

May 6, 2025 10:00 AM GMT

Tesla Inc | North America

# AI and Manufacturing: An Odd Yet Perfect Couple

AI diffusion makes it necessary to re-shore manufacturing. At the same time, AI diffusion makes it possible to re-shore manufacturing. In this way, AI is both the cause and the effect of a US manufacturing revival.

**NVIDIA CEO Jensen Huang's recent visit to the White House highlighted the seemingly strange yet absolutely essential relationship between AI and manufacturing.** Mr. Huang's May 1st impromptu remarks on US manufacturing captured much of the spirit of what we have tried to convey to investors about Tesla's relative advantages that drive the name as our 'Top Pick.' The direct quotes from Mr. Huang say it best:

*"Manufacturing isn't about low cost manufacturing anymore. Manufacturing is about technology."*

*"And most of the factories that build these systems today are the most advanced factories of the future. And we're going to use artificial intelligence and robotics and omniverse digital twin technology to make it possible for us to create the factories of the future. And we have to build it right here."*

*"And this new industry is a manufacturing industry in itself... [gesturing towards the supercomputer] that's a factory machine."*

**Exhibit 1:** NVIDIA CEO Jensen Huang providing remarks on 'Investing in America' on April 30th



Source: White House

The following is an excerpt from our recently published Embodied AI [video](#)

MORGAN STANLEY & CO. LLC  
**Adam Jonas, CFA**  
Equity Analyst  
Adam.Jonas@morganstanley.com +1 212 761-1726  
**Daniela M Haigian**  
Equity Analyst  
Daniela.Haigian@morganstanley.com +1 212 761-6071  
**William Tackett, CFA**  
Research Associate  
William.Tackett@morganstanley.com +1 212 761-6028

Tesla Inc (TSLA.O, TSLA US)	
Top Pick	
Autos & Shared Mobility   United States of America	
Stock Rating	Overweight
Industry View	In-Line
Price target	\$410.00
Shr price, close (May 5, 2025)	\$280.26
Mkt cap, curr (mm)	\$986,795
52-Week Range	\$488.54-167.41

Morgan Stanley does and seeks to do business with companies covered in Morgan Stanley Research. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of Morgan Stanley Research. Investors should consider Morgan Stanley Research as only a single factor in making their investment decision.

**For analyst certification and other important disclosures, refer to the Disclosure Section, located at the end of this report.**

**explainer:**

We're often asked what is Tesla's secret sauce? What's its moat? Well - it's not really 1 thing but the combination of 6 attributes that set Tesla apart from its peers. Let's look at each of them...

1. **Data.** 7 million cars on the road today. Over 100mm by 2040.
2. **Robotics.** In-house electric motors & actuators. Just the hands of Optimus have 22 degrees of freedom.
3. **Energy.** Leading battery storage solutions at scale.
4. **AI.** A world class AI team developing FSD, Dojo and custom silicon.
5. **Manufacturing.** The most vertically integrated, US-local sourced auto company in the world.
6. **Space.** Redundant, resilient, cyber secure comms. SpaceX is the data transport layer - the connective tissue of the AI ecosystem.

So... out of Tesla's DREAMS... what does Elon Musk think is the single most critical component of the company's moat? Without any doubt... Manufacturing. You need to make the probes, to collect the data to improve the probes to collect more data to improve the probes... (you get the idea here).

Data defines the software, software defines the hardware, hardware defines the manufacturing. Elon Musk has used the car industry as a laboratory to develop competency in other areas... The car is to Tesla what the book was to Amazon.

**Exhibit 2:** The Importance of Manufacturing: You need to make the probes, to collect the data, to improve the probes, to collect more data to improve the probes... (you get the idea here)



Source: Shutterstock, Morgan Stanley Research

**Exhibit 3:** The car is to Tesla what the book was to Amazon

Source: Tesla, Amazon, Shutterstock, Morgan Stanley Research

**Knowledge and atoms (thinkers and makers). Lesson from Alexandria...** To help illustrate the diffusion of AI from the digital economy - the economy of bits and bytes - to the physical economy - the economy of atoms and photons - I refer to H.G. Wells's 1922 book "A Short History of the World," Chapter 27: The Museum and Library at Alexandria. It is meant to convey how, despite representing the most comprehensive collection of knowledge in the ancient world, that its progress was ultimately limited by a separation of the 'thinkers' and the 'makers.'

H. G. Wells writes:

*"Here we have the systematic gathering and distribution of knowledge. The foundation of this museum and library marks one of the great epochs in the history of mankind."*

*"Both the work of research and the work of dissemination went on under serious handicaps. One of these was the great social gap that separated the philosopher, who was a gentleman, from the trader and the artisan."*

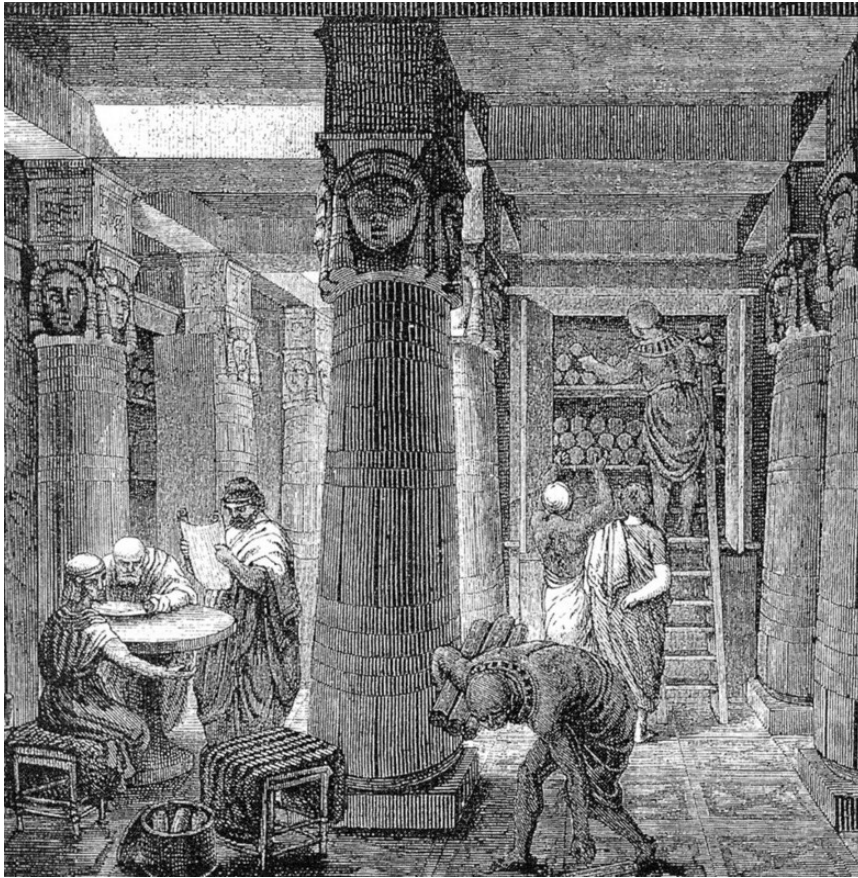
*"There were glass workers and metal workers in abundance in those days but they were not in mental contact with the thinkers. The glass worker was making the most beautifully colored beads and vials and so forth but he never made a Florentine flask or a lens. Clear glass does not seem to have interested him."*

*"The metal worker made weapons and jewelry but he never made a chemical balance. The philosopher speculated loftily about atoms and the nature of things but he had no practical experience of enamels and pigments and filters and so forth. He was not interested in substances."*

*"So Alexandria in its brief day of opportunity produced no microscopes and no chemistry."*

*And though Hero invented a steam engine it was never set either to pump or drive a boat or do any useful thing."*

**Exhibit 4:** Library of Alexandria



Source: Wikipedia

## Valuation Methodology and Risks

### Tesla Inc (TSLA.O)

Our PT of \$410 is comprised of 5 components: **(1)** \$75/share for core Tesla Auto business on 4.7mm units in 2030, 9.0% WACC, 14x 2030 exit EBITDA multiple, exit EBITDA margin of 16.1%. **(2)** Network Services at \$160, 65% attach rate at \$200 ARPU by 2040 **(3)** Tesla Mobility at \$90 on DCF with ~7.5mn cars at ~\$1.46/mile by 2040. **(4)** Energy at \$67/share, & **(5)** Tesla as a 3rd party supplier at \$17/share.

### Risks to Upside

- Disclosure on service revs
- Increased FSD attach rate
- Cost milestones on new battery
- New model intro (Cybertruck, multivan, Semi)
- 3rd party battery win
- Geographic penetration & new capacity

### Risks to Downside

- Competition: legacy OEMs/Chinese players/big tech
- Execution risk: multiple factory ramps
- Market does not recognize Dojo-enabled services op, lower than expected attach rate & RPU
- China risk
- Dilution
- Valuation

## Disclosure Section

The information and opinions in Morgan Stanley Research were prepared by Morgan Stanley & Co. LLC, and/or Morgan Stanley C.T.V.M. S.A., and/or Morgan Stanley Mexico, Casa de Bolsa, S.A. de C.V., and/or Morgan Stanley Canada Limited. As used in this disclosure section, "Morgan Stanley" includes Morgan Stanley & Co. LLC, Morgan Stanley C.T.V.M. S.A., Morgan Stanley Mexico, Casa de Bolsa, S.A. de C.V., Morgan Stanley Canada Limited and their affiliates as necessary.

For important disclosures, stock price charts and equity rating histories regarding companies that are the subject of this report, please see the Morgan Stanley Research Disclosure Website at [www.morganstanley.com/researchdisclosures](http://www.morganstanley.com/researchdisclosures), or contact your investment representative or Morgan Stanley Research at 1585 Broadway, (Attention: Research Management), New York, NY, 10036 USA.

For valuation methodology and risks associated with any recommendation, rating or price target referenced in this research report, please contact the Client Support Team as follows: US/Canada +1 800 303-2495; Hong Kong +852 2848-5999; Latin America +1 718 754-5444 (U.S.); London +44 (0)20-7425-8169; Singapore +65 6834-6860; Sydney +61 (0)2-9770-1505; Tokyo +81 (0)3-6836-9000. Alternatively you may contact your investment representative or Morgan Stanley Research at 1585 Broadway, (Attention: Research Management), New York, NY 10036 USA.

### Analyst Certification

The following analysts hereby certify that their views about the companies and their securities discussed in this report are accurately expressed and that they have not received and will not receive direct or indirect compensation in exchange for expressing specific recommendations or views in this report: Adam Jonas, CFA.

### Global Research Conflict Management Policy

Morgan Stanley Research has been published in accordance with our conflict management policy, which is available at [www.morganstanley.com/institutional/research/conflictolicies](http://www.morganstanley.com/institutional/research/conflictolicies). A Portuguese version of the policy can be found at [www.morganstanley.com.br](http://www.morganstanley.com.br)

### Important Regulatory Disclosures on Subject Companies

As of March 31, 2025, Morgan Stanley beneficially owned 1% or more of a class of common equity securities of the following companies covered in Morgan Stanley Research: Adient PLC, American Axle & Manufacturing Holdings Inc, Aptiv Plc, Asbury Automotive Group Inc, AutoNation Inc., Avis Budget Group Inc, BorgWarner Inc., Carmax Inc, Carvana Co, Ferrari NV, Ford Motor Company, General Motors Company, Goodyear Tire & Rubber Company, Group 1 Automotive, Inc, Hertz Global Holdings Inc, Lear Corporation, Lithia Motors Inc., Magna International Inc., Mobileye Global Inc, PHINIA INC, Rivian Automotive, Inc., Sonic Automotive Inc, **Tesla Inc**, Visteon Corporation.

Within the last 12 months, Morgan Stanley managed or co-managed a public offering (or 144A offering) of securities of Avis Budget Group Inc, Ford Motor Company, General Motors Company, Hertz Global Holdings Inc, **Tesla Inc**.

Within the last 12 months, Morgan Stanley has received compensation for investment banking services from Avis Budget Group Inc, Ford Motor Company, General Motors Company, Hertz Global Holdings Inc, Rivian Automotive, Inc., **Tesla Inc**.

In the next 3 months, Morgan Stanley expects to receive or intends to seek compensation for investment banking services from Aptiv Plc, AutoNation Inc., Avis Budget Group Inc, BorgWarner Inc., Ferrari NV, Ford Motor Company, General Motors Company, Goodyear Tire & Rubber Company, Hertz Global Holdings Inc, Lear Corporation, Lithia Motors Inc., Magna International Inc., Mobileye Global Inc, PHINIA INC, Quantumscape Corp, Rivian Automotive, Inc., **Tesla Inc**, Visteon Corporation.

Within the last 12 months, Morgan Stanley has received compensation for products and services other than investment banking services from American Axle & Manufacturing Holdings Inc, Aptiv Plc, Avis Budget Group Inc, BorgWarner Inc., Ferrari NV, Ford Motor Company, General Motors Company, Goodyear Tire & Rubber Company, Hertz Global Holdings Inc, Lear Corporation, Rivian Automotive, Inc., **Tesla Inc**, Visteon Corporation.

Within the last 12 months, Morgan Stanley has provided or is providing investment banking services to, or has an investment banking client relationship with, the following company: Aptiv Plc, AutoNation Inc., Avis Budget Group Inc, BorgWarner Inc., Ferrari NV, Ford Motor Company, General Motors Company, Goodyear Tire & Rubber Company, Hertz Global Holdings Inc, Lear Corporation, Lithia Motors Inc., Magna International Inc., Mobileye Global Inc, PHINIA INC, Quantumscape Corp, Rivian Automotive, Inc., **Tesla Inc**, Visteon Corporation.

Within the last 12 months, Morgan Stanley has either provided or is providing non-investment banking, securities-related services to and/or in the past has entered into an agreement to provide services or has a client relationship with the following company: American Axle & Manufacturing Holdings Inc, Aptiv Plc, Avis Budget Group Inc, BorgWarner Inc., Ferrari NV, Ford Motor Company, General Motors Company, Goodyear Tire & Rubber Company, Hertz Global Holdings Inc, Lear Corporation, Rivian Automotive, Inc., **Tesla Inc**, Visteon Corporation.

An employee, director or consultant of Morgan Stanley is a director of General Motors Company. This person is not a research analyst or a member of a research analyst's household.

Morgan Stanley & Co. LLC makes a market in the securities of Adient PLC, American Axle & Manufacturing Holdings Inc, Asbury Automotive Group Inc, AutoNation Inc., Avis Budget Group Inc, BorgWarner Inc., Carmax Inc, Ford Motor Company, General Motors Company, Goodyear Tire & Rubber Company, Group 1 Automotive, Inc, Lear Corporation, Lithia Motors Inc., Magna International Inc., Mobileye Global Inc, Penske Automotive Group, Inc, PHINIA INC, Quantumscape Corp, Rivian Automotive, Inc., Sonic Automotive Inc, **Tesla Inc**, Visteon Corporation.

The equity research analysts or strategists principally responsible for the preparation of Morgan Stanley Research have received compensation based upon various factors, including quality of research, investor client feedback, stock picking, competitive factors, firm revenues and overall investment banking revenues. Equity Research analysts' or strategists' compensation is not linked to investment banking or capital markets transactions performed by Morgan Stanley or the profitability or revenues of particular trading desks.

Morgan Stanley and its affiliates do business that relates to companies/instruments covered in Morgan Stanley Research, including market making, providing liquidity, fund management, commercial banking, extension of credit, investment services and investment banking. Morgan Stanley sells to and buys from customers the securities/instruments of companies covered in Morgan Stanley Research on a principal basis. Morgan Stanley may have a position in the debt of the Company or instruments discussed in this report. Morgan Stanley trades or may trade as principal in the debt securities (or in related derivatives) that are the subject of the debt research report.

Certain disclosures listed above are also for compliance with applicable regulations in non-US jurisdictions.

### STOCK RATINGS

Morgan Stanley uses a relative rating system using terms such as Overweight, Equal-weight, Not-Rated or Underweight (see definitions below). Morgan Stanley does not assign ratings of Buy, Hold or Sell to the stocks we cover. Overweight, Equal-weight, Not-Rated and Underweight are not the equivalent of buy, hold and sell. Investors should carefully read the definitions of all ratings used in Morgan Stanley Research. In addition, since Morgan Stanley Research contains more complete information concerning the analyst's views, investors should carefully read Morgan Stanley Research, in its entirety, and not infer the contents from the rating alone. In any case, ratings (or research) should not be used or relied upon as investment advice. An investor's decision to buy or sell a stock should depend on individual circumstances (such as the investor's existing holdings) and other considerations.

### Global Stock Ratings Distribution



(as of April 30, 2025)

The Stock Ratings described below apply to Morgan Stanley's Fundamental Equity Research and do not apply to Debt Research produced by the Firm.

For disclosure purposes only (in accordance with FINRA requirements), we include the category headings of Buy, Hold, and Sell alongside our ratings of Overweight, Equal-weight, Not-Rated and Underweight. Morgan Stanley does not assign ratings of Buy, Hold or Sell to the stocks we cover. Overweight, Equal-weight, Not-Rated and Underweight are not the equivalent of buy, hold, and sell but represent recommended relative weightings (see definitions below). To satisfy regulatory requirements, we correspond Overweight, our most positive stock rating, with a buy recommendation; we correspond Equal-weight and Not-Rated to hold and Underweight to sell recommendations, respectively.

Stock Rating Category	Coverage Universe		Investment Banking Clients (IBC)			Other Material Investment Services Clients (MISC)	
	Count	% of Total	Count	% of Total IBC	% of Rating Category	Count	% of Total Other MISC
Overweight/Buy	1501	40%	377	46%	25%	691	40%
Equal-weight/Hold	1667	44%	375	45%	22%	796	46%
Not-Rated/Hold	3	0%	0	0%	0%	1	0%
Underweight/Sell	603	16%	76	9%	13%	229	13%
Total	3,774		828			1717	

Data include common stock and ADRs currently assigned ratings. Investment Banking Clients are companies from whom Morgan Stanley received investment banking compensation in the last 12 months. Due to rounding off of decimals, the percentages provided in the "% of total" column may not add up to exactly 100 percent.

## Analyst Stock Ratings

**Overweight (O).** The stock's total return is expected to exceed the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

**Equal-weight (E).** The stock's total return is expected to be in line with the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

**Not-Rated (NR).** Currently the analyst does not have adequate conviction about the stock's total return relative to the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

**Underweight (U).** The stock's total return is expected to be below the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Unless otherwise specified, the time frame for price targets included in Morgan Stanley Research is 12 to 18 months.

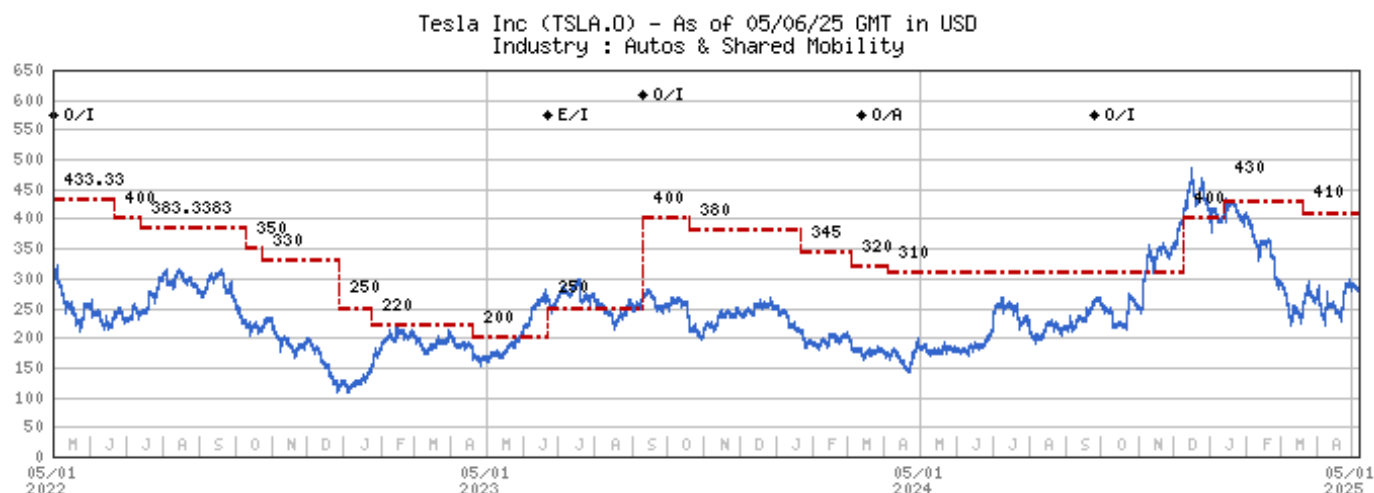
## Analyst Industry Views

**Attractive (A):** The analyst expects the performance of his or her industry coverage universe over the next 12-18 months to be attractive vs. the relevant broad market benchmark, as indicated below.

**In-Line (I):** The analyst expects the performance of his or her industry coverage universe over the next 12-18 months to be in line with the relevant broad market benchmark, as indicated below.

**Cautious (C):** The analyst views the performance of his or her industry coverage universe over the next 12-18 months with caution vs. the relevant broad market benchmark, as indicated below. Benchmarks for each region are as follows: North America - S&P 500; Latin America - relevant MSCI country index or MSCI Latin America Index; Europe - MSCI Europe; Japan - TOPIX; Asia - relevant MSCI country index or MSCI sub-regional index or MSCI AC Asia Pacific ex Japan Index.

## Stock Price, Price Target and Rating History (See Rating Definitions)



Stock Rating History: 5/1/20 : E/I; 6/12/20 : U/I; 8/13/20 : E/I; 11/18/20 : O/I; 6/22/23 : E/I; 9/10/23 : O/I; 3/13/24 : O/A; 9/25/24 : O/I

Price Target History: 3/24/20 : 29.33; 5/4/20 : 45.33; 6/12/20 : 43.33; 7/7/20 : 49.33; 7/29/20 : 70; 8/13/20 : 90.67; 10/15/20 : 111; 10/22/20 : 120; 11/18/20 : 180; 1/5/21 : 270; 2/1/21 : 293.33; 4/22/21 : 300; 10/24/21 : 400; 1/10/22 : 433.33; 6/22/22 : 400; 7/14/22 : 383.33; 8/25/22 : 383; 10/10/22 : 350; 10/24/22 : 330; 12/28/22 : 250; 1/25/23 : 220; 4/20/23 : 200; 6/22/23 : 250; 9/10/23 : 400; 10/19/23 : 380; 1/22/24 : 345; 3/5/24 : 320; 4/4/24 : 310; 12/10/24 : 400; 1/13/25 : 430; 3/20/25 : 410

Source: Morgan Stanley Research Date Format : MM/DD/YY Price Target — No Price Target Assigned (NA)  
 Stock Price (Not Covered by Current Analyst) — Stock Price (Covered by Current Analyst) —  
 Stock and Industry Ratings (abbreviations below) appear as ♦ Stock Rating/Industry View  
 Stock Ratings: Overweight (O) Equal-weight (E) Underweight (U) Not-Rated (NR) No Rating Available (NA)  
 Industry View: Attractive (A) In-line (I) Cautious (C) No Rating (NR)

Effective January 13, 2014, the stocks covered by Morgan Stanley Asia Pacific will be rated relative to the analyst's industry (or industry team's) coverage.

Effective January 13, 2014, the industry view benchmarks for Morgan Stanley Asia Pacific are as follows: relevant MSCI country index or MSCI sub-regional index or MSCI AC Asia Pacific ex Japan Index.

## Important Disclosures for Morgan Stanley Smith Barney LLC Customers

Important disclosures regarding the relationship between the companies that are the subject of Morgan Stanley Research and Morgan Stanley Smith Barney LLC or Morgan Stanley or any of their affiliates, are available on the Morgan Stanley Wealth Management disclosure website at [www.morganstanley.com/online/researchdisclosures](http://www.morganstanley.com/online/researchdisclosures). For Morgan Stanley specific disclosures, you may refer to [www.morganstanley.com/researchdisclosures](http://www.morganstanley.com/researchdisclosures).

Each Morgan Stanley research report is reviewed and approved on behalf of Morgan Stanley Smith Barney LLC. This review and approval is conducted by the same person who reviews the research report on behalf of Morgan Stanley. This could create a conflict of interest.

## Other Important Disclosures

A member of Research who had or could have had access to the research prior to completion owns securities (or related derivatives) in the Ford Motor Company. This person is not a research analyst or a member of research analyst's household.

Morgan Stanley Research policy is to update research reports as and when the Research Analyst and Research Management deem appropriate, based on developments with the issuer, the sector, or the market that may have a material impact on the research views or opinions stated therein. In addition, certain Research publications are intended to be updated on a regular periodic basis (weekly/monthly/quarterly/annual) and will ordinarily be updated with that frequency, unless the Research Analyst and Research Management determine that a different publication schedule is appropriate based on current conditions.

Morgan Stanley is not acting as a municipal advisor and the opinions or views contained herein are not intended to be, and do not constitute, advice within the meaning of Section 975 of the Dodd-Frank Wall Street Reform and Consumer Protection Act.

Morgan Stanley produces an equity research product called a "Tactical Idea." Views contained in a "Tactical Idea" on a particular stock may be contrary to the recommendations or views expressed in research on the same stock. This may be the result of differing time horizons, methodologies, market events, or other factors. For all research available on a particular stock, please contact your sales representative or go to Matrix at <http://www.morganstanley.com/matrix>.

Morgan Stanley Research is provided to our clients through our proprietary research portal on Matrix and also distributed electronically by Morgan Stanley to clients. Certain, but not all, Morgan Stanley Research products are also made available to clients through third-party vendors or redistributed to clients through alternate electronic means as a convenience. For access to all available Morgan Stanley Research, please contact your sales representative or go to Matrix at <http://www.morganstanley.com/matrix>.

Any access and/or use of Morgan Stanley Research is subject to Morgan Stanley's Terms of Use (<http://www.morganstanley.com/terms.html>). By accessing and/or using Morgan Stanley Research, you are indicating that you have read and agree to be bound by our Terms of Use (<http://www.morganstanley.com/terms.html>). In addition you consent to Morgan Stanley processing your personal data and using cookies in accordance with our Privacy Policy and our Global Cookies Policy ([http://www.morganstanley.com/privacy\\_pledge.html](http://www.morganstanley.com/privacy_pledge.html)), including for the purposes of setting your preferences and to collect readership data so that we can deliver better and more personalized service and products to you. To find out more information about how Morgan Stanley processes personal data, how we use cookies and how to reject cookies see our Privacy Policy and our Global Cookies Policy ([http://www.morganstanley.com/privacy\\_pledge.html](http://www.morganstanley.com/privacy_pledge.html)).

If you do not agree to our Terms of Use and/or if you do not wish to provide your consent to Morgan Stanley processing your personal data or using cookies please do not access our research.



Morgan Stanley Research does not provide individually tailored investment advice. Morgan Stanley Research has been prepared without regard to the circumstances and objectives of those who receive it. Morgan Stanley recommends that investors independently evaluate particular investments and strategies, and encourages investors to seek the advice of a financial adviser. The appropriateness of an investment or strategy will depend on an investor's circumstances and objectives. The securities, instruments, or strategies discussed in Morgan Stanley Research may not be suitable for all investors, and certain investors may not be eligible to purchase or participate in some or all of them. Morgan Stanley Research is not an offer to buy or sell or the solicitation of an offer to buy or sell any security/instrument or to participate in any particular trading strategy. The value of and income from your investments may vary because of changes in interest rates, foreign exchange rates, default rates, prepayment rates, securities/instruments prices, market indexes, operational or financial conditions of companies or other factors. There may be time limitations on the exercise of options or other rights in securities/instruments transactions. Past performance is not necessarily a guide to future performance. Estimates of future performance are based on assumptions that may not be realized. If provided, and unless otherwise stated, the closing price on the cover page is that of the primary exchange for the subject company's securities/instruments.

The fixed income research analysts, strategists or economists principally responsible for the preparation of Morgan Stanley Research have received compensation based upon various factors, including quality, accuracy and value of research, firm profitability or revenues (which include fixed income trading and capital markets profitability or revenues), client feedback and competitive factors. Fixed Income Research analysts', strategists' or economists' compensation is not linked to investment banking or capital markets transactions performed by Morgan Stanley or the profitability or revenues of particular trading desks.

The "Important Regulatory Disclosures on Subject Companies" section in Morgan Stanley Research lists all companies mentioned where Morgan Stanley owns 1% or more of a class of common equity securities of the companies. For all other companies mentioned in Morgan Stanley Research, Morgan Stanley may have an investment of less than 1% in securities/instruments or derivatives of securities/instruments of companies and may trade them in ways different from those discussed in Morgan Stanley Research. Employees of Morgan Stanley not involved in the preparation of Morgan Stanley Research may have investments in securities/instruments or derivatives of securities/instruments of companies mentioned and may trade them in ways different from those discussed in Morgan Stanley Research. Derivatives may be issued by Morgan Stanley or associated persons.

With the exception of information regarding Morgan Stanley, Morgan Stanley Research is based on public information. Morgan Stanley makes every effort to use reliable, comprehensive information, but we make no representation that it is accurate or complete. We have no obligation to tell you when opinions or information in Morgan Stanley Research change apart from when we intend to discontinue equity research coverage of a subject company. Facts and views presented in Morgan Stanley Research have not been reviewed by, and may not reflect information known to, professionals in other Morgan Stanley business areas, including investment banking personnel.

Morgan Stanley Research personnel may participate in company events such as site visits and are generally prohibited from accepting payment by the company of associated expenses unless pre-approved by authorized members of Research management.

Morgan Stanley may make investment decisions that are inconsistent with the recommendations or views in this report.

To our readers based in Taiwan or trading in Taiwan securities/instruments: Information on securities/instruments that trade in Taiwan is distributed by Morgan Stanley Taiwan Limited ("MSTL"). Such information is for your reference only. The reader should independently evaluate the investment risks and is solely responsible for their investment decisions. Morgan Stanley Research may not be distributed to the public media or quoted or used by the public media without the express written consent of Morgan Stanley. Any non-customer reader within the scope of Article 7-1 of the Taiwan Stock Exchange Recommendation Regulations accessing and/or receiving Morgan Stanley Research is not permitted to provide Morgan Stanley Research to any third party (including but not limited to related parties, affiliated companies and any other third parties) or engage in any activities regarding Morgan Stanley Research which may create or give the appearance of creating a conflict of interest. Information on securities/instruments that do not trade in Taiwan is for informational purposes only and is not to be construed as a recommendation or a solicitation to trade in such securities/instruments. MSTL may not execute transactions for clients in these securities/instruments.

Morgan Stanley is not incorporated under PRC law and the research in relation to this report is conducted outside the PRC. Morgan Stanley Research does not constitute an offer to sell or the solicitation of an offer to buy any securities in the PRC. PRC investors shall have the relevant qualifications to invest in such securities and shall be responsible for obtaining all relevant approvals, licenses, verifications and/or registrations from the relevant governmental authorities themselves. Neither this report nor any part of it is intended as, or shall constitute, provision of any consultancy or advisory service of securities investment as defined under PRC law. Such information is provided for your reference only.

Morgan Stanley Research is disseminated in Brazil by Morgan Stanley C.T.V.M. S.A. located at Av. Brigadeiro Faria Lima, 3600, 6th floor, São Paulo - SP, Brazil; and is regulated by the Comissão de Valores Mobiliários; in Mexico by Morgan Stanley México, Casa de Bolsa, S.A. de C.V. which is regulated by Comisión Nacional Bancaria y de Valores. Paseo de los Tamarindos 90, Torre 1, Col. Bosques de las Lomas Floor 29, 05120 Mexico City; in Japan by Morgan Stanley MUFG Securities Co., Ltd. and, for Commodities related research reports only, Morgan Stanley Capital Group Japan Co., Ltd; in Hong Kong by Morgan Stanley Asia Limited (which accepts responsibility for its contents) and by Morgan Stanley Bank Asia Limited; in Singapore by Morgan Stanley Asia (Singapore) Pte. (Registration number 199206298Z) and/or Morgan Stanley Asia (Singapore) Securities Pte Ltd (Registration number 200008434H), regulated by the Monetary Authority of Singapore (which accepts legal responsibility for its contents and should be contacted with respect to any matters arising from, or in connection with, Morgan Stanley Research) and by Morgan Stanley Bank Asia Limited, Singapore Branch (Registration number T14FC0118); in Australia to "wholesale clients" within the meaning of the Australian Corporations Act by Morgan Stanley Australia Limited A.B.N. 67 003 734 576, holder of Australian financial services license No. 233742, which accepts responsibility for its contents; in Australia to "wholesale clients" and "retail clients" within the meaning of the Australian Corporations Act by Morgan Stanley Wealth Management Australia Pty Ltd (A.B.N. 19 009 145 555, holder of Australian financial services license No. 240813, which accepts responsibility for its contents; in Korea by Morgan Stanley & Co International plc, Seoul Branch; in India by Morgan Stanley India Company Private Limited having Corporate Identification No (CIN) U22990MH1998PTC115305, regulated by the Securities and Exchange Board of India ("SEBI") and holder of licenses as a Research Analyst (SEBI Registration No. INH000001105); Stock Broker (SEBI Stock Broker Registration No. INZ000244438), Merchant Banker (SEBI Registration No. INM000011203), and depository participant with National Securities Depository Limited (SEBI Registration No. IN-DP-NSDL-567-2021) having registered office at Altimus, Level 39 & 40, Pandurang Budhkar Marg, Worli, Mumbai 400018, India; Telephone no. +91-22-61181000; Compliance Officer Details: Mr. Tejarshi Hardas, Tel. No.: +91-22-61181000 or Email: tejarshi.hardas@morganstanley.com; Grievance officer details: Mr. Tejarshi Hardas, Tel. No.: +91-22-61181000 or Email: msic-compliance@morganstanley.com. Morgan Stanley India Company Private Limited (MSICPL) may use AI tools in providing research services. All recommendations contained herein are made by the duly qualified research analysts; in Canada by Morgan Stanley Canada Limited; in Germany and the European Economic Area where required by Morgan Stanley Europe S.E., authorised and regulated by Bundesanstalt fuer Finanzdienstleistungsaufsicht (BaFin) under the reference number 14-9169; in the US by Morgan Stanley & Co. LLC, which accepts responsibility for its contents. Morgan Stanley & Co. International plc, authorized by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority, disseminates in the UK research that it has prepared, and research which has been prepared by any of its affiliates, only to persons who (i) are investment professionals falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (as amended, the "Order"); (ii) are persons who are high net worth entities falling within Article 49(2)(a) to (d) of the Order; or (iii) are persons to whom an invitation or inducement to engage in investment activity (within the meaning of section 21 of the Financial Services and Markets Act 2000, as amended) may otherwise lawfully be communicated or caused to be communicated. RMB Morgan Stanley Proprietary Limited is a member of the JSE Limited and A2X (Pty) Ltd. RMB Morgan Stanley Proprietary Limited is a joint venture owned equally by Morgan Stanley International Holdings Inc. and RMB Investment Advisory (Proprietary) Limited, which is wholly owned by FirstRand Limited. The information in Morgan Stanley Research is being disseminated by Morgan Stanley Saudi Arabia, regulated by the Capital Market Authority in the Kingdom of Saudi Arabia, and is directed at Sophisticated investors only.

The information in Morgan Stanley Research is being communicated by Morgan Stanley & Co. International plc (DIFC Branch), regulated by the Dubai Financial Services Authority (the DFSA) or by Morgan Stanley & Co. International plc (ADGM Branch), regulated by the Financial Services Regulatory Authority Abu Dhabi (the FSRA), and is directed at Professional Clients only, as defined by the DFSA or the FSRA, respectively. The financial products or financial services to which this research relates will only be made available to a customer who we are satisfied meets the regulatory criteria of a Professional Client. A distribution of the different MS Research ratings or recommendations, in percentage terms for Investments in each sector covered, is available upon request from your sales representative.

The information in Morgan Stanley Research is being communicated by Morgan Stanley & Co. International plc (QFC Branch), regulated by the Qatar Financial Centre Regulatory Authority (the QFCRA), and is directed at business customers and market counterparties only and is not intended for Retail Customers as defined by the QFCRA.

As required by the Capital Markets Board of Turkey, investment information, comments and recommendations stated here, are not within the scope of investment advisory activity. Investment advisory service is provided exclusively to persons based on their risk and income preferences by the authorized firms. Comments and recommendations stated here are general in nature. These opinions may not fit to your financial status, risk and return preferences. For this reason, to make an investment decision by relying solely to this information stated here may not bring about outcomes that fit your expectations.

The trademarks and service marks contained in Morgan Stanley Research are the property of their respective owners. Third-party data providers make no warranties or representations relating to the accuracy, completeness, or timeliness of the data they provide and shall not have liability for any damages relating to such data. The Global Industry Classification Standard (GICS) was developed by and is the exclusive property of MSCI and S&P.

Morgan Stanley Research, or any portion thereof may not be reprinted, sold or redistributed without the written consent of Morgan Stanley.

Indicators and trackers referenced in Morgan Stanley Research may not be used as, or treated as, a benchmark under Regulation EU 2016/1011, or any other similar framework.

The issuers and/or fixed income products recommended or discussed in certain fixed income research reports may not be continuously followed. Accordingly, investors should regard those fixed income research reports as providing stand-alone analysis and should not expect continuing analysis or additional reports relating to such issuers and/or individual fixed income products. Morgan Stanley may hold, from time to time, material financial and commercial interests regarding the company subject to the Research report.

Registration granted by SEBI and certification from the National Institute of Securities Markets (NISM) in no way guarantee performance of the intermediary or provide any assurance of returns to investors. Investment in securities market are subject to market risks. Read all the related documents carefully before investing.

## INDUSTRY COVERAGE: Autos & Shared Mobility

COMPANY (TICKER)	RATING (AS OF)	PRICE* (05/05/2025)
<b>Adam Jonas, CFA</b>		
Adient PLC (ADNT.N)	U (03/17/2021)	\$12.87
American Axle & Manufacturing Holdings Inc (AXL.N)	O (02/28/2022)	\$4.29
Aptiv Plc (APTV.N)	U (02/06/2024)	\$58.78
Avis Budget Group Inc (CAR.O)	O (06/20/2023)	\$96.30
BorgWarner Inc. (BWA.N)	O (05/15/2023)	\$29.45
Carmax Inc (KMX.N)	O (07/10/2018)	\$66.29
Carvana Co (CVNA.N)	O (03/25/2025)	\$259.57
Ferrari NV (RACE.N)	O (05/09/2019)	\$466.46
Ford Motor Company (F.N)	E (09/25/2024)	\$10.17
General Motors Company (GM.N)	E (12/10/2024)	\$45.38
Hertz Global Holdings Inc (HTZ.O)	E (02/08/2024)	\$6.20
Lear Corporation (LEA.N)	O (05/10/2024)	\$88.37
Lucid Group Inc (LCID.O)	E (03/17/2025)	\$2.36
Magna International Inc. (MGA.N)	E (09/25/2024)	\$33.28
Mobileye Global Inc (MBLY.O)	E (08/02/2024)	\$14.55
PHINIA INC (PHIN.N)	E (09/25/2024)	\$41.94
Quantumscape Corp (QS.N)	NR (11/21/2024)	\$3.87
Rivian Automotive, Inc. (RIVN.O)	E (09/25/2024)	\$13.55
Tesla Inc (TSLA.O)	O (09/10/2023)	\$280.26
Visteon Corporation (VC.O)	E (06/01/2022)	\$80.54
<b>Daniela M Haigian</b>		
Asbury Automotive Group Inc (ABG.N)	E (09/25/2024)	\$220.71
AutoNation Inc. (AN.N)	O (09/25/2024)	\$175.84
Group 1 Automotive, Inc (GPI.N)	O (09/25/2024)	\$411.81
Lithia Motors Inc. (LAD.N)	E (09/25/2024)	\$298.44
Penske Automotive Group, Inc (PAG.N)	O (09/25/2024)	\$156.23
Sonic Automotive Inc (SAH.N)	E (09/25/2024)	\$62.74
<b>Shaqeal A Kirunda</b>		
Goodyear Tire & Rubber Company (GT.O)	E (06/13/2024)	\$11.04

---

Stock Ratings are subject to change. Please see latest research for each company.  
\* Historical prices are not split adjusted.

© 2025 Morgan Stanley