Goldman Sachs Research

Equity Research
23 October 2025 | 1:11AM EDT

Tesla Inc. (TSLA)

Mixed 3Q report with certain key KPIs somewhat below the Street; debate on AI related long-term profit potential likely to continue

TSLA	12m Price Target: **$400.00**	Price: **$438.97**	Downside: **8.9%**

NEUTRAL

Mark Delaney, CFA
+1(212)357-0535 | mark.delaney@gs.com
Goldman Sachs & Co. LLC

Will Bryant
+1(212)934-4705 | will.bryant@gs.com
Goldman Sachs & Co. LLC

Aman Gupta
+1(212)357-1549 | aman.s.gupta@gs.com
Goldman Sachs & Co. LLC

Tesla reported revenue/non-GAAP diluted EPS (excluding SBC and non-cash gains/losses from digital assets) of $28.1 bn/$0.50, which was 6% above/$0.06 below the Street (FactSet) and 2% below/$0.12 below GS. The automotive non-GAAP gross margin (including SBC and excluding the revenue from regulatory credits) was 15.4%, below GS at 15.7% and consensus at ~16%.

We think the 3Q report was mixed to slightly negative relative to some focus areas for investors. While revenue and the overall gross margin were above consensus, we believe certain key KPIs for 3Q (e.g. the automotive non-GAAP gross margin and non-GAAP EPS), and the timeframes management outlined for Optimus 3 to be unveiled and enter production, were somewhat below investor expectations. We expect the stock to remain debated post results including on the near to medium term event path and long-term profit potential in AI related areas.

We expect a potentially volatile event path over the near to medium term for the stock, with investors likely to focus on the company's 11/6 shareholder meeting, the potential to remove safety observers from robotaxis in Austin before year-end, 4Q automotive deliveries (likely reported in early January), and the unveil of Optimus 3 (which the company suggested could now occur in 1Q).

We remain Neutral rated on the stock. Longer term, we expect Tesla to grow its EPS more meaningfully driven in part by larger contributions from autonomy and robotics, although our base case expectation for profits in these areas is more measured than the company is targeting given our expectations for market size/timing and competition.

3Q25 financial results

Tesla reported 3Q25 revenue of $28,095 mn (up 25% qoq and up 12% yoy) which was 2% below GS at $28,545 mn but 6% above the

Key Data

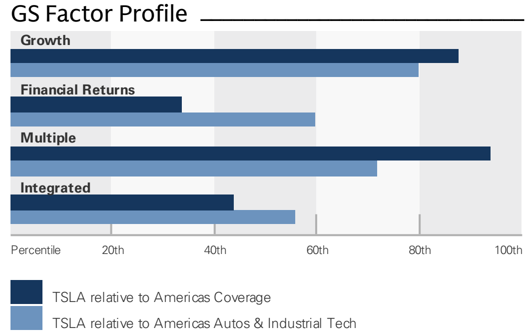
Market cap: $1.5tr
Enterprise value: $1.5tr
3m ADTV: $33.5bn
United States
Americas Autos & Industrial Tech
M&A Rank: 3

GS Forecast

	12/24	12/25E	12/26E	12/27E
Revenue ($ mn) New	**97,690.0**	**96,679.7**	**107,457.4**	**125,243.3**
Revenue ($ mn) Old	97,690.0	97,159.9	109,372.1	129,931.1
EBITDA ($ mn)	15,974.0	14,702.3	18,533.3	24,621.9
EBIT ($ mn)	7,076.0	4,415.4	6,641.7	10,678.0
EPS ($) New	**2.04**	**1.19**	**1.85**	**2.80**
EPS ($) Old	2.04	1.30	1.95	3.00
P/E (X)	113.0	NM	NM	156.5
Dividend yield (%)	0.0	0.0	0.0	0.0
Net debt/EBITDA (X)	(0.7)	(1.1)	(1.0)	(0.9)

	9/25	12/25E	3/26E	6/26E
EPS ($)	0.37	0.40	0.17	0.39

GS Factor Profile



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

NEUTRAL

Tesla Inc. (TSLA)

Rating since Jun 25, 2023

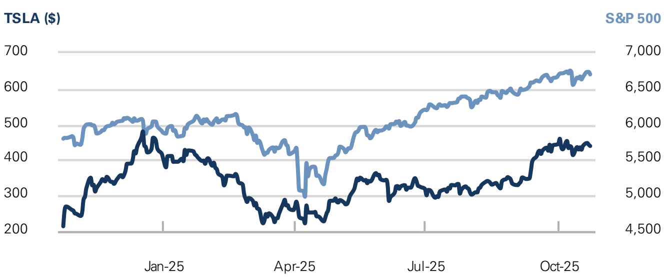
Ratios & Valuation

	12/24	12/25E	12/26E	12/27E
P/E (X)	113.0	NM	NM	156.5
EV/EBITDA (X)	45.4	95.2	75.8	57.3
EV/sales (X)	7.4	14.5	13.1	11.3
FCF yield (%)	0.4	0.4	0.3	0.2
EV/DACF (X)	53.0	110.8	90.8	69.1
CROCI (%)	21.8	16.2	17.1	19.2
ROE (%)	10.5	5.4	7.6	10.4
Net debt/EBITDA (X)	(0.7)	(1.1)	(1.0)	(0.9)
Net debt/equity (%)	(15.3)	(18.7)	(21.2)	(22.1)
Interest cover (X)	20.2	12.7	16.6	25.1
Inventory days	58.3	60.3	64.0	64.9
Receivable days	14.8	16.7	16.0	15.4
Days payable outstanding	61.2	63.3	68.6	62.6

Growth & Margins (%)

	12/24	12/25E	12/26E	12/27E
Total revenue growth	0.9	(1.0)	11.1	16.6
EBITDA growth	(8.2)	(14.0)	37.4	39.2
EPS growth	(21.7)	(41.8)	55.8	51.5
DPS growth	NM	NM	NM	NM
Gross margin	17.9	17.2	17.9	18.8
EBIT margin	7.2	4.6	6.2	8.5

Price Performance



	3m	6m	12m
Absolute	32.2%	84.5%	101.4%
Rel. to the S&P 500	24.5%	45.6%	75.9%

Source: FactSet. Price as of 22 Oct 2025 close.

Income Statement ($ mn)

	12/24	12/25E	12/26E	12/27E
Total revenue	97,690.0	96,679.7	107,457.4	125,243.3
Cost of goods sold	(80,240.0)	(80,035.3)	(88,177.2)	(101,642.7)
SG&A	(5,834.0)	(5,955.7)	(5,956.5)	(6,096.0)
R&D	(4,540.0)	(6,273.4)	(6,681.9)	(6,826.5)
Other operating inc./(exp.)	–	–	–	–
EBITDA	**12,444.0**	**10,706.3**	**14,715.6**	**20,478.1**
Depreciation & amortization	(5,368.0)	(6,290.9)	(8,073.9)	(9,800.1)
EBIT	**7,076.0**	**4,415.4**	**6,641.7**	**10,678.0**
Net interest inc./(exp.)	1,219.0	1,308.0	1,700.0	2,020.0
Income/(loss) from associates	–	–	–	–
Pre-tax profit	**9,032.0**	**5,657.4**	**8,341.7**	**12,698.0**
Provision for taxes	(1,837.0)	(1,405.9)	(1,668.3)	(2,539.6)
Minority interest	(65.0)	(65.0)	(71.0)	(90.0)
Preferred dividends	–	–	–	–
Net inc. (pre-exceptionals)	**7,130.0**	**4,186.5**	**6,602.3**	**10,068.4**
Net inc. (post-exceptionals)	**7,091.0**	**4,373.5**	**6,602.3**	**10,068.4**
EPS (basic, pre-except) ($)	**2.23**	**1.30**	**2.03**	**3.08**
EPS (diluted, pre-except) ($)	**2.04**	**1.19**	**1.85**	**2.80**
EPS (ex-ESO exp., dil.) ($)	**--**	**--**	**--**	**--**
DPS ($)	–	–	–	–
Div. payout ratio (%)	0.0	0.0	0.0	0.0
Wtd avg shares out. (basic) (mn)	3,197.0	3,225.2	3,245.4	3,265.4
Wtd avg shares out. (diluted) (mn)	3,494.8	3,523.7	3,566.8	3,590.4

Balance Sheet ($ mn)

	12/24	12/25E	12/26E	12/27E
Cash & cash equivalents	17,061.0	21,230.4	25,211.0	28,782.3
Accounts receivable	4,418.0	4,410.0	4,983.3	5,591.5
Inventory	12,017.0	14,405.9	16,496.5	19,666.6
Other current assets	25,268.0	28,470.0	28,470.0	28,470.0
Total current assets	**58,764.0**	**68,516.2**	**75,160.9**	**82,510.4**
Net PP&E	40,996.0	46,420.1	51,410.2	55,674.1
Net intangibles	394.0	372.0	308.0	244.0
Total investments	0.0	0.0	0.0	0.0
Other long-term assets	22,320.0	23,504.0	23,504.0	23,504.0
Total assets	**122,070.0**	**138,223.3**	**149,794.0**	**161,343.5**
Accounts payable	12,474.0	15,287.8	17,871.2	16,967.3
Short-term debt	–	–	–	–
Current lease liabilities	2,456.0	1,924.0	1,924.0	1,924.0
Other current liabilities	13,891.0	16,547.0	16,547.0	16,547.0
Total current liabilities	**28,821.0**	**33,758.8**	**36,342.2**	**35,438.3**
Long-term debt	5,757.0	5,778.0	5,778.0	5,778.0
Non-current lease liabilities	–	–	–	–
Other long-term liabilities	13,812.0	15,951.0	15,951.0	15,951.0
Total long-term liabilities	**19,569.0**	**21,729.0**	**21,729.0**	**21,729.0**
Total liabilities	**48,390.0**	**55,487.8**	**58,071.2**	**57,167.3**
Preferred shares	–	–	–	–
Total common equity	**72,913.0**	**81,989.5**	**90,976.8**	**103,430.2**
Minority interest	767.0	746.0	746.0	746.0
Total liabilities & equity	**122,070.0**	**138,223.3**	**149,794.0**	**161,343.5**
BVPS ($)	20.86	23.27	25.51	28.81

Cash Flow ($ mn)

	12/24	12/25E	12/26E	12/27E
Net income	7,153.0	4,418.5	6,602.3	10,068.4
D&A add-back	5,368.0	6,290.9	8,073.9	9,800.1
Minority interest add-back	–	–	–	–
Net (inc)/dec working capital	81.0	1,488.0	(80.6)	(4,682.2)
Others	2,321.0	3,174.0	2,385.0	2,385.0
Cash flow from operations	**14,923.0**	**15,371.4**	**16,980.6**	**17,571.3**
Capital expenditures	(11,339.0)	(9,134.0)	(13,000.0)	(14,000.0)
Acquisitions	(7,445.0)	(2,816.0)	–	–
Divestitures	–	–	–	–
Others	(3.0)	0.0	0.0	0.0
Cash flow from investing	**(18,787.0)**	**(11,950.0)**	**(13,000.0)**	**(14,000.0)**
Dividends paid	–	–	–	–
Share issuance/(repurchase)	–	–	–	–
Inc/(dec) in debt	3,244.0	(669.0)	–	–
Others	873.0	1,484.0	–	–
Cash flow from financing	**3,736.0**	**748.0**	**0.0**	**0.0**
Total cash flow	**(128.0)**	**4,169.4**	**3,980.6**	**3,571.3**
Free cash flow	3,584.0	6,237.4	3,980.6	3,571.3
Free cash flow per share (basic) ($)	1.00	1.91	1.23	1.09

Source: Company data, Goldman Sachs Research estimates.

Street (FactSet) at $26,540 mn. Tesla reported the following by segment:

- Automotive revenue of $21,205 mn (up 27% qoq and up 6% yoy) compared to GS at $21,342 mn and the Street at $19,694 mn. The implied vehicle ASP was about $41.8K and in line with our $41.8K estimate. Sales of regulatory credits were $417 mn in the quarter vs. our estimate of $450 mn, down from $439 mn last quarter and down from $739 mn in 3Q24.
- Energy Generation and Storage revenue of $3,415 mn (up 22% qoq and up 44% yoy) compared to GS at $3,666 mn. Tesla commented that energy storage deployments were 12.5 GWh. Energy was Tesla's highest margin business in 3Q.
- Service and Other revenue of $3,475 mn (up 14% qoq and up 25% yoy) compared to GS at $3,536 mn.

As previously reported, total vehicle deliveries in the quarter were about 497K (up 29% qoq and up 7% yoy). Model 3/Y deliveries in the quarter were about 481K (up 29% qoq and up 9% yoy), and other model deliveries (e.g. S/X/Cybertruck) were about 16K (up 53% qoq and down 30% yoy). Tesla produced about 447K vehicles (up 9% qoq and down 5% yoy).

The total company gross margin (including SBC) was 18.0%, above both GS at 17.3% and the Street (FactSet) at 17.5%. The 2Q25 margin was 17.2%, and 3Q24 was 19.8%.

The automotive non-GAAP gross margin (including SBC and excluding the revenue from regulatory credits) was 15.4%, compared to GS at 15.7% and consensus at ~16% (with FactSet at ~16.3% and Visible Alpha Consensus Data at 15.6%). The margin was 15.0% in 2Q25 and 17.1% in 3Q24.

Tesla's cost per vehicle decreased sequentially to ~$35.7K from $35.9K in 2Q, but was up yoy from $35.1K in 3Q24.

The Energy gross margin was 31.4% (above our 27.0% estimate), which was up from 30.3% in 2Q25 and up from 30.5% in 3Q24.

GAAP opex was $3.43 bn vs. our $3.05 bn estimate, in part due to $238 mn for restructuring and other costs. The company also commented that legal expenses were higher in 3Q.

EBIT (including SBC) of ~$1.62 bn was lower than our forecast of ~$1.90 bn.

Non-GAAP diluted EPS (excluding SBC and digital asset non-cash mark to market adjustments) was $0.50, below both GS at $0.62 and the Street at $0.56. We estimate that non-GAAP EPS including SBC was $0.37 vs GSe at $0.50. EPS downside compared to our estimate was driven primarily by 2% lower revenue, a ~30 bp lower non-GAAP auto gross margin ex. credits, higher opex (driven in part by restructuring, which we estimate was a ~$0.05 headwind), and higher other expense. This was partially offset by higher Energy and Services segment margins.

Cash, cash equivalents and investments were up by $4.9 bn qoq to $41.6 bn, with FCF of $3,990 mn in 3Q (we had estimated FCF would be $4.9 bn as Tesla reduced inventory driven in part by higher vehicle sales ahead of the expiration of the IRA EV purchase credit in the US, although consensus was at ~$1 bn for FCF). Inventory dollars were down $2.3 bn qoq to $12.3 bn.

Policy related updates

Management noted that the total tariff impact to its automotive and energy business for 3Q was in excess of $400 million. The company also said that this was roughly evenly split between the automotive and energy businesses.

On regulatory credits, the company noted that although regulatory credits declined in the quarter, it entered into new contracts and continued to deliver on previous contracts. Recall we previously lowered our forecast for regulatory credits to reflect the less stringent federal and state emissions standards in the US, but continue to expect a degree of revenue driven by international markets especially Europe.

Key product updates and outlook

Tesla noted that the shifting of global trade and fiscal policies makes it difficult to measure the impact on its supply chains, cost structure, and demand for its products. The company also stated it remains on track for volume production of Cybercab, Tesla Semi, and its Megapack 3 products for 2026. The company added that it is in the process of installing the first generation production lines for Optimus in anticipation of volume production.

On robotaxi, Tesla commented that it is working toward removing the safety driver in large parts of Austin by the end of the year (similar to its previous commentary). Management also expects to be operating in several other metro areas by the end of the year pending regulatory approval, including Nevada, Florida, and Arizona.

On FSD, the company said that 12% of its installed base has paid for this product (we believe across both upfront licenses and subscriptions).

Tesla commented that it expects to unveil Optimus V3 in 1Q26. Recall the company had commented on its 2Q call that it expected to have a prototype late this year and scale production next year. Also, recall that management has previously noted that it believes it can get to >1 mn annual units per year for Optimus by the end of the decade.

On the energy business, the company commented that its Megablock product will begin shipping next year out of its Houston factory. Moreover, the company highlighted that it has seen a surge in residential solar demand in the US which management expects to continue through 1H26 due to pending policy changes. However, the company said competition and tariffs could be headwinds to Energy segment gross margins.

Management noted that it expects its 2025 capex to be around $9 bn and that it expects 2026 capex to increase substantially.

Implications

We think the 3Q report was mixed to slightly negative relative to some focus areas for investors. While revenue and the overall gross margin were above consensus, we believe certain key KPIs for 3Q (e.g. the automotive non-GAAP gross margin and non-GAAP EPS), and the timeframes management outlined for Optimus 3 to be unveiled and enter production, were somewhat below investor expectations. We expect the stock to remain debated post results including on the near to medium term event path and long-term profit potential in AI related areas. Please see our recent report, Platforms & Power - Part II: Humanoids and profit implications for autos & industrial tech, for more details on our outlook for the humanoid market.

We expect a potentially volatile event path over the near to medium term for the stock, with investors likely to focus on the company's 11/6 shareholder meeting, the potential to remove safety observers from robotaxis in Austin before year-end, 4Q automotive deliveries (likely reported in early January), and the unveil of Optimus 3 (which the company suggested could now occur in 1Q).

Specifically:

- On the 11/6 shareholder meeting, we believe some investors view the proposed CEO compensation plan through the lens of the 2018 award that correlated with significant outperformance in the stock, as previously discussed in our note "Framing regional delivery trends, global consumer survey data, and longer-term EPS scenarios". Although how the stock trades post 11/6 may depend not only on the outcome of the compensation plan but also any details related to new products.
- On Optimus 3, the timing for a prototype to be revealed in 1Q is slightly later than we believe had been previously implied by company commentary on the 2Q call of this occurring around year end. In addition, commentary that production of Optimus 3 could begin toward the end of next year suggests in our view that 2026 Optimus volumes could be somewhat limited. However, the actual reveal of the prototype could still be a positive for the stock depending on capabilities/features shown.
- On removing safety observers from its robotaxis in Austin, Tesla's CEO similarly commented on X in early September that it planned to remove the safety observers by year end. Tesla has not released data to help investors gauge the probability of this occurring in 2025, and the company has historically been too optimistic on its AV targets. However, other AV companies have shown this can be achieved (e.g. Waymo, Pony AI), and if this were to occur then we believe it would be a positive catalyst for the stock.
- On vehicle deliveries, we continue to expect a decline in 4Q qoq driven by lower shipments into the US post the end of IRA purchase credits partly offset by seasonality internationally.

We remain Neutral rated on the stock. Longer term, we expect Tesla to grow its EPS more meaningfully driven in part by larger contributions from autonomy and robotics, although our base case expectation for profits in these areas is more measured than the company is targeting given our expectations for market size/timing and competition.

Estimate changes

We're lowering our vehicle delivery estimates for 2026/2027 to better reflect the lower cost versions of 3 and Y being different trims rather than what we had previously expected to be new models, although we still expect the Y L to help drive growth (as discussed in our recent note). Our delivery assumptions for 2025/2026/2027 move to 1.693 mn/1.815 mn/2.015 mn from 1.693 mn/1.865 mn/2.150 mn prior. Our assumptions compare to Visible Alpha consensus at 1.636 mn/1.855 mn/2.140 mn prior to the 3Q report.

We lower our 2025/2026/2027 EPS estimates including SBC to $1.19/$1.85/$2.80 from $1.30/$1.95/$3.00 driven by higher opex, and also lower vehicle delivery estimates for 2026/2027. Our CY25/26/27 non-GAAP EPS estimates (ex. SBC) are now

$1.69/$2.35/$3.30.

Exhibit 1: Updated TSLA estimates

TSLA estimate revisions	2025E		2026E		2027E	
	Old GSe	New GSe	Old GSe	New GSe	Old GSe	New GSe
Deliveries (Ks)	1,693	1,693	1,865	1,815	2,150	2,015
Revenue	$97,160	$96,680	$109,372	$107,457	$129,931	$125,243
Automotive non-GAAP gross margin excl. credits	14.7%	14.6%	15.4%	15.4%	16.2%	16.1%
EBIT margin including SBC	4.7%	4.6%	6.5%	6.2%	8.9%	8.5%
Non-GAAP EPS including SBC	$1.30	$1.19	$1.95	$1.85	$3.00	$2.80
Non-GAAP EPS excluding SBC	$1.80	$1.69	$2.45	$2.35	$3.50	$3.30

Source: Goldman Sachs Global Investment Research

Valuation, price target, and key risks

We lower our 12-month price target to $400 from $425, which is based on 150X (unchanged) applied to our updated Q5-Q8E EPS estimate including SBC.

Key downside risks to our view relate to potentially larger vehicle price reductions than we expect, increased competition in EVs, a larger than expected tariff impact, 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, an earlier/larger impact from AI enabled products (e.g., FSD, Optimus and robotaxis), and a smaller than expected tariff impact than we currently anticipate.

Disclosure Appendix

Reg AC

We, Mark Delaney, CFA, Will Bryant, Aman Gupta and Ayush Ghose, 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.

Unless otherwise stated, the individuals listed on the cover page of this report are analysts in Goldman Sachs' Global Investment Research division.

GS Factor Profile

The Goldman Sachs Factor Profile provides investment context for a stock by comparing key attributes to the market (i.e. our universe of rated stocks) and its sector peers. The four key attributes depicted are: Growth, Financial Returns, Multiple (e.g. valuation) and Integrated (a composite of Growth, Financial Returns and Multiple). Growth, Financial Returns and Multiple are calculated by using normalized ranks for specific metrics for each stock. The normalized ranks for the metrics are then averaged and converted into percentiles for the relevant attribute. The precise calculation of each metric may vary depending on the fiscal year, industry and region, but the standard approach is as follows:

Growth is based on a stock's forward-looking sales growth, EBITDA growth and EPS growth (for financial stocks, only EPS and sales growth), with a higher percentile indicating a higher growth company. **Financial Returns** is based on a stock's forward-looking ROE, ROCE and CROCI (for financial stocks, only ROE), with a higher percentile indicating a company with higher financial returns. **Multiple** is based on a stock's forward-looking P/E, P/B, price/dividend (P/D), EV/EBITDA, EV/FCF and EV/Debt Adjusted Cash Flow (DACF) (for financial stocks, only P/E, P/B and P/D), with a higher percentile indicating a stock trading at a higher multiple. The **Integrated** percentile is calculated as the average of the Growth percentile, Financial Returns percentile and (100% - Multiple percentile).

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).

For a more detailed description of how we calculate the GS Factor Profile, please contact your GS representative.

M&A Rank

Across our global coverage, we examine stocks using an M&A framework, considering both qualitative factors and quantitative factors (which may vary across sectors and regions) to incorporate the potential that certain companies could be acquired. We then assign a M&A rank as a means of scoring companies under our rated coverage from 1 to 3, with 1 representing high (30%-50%) probability of the company becoming an acquisition target, 2 representing medium (15%-30%) probability and 3 representing low (0%-15%) probability. For companies ranked 1 or 2, in line with our standard departmental guidelines we incorporate an M&A component into our target price. M&A rank of 3 is considered immaterial and therefore does not factor into our price target, and may or may not be discussed in research.

Quantum

Quantum is Goldman Sachs' proprietary database providing access to detailed financial statement histories, forecasts and ratios. It can be used for in-depth analysis of a single company, or to make comparisons between companies in different sectors and markets.

Disclosures

The rating(s) for Tesla Inc. is/are relative to the other companies in its/their coverage universe: Amphenol Corp., Aurora Innovation Inc., Belden Inc., BorgWarner Inc., Cerence Inc., ChargePoint Holdings, Flex, Ford Motor Co., General Motors Co., Gentex Corp., Innoviz Technologies, Jabil Circuit Inc., Keysight Technologies Inc., Lear Corp., Luminar Technologies Inc., Magna International Inc., Mobileye Global Inc., QuantumScape Corp., Rivian Automotive Inc., Sensata Technologies Holding, Symbotic Inc., TE Connectivity Plc, Tesla Inc., Vertiv Holdings, Visteon Corp.

Company-specific regulatory disclosures

The following disclosures relate to relationships between The Goldman Sachs Group, Inc. (with its affiliates, "Goldman Sachs") and companies covered by Goldman Sachs Global Investment Research and referred to in this research.

Goldman Sachs has received compensation for investment banking services in the past 12 months: Tesla Inc. ($438.97)

Goldman Sachs expects to receive or intends to seek compensation for investment banking services in the next 3 months: Tesla Inc. ($438.97)

Goldman Sachs had an investment banking services client relationship during the past 12 months with: Tesla Inc. ($438.97)

Goldman Sachs had a non-investment banking securities-related services client relationship during the past 12 months with: Tesla Inc. ($438.97)

Goldman Sachs had a non-securities services client relationship during the past 12 months with: Tesla Inc. ($438.97)

Goldman Sachs makes a market in the securities or derivatives thereof: Tesla Inc. ($438.97)

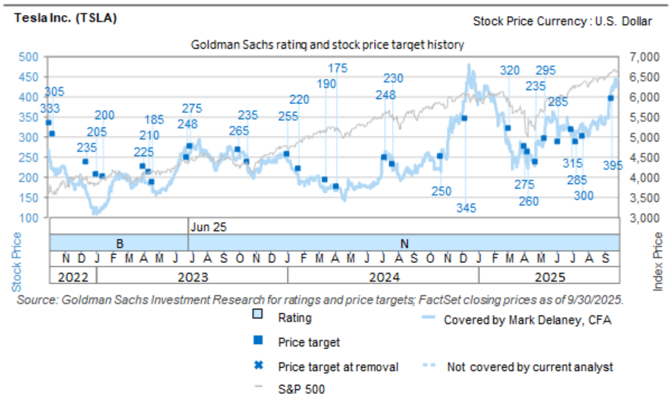
Distribution of ratings/investment banking relationships

Goldman Sachs Investment Research global Equity coverage universe

	Rating Distribution			Investment Banking Relationships		
	Buy	Hold	Sell	Buy	Hold	Sell
Global	49%	34%	17%	63%	58%	42%

As of October 1, 2025, Goldman Sachs Global Investment Research had investment ratings on 3,014 equity securities. Goldman Sachs assigns stocks as Buys and Sells on various regional Investment Lists; stocks not so assigned are deemed Neutral. Such assignments equate to Buy, Hold and Sell for the purposes of the above disclosure required by the FINRA Rules. See 'Ratings, Coverage universe and related definitions' below. The Investment Banking Relationships chart reflects the percentage of subject companies within each rating category for whom Goldman Sachs has provided investment banking services within the previous twelve months.

Price target and rating history chart(s)



The price targets shown should be considered in the context of all prior published Goldman Sachs research, which may or may not have included price targets, as well as developments relating to the company, its industry and financial markets.

Regulatory disclosures

Disclosures required by United States laws and regulations

See company-specific regulatory disclosures above for any of the following disclosures required as to companies referred to in this report: manager or co-manager in a pending transaction; 1% or other ownership; compensation for certain services; types of client relationships; managed/co-managed public offerings in prior periods; directorships; for equity securities, market making and/or specialist role. Goldman Sachs trades or may trade as a principal in debt securities (or in related derivatives) of issuers discussed in this report.

The following are additional required disclosures: **Ownership and material conflicts of interest:** Goldman Sachs policy prohibits its analysts, professionals reporting to analysts and members of their households from owning securities of any company in the analyst's area of coverage. **Analyst compensation:** Analysts are paid in part based on the profitability of Goldman Sachs, which includes investment banking revenues. **Analyst as officer or director:** Goldman Sachs policy generally prohibits its analysts, persons reporting to analysts or members of their households from serving as an officer, director or advisor of any company in the analyst's area of coverage. **Non-U.S. Analysts:** Non-U.S. analysts may not be associated persons of Goldman Sachs & Co. LLC and therefore may not be subject to FINRA Rule 2241 or FINRA Rule 2242 restrictions on communications with a subject company, public appearances and trading in securities covered by the analysts.

Distribution of ratings: See the distribution of ratings disclosure above. **Price chart:** See the price chart, with changes of ratings and price targets in prior periods, above, or, if electronic format or if with respect to multiple companies which are the subject of this report, on the Goldman Sachs website at https://www.gs.com/research/hedge.html.

Additional disclosures required under the laws and regulations of jurisdictions other than the United States

The following disclosures are those required by the jurisdiction indicated, except to the extent already made above pursuant to United States laws and regulations. **Australia:** Goldman Sachs Australia Pty Ltd and its affiliates are not authorised deposit-taking institutions (as that term is defined in the Banking Act 1959 (Cth)) in Australia and do not provide banking services, nor carry on a banking business, in Australia. This research, and any access to it, is intended only for "wholesale clients" within the meaning of the Australian Corporations Act, unless otherwise agreed by Goldman Sachs. In producing research reports, members of Global Investment Research of Goldman Sachs Australia may attend site visits and other meetings hosted by the companies and other entities which are the subject of its research reports. In some instances the costs of such site visits or meetings may be met in part or in whole by the issuers concerned if Goldman Sachs Australia considers it is appropriate and reasonable in the specific circumstances relating to the site visit or meeting. To the extent that the contents of this document contains any financial product advice, it is general advice only and has been prepared by Goldman Sachs without taking into account a client's objectives, financial situation or needs. A client should, before acting on any such advice, consider the appropriateness of the advice having regard to the client's own objectives, financial situation and needs. A copy of certain Goldman Sachs Australia and New Zealand disclosure of interests and a copy of Goldman Sachs' Australian Sell-Side Research Independence Policy Statement are available at: https://www.goldmansachs.com/disclosures/australia-new-zealand/index.html. **Brazil:** Disclosure information in relation to CVM Resolution n. 20 is available at https://www.gs.com/worldwide/brazil/area/gir/index.html. Where applicable, the Brazil-registered analyst primarily responsible for the content of this research report, as defined in Article 20 of CVM Resolution n. 20, is the first author named at the beginning of this report, unless indicated otherwise at the end of the text. **Canada:** This information is being provided to you for information purposes only and is not, and under no circumstances should be construed as, an advertisement, offering or solicitation by Goldman Sachs & Co. LLC for purchasers of securities in Canada to trade in any Canadian security. Goldman Sachs & Co. LLC is not registered as a dealer in any jurisdiction in Canada under applicable Canadian securities laws and generally is not permitted to trade in Canadian securities and may be prohibited from selling certain securities and products in certain jurisdictions in Canada. If you wish to trade in any Canadian securities or other products in Canada please contact Goldman Sachs Canada Inc., an affiliate of The Goldman Sachs Group Inc., or another registered Canadian dealer. **Hong Kong:** Further information on the securities of covered companies referred to in this research may be obtained on request from Goldman Sachs (Asia) L.L.C. **India:** Further information on the subject company or companies referred to in this research may be obtained from Goldman Sachs (India) Securities Private Limited, Research Analyst - SEBI Registration Number INH000001493, 951-A, Rational House, Appasaheb Marathe Marg, Prabhadevi, Mumbai 400 025, India, Corporate Identity Number U74140MH2006FTC160634, Phone +91 22 6616 9000, Fax +91 22 6616 9001. Goldman Sachs may beneficially own 1% or more of the securities (as such term is defined in clause 2 (h) the Indian Securities Contracts (Regulation) Act, 1956) of the subject company or companies referred to in this research report. Investment in securities market are subject to market risks. Read all the related documents carefully before investing. Registration granted by SEBI and certification from NISM in no way guarantee performance of the intermediary or provide any assurance of returns to investors. Goldman Sachs (India) Securities Private Limited compliance officer and investor grievance contact details can be found at this link: https://publishing.gs.com/disclosures/hedge.html - /general/equity. **Japan:** See below. **Korea:** This research, and any access to it, is intended only for "professional investors" within the meaning of the Financial Services and Capital Markets Act, unless otherwise agreed by Goldman Sachs. Further information on the subject company or companies referred to in this research may be obtained from Goldman Sachs (Asia) L.L.C., Seoul Branch. **New Zealand:** Goldman Sachs New Zealand Limited and its affiliates are neither "registered banks" nor "deposit takers" (as defined in the Reserve Bank of New Zealand Act 1989) in New Zealand. This research, and any access to it, is intended for "wholesale clients" (as defined in the Financial Advisers Act 2008) unless otherwise agreed by Goldman Sachs. A copy of certain Goldman Sachs Australia and New Zealand disclosure of interests is available at:

https://www.goldmansachs.com/disclosures/australia-new-zealand/index.html. **Russia:** Research reports distributed in the Russian Federation are not advertising as defined in the Russian legislation, but are information and analysis not having product promotion as their main purpose and do not provide appraisal within the meaning of the Russian legislation on appraisal activity. Research reports do not constitute a personalized investment recommendation as defined in Russian laws and regulations, are not addressed to a specific client, and are prepared without analyzing the financial circumstances, investment profiles or risk profiles of clients. Goldman Sachs assumes no responsibility for any investment decisions that may be taken by a client or any other person based on this research report. **Singapore:** Goldman Sachs (Singapore) Pte. (Company Number: 198602165W), which is regulated by the Monetary Authority of Singapore, accepts legal responsibility for this research, and should be contacted with respect to any matters arising from, or in connection with, this research. **Taiwan:** This material is for reference only and must not be reprinted without permission. Investors should carefully consider their own investment risk. Investment results are the responsibility of the individual investor. **United Kingdom:** Persons who would be categorized as retail clients in the United Kingdom, as such term is defined in the rules of the Financial Conduct Authority, should read this research in conjunction with prior Goldman Sachs research on the covered companies referred to herein and should refer to the risk warnings that have been sent to them by Goldman Sachs International. A copy of these risks warnings, and a glossary of certain financial terms used in this report, are available from Goldman Sachs International on request.

European Union and United Kingdom: Disclosure information in relation to Article 6 (2) of the European Commission Delegated Regulation (EU) (2016/958) supplementing Regulation (EU) No 596/2014 of the European Parliament and of the Council (including as that Delegated Regulation is implemented into United Kingdom domestic law and regulation following the United Kingdom's departure from the European Union and the European Economic Area) with regard to regulatory technical standards for the technical arrangements for objective presentation of investment recommendations or other information recommending or suggesting an investment strategy and for disclosure of particular interests or indications of conflicts of interest is available at https://www.gs.com/disclosures/europeanpolicy.html which states the European Policy for Managing Conflicts of Interest in Connection with Investment Research.

Japan: Goldman Sachs Japan Co., Ltd. is a Financial Instrument Dealer registered with the Kanto Financial Bureau under registration number Kinsho 69, and a member of Japan Securities Dealers Association, Financial Futures Association of Japan Type II Financial Instruments Firms Association, The Investment Trusts Association, Japan, and Japan Investment Advisers Association. Sales and purchase of equities are subject to commission pre-determined with clients plus consumption tax. See company-specific disclosures as to any applicable disclosures required by Japanese stock exchanges, the Japanese Securities Dealers Association or the Japanese Securities Finance Company.

Ratings, coverage universe and related definitions

Buy (B), Neutral (N), Sell (S) Analysts recommend stocks as Buys or Sells for inclusion on various regional Investment Lists. Being assigned a Buy or Sell on an Investment List is determined by a stock's total return potential relative to its coverage universe. Any stock not assigned as a Buy or a Sell on an Investment List with an active rating (i.e., a stock that is not Rating Suspended, Not Rated, Early-Stage Biotech, Coverage Suspended or Not Covered), is deemed Neutral. Each region manages Regional Conviction Lists, which are selected from Buy rated stocks on the respective region's Investment Lists and represent investment recommendations focused on the size of the total return potential and/or the likelihood of the realization of the return across their respective areas of coverage. The addition or removal of stocks from such Conviction Lists are managed by the Investment Review Committee or other designated committee in each respective region and do not represent a change in the analysts' investment rating for such stocks.

Total return potential represents the upside or downside differential between the current share price and the price target, including all paid or anticipated dividends, expected during the time horizon associated with the price target. Price targets are required for all covered stocks. The total return potential, price target and associated time horizon are stated in each report adding or reiterating an Investment List membership.

Coverage Universe: A list of all stocks in each coverage universe is available by primary analyst, stock and coverage universe at https://www.gs.com/research/hedge.html.

Not Rated (NR). The investment rating, target price and earnings estimates (where relevant) are removed pursuant to Goldman Sachs policy when Goldman Sachs is acting in an advisory capacity in a merger or in a strategic transaction involving this company, when there are legal, regulatory or policy constraints due to Goldman Sachs' involvement in a transaction, and in certain other circumstances. **Early-Stage Biotech (ES).** An investment rating and a target price are not assigned pursuant to Goldman Sachs policy when this company neither has a drug, treatment or medical device that has passed a Phase II clinical trial nor a license to distribute a post-Phase II drug, treatment or medical device. **Rating Suspended (RS).** Goldman Sachs Research has suspended the investment rating and price target for this stock, because there is not a sufficient fundamental basis for determining an investment rating or target price. The previous investment rating and target price, if any, are no longer in effect for this stock and should not be relied upon. **Coverage Suspended (CS).** Goldman Sachs has suspended coverage of this company. **Not Covered (NC).** Goldman Sachs does not cover this company.

Global product; distributing entities

Goldman Sachs Global Investment Research produces and distributes research products for clients of Goldman Sachs on a global basis. Analysts based in Goldman Sachs offices around the world produce research on industries and companies, and research on macroeconomics, currencies, commodities and portfolio strategy. This research is disseminated in Australia by Goldman Sachs Australia Pty Ltd (ABN 21 006 797 897); in Brazil by Goldman Sachs do Brasil Corretora de Títulos e Valores Mobiliários S.A.; Public Communication Channel Goldman Sachs Brazil: 0800 727 5764 and / or contatogoldmanbrasil@gs.com. Available Weekdays (except holidays), from 9am to 6pm. Canal de Comunicação com o Público Goldman Sachs Brasil: 0800 727 5764 e/ou contatogoldmanbrasil@gs.com. Horário de funcionamento: segunda-feira à sexta-feira (exceto feriados), das 9h às 18h; in Canada by Goldman Sachs & Co. LLC; in Hong Kong by Goldman Sachs (Asia) L.L.C.; in India by Goldman Sachs (India) Securities Private Ltd.; in Japan by Goldman Sachs Japan Co., Ltd.; in the Republic of Korea by Goldman Sachs (Asia) L.L.C., Seoul Branch; in New Zealand by Goldman Sachs New Zealand Limited; in Russia by OOO Goldman Sachs; in Singapore by Goldman Sachs (Singapore) Pte. (Company Number: 198602165W); and in the United States of America by Goldman Sachs & Co. LLC. Goldman Sachs International has approved this research in connection with its distribution in the United Kingdom.

Goldman Sachs International ("GSI"), authorised by the Prudential Regulation Authority ("PRA") and regulated by the Financial Conduct Authority ("FCA") and the PRA, has approved this research in connection with its distribution in the United Kingdom.

European Economic Area: Goldman Sachs Bank Europe SE ("GSBE") is a credit institution incorporated in Germany and, within the Single Supervisory Mechanism, subject to direct prudential supervision by the European Central Bank and in other respects supervised by German Federal Financial Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufsicht, BaFin) and Deutsche Bundesbank and disseminates research within the European Economic Area.

General disclosures

This research is for our clients only. Other than disclosures relating to Goldman Sachs, this research is based on current public information that we consider reliable, but we do not represent it is accurate or complete, and it should not be relied on as such. The information, opinions, estimates and forecasts contained herein are as of the date hereof and are subject to change without prior notification. We seek to update our research as appropriate, but various regulations may prevent us from doing so. Other than certain industry reports published on a periodic basis, the large majority of reports are published at irregular intervals as appropriate in the analyst's judgment.

Goldman Sachs conducts a global full-service, integrated investment banking, investment management, and brokerage business. We have investment banking and other business relationships with a substantial percentage of the companies covered by Global Investment Research. Goldman Sachs & Co. LLC, the United States broker dealer, is a member of SIPC (https://www.sipc.org).

Our salespeople, traders, and other professionals may provide oral or written market commentary or trading strategies to our clients and principal trading desks that reflect opinions that are contrary to the opinions expressed in this research. Our asset management area, principal trading desks and investing businesses may make investment decisions that are inconsistent with the recommendations or views expressed in this research.

The analysts named in this report may have from time to time discussed with our clients, including Goldman Sachs salespersons and traders, or may discuss in this report, trading strategies that reference catalysts or events that may have a near-term impact on the market price of the equity securities discussed in this report, which impact may be directionally counter to the analyst's published price target expectations for such stocks. Any such trading strategies are distinct from and do not affect the analyst's fundamental equity rating for such stocks, which rating reflects a stock's return potential relative to its coverage universe as described herein.

We and our affiliates, officers, directors, and employees will from time to time have long or short positions in, act as principal in, and buy or sell, the securities or derivatives, if any, referred to in this research, unless otherwise prohibited by regulation or Goldman Sachs policy.

The views attributed to third party presenters at Goldman Sachs arranged conferences, including individuals from other parts of Goldman Sachs, do not necessarily reflect those of Global Investment Research and are not an official view of Goldman Sachs.

Any third party referenced herein, including any salespeople, traders and other professionals or members of their household, may have positions in the products mentioned that are inconsistent with the views expressed by analysts named in this report.

This research is not an offer to sell or the solicitation of an offer to buy any security in any jurisdiction where such an offer or solicitation would be illegal. It does not constitute a personal recommendation or take into account the particular investment objectives, financial situations, or needs of individual clients. Clients should consider whether any advice or recommendation in this research is suitable for their particular circumstances and, if appropriate, seek professional advice, including tax advice. The price and value of investments referred to in this research and the income from them may fluctuate. Past performance is not a guide to future performance, future returns are not guaranteed, and a loss of original capital may occur. Fluctuations in exchange rates could have adverse effects on the value or price of, or income derived from, certain investments.

Certain transactions, including those involving futures, options, and other derivatives, give rise to substantial risk and are not suitable for all investors. Investors should review current options and futures disclosure documents which are available from Goldman Sachs sales representatives or at https://www.theocc.com/about/publications/character-risks.jsp and https://www.goldmansachs.com/disclosures/cftc_fcm_disclosures. Transaction costs may be significant in option strategies calling for multiple purchase and sales of options such as spreads. Supporting documentation will be supplied upon request.

Differing Levels of Service provided by Global Investment Research: The level and types of services provided to you by Goldman Sachs Global Investment Research may vary as compared to that provided to internal and other external clients of GS, depending on various factors including your individual preferences as to the frequency and manner of receiving communication, your risk profile and investment focus and perspective (e.g., marketwide, sector specific, long term, short term), the size and scope of your overall client relationship with GS, and legal and regulatory constraints. As an example, certain clients may request to receive notifications when research on specific securities is published, and certain clients may request that specific data underlying analysts' fundamental analysis available on our internal client websites be delivered to them electronically through data feeds or otherwise. No change to an analyst's fundamental research views (e.g., ratings, price targets, or material changes to earnings estimates for equity securities), will be communicated to any client prior to inclusion of such information in a research report broadly disseminated through electronic publication to our internal client websites or through other means, as necessary, to all clients who are entitled to receive such reports.

All research reports are disseminated and available to all clients simultaneously through electronic publication to our internal client websites. Not all research content is redistributed to our clients or available to third-party aggregators, nor is Goldman Sachs responsible for the redistribution of our research by third party aggregators. For research, models or other data related to one or more securities, markets or asset classes (including related services) that may be available to you, please contact your GS representative or go to https://research.gs.com.

Disclosure information is also available at https://www.gs.com/research/hedge.html or from Research Compliance, 200 West Street, New York, NY 10282.