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IDEA

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Cross-Asset Dispatches | Global

Melting Up Is Hard to Do

Melt-ups are rare. We see key differences between the US market today and past episodes, and think the more likely bull case would originate overseas. However, calls price in a low probability of near-term upside.

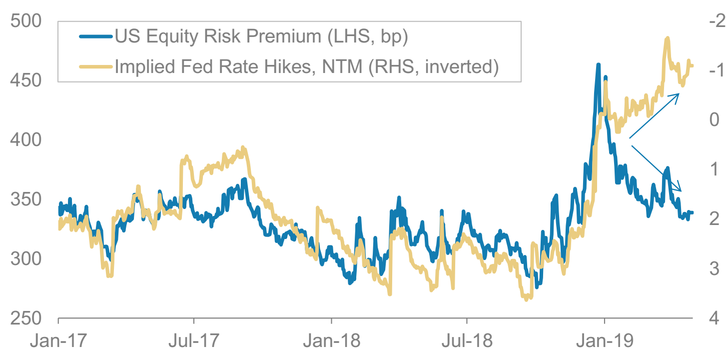
The punchbowl remains on the table... As the rally continues, investors are growing more excited about the possibility of a 'melt-up' – a further sharp move higher in the US market fuelled by a dovish Fed, stabilising data and light investor positioning.

...but melting up is hard to do: Define a 'melt-up' as a historically large move from a high starting point, and they account for just 1-2% of historical observations. Similar to today, they usually occur with the Fed on hold and yields declining. Unlike today, they usually start after *modest* returns and occur with *stronger* underlying earnings growth and *greater* levels of investor fear/negativity.

Could a 'melt-up' happen? Of course, but we'd look elsewhere: We've thought that the market was overpricing a benign 'Goldilocks' environment, and underpricing *both* tails. But we are sceptical about a US melt-up for two specific reasons: i) Our economists don't see the Fed making an 'insurance' rate cut; and ii) We are below consensus on 2019 earnings growth. While bullish investors are looking to the US, we instead think that the more likely 'bull case' lies overseas, if better growth in China pulls up other regions.

Strategy implications: While hitting our equity strategists' S&P 500 bull case of 3,000 is likely, the probability of a larger 'melt-up' is not high enough to warrant buying the market here. For investors worried they are under-exposed to a more bullish scenario, we think call options offer the best risk-adjusted way to add beta. During 'melt-ups', the S&P 500 rose an average of ~13% over three months, yet credit spreads only fell ~7bp and volatility was largely unchanged. Credit and volatility need to price in some of the risk that a speculative rush creates.

Exhibit 1: Policy is *already* very easy, relative to prices



Source: Bloomberg, Morgan Stanley Research

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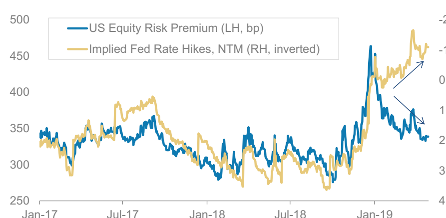
Melting up is hard to do

The S&P 500 declined nearly 20% from September through December 2018. In response, the Federal Reserve executed an enormous pivot in policy. This pivot, along with other positive surprises, drove a dramatic reversal, from a terrible 4Q18 to one of the best first quarters in market history.

But then something remarkable happened. As markets rallied and financial conditions eased, the Federal Reserve (along with the ECB) became *even more* accommodative. Every G10 central bank is now priced for a more dovish path through 2020 relative to the start of the year, with the US, Canada, Australia and New Zealand all priced for material outright cuts.

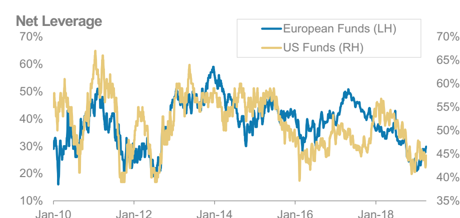
The rationale for this recent 'doubling-down' on easy policy has been tied to recently soft inflation readings. But investors know a punchbowl when they see one. Deliberate steps by central banks to keep policy easy in the face of strong markets have caused the familiar forces of greed and extrapolation to set in. Questions such as "Why couldn't we be significantly higher?" and "Won't investors be forced in?" are becoming more frequent. Could central bank accommodation, combined with modest investor positioning, cause stock prices to 'melt up'?

Exhibit 2: The rate market expects dovish policy even as risk premiums have compressed



Source: Bloomberg, Morgan Stanley Research

Exhibit 3: HF net exposure is still 'low', but has started to tick higher



Source: Morgan Stanley Prime Brokerage Strategic Content, Morgan Stanley Research

This report seeks to define a 'melt-up' in order to better analyse the conditions that allowed it, how it transpired and what came next. Our conclusions are:

- **Melting up is hard to do:** We are sceptical about the 'melt-up' story for US equities. Large moves higher from a high starting point (a melt-up) are rare, and unlike today usually follow a period of *subdued* returns and *good* earnings growth (the current environment has neither). We feel comfortable with our 2,400-3,000 bull/bear range for the S&P 500.

- **Some similarities, but a better bull case overseas:** True, past melt-ups have occurred when the Fed paused and 10-year rates were falling. But our economists are sceptical about the larger US-based catalyst (an 'insurance' rate cut, similar to 1995-96). Instead, we think that the most plausible bull case for the remainder of 2019 is one where better-than-expected China growth pulls up other regions.

- **Melt-ups: Vol largely unchanged, credit underperforms marginally and call options**

assign low probabilities: Despite the S&P 500 rising ~14% in an average 'melt-up', US BBB credit spreads only fell marginally and volatility remained largely unchanged. Current option market pricing assigns low probabilities to near-term upside, suggesting that call options are the best avenue for those looking to add beta.

What do you mean by a 'melt-up'?

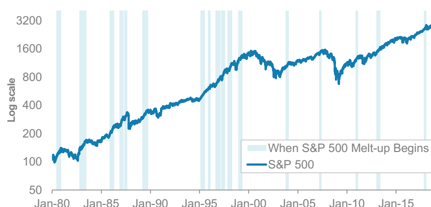
Defining terms is important. Qualitatively, a 'melt-up' is a buying frenzy where stocks break out to new highs as investors rush to avoid missing out. But *quantifying* such a frenzy is important. For our purposes, look at two (related) measures of a 'melt-up'. Both look at defining a 'melt-up' using a three-month period where the S&P 500 made a new high:

1. **Price-based:** Large gains (top decile of three-month returns) from high levels (starting within 5% of rolling 52-week high).

2. **Valuation-based:** Large re-rating (top decile of z-score changes of S&P 500 forward P/E) from high levels (P/E of more than 2 standard deviation above its rolling three-year average).

Both measures aim to capture large moves from high starting points. Price-based is indifferent to how the move occurs, while valuation-based is looking specifically for prices moving ahead of fundamental support. This yields 17 distinct periods for the former (back to 1980) and six distinct periods for the latter (back to 1990).

Exhibit 4: Price-based: We define 17 melt-up periods since 1980



Source: Bloomberg, Morgan Stanley Research

Exhibit 5: Valuation-based: We define six melt-up periods since 1990

Source: Bloomberg, Morgan Stanley Research

What happens in a melt-up?

These 'melt-up' instances, on average, saw the following:

Exhibit 6: Price-based: What happens in a melt-up?

PRICE BASED METHODOLOGY		
Asset Class	Asset	Median Chg/Rtn Over S&P 500 "Melt-up"
EQUITIES	S&P 500 (Rtn)	12.5%
	S&P 500 ERP (Chg)	-0.9%
EQUITY SECTORS	Value vs Growth (Rtn)	-2.9%
	Large Cap vs Small Cap (Rtn)	2.2%
FX	DXY (Rtn)	0.2%
	EURUSD (Rtn)	-1.2%
	JPYUSD (Rtn)	0.3%
CREDIT	BBB Credit bp (Chg)	-6
RATES	UST 10Y bp (Chg)	2.6%
	Fed Funds bp (Chg)	0
VOL	VXO (Chg)	-0.1
COMMODITIES	Brent (Rtn)	2.6%

Source: Bloomberg, Morgan Stanley Research; Note: BBB credit data are from March 1995 onwards, VXO data from January 1986 onwards and other data from January 1980 onwards.

Exhibit 7: Valuation-based: What happens in a melt-up?

VALUATION BASED METHODOLOGY		
Asset Class	Asset	Median Chg/Rtn Over S&P 500 "Melt-up"
EQUITIES	S&P 500 (Rtn)	13.3%
	S&P 500 ERP (Chg)	-1.0%
EQUITY SECTORS	Value vs Growth (Rtn)	-4.3%
	Large Cap vs Small Cap (Rtn)	2.3%
FX	DXY (Rtn)	1.3%
	EURUSD (Rtn)	-2.4%
	JPYUSD (Rtn)	-1.2%
CREDIT	BBB Credit bp (Chg)	-8
RATES	UST 10Y bp (Rtn)	2.0%
	Fed Funds bp (Chg)	0
VOL	VXO (Chg)	0.1
COMMODITIES	Brent (Rtn)	-2.9%

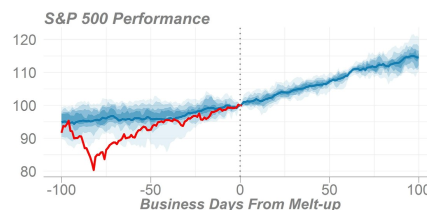
Source: Bloomberg, Morgan Stanley Research; Note: BBB credit data are from March 1995 onwards and other data from January 1990 onwards.

What's most notable in a typical equity 'melt-up'?

- Credit underperforms marginally (tightening only ~7bp) despite a large rally in equities;
- Large caps outperform small caps, value stocks underperform growth;
- Volatility remains largely unchanged, despite the better equity environment.

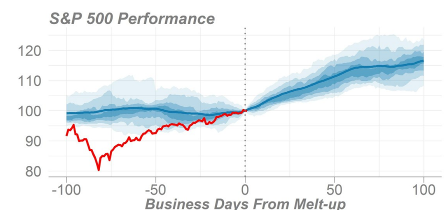
Considering the performance prior to the start of a melt-up, we'd note that we have already had a significant run in stock prices in a short period of time that has seen slowing momentum. This is not the usual pattern pre-melt-up, where we have historically seen more modest returns before a significant uptick. S&P 500 forward earnings growth (%Y) has typically started around ~12% and rose further throughout the melt-up period. Consensus earnings estimates currently sit much lower, at ~6.7%, a number we think is still too high.

Exhibit 8: Price-based: S&P performance around melt-up periods



Source: Bloomberg, Morgan Stanley Research; Note: Shows summary of melt-up episodes. Each band represents observation decile starting at 10% to 90%, solid line is median. Red line is current S&P 500 performance .

Exhibit 9: Valuation-based: S&P performance around melt-up periods



Source: Bloomberg, Morgan Stanley Research; Note: Shows summary of melt-up episodes. Each band represents observation decile starting at 10% to 90%, solid line is median. Red line is current S&P 500 performance .

Market sentiment is usually more bearish ahead of a melt-up than we see today. The percentage of retail investors who are bearish (per AAII) is currently 20%, below the pre-melt-up average of 25%. Current volatility is also much lower than what has usually existed around melt-ups.

Exhibit 10: Price-based: Sentiment before/after melt-up periods

PRICE BASED METHODOLOGY			
Indicator	Median Start Lvl	Median End Lvl	Current Lvl
AAII BEARS	25	21	20
VXO Index	21	19	12

Source: Bloomberg, Morgan Stanley Research

Exhibit 11: Valuation-based: Sentiment before/after melt-up periods

VALUATION BASED METHODOLOGY			
Indicator	Median Start Lvl	Median End Lvl	Current Lvl
AAII BEARS	29	25	20
VXO Index	19	20	12

Source: Bloomberg, Morgan Stanley Research

Fundamentally, the environment also appears to look different. While low yields and policy rates are reminiscent of post-crisis melt-ups, real GDP growth certainly isn't.

Exhibit 12: Price-based: Where were we then versus now?

		Valuations when S&P 500 Melt-up Begins				Macro Environment when S&P 500 Melt-up Begins			
Start Date	End Date	S&P 500 Fwd P/E	USD REER	UST 10Y Real Ylds	US HY Spreads	Real GDP Growth	Headline CPI	Policy Rate	Current Acct
04-Jun-80	28-Nov-80	n/a	n/a	-4.3	n/a	-0.8	14.4	10.8	-0.1
07-Oct-82	22-Jun-83	n/a	n/a	5.6	n/a	-1.4	5.1	10.0	0.0
04-Nov-85	21-Apr-86	9.9	n/a	6.1	n/a	4.2	3.5	8.0	-2.5
03-Nov-86	06-Apr-87	11.9	n/a	5.8	n/a	2.9	1.3	5.9	-3.1
01-May-87	25-Aug-87	13.8	n/a	4.6	n/a	3.4	3.9	6.5	-3.2
03-Mar-89	04-Oct-89	10.3	n/a	4.3	n/a	4.3	5.0	9.8	-2.1
01-Feb-95	17-Jul-95	12.5	104	4.3	336	3.5	2.9	6.0	-1.6
08-Nov-95	12-Feb-96	13.8	102	3.1	379	2.2	2.6	5.8	-1.7
12-Aug-96	18-Feb-97	14.8	103	4.0	303	4.1	2.9	5.3	-1.3
13-Mar-97	06-Aug-97	16.4	107	4.1	264	4.3	2.8	5.3	-1.6
03-Nov-97	22-Apr-98	18.4	111	4.1	266	4.5	1.8	5.5	-1.5
07-Dec-98	12-May-99	22.0	114	3.0	527	4.9	1.6	4.8	-2.3
30-Sep-03	26-Jan-04	17.3	118	1.6	517	3.3	2.3	1.0	-4.5
02-Mar-07	01-Jun-07	14.8	108	1.8	279	1.5	2.8	5.3	-5.7
15-Nov-10	18-Feb-11	12.7	96	1.7	557	2.6	1.1	0.3	-2.9
28-Dec-12	21-May-13	12.7	96	0.1	510	1.5	1.7	0.3	-2.6
27-Oct-17	26-Jan-18	18.1	113	0.4	334	2.5	2.0	1.3	-2.3
	Average:	14.6	107	3.0	388	2.8	3.4	5.4	-2.3
	Current level:	16.6	116	0.6	356	3.2	1.9	2.5	-2.3

Source: Bloomberg, Thomson Reuters, Haver Analytics, Morgan Stanley Research

Exhibit 13: Valuation-based: Where were we then versus now?

		Valuations when S&P 500 Melt-up Begins				Macro Environment when S&P 500 Melt-up Begins			
Start Date	End Date	S&P 500 Fwd P/E	USD REER	UST 10Y Real Ylds	US HY Spreads	Real GDP Growth	Headline CPI	Policy Rate	Current Acct
19-Jul-96	30-Dec-96	14.2	103.4	3.8	323	4.1	3.0	5.3	-1.3
01-Apr-97	30-Jul-97	15.8	107.7	4.2	269	4.3	2.5	5.5	-1.6
25-Dec-97	17-Apr-98	18.7	114.8	4.0	288	4.5	1.7	5.5	-1.6
25-Sep-98	03-Feb-99	19.5	119.1	2.9	565	4.1	1.5	5.5	-2.2
05-Feb-13	31-May-13	13.4	97	-0.1	484	1.6	2.0	0.3	-2.6
24-Nov-16	06-Mar-17	17.0	118	0.7	459	1.9	1.7	0.5	-2.3
	Average:	16.4	110	2.6	398	3.4	2.1	3.8	-1.9
	Current level:	16.6	116	0.6	356	3.2	1.9	2.5	-2.3

Source: Bloomberg, Thomson Reuters, Haver Analytics, Morgan Stanley Research

What's similar/different this time?

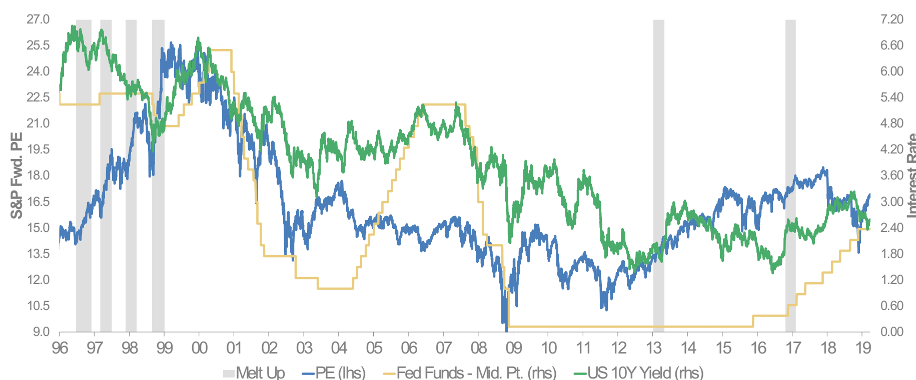
Adam Virgadamo

As mentioned above, it would be unusual for a melt-up to follow a run as strong as the one we've just had. What else is similar and different? History tells us that an accommodative Fed and falling rates support the case for a melt-up. However, we also see a few missing ingredients such as an uptick in earnings and economic growth expectations, fiscal relief, investor fear/bearishness and further increases in consumer confidence.

What's similar?

A Fed on hold and a falling 10-year yields helped to lift multiples in several prior melt-up periods: We think that a more accommodative Fed outlook has been a big driver of the rate move year-to-date and has evoked comparisons to these late 1990s melt-ups. The final melt-up of the 1990s was a bit different from the first three as it followed a large decrease in S&P multiples, a Fed that cut aggressively and a larger decline in Treasury yields. This correction only reversed the multiple expansion of the early 1998 melt-up, but the move lower was enough to invite aggressive action by the Fed, helping markets to make one final push higher as the rate environment eased financial conditions and lowered the cost of capital. Of course, this final melt-up set the stage for a much bigger correction later. Melt-ups in the post-crisis era were a bit different from the late 1990s in that they were not fuelled by rates – in both instances we think that the market was reacting more to the removal of a fiscal overhang (fiscal cliff resolution in early 2013) or added fiscal stimulus (2016 US election), which helped to push multiples higher.

Exhibit 14: A Fed on hold and falling rates supported 1990s melt-ups



Source: Bloomberg, FactSet, Morgan Stanley Research

What's different?

A less robust growth outlook: The most obvious differences we found between today and melt-up periods were the growth rates of the economy and earnings. In all of the 1990s melt-ups, real GDP growth was at least 4%Y and next 12-month expected earnings growth was over 10%. The post-crisis melt-ups were different from those in the

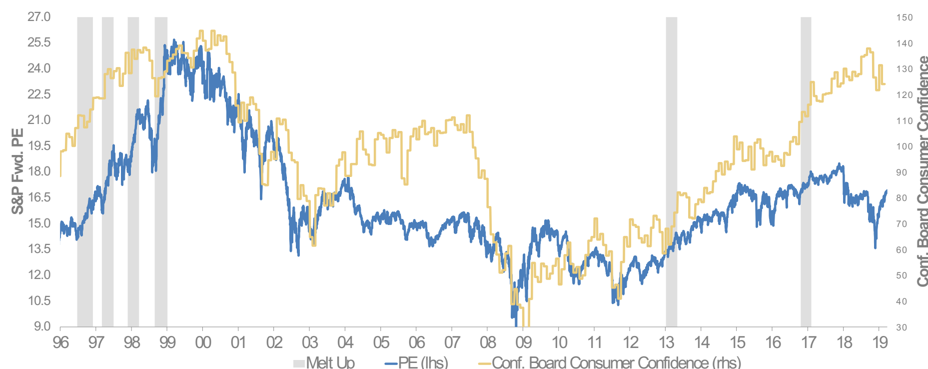
1990s as they were products of fiscal policy rather than monetary policy. As such, GDP growth heading into those melt-ups was at or below today's levels, but projected earnings growth was still well above due to a combination of earnings growth momentum and the prospect for some fiscal relief/stimulus. Real GDP growth in 1Q19 was 3.2% (annualised), with a substantial contribution from inventory builds, and the current consensus forward earnings growth forecast is only about 6%. In the case of GDP, we would expect inventory drawdowns to act as a drag on 2Q and we continue to believe that earnings estimates will trend lower through the year as margin pressures continue to rise, limiting the growth support for any potential melt-up.

Exhibit 15: GDP growth and earnings growth were higher in prior melt-ups

Source: Bloomberg, FactSet, Morgan Stanley Research

Consumer confidence is higher than before most prior melt-ups: In most of the melt-ups in our sample, consumer confidence was rising steadily into and through the melt-up. While not impossible that consumer confidence expands from here, we think it is unlikely, given its already elevated levels and its recent turn lower.

Exhibit 16: Consumer confidence tends to rise during melt-ups. Room to move higher from here?



Source: Bloomberg, Factet, Morgan Stanley Research

What's notable/worth watching

Growth, the Fed and the 'insurance rate cut' debate: Comparing prior melt-ups reinforces points we have been making this year: i) Earnings growth matters for equity performance; and ii) For risk assets, there is a difference between a Fed pause and a Fed cut. A pause is positive for risk assets as it eases financial conditions at a time when underlying economic fundamentals are not yet seeing irreversible pressure. The associated easing via credit, growth and dollar channels helps to support confidence

and risk appetite.

But if the Fed turns to cutting, it is usually because fundamental deterioration is more obvious. History suggests that, most of the time, the market positives from easier Fed policy are overwhelmed by the negatives of those weakening fundamentals, and performance has been far worse when the Fed was cutting than when it was on hold.

Like everything, of course, there are exceptions. One scenario the market has gotten more excited about in recent weeks is the 1995-96 experience when the Fed eased rates after over-tightening the previous year. Markets performed strongly as a result.

But we think that there are reasons to be sceptical of the 'insurance' cut scenario:

1. Our economists believe that it remains unlikely (see Will 1.5% Inflation Bring Insurance Cuts? April 24, 2019).
2. The Fed had raised rates 300bp from early 1994 to early 1995, an over-tightening that subsequent rate cuts helped to address. Today, the amount of Fed rate increases over a similar period is just 100bp.
3. The economy today has less slack. Unemployment was ~5.5% as the Fed cut rates in 1995, versus 3.8% today.
4. The 1995 rate cuts occurred relatively early in what was to be one of the longest expansions in US history. Today, the US expansion is nearly 10 years old.

What's in the price?

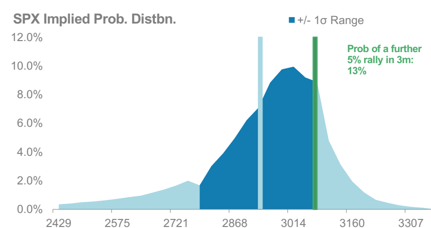
What do options markets say about the probability of a quick move higher from here? Leveraging the 'what's in the price' framework of our Global Volatility Playbook, we note that the market-implied probabilities of sharp near-term gains from current levels are low.

Exhibit 18 is a visualisation of what options imply for the range of S&P 500 outcomes over the next three months. Due to generally low overall volatility and a steep 'skew', the probability of a 5% rally is ~13%, while the probability of a 10% rally over the next three months is ~1%.

We can run a similar analysis on other markets. For instance, the UK market prices in an even lower probability of a further 5% rally, we which we show in Exhibit 19.

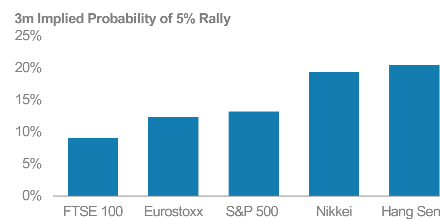
A co-ordinated melt-up scenario (say, all indices rallying more than 10% by year-end) is also priced cheaply. For instance, a worst-of-call digital option on Eurostoxx, NKY, SPX (110 strike) which pays off if the worst index of the three rallies 10% versus spot offers can provide a ~10:1 payout (indicative pricing only), although this is a high risk strategy.

Exhibit 17: S&P 500: Option-implied probability distribution suggests that a 5% rally in three months is a tail scenario



Source: Bloomberg, Morgan Stanley Research

Exhibit 18: Option-implied probability of a 5% three-month rally lowest in FTSE 100 and Eurostoxx



Source: Bloomberg, Morgan Stanley Research

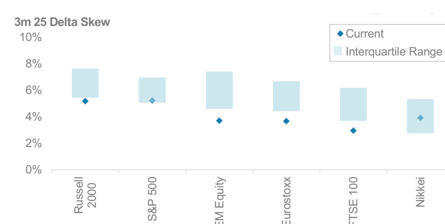
Investment implications

Based on this analysis, *we are sceptical that US stocks will see a further 'melt-up' from current levels*. Current conditions differ from prior 'melt-ups' in a number of important ways, including large recent market gains, a low reading of investor 'fear' or bearish sentiment and our below-consensus outlook for US GDP and earnings growth over the remainder of the year. An 'insurance' rate cut by the Federal Reserve is a risk to this view, but our economists think that such a step remains unlikely (see US Economics, Rates, FX Strategy: Prospects for a New Inflation Framework, April 24, 2019).

Instead, we think that the most plausible bull case *from here* lies overseas. We are above-consensus on China growth over the remainder of the year, and think it is no coincidence that 1Q19 weakness in China corresponded to poor growth data in Europe and the rest of Asia. If policy easing in China is able to gain more traction, and if the historical ~3-month lag between China and eurozone PMIs holds, a scenario where the Fed remains on hold while the RoW grows is not hard to imagine. We think that this 'bull case' is more likely than a US-led 'melt-up'.

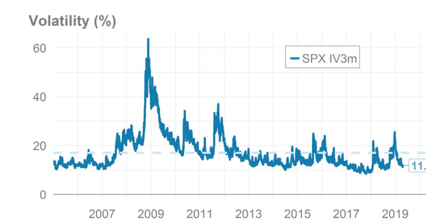
That said, it is important to note that **options pricing is sceptical about near-term upside of this scale in any region.** And so if one is worried about 'missing' a melt-up, we think that calls and call spreads are the best way to position for it, rather than adding high-beta stocks. And given both our preference for non-US equities and the lower volatility term premiums in these markets (versus the US), longer-dated call options in Europe, Japan and EM look even more attractive.

Exhibit 19: S&P 500 skew and Nikkei skew steeper versus history than EM skew



Source: Bloomberg, Morgan Stanley Research

Exhibit 20: S&P 500 volatility has now declined back to 3Q levels



Source: Bloomberg, Morgan Stanley Research

Macro event calendar – next two weeks

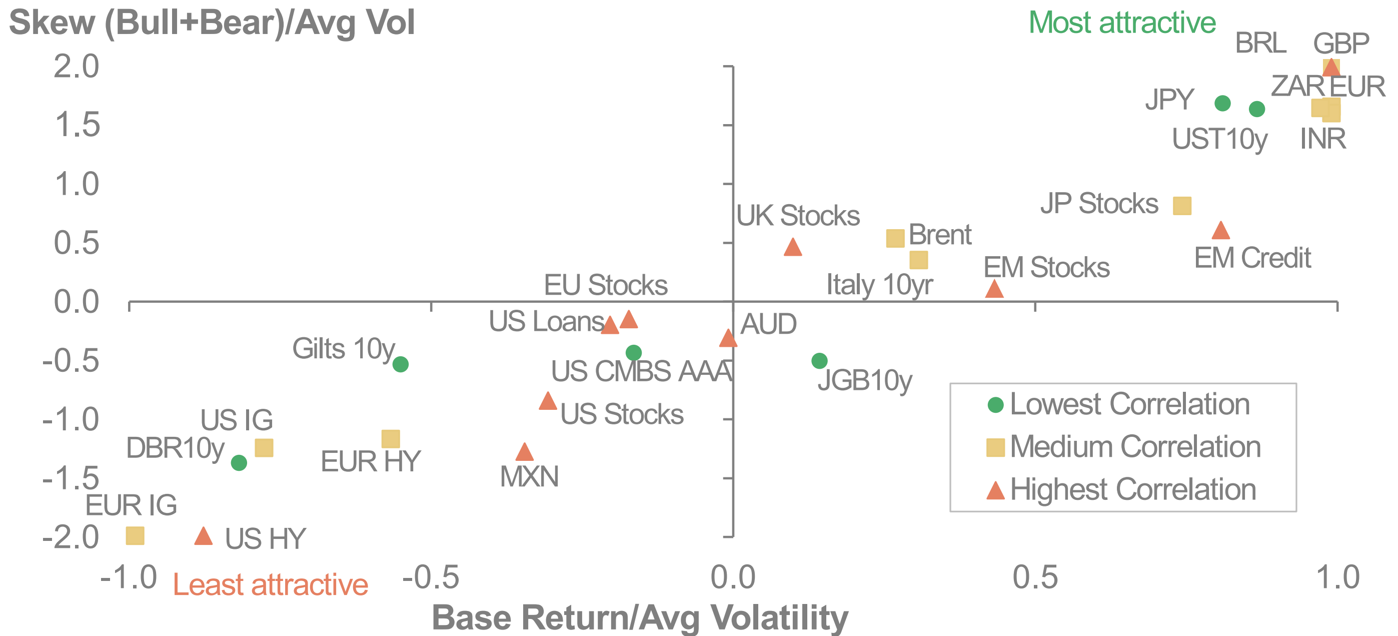
Exhibit 21: Key global events over the next two weeks, with Morgan Stanley forecasts where applicable

Date	Time (Ldn)	Region	Event	Ref. Period	MS forecast	Market	Previous
30-Apr	02:00	CNY	Non-manufacturing PMI	Apr		54.9	54.8
30-Apr	02:00	CNY	Manufacturing PMI	Apr	50.3	50.5	50.5
30-Apr	02:45	CNY	Caixin PMI Manufacturing	Apr		50.9	50.8
30-Apr	10:00	EUR	Eurozone GDP (QoQ)	1Q A	0.2%	0.3%	0.2%
30-Apr	13:30	USD	Employment Cost Index (QoQ)	1Q	0.7%	0.7%	0.7%
30-Apr	15:00	USD	Consumer Confidence Index	Apr	126.1	126.5	124.1
1-May	01:30	JPY	PMI Manufacturing	Apr F			49.5
1-May	09:30	GBP	PMI Manufacturing	Apr	53.0	53.1	55.1
1-May	13:15	USD	ADP Employment Change	Apr		180k	129k
1-May	15:00	USD	ISM Manufacturing	Apr	54.4	55	55.3
1-May	19:00	USD	FOMC Rate Decision (Upper Bound)		2.50%	2.5%	2.5%
2-May	08:55	EUR	German PMI Manufacturing	Apr F		44.5	44.5
2-May	09:00	EUR	PMI Manufacturing	Apr F	47.8	47.8	47.8
2-May	12:00	GBP	BoE Rates Decision		0.75%	0.75%	0.75%
2-May	15:00	USD	Factory Orders	Mar		1.4%	-0.5%
2-May	15:00	USD	Durable Goods Orders	Mar F			2.7%
3-May	09:30	GBP	PMI Services	Apr	50.7	50.2	48.9
3-May	09:30	GBP	PMI Composite	Apr		50.6	50
3-May	10:00	EUR	CPI Core (YoY)	Apr A	1.0%	1%	0.8%
3-May	13:30	USD	Change in Nonfarm Payrolls	Apr	233k	185k	196k
3-May	13:30	USD	Unemployment Rate	Apr	3.8%	3.8%	3.8%
3-May	13:30	USD	Average Hourly Earnings (YoY)	Apr	3.3%	3.3%	3.2%
3-May	15:00	USD	ISM Non-Manufacturing Composite	Apr		57	56.1
3-May	15:15	USD	Fed's Evans (voter) spks (Monetary Policy)				
3-May	16:30	USD	Fed's Clarida (voter) spks (Monetary Policy)				
3-May	18:45	USD	Fed's Williams (voter) spks (Monetary Policy)				
3-May	20:00	USD	Fed's Bowman (voter) spks (Monetary Policy)				
4-May	00:45	USD	Fed's Bullard, Daly (voters), Kaplan, Mester (non-voters) spk (Monetary Strategies)				
6-May	02:45	CNY	PMI Composite	Apr			52.9
6-May	09:00	EUR	PMI Services	Apr F			52.5
7-May	N/A	CNY	Foreign Reserves	Apr			3098.8B
7-May	07:00	EUR	German Factory Orders (MoM)	Mar	-0.4%		-4.2%
8-May	N/A	CNY	Exports (YoY)	Apr			14.2%
8-May	N/A	CNY	Trade Balance	Apr			$32.67B
8-May	00:50	JPY	BoJ Minutes	Mar-15			
8-May	07:00	EUR	German Industrial Production (MoM)	Mar			0.7%
9-May	02:30	CNY	PPI (YoY)	Apr			0.4%
9-May	13:30	USD	Trade Balance	Mar		-53.4B	-49.4B
9-May	13:30	USD	Fed's Powell (voter) spks (Community Development)		-0.40%		
9-May	18:15	USD	Fed's Evans (voter) spks (Community Development)				
10-May	00:30	JPY	Labor Cash Earnings (YoY)	Mar	-0.5%	-0.6%	-0.7%
10-May	09:00	EUR	Italian Industrial Production (MoM)	Mar			0.8%
10-May	09:30	GBP	Trade Balance	Mar			-4860m
10-May	09:30	GBP	GDP (QoQ)	1Q P			0.2%
10-May	13:30	USD	CPI (YoY)	Apr	2.1%	2.1%	1.9%
10-May	13:30	USD	Fed's Brainard (voter) spks (Community Development)				
05/10-05/15	N/A	CNY	M2 (YoY)	Apr			8.6%
05/10-05/15	N/A	CNY	New Yuan Loans	Apr			1690B

Source: Morgan Stanley Research forecasts, Bloomberg. Note: P = Preliminary, F = Final.

Asset class forecasts and risk/reward

Global asset classes – expected 12-month return vs. risk



Source: Morgan Stanley Research. Note: 'Expected returns' based on MS Strategy 12m forecasts and current market prices. Correlation is six-month relative to global equities (MSCI ACWI). Credit returns are excess returns.

Exhibit 22: Morgan Stanley key market forecasts

	As of Apr 26, 2019	Q4 2019 Forecast Bear	Base	Bull
Equities				
S&P 500	2,940	2,400	2,750	3,000
MSCI Europe	1,609	1,190	1,500	1,860
Topix	1,618	1,300	1,800	2,100
MSCI EM	1,078	810	1,130	1,310
FX				
USD/JPY	112	97	102	107
EUR/USD	1.12	1.13	1.25	1.31
GBP/USD	1.29	1.40	1.52	1.60
AUD/USD	0.70	0.65	0.71	0.75
USD/INR	70.0	64.0	68.0	75.0
USD/ZAR	14.4	12.4	13.0	14.3
USD/BRL	3.93	3.10	3.50	4.00
Rates (% percent)				
UST 10yr	2.50	2.75	2.25	1.80
DBR 10yr	-0.02	0.90	0.50	0.00
UKT 10yr	1.14	1.90	1.65	1.10
JGB 10yr	-0.04	0.18	-0.05	-0.10
Credit (bps)				
US IG	114	205	153	97
US HY	390	816	564	346
EUR IG	62	150	110	80
EUR HY	374	615	500	390
Italy 10yr	261	390	260	170
EM Sovs	335	440	320	280
US CMBS AAA	85	125	100	80
Commodities				
Brent	72	67.5	77.5	87.5

Source: Markit, MSCI, Bloomberg, The Yield Book, Morgan Stanley Research forecasts

Exhibit 23: 12m return and risk forecasts

Asset	12m Return: Bear Case	Base Case	Bull Case	Volatility: Option Implied	LT Average	Return/Risk: Base case Return/Vol
Equities						
S&P 500	-16%	-4.6%	4%	14%	15%	-0.31
MSCI Europe	-22%	-3.0%	19%	14%	16%	-0.20
Topix	-17%	13.6%	32%	17%	20%	0.74
MSCI EM	-22%	7.5%	24%	19%	16%	0.43
FX						
JPY/USD	1%	6.5%	12%	6.7%	9.5%	0.81
EUR/USD	-2%	9.2%	15%	6.4%	9.2%	1.17
GBP/USD	7%	16.0%	22%	8.4%	9.1%	1.84
AUD/USD	-9%	-0.1%	6%	8.1%	11.3%	-0.01
INR/USD	-2%	7.4%	14%	7.2%	7.5%	1.02
ZAR/USD	5%	15.3%	21%	15.5%	16.0%	0.97
BRL/USD	1%	15.1%	30%	14.0%	15.5%	1.02
Rates						
UST 10yr	0.5%	4.8%	8.6%	5.0%	6.1%	0.87
DBR 10yr	-6.9%	-3.7%	0.8%	3.9%	5.0%	-0.82
UKT 10yr	-5.0%	-3.0%	2.1%	5.3%	5.6%	-0.55
JGB 10yr	-1.6%	0.3%	0.7%	1.5%	2.3%	0.14
Credit (Excess Return)						
US IG	-5.4%	-2.0%	2.3%	3.2%	1.8%	-0.78
US HY	-17.4%	-5.1%	5.0%	6.3%	5.2%	-0.88
EUR IG	-3.9%	-1.9%	-0.4%	1.2%	1.6%	-1.36
EUR HY	-8.0%	-2.9%	2.0%	5.7%	4.6%	-0.57
Italy 10yr	-7.1%	2.7%	10.1%	7.4%	9.9%	0.31
EM Sovs	-4.3%	4.5%	7.7%	4.8%	6.4%	0.81
US CMBS AAA	-3.2%	-0.7%	1.4%	2.0%	6.5%	-0.16
Commodities						
Brent	-6%	7.4%	21%	25%	30%	0.27

Source: Note: Brent returns are vs.the forward.
Source: Bloomberg, Morgan Stanley Research forecasts

Morgan Stanley long-run returns forecasts

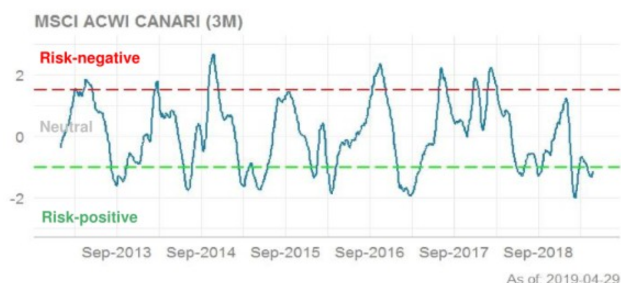
Exhibit 24: Morgan Stanley 10-year expected return forecasts across asset classes

	10Y Nominal Expected Rtns		Risk Premium	
	Current	Z-score	Current	Z-score
EQUITIES		-2 0 2		-2 0 2
S&P 500	6.0		3.0	
MSCI Europe	6.8		6.2	
MSCI UK	9.4		8.0	
MSCI Japan	6.9		6.0	
MSCI EM	10.0		6.9	
	Current	Z-score	Current	Z-score
GOV'T BONDS		-2 0 2		-2 0 2
UST 5Y	2.9		0.9	
UST 10Y	2.9		0.9	
DBR 5Y	0.2		-0.8	
DBR 10Y	0.7		-0.4	
UKT 5Y	1.4		-1.8	
UKT 10Y	1.4		-1.9	
JGB 5Y	0.5		0.3	
JGB 10Y	0.9		0.7	
FIXED INCOME & CREDIT		-2 0 2		-2 0 2
USD Agg	2.9		0.0	
USD IG	3.4		0.5	
USD HY	3.6		0.8	
USD BBB	3.6		0.7	
USD BB	3.6		0.7	
		-2 0 2		-2 0 2
EUR Agg	1.4		0.9	
EUR IG	0.6		0.3	
EUR HY	1.5		1.3	
EUR BBB	0.8		0.5	
EUR BB	1.4		1.2	
EM $ CREDIT		-2 0 2		-2 0 2
Global	5.5		2.5	
Asia	3.9		1.0	

Source: Bloomberg, Morgan Stanley Research forecasts

Morgan Stanley CANARIs

Exhibit 25: ACWI CANARI 3M



Source: Morgan Stanley Research

Exhibit 26: ACWI CANARI 12M

Source: Morgan Stanley Research

Exhibit 27: Morgan Stanley CANARIs

	CANARI				Avg Fwd Performance Given Bucket				% Better Than Avg Given Bucket			
	1M	3M	6M	12M	1M	3M	6M	12M	1M	3M	6M	12M
EQUITIES												
MSCI ACWI					0%				53%			
S&P 500						1%				46%		
MSCI Europe												
TOPIX								-11%				17%
MSCI EM												
BONDS												
UST							17				30%	
DBR					2		17		42%		36%	
JGB							1				39%	
CREDIT												
US IG												
US HY												
EU IG												
EM $												
US Securitized						2				33%		
FX												
DXY					-1%	1%			35%	62%		
EUR					0%				52%			
GBP					1%				59%			
JPY*							-6%				73%	
AUD												
COMMODITIES												
Gold												
Copper												
Crude					3%				58%			

As of: 2019-04-28

Note: For equity, we show price performance; bonds, yield change in bps, credit, spread change in bps

Source: Morgan Stanley Research; Note: Boxes with black border indicate that CANARI has triggered risk-positive or risk-negative. Red boxes indicate that CANARI is associated with worse-than-average forward returns; green is associated with better-than-average returns. "Next XM Performance" show realized performance from stated date. For USDBRL, average spot change is * as data break means averages over that horizon look extreme. 'Vs Avg' indicates Next XM Performance minus average performance up to stated date. Greyed out numbers indicate where the CANARI signal produced the 'wrong' signal, and realized performance was worse than average.

Appendix: Strategy Risk Factors

Buying calls or call spreads: Investors who buy call options risk loss of the entire premium paid if the underlying security finishes below the strike price at expiration. Investors who buy call spreads (buy a call and sell a further OTM call) also have a maximum loss of the entire up-front premium paid. The maximum gain from buying call spreads is the difference between the strike prices, less the upfront premium paid.

Buying puts or put spreads: Investors who buy put options risk loss of the entire premium paid if the underlying security finishes above the strike price at expiration. Investors who buy put spreads (buy a put and sell a further OTM put) also have a maximum loss of the upfront premium paid. The maximum gain from buying put spreads is the difference between the strike prices, less the upfront premium paid.

Selling calls: Investors who sell covered calls (own the underlying security and sell a call) risk limiting their upside to the strike price plus the upfront premium received and may have their security called away if the security price exceeds the strike price of the short call. Additionally, the investor has full downside exposure that is only partially offset by the upfront premium taken in. Investors short naked calls (i.e. sold calls but don't hold underlying security) risk unlimited losses of security price less strike price. Investors who sell naked call spreads (i.e. sell a call and buy a farther out-of-the-money call with no underlying security position) have a maximum loss of the difference between the long call strike and the short call strike, less the upfront premium taken in, if the underlying security finishes above the long call strike at expiration. The maximum gain is the upfront premium taken in, if the security finishes below the short call strike at expiration.

Selling puts: Put sellers commit to buying the underlying security at the strike price in the event the security falls below the strike price. The maximum loss is the full strike price less the premium received for selling the put. Put sellers who are also long a lower dollar-strike put face a maximum loss of the difference between the long and short put strikes less the options premium received.

Buying strangles: The maximum loss is the entire premium paid (put + call), if the security finishes between the put strike and the call strike at expiration.

Selling strangles or straddles: Investors who are long a security and short a strangle or straddle risk capping their upside in the security to the strike price of the call that is sold plus the upfront premium received. Additionally, if the security trades below the strike price of the short put, the investor risks losing the difference between the strike price and the security price (less the value of the premium received) on the short put and will also experience losses in the security position if he owns shares. The maximum potential loss is the full value of the strike price (less the value of the premium received) plus losses on the long security position. Investors who are short naked strangles or straddles have unlimited potential loss since if the security trades above the call strike price, the investor risks losing the difference between the strike price and the security price (less the value of the premium received) on the short call. Additionally, they are obligated to buy the security at the put strike price (less upfront premium received) if the security finishes below the put strike price at expiration. Strangle/straddle sellers risk assignment on short put positions that become in the money. Additionally, they risk having stock called away from short call positions that become in the money.

Options Disclaimer

Options are not for everyone. Before engaging in the purchasing or writing of options, investors should understand the nature and extent of their rights and obligations and be aware of the risks involved, including the risks pertaining to the business and financial condition of the issuer and the underlying stock. A secondary market may not exist for these securities. For customers of Morgan Stanley & Co. Incorporated who are purchasing or writing exchange-traded options, your attention is called to the publication "Characteristics and Risks of Standardized Options;" in particular, the statement entitled "Risks of Option Writers." That publication, which you should have read and understood prior to investing in options, can be viewed on the Web at the following address: http://www.optionsclearing.com/about/publications/character-risks.jsp. Spreading may also entail substantial commissions, because it involves at least twice the number of contracts as a long or short position and because spreads are almost invariably closed out prior to expiration. Potential investors should be advised that the tax treatment applicable to spread transactions should be carefully reviewed prior to entering into any transaction. Also, it should be pointed out that while the investor who engages in spread transactions may be reducing risk, he is also reducing his profit potential. The risk/ reward ratio, hence, is an important consideration.

The risk of exercise in a spread position is the same as that in a short position. Certain investors may be able to anticipate exercise and execute a "rollover" transaction. However, should exercise occur, it would clearly mark the end of the spread position and thereby change the risk/reward ratio. Due to early assignments of the short side of the spread, what appears to be a limited risk spread may have more risk than initially perceived. An investor with a spread position in index options that is assigned an exercise is at risk for any adverse movement in the current level between the time the settlement value is determined on the date when the exercise notice is filed with OCC and the time when such investor sells or exercises the long leg of the spread. Other multiple-option strategies involving cash settled options, including combinations and straddles, present similar risk.

Important information: Examples within are indicative only, please call your local Morgan Stanley Sales representative for current levels.

By selling an option, the seller receives a premium from the option purchaser, and the purchase receives the right to exercise the option at the strike price. If the option purchaser elects to exercise the option, the option seller is obligated to deliver/purchase the underlying shares to/from the option buyer at the strike price. If the option seller does not own the underlying security while maintaining the short option position (naked), the option seller is exposed to unlimited market risk.

Spreading may entail substantial commissions, because it involves at least twice the number of contracts as a long or short position and because spreads are almost invariably closed out prior to expiration. Potential investors should carefully review tax treatment applicable to spread transactions prior to entering into any transactions.

Multi-legged strategies are only effective if all components of a suggested trade are implemented.

Investors in long option strategies are at risk of losing all of their option premiums. Investors in short option strategies are at risk of unlimited losses.

There are special risks associated with uncovered option writing which expose the investor to potentially significant loss. Therefore, this type of strategy may not be suitable for all customers approved for options transactions. The potential loss of uncovered call writing is unlimited. The writer of an uncovered call is in an extremely risky position, and may incur large losses if the value of the underlying instrument increases above the exercise price.

As with writing uncovered calls, the risk of writing uncovered put options is substantial. The writer of an uncovered put option bears a risk of loss if the value of the underlying instrument declines below the exercise price. Such loss could be substantial if there is a significant decline in the value of the underlying instrument.

Uncovered option writing is thus suitable only for the knowledgeable investor who understands the risks, has the financial capacity and willingness to incur potentially substantial losses, and has sufficient liquid assets to meet applicable margin requirements. In this regard, if the value of the underlying instrument moves against an uncovered writer's options position, the investor's broker may request significant additional margin payments. If an investor does not make such margin payments, the broker may liquidate stock or options positions in the investor's account, with little or no prior notice in accordance with the investor's margin agreement.

For combination writing, where the investor writes both a put and a call on the same underlying instrument, the potential risk is unlimited.

If a secondary market in options were to become unavailable, investors could not engage in closing transactions, and an option writer would remain obligated until expiration or assignment.

The writer of an American-style option is subject to being assigned an exercise at any time after he has written the option until the option expires. By contrast, the writer of a European-style option is subject to exercise assignment only during the exercise period.

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(as of March 31, 2019)
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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	IBC % OF TOTAL IBC	IBC % OF RATING CATEGORY	OTHER MATERIAL INVESTMENT SERVICES CLIENTS (MISC) COUNT	MISC % OF TOTAL OTHER MISC
Overweight/Buy	**1126**	**36%**	**304**	**43%**	**27%**	**529**	**38%**
Equal-weight/Hold	**1394**	**44%**	**319**	**45%**	**23%**	**643**	**46%**
Not-Rated/Hold	**46**	**1%**	**5**	**1%**	**11%**	**6**	**0%**
Underweight/Sell	**593**	**19%**	**82**	**12%**	**14%**	**227**	**16%**
TOTAL	**3,159**		**710**			**1405**	

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.

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Overweight (O or Over) - The stock's total return is expected to exceed the total return of the relevant country MSCI Index or the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis over the next 12-18 months.
Equal-weight (E or Equal) - The stock's total return is expected to be in line with the total return of the relevant country MSCI Index or the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis over the next 12-18 months.
Not-Rated (NR) - Currently the analyst does not have adequate conviction about the stock's total return relative to the relevant country MSCI Index or the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.
Underweight (U or Under) - The stock's total return is expected to be below the total return of the relevant country MSCI Index or the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.
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