 2.1 mn vehicles (note that our 2.1 mn estimate is in-line with Visible Alpha Consensus Data).

Update on Tesla's market share by region

On a trailing twelve months (TTM) basis, Tesla has over 50% share of the US EV market, mid teens share of the EV market in the select European countries, and high single digit EV share in China [Exhibit 5](#). For the total market, Tesla made up a low to mid single digit percent of the US market, and a low single digit share of the market in Europe and China [Exhibit 6](#).

Exhibit 5: Tesla's TTM EV market share in key regions

Source: Motor Intelligence, CPCA, ACEA, Wards, Goldman Sachs Global Investment Research

Exhibit 6: Tesla's TTM market share in key regions

Source: Motor Intelligence, CPCA, ACEA, Wards, Goldman Sachs Global Investment Research

To help illustrate sensitivity to market share, if Tesla were to take 1 point of market share across the US, Europe, and China with new models in the mainstream portion of the market, it would add 300-400K units of total volume for Tesla.

Stock Implications

We maintain our Neutral rating on the stock, and our 12-month price target is \$175 (based on 50X Q5-Q8E EPS). Our 2024/2025/2026E EPS estimates including SBC remain \$1.90/\$3.20/\$4.45. Our estimates excluding SBC are \$2.40/\$3.75/\$5.00 for 2024/2025/2026E.

While we continue to believe that Tesla is well positioned for longer-term growth given its strong position in the EV and clean energy markets (which we attribute to factors including its ability to offer full solutions such as charging, storage, software/FSD and services, and with a leading cost structure), we expect weaker market conditions to weigh on earnings in the near to intermediate term. We also see valuation as full.

Our volume estimates for 2Q24 (415K) and 2024 (1.785 mn) are below Visible Alpha consensus at 442K/1.79 mn. We believe monthly datapoints in key regions imply that Tesla's volumes for 2Q are tracking to about 410-430K (as detailed in [our 6/13 note](#)), and we consider our 2Q estimate of 415K to be directionally similar to investor expectations.

Key downside risks to our view relate to potentially larger vehicle price reductions than we expect, increased competition in EVs, slower EV demand, delays with products/capabilities like FSD/4680, key person risk, the internal control environment, margins, and operational risks associated with Tesla's high degree of vertical integration. Upside risks include faster EV adoption and/or share gain by Tesla, a stronger macroeconomic environment for new vehicle sales more generally, earlier new product launches than we expect, and an earlier/larger impact from AI enabled products (e.g., FSD, Optimus and robotaxis) than we currently anticipate.

Disclosure Appendix

Reg AC

We, Mark Delaney, CFA, Will Bryant, Morgan Leung and Aman Gupta, hereby certify that all of the views expressed in this report accurately reflect our personal views about the subject company or companies and its or their securities. We also certify that no part of our compensation was, is or will be, directly or indirectly, related to the specific recommendations or views expressed in this report.

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Financial Returns and Multiple use the Goldman Sachs analyst forecasts at the fiscal year-end at least three quarters in the future. Growth uses inputs for the fiscal year at least seven quarters in the future compared with the year at least three quarters in the future (on a per-share basis for all metrics).

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Quantum

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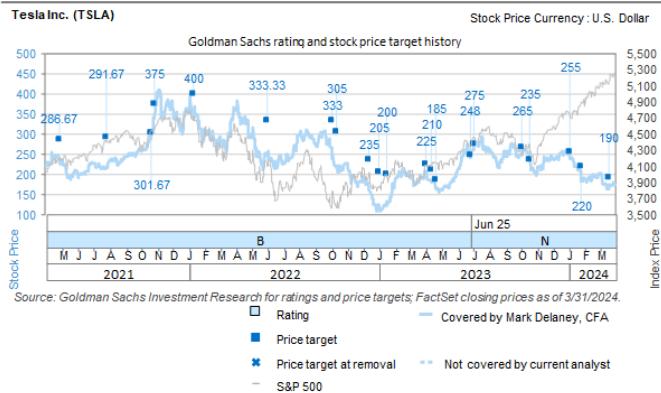
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Global	48%	36%	16%	64%	56%	41%

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