IDEA

November 9, 2018 11:52 AM GMT

Mexico Strategy and Economics | Latin America

A New Higher Vol Regime: Will Banxico React?

We think that fiscal slippage and unorthodox policy are now more likely, which would increase risk premia in Mexico local assets, and lead Banxico to act next week. We continue to recommend fading rallies and building strategic underweight positions, particularly on the FX front.

Fixed income strategy: We remain concerned about potential fiscal slippage over the medium term. Moreover, we believe that the uncertainty generated around the airport consultation and the actual outcome of it has raised concern among investors about policy implementation risks in the future (see Mexico: Fade The Rallies, October 29, 2018). We are strategically bearish on MXN local assets and recommend short MXN positions versus a basket of high-beta EM as we expect USD to trend down (supporting EM overall). We keep defensive positions in rates despite attractive valuations and recommend 5s10s steepeners.

Compared to past episodes of relative stress in EM, we think that the **recent** increase in implied volatility relative to realized volatility and Mexico's EM peers was induced by domestic policies, rather than exogenous shocks – in which usually the latter can be counteracted with a swift and effective policy response. Given the current situation, we think that the financial markets will serve as one of a few counterbalances that the administration will have to face. This means that further episodes of higher volatility and cheaper valuations in the years ahead are more likely, resulting in a 'new regime'.

Economics: Increased currency volatility associated with greater uncertainty about the new administration's policy path comes at an inopportune time for the central bank, when inflation remains elevated, expectations are drifting higher and risks to prices are skewed to the upside. The airport decision and other likely proposals hinting at a shift away from the policy status quo led to an increase in risk premia, which may be signaling that the neutral rate is higher than before – something that Banxico is likely to validate via a rate hike on November 15.

MORGAN STANLEY & CO. LLC

Luis A Arcentales, CFA

ECONOMIST

Luis.Arcentales@morganstanley.com

+1 212 761-4913

Andres Jaime

STRATEGIST

Andres.Jaime@morganstanley.com

+1 212 296-5570

MORGAN STANLEY C.T.V.M. S.A.+

Lucas B Almeida

ECONOMIST

Lucas.Almeida@morganstanlev.com

+55 11 3048-6026

Luis Arcentales and Lucas Almeida are economists and are not opining on fixed income securities. Their views are clearly delineated.

Due to the nature of the fixed income market, the issuers or bonds of the issuers recommended or discussed in this report may not be continuously followed. Accordingly, investors must regard this report as providing stand-alone analysis and should not expect continuing analysis or additional reports relating to such issuers or bonds of the issuers.

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.

+= Analysts employed by non-U.S. affiliates are not registered with FINRA, may not be associated persons of the member and may not be subject to NASD/NYSE restrictions on communications with a subject company, public appearances and trading securities held by a research analyst account.



Fixed income strategy: A new higher vol regime

Andres Jaime

As we highlighted in Mexico Economics and Strategy: Mexico: Tightening Cycle Behind, But Not Uncertainty (July 18, 2018), we had been skeptical about the optimism generated around Mexico during the past few months. While we understood the relative attractiveness of Mexico amid the EM sell-off, we were not comfortable with the risks we perceived for a medium-term deterioration in Mexico's investment narrative. These risks have materialized sooner than anticipated, in our view.

We remain concerned about the potential fiscal slippage over the medium term. In addition, we think that the uncertainty generated around the airport consultation and the actual outcome of it has raised concern among investors about policy implementation risks in the future (see Mexico: Fade The Rallies, October 29, 2018). We are strategically bearish on MXN local assets and recommend short MXN positions versus a basket of high-beta EM as we expect USD to trend down (supporting EM overall). We keep defensive positions in rates despite attractive valuations and recommend 5s10s steepeners.

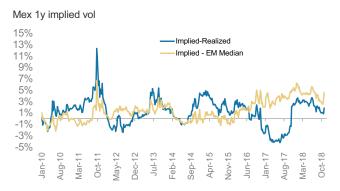
Keeping a defensive stance in Mexican local assets: Staying bearish on MXN

Risk premia should be structurally higher than during the past administration, in our view: We do believe that EM portfolios with Mexico exposure should adapt to a new higher vol regime. While not necessarily immediate, we contend that greater risks on the policy front (additional consultations, potential unorthodox policies) call for an increased volatility risk premium (Exhibit 1) which should weigh on expected risk-adjusted returns and, consequently, the attractiveness of Mexican local assets compared to the rest of EM.

This is also reflected in Exhibit 2, where 1y MXN ATM-implied vol is trading at very high levels vis-à-vis the median of its EM peers, and close to historical highs compared to BRL.

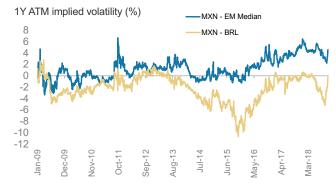


Exhibit 1: Volatility risk premium poised to increase structurally in MXN



Source: Bloomberg, Morgan Stanley Research

Exhibit 2: MXN vol regime has likely shifted upward relative to its peers



Source: Bloomberg, Morgan Stanley Research

As we see it, there are many reasons for caution: Uncertainty has increased, as we discuss above, and markets are increasingly pricing in a higher probability of fiscal slippage/central bank independence coming into question. 5y5y implied inflation in MBonos versus UDIs reflects a substantial increase in the long-term inflation risk premium Exhibit 6) which, although not necessarily explained by a cyclical change in inflation dynamics, will likely keep Banxico on guard.

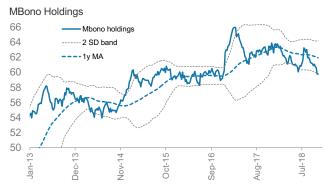
We believe that with inflation risks likely to rise, Banxico will be potentially forced to hike beyond what the policy status quo would have dictated. The increase in long-term rates has been reflected in a **reduced positioning from offshore in MBonos during the past few weeks.** It is important to highlight that, while the percentage of **MBonos in offshore hands** has not decreased to levels that would suggest structural changes, it seems that it has peaked lately and has been consistently testing the 2 standard deviation band compared to the one-year average. This has happened just a few times in the past – the taper tantrum and the US election come to mind.

Exhibit 3: While swap spreads have not widened...



Source: Bloomberg, Morgan Stanley Research

Exhibit 4: ...MBono holdings seem to have peaked and potentially signal a downward trend



Source: Bloomberg, Morgan Stanley Research

Taken together, we believe that vol-adjusted returns and fatter left tails (higher probability of downside), suggest that GBI-EM investors will continue to reduce their overweight positions (Exhibit 4), thereby increasing risk premia in Mexican assets in the months and quarters to come (see Mexico: Fade The Rallies, October 29, 2018).



Why we argue that this time is different

Compared to past episodes of relative stress in EM, we think that the **recent increase in implied volatility relative to realized volatility and Mexico's EM peers was induced by domestic policies, rather than by exogenous shocks** – in which the latter usually can be counteracted with a swift and effective policy response.

In our opinion, rates and FX have sent a strong message, which continues to point to cautious and underweight positions in Mexican local assets. When looking at the USDMXN move on October 29 relative to comparable moves in the past (scaled by historical vol), two things stand out: i) It marked the first time in the past 10+ years that, in a single day, USDMXN appreciated by four times its 3-month historical vol (4-sigma move) without an external shock (i.e., it was domestically induced); and ii) It was the first time such a move happened while MXN's valuation looked expensive (to us) and positioning was still overweight (Exhibit 5).

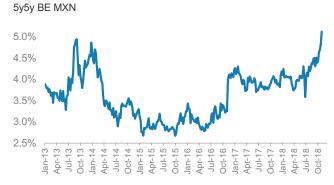
Given the current situation, we think that financial markets will serve as one of a few counterbalances that the administration will have to face. This means that further episodes of higher volatility and cheaper valuations in the years ahead are more likely, resulting in a 'new regime'.

Exhibit 5: October 29 was the first 4-sigma move with MXN being expensive and real money positioning not clean



Source: Morgan Stanley Research; Note: We define a 4-sigma move as a % daily change in USDMXN that is four times its 3-month rolling standard deviation.

Exhibit 6: Inflation risk premium clearly on the rise



Source: Bloomberg, Morgan Stanley Research

New budget is likely the next catalyst: We see the upcoming budget as an important catalyst, owing to the airport consultation results and the administration's rhetoric regarding the outcome. On this, we argue that details are ultimately what matter, as even if a balanced budget is presented for 2019, potential concerns about assumptions on growth and/or savings from spending reengineering will likely tilt risks to the downside. We believe that the budget's details regarding the plans for Pemex will also matter – particularly given recent concerns highlighted by rating agencies – including the uses of future capex. We think that another potential risk to monitor would be the prospects for USMCA trade deal approval in the US after the midterm elections.

USMCA priced for perfection, in our view: While we do believe that the agreement will be ratified by the three countries, risks seem clearly asymmetric, particularly as the US could announce its intention to withdraw from the current NAFTA agreement. If this is the case, we believe that increased volatility and MXN weakness before confirmation of the deal's approval are warranted.



Lastly, in our view, it will be important to monitor interaction between the administration and the central bank, in addition to potential cabinet changes within the current coalition.

Fundamentals and quant are aligned: Our quantitative framework to trade EMFX (see EM Quant Strategy: EMFX Quant's Lab, November 5, 2018) recently shifted to underweight Mexico, confirming the fundamental view of MXN underperformance that we have held since before the airport consultation (see Mexico Economics & Strategy: In a Holding Pattern, October 17, 2018). A confirmation of the signal at the end of this week would only reinforce our conviction on MXN shorts.



Economics: Rising uncertainty, rising rates?

Luis Arcentales

Exhibit 7: Mexico: Real interest rate (ex-ante, annual rate)



For several months, discussions about monetary policy in Mexico focused on the outlook for 2019 and the room, if any, for the central bank to lower interest rates: Since its last rate increase in June, there has been a lull during which Banxico kept rates unchanged at 7.75%, matching expectations at both its August and October meetings. To be fair, the central bank held on to its hawkish rhetoric by reiterating the need for a "prudent" stance and stressed that risks to inflation were skewed to the upside (see Mexico: Tightening Cycle Behind, But Not Uncertainty, July 28, 2018). But policy-makers also hinted that policy was sufficiently tight and, though still running at elevated levels, the outlook for inflation was for a gradual shift lower over the forecast horizon, with most question marks centered on the speed at which prices

would moderate rather than the direction (Exhibit 7). Moreover, slack was opening up, policy-makers argued, after the economy hit a soft path around mid-year. In all, it seemed that despite inflation risks being biased to the upside and one board member voting in favor of a 25bp rate increase in October, most policy-makers were comfortable staying on hold for the foreseeable future (see Mexico – Banxico Decision: Hawkish Despite Trade Progress, October 4, 2018). Thereafter, prospects for adopting a more dovish stance in 2019 would depend on a handful of risk events for which there would be greater visibility in the coming months, principally details of the 2019 government budget and minimum wage adjustment, in addition to any potential shift in the outlook for Fed normalization

Today the monetary policy debate is in full force once again, but one of the different kind: as the November 15 meeting approaches, the question is whether the central bank will resume its tightening cycle: The immediate cause for the shift was the cancellation of the new airport – a move we consider to be a policy mistake – leading to renewed currency volatility and higher yields linked to greater uncertainty about the policy path under the incoming administration (see Exhibit 2 and Mexico: Plan B Airport Receives a Hard Landing, October 30, 2018). The challenge for the central bank goes beyond the initial currency weakness, which by now has been largely reversed: renewed uncertainty comes at a challenging time when there is a wide gap between the (higher) consensus and the more constructive central bank's inflation, expectations have moved up, as have market-based measures of inflation. With two members of the board - one of whom voted in favor of higher rates last month – already warning in October of a "rising" probability that under current circumstances" additional rate increases in the near term may be required, the threshold for any additional rate hikes may not be as high as we perceived previously. Accordingly, we see policy-makers increasing rates to 8.00% next week - validating swap pricing - and keeping a hawkish rhetoric.

IDEA

Exhibit 8: Mexico: 2019 inflation expectations (% change y-o-y)

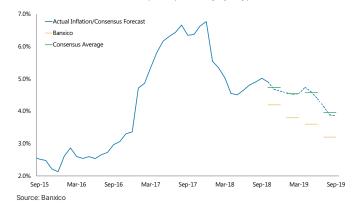


Source: Banxico

The annual rate of headline inflation likely peaked already, yet inflation expectations keep drifting higher — one of the variables the central bank watches closely (Exhibit 8). The rate of inflation reached 5.02%Y in September and moved lower in October (4.90%Y), bringing to an end the energy-led uptrend that began in May. While a favorable comparison base in October-December — because of post-earthquake price hikes (transportation, mobile costs) and a spike in non-core items last year — should lead to a further declines in inflation into year-end, inflation expectations continued creeping up. For 2019, the latest median headline consensus ticked up to 3.71%Y, as did core (3.45%Y), 12-month forward forecasts also moved up to 3.80%Y and, for 2020, they remained stuck at 3.50%Y. A similar upward trend can be seen in breakeven measures (Exhibit 6). In and of themselves, rising

expectations shouldn't necessarily force the central bank's hand; however, the persistent move higher in expectations — even though recent price pressures have come mostly from energy and thus are temporary — suggests mounting market concerns about future price dynamics.

Exhibit 9: Mexico: Inflation path (% change y-o-y)



Importantly, the deterioration in expectations is likely to prompt the central bank to once again revise its forecasts higher: The

central bank took an important step towards greater transparency and accountability at the beginning of the year by re-introducing quarterly inflation forecasts — a practice scrapped in 2010 in favor of fan charts. While a welcome development, the central bank has been repeatedly forced to adjust its forecasts higher, and postpone the timing for convergence to target (currently mid-2020). And a wide gap between the consensus and the central bank's outlook remains — averaging 0.8pp in 2019, for example — suggests that markets do not see policy-makers' projections as credible (Exhibit 9). Repeated upward revisions to the quarterly forecast path, and the wide gap versus consensus,

could lead to the gradual erosion over time of the objective the forecasts were supposed to achieve in the first place, namely to help to form expectations and to strengthen the expectations channel in the transmission of monetary policy. We believe that a timely rate hike in November would go a long way towards preventing that erosion by signaling the central bank's resolve, particularly now that expectations seem to signal concerns that may go beyond the recent energy-led, transitory price pressures.

Inflation considerations aside, one relevant debate centers on whether the central bank should react to the greater uncertainty derived from decisions such as the airport

cancelation. There are several reasons why policy-makers may choose to do so, in our view. First, Banxico has favored a risk-management approach that prioritizes financial stability, as suggested by the tightening experience of 2016 when the central bank reacted, among other factors, to currency jitters and underperformance. While the peso has reversed part of the airport-linked sell-off, currency volatility is higher, as are yields. The central bank also sees monetary policy in a context of broader macro policy, thus the fiscal stance matters. The airport decision will involve diverting public funds to compensate contractors and investors and to upgrade the other facilities, in turn generating greater uncertainty about the incoming administration's ability and



commitment to running a tight fiscal ship. To be clear, we are not arguing that the central bank should adjust rates on expectations of what the budget, fuel pricing policy or minimum wage adjustments may look like – policy-makers will analyze their implications and react accordingly once they are known. However, the airport decision has already translated into higher risk premia, which is likely to persist, as argued by our strategists in the previous section. We interpret the higher risk premia as the market signaling that the neutral rate may be higher than before, something that the central bank is likely to validate via a rate hike next week, in our view (see Global EM Strategist: Will We Rally into Year-End? October 29, 2018).



Exhibit 10: Valuation methodology and risks

Trade					Rationale	Risks		
Rates	Date	Entry Level	Target	Stop				
5s10s TIIE steepener	15-Aug-18	23	50	10	We believe that there is a higher premium in the short/belly part of the curve created by a historically tight monetary policy stance. Therefore, we prefer to focus on the belly of the curve as a higher USD would likely push Banxico to pull the trigger again, keeping longer tenors anchored. In addition, increased risk sentiment paired with a higher volatility regime should increase risk premium on the curve.	USD strengthening beyond our forecasts, prompting the market to price in additional hikes, or an improvement in risk sentiment that would bring a lower volatility regime.		
Dislike Mexico Local Rates	29-Oct-18	NA	NA	NA	We remain concerned about the potential fiscal slippage over the medium term. In addition, we think that the uncertainty generated around the airport consultation and the actual outcome of it has raised concern among investors about policy implementation risks in the future.	Investor sentiment improves as the next administration pursues an orthodox policy agenda.		

Source: Morgan Stanley Research

Definition of terms

Buy/Long: The analyst expects the total or excess return (depending on the nature of the recommendation) of the instrument or issuer that is the subject of the investment recommendation to be positive over the relevant time period.

Sell/Short: The analyst expects the total or excess return (depending on the nature of the recommendation) of the instrument or issuer that is the subject of the investment recommendation to be negative over the relevant time period.

Selling protection or Buying Risk: The analyst expects that the price of protection against the event occurring will decrease over the relevant time period.

Buying protection or Selling Risk: The analyst expects the price of protection against the event occurring will increase over the relevant time period.

Pay: The analyst expects that over the specified time period the variable rate underlying the swap agreement that is the subject of the investment recommendation will increase.

Receive: The analyst expects that over the specified time period the variable rate underlying the swap agreement that is the subject of the investment recommendation will decrease.

Unless otherwise specified, the time frame for recommendations included in the Morgan Stanley Fixed Income Research reports is 1 - 3 months and the price of financial instruments mentioned in the recommendation is as at the date and time of publication of the recommendation.

When more than one issuer or instrument is included in a recommendation, analyst expects one part of the trade to outperform the other trade or combination of other trades included in the recommendation on a relative basis.

For important disclosures related to the proportion of all investment recommendations over the past 12 months that fit each of the categories defined above, and the proportion of issuers corresponding to each of those categories to which Morgan Stanley has supplied material services, please see the Morgan Stanley disclosure at https://ny.matrix.ms.com/eqr/article/webapp/a5cdea6a-d95a-11e8-9388-71fc4ae660a6? ch=rpint&sch=ar



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.

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: Andres Jaime.

Unless otherwise stated, the individuals listed on the cover page of this report are research analysts.

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/conflictpolicies.

Important US 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 Mexico.

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: Mexico.

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: Mexico.

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 October 31, 2018)

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 NASD and NYSE 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	COUNT	% OF	COUNT	% OF	% OF	COUNT	% OF
CATEGORY		TOTAL		TOTAL IBC	RATING		TOTAL
					CATEGORY		OTHER
							MISC
Overweight/Buy	1157	37%	305	42%	26%	544	39%
Equal-weight/Hold	1380	44%	335	46%	24%	632	45%
Not-Rated/Hold	47	1%	7	1%	15%	7	0%
Underweight/Sell	553	18%	82	11%	15%	220	16%
TOTAL	3,137		729			1403	

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 or Over) - The stock's total return is expected to exceed the total return of the relevant country MSCI Index, on a risk-adjusted basis over the next 12-18 months.

Equal-weight (E or Equal) - The stock's total return is expected to be in line with the total return of the relevant country MSCI Index, 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 relevant country MSCI Index on a risk-adjusted basis, over the next 12-18 months.

Underweight (U or Under) - The stock's total return is expected to be below the total return of the relevant country MSCI Index, 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.

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. For Morgan Stanley specific disclosures, you may refer to www.morganstanley.com/researchdisclosures.

Each Morgan Stanley Equity 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 Equity Research report on behalf of Morgan Stanley. This could create a conflict of interest.

Other Important Disclosures

Morgan Stanley & Co. International PLC and its affiliates have a significant financial interest in the debt securities of Mexico.

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), 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).

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.



The recommendations of Lucas B Almeida in this report reflect solely and exclusively the analyst's personal views and have been developed independently, including from the institution for which the analyst works.

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 US 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.; 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 Asia International Limited, Hong Kong Branch; 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 Asia International Limited, Singapore Branch (Registration number T11FC0207F); 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; in Indonesia by PT. Morgan Stanley Sekuritas Indonesia; in Canada by Morgan Stanley Canada Limited, which has approved of and takes responsibility for its contents in Canada; in Germany by Morgan Stanley Bank AG, Frankfurt am Main and Morgan Stanley Private Wealth Management Limited, Niederlassung Deutschland, regulated by Bundesanstalt fuer Finanzdienstleistungsaufsicht (BaFin); in Spain by Morgan Stanley, S.V., S.A., a Morgan Stanley group company, which is supervised by the Spanish Securities Markets Commission (CNMV) and states that Morgan Stanley Research has been written and distributed in accordance with the rules of conduct applicable to financial research as established under Spanish regulations; in the US by Morgan Stanley & Co. LLC, which accepts responsibility for its contents. Morgan Stanley & Co. International plc, authorized by the Prudential Regulatory Authority and regulated by the Financial Conduct Authority and the Prudential Regulatory Authority, disseminates in the UK research that it has prepared, and approves solely for the purposes of section 21 of the Financial Services and Markets Act 2000, research which has been prepared by any of its affiliates. RMB Morgan Stanley Proprietary Limited is a member of the JSE Limited and regulated by the Financial Services Board in South Africa. 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), and is directed at Professional Clients only, as defined by the DFSA. 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 to be a Professional Client. 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.

© 2018 Morgan Stanley