January 13, 2020 05:01 AM GMT

US Equity Strategy | North America

Weekly Warm Up: Concentration Should Lead to Opportunities

Concentration at the top suggests risk and opportunity to capture a rotation to the laggards; but timing it may be tricky and we need more than a modest recovery to catalyze. Our "analysis" of Fed balance sheet expansions suggests it does boost asset prices.

MORGAN STANLEY & CO. LLC

Michael J Wilson
EQUITY STRATEGIST
M.Wilson@morganstanley.com +1 212 761-2532

Adam Virgadamo, CFA
EQUITY STRATEGIST
Adam.Virgadamo@morganstanley.com +1 212 761-1376

Andrew B Pauker
EQUITY STRATEGIST
Andrew.Pauker@morganstanley.com +1 212 761-1330

Michelle M. Weaver
EQUITY STRATEGIST
Michelle.M.Weaver@morganstanley.com +1 212 296-5254

An unprecedented divergence has opened up between the y/y change in the S&P 500 and earnings revisions breadth. With $1.2T in annualized balance sheet expansion from the Fed, ECB and BOJ and signs growth is bottoming, the S&P 500 could have further upside with corrections limited to 5%. The tougher question is whether leadership will stay the same or shift.

As equity markets make new highs every day/week, there is a defensive undertone. This suggests the recovery will be more modest than 2016-17 and in line with our economists' forecast. If the recovery turns out to be more robust, there is an opportunity in the more cyclical parts of the market. We think it is still too early to make a big bet on cyclicals or small caps but a good entry point may be approaching after this final test is finished and there is more evidence of a real rebound in manufacturing and inflation expectations.

We are seeing extraordinary concentration of returns at the very top of the market. Specifically, the five largest companies are all tech companies and currently make up 18% of the S&P 500 market cap. This is the most extreme this metric has ever been, including the tech bubble of the late 1990s. This doesn't have to correct itself immediately but it is an unsustainable development in our view especially if net income concentration doesn't keep pace.

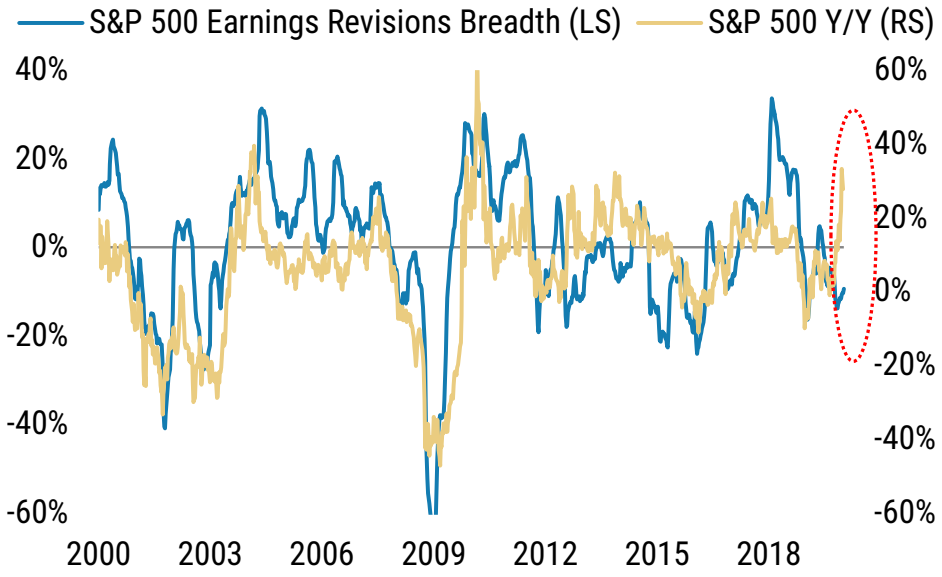
We think a reversal in the concentration could happen one of 2 ways: 1) proactively as investors decide to diversify into other areas of the market that have underperformed (bullish), or 2) reactively as the leaders just trade lower because the trend exhausts itself as net income concentration doesn't keep pace (bearish). Of course there is also a chance this is like the late 1990s and these leaders just continue to melt up. We would view that as bullish in the short term but a bearish development longer term.

The Fed's balance sheet and the S&P 500. Our missed call on the market multiple last year has us tuned in to liquidity dynamics that can support the market and its valuation at these levels. Given limited precedent, establishing a causal link between the Fed's balance sheet expansion and above average returns for the S&P is difficult. We found some (limited) historical evidence that S&P returns are better than average when the Fed is adding liquidity to the market, especially if the balance sheet expansion is large and/or forward earnings forecasts aren't falling, dynamics which have been at play through 4Q and YTD.

What to Focus on This Week

We continue to view central bank activity as an important driver of asset prices in the near term given the lackluster improvement in earnings revisions. More specifically, an unprecedented divergence has opened up between the y/y change in the S&P 500 and earnings revisions breadth (Exhibit 1). With $1.2T in annualized balance sheet expansion from the Fed, ECB and BOJ ongoing, we think stocks will have a difficult time selling off much and think any correction in the S&P 500 will be limited to 5 percent or less.

Exhibit 1: Unprecedented Divergence between y/y change in S&P 500 and Earnings Revisions Breadth



Source: Factset, Morgan Stanley Research

It's also important to acknowledge the role that bottoming fundamentals have played as well. Without such improvement, it's unlikely stocks would have rallied so much this fall even with the excessive liquidity. On that score, our economists have been vocal about the improvement in global PMIs, trade and other early indicators suggesting global growth will trough in 1Q near 3 percent with a ramp toward 3.4% by 4Q. The US recovery should lag the rest of the world given the fact that it began to slow later, is less leveraged to a trade rebound and is still suffering from unique late cycle dynamics weighing on margins and capital investment. As a result, we see further deceleration in US economic growth in the first half but stabilizing at around trend line growth of 1.8%. That should be enough to generate decent top line growth in 2019.

As for earnings, our work is also starting to show some signs of bottoming in the growth rate for the S&P 500 while small/mid caps are still struggling with deteriorating operating leverage. We will be looking this earnings season for signs of stabilization in margins and areas of pricing power and positive operating leverage. **The equity market continues to pay up for quality and is fading cyclicals relative to defensives** again as this ratio tests its 200 day moving average. 10 Year Treasury Yields are following this same pattern after failing to get above its 200 day moving average

during this entire market recovery. **In short, as equity markets make new highs every week, there is still a defensive undertone that suggests the recovery will be much more modest than 2016-17 and in line with our economists' forecast.** If the recovery turns out to be more robust, there is an opportunity in the more cyclical parts of the market. We think it is still too early to make a big bet on cyclicals but a good entry point may be approaching after this final test is finished and there is more evidence of a real rebound in manufacturing and inflation expectations.

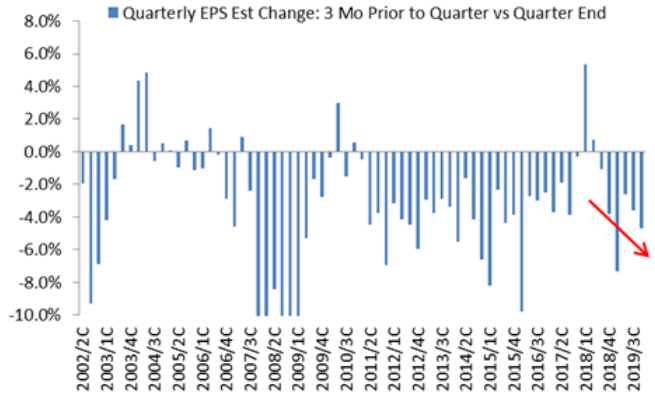
Exhibit 2: Cyclicals/Defensive stock ratio and Treasury Bonds suggest recovery will be modest

Source: Bloomberg, Morgan Stanley Research

Earnings downgrades have abated and may flatten out near term

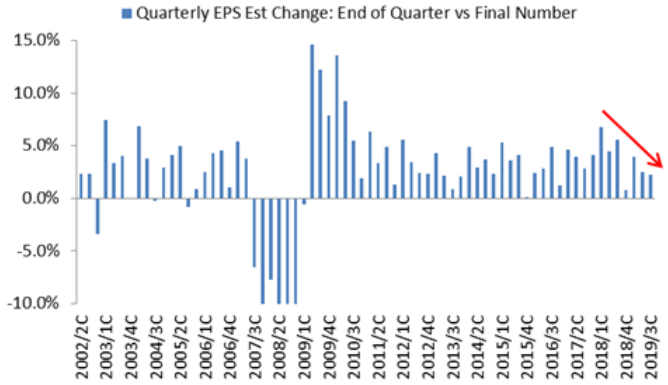
As we head into earnings season, negative revisions have abated which is natural at this time of the quarter. Exhibit 3 shows that revisions during each quarter last year got progressively worse which led to progressively smaller beats (Exhibit 4). Based on the sharp decline of 4Q EPS estimates during last quarter, **we expect a beat of approximately 2 percent when 4Q earnings season is finished. This would leave 4Q flat y/y based on the current -1.8% estimate. Hardly exciting, but that would be a slight uptick from 3Q when y/y EPS came in at -0.8% which supports the view that the earnings recession is behind us, at least for the large caps.** Furthermore, with progress made on trade and Brexit, recession fears extinguished and a strong stock market, companies are likely feeling more optimistic and will not guide 1Q or 2020 down as much as they did during 1Q-3Q19 earnings seasons. All of this is supportive of stock prices but the question is have stocks run too far? We still think 2020 bottom up consensus EPS forecast for the S&P 500 of +9.5% growth is too high and these numbers will come down. However, with 2020 growth expectations very back end loaded, forward 12 month EPS will likely not come down much, and may even go up as we roll up estimates from 2021.

Exhibit 3: Earnings revisions during each quarter last year got progressively worse....



Source:

Exhibit 4: ....which led to progressively smaller beats



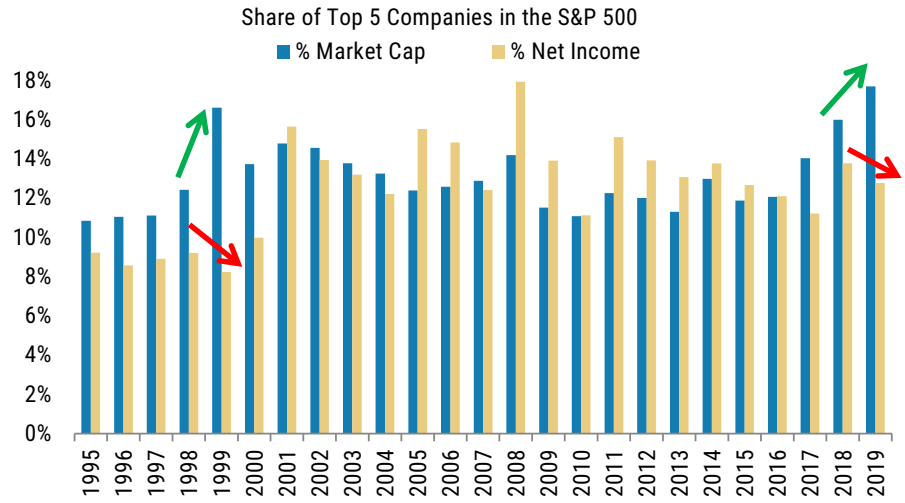
Source:

The Other 1 Percenters

Market breadth has improved over the past year and it is one of several positive technical factors at the moment. However, we are seeing extraordinary concentration of returns at the very top of the market. Specifically, the five largest companies, or the top 1%, currently make up 18% of the market cap of the S&P 500. This is the most extreme this metric has ever been (Exhibit 5). **The last time we saw something even remotely this high was 1999, at the *end* of the tech bubble.** Interestingly, the five largest companies in the S&P are all tech or internet companies-- Apple, Microsoft, Google, Amazon and Facebook. Ironically, during the tech bubble episode of 1999, the group at the top included only three tech companies - Microsoft, Cisco, and Intel. The other two were GE and Walmart. While we don't think there is a valuation bubble in tech anywhere near the scope of what we experienced in 1999, the concentration in tech stock performance is unhealthy in our view and arguably unsustainable.

On one hand, the concentrated returns in such stocks make sense in a world of low growth and low interest rates and inflation. High quality growth stocks are a great place to be. However, obvious themes often go too far and exhibit 3 is a warning sign we may be closer to the end of this trend. Adding further concern to that warning is the fact that net income concentration for these five companies failed to keep pace with last year's price move which is another similarity to what happened in 1999. Its seems clear, that this concentration is extreme. **The question is will it reverse and when? Secondly, will it happen proactively as investors decide to diversify into other areas of the market that have underperformed (bullish), or will it happen reactively as these leaders just trade lower because the trend exhausts itself as net income concentration doesn't keep pace (bearish)?** Of course there is also a case that the concentration just gets more extreme as liquidity keeps plowing into the same names at the top. Year to date, that's exactly what's happening and it's what happened in the first quarter of 2000, the last time we saw such concentration.

Exhibit 5: There is a growing divergence between top 1% market cap and net income concentration



Source: Bloomberg, Factset, Morgan Stanley Research

Beneficiaries of a Proactive Reversal?

We have become more bulllish over the past 3 months but a good chunk of that bullishness is due to excess liquidity rather than a material change to our economic / earnings forecasts. Extinguishing the recession risk was very important and worth a lot as was the de-escalation in trade tensions between China and the US. However, the market internals seem to agree with our view that the rebound will be modest given its preference for large over small, quality over junk, inability of cyclicals to power higher relative to defensives and still low Treasury yields. Perhaps the biggest vote for a modest rebound can we seen in *real* Treasury yields which have barely moved off the zero bound, a level they crossed during last summer's recession scare (Exhibit)

Exhibit 6: Real Rates very close to zero suggest Modest Growth Rebound

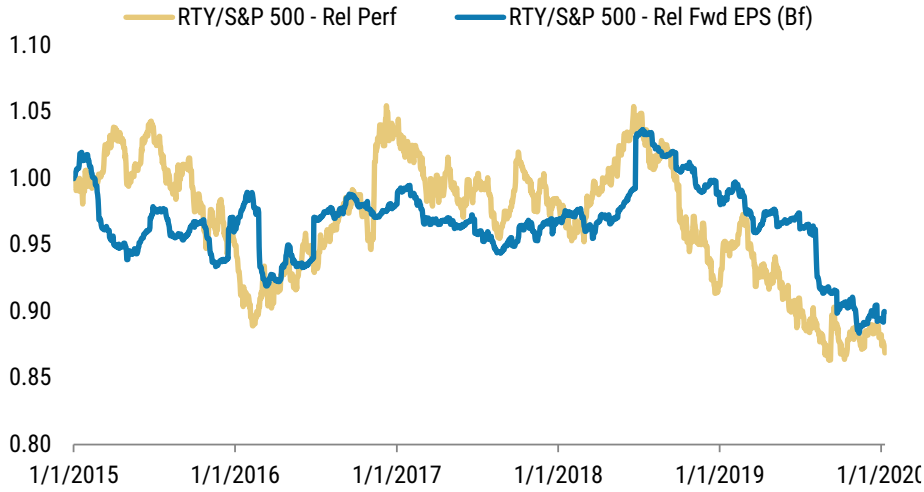
Source:

The bottom line is that the market internals are priced for a *modest* rebound in growth. This is one reason why large cap tech stocks are dominating, especially year to date. Therefore, the bigger opportunities are away from big cap tech but it will require a greater belief in a bigger growth rebound. We don't see that yet but we do think this as the biggest risk to positioning and sector performance going forward.

Small caps

Small caps have underperformed large caps by almost 20 percent over the past 18 months and would be a natural beneficiary of a reversal of the concentration discussed above. We think it's too early for a proactive shift into small caps specifically, mainly because relative forward EPS will likely remain under pressure and that's the reason they have been underperforming (Exhibit 4). Our analysis continues to show small cap companies exhibiting much worse negative operating leverage than large caps and that should continue into early 2020 at a minimum. Having said that, we are looking for an entry point as the relative underperformance has reached an extreme. **We think it will require meaningful *acceleration* in growth in the *US* economy which our economists aren't forecasting.**

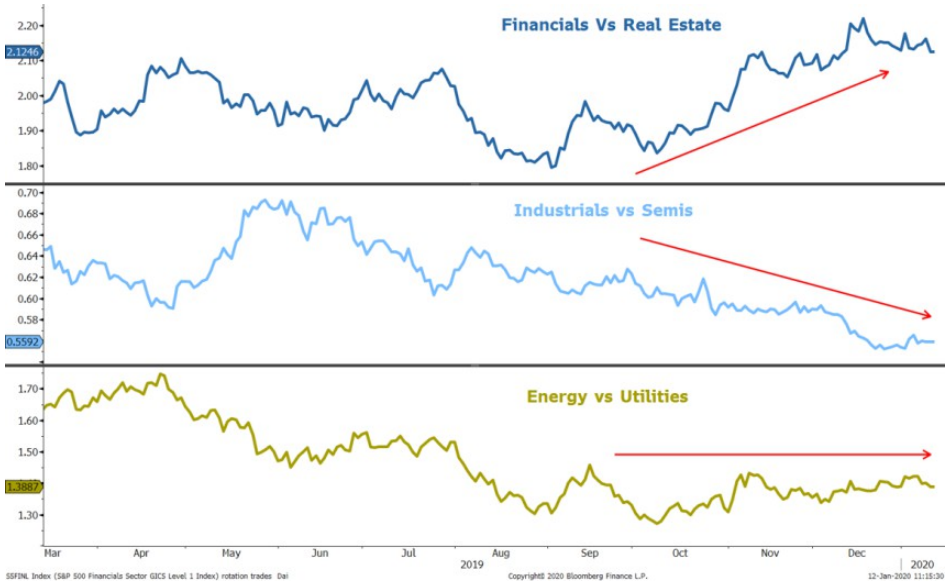
Exhibit 7: Small caps likely to continue underperforming until relative EPS can turn around.



Source: Bloomberg, Morgan Stanley Research

With global growth bottoming in 1Q, there has been more interest in the global cyclicals since September but as noted earlier, the rally here has started to fade. In Exhibit 8, we highlight 3 index rotation trades that we believe should work if we get the proactive rotation out of big cap tech from a more convincing reacceleration in global growth: Financials (Banks) over Real Estate, Industrials over Semis, and Energy over Utilities. Exhibit 8 shows these three pairs and how they have traded over the past few years. Of the three, only the first one (Financials over Real Estate) is showing any meaningful outperformance since last summer's lows/recession fears. Industrials have showed no relative strength versus semis yet but the performance is starting to flatten out. Finally, Energy vs Utilities performance has been flattening since last summer which is encouraging as well but that is during a period when oil prices have rebounded sharply due to OPEC supply cuts and rising geopolitical concerns.

Exhibit 8: Three index rotation trades that we believe should work in a better global growth environment



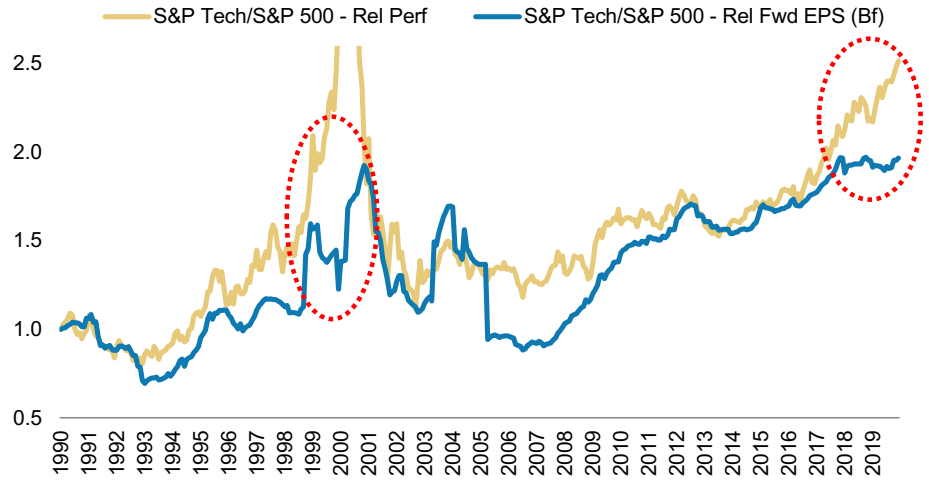
Source: Bloomberg, Morgan Stanley Research

Will Tech Leadership Continue?

Since the Fed's balance sheet began expanding in September of last year, the S&P 500 is up 12%, led by Tech, which is up 19%. Tech Hardware (+34%), Semis (22%), and Banks (21%) have led the way. Software has been a modest relative underperformer over this period despite its surge since year end, underscoring the idea that the liquidity driven bid may now have shifted to higher quality/defensive growth that benefit from lower rates rather than the more cyclical growth subsectors (i.e. semis/hardware). While we think this outperformance in Tech can continue in the near term, we think it is getting more, not less, speculative. In our view, tech's relative outperformance has not been supported by earnings and will require a surge in absolute and relative earnings growth this year to substantiate. Having said that, it has all the qualities many investors want right now, so if liquidity continues to drive markets, it could just keep going. We just want to highlight the divergences we see in our work.

Exhibit 9 shows that Tech's relative performance has significantly overshot relative forward earnings. In fact, relative forward earnings are essentially flat since November of 2017 (in line with our forecasts), while relative performance for the Tech sector is up 26%. We downgraded the sector in July 2018 when this relationship became disconnected by approximately 15%. The sector underperformed in 4Q18 but has since become even more disconnected from earnings. In fact, the only other time we have observed such a disparity was during the tech bubble of the late 1990s. While our call on tech earnings has been right, our call to be underweight the sector has been wrong. We appreciate that momentum can go further in a liquidity driven bull market but we can't ignore the lagging relative earnings growth, and therefore, remain underweight. **We fully expect to see powerful rotation to other sectors and stocks at some point this year as discussed above.**

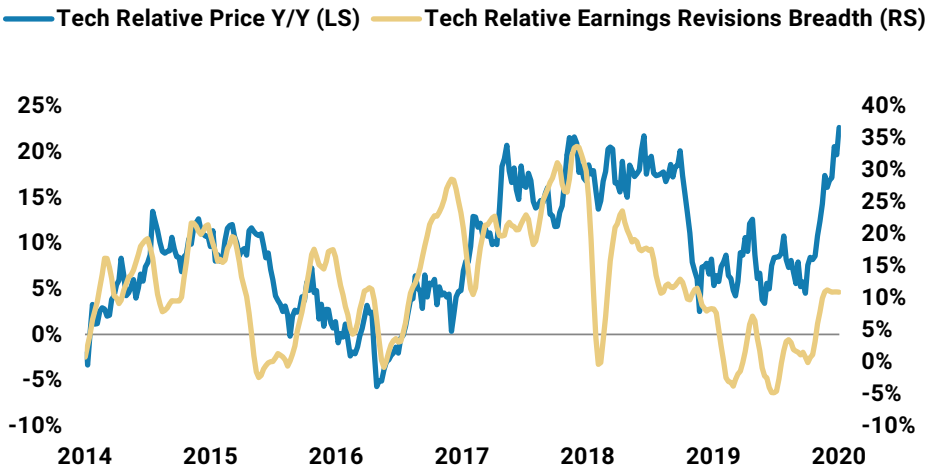
Exhibit 9: Tech Relative Performance Has Significantly Outpaced Relative Earnings



Source: Bloomberg, Morgan Stanley Research as of December 31, 2019.

Exhibit 10 shows that **Tech relative earnings revisions breadth has turned higher since the summer which is absolutely a positive and a fundamental reason why the sector is performing well.** However, just as with the prior example, relative performance has outpaced relative earnings revisions breadth by a wide margin and *modestly* positive relative earnings revisions breadth won't close the gap seen in Exhibit 7 any time soon.

Exhibit 10: Tech Relative Performance Has Also Gotten Ahead of Relative Earnings Revisions Breadth

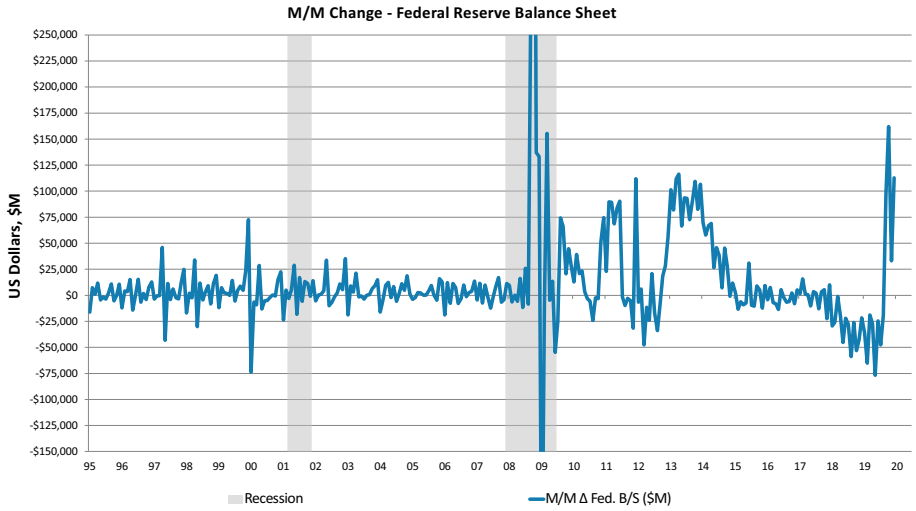


We ran the same analysis for all of the sectors in the S&P 500 shown in Exhibits 9 and 10 and nothing was as extended as Tech. On the flip side, diversified financials, healthcare, staples and utilities are showing relative earnings revision breadth *ahead* of relative performance suggesting there could be a rotation back toward some of these defensive areas as we go through earnings season, particularly if rates stay under control as we expect. For healthcare specifically, further relative outperformance for this sector will occur only if political concerns remain benign. With primaries about to start, this is probably not the time to make that choice but it should be on your radar and not a big underweight in portfolios in our view.

The Fed's Balance Sheet & S&P Returns

As the Fed has expanded the size of its balance sheet, we have been of the view that the resultant excess liquidity has been beneficial for stock prices and multiples. The potential impact of the Fed on equities has been a central feature of almost all our client conversations the last few months. Most clients suspect that there is some positive impact, though the transmission mechanism and quantification of that impact are hard to pin down, limiting confidence in its durability now that asset prices appear ahead of the fundamentals (Exhibit 1). Since the Fed has rarely expanded its balance sheet at the pace it has been on since October (Exhibit 11) there is limited history to analyze, but we found some evidence that periods of balance sheet expansion have lined up with above average equity returns.

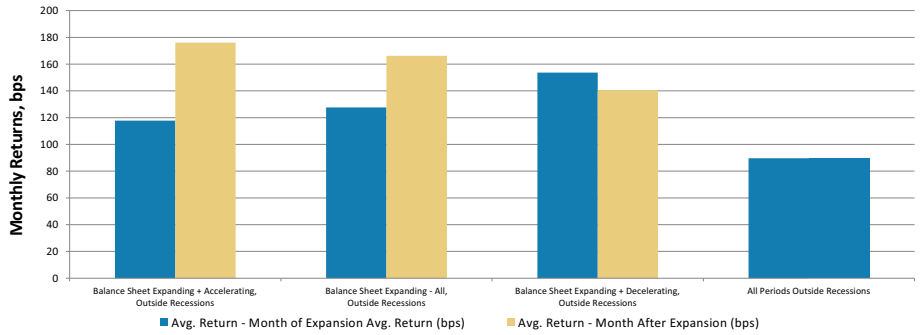
Exhibit 11: The Fed's Recent Balance Sheet Expansion Looks Extreme vs History



Source: Bloomberg, Morgan Stanley Research.

An expanding balance sheet outside of recessions has coincided with above average monthly returns for the S&P, but there are some caveats. Exhibit 12 shows the average monthly total return of the S&P 500 (in basis points using data from 1995 on) in non-recession months when the Fed expanded its balance sheet and in the subsequent month. When the balance sheet expanded, the S&P returned 128 bps and another 166 bps in the following month. This compares to about a 90 bps average return for the S&P in all months outside of recession during the period. When we further broke down the balance sheet expansion into periods of acceleration (balance sheet grew more than in the prior month) and deceleration (balance sheet grew, but less than in the prior month) returns look similar, with the month after accelerating expansion seeing the highest average returns. The higher average returns are encouraging, but monthly returns on the S&P are fairly volatile and exogenous fundamental forces can overwhelm liquidity dynamics so difference tests for statistical significance generally fail to corroborate a definitive difference in returns. Where we did find some statistical significance to coincident balance sheet expansion and above average returns, albeit on smaller sample sizes, were periods where (1) the balance sheet expansion was toward the high end of its historical range or (2) next twelve month earnings estimates on the S&P were rising. We note that both of these dynamics have been at play in 4Q19.

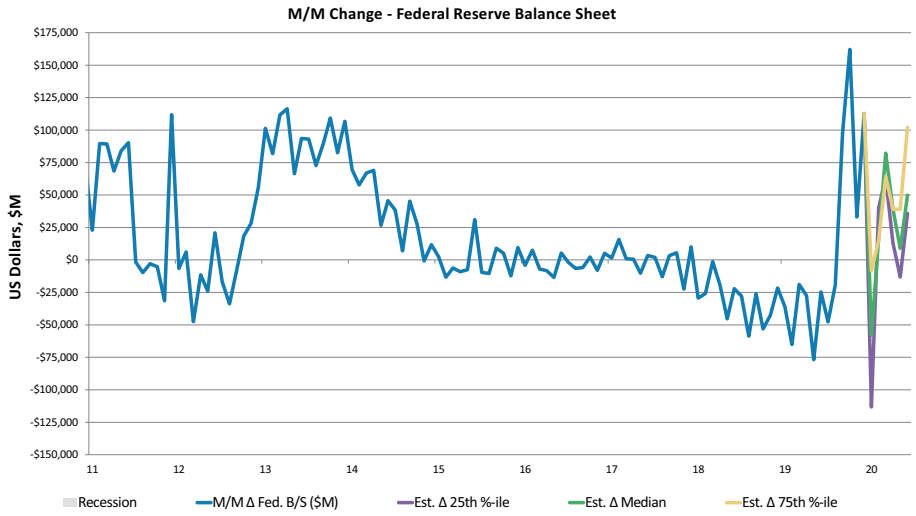
Exhibit 12: Some Evidence S&P Returns Are Higher When The Fed Balance Sheet Is Expanding



Source: Bloomberg, Morgan Stanley Research.

To the extent Fed provided liquidity is supporting equities, the outlook for the balance sheet matters and expansion looks set to continue. Exhibit 13 looks at the historical m/m change in the Fed's balance sheet and projects that change thorough June based on the Fed's December survey of market participants. The purple, green, and yellow lines show what the potential evolution of the m/m changes in the Fed's balance sheet based on the 25th percentile, median, and 75th percentile of responses to this survey respectively, with an embedded assumption from us that the take down rate on available repo facilities is ~60% (lower than it has been the last few months). In most scenarios the balance sheet will continue to expand through the first half of this year.

Exhibit 13: Market Participant Expectations Show Continued Balance Sheet Expansion



Source: Bloomberg, Federal Reserve Bank of New York, Morgan Stanley Research.

Fresh Money Buy List Updates

Each week, we will use a section of our Weekly Warm Up to provide brief updates on select stocks on our Fresh Money Buy List.

Exhibit 14: Fresh Money Buy List - Stats & Performance

Company Name	Ticker	MS Analyst Rating	Sector	Market Cap ($Bn)	Price	MS PT	% to MS PT	MS Analyst	Date Added	Total Return Since Inclusion	
										Absolute	Rel. to S&P
Walt Disney Co	DIS	Overweight	Communication Services	$262.6	$144.62	$160.00	11%	Swinburne, Benjamin	3/14/2018	43.4%	20.9%
Humana Inc	HUM	Overweight	Health Care	$49.3	$364.12	$457.00	26%	Goldwasser, Ricky	7/19/2018	16.1%	(3.3%)
Iqvia Holdings Inc	IQV	Overweight	Health Care	$32.4	$159.30	$170.00	7%	Goldwasser, Ricky	3/14/2018	50.7%	28.3%
Coca-Cola Co.	KO	Overweight	Consumer Staples	$239.4	$55.53	$60.00	8%	Mohsenian, Dara	8/5/2019	7.7%	(4.7%)
Microsoft	MSFT	Overweight	Information Technology	$1,249.7	$161.34	$189.00	17%	Weiss, Keith	3/14/2018	75.6%	53.2%
NextEra Energy Inc	NEE	Overweight	Utilities	$117.4	$243.55	$240.00	(1.5%)	Byrd, Stephen	3/14/2018	64.5%	42.0%
Philip Morris Intl.	PM	Overweight	Consumer Staples	$136.1	$87.46	$99.00	13%	Kaufman, Pamela	7/29/2019	4.8%	(4.1%)
Procter & Gamble Co.	PG	Overweight	Consumer Staples	$327.9	$123.97	$134.00	8%	Mohsenian, Dara	3/18/2019	23.4%	5.9%
T-Mobile US, Inc.	TMUS	++	Communication Services	$68.9	$79.00	++	++	Flannery, Simon	3/14/2018	21.6%	(0.9%)
Current List Performance											
Average (Eq. Weight)				$276.0			11%			34.2%	15.3%
Median				$136.1			9%			23.4%	5.9%
% Positive Returns (Abs. / Rel.)										100%	56%
% Negative Returns (Abs. / Rel.)										0%	44%
Avg. Hold Period (Months)											16.7
All Time List Performance											
Average (Eq. Weight)										15.8%	2.9%
Median										16.1%	(3.3%)
% Positive Returns (Abs. / Rel.)										71%	35%
% Negative Returns (Abs. / Rel.)										29%	65%
Avg. Hold Period (Months)											12.8

++ Rating and other information has been removed from consideration in this report because, under applicable law and/or Morgan Stanley policy, Morgan Stanley may be precluded from issuing such information with respect to this company at this time.

Performance returns shown above represent local currency total returns, including dividends and excluding brokerage commission. Returns are calculated using the closing price on the last trading day before the date shown in the "Date Added" column through close on the last trading day prior to publication of this report for stocks currently on the list and through close on the day of removal for stocks formerly on the list. These figures are not audited. Past performance is no guarantee of future results.

Source: Bloomberg, Morgan Stanley Research

Microsoft (MSFT), Keith Weiss

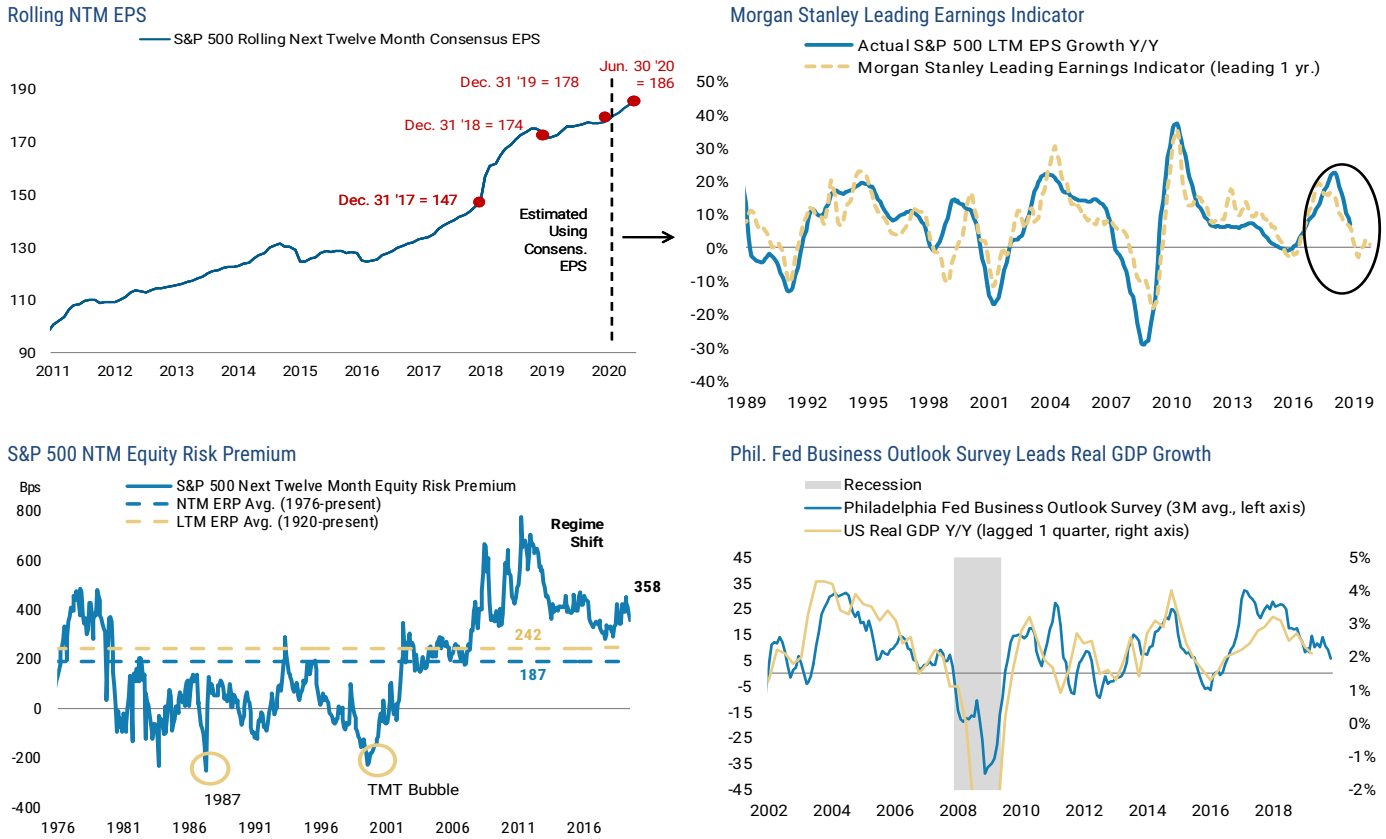
- **Who's Afraid of Gross Margin Pressures? Not Us…** - Product cycles and Cloud revenue mix have stoked investor concerns on the durability of FY21 gross margins. Our bottom-up gross margin analysis supports an out of consensus view of expanding margins and durable double-digit gross profit $ growth. We remain OW and increase our PT to $189.

T-Mobile US (TMUS), Simon Flannery

- **4Q19 Pre-release: Another Beat But Signs of Heightened Competition** - In line with prior years, T-Mobile pre-released its 4Q subscriber results with net adds coming in ahead of both guidance and consensus estimates: The company reported 1.3M branded postpaid net adds vs MS/consensus at ~1.2M and an implied 4Q guidance midpoint of ~1M. The ~30% beat vs guidance compares to ~60% last year and ~45% on average over the last 5 years. Postpaid phone net adds of ~1M drove most of the beat, though churn was 10 bps above consensus and up 2 bps vs last year for the first y/y increase since 1Q16. The higher churn may reflect more aggressive promotional activity, particularly from Verizon in recent months, as well as a continued ramp in mobile from the cable companies. The company noted that postpaid phone gross adds were up 5% y/y "in a very competitive environment." This factor could pressure margins when the company reports financial results in February. Prepaid adds of 77k were below both MSe and consensus expectations, with the company noting 160k migrations from prepaid to postpaid in the quarter. These could be the first signs of more heightened competition to come in 2020.

Weekly Charts to Watch

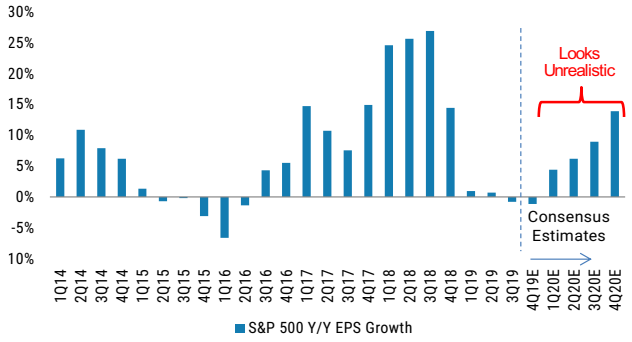
Exhibit 15: Four Charts to Focus On



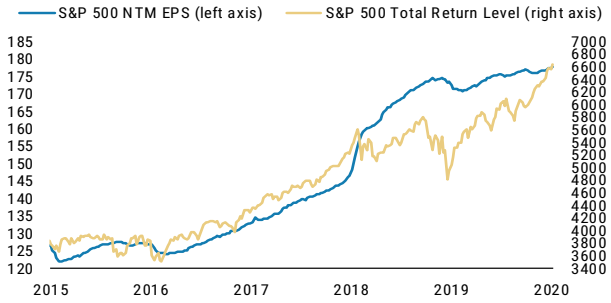
Source: FactSet, Bloomberg, Robert Shiller, Morgan Stanley Research. Top: As of Dec 31, 2019. Bottom Left: As of Jan 9, 2020. Bottom Right: As of Dec 31, 2019. MS Leading Earnings Indicator is a macro factor based earnings model that leads actual earnings growth by one year with a 0.7 12-month leading correlation. Note: S&P 500 fundamental data used post March 1993; Top 500 by market cap data used before 1993. LTM equity risk premium average is since 1920. ERP based on forward earnings yield and 10-year Treasury Yield.

Exhibit 16: US Earnings Snapshot

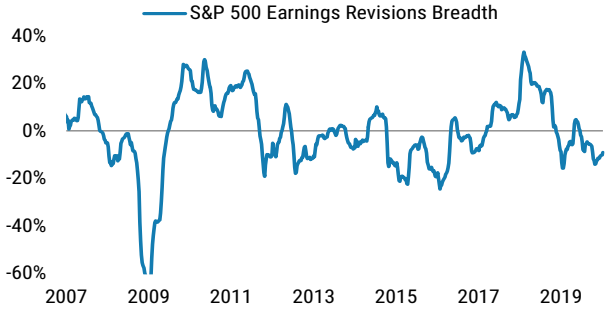
S&P 500 Y/Y EPS Growth



S&P 500 NTM EPS vs. Total Return Level



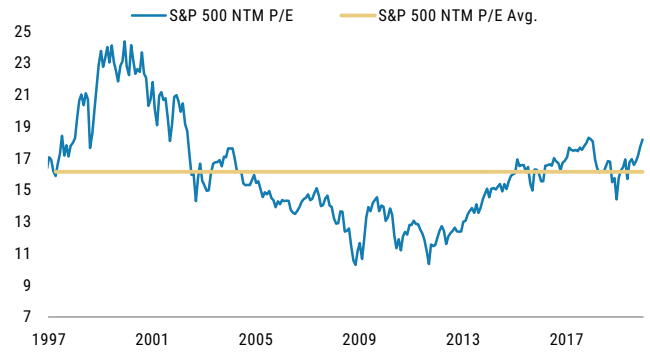
S&P 500 Earnings Revisions Breadth



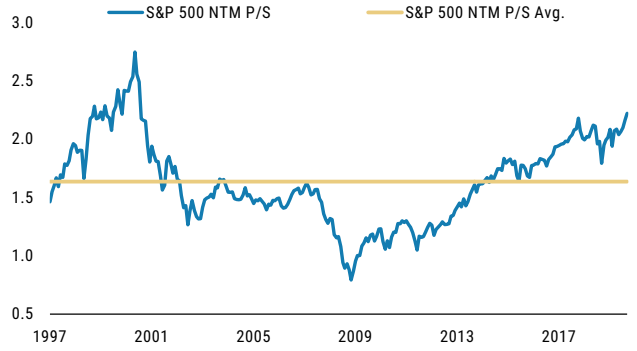
Source: Thomson Financial, FactSet, Morgan Stanley Research. Top: As of January 10, 2020. Bottom: As of January 9, 2020.

Exhibit 17: US Equity Market Traditional Valuation Measures

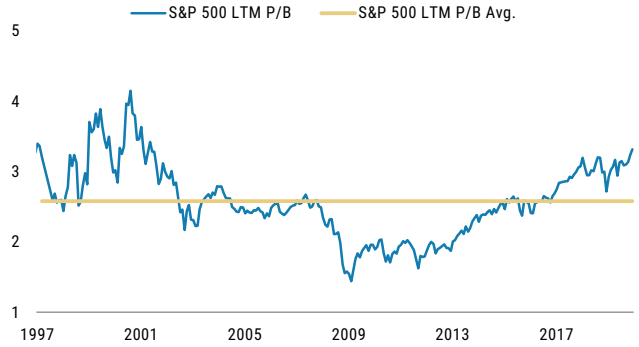
S&P 500 NTM P/E



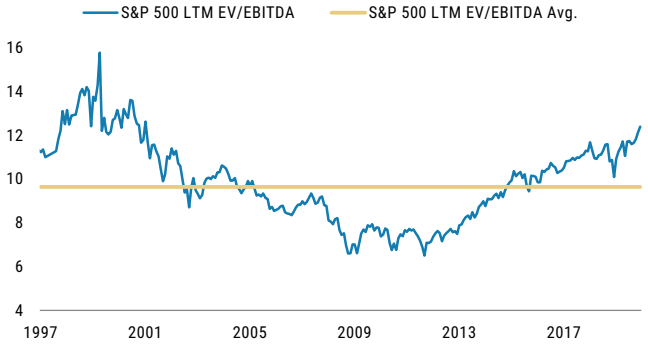
S&P 500 NTM P/S



S&P 500 NTM P/B



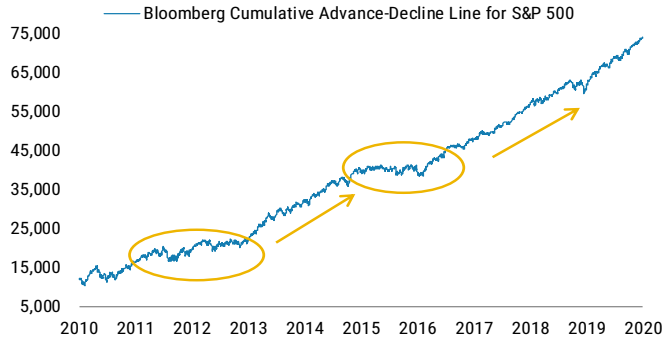
S&P 500 NTM EV/EBITDA



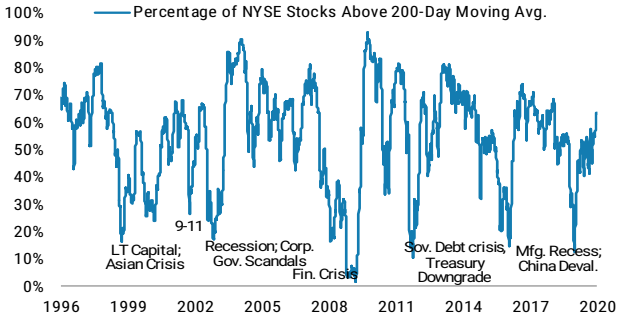
Source: FactSet, Morgan Stanley Research as of December 31, 2019. Monthly Data. Note: S&P 500 fundamental data used post March 1993; Top 500 by market cap data used before 1993.

Exhibit 18: US Equity Market Technicals and Financial Conditions

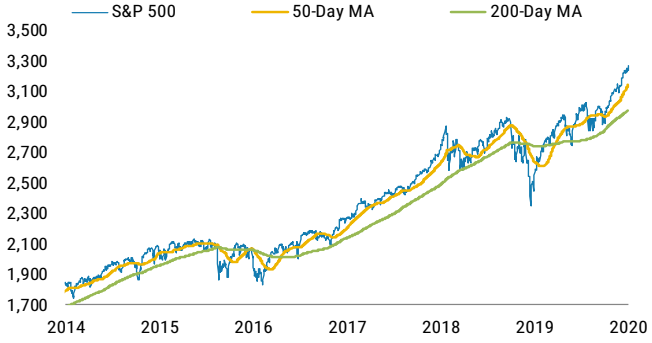
S&P 500 Cumulative Advance-Decline



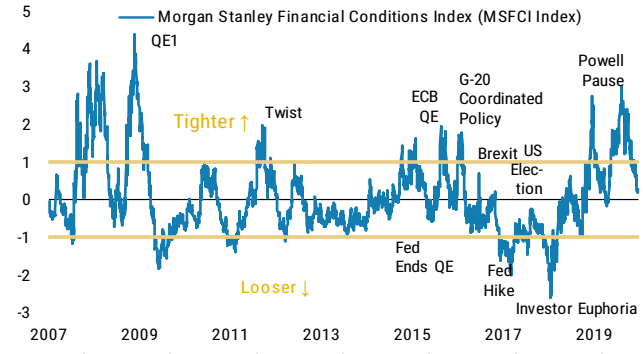
S&P 500 Percent Members Above 200-Day Moving Average



S&P 500 with Moving Averages



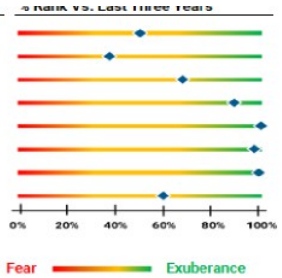
Morgan Stanley Financial Conditions Index

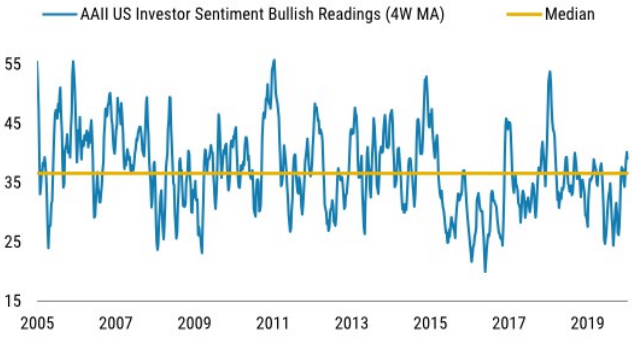


Source: Bloomberg, Morgan Stanley Research. All: As of January 9, 2020

Exhibit 19: US Equity Market Sentiment

Indicator	Latest	% Rank vs. Last Three Years
MS & Co. Standardized GRDI	0.5	
US AAII % Bulls	33.1%	
S&P 500 Mutual Fund Beta	1.1	
S&P 500 30-Day Rel. Strength Index	65.9	
% S&P 500 Members > 200-Day MA	83.8%	
% S&P 500 >/< 200-Day MA	9.5%	
S&P 500 Put/Call[1]	0.5	
VIX Index[1]	12.6	

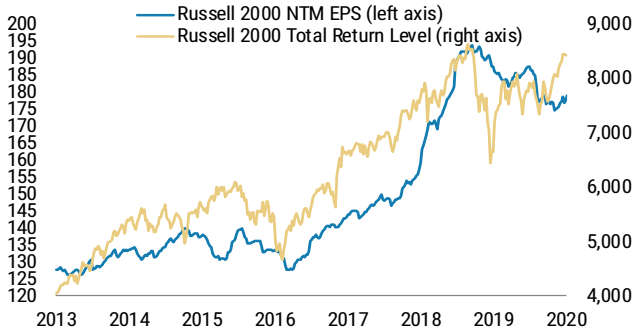




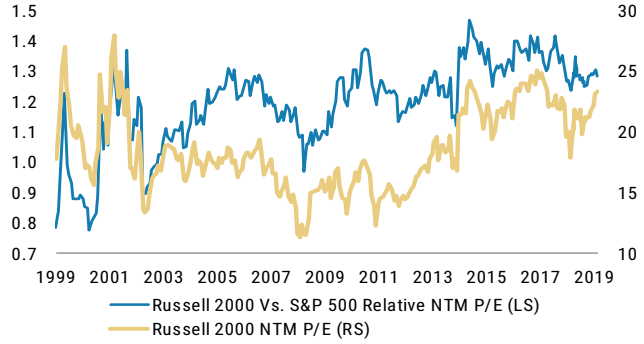
Source: Bloomberg, FactSet, Morgan Stanley Research. As of January 9, 2020.

Exhibit 20: US Small Cap Equities

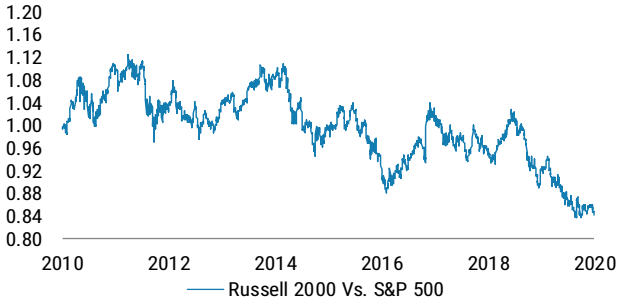
Russell 2000 NTM EPS vs. Total Return Level



Russell 2000 NTM P/E and Relative NTM P/E vs. S&P 500



Russell 2000 Relative Performance vs. S&P 500



Source: FactSet, Morgan Stanley Research. Top Right: As of December 31, 2019. Top Left and Bottom: As of January 9, 2020

Exhibit 21: We Have a Mid 2020 Price Target of $2,750

Morgan Stanley S&P 500 Price Target: Year End 2020

Landscape	Earnings	Multiple	Price Target	Upside / Downside
Bull Case	$191	18.5x	3,500	6.9%
Base Case	$185	17.5x	3,250	-0.8%
Bear Case	$176	17.0x	3,000	-8.4%
Current S&P 500 Price as of:		1/9/2020	3,275	

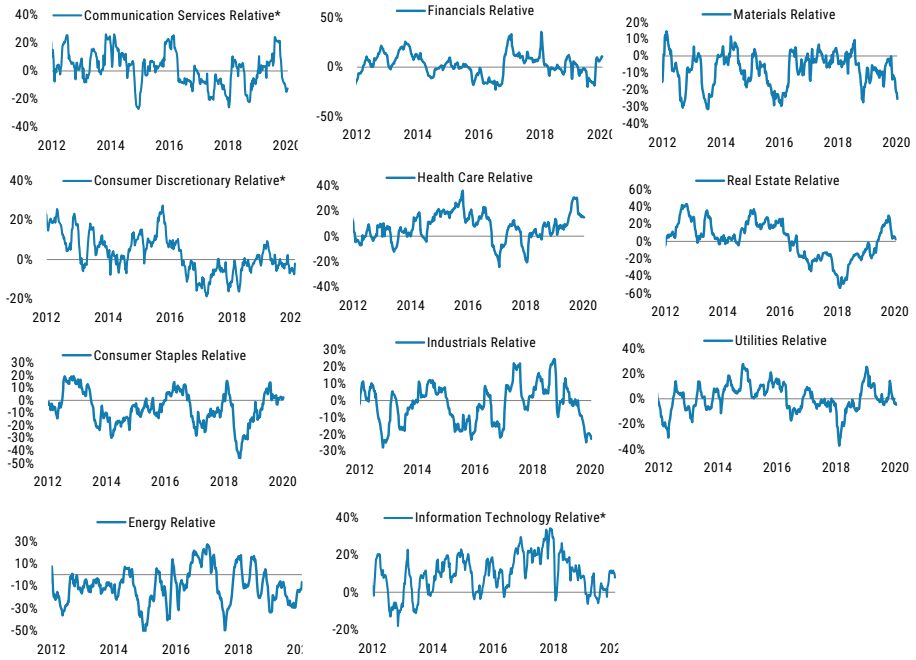
Source: Morgan Stanley Research.
Note: We apply a forward PE multiple to 2021 EPS estimates.

Exhibit 22: Sector Recommendations

Morgan Stanley Sector Recommendations			
Overweight	Consumer Staples	Financials	Utilities
Neutral	Comm Services	Energy	Health Care
	Industrials	Materials	Real Estate
Underweight	Discretionary	Technology	

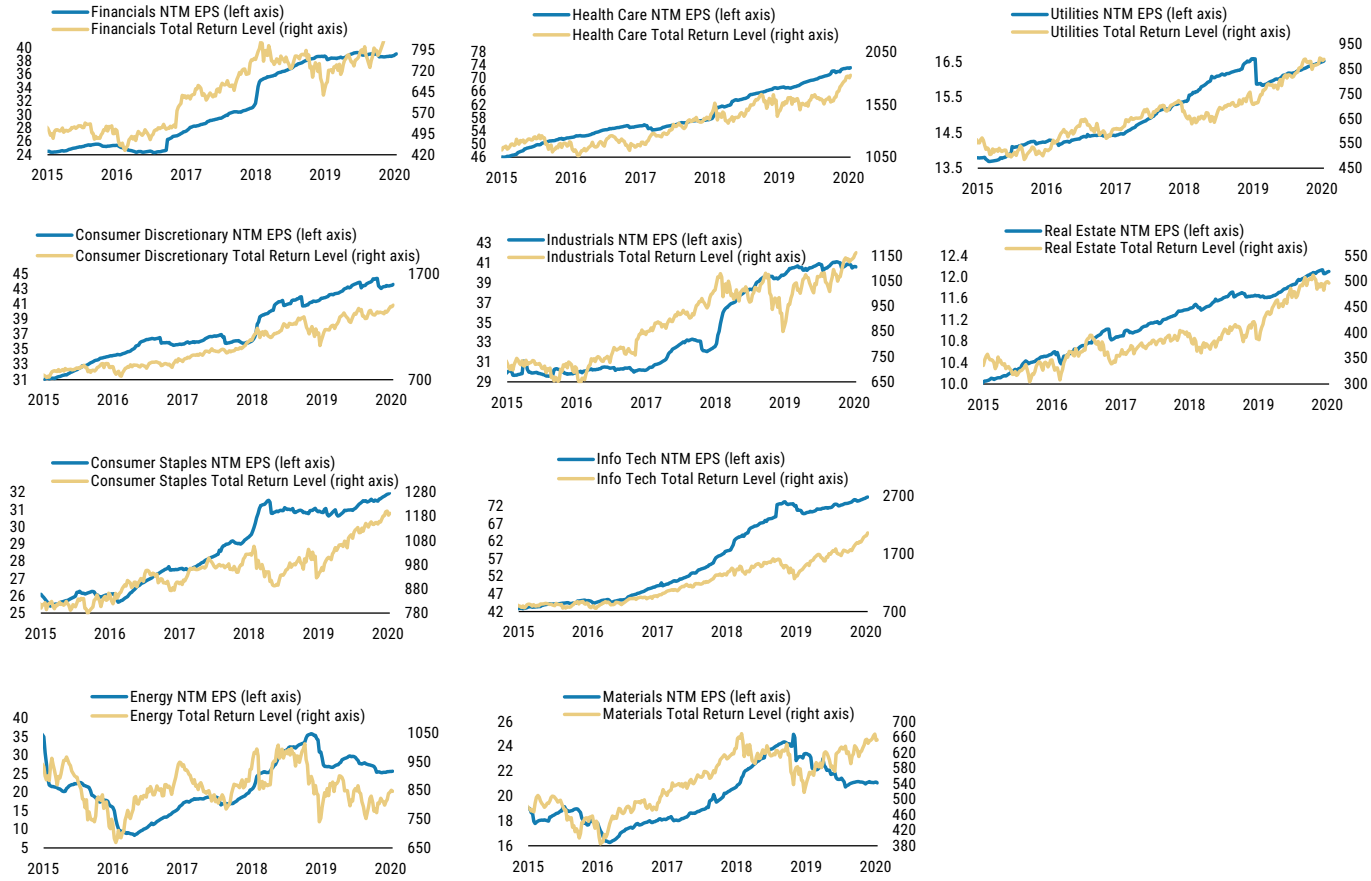
Source: Morgan Stanley Research

Exhibit 23: Earnings Revisions Breadth



Source: FactSet, Morgan Stanley Research. As of January 9, 2020. Sectors with * use current, fixed constituents.

Exhibit 24: US Sector NTM EPS vs. Total Return Level



Source: FactSet, Morgan Stanley Research as of January 10, 2020.

For valuation methodology and risks associated with any price targets 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.

Morgan Stanley & Co. LLC ("Morgan Stanley") is acting as financial advisor to Deutsche Telekom AG ("DT") and is providing financing services in relation to T-Mobile USA, Inc. ("T-Mobile") for the proposed acquisition by T-Mobile of Sprint Communications, Inc. ("Sprint") as announced on 29th April 2018. The transaction is subject to approval by T-Mobile and Sprint shareholders and other customary closing conditions. DT and T-Mobile have agreed to pay fees to Morgan Stanley for its financial services that are contingent upon the consummation of the transaction. Please refer to the notes at the end of the report.

Morgan Stanley is providing financial advisory services to Cisco Systems, Inc. ("Cisco") in connection with its acquisition of Acacia Communications, Inc. ("Acacia"), as announced on July 9, 2019. The proposed transaction is subject to approval by Acacia's shareholders, regulatory approval and other customary closing conditions. This report and the information provided herein is not intended to (i) provide voting advice, (ii) serve as an endorsement of the proposed transaction, or (iii) result in the procurement, withholding or revocation of a proxy or any other action by a security holder. Cisco has agreed to pay fees to Morgan Stanley for its financial services. Please refer to the notes at the end of the report.

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: Andrew B Pauker; Adam Virgadamo, CFA; Michelle M. Weaver; Michael J 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. A Portuguese version of the policy can be found at www.morganstanley.com.br

Important US Regulatory Disclosures on Subject Companies

As of December 31, 2019, Morgan Stanley beneficially owned 1% or more of a class of common equity securities of the following companies covered in Morgan Stanley Research: Coca-Cola Co., Iqvia Holdings Inc, NextEra Energy Inc, Philip Morris International Inc, Walt Disney Co.

Within the last 12 months, Morgan Stanley managed or co-managed a public offering (or 144A offering) of securities of Coca-Cola Co., Humana Inc, NextEra Energy Inc.

Within the last 12 months, Morgan Stanley has received compensation for investment banking services from Alphabet Inc., Coca-Cola Co., Humana Inc, NextEra Energy Inc, Procter & Gamble Co..

In the next 3 months, Morgan Stanley expects to receive or intends to seek compensation for investment banking services from Alphabet Inc., Coca-Cola Co., Humana Inc, Iqvia Holdings Inc, Microsoft, NextEra Energy Inc, Procter & Gamble Co., T-Mobile US, Inc., Walt Disney Co.

Within the last 12 months, Morgan Stanley has received compensation for products and services other than investment banking services from Alphabet Inc., Coca-Cola Co., Humana Inc, Iqvia Holdings Inc, Microsoft, NextEra Energy Inc, Procter & Gamble Co., T-Mobile US, Inc., Walt Disney Co.

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: Alphabet Inc., Coca-Cola Co., Humana Inc, Iqvia Holdings Inc, Microsoft, NextEra Energy Inc, Procter & Gamble Co., T-Mobile US, Inc., Walt Disney Co.

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: Alphabet Inc., Coca-Cola Co., Humana Inc, Iqvia Holdings Inc, Microsoft, NextEra Energy Inc, Procter & Gamble Co., T-Mobile US, Inc., Walt Disney Co.

Morgan Stanley & Co. LLC makes a market in the securities of Alphabet Inc., Coca-Cola Co., Iqvia Holdings Inc, Microsoft, NextEra Energy Inc, Philip Morris International Inc, Procter & Gamble Co., T-Mobile US, Inc., Walt Disney Co.

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 December 31, 2019)

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.

STOCK RATING CATEGORY	COVERAGE UNIVERSE COUNT	COVERAGE UNIVERSE % OF TOTAL	INVESTMENT BANKING CLIENTS (IBC) COUNT	INVESTMENT BANKING CLIENTS (IBC) % OF TOTAL IBC	INVESTMENT BANKING CLIENTS (IBC) % OF RATING CATEGORY	OTHER MATERIAL INVESTMENT SERVICES CLIENTS (MISC) COUNT	OTHER MATERIAL INVESTMENT SERVICES CLIENTS (MISC) % OF TOTAL OTHER MISC
Overweight/Buy	**1151**	**36%**	**289**	**42%**	**25%**	**513**	**36%**
Equal-weight/Hold	**1464**	**46%**	**321**	**47%**	**22%**	**690**	**48%**
Not-Rated/Hold	**2**	**0%**	**1**	**0%**	**50%**	**2**	**0%**
Underweight/Sell	**561**	**18%**	**76**	**11%**	**14%**	**225**	**16%**
TOTAL	**3,178**		**687**			**1430**	

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

Analyst Stock Ratings

Overweight (O). The stock's total return is expected to exceed the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.
Equal-weight (E). The stock's total return is expected to be in line with the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.
Not-Rated (NR). Currently the analyst does not have adequate conviction about the stock's total return relative to the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.
Underweight (U). The stock's total return is expected to be below the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.
Unless otherwise specified, the time frame for price targets included in Morgan Stanley Research is 12 to 18 months.

Analyst Industry Views

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

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 Alphabet Inc., Coca-Cola Co., Humana Inc, Microsoft, NextEra Energy Inc, Philip Morris International Inc, Procter & Gamble Co., T-Mobile US, Inc., Walt Disney Co.
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.
Morgan Stanley is not incorporated under PRC law and the research in relation to this report is conducted outside the PRC. Morgan Stanley Research does not constitute an offer to sell or the solicitation of an offer to buy any securities in the PRC. PRC investors shall have the relevant qualifications to invest in such securities and shall be responsible for obtaining all relevant approvals, licenses, verifications and/or registrations from the relevant governmental authorities themselves. Neither this report nor any part of it is intended as, or shall constitute, provision of any consultancy or advisory service of securities investment as defined under PRC law. Such information is provided for your reference only.
Morgan Stanley Research is disseminated in Brazil by Morgan Stanley C.T.V.M. S.A. located at Av. Brigadeiro Faria Lima, 3600, 6th floor, São Paulo - SP, Brazil; and is regulated by the Comissão de Valores Mobiliários; in Mexico by Morgan Stanley México, Casa de Bolsa, S.A. de C.V which is regulated by Comision Nacional Bancaria y de Valores. Paseo de los Tamarindos 90, Torre 1, Col. Bosques de las Lomas Floor 29, 05120 Mexico City; in Japan by Morgan Stanley MUFG Securities Co., Ltd. and, for Commodities related research reports only, Morgan Stanley Capital Group Japan Co., Ltd; in Hong Kong by Morgan Stanley Asia Limited (which accepts responsibility for its contents) and by Morgan Stanley 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 and the European Economic Area where required by Morgan Stanley Europe S.E., 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 A2X(Pty) Ltd. RMB Morgan Stanley Proprietary Limited is a joint venture owned equally by Morgan Stanley International Holdings Inc. and RMB Investment Advisory (Proprietary) Limited, which is wholly owned by FirstRand Limited. The information in Morgan Stanley Research is being disseminated by Morgan Stanley Saudi Arabia, regulated by the Capital Market Authority in the Kingdom of Saudi Arabia , and is directed at Sophisticated investors only.
The information in Morgan Stanley Research is being communicated by Morgan Stanley & Co. International plc (DIFC Branch), regulated by the Dubai Financial Services Authority (the DFSA), 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.