

May 26, 2020 04:01 AM GMT

US Equity Strategy | North America

Weekly Warm Up: Follow the Money - QE & Fiscal Stimulus Growing Money Supply

QE and fiscal stimulus are creating unprecedented growth in the money supply - deposits and money market balances have surged. Where will the money end up? Equity market indices do not reflect the nervousness that still lurks under the surface. Is this a concern or an opportunity?

A different kind of QE is growing the money supply... The US money supply has been growing quickly since QE restarted. M2 money supply and near money equivalents have grown by 22% of the money supply in 3 months, an amount multiple times bigger than in 2008. Money supply growth is also *larger* than the Fed's B/S expansion to date as the combination of large Fed asset buying and fiscal stimulus is creating a powerful transmission mechanism to money supply.

... and we think there is more to come. With QE and fiscal stimulus programs both set to continue into the foreseeable future, we expect the growth in money supply will continue. Contrary to the 2008 experience, Treasury issuance is not blunting money supply growth – money from QE asset sales is flowing into money market funds, which buy new Treasury paper issued to support deficit spending, meaning the QE dollars are moving into M2.

A tailwind for inflation. We see a good chance that as we move through the year and into 2021 that an increase in money supply may provide a tailwind to inflation, which supports the view of our economists that inflation will move higher in 2021 and beyond. [Global Economics: The Return of Inflation \(11 May 2020\)](#). Among the signposts to watch, money market flows into M2 and new bank lending that further propels money supply.

Trust the cycle and embrace the cyclical side of the barbell. It's always difficult to trust the cycle at the trough. However, price action suggests it's not different this time. In fact, the cheapest stocks have never been cheaper and this argues for leaning even harder into the wind. Banks and financials look to be the greatest outlier as long rates continue to hold the key to any meaningful rotation.

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

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.

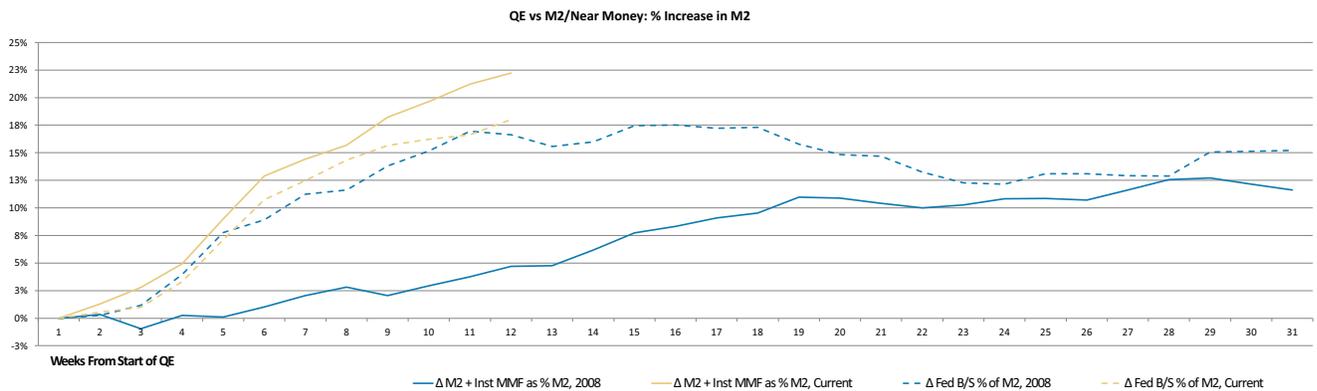
For analyst certification and other important disclosures, refer to the Disclosure Section, located at the end of this report.

What to Focus on This Week

Follow the Money: QE + Fiscal Means More Money to the Real Economy

QE + fiscal = increased money supply. The latest round of QE is more likely to be inflationary than past QE as QE and the stimulus loan programs are effectively inflating M2 and near money equivalents more effectively. From the start of QE through 2 weeks ago, M2 money supply and near money (institutional money market funds) have grown by ~22% of M2, compared to a peak of around 13% during the first wave of QE ([Exhibit 1](#)). The current growth in M2/near money is actually in excess of the current Fed B/S expansion, whereas in 2008 this growth was running well below the Fed's growth during a similar period. As we move through the year and into 2021 that increase in money supply may provide a tailwind to inflation, which supports the view of our economists that inflation will move higher in 2021 and beyond. [Global Economics: The Return of Inflation \(11 May 2020\)](#).

Exhibit 1: Money Supply Growing Much Faster Today Than With QE1

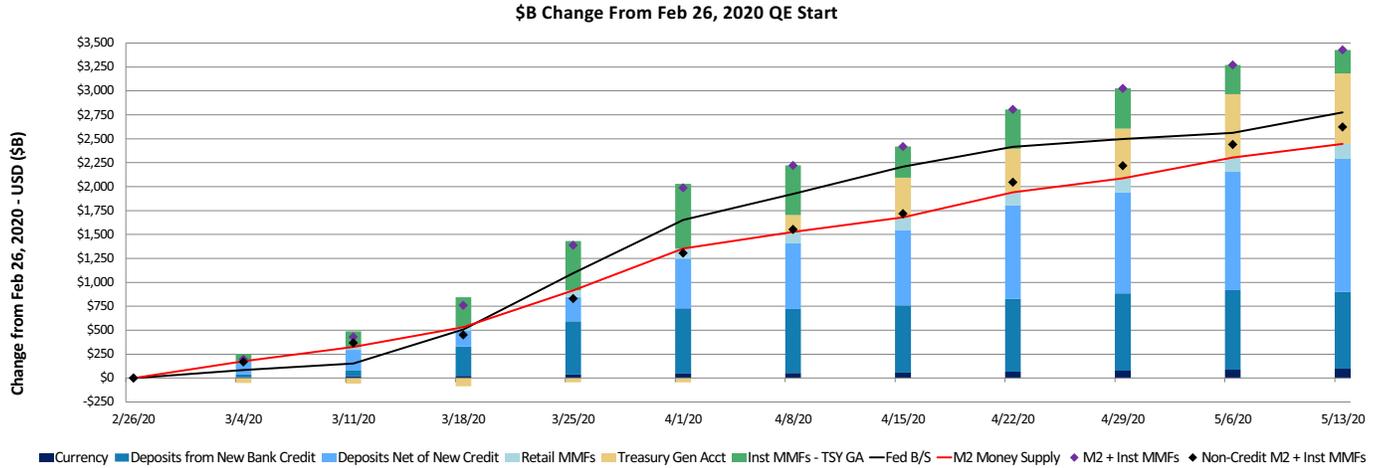


Source: Source: US Federal Reserve, ICI, Bloomberg, Morgan Stanley Research.

Money supply is entering the economy - bank deposits are growing and growing AUM in government money market funds is supporting new treasury paper that will find its way to M2 via deficit/stimulus spending. Last week, we noted that M2 growth is tracking closely with the growth of the Fed's balance sheet. [Exhibit 2](#) goes into some detail on where the money from the Fed's asset purchases is flowing. For those interested in the detailed build up, we provide a breakdown of the various chart components/fund flows below, but here we highlight a few key points:

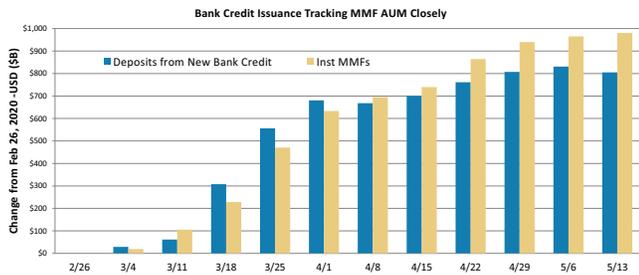
- **M2 growing with QE:** M2 money supply growth is tracking the expansion of the Fed's balance sheet in \$ terms on a weekly basis (red vs black lines in [Exhibit 2](#)).
- **M2 + near money > QE:** A slightly broader measure of the money supply - M2 + funds flowing to institutional money market funds (MMFs) - is running well ahead of the QE amount to date. See the purple diamonds in [Exhibit 2](#).
- **Credit creation explains the money supply upside to QE:** It seems cash from QE is sitting in a mix of bank deposits and MMFs as asset sellers seek a safe home for cash. That means new bank credit is the primary upside driver to the increase in the broader money supply beyond funds from QE. To date these credit increases are a bit below MMF inflows, an indirect offset or sidelining of cash ([Exhibit 3](#)), but we expect that money to find its way to the money supply and the real economy as well.
- **Defensive credit growth:** Credit growth can almost all be explained by the payroll protection program (PPP) and revolver drawdowns to support liquidity ([Exhibit 4](#)). Both of these are fairly defensive forms of money creation as they are meant to cover shortfalls from a drop in economic activity, but they nevertheless represent flow of new money into the economy.
- **MMF AUM has surged, driven by institutional govt funds:** Retail MMFs have seen an increase that is substantial (~\$160B) but the flows to institutional MMFs has been over 6x as large (~\$1T).
- **Deficit spending by way of inst MMFs:** The \$1T in flows to institutional MMFs have gone to government funds, which are in turn buying short term treasury paper. This paper is newly issued to support further deficit spending, meaning if the new QE money in MMFs isn't in M2 now, it will be soon as the government continues spending. See [Global Macro Strategy: Do Deficits Destroy Liquidity? \(22 May 2020\)](#)
- **Watching further new credit creation:** Organic credit creation using the QE enhanced deposit base and fractional reserve lending would be a bullish signal for the real economy and reflationary trades. This future growth will hinge on the strength of organic credit demand as we move further along in the recovery and merits watching.

Exhibit 2: Money Supply Has Been Rising With QE



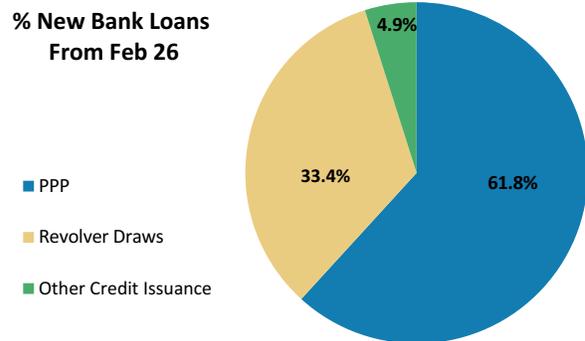
Source: US Federal Reserve, ICI, Bloomberg, Morgan Stanley Research.

Exhibit 3: Credit Based Money Creation Has So Far Been Indirectly "Absorbed" in MMF Flows



Source: US Federal Reserve, ICI, Bloomberg, Morgan Stanley Research.

Exhibit 4: New Credit Creation Explained By PPP and Liquidity Draws



Source: US Federal Reserve, ICI, Bloomberg, Company Filings, Morgan Stanley Research.

Following the Money - A Closer Look at QE Flows

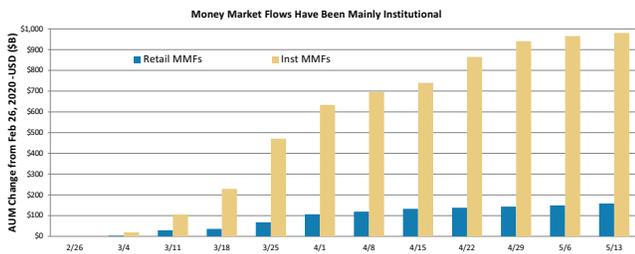
All line items in [Exhibit 2](#) are shown as cumulative net change from when QE restarted on Feb 26 through the week of May 13, the latest period available in Federal Reserve data.

- **Black line - Fed B/S Expansion:** The Fed's balance sheet with a total net change of just under \$2.9T. (Bloomberg - FARFAST Index)
- **Red line - M2:** Net change in the M2 money supply. (Federal Reserve H6 Statistical Release)
- **Blue bars - M2 Decomposed:** The M2 money supply consists of M1 - currency, demand deposits, and other checkable deposits (including travelers checks) - and non-M1 M2 - small denomination time deposits (CDs), savings deposits, and retail MMFs. For simplicity, we aggregate all of the deposit series in the blue bars, and break down growth in M2 according to a different structure, showing currency (dark blue), deposit growth tied to the issuance of new bank credit (medium blue, defined as the change in loans and leases in bank credit, line 5 of the Fed's H8 Statistical Release), and the growth in deposits not tied to credit growth (light blue).
- **Yellow bars - US Treasury Gen Acct:** The US Treasury's general account at the Fed. Treasury holdings at the Fed are not a part of the money supply, but large issuance of US Treasuries that pull money from M2, are a potentially material destination for funds from QE. (Federal Reserve H6 Statistical Release)
- **Green bars - Inst MMF Flows > TSY Gen Acct:** Institutional MMFs are a near money item and included in M3. Within this group of MMFs, there are government and prime funds, but the recent growth in institutional MMFs has been primarily in government money market funds, which have been buying US government paper. Since these funds are buying from the US Treasury and those funds could flow through to either the Treasury's general account (or back to M2 if Treasury spends that money), we're showing only the growth in institutional MMFs greater than the growth in the Treasury's general account to avoid double counting. (Federal Reserve H6 Statistical Release and ICI)
- **Purple diamonds - Broader Money Supply:** Since institutional MMFs are a near money item, we aggregate M2 and institutional MMFs flows to show a measure of the broader money supply increase.
- **Black diamonds - Non-Credit Broader Money Supply:** For a closer look at how the money supply is growing more directly from QE, this series removes the growth in new bank credit issuance, or private money creation via the credit channel. In practice this means removing the boost to the money supply from PPP lending and revolver draws for liquidity purposes.

The MMF "cash on the sidelines" is not retail. Over the last few weeks, we've seen many point out the rapid rise in MMF AUM, over \$1.1T since the end of February, as a sign of retail cash on the sidelines. As part of the analysis here, we looked at the breakdown of where the new AUM in MMFs is sitting and it is overwhelmingly in institutional MMFs, not retail funds. [Exhibit 5](#) shows the side by side comparison of AUM growth where inst. MMFs flows have outpaced retail by a factor of ~6x (\$160B vs \$1T). \$160B of funds into retail oriented MMFs is not a small number, but lines up more closely with observed flows out of equity mutual funds and ETFs over the similar period. The bigger flows to MMFs seem to be from either (1) asset owners that have sold assets to the Fed via QE or (2) businesses that have drawn on credit liquidity, both of which are now likely putting cash in short term MMFs primarily servicing institutional clients and holding government paper.

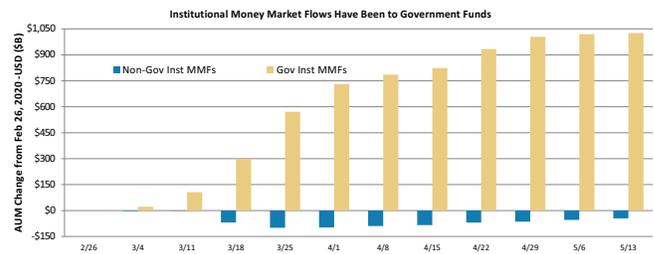
Over 100% of the flows to MMFs have gone to government funds, effectively financing deficit spending. The bulk of MMF flows have gone to institutional funds and, of these flows, government funds are the entire story. [Exhibit 6](#) shows the breakdown of cumulative flows to government vs non-government institutional MMFs. The government MMFs invest in short term Treasury securities and repo loans securitized by short term Treasury paper. While the AUM flows are massive, they amount to ~70% of the net T-bill issuance from the Treasury in March and April, money that will likely soon find its way into the real economy (M2) via the various stimulus programs being supported by the federal government.

Exhibit 5: Money Market Flows - QE Asset Sales and Liquidity Drawdowns Funneling Money to Inst Funds



Source: US Federal Reserve, ICI, Bloomberg, Morgan Stanley Research.

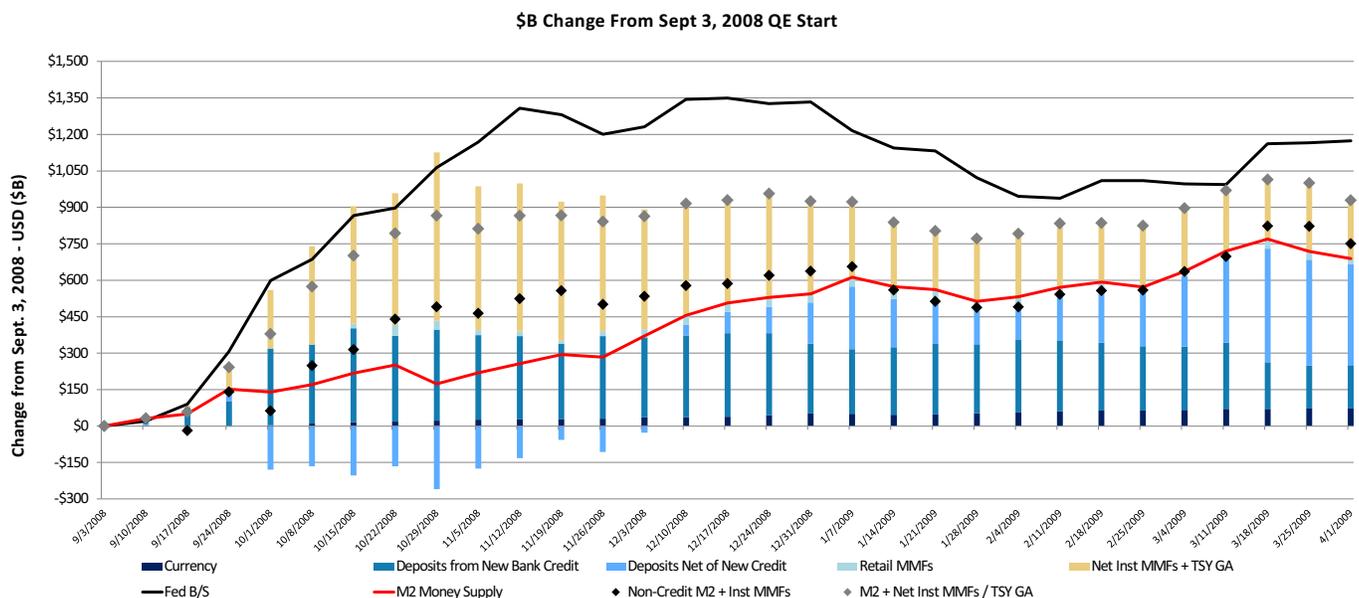
Exhibit 6: Money Market Flows - Govt Funds Explain > 100% of the Inflows



Source: US Federal Reserve, ICI, Bloomberg, Morgan Stanley Research.

QE's transmission to M2 was much slower in 2008. Exhibit 7 shows a similar comparison between QE and M2 when QE first launched in the US in 2008. There are some differences that make the charts slightly different but the key point is that M2 growth lagged the balance sheet expansion by \$500B even 7 months after QE started as the Fed's balance sheet stabilized at levels \$1.2T higher, indicating a much less effective transmission mechanism to M2. Part of the slower transmission to M2 was by design given the use of the Supplementary Financing Program ("extra" Treasury issuance stored in the general account to keep a check on liquidity). Today though we also have large Treasury issuance and the transmission to M2/near money is obviously stronger in the current environment due, at least in part to the Treasury spending. We suspect the shoring up of bank balance sheets in 2008 also played a meaningful role in blunting this transmission mechanism as well.

Exhibit 7: In 2008 Money Supply Did Not Rise As Closely With QE



Source: US Federal Reserve, ICI, Bloomberg, Morgan Stanley Research.

Among the differences visible in our charts on QE/M2 now vs 2008: (1) Credit growth outpaced deposit growth for the first few weeks such that > 100% of the growth in bank liabilities was explainable by deposits from new credit growth and indicating a liquidity draw away from the M2 base measured here. (2) The MMF flow dynamic was very different with non-govt inst MMFs first seeing greater outflows than inflows to govt MMFs. This trend changed after about 8 weeks as inst govt MMFs eventually drew in more assets than flows out of non-govt funds. (3) Similar to the current period, the US Treasury issued heavily, drawing M2 into its general account, but unlike this time, it is harder to make the case that was funded by QE driven flows into govt MMF given the shift from non-govt to govt funds noted above. For simplicity and to avoid potential double counting we condense flows to institutional money market funds and the Treasury general account into the yellow bar below. We make assumptions similar to those made above - that new AUM in institutional govt MMFs flowed to the Treasury's general account - and that the flows from non govt institutional MMFs went into govt funds.

Headlines Don't Match the Subtext

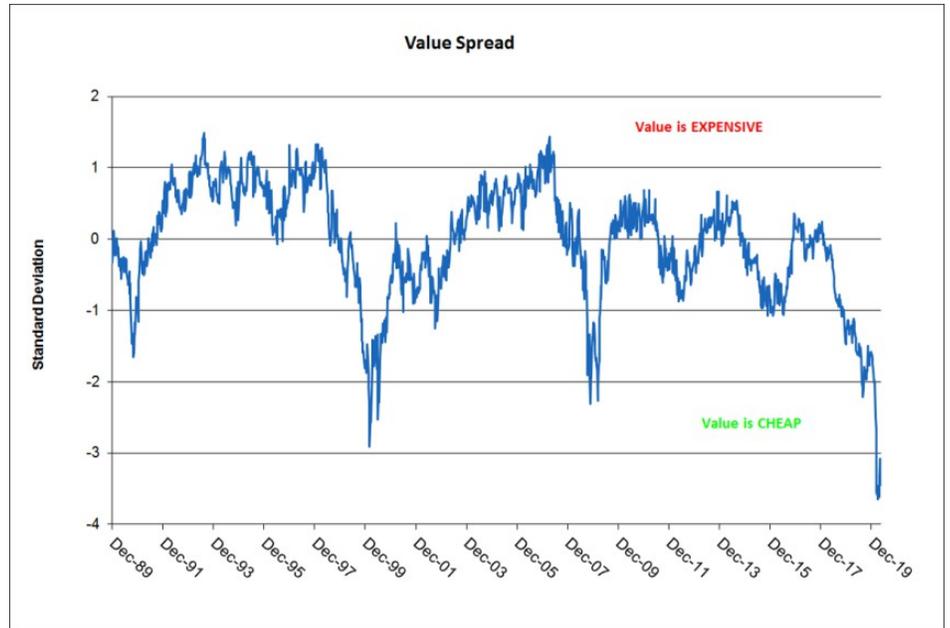
Headline indices have rebounded sharply since the March lows which makes sense in the context of the very steep recession we are experiencing and the sharp rebound we expect as the economy reopens. While our equity risk premium framework analysis can justify the move, many believe the rally has come too far, too fast and does not reflect the adverse current state of the economy and/or the risks we face in trying to restart it. Furthermore, even if we are able to get it going again, there are questions about the pace of consumer re-engagement and the sustainability of any recovery if unemployment remains close to 10 percent next year.

Our view is that this is very similar to how things felt in the spring of 2009 during the Great Financial Crisis (GFC). Not since the Great Depression had we faced such uncertainty about the economy, state of the banking system and the capital markets. Fast forward to today and we find ourselves facing a possibly more uncertain economic future given the nature of this crisis. However, our banking system remains quite sound while capital markets are operating extremely well as we set records for both debt and equity / equity-linked issuance. Most of these deals have been oversubscribed and priced with normal discounts. In short, the money is finding its way to where it's needed and that's a major reason to remain constructive on the path of the recovery.

The majority of investors we speak with remain skeptical of the rally and unwilling to embrace a more aggressive early cycle positioning. Such a view is confirmed by our prime brokerage data which shows net exposures still in the lowest quartile of the past 10 years and cyclical exposures historically low. Having said that, our barbell of high quality growth with low quality cyclicals is being adopted by many but to varying degrees and with a strong preference still for the high quality growth side--i.e. a barbell with a 45 pound plate on one side and a 10 pounder on the other.

Exhibit 8 shows how defensively the market is still trading beneath the surface even as the S&P 500 approaches 3000. The chart comes from our colleagues in MSIM's Applied Equity Advisors and is quite revealing about the market's underlying sentiment. Specifically, it shows the valuation spread between the cheapest 10 percent of the stocks in the Russell 100 versus the median on 3 normalized measures--Price/Book, Price/Cash flow and Earnings Yield. First, we are still trading at the widest spread of the past 30 years which includes 3 recessions, the bursting of the tech bubble and the Great Financial Crisis. Second, the widest spreads occur during recessions, like today. Finally, the spread narrows as quickly as it widens as the economy recovers. We see no reason why it won't be the same this time around.

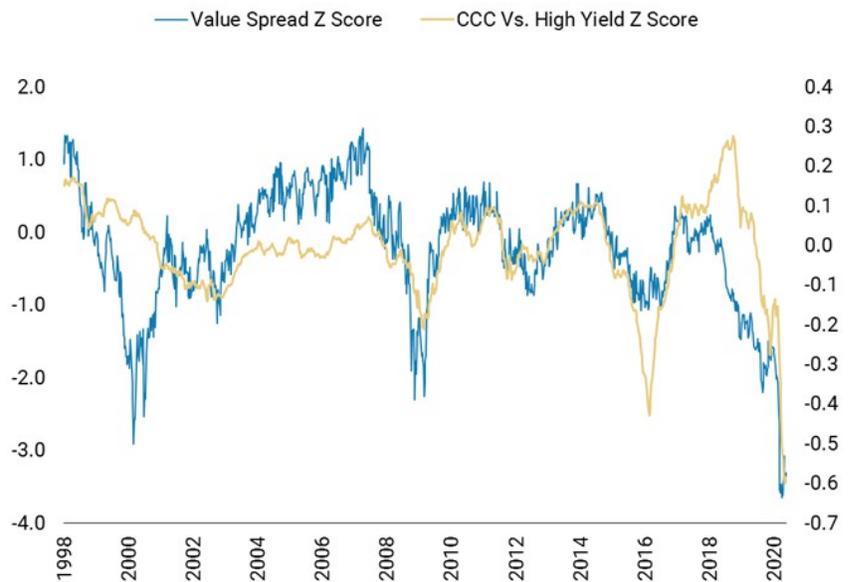
Exhibit 8: Value is always cheapest during recessions but it's never been this extreme.



Source: Morgan Stanley Investment Management (MSIM), Applied Equity Advisors

Meanwhile, the credit markets seem to be saying the same thing with the spread between the lowest quality segment of high yield (CCC) and the overall high yield index also at its all time widest (Exhibit 9). In short, both equity and credit markets are still trading conservatively even as the main indices recover.

Exhibit 9:



Source: Morgan Stanley Research, MSIM, Bloomberg.

In last week's note we illustrated that early cycle sectors are doing better and even leading from the low points in March. What Exhibits 8 and 9 suggest is that these unloved sectors could still have a long way to go should the recovery continue to make progress as we expect. Exhibit 10 shows the current constituents of the cheapest 10

percent of the Russell 1000 by sector. Clearly, banks are the most disliked. As discussed last week, we believe this is mainly due to the very low level of rates rather than any balance sheet issues like during the GFC. In fact, very little of the CCC index consists of financials (Exhibit 11).

Exhibit 10: Cheapest decile of stocks heavy in Banks/ Fins

Value	
Industry Group Short	%
Banks	22%
Diversified Fins.	16%
Insurance	13%
Energy	11%
Real Estate	6%
Transports	5%
Materials	4%
Retailing	4%
Cap. Goods	3%
Consumer Durables & Apparel	3%
Media & Entertainment	3%
Autos	2%
Consumer Services	2%
Software & Svcs.	2%
Tech. Hardware	2%
Telecom.	2%
Comm. & Prof. Svcs.	0%
Food & Staples Retailing	0%
Food Beverage & Tobacco	0%
HH & Personal Products	0%
Health Care Equip. & Svcs.	0%
Pharma, Biotech	0%
Semis	0%
Utilities	0%

Source:

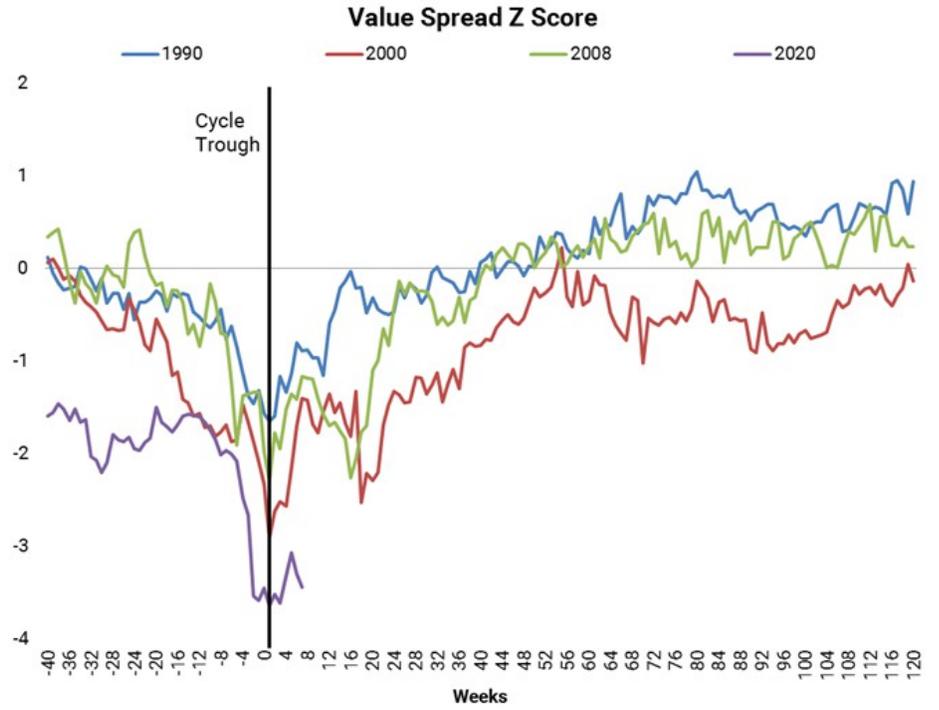
Exhibit 11: While CCC index has very little Fins/Banks.

CCC		
Industry Group	Count	%
Energy	43	19.55%
Basic Industry	23	10.45%
Healthcare	21	9.55%
Leisure	18	8.18%
Services	17	7.73%
Capital Goods	16	7.27%
Technology & Electronics	15	6.82%
Telecommunications	12	5.45%
Retail	12	5.45%
Media	10	4.55%
Consumer Goods	10	4.55%
Insurance	6	2.73%
Automotive	6	2.73%
Transportation	4	1.82%
Financial Services	2	0.91%
Utility	2	0.91%
CASH	1	0.45%
Real Estate	1	0.45%
Banking	1	0.45%

Source:

Finally, we show how the value spread behaves coming out of prior recessions (Exhibit 12). First, the recovery is messy and choppy. It's not a straight line higher. This seems to fit nicely with what we have witnessed over the past month – i.e. a very good week followed by a very bad one for these junkier stocks. Second, we are at the lowest starting point today which suggests the market is not complacent at all about the depth and seriousness of this recession/pandemic. Finally, the upside could be even greater for this cheap cohort than in prior troughs. The bottom line is that we continue to recommend a barbell of high quality growth stocks with low quality cyclicals.

Exhibit 12: Value Spread has a long way to go if the recovery progresses as we expect.



Source: Morgan Stanley Research, MSIM-Applied Equity Advisors

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 13: Fresh Money Buy List - Stats & Performance

Company Name	Ticker	MS Rating	Sector	Market Cap (\$Bn)	Price	MS PT	% to MS PT	MS Analyst	Date Added	Total Return Since Inclusion	
										Absolute	Rel. to S&P
Citizens Financial Group, Inc	CFG	Overweight	Financials	\$9.1	\$21.28	\$32.00	50.4%	Zerbe, Ken	4/20/2020	9.0%	5.9%
Walt Disney Co	DIS	Overweight	Communication Services	\$214.1	\$118.02	\$125.00	5.9%	Swinburne, Benjamin	3/14/2018	17.0%	5.4%
Humana Inc	HUM	Overweight	Health Care	\$53.4	\$394.43	\$500.00	26.8%	Goldwasser, Ricky	7/19/2018	26.1%	17.1%
Johnson & Johnson	JNJ	Overweight	Health Care	\$391.7	\$144.37	\$170.00	17.8%	Lewis, David	2/3/2020	(1.7%)	6.0%
Linde PLC	LIN	Overweight	Materials	\$102.4	\$190.87	\$205.00	7.4%	Andrews, Vincent	3/23/2020	26.2%	(2.5%)
MasterCard, Inc.	MA	Overweight	Information Technology	\$297.2	\$294.91	\$311.00	5.5%	Faucette, James	3/2/2020	1.8%	1.2%
Microsoft	MSFT	Overweight	Information Technology	\$1,405.6	\$183.51	\$198.00	7.9%	Weiss, Keith	3/14/2018	100.9%	89.2%
Procter & Gamble Co.	PG	Overweight	Consumer Staples	\$291.7	\$112.60	\$134.00	19.0%	Mohsenian, Dara	3/18/2019	13.5%	6.3%
PVH Corp.	PVH	Overweight	Consumer Discretionary	\$3.4	\$44.15	\$77.00	74.4%	Greenberger, Kimberly	4/20/2020	(1.6%)	(4.7%)
S&P Global Inc	SPGI	Overweight	Financials	\$75.2	\$311.86	\$316.00	1.3%	Kaplan, Toni	3/23/2020	49.4%	20.7%
T-Mobile US, Inc.	TMUS	Overweight	Communication Services	\$82.0	\$95.80	\$107.00	11.7%	Flannery, Simon	3/14/2018	47.4%	35.8%
Current List Performance											
Average (Eq. Weight)				\$266.0			21%			26.2%	16.4%
Median				\$102.4			12%			17.0%	6.0%
% Positive Returns (Abs. / Rel.)										82%	82%
% Negative Returns (Abs. / Rel.)										18%	18%
Avg. Hold Period (Months)											11.8
All Time List Performance											
Average (Eq. Weight)										14.0%	7.6%
Median										11.3%	3.3%
% Positive Returns (Abs. / Rel.)										63%	54%
% Negative Returns (Abs. / Rel.)										38%	46%
Avg. Hold Period (Months)											10.4

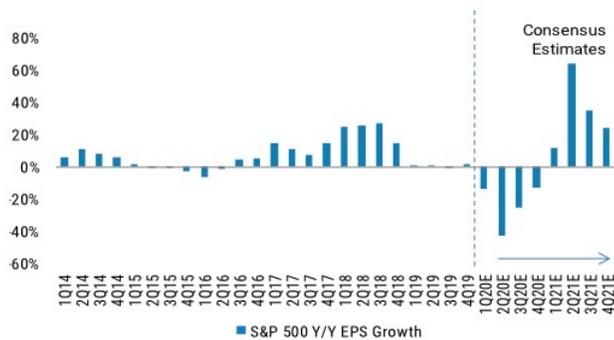
Performance returns shown above represent local currency total returns, including dividends and excluding brokerage commission. Returns are calculated using the closing price on the last trading day before the date shown in the "Date Added" column through close on the last trading day prior to publication 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

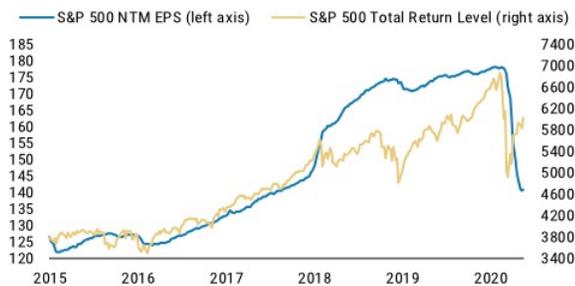
Weekly Charts to Watch

Exhibit 14: 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

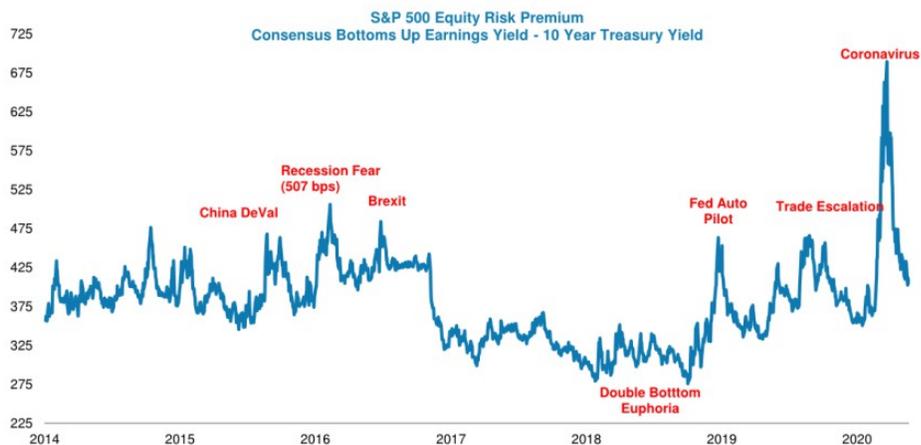


US Leading Earnings Indicator



Source: Thomson Financial, FactSet, Morgan Stanley Research. As of May 21, 2020 Bottom right As of April 30, 2020. 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.

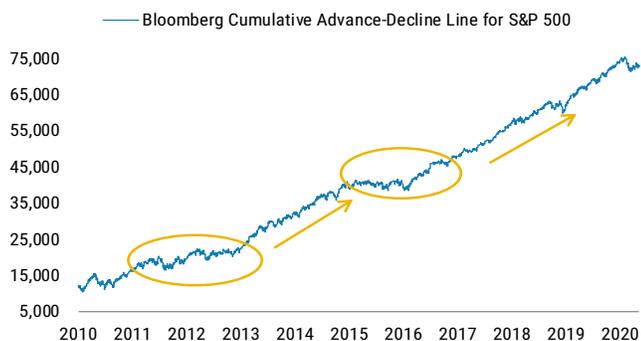
Exhibit 15: S&P 500 Equity Risk Premium



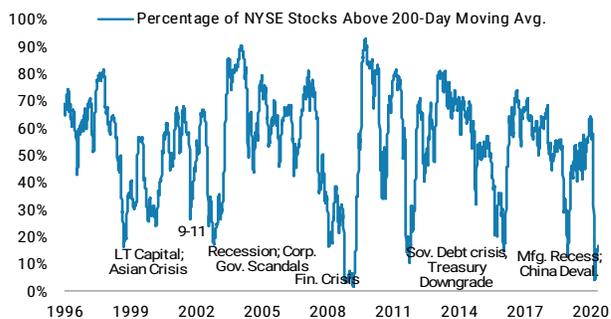
Source: Bloomberg, Morgan Stanley Research. As of May 21, 2020

Exhibit 16: US Equity Market Technicals and Financial Conditions

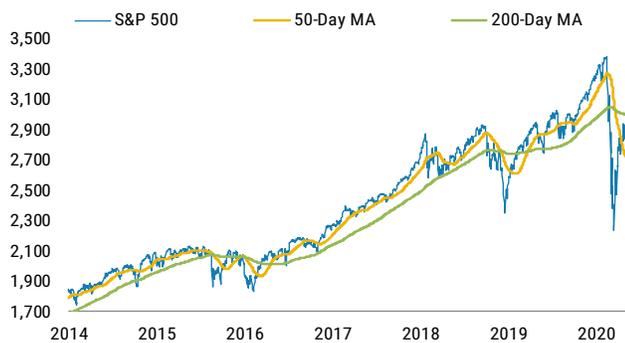
S&P 500 Cumulative Advance-Decline



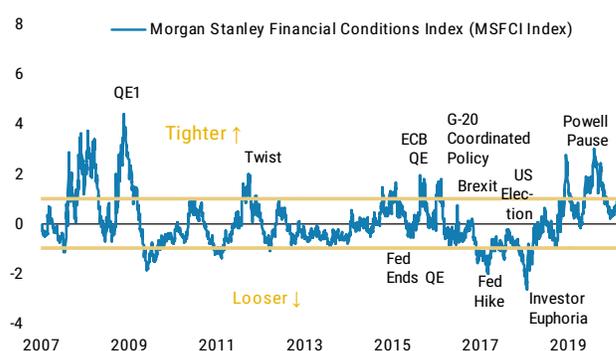
S&P 500 Percent Members Above 200-Day Moving Average



S&P 500 with Moving Averages

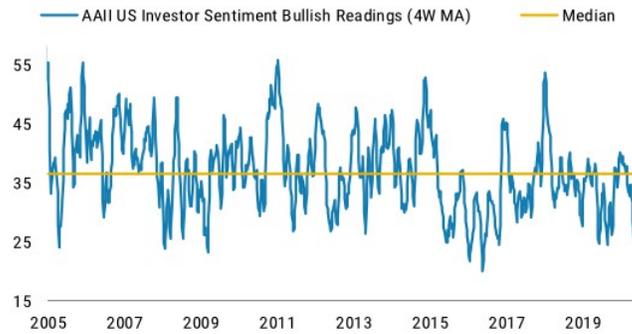
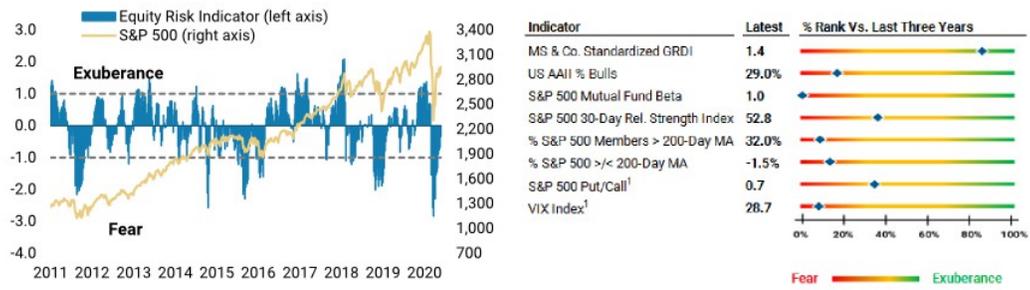


Morgan Stanley Financial Conditions Index



Source: Bloomberg, Morgan Stanley Research. All: As of May 21, 2020

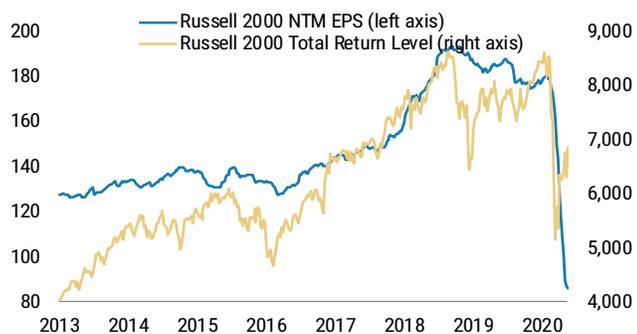
Exhibit 17: US Equity Market Sentiment



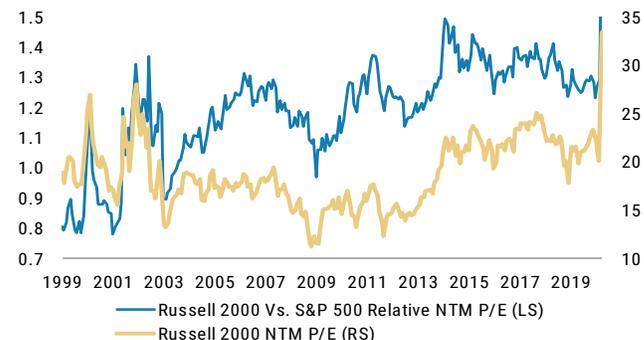
Source: Bloomberg, FactSet, Morgan Stanley Research. As of May 21, 2020.

Exhibit 18: US Small Cap Equities

Russell 2000 NTM EPS vs. Total Return Level



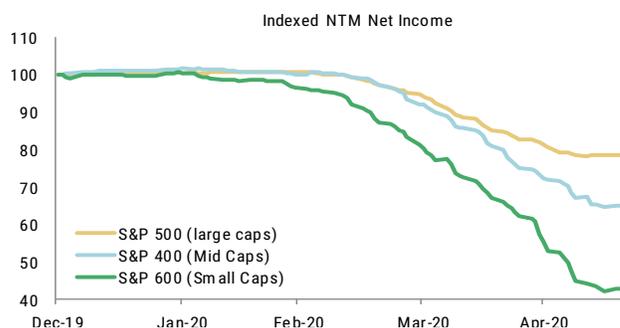
Russell 2000 NTM P/E and Relative NTM P/E vs. S&P 500



Russell 2000 Relative Performance vs. S&P 500



NTM EPS by Cap Size



Source: FactSet, Morgan Stanley Research. Top Right: As of April 30, 2020. Top Left and Bottom: As of May 21, 2020

Exhibit 19: Our Year End Bull, Base, and Bear Cases

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

Landscape	Earnings	Multiple	Price Target	Upside / Downside
Bull Case	\$170	19.1x	3,250	10.2%
Base Case	\$156	19.1x	3,000	1.7%
Bear Case	\$149	16.7x	2,500	-15.2%

Current S&P 500 Price as of: 5/21/2020 2,949

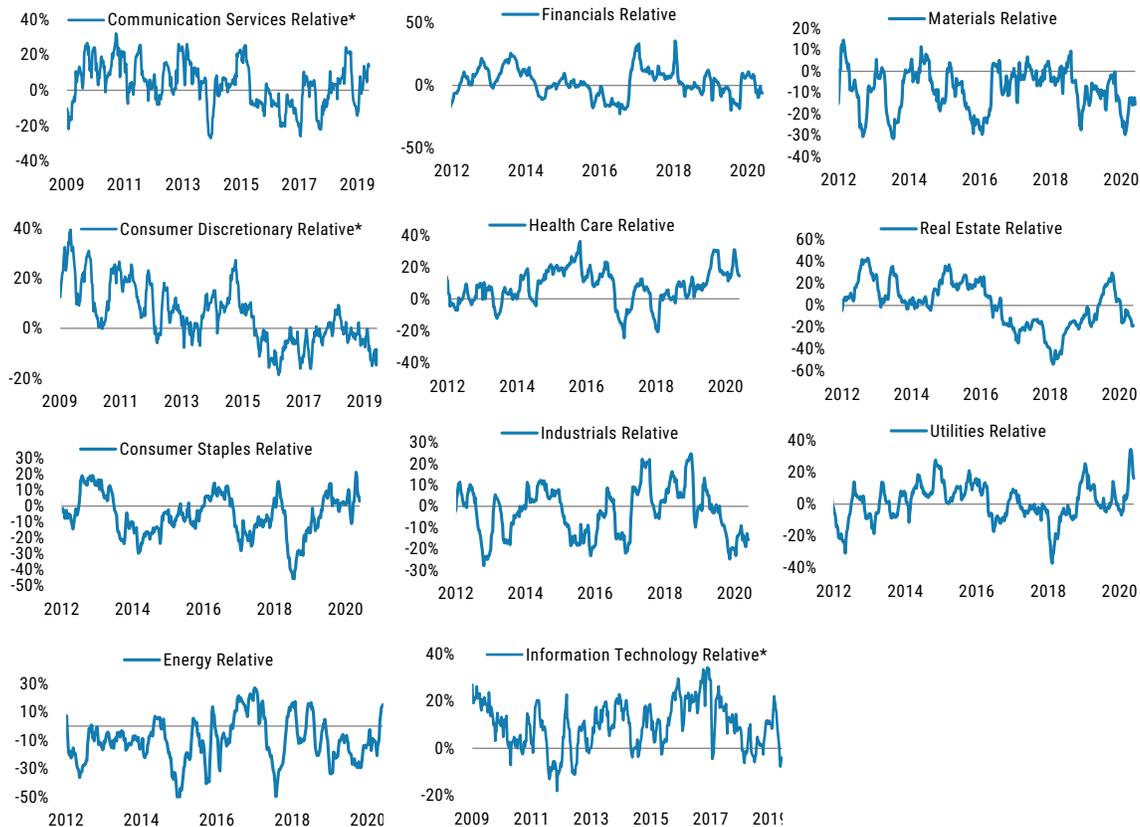
Source: Morgan Stanley Research.
Note: We apply a forward PE multiple to 2021 EPS estimates.

Exhibit 20: Sector Ratings

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

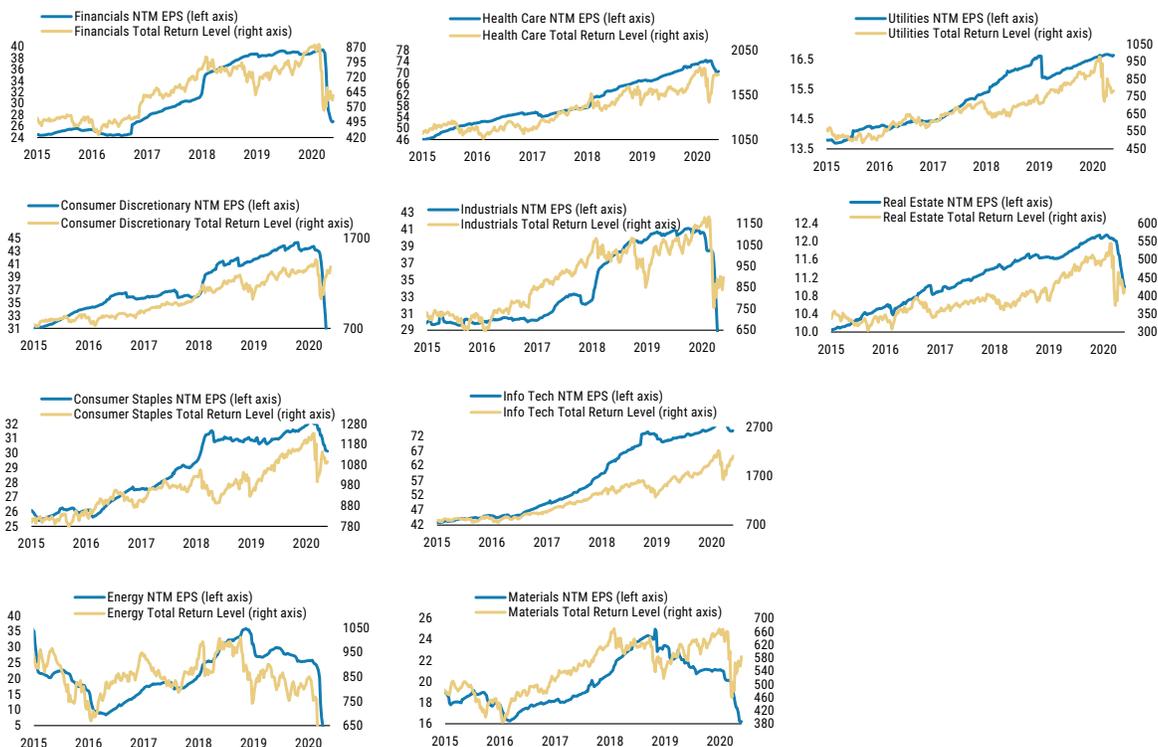
Source: Morgan Stanley Research

Exhibit 21: Earnings Revisions Breadth



Source: FactSet, Morgan Stanley Research. As of May 21, 2020. Sectors with * use current, fixed constituents.

Exhibit 22: US Sector NTM EPS vs. Total Return Level



Source: FactSet, Morgan Stanley Research as of May 21, 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.

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

Important Regulatory Disclosures on Subject Companies

As of April 30, 2020, Morgan Stanley beneficially owned 1% or more of a class of common equity securities of the following companies covered in Morgan Stanley Research: MasterCard Inc, Procter & Gamble Co., Walt Disney Co.

Within the last 12 months, Morgan Stanley managed or co-managed a public offering (or 144A offering) of securities of Citizens Financial Group, Inc, Humana Inc, MasterCard Inc, Procter & Gamble Co., S&P Global Inc, T-Mobile US, Inc., Walt Disney Co.

Within the last 12 months, Morgan Stanley has received compensation for investment banking services from Citizens Financial Group, Inc, Humana Inc, MasterCard Inc, Procter & Gamble Co., S&P Global Inc, Walt Disney Co.

In the next 3 months, Morgan Stanley expects to receive or intends to seek compensation for investment banking services from Citizens Financial Group, Inc, Humana Inc, Johnson & Johnson, MasterCard Inc, Microsoft, Procter & Gamble Co., PVH Corp., S&P Global Inc, 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 Citizens Financial Group, Inc, Humana Inc, Johnson & Johnson, MasterCard Inc, Microsoft, Procter & Gamble Co., PVH Corp., S&P Global Inc, 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: Citizens Financial Group, Inc, Humana Inc, Johnson & Johnson, MasterCard Inc, Microsoft, Procter & Gamble Co., PVH Corp., S&P Global Inc, 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: Citizens Financial Group, Inc, Humana Inc, Johnson & Johnson, Linde PLC, MasterCard Inc, Microsoft, Procter & Gamble Co., PVH Corp., S&P Global Inc, T-Mobile US, Inc., Walt Disney Co.

Morgan Stanley & Co. LLC makes a market in the securities of Citizens Financial Group, Inc, Johnson & Johnson, MasterCard Inc, Microsoft, Procter & Gamble Co., PVH Corp., S&P Global Inc, 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 April 30, 2020)

The Stock Ratings described below apply to Morgan Stanley's Fundamental Equity Research and do not apply to Debt Research produced by the Firm. For disclosure purposes only (in accordance with FINRA requirements), we include the category headings of Buy, Hold, and Sell alongside our ratings of Overweight, Equal-weight, Not-Rated and Underweight. Morgan Stanley does not assign ratings of Buy, Hold or Sell to the stocks we cover. Overweight, Equal-weight, Not-Rated and Underweight are not the equivalent of buy, hold, and sell but represent recommended relative weightings (see definitions below). To satisfy regulatory requirements, we correspond Overweight, our most positive stock rating, with a buy recommendation; we correspond Equal-weight and Not-Rated to hold and Underweight to sell recommendations, respectively.

STOCK RATING CATEGORY	COVERAGE UNIVERSE		INVESTMENT BANKING CLIENTS (IBC)			OTHER MATERIAL INVESTMENT SERVICES CLIENTS (MISC)	
	COUNT	% OF TOTAL	COUNT	% OF TOTAL IBC	% OF RATING CATEGORY	COUNT	% OF TOTAL OTHER MSC
Overweight/Buy	1216	38%	300	42%	25%	533	37%
Equal-weight/Hold	1432	45%	325	46%	23%	698	48%
Not-Rated/Hold	3	0%	1	0%	33%	3	0%
Underweight/Sell	553	17%	81	11%	15%	220	15%
TOTAL	3,204		707			1454	

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 Humana Inc, Johnson & Johnson, Linde PLC, MasterCard Inc, Microsoft, Procter & Gamble Co., S&P Global Inc, 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 Research 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 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 Comisión Nacional Bancaria y de Valores. Paseo de los Tamarindos 90, Torre 1, Col. Bosques de las Lomas Floor 29, 05120 Mexico City; in Japan by Morgan Stanley MUFG Securities Co., Ltd. and, for Commodities related research reports only, Morgan Stanley Capital Group Japan Co., Ltd; in Hong Kong by Morgan Stanley Asia Limited (which accepts responsibility for its contents) and by Morgan Stanley 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.

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 following companies do business in countries which are generally subject to comprehensive sanctions programs administered or enforced by the U.S. Department of the Treasury's Office of Foreign Assets Control ("OFAC") and by other countries and multi-national bodies: MasterCard Inc.

The trademarks and service marks contained in Morgan Stanley Research are the property of their respective owners. Third-party data providers make no warranties or representations relating to the accuracy, completeness, or timeliness of the data they provide and shall not have liability for any damages relating to such data. The Global Industry Classification Standard (GICS) was developed by and is the exclusive property of MSCI and S&P.

Morgan Stanley Research, or any portion thereof may not be reprinted, sold or redistributed without the written consent of Morgan Stanley.

Indicators and trackers referenced in Morgan Stanley Research may not be used as, or treated as, a benchmark under Regulation EU 2016/1011, or any other similar framework.

© 2020 Morgan Stanley