Morgan Stanley | RESEARCH

IDEA

October 30, 2026 11:33 PM GMT

US Rates Strategy | North America

"It's The Rates Market..."

Despite stronger US growth, a rising cost of capital has weighed on risk assets, and the political backdrop may explain some of the risk-off. We think the midterms matter for rates only if they move equities, and we would wait for the vote, payrolls, and CPI before adding duration or curve risk.

Key Takeaways

- By the proxy funds rate, monetary conditions are nearly as tight as at the peak of the last hiking cycle, though the policy rate sits well below that level.
- The proxy funds rate sits >100bp above the effective fed funds rate, outside its usual band, driven by a broad-based increase in bond market yields.
- AI-related IG yields rose 100bp more than Treasury yields over the past year, adding an AI-specific layer to the broader increase in the cost of capital.
- Maintain the SFRZ6Z7 flattener at +35bp with a +10bp target and +53bp trailing stop, as a widening gap between the trough rate and longer-run dot favors it.
- Payrolls and CPI both land within a week of the November 3 vote, and if risk-off continues, curve shape could trade sporadically into both of those releases.

Click here for our Bloomberg Ticker Almanac.

Please add me to your distribution list.

MORGAN STANLEY & CO. LLC

Matthew Hornbach
Strategist
Matthew.Hornbach@morganstanley.com +1 212 761-1837

Martin W Tobias, CFA
Strategist
Martin.Tobias@morganstanley.com +1 212 761-6076

Shaun Zhou
Strategist
Shaun.Zhou@morganstanley.com +1 212 761-3348

Aryaman Singh
Strategist
Aryaman.Singh@morganstanley.com +1 212 761-1993

Eli P Carter
Strategist
Eli.Carter@morganstanley.com +1 212 761-4703

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.

Interest Rate Strategy

United States | There was a yield level that mattered after all

MORGAN STANLEY & CO. LLC

Matthew Hornbach, CMT
Matthew.Hornbach@morganstanley.com +1 212 761-1863

Martin Tobias, CFA, CMT
Martin.Tobias@morganstanley.com +1 212 761-6076

Shaun Zhou
Shaun.Zhou@morganstanley.com +1 212 761-6076

Aryaman Singh
Aryaman@morganstanley.com +1 212 761-1993

Eli Carter
Eli.Carter@morganstanley.com +1 212 761-4703

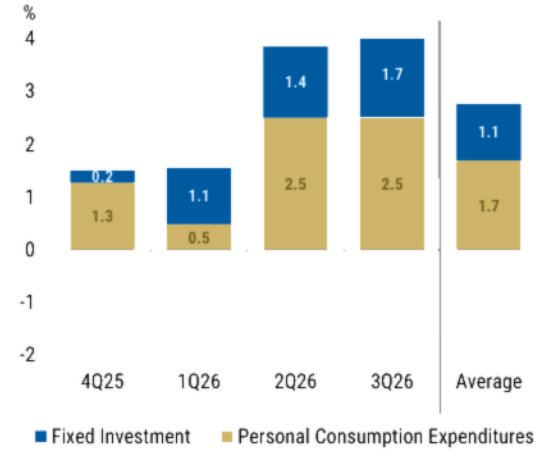
It's the rates market, stupid

In 1992, James Carville – a political strategist and chief campaign adviser for Bill Clinton's successful US presidential campaign against incumbent George H.W. Bush – coined the phrase "It's the economy, stupid." The phrase meant campaign workers should focus messaging on the recession and the public's financial concerns rather than get distracted.

This time, though, with the US economy strengthening into the midterm election, another catchphrase may resonate more: it's the rates market. As Exhibit 1 shows, private domestic final demand contributed 2.8pp to annualized real GDP growth, on average, over the past four quarters – mostly driven by 2Q26 and 3Q26.

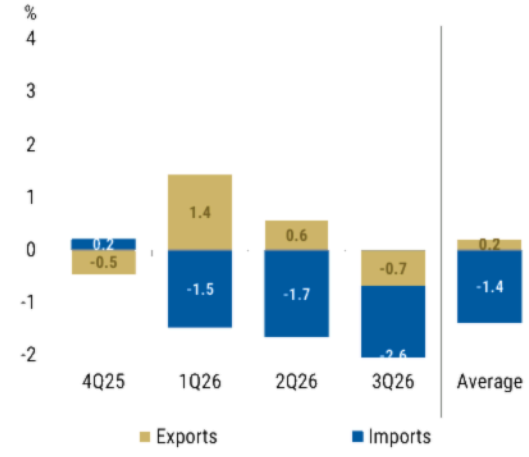
At the same time, as our economists point out often, we need to adjust lower the fixed investment contribution related to the AI theme with imports related to the AI theme. As shown in Exhibit 2, net exports shaved 1.2pp off real GDP – bringing the contribution of private final domestic demand adjusted for net exports to 1.6pp – much lower than 2.8pp.

Exhibit 1: Private domestic final demand contributions to real GDP Q/Q SAAR



Source: Morgan Stanley Research, BLA, Bloomberg

Exhibit 2: Exports and imports contributions to real GDP Q/Q SAAR

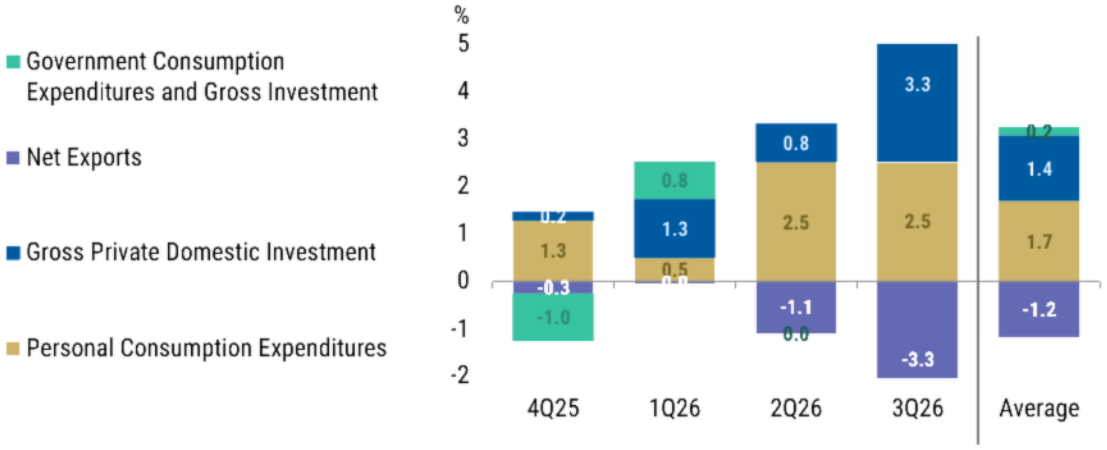


Source: Morgan Stanley Research, BLA, Bloomberg

- Indeed, adjusting the overall fixed investment contribution by the overall import contribution suggests the two in combination actually subtracted from real GDP over the past four quarters.
- Of course, neither all fixed investment nor all imports relate to the AI theme alone. Still, we think this broader viewpoint places the AI theme and its impact on the overall economy into perspective.

Nevertheless, real GDP growth over the past year remained solid (and more recently "strong", per the October FOMC statement). Real GDP grew at 2.1% Y/Y and, over the past two quarters, at 2.8% SAAR (see Exhibit 3).

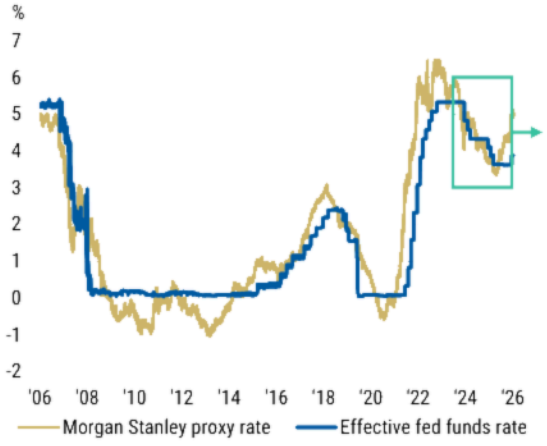
Exhibit 3: Contributions to US real GDP growth Q/Q SAAR



Source: Morgan Stanley Research, BLA

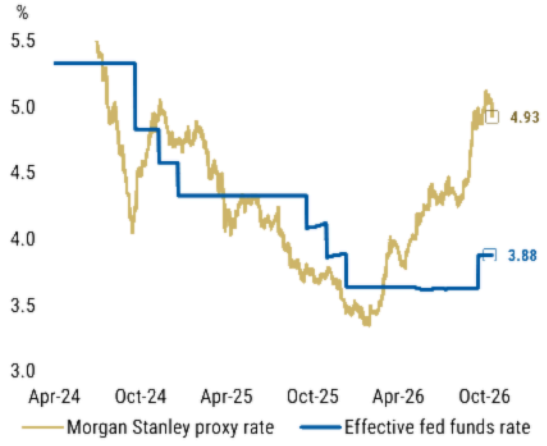
If the real economy accelerated recently, then why did risky assets languish more recently? Our US equity strategists point to a rate-of-change deceleration in (earnings) growth (see Weekly Warm-up: Clearing Events Still Ahead). This growth inflection preceded a very aggressive tightening in monetary conditions, embodied by the proxy effective fed funds rate (or the "proxy funds rate", see Exhibit 4 and Exhibit 5).

Exhibit 4: Morgan Stanley proxy effective fed funds rate* and actual effective fed funds rate: since 2006



Source: Morgan Stanley Research, FRB San Francisco, Bloomberg
* https://www.frbsf.org/research-and-insights/data-and-indicators/proxy-funds-rate/

Exhibit 5: Morgan Stanley proxy effective fed funds rate* and actual effective fed funds rate: since 2024



Source: Morgan Stanley Research, FRB San Francisco, Bloomberg
* https://www.frbsf.org/research-and-insights/data-and-indicators/proxy-funds-rate/

- Indeed, the proxy funds rate nearly returned to the peak effective fed funds rate in the 2022-2023 hiking cycle.

The proxy funds rate rarely strays far from its effective fed funds rate sibling. Outside crises like the Great Financial Crisis (GFC) and Great Covid Recession (GCR), the spread between the proxy funds rate and the effective fed funds rate stays within a +/- 100bp band (see Exhibit 6 and Exhibit 7).

- Of course, the spread between the two rates can fall if either (2) the FOMC continues to hike rates, as our economists expect, or (2) bond yields in the US - including US Treasuries and corporate bonds - fall.

Exhibit 6: Morgan Stanley proxy effective fed funds rate* less actual effective fed funds rate: since 2006



Source: Morgan Stanley Research, FRB San Francisco, Bloomberg
* https://www.frbsf.org/research-and-insights/data-and-indicators/proxy-funds-rate/

Exhibit 7: Morgan Stanley proxy fed funds rate* less actual effective fed funds rate: since 2024



Source: Morgan Stanley Research, FRB San Francisco, Bloomberg
* https://www.frbsf.org/research-and-insights/data-and-indicators/proxy-funds-rate/

Our US equity strategists conceded that, historically, equity markets continue to show strength even as the rate of change on growth slows – as long as it's still above 0% – while leadership shifts to high quality.

However, they note that, in a "mid-cycle adjustment" phase, a rapid increase in the cost of capital (rates) tends to also hurt economically sensitive equity sectors more, thereby broadening out the correction already underway – what we saw more recently.

The cost of capital rose both through the increase in US Treasury yields, but also through a dramatic rise in AI-related investment grade corporate bond spreads to US Treasuries (see Exhibit 8 and Exhibit 9).

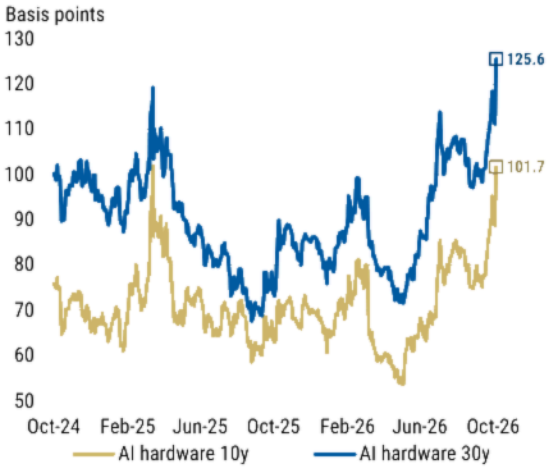
- AI data center-related investment grade bond yields rose 100bp more than US Treasury yields – which also rose 100bp at one point – over the past year.
- AI hardware-related investment grade bond yields rose 50bp more than US Treasury yields just over the past five months.

Exhibit 8: Investment Grade AI data center bond spreads to US Treasuries



Source: Morgan Stanley Research, Bloomberg

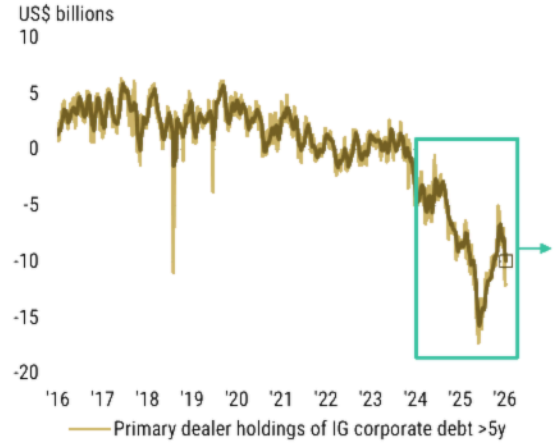
Exhibit 9: Investment Grade AI hardware bond spreads to US Treasuries



Source: Morgan Stanley Research, Bloomberg

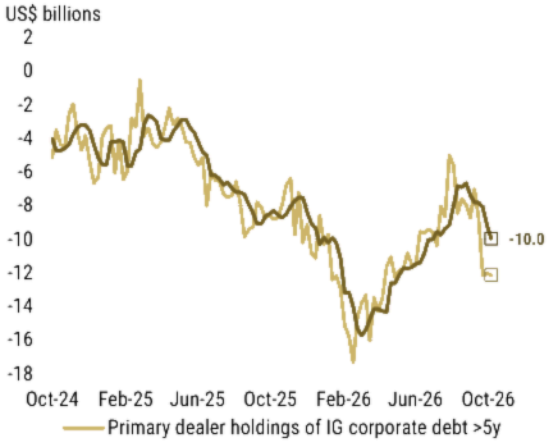
The more recent widening of corporate bond spreads appear less related to supply than risk-off sentiment. Indeed, it appears as if primary dealers in the US hold fewer longer-maturity investment grade corporate bonds today than in August when inventory peaked (see Exhibit 10 and Exhibit 11).

Exhibit 10: US primary dealer holdings of IG corporate debt >5-years in maturity: past decade



Source: Morgan Stanley Research, FRB New York, Bloomberg

Exhibit 11: US primary dealer holdings of IG corporate debt >5-years in maturity: past 2 years



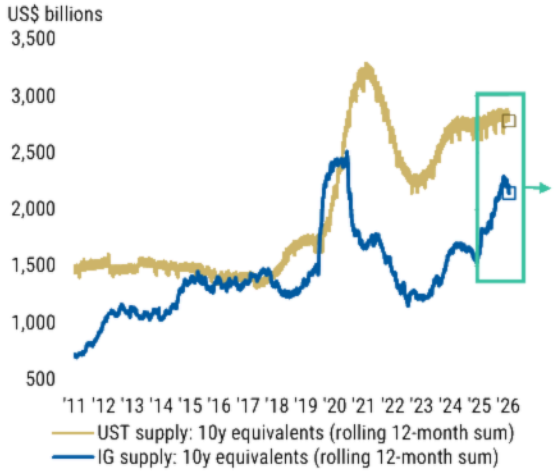
Source: Morgan Stanley Research, FRB New York, Bloomberg

This suggests that either (1) some investors took advantage of the higher yields and wider spreads, and/or (2) that supply dwindled. Our tracking of US Treasury and investment grade corporate bond supply suggests the latter played a role, at least (see Exhibit 12 and Exhibit 13).

- Over the 21 business days ending October 21, investment grade corporate supply (gross) totaled $82bn 10y US Treasury equivalents – matching the lowest amount of gross supply over any 21-day window all year.

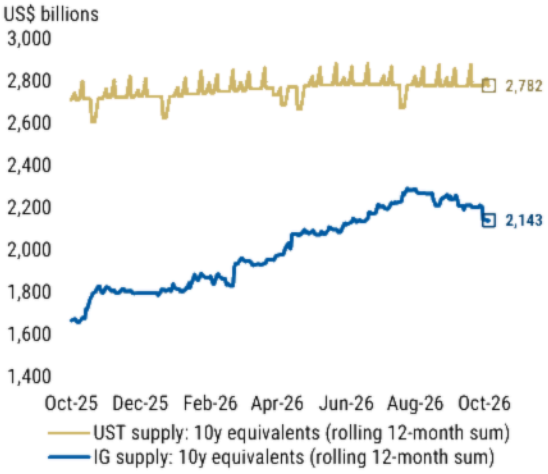
- Through October 21, investment grade corporate bond supply (gross) looks on track to come in below the average gross supply in October for the past three years – the first time this would happen in any month all year.

Exhibit 12: US investment grade corporate bond supply and US Treasury supply (gross), in 10y UST equivalents, rolling 12-month summation



Source: Morgan Stanley Research, Dea Logic

Exhibit 13: US investment grade corporate bond supply and US Treasury supply (gross), in 10y UST equivalents, rolling 12-month summation



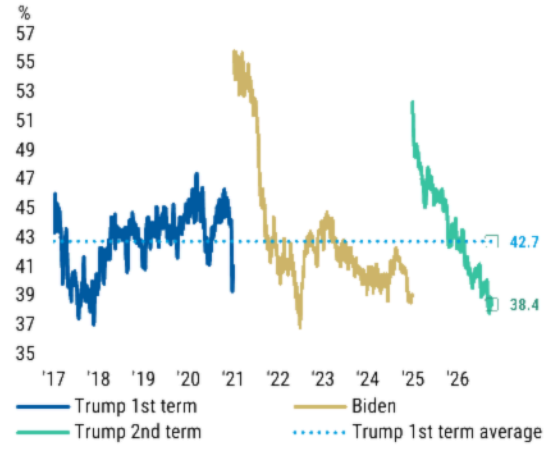
Source: Morgan Stanley Research, Dea Logic

If the risk-off price action continues, we would expect Treasury yields to fall further, with yield curve shape trading sporadically into nonfarm payrolls and CPI – both set to land within a week of the midterm election on Tuesday, November 3.

We don't think the midterms mean much for the rates markets, unless they mean much to equity markets (see Midterms FAQs: Two Weeks Out). In that sense, we wonder whether some of the recent risk-off relates to the political backdrop going into the midterms.

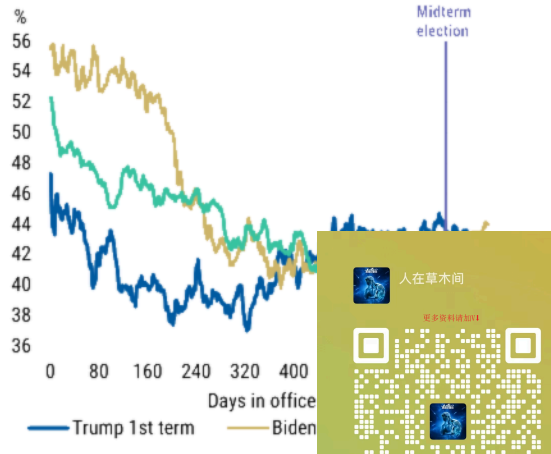
- President Trump's average approval rating sits at his first term lows, and prediction markets price a Democrat sweep at 69% (see Exhibit 14 and Exhibit 15).

Exhibit 14: RealClear Politics job approval polling average: Trump vs. Biden



Source: Morgan Stanley Research, RealClearPolitics, Bloomberg

Exhibit 15: RealClear Politics job approval polling average: Trump vs. Biden by days in office



Source: Morgan Stanley Research, RealClearPolitics

人在草木间

Until we get the midterm election results and through the next round of economic data, we remain sidelined on duration and yield curve shape, and suggest investors do as well.

- **Trade idea: Maintain SFRZ6Z7 curve flattener at +35bp with a target of +10bp and a trailing stop of +53bp.**
- **Trade idea: Maintain long 2-year (Sep '27) UST SOFR swap spreads at -5bp with a target of 0bp and a trailing stop of -6bp.**

Valuation Methodology and Risks

Below you will find a list of our current trade ideas, entry levels, entry dates, rationales, and risks.

Interest Rate Strategy				
TRADE	**ENTRY LEVEL**	**ENTRY DATE**	**RATIONALE**	**RISKS**
SFRZ6Z7 flattener	42bp	10/23/2026	We think the combination of an usually steep curve, growing divergence between the trough rate and longer-run dot, and strengthening relationship between SFRZ6Z7 and the trough rate all create a more compelling case for fading the recent steepening.	The main risk to the trade is stronger-than-expected economic activity or an increase in the perceived neutral rate could keep the December 2027 implied rate elevated.
Long 2y (Sep '27) UST SOFR swap spread	-21.6bp	10/3/2025	We expect softer funding conditions and a steepening of the very front end to cause swap spreads in the front end to widen given recent relationships.	Risks to the trade include firmer funding than expected or a stabilizing job market.

Global Macro Strategy Team

MORGAN STANLEY & CO. LLC	**Matthew Hornbach, CMT** Matthew.Hornbach@morganstanley.com	Global Head of Macro Strategy	+1 212 761-1837
	Martin Tobias, CFA, CMT	US Rates Strategist	+1 212 761-6076
	Shaun Zhou	US Rates Strategist	+1 212 761-3348
	Aryaman Singh	US Rates Strategist	+1 212 761-1993
	Eli Carter	US Rates Strategist	+1 212 761-4703
MORGAN STANLEY & CO. LLC	**Andrew Watrous**	G10 FX Strategist	+1 212 761-5287
	Grace Xia	G10 FX Strategist	+1 212 761-8794
	Simon Waever Simon.Waever@morganstanley.com	Head of EM Sovereign Credit and Latin America Fixed Income Strategy	+1 212 296-8101
	Ioana Zamfir	Latin America Macro Strategist	+1 212 761-4012
	Emma Cerda	Latin America Sovereign Credit	+1 212 761-2344
MORGAN STANLEY & CO. INTERNATIONAL PLC	**James K. Lord** James.Lord@morganstanley.com	Global Head of FXEM Strategy	+44 20 7677-3254
	Gianluca Salford Luca.Salford@morganstanley.com	Head of European Rates Strategy	+44 20 7677-1337
	Fabio Bassanin, CFA	UK Rates Strategist	+44 20 7425-1869
	Maria Chiara Russo	Euro Area Rates Strategist	+44 20 7677-3499
	Jasper Knyphausen	Euro Area Rates Strategist	+44 20 7425-2185
	David S. Adams, CFA David.S.Adams@morganstanley.com	Head of G10 FX Strategy	+44 20 7425-3518
	Alexander Scholefield	G10 FX Strategist	+44 20 3207-1972
	Neville Mandimika	CEEMEA Sovereign Credit Strategist	+44 20 7425-2509
	Arnav Gupta	CEEMEA Macro Strategist	+44 20 7677-0382
	Yi Song	CEEMEA Macro Strategist	+44 20 7677-2019
MORGAN STANLEY ASIA LIMITED+	**Gek Teng Khoo**	AXJ Macro Strategist	+852 3963-0303
MORGAN STANLEY MUFG SECURITIES CO., LTD.	**Koichi Sugisaki** Koichi.Sugisaki@ g.com	Head of Japan Macro Strategy	+81 3 6836-8428
	Hiromu Uezato	Japan Macro Strategist	+81 3 6836-8431

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.. 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. 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/eqr/disclosures/webapp/generalresearch, 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: E. P Carter; Matthew Hornbach; Aryaman Singh; Martin W Tobias, CFA; Shaun Zhou.

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/ . A Portuguese version of the policy can be found at www.morganstanley.com.br

Important Regulatory Disclosures on Subject Companies

In the next 3 months, Morgan Stanley expects to receive or intends to seek compensation for investment banking services from United States of America.

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: United States of America.

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 September 30, 2026)

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.

	Coverage Universe		Investment Banking Clients (IBC)			Other Material Investment Services Clients (MISC)	
Stock Rating Category	Count	% of Total	Count	% of Total IBC	% of Rating Category	Count	% of Total Other MISC
Overweight/Buy	1599	43%	455	48%	28%	783	44%
Equal-weight/Hold	1563	42%	394	42%	25%	763	43%
Not-Rated/Hold	2	0%	1	0%	50%	1	0%
Underweight/Sell	570	15%	96	10%	17%	227	13%
Total	3,734		946			1774	

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

Overwe gnt (O). The stock's total return s expected to exceed the average tota. return of the analyst's ndustry (or industry team's) coverage universe, on a r sk-ad,usted bas s, over the next 12-18 months.

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

Not-Rated (NR). Current.y the analyst does not have adequate conviction about the stock's total return re.ative to the average total return of the analyst's industry (or industry team's) coverage un verse, on a r sk-adjusted basis, over the next 12-18 months.

Underwe gnt (U). The stock's total return is expected to be be.ow the average total return of the ana.yst's ndustry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Unless otherw se specified, the time frame for price targets inc.uded n Morgan Stanley Research s 12 to 18 months.

Analyst Industry Views

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

n-.ine (I): The ana.yst 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 be.ow.

Caut ous (C): The ana.yst v ews the performance of his or her industry coverage un verse 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 Amer ca - re.evant MSCI country ndex or MSCI Latin America Index; Europe - MSCI Europe; Japan - TOPIX; Asia - re.evant MSC country index or MSCI sub-regional index or MSCI AC Asia Pac fic ex Japan Index.

Important Disclosures for Morgan Stanley Smith Barney LLC Customers

mportant disclosures regard ng any material conflict of interest that can reasonably be expected to have influenced Morgan Stanley Smith Barney L.C's choice of a third-party research provider or the sub,ect company of a third-party research report, are available on the Morgan Stanley Wealth Management disclosure webs te at www.morganstanley.com/onl ne/ res.

For Morgan Stanley specif c d sc.osures, you may refer to https://www.morganstanley.com/eqr/disclosures/webapp/genera.research.

Each Morgan Stanley research report is rev ewed and approved on beha.f of Morgan Stanley Smith Barney L.C. This review and approva. s conducted by the same person who reviews the research report on beha.f of Morgan Stanley. This could create a conf. ct of interest.

Other Important Disclosures

Morgan Stanley Research policy is to update research reports as and when the Research Ana.yst 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. n addition, certain Research publications are intended to be updated on a regular period c basis (weekly/month.y/quarterly/annual) and wi.l ordinarily be updated with that frequency, unless the Research Analyst and Research Management determ ne that a different pub. cation schedule s appropriate based on current cond t ons.

Morgan Stanley is not acting as a municipal advisor and the opin ons or views contained herein are not ntended to be, and do not const tute, advice with n the meaning of Section 975 of the Dodd-Frank Wall Street Reform and Consumer Protection Act.

Morgan Stan.ey produces an equity research product ca.ed a "Tactical Idea." V ews contained in a "Tactical Idea" on a part cular stock may be contrary to the recommendat ons or views expressed n research on the same stock. This may be the result of differing time horizons, methodologies, market events, or other factors. For a.. research available on a particu.ar stock, please contact your sales representative or go to Matrix at http://www.morganstanley.com/matrix.

Morgan Stan.ey Research is provided to our clients through our proprietary research porta. on Matrix and a.so distr buted electronically by Morgan Stan.ey to clients. Certain, but not all, Morgan Stanley Research products are also made avai.able to clients through th rd-party vendors or rec stributed to clients through a.ternate electron c means as a convenience. For access to a.. available Morgan Stanley Research, please contact your sales representat ve or go to Matrix at http://www.morganstanley.com/matrix.

Any access and/or use of Morgan Stan.ey Research is subject to Morgan Stanley's Terms of Use (http://www.morganstan.ey.com/terms.htm.). 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). n addition you consent to Morgan Stan.ey processing your personal data and using cookies n accordance with our Privacy Policy and our Global Cook es Policy (http://www.morganstanley.com/privacy_pledge.htm.), including for the purposes of setting your preferences and to collect readersh p data so that we can del ver better and more personalized service and products to you. To find out more informat on about how Morgan Stanley processes personal data, how we use cookies and how to reject cookies see our Privacy Po.icy and our Global Cookies Policy (http://www.morganstanley.com/privacy_pledge.html). Please use the provided link to review the Terms and Conditions and Most mportant Terms and Conditions for Morgan Stanley India Company Private Limited (https://www.morganstanley.com/assets/pdfs/about-us-g.obal-offices/india/Terms_and_conditions.pdf) and the following .nk to review the audit report (https://ny.matrix.ms.com/eqr/research/webapp/researchdocs/MSCPL_Morgan_Stanley_Research_Audit_Report.pdf).

f you do not agree to our Terms of Use and/or f you do not wish to provide your consent to Morgan Stan.ey processing your personal data or using cookies please do not access our research. Morgan Stan.ey Research does not provide indiv dually tailored investment advice. Morgan Stan.ey Research has been prepared without regard to the circumstances and objectives of those who receive it. Morgan Stanley recommends that nvestors ndependent.y evaluate particular investments and strategies, and encourages investors to seek the adv ce of a f nancia. adv ser. The appropriateness of an investment or strategy w.l depend on an nvestor's circumstances and object ves. The securities, instruments, or strategies d scussed in Morgan Stan.ey Research may not be su tab.e for all investors, and certain investors may not be eligib.e to purchase or participate n some or all of them. Morgan Stanley Research is not an offer to buy or sel. or the solicitation of an offer to buy or se.. any security/instrument or to participate in any particular trading strategy. The va.ue of and income from your investments may vary because of changes n nterest rates, foreign exchange rates, defau.t rates, prepayment rates, securities/instruments prices, market indexes, operational or f nancial conditions of companies or other factors. There may be t me. mitat ons on the exercise of opt ons or other r ghts n securities/instruments transact ons. Past perf rmance is not necessari.y a guide to future performance. Estimates of future performance are based on assumpt ons that may not be realized. f provided, and unless otherw se stated, the clos ng pr ce on the cover page s that of the primary exchange for the subject company's securities/instruments.

The fixed nc me research analysts, strateg sts or economists princ pally responsib.e for the preparation of Morgan Stan.ey Research have received compensation based upon various factors, ncluding quality, accuracy and va.ue of research, f rm profitability or revenues (which nclude fixed income trading and capita. markets prof tab.ity or revenues), client feedback and competitive factors. Fixed Income Research analysts', strateg sts' or economists' compensation is not linked to nvestment banking or capital markets transact ons perfo med by Morgan Stanley or the prof tability or revenues of particu.ar trading desks.

The "Important Regulatory Disclosures on Sub,ect Compan es" section n Morgan Stan.ey Research lists all compan es mentioned where Morgan Stan.ey 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: 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 Comision 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 T14FC0118J); 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) 15305, 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. Tejarsh Hardas, Tel. No.: +91-22-61181000 or Email: tejarsh.hardas@morganstanley.com; Grievance officer details: Mr. Tejarsh 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 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 149169; 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. Morgan Stanley Research is disseminated in Canada by Morgan Stanley Canada Limited and Morgan Stanley Wealth Management Canada Inc., members of the Canadian Investment Regulatory Organization (CIRO). 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 services are 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.

References to any prediction market or event contract do not constitute an offer, solicitation, recommendation, or endorsement to participate in any such market or contract. Morgan Stanley Research may not be distributed or made available in any jurisdiction where such distribution would be unlawful or otherwise prohibited by applicable law.

The following authors are Fixed Income Research Analysts/Strategists and are not opining on or expressing recommendations on equity securities: Aryaman Singh; Shaun Zhou; Eli P Carter; Matthew Hornbach; Martin W Tobias, CFA.

© 2026 Morgan Stanley