

Morgan Stanley Global Macro Forum Key Views Through Year-End

September 5, 2017

Andrew Sheets – Chief Cross-Asset Strategist/Strategist

Elga Bartsch – Global Co-Head of Economics and Chief European Economist/Economist

Sheena Shah – FX Strategist/Strategist

MORGAN STANLEY & CO. INTERNATIONAL PLC+

Vishwanath Tirupattur – Head of US Fixed Income Research/Strategist
Michael Wilson – Chief US Equity Strategist and Chief Investment Officer of
Institutional Securities & Wealth Management/Strategist
MORGAN STANLEY & CO. LLC

Vishwanath Tirupattur and Sheena Shah are fixed income strategists and are not opining on equity securities. Elga Bartsch is an economist and is not opining on any 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.

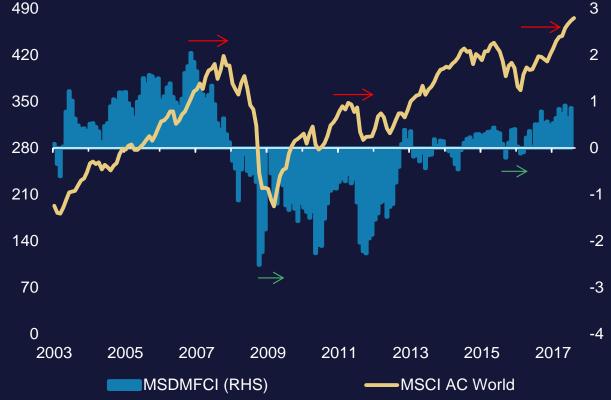
Morgan Stanley does and seeks to do business with companies covered in Morgan Stanley Research. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of Morgan Stanley Research. Investors should consider Morgan Stanley Research as only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

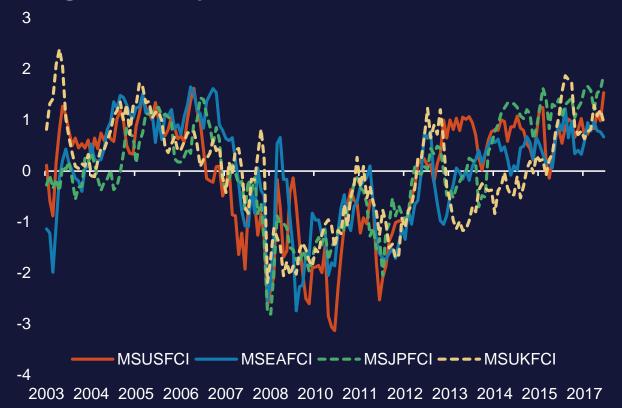
Elga Bartsch Global Co-Head of Economics and Chief European Economist

MSDMFCI Historically Has Led Turning Points in Equity Market Cycles



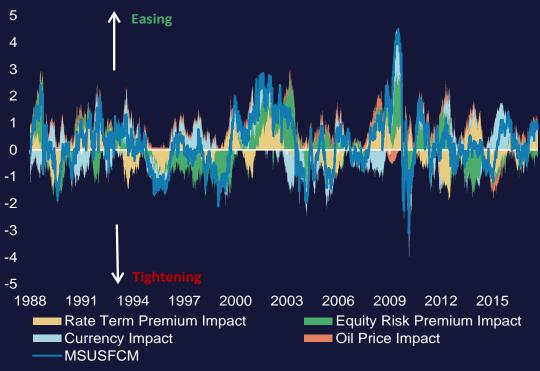
Source: MSCI, Morgan Stanley Research

The New Morgan Stanley National FCIs at a Glance



Source: Morgan Stanley Research

MSUSFCM and its Components



Note: Dynamic weights are determined from simulated responses of nominal GDP to a shock in the highlighted economic variables, following the FRB-US model (VAR version). A 100bp shock to the 10Y term premium or equity risk premium, a 10% USD TWI appreciation, or a US\$10/barrel rise in oil prices translates into an average decline of -0.38, -0.19, -0.34, and -0.03 percentage points in nominal GDP within the first four quarters, respectively.

Source: Federal Reserve Board, FRED, Bloomberg, Morgan Stanley Research

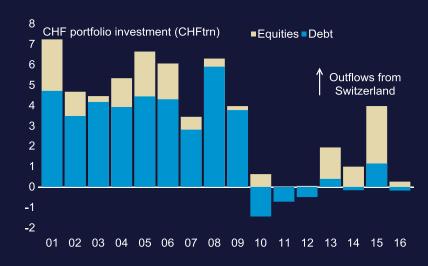
Sheena Shah FX Strategist

EUR Strength on the Horizon

EURUSD trades below fair value



Swiss investors look to buy EUR assets



Source: Bloomberg, Macrobond, Morgan Stanley Research

Michael Wilson

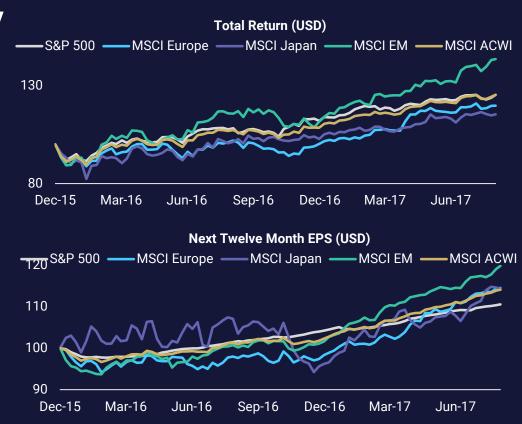
Chief US Equity Strategist and Chief Investment Officer of Institutional Securities & Wealth Management

This Has Been a *Global* Equity Rally Driven by Earnings

MSCI AC World Earnings Scorecard - As of Sept 1

Sector	Growth Reported	Surprise %
Discretionary	8.8%	4.9%
Staples	6.0%	2.4%
Energy	51.7%	-4.0%
Financials	12.2%	8.1%
Health Care	4.7%	5.1%
Industrials	14.1%	4.5%
Info Tech	27.6%	11.3%
Materials	18.1%	4.1%
Real Estate	22.1%	12.2%
Telecom	-2.4%	0.6%
Utilities	-9.9%	26.9%
MSCI AC World	13.4%	6.5%

98% of cos have reported



Source: L: FactSet, Morgan Stanley Research. As of Sept 1, 2017. R: FactSet, Morgan Stanley Research. As of Aug. 31, 2017.

Breadth of Rally Supports Our Fundamental Views

		_					
Total Return YTD (in USD)							
	S&P 500	MSCI AC World	MSCI EM	MSCI Japan	MSCI Europe		
Discretionary	11.0%	14.1%	28.8%	8.1%	16.7%		
Staples	7.5%	12.7%	18.1%	16.9%	20.3%		
Energy	-15.1%	-7.0%	10.0%	6.5%	2.2%		
Financials	7.0%	14.0%	26.1%	1.0%	23.2%		
Health Care	19.1%	17.5%	10.6%	10.0%	17.4%		
Industrials	9.7%	15.4%	21.7%	14.4%	23.5%		
Tech	26.6%	29.9%	47.6%	28.8%	27.8%		
Materials	11.9%	19.1%	27.7%	20.8%	21.7%		
Real Estate	8.9%	14.0%	39.6%	2.4%	17.0%		
Telecom	-7.9%	6.1%	17.8%	14.2%	14.7%		
Utilities	15.0%	17.5%	15.9%	7.2%	27.3%		
Total	11.9%	15.5%	28.6%	12.3%	19.5%		

	Total Return - Dec. 31, 2012 through Sept. 1, 2013 (in USD)						
	S&P 500	MSCI AC World	MSCI EM	MSCI Japan	MSCI Europe		
Discretionary	29.1%	26.6%	3.4%	33.4%	26.5%		
Staples	16.1%	13.1%	-2.1%	22.8%	13.2%		
Energy	15.4%	8.1%	-8.0%	-0.7%	5.5%		
Financials	22.9%	14.8%	-4.8%	28.1%	19.2%		
Health Care	28.5%	25.3%	4.4%	16.1%	22.1%		
Industrials	23.9%	19.4%	-3.5%	18.1%	22.0%		
Tech	13.4%	14.1%	6.0%	13.0%	23.9%		
Materials	13.5%	-4.2%	-18.5%	20.4%	-0.1%		
Real Estate	1.5%	-	-	-	-		
Telecom	5.7%	15.4%	-1.3%	53.5%	28.8%		
Utilities	10.1%	8.9%	-7.1%	26.3%	12.3%		
Total	19.8%	14.9%	-4.1%	24.5%	16.7%		



Source: Top: FactSet, Morgan Stanley Research. As of Sept. 1, 2017. Bottom: Bloomberg, Morgan Stanley Research. As of Aug. 31, 2017.

Summary and Key Conclusions

- Magnitude of the global recession in 2015 is still underappreciated
- Coordinated global monetary policy in March 2016 (Shanghai G-20) was a game-changer
- We now have most synchronous global economic recovery since the financial crisis
- Equity vol is low because economic surprises and earnings dispersion are low
- Populist movement around the world was/is positive catalyst for markets—fiscal policy
- Fiscal policy → nominal GDP > debt growth → falling equity risk
- "Classic late-cycle" in the US—waiting for excesses to develop in the real economy
 - Capex
 - M&A
 - Borrowing/lending
- Ironically, fiscal stimulus could shorten, not lengthen, the expansion
- No matter who is running the Fed, they will ultimately do their job and kill the cycle

Global equity rally continues; sentiment not exuberant; embrace it before it's over.

→ Favour Japan (FX-hedged), US, EM, Europe (FX-unhedged).

Vishwanath Tirupattur Head of US Fixed Income Research

Interest Rate Markets

- US Interest rates to be relatively range-bound. Don't expect rates to spike in 2017
 - Market pricing ~ 30% probability of a December Fed hike based on inflation data to date
 - Lower inflation prints likely to continue until year-end
 - Market pricing just about one rate hike over the next year. We don't expect it to price much more, absent a change in growth and inflation outlook
 - Fed balance sheet unwind is largely reflected in the Treasury markets
 - Meaningful yield differentials between US and Europe/Japan to persist for some time
 - FOMC appointments, particularly of the Fed Chair, are critical.
 - Trades: Overweight in the belly of the curve

Corporate Credit, EM and Securitized Products

- Cautious on US corporate credit. Expect a bumpier rest of 2017
 - Credit markets underestimating the impact of the Fed's balance sheet unwind
 - Valuations are stretched and margin for error is shrinking
- Favour EM over credit. Prefer local market debt over external debt thanks to firmer EM FX
 - EM debt inflows will outpace expected reductions, driven by the Fed's balance sheet unwind
- · Significant pockets of opportunity remain in securitized products, particularly related to housing
- Trades:
 - Credit: Up in quality. IG>loans>HY; long financials; CDX over cash
 - EM: In local rates, Mexico, Peru, Indonesia, India and Turkey; Argentina sovereign credit
 - Securitized: CRT, Agency CMBS, senior tranches of conduit CMBS and short WAL CLOs

Andrew Sheets Chief Cross-Asset Strategist

Key Takeaways

Key Takeaways

- A constructive backdrop into year-end
 - Solid global growth, easy financial conditions and light positioning all help.
 - Yes, there are near-term risks (debt ceiling, North Korea). But we think supportive factors
 ultimately win out this year.
- What do we like? Late-cycle positioning
 - O/W global equities, with US and Japan as top regions. In EM, we're OW China and India.
 - U/W US corporate credit, which we expect to underperform before the cycle turns.
 - Positive on EM fixed income (local and HC), where we think valuations are still reasonable
 and fundamentals are improving. We like local rates in Mexico, Indonesia, India and Turkey.
 - In rates, favour the belly of the US curve, and US and UK duration over eurozone duration.
 - In FX, we are **bullish EUR**, which is on a multi-year uptrend.

Valuation Methodology and Risks

Trade	Entry Date	Rationale	Risk
Like Indonesia local bonds	06-Mar-17		Despite an improvement in Indonesia's fundamentals, we remain cautious on rising market uncertainties out of China and the US, as IndoGBs and IDR tend to underperform in periods of increasing volatility.
Like India local bonds	06-Mar-17	Intiation Until Aligust gives scope to pick up carry in the tront end, we expect the RBI to stay on	Spike in global volatility leading to a sell-off in EM FX and rates.
Like Mexico Local Bonds	02-May-17	and what appears to be the end of the tightening cycle, Mexican local government bonds should	US Treasuries sell off, risks build with regards to NAFTA renegotiation. Banxico needs to continue with the tightening cycle.
Like Turkey local bonds	02-Jun-17		Sell-off in core rates or a cabinet reshuffle that removes market-friendly ministers.
Like Peru Local Bonds	14-Jul-17	Peru's fundamentals are among the strongest in the region, notwithstanding downside risks to growth and political uncertainty. Local bonds offer attractive carry while a very steep curve bodes well for extending duration.	Risk aversion driven by external factors and thin liquidity in the local market.
Like Argentina Hard Currency Bonds	14-Jul-16	We envisage macro normalisation and transformation in Argentina. A positive election result can push the current spread of 40bp tighter vs. single B credits to at least 80bp. And 10y spreads vs. benchmark to be at 350bp by the end of the year. The much steeper 10s30s curve favours the long end of the USD curve and we still recommend buying EUR discount.	Fiscal consolidation efforts falter or confidence in the economy does not pick up as expected, leading to another growth slump.

History of Recommendations/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.

Like: Based on current market conditions as of the date of this report the analyst expects that the relevant securities of the issuer that is subject of the recommendation will perform favorably over the relevant time period as compared to the overall market of comparable securities by other issuers. This is not intended to be, nor should it be interpreted as a formal fundamental rating of the issuer or its creditworthiness.

Dislike: Based on current market conditions as of the date of this report the analyst expects that the relevant securities of the issuer that is subject of the recommendation will perform favorably over the relevant time period as compared to the overall market of comparable securities by other issuers. This is not intended to be, nor should it be interpreted as a formal fundamental rating of the issuer or its creditworthiness.

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/9f0d1ff4-8748-11e6-902f-06aea91b8def?ch=rpint

History of recommendations for Turkey local currency bonds

Trade	Entry Date	Exit Date
Dislike Turkey Local Currency Bonds	17-Jul-16	27-Nov-16

Source: Morgan Stanley Research

Disclosures

Disclosure Section

Mortgage Backed Securities (MBS) and Collateralized Mortgage Obligations (CMO)

Principal is returned on a monthly basis over the life of the security. Principal prepayment can significantly affect the monthly income stream and the maturity of any type of MBS, including standard MBS, CMOs and Lottery Bonds. Yields and average lives are estimated based on prepayment assumptions and are subject to change based on actual prepayment of the mortgages in the underlying pools. The level of predictability of an MBS/CMO's average life, and its market price, depends on the type of MBS/CMO class purchased and interest rate movements. In general, as interest rates fall, prepayment speeds are likely to increase, thus shortening the MBS/CMO's average life and likely causing its market price to rise. Conversely, as interest rates rise, prepayment speeds are likely to decrease, thus lengthening average life and likely causing the MBS/CMO's market price to fall. Some MBS/CMOs may have "original issue discount" (OID). OID occurs if the MBS/CMO's original issue price is below its stated redemption price at maturity, and results in "imputed interest" that must be reported annually for tax purposes, resulting in a tax liability even though interest was not received. Investors are urged to consult their tax advisors for more information. Government agency backing applies only to the face value of the CMO and not to any premium paid.

The information and opinions in Morgan Stanley Research were prepared or are disseminated by Morgan Stanley & Co. LLC and/or Morgan Stanley C.T.V.M. S.A. and/or Morgan Stanley México, Casa de Bolsa, S.A. de C.V. and/or Morgan Stanley Canada Limited and/or Morgan Stanley & Co. International plc and/or RMB Morgan Stanley (Proprietary) Limited and/or Morgan Stanley MUFG Securities Co., Ltd. and/or Morgan Stanley Capital Group Japan Co., Ltd. and/or 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/or Morgan Stanley Taiwan Limited and/or Morgan Stanley & Co. International plc, Seoul Branch, and/or 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), and/or Morgan Stanley Pt Ltd (A.B.N. 19 009 145 555, holder of Australian financial services license No. 240813, which accepts responsibility for its contents), and/or Morgan Stanley India Company Private Limited, regulated by the Securities and Exchange Board of India ("SEBI") and holder of licenses as a Research Analyst (SEBI Registration No. INH000001105), Stock Broker (BSE Registration No. INB011054237 and NSE Registration No. INB/INF231054231), Merchant Banker (SEBI Registration No. INM000011203), and depository participant with National Securities Depository Limited (SEBI Registration No. IN-DP-NSDL-372-2014) which accepts the responsibility for its contents and should be contacted with respect to any matters arising from, or in connection with, Morgan Stanley Research, and/or PT. Morgan Stanley").

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: Andrew Sheets, Vishwanath Tirupattur, Michael Wilson.

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

Within the last 12 months, Morgan Stanley managed or co-managed a public offering (or 144A offering) of securities of United Kingdom, United States of America. In the next 3 months, Morgan Stanley expects to receive or intends to seek compensation for investment banking services from Argentina, India, Indonesia, Mexico, Peru, Turkey, United Kingdom, 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: Argentina, India, Indonesia, Mexico, Peru, Turkey, United Kingdom, United States of America.

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 August 31, 2017)

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.

							ial Investment
	Coverage Universe		Investment Banking Clients (IBC)			Services C	lients (MISC)
		% of		% of	% of Rating		% of Total
Stock Rating Category	Count	Total	Count	Total IBC	Category	Count	Other MISC
Overweight/Buy	1164	36%	306	41%	26%	555	37%
Equal-weight/Hold	1425	44%	349	46%	24%	701	46%
Not-Rated/Hold	61	2%	6	1%	10%	10	1%
Underweight/Sell	606	19%	91	12%	15%	242	16%
Total	3,256		752			1508	

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.

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 or the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis over the next 12-18 months.

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

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

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

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

Analyst Industry Views

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

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

Cautious (C): The analyst views the performance of his or her industry coverage universe over the next 12-18 months with caution vs. the relevant broad market benchmark, as indicated below.

Benchmarks for each region are as follows: North America - S&P 500; Latin America - relevant MSCI country index or MSCI Latin America Index; Europe - MSCI Europe; Japan - TOPIX; Asia - relevant MSCI country index or MSCI sub-regional index or MSCI AC Asia Pacific ex Japan Index.

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 Argentina, India, Indonesia, Mexico, Peru, Turkey, United Kingdom, United States of America.

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.

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.

Certain information in Morgan Stanley Research was sourced by employees of the Shanghai Representative Office of Morgan Stanley Asia Limited for the use of Morgan Stanley Asia Limited.

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, S.V., S.A., a

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. cc0509