

July 16, 2025 11:00 AM GMT

US Economics | North America

US outlook update: Still weighted to the downside

We mark-to-market our baseline view for the US economy this year and next, and update our alternate scenarios. We continue to expect slow growth and firm inflation, with backloaded Fed cuts in 2026. Fiscal is now more of an upside risk, but recent trade announcements raise downside probabilities.

Key Takeaways

- We maintain our baseline view for slow growth and firm inflation. We expect real GDP growth of 0.8% in 2025 (Q4/Q4) and 1.1% in 2026. Inflation peaks in 3Q25.
- Elevated inflation and downward pressure on the unemployment rate from immigration keep the Fed on hold this year, with backloaded cuts starting in March.
- In our updated alternate scenarios, we see higher risk (40%) of a downside scenario on the back of recent escalations in trade announcements.
- Upside risks could come from larger fiscal multipliers or de-escalation in trade and immigration restrictions. In both cases, 2026 growth is boosted more.

Exhibit 1: Morgan Stanley US Economics baseline and alternative outlooks for the US Economy: 2025-26

	Demand upside: Fiscal push and animal spirits (10%)	Supply upside: De-escalation plus (10%)	Baseline: Slow growth, firming inflation (40%)	Mild recession: Trade shock/sudden stop (40%)
	Effective tariff rate at ~16-17%	Effective tariff rate reduced to ~10%	Effective tariff rate at ~16-17%	Effective tariff rate at ~23%
Trade Assumptions				
Fiscal Assumptions	The OBBBA has larger fiscal multipliers than anticipated, and thus a larger growth impulse	The OBBBA widens the deficit in 2026, but multipliers are unfavorable. Fiscal adds 0.4pp push to GDP growth in 2026	The OBBBA widens the deficit in 2026, but multipliers are unfavorable. Fiscal adds 0.4pp push to GDP growth in 2026	The OBBBA widens the deficit in 2026, but multipliers are unfavorable. Fiscal adds 0.4pp push to GDP growth in 2026
Immigration Assumptions	Immigration restrictions slow potential growth to 1.5%	Expanded legal immigration keeps potential growth at 2.0%	Immigration restrictions slow potential growth to 1.5%	Immigration restrictions slow potential growth to 1.5%
Real GDP Growth (4Q/4Q)	2025: 1.2% 2026: 2.1%	2025: 1.2% 2026: 1.8%	2025: 0.8% 2026: 1.1%	2025: -0.6% 2026: 0.6%
Unemployment Rate (End of Year)	2025: 4.2% 2026: 3.8%	2025: 4.2% 2026: 4.3%	2025: 4.4% 2026: 4.9%	2025: 4.6% 2026: 5.8%
Inflation (core PCE 4Q/4Q)	2025: 3.2% 2026: 2.8%	2025: 2.9% 2026: 2.2%	2025: 3.2% 2026: 2.3%	2025: 4.1% 2026: 2.2%
Federal Reserve Policy	2025: No cuts 2026: No cuts	2025: No cuts 2026: 75bp of cuts	2025: No cuts 2026: 175bp of cuts	2025: 75bp of cuts 2026: 200bp of cuts

Source: Morgan Stanley Research

MORGAN STANLEY & CO. LLC

Michael T Gapen

Chief US Economist

Michael.Gapen@morganstanley.com

+1 212 761-0571

Sam D Coffin

Economist

Sam.Coffin@morganstanley.com

+1 212 761-4630

Diego Anzoategui

Economist

Diego.Anzoategui@morganstanley.com

+1 212 761-8573

Lenoy Dujon

US/Canada Economist

Lenoy.Dujon@morganstanley.com

+1 212 761-2779

Heather Berger

Economist

Heather.Berger@morganstanley.com


+1 212 761-2296

Arunima Sinha

Global Economist

Arunima.Sinha@morganstanley.com

+1 212 761-4125



Extel Global Fixed Income Poll is now open.

We hope you have enjoyed our research over the past year and appreciate your support.

Request your ballot.

Still weighted to the downside

Since we published our [mid-year outlook](#) in May, we have more clarity around some policy variables (fiscal, immigration), and continued uncertainty around others (trade). Our base case remains largely unchanged, with slow growth and firm inflation. We mark-to-market our base case on the back of recent data releases, the final fiscal bill, and updated immigration flows. For our alternate scenarios, we now see more upside than downside risk from fiscal. However, recent trade announcements increase the probability of a downside scenario, which we estimate at ~40%.

In other words, even with two upside scenarios, we see their combined probability (~20%) as less likely than downside risk from a tariff and trade shock (~40%), leaving risk to the outlook as weighted to the downside.

Baseline: Slow Growth, Firm Inflation: We assume the effective tariff rate rises to slightly higher than it has been for the past month and remains there. In our view, at least some of the reciprocal tariffs announced for August 1 stay in place, which bring us to an effective tariff rate around 16-17% (versus the current 14% rate). [Immigration slows significantly](#) compared to the past couple years, with net immigration at 300k this year and 200k next, versus 2.9mn in 2024.

In today's CPI print, we saw signs of tariff effects, with acceleration in many core goods categories, despite the declines in new and used car prices. We continue to expect the strongest inflation push from tariffs will be in August. June is the end of the beginning, not the beginning of the end.

Meanwhile, slower immigration puts downward pressure on the unemployment rate, leading to only a slight increase by year-end. The Fed is on hold for the remainder of this year with the economy further from price stability than maximum employment. They begin cuts in March 2026 and cut by 25bp at every meeting thereafter, bringing the target Fed Funds rate to 2.625% at the end of 2026. A Fed that cuts late is likely to cut more, and slower immigration can pull potential growth and, in turn, the neutral rate lower.

Alternate Scenarios:

As before, we acknowledge the outlook remains uncertain and think scenario analysis is as important as thinking about baseline outcomes. Despite some clarity, policy-related uncertainty remains elevated.

Demand upside: Fiscal push ignites animal spirits: We add a new upside scenario on the back of the fiscal bill, incorporating stronger demand, prolonged elevated inflation, and a Fed on hold throughout 2026. Tariffs and immigration still weigh on growth. However, fiscal multipliers from the One Big Beautiful Bill Act are higher than we expect, due in part to animal spirits and optimism, leading to more business investment and more consumption as hiring and income pick up. Inflation picks up in Q3 due to tariffs, then remains elevated on the back of stronger demand. With stronger growth and still elevated inflation, the Fed is on a prolonged hold, with no cuts this year or next.

Supply upside: De-escalation plus: De-escalation in trade and immigration policy lead to faster growth and less cuts versus our baseline. The effective tariff rate falls to around ~10% on the back of negotiations. Increased legal immigration, or less deportations than

assumed, lead to higher net immigration than in the baseline, though still a significant slowdown from last year. Trade and immigration policy still detract from growth versus the past couple years, but the smaller supply shock brings consumption and growth higher than in our base case. Inflation still picks up in Q3 on the back of already in-place tariffs, but the magnitude is smaller and inflation comes down more quickly. The Fed is on hold for the remainder of this year and cuts gradually in 2026, by 75bp total, as inflation decelerates.

Mild recession: Trade shock/sudden stop: The effective tariff rate rises as recently announced reciprocal tariffs go into effect and tariffs on China pick up when the 90-day pause is over in August. The effective tariff rate at ~23% is reaching "sudden stop" levels, and the interaction with further sectoral tariffs amplify trade uncertainty even further. Indirect effects of tariffs, such as non-linear effects on trading volumes and negative wealth effects, contribute to a mild recession, beginning in Q3. GDP falls by 1.2% peak-trough. Inflation is higher in 2025 with more tariffs but the collapse in demand ensures this is transitory and inflation moves back towards 2% in 2026. The Fed moves to cuts more quickly than in our baseline. The Fed cuts by 75bp this year and 200bp next year. Importantly, the policy rate remains well above the zero lower bound and the Fed abstains from launching another round of asset purchases.

Exhibit 2: Scenario comparisons

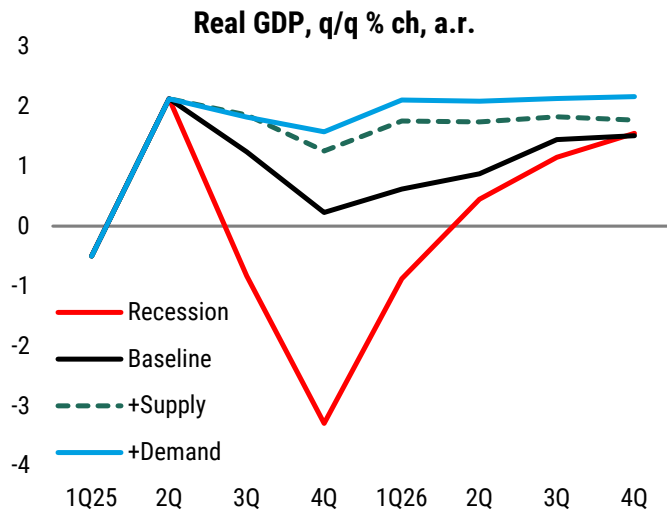
	2025				2026			
	+Demand	+Supply	Baseline	Recession	+Demand	+Supply	Baseline	Recession
Real GDP	1.2	1.2	0.8	-0.6	2.1	1.8	1.1	0.6
Final Sales ¹	1.4	1.4	1.0	-0.6	2.0	1.7	1.2	0.5
Final Domestic Demand ²	1.4	1.3	0.9	-0.4	1.9	1.7	0.9	0.4
Final Private Domestic Demand ³	1.6	1.5	1.0	-0.5	2.1	1.8	0.8	0.2
Personal Consumption Expenditures	1.2	0.9	0.6	-0.7	1.6	1.4	0.7	0.2
Nonresidential Fixed Investment	4.6	5.0	3.7	1.6	4.7	3.3	1.5	0.2
Residential Investment	-0.9	-0.5	-1.8	-3.1	2.0	2.8	1.1	0.3
Government	0.3	0.3	0.3	0.3	1.2	1.2	1.2	1.2
Inventory contribution (pct pts, a.r.)	-0.2	-0.2	-0.2	-0.1	0.1	0.0	-0.1	0.0
Trade contribution (pct pts, a.r.)	0.0	0.0	0.1	-0.1	0.0	0.1	0.2	0.2
Employment & Personal Income								
Civilian Unemployment Rate (%)	4.2	4.2	4.4	4.6	3.8	4.3	4.9	5.8
Average Monthly Change in Nonfarm Payrolls (Thous.)	113	106	96	-31	124	122	45	14
Inflation								
PCE Price Index	3.0	2.7	2.9	3.7	2.6	2.2	2.2	2.2
PCE ex Food & Energy	3.2	2.9	3.2	4.1	2.8	2.2	2.3	2.2
Monetary Policy								
Fed Funds Target (%; midpoint of target range)	4.375	4.375	4.375	3.625	4.375	3.625	2.625	1.625

Note: 1) GDP less contribution from inventory investment. 2) GDP less contributions from inventory investment and trade. 3) GDP less contributions from inventory investment, trade, and the government sector (private final consumption plus investment). Source: BEA, BLS, Federal Reserve, Treasury, Morgan Stanley Research forecast

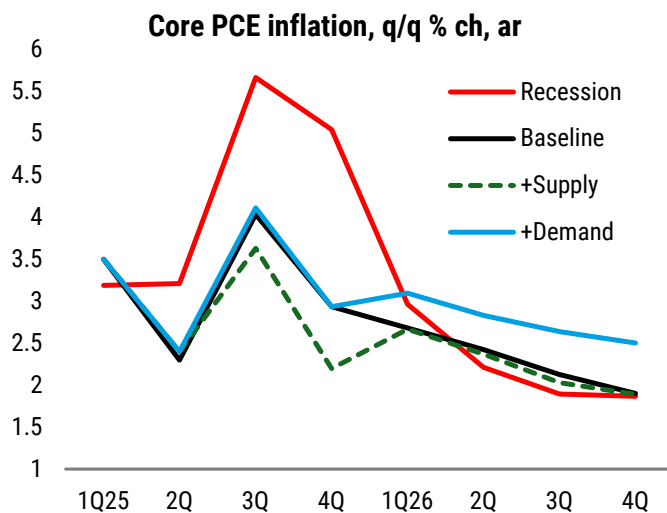
Exhibit 3: Morgan Stanley US Economics baseline and alternative outlooks for the US Economy: 2025-26

	Demand upside: Fiscal push and animal spirits (10%)	Supply upside: De-escalation plus (10%)	Baseline: Slow growth, firming inflation (40%)	Mild recession: Trade shock/sudden stop (40%)
Key Assumptions				
Trade	Effective tariff rate picks up slightly versus tariffs currently in place, to ~16-17%	Negotiated settlements reduce the effective tariff rate to ~10%	Effective tariff rate picks up slightly from tariffs currently in place, to ~16-17%	Effective tariff rate picks up to ~23% (recently announced reciprocal tariffs stay, or rate on China increases, etc)
Immigration	Immigration restrictions slow potential growth to 1.5%	Expanded legal immigration helps keep potential growth at 2.0%	Immigration restrictions slow potential growth to 1.5%	Immigration restrictions slow potential growth to 1.5%
Deregulation	Deregulation takes time. More of a micro story than a macro story	Deregulation takes time. More of a micro story than a macro story	Deregulation takes time. More of a micro story than a macro story	Deregulation takes time. More of a micro story than a macro story
Fiscal	The OBBBA has larger fiscal multipliers than anticipated, and thus a larger growth impulse	The OBBBA widens the deficit in 2026, but multipliers are unfavorable. Fiscal adds 0.4pp push to GDP growth in 2026	The OBBBA widens the deficit in 2026, but multipliers are unfavorable. Fiscal adds 0.4pp push to GDP growth in 2026	The OBBBA widens the deficit in 2026, but multipliers are unfavorable. Fiscal adds 0.4pp push to GDP growth in 2026
Forecast outcomes				
GDP growth	GDP growth still slows meaningfully in 2025, to 1.2%, from restrictive trade and immigration policy. In 2026, greater demand from elevated spirits on the back of the OBBBA leads to stronger growth, 2.1%.	Even with less restrictive trade and immigration policy than the baseline, growth slows to 1.2% in 2025. De-escalation on trade and immigration lead to a pickup of 1.8% next year.	Real growth slows to 0.8% (Q4/Q4) in 2025 and 1.1% in 2026. Tariffs act as a tax on consumption and capital, with the weakest quarters for growth in 4Q25 and 1Q26.	Real GDP falls 0.6% in 2025 before a 0.6% rebound in 2026. Tariffs, wealth effects, and increased uncertainty hold back capex, hiring, and household spending. The result: mild recession, a 1.2% peak-to-trough decline in GDP over three quarters beginning 2H25.
Consumer spending	Consumption slows to 1.2% in 2025 then picks up to 1.6% in 2026. Tariffs and immigration policy still weigh on goods spending, but a tighter labor market supports spending in 2026. Limited negative wealth effects on upper income consumers.	Consumption slows to 0.9% in 2025 but recovers from winter weakness to 1.4% in 2026. Tariffs still weigh on goods spending in 2H 2025 and in 2026, but less so with a lower effective tariff rate. Limited negative wealth effects.	Consumption slows to 0.6% in 2025 and 0.7% in 2026. Tariffs weigh heavily on goods spending. Limited negative wealth effects on upper income consumers. Less immigration means less employment growth.	Consumption falls from Q3 2025 to Q1 2026 before a gradual reacceleration. Tariffs weigh heavily on goods spending. Negative wealth effects lead upper-income consumers to pull back, with spillover into broader spending.
Nonresidential fixed investment	Businesses pick up investments more than in the base case on the back of the fiscal bill. Investment rises 4.6% in 2025 and 4.7% in 2026.	Investment picks up more than in the baseline both this year and next as tariffs de-escalate and there is more certainty around policy. Investment rises 5.0% in 2025 and 3.3% in 2026.	Investment picks up to 3.7% in 2025, owing to a strong Q1 that does not reverse, then slows to 1.5% in 2026. Business responds to a slowing economy by delaying expenditures, but does not retrench.	A retrenching business sector cuts employment and capex. Investment declines throughout 2H and into Q1 2026, followed by tepid recovery.
Residential investment	Stronger income growth and better sentiment helps activity. Still, investment is not as strong as in the de-escalation case since high rates keep the lock-in effect strong: -0.9% in 2025 and +2.0% in 2026.	Affordability improves from stronger income growth, while rate cuts still ease pressure on the margins. Activity is less weak this year and stronger next: -0.5% in 2025 and +2.8% in 2026.	Declines by 1.8% in 2025 before a slight pickup to 1.1% in 2026. The combination of slowing income growth and pressures on building from tariffs and immigration weigh on activity before rate cuts in 2026 provide relief.	New housing is helped by lower rates, hurt by slower incomes. Existing home sales regain share as low rates lessen mortgage lock-in and raise turnover. Activity is weaker in 2025 then picks up only slightly in 2026.
Net trade	Trade is neutral for growth both this year and next. Imports are stronger than in the baseline with stronger demand.	Trade is neutral for growth this year and a slight boost next year. Imports are less weak this year and next than in the baseline on the back of de-escalation of tariffs.	Higher trade barriers slow trade volumes, with imports falling most. Export growth slows to 0.1% and 0.6% this year and next, while imports fall 1.9% and 1.4%. Front-loading of imports and a weak consumer drive some of the import weakness. Net trade adds a 0.1pp to growth in 2025 and 0.2pp in 2026.	Higher trade barriers slow trade volumes more drastically. Net trade subtracts 0.1 from growth in 2025 and adds 0.2pp in 2026.
Fiscal policy	Government spending contribution to GDP is same as in baseline, but indirect effects of fiscal policy boost growth more.	The contribution of fiscal to growth slows from prior years as growth in government spending slows. Still, the fiscal bill boosts 2026 growth by about 0.4pp.	The contribution of fiscal to growth slows from prior years as growth in government spending slows. Still, the fiscal bill boosts 2026 growth by about 0.4pp.	The contribution of fiscal to growth slows from prior years as growth in government spending slows. Still, the fiscal bill boosts 2026 growth by about 0.4pp.
Labor markets	Monthly payroll gains average 113k per month this year and 124k next year. Labor demand outpaces supply next year. The unemployment rate finishes 2025 at 4.2% and 2026 at 3.8%.	Monthly payroll gains average 106k per month this year and 122k next year. More immigration means a higher breakeven rate of hiring. The unemployment rate stalls, finishing 2025 at 4.2% and 2026 at 4.3%.	Average monthly payroll gains slow to 96k this year and 45k next year. Less immigration means a lower breakeven rate of hiring. The unemployment rate finishes 2025 at 4.4% and 2026 at 4.9%.	Payrolls fall an average of 31k per month in 2025 with declines near 200k in H2. In 2026, payrolls stall, averaging 14k per month. The unemployment rate rises to 4.6% this year and 5.8% next year.
Inflation	Tariffs result in headline and core PCE inflation at 3.0% and 3.2% (Q4/Q4) in 2025, similar to the baseline. In 2026, stronger demand keeps inflation elevated, with headline and core at 2.6% and 2.8%.	A less pronounced inflationary impulse from tariffs brings headline and core PCE inflation to 2.7% and 2.9% (Q4/Q4) in 2025. In 2026, disinflation continues, with headline and core at 2.2%.	Tariffs push headline and core PCE inflation to 3.0% and 3.2% q4/q4 in 2025. The q/q rates peak at 3.7% and 4.0% in Q3 2025. We expect headline and core PCE at 2.2% and 2.3% q4/q4 in 2026.	We see headline and core PCE at 3.9% and 4.3% in 2025. The sequential peak in inflation is still Q3. Contraction slows 2026 inflation relative to the baseline. We expect headline and core PCE at 2.1 and 2.2% in 2026.
Federal reserve policy	The Fed is on hold throughout the remainder of 2025 and 2026. Inflation remaining elevated versus our base case, along with growth above potential in 2026, keep them restrictive.	The Fed delays cuts until 2026, and then cuts three times to a terminal of 3.50-3.75% by year-end. 75bp in total cuts. No QE.	With inflation further from its target than employment, the Fed is forced to delay cuts. No cuts in 2025 but cuts in 2026 bring the terminal to 2.5-2.75% by year-end. 175bp in total cuts. No QE.	The Fed shifts to cuts as downside risks to growth mount. 75bp in 2025 and a terminal of 1.50-1.75% in 2026. 275bp in total cuts. No QE.
Credit conditions	Credit conditions start to loosen later this year and next on the back of optimism from lower tax rates. High rates keep credit demand weak.	High policy rates and elevated uncertainty constrain the flow of credit to non-prime borrowers in 2025. Credit conditions start to loosen in 2026 with less uncertainty.	Credit conditions remain tight as a slowing economy, high policy rates, and elevated uncertainty restrict the flow of credit to non-prime borrowers.	Credit conditions tighten further as the economy contracts. By late next year, the Fed has eased policy enough to encourage some new credit supply but demand remains weak.
Productivity growth	Higher productivity growth than in the baseline. Productivity is still below trend in 2025, bouncing back in 2026.	Higher productivity growth than in the baseline. Productivity is still below trend in 2025, bouncing back in 2026.	Productivity growth was slowing from its post pandemic pace. Productivity growth runs well below recent and long-run trends this year and next.	With rapid declines in output in 2H, productivity falls in 2025 and stalls in 2026.
Consumer and business confidence	Confidence starts to rebound this year, though held somewhat low from continued uncertainty. Confidence rebounds more in 2026.	Confidence rebounds from 2022-2023 lows, but the rebound is limited in 2025 on account of sluggish growth, high inflation, and elevated uncertainty.	Confidence of households and business remains near 2022-2023 lows on account of sluggish growth, high inflation, and elevated uncertainty.	Recession pushes confidence down further, testing new lows.

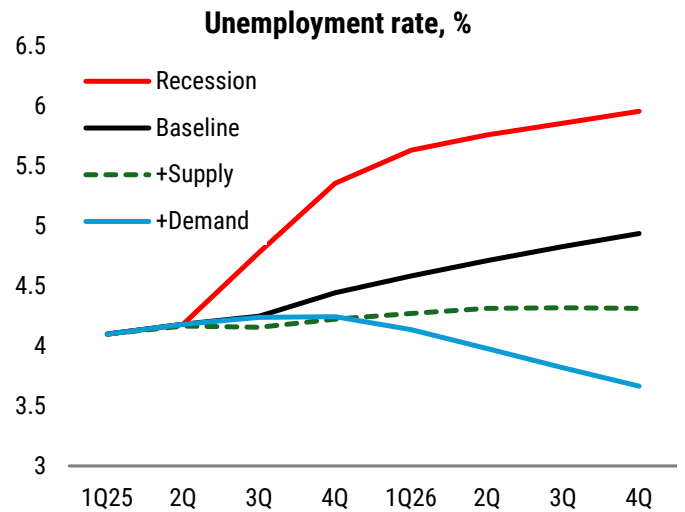
Source: Morgan Stanley Research forecasts

Exhibit 4: Real GDP growth

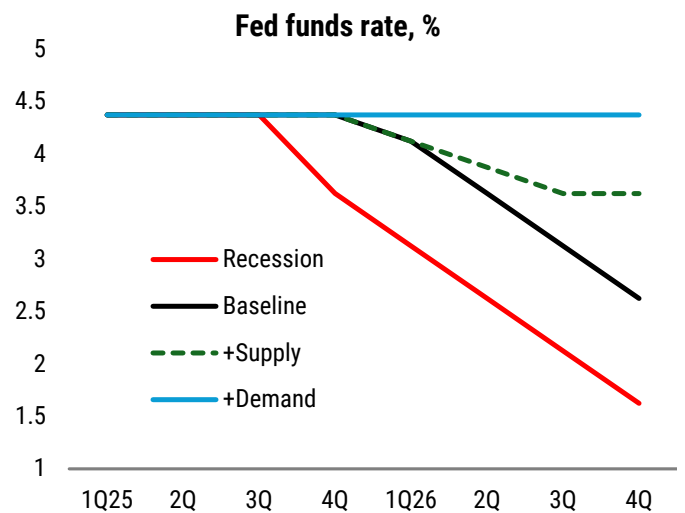
Source: Bureau of Economic Analysis, Morgan Stanley Research

Exhibit 6: Core PCE inflation

Source: Bureau of Labor Statistics, Morgan Stanley Research

Exhibit 5: The unemployment rate

Source: Bureau of Labor Statistics, Morgan Stanley Research

Exhibit 7: Fed funds rate

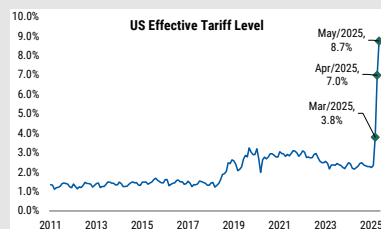
Source: Federal Reserve Board, Morgan Stanley Research

Our view on recent US trade data

Our estimates of the baseline tariff revenue continue to be based on the country and product import shares from 2024. In the most recent US Census [trade data](#) from May 2025, we have observed changing import shares, and the customs duties collected would imply a lower level of average tariff rates than our baseline. However, we do not view this as the status quo. Given the significant uncertainty around trade policy and tariff levels, we expect that the trade data will continue to react, before settling back into more stable patterns. Also, despite the temporary change in import patterns, the effective tariff rate was already more than three times the levels from end of the 2024. To model the effects of tariffs on the economy, we therefore use the changes in tariff levels using 2024 import shares as

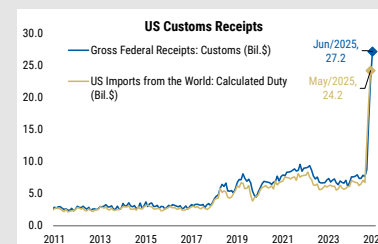
a measure of the shock.

Exhibit 8: Recent trade data already shows the ramp up in effective tariff levels



Source: Census, Morgan Stanley Research. Note: this tariff rate is computed as the Calculated Duties collected on all US imports divided by total US imports.

Exhibit 9: The duties collected by US Customs have continued to rise in June



Source: US Treasury, Census, Morgan Stanley Research

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, 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.

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

Important Disclosures

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 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.

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 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 T14FCO118); 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., regulated by Bundesanstalt fuer Finanzdienstleistungsaufsicht (BaFin) under the reference number 149169; in the United States 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 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 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.

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.