ABSOLUTE STRATEGY RESEARCH

ASR Multi-Asset Survey: 2018 Q4

14th December 2018

Winter Blues as Investors Begin to Capitulate

This survey is one of the most interesting we have conducted in the last four years. It reveals significant changes in expectations, along with relatively firm conviction levels, and by far the most pessimistic views on record. Obviously, the views expressed in this survey echo some of the sizeable moves in markets seen in the past three months. These changes in expectations could simply be a reaction to the sharp moves in financial assets, or they could be indicative of a more profound reassessment.

Macro outlook: most bearish on record

Over the past three months, investors have become increasingly confident that the macro environment was likely to deteriorate in the coming year. (1) Global business confidence is expected to decline from its current elevated level. (2) For the first time since we launched the survey four years ago, investors think that the US unemployment rate is likely to rise from its multi-decade lows. (3) A Global recession remains unlikely on a one-year view, but concerns have been building up in recent months. (4) Our panel now sees a 50% chance of a bear market in US equities at some stage in the next 12 months (its highest level on record).

Asset allocation views: most bearish / least positive on risk assets

Consistent with their negative macro outlook, investors have become significantly more bearish on risk assets, or less positive in the case of global stocks vs bonds. Interestingly, they still expect stocks to outperform bonds globally in the next 12 months, so we have not seen a full capitulation yet, but their confidence level has weakened considerably in the past two years (59% probability in 4Q18, the lowest on record, vs 77% in 4Q16). The positive view on stocks vs bonds primarily reflects expectations of negative bond returns, rather than positive equity returns.

Similarly, since we launched the survey four years ago, investors have never been more negative on US Investment Grade credit vs US Treasuries, US High Yield vs US Investment Grade, Global Cyclicals vs Defensives and Industrial Metals vs Gold.

Most notable reversal in views: EM now favoured over DM

This quarter also reveals a significant reversal in regional equity preferences. Following the 6% outperformance of Emerging Markets (EM) vs Developed Markets (DM) between the 3Q18 and the 4Q18 polling periods, investors now expect EM to continue outperforming over the next 12 months, with a 58% probability, vs 50% in September and 47% in June. This represents one of the biggest changes in expectations this quarter.

While this may seem at odds with an expected slowdown in global growth, this is consistent with their bearish view on the USD. EM hold large amounts of USD-denominated debt and are sensitive to currency fluctuations. In the past decade, EM have tended to outperform DM in periods of dollar weakness. For the first time in the last four years, investors have turned negative on the USD. The implied probability of a rise in the USD has declined to 46% from 53% three months ago. This is also one of the most significant reassessments of views this quarter.

Linked to the EM / DM call, investors now expect US equities to underperform the rest of the world (48% of a US outperformance, vs 51% in September).

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Survey Highlights: 8 Key Messages

1) Big changes in expectations this quarter, relatively firm conviction levels, and most pessimistic views on record

This quarterly survey reveals some of the biggest quarterly changes in expectations since the survey was launched in December 2014 (table 1), and by far the least optimistic views on record (Chart 1).

Implied probabilities have been revised by c. 5 percentage points in the past quarter, a level that was exceeded only twice before, in September 2015 and in December 2016.

Table 1 shows the top convictions in the survey this quarter (green and red highlights), as well as the biggest changes in expectations (yellow highlights)

Table 1: Top convictions & biggest changes in expectations in ASR 4Q18 Multi-Asset Survey

	4Q18 Survey - Fieldwork conducted between 22 Nov & 05 Dec 2018	4Q18 Implied Prob.	3Q18 Implied Prob.	QoQ Change	
Most Likely	German 10-year Bund yields higher	67	71	-4	Biggest Q/Q Changes
	US 2-year Treasury yields higher	65	72	-7	
	VIX higher	63	70	-6	
	US 10-year Treasury yields higher	60	66	-5	
	US core inflation at 2% or higher	60	71	-11	
	EM equities outperform DM equities ($)	58	50	8	
	US TIPS returns beat US Treasuries	52	58	-6	
	US unemployment rate higher	52	47	4	
	20% drawdown in US equities	50	41	9	
	Industrial Metals outperform Gold	47	53	-5	
	USD trade weighted index higher	46	53	-7	
	US IG corp. bonds beat US Treasuries	43	50	-7	
	US HY corp. bonds beat US IG	42	46	-5	
	Global cyclical stocks outperform defensives ($)	41	48	-7	
Least Likely	Eurozone core inflation at 2% or higher	37	42	-5	
	Global business confidence higher	37	40	-3	
	Global recession	35	34	1	
	Japanese core inflation at 2% or higher	30	32	-2	

Survey based on 219 Participants

Source: ASR Ltd. / Refinitiv

(*) Average of 9 implied probabilities in the survey. See components in the side bar of page 3

ASR Optimism Indicator (*) declined to 51 in December 2018, from 56 in September and 58 in June 2018. This represents a sharp drop from its peak of 67 in December 2016. The severe decline in optimism seen in the past couple of years primarily reflects a loss of confidence in the cycle, with investors now expecting Global business confidence to deteriorate, Cyclicals to underperform Defensives within the equity market, and US Credit to underperform Treasuries in the fixed income space.

This quarter, we introduced a new question and asked investors to rate their conviction about the views expressed on a scale of 1 to 5, with 1 denoting a low conviction and 5 a high conviction.

The most frequent answers were '4' (41% of the panel) and '3' (36% of the panel). The results translated into a weighted average of '3.3', which in our view represents a relatively firm conviction level.

(*) The ASR Multi-Asset Survey Optimism Indicator shown in Chart 1 is the average of 9 implied probabilities in the survey:

Macro
1. Global business confidence being higher
2. Absence of a global recession
3. US unemployment rate being flat or lower

Fixed Income & Credit
4. US 10-year Treasury yields being higher
5. US investment grade corporate bond returns outperforming US Treasuries
6. US TIPS returns beating US Treasuries

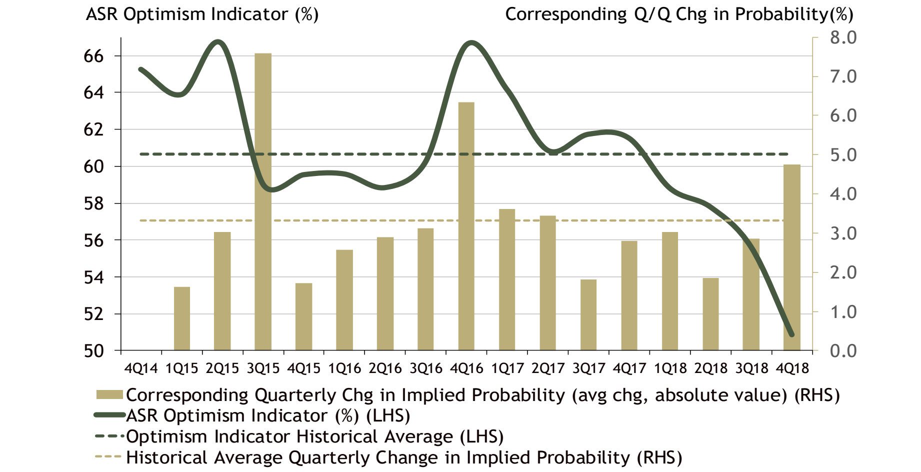
Equities
7. Global equities being higher
8. Global cyclical stocks outperforming defensives

Asset Allocation
9. Global equity returns outperforming global bond returns

The 4Q18 results reveal significant changes in expectations.

The most significant ones revolve around the US (US inflation, US interest rates, the USD, US equities and US credit). But we have also seen notable changes in regional equity preferences

Chart 2: ASR Multi-Asset Survey Optimism Indicator (*) at its lowest level since the survey was launched in December 2014



Source: ASR Ltd. / Refinitiv

2) The biggest changes in expectations revolve around the US

As mentioned earlier, investors have revised their expectations quite significantly in the past three months (Chart 3).

The most notable changes in expectations this quarter revolve around the US: US inflation, US rates, the USD, US equities and US credit.

Investors have become significantly less confident that US inflation will hit 2% in the next 12 months. They still expect US interest rates to move higher, both at the short end and the long end (this remains one of the strongest convictions in the survey), but confidence levels have declined significantly in the past three months, with investors now turning bearish on the USD on a one-year view. Unsurprisingly, investors have also become more bearish on US credit, now expecting US investment grade credit to underperform US Treasuries (vs evenly split in September) and more convinced that US high yield will underperform US investment grade in the coming year (our panel has been negative on US HY / US IG since March 2018).

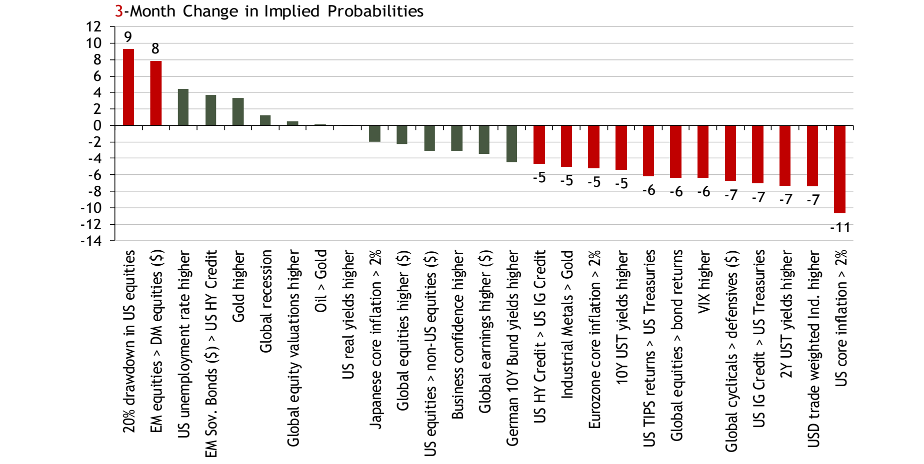
The implied probability of a bear market in US equities has increased significantly in the past three months, with investors now seeing a 50% chance of a 20% drawdown in US stocks at some point in the next 12 months, vs 41% in September. This is the highest level since we started asking the question in June 2016. Unsurprisingly given their bearish macro outlook, investors have become more convinced that Global cyclicals would underperform defensives.

Another notable development this quarter shows investors reversing their regional preferences within the equity market. They now expect EM equities to outperform DM, with a 58% probability, up from 50% in September and 47% in June. This may seem surprising at a time when global growth is slowing down, but it is consistent with the view that the USD is now more likely to come down in the next 12 months (this is the first time in four years that investors are bearish on the USD). Linked to this call, a small balance of investors now expects US equities to underperform the rest of the world, also a reversal of the views held in September and June.

Some of the biggest changes in probabilities this quarter include views on:

- US core inflation exceeding 2% (-11% Q/Q)
- higher USD (-7%)
- higher 2Y UST yields (-7%)
- US IG Credit > US Treasury returns (-7%)
- bear market in US equities (+9%)
- EM > DM equities (+8%)

Chart 3: Quarterly change in implied probabilities (%)



Source: ASR Ltd. / Refinitiv

3) Investors have become more bearish on the macro ...

On the macro front, investors have become more convinced that the Global business cycle is unlikely to improve from its current elevated levels. They see a 37% probability of an improvement in global business confidence, down significantly from 52% in September 2017 (see Chart 4).

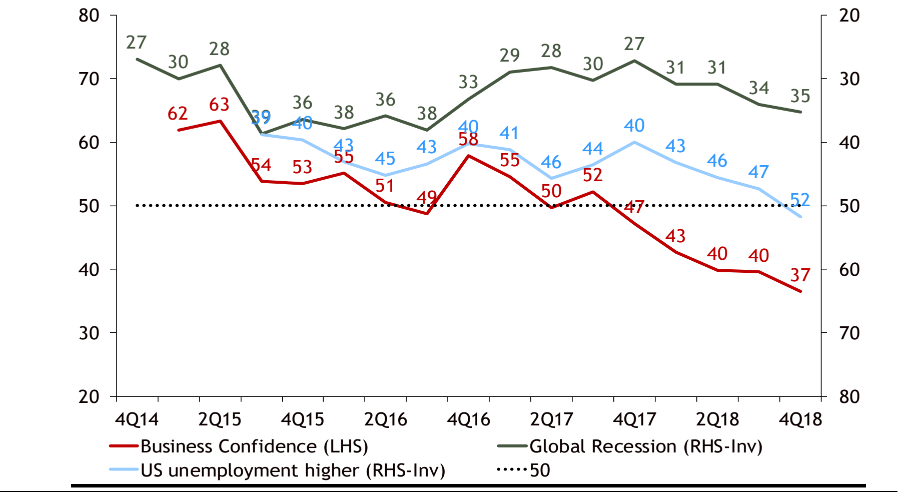
A small balance of investors now believe that the US unemployment rate is likely to increase in the coming year. They place a 52% probability on this scenario, up significantly from 40% a year ago. This is the first time since we started asking the question three years ago that investors expect the US unemployment rate to reverse from its multi-decade lows.

A global recession remains unlikely in the next 12 months, with a 35% probability. However, this probability has increased significantly from 27% in December 2017.

Investors have become more confident that the best of global growth is now behind us.

A global recession remains unlikely on a one-year horizon, but concerns have been mounting in the past 12 months.

Chart 4: Investors' macro outlook continues to deteriorate



Source: ASR Ltd. / Refinitiv

4) … and more defensive in their asset allocation views

Given their bearish views on the global economy, it is not a surprise that investors have become more defensive in their asset allocation views. This trend towards more defensiveness has been steady and almost uninterrupted since December 2016.

Investors have become more convinced that Global cyclical stocks will underperform defensives in the coming year (41% probability of a cyclicals' outperformance vs 48% in September and 53% in June).

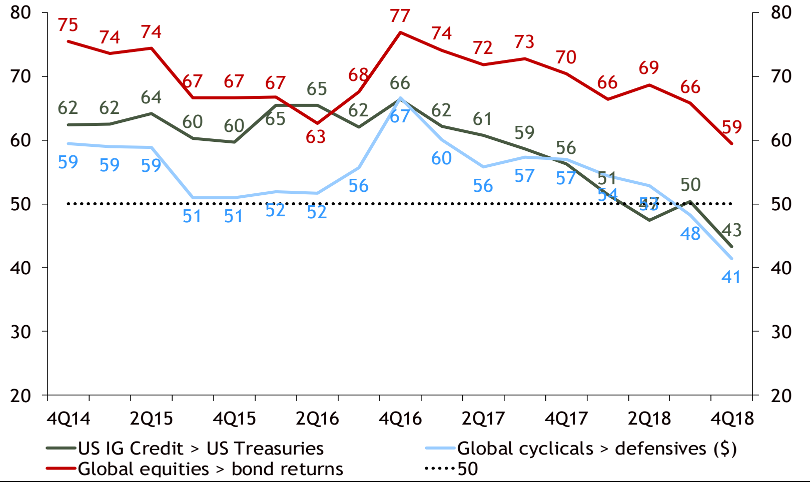
They now expect US investment credit to underperform US Treasuries (43% chance of a US IG's outperformance), while they were still evenly split three months ago.

Despite these reassessments, we have not seen a full capitulation on the stock / bond call. Our panel continues to see equities outperforming bonds globally in the next 12 months, with a 59% probability. However, these expectations have come down drastically (and steadily) from a high of 77% in December 2016.

Our panel has turned (more) bearish on certain risk strategies such as Cyclical stocks / Defensive stocks and US IG / US Treasuries.

Investors continue to see equities beating bonds on a 12-month view, although their conviction level has declined substantially in recent months.

Chart 5: Investors have become more defensive in their asset allocation preferences



Source: ASR Ltd. / Refinitiv

5) Some of the highest convictions remain around interest rate normalisation

Once again this quarter, some of the highest convictions revolve around government bond yields moving higher in all regions considered in the survey: German 10Y (67%), US 2Y (65%), US 10Y (60%), Japanese 10Y (60%).

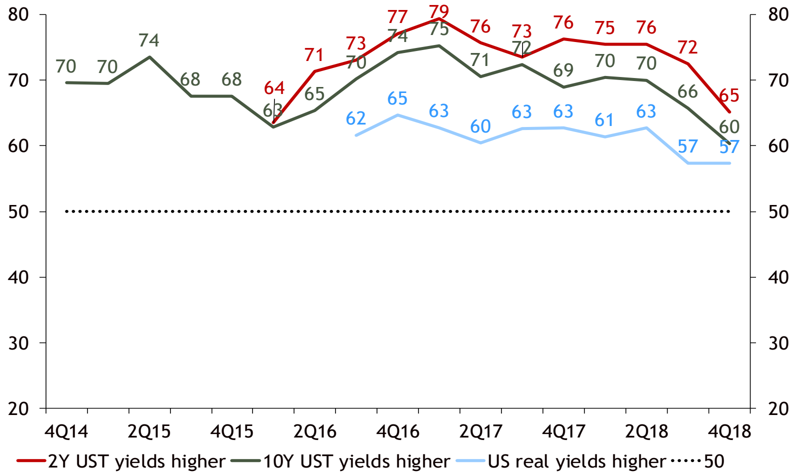
Our panel remains confident that the VIX will move higher (63% probability). However, this probability is down significantly from 70% in September. This adjustment is not surprising given that the VIX rose sharply from 14 on average during the 3Q18 polling period, to 19 during the 4Q18 period (19 is the VIX's long term average level).

Other areas of conviction include the belief that core inflation is unlikely to hit 2% in Japan and the Eurozone (30% and 37% probabilities respectively), that a Global recession is unlikely in the next 12 months (35%) and that Global business confidence is unlikely to improve from here (37%).

Investors remain confident that US 10-year yields will move higher (60% probability). However, conviction levels have come down significantly in the past three months, primarily driven by inflation expectations.

The probability of a rise in US real yields has remained stable in the past three months at 57%.

Chart 6: US real and nominal yields still expected to rise but with less conviction, especially on the inflation expectation front



Source: ASR Ltd. / Refinitiv

6) Investors have become equally split on Global stocks, as conviction in corporate earnings growth continues to drop

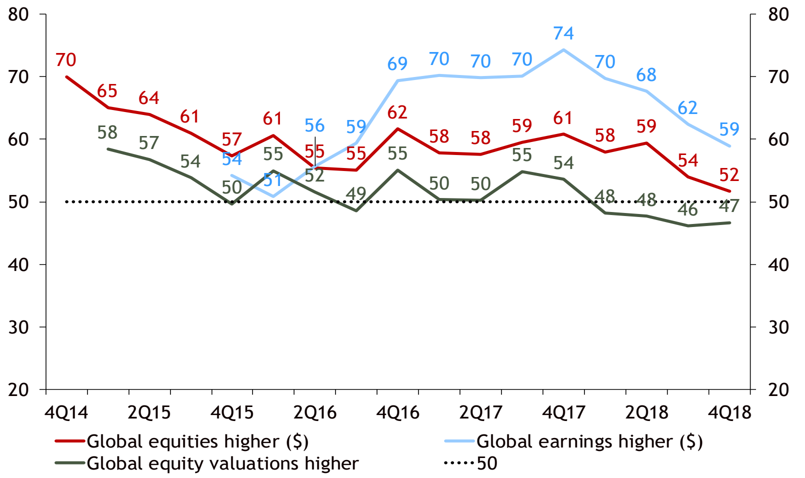
Investors are now equally split on Global equity prospects. They only place a 52% probability on Global equity prices moving higher in the next 12 months, down substantially from 61% a year ago.

This sharp drop in conviction is primarily driven by a reduced confidence that corporate earnings will grow (59% probability in December, vs 74% a year ago), and to a lower extent the expectation that valuation multiples will contract (they were expected to expand on a one-year view back in December 2017).

Investors have now become equally split on Global equity markets (52% probability of a rise).

Corporate earnings are still expected to grow in the coming year, but most of this should be offset by valuation compression.

Chart 7: Global equity prospects are revised down further



Source: ASR Ltd. / Refinitiv

7) With the odds of a bear market in US equities rising, investors reinforce their preference for Defensives/Cyclicals

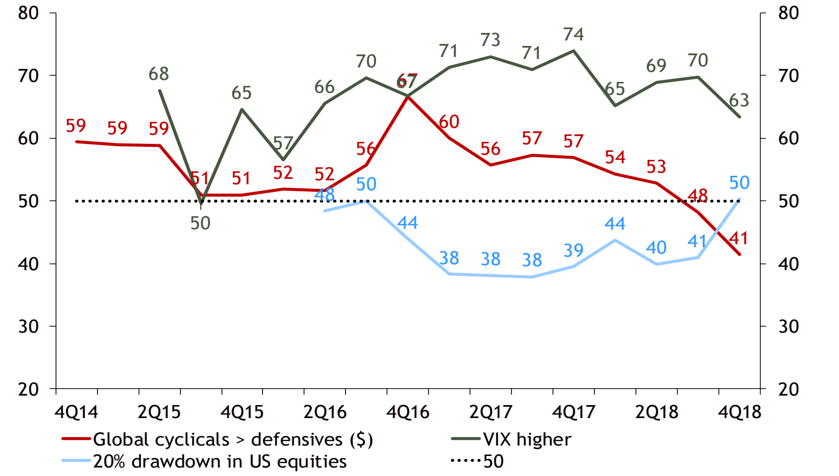
With US equities moving into correction territory, investors now see a 50% chance of a bear market at some point in the next 12 months. This represents a significant increase from 41% only three months ago. Investors also remain confident that equity volatility will rise in 2019 (63% probability).

Unsurprisingly in this environment, investors have reinforced their preference for defensive equities over the more economically sensitive ones. They were positive on Global cyclicals vs defensives until June this year and turned negative in September.

Confidence in Cyclicals / Defensives peaked two years ago but has been in a downtrend since.

Investors now expect Cyclicals to underperform Defensives, vs. equally split three months ago.

Chart 8: Defensives are increasingly favoured over Cyclicals



Source: ASR Ltd. / Refinitiv

8) Regional asset allocation preferences have reversed in the past 6 months, with investors now favouring EM vs DM

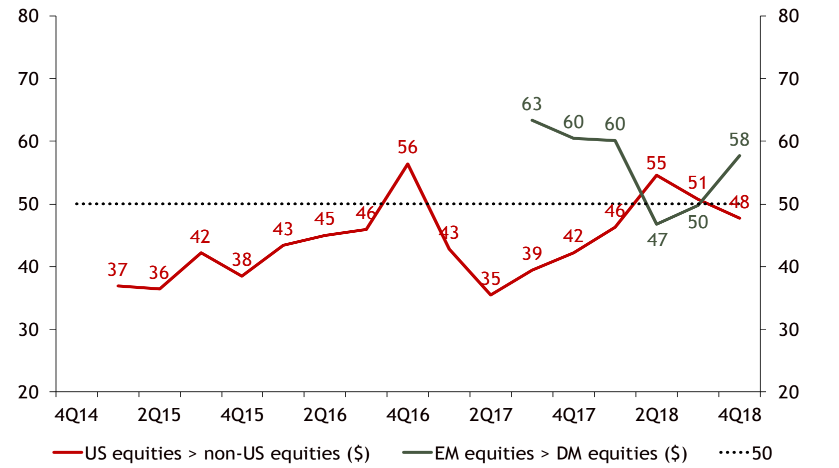
Interestingly this quarter, we have seen a significant reversal in regional preferences within the equity market. Investors have turned positive on emerging markets and see a 58% probability of EM outperforming DM in the next 12 months, vs 50% in September. This follows the 6% outperformance of EM vs DM between the 3Q and 4Q polling periods.

The renewed preference for EM vs DM may seem surprising at a time when global growth is slowing down, but it is consistent with the now bearish views on the USD. Emerging markets hold large amounts of dollar-denominated debt, and in the past, have tended to outperform in periods when the USD was depreciating.

A small balance of investors now expects US equities to underperform the rest of the world, also a reversal of the views held six months ago.

Investors now favour EM vs DM and non-US stocks over their US peers.

Chart 9: Investors are now positive on EM vs DM



Source: ASR Ltd. / Refinitiv

Survey Responses: Macro Environment & Tail Risks

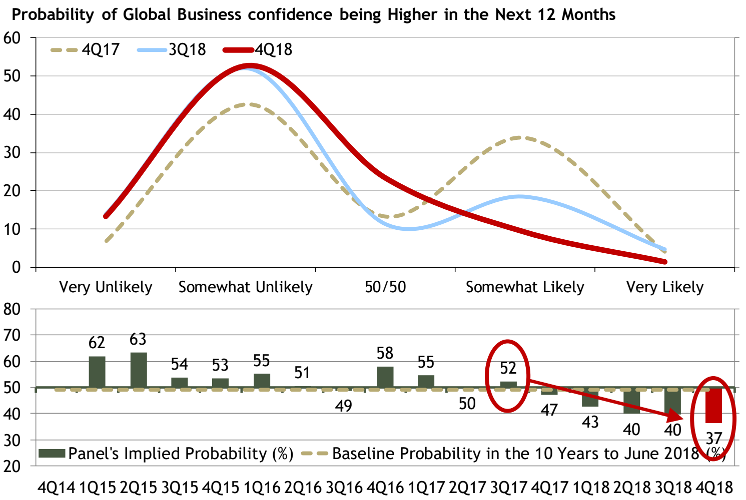
In the past few months, investors have become increasingly confident that global business confidence is unlikely to improve from its current elevated level. They believe that the best of global growth is now behind us.

The probability of an improvement in global business confidence has declined to 37% in December, down substantially from 52% in September 2017 (see Chart 10).

A global recession remains unlikely over the next 12 months, with a 35% probability. However, this represents a significant increase from 27% a year ago (Chart 11).

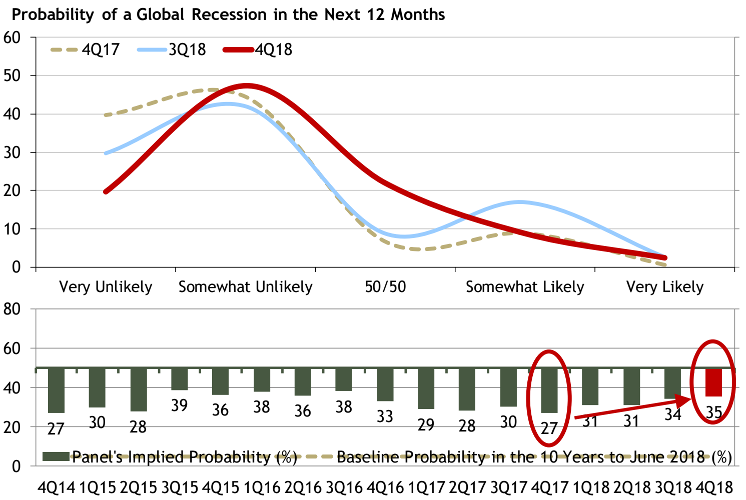
A small balance of investors believe that the US unemployment rate is now likely to increase from its multi-decade low over the next 12 months. This translates into a 52% probability, up from 40% a year ago. This represents the first time since we started asking the question in September 2015, that our panel expects a deterioration in the US labour market (Chart 12).

Chart 10: Probability of global business confidence being higher



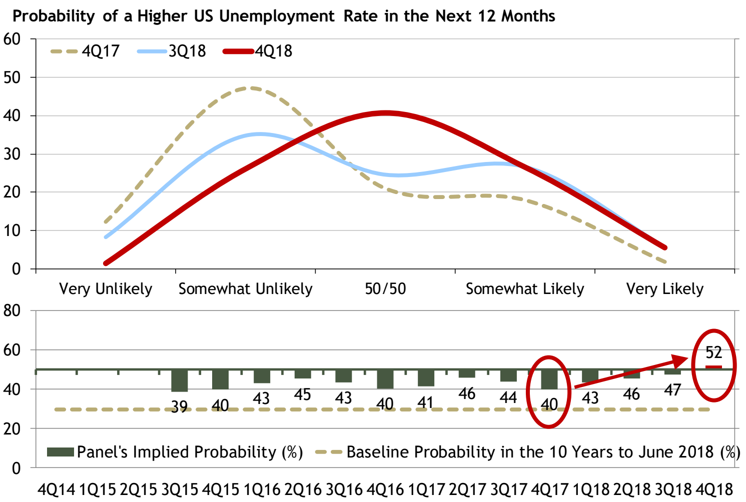
Source: ASR Ltd. / Refinitiv

Chart 11: Probability of a global recession in the next 12 months



Source: ASR Ltd. / Refinitiv

Chart 12: Probability of a rise in the US unemployment rate



Source: ASR Ltd. / Refinitiv

Survey Responses: Core Inflation

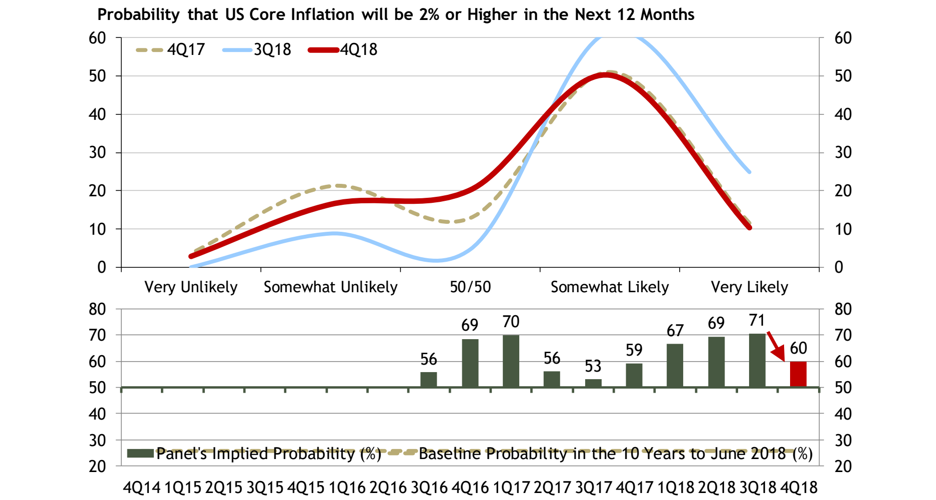
Investors now see a 60% probability that US core inflation will be 2% or higher in a year's time, down substantially from 71% in September.

This is the biggest change in investor expectations this quarter.

This follows the decline in the US core PCE from 2.0% in July to 1.8% in October.

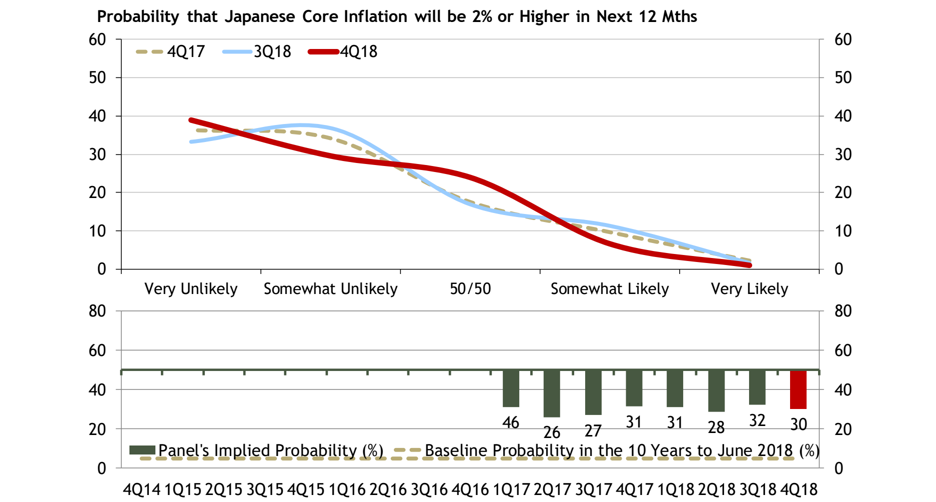
In contrast, in Japan and the Eurozone investors continue to believe that core inflation is unlikely to hit 2% in the coming year, with implied probabilities of 30% and 37% respectively, down modestly in the past three months (see Charts 14 and 15).

Chart 13: Probability that US core inflation will be 2% or higher



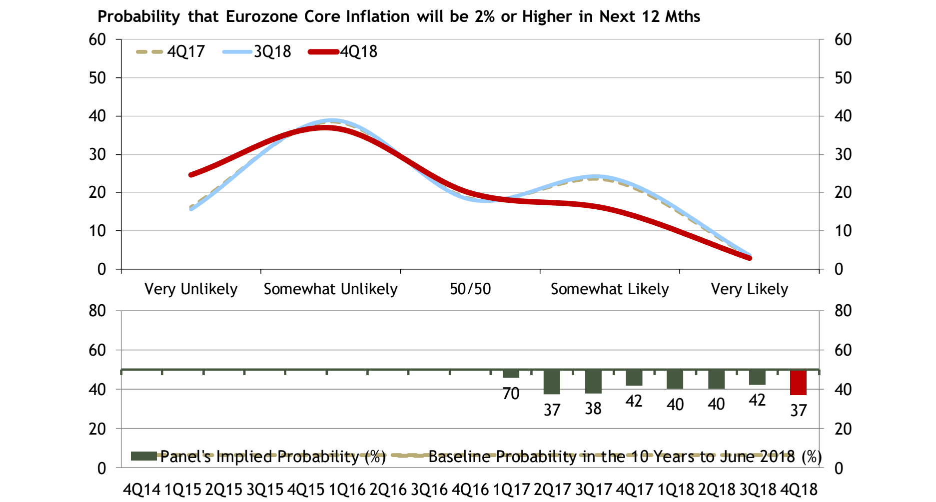
Source: ASR Ltd. / Refinitiv

Chart 14: Probability that Japanese core inflation will be 2% or higher



Source: ASR Ltd. / Refinitiv

Chart 15: Probability that Eurozone core inflation will be 2% or higher



Source: ASR Ltd. / Refinitiv

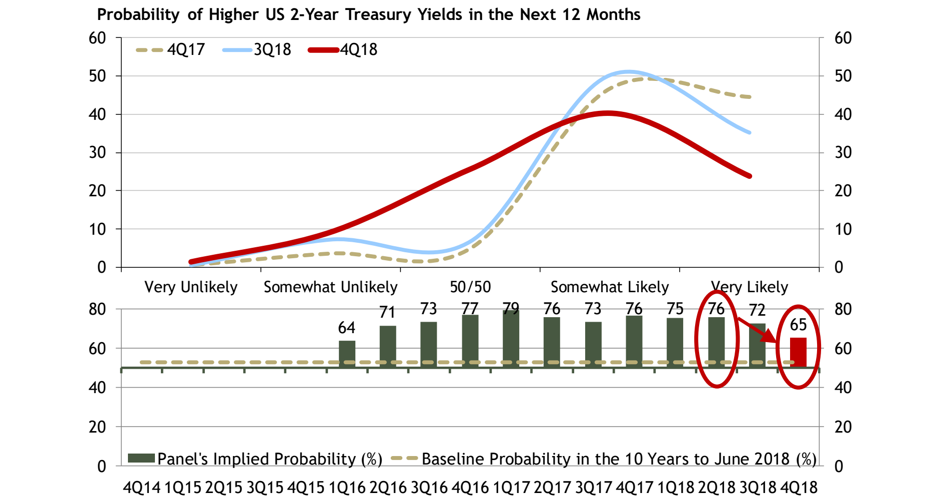
Survey Responses: Interest Rates

Historically, the area of interest rates is where investors have registered some of the strongest convictions in the survey. This is true again this quarter, even though confidence levels have declined significantly in the past six months.

Investors remain convinced that 2-year and 10-year US Treasury yields will move higher in the next 12 months, placing probabilities of 65% and 60% on those events respectively. This compares with 76% and 70% in June respectively (see Charts 16 and 17).

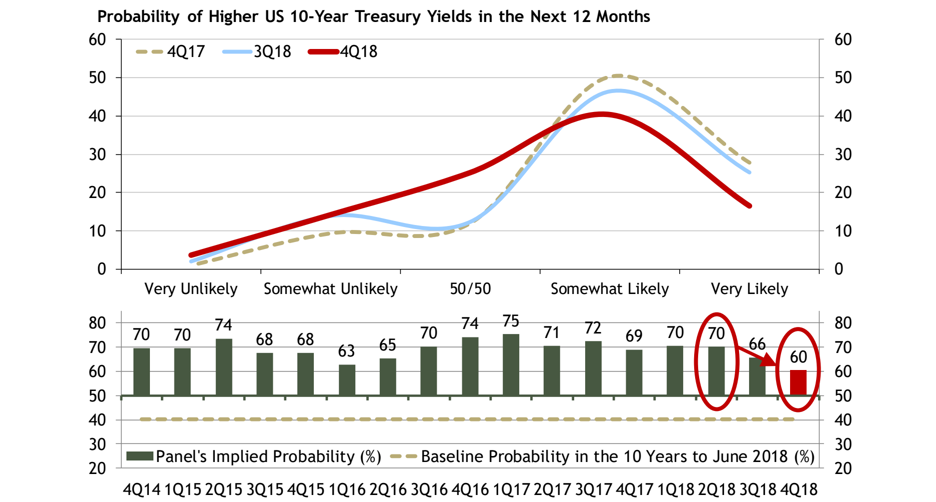
Our panel also expects 10-year yields to move higher in Germany and Japan, with implied probabilities of 67% and 60%, respectively. See Chart 18 for German 10-year Bund yields.

Chart 16: Probability that 2-Year UST yields will be higher



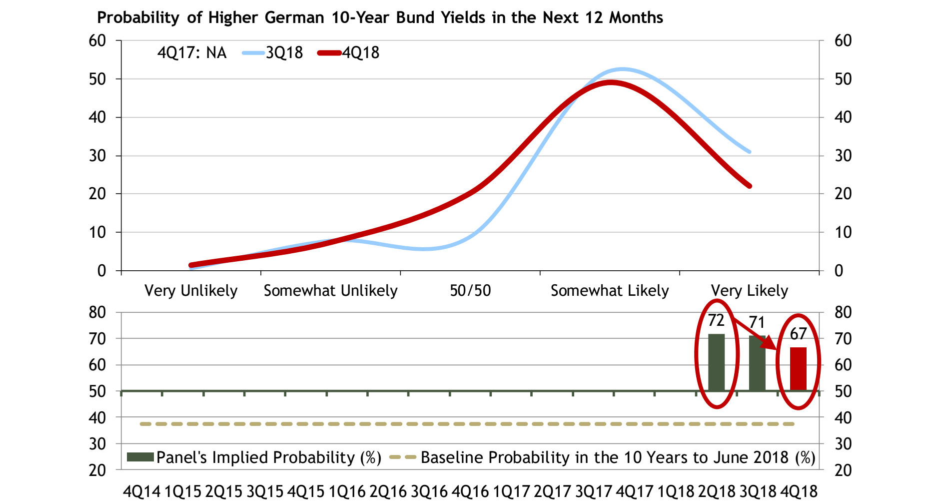
Source: ASR Ltd. / Refinitiv

Chart 17: Probability that 10-Year UST yields will be higher



Source: ASR Ltd. / Refinitiv

Chart 18: Probability that 10-Yr German Bund yields will be higher



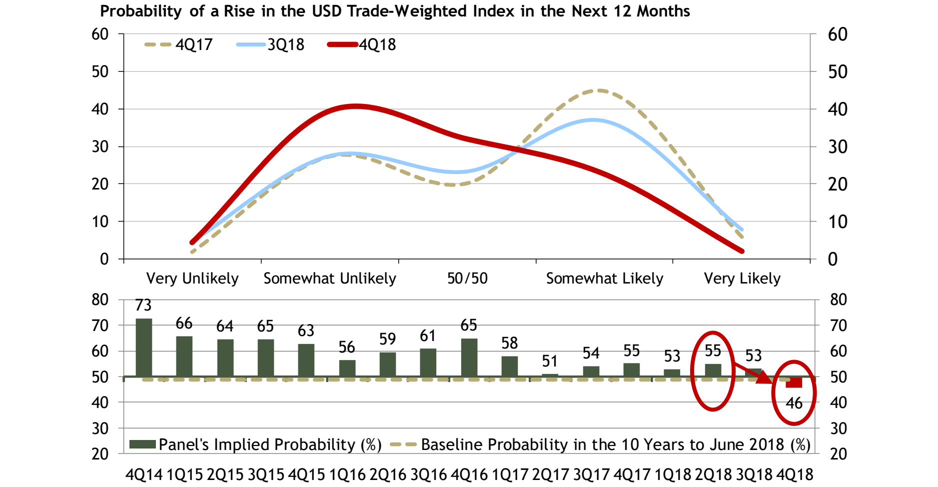
Source: ASR Ltd. / Refinitiv

Survey Responses: USD, US Real Yields & TIPS

For the first time since the survey was launched four years ago, investors have become bearish on the USD on a one-year view.

The implied probability of a rise in the USD has declined to 46% in December, from 53% in September and 55% in June.

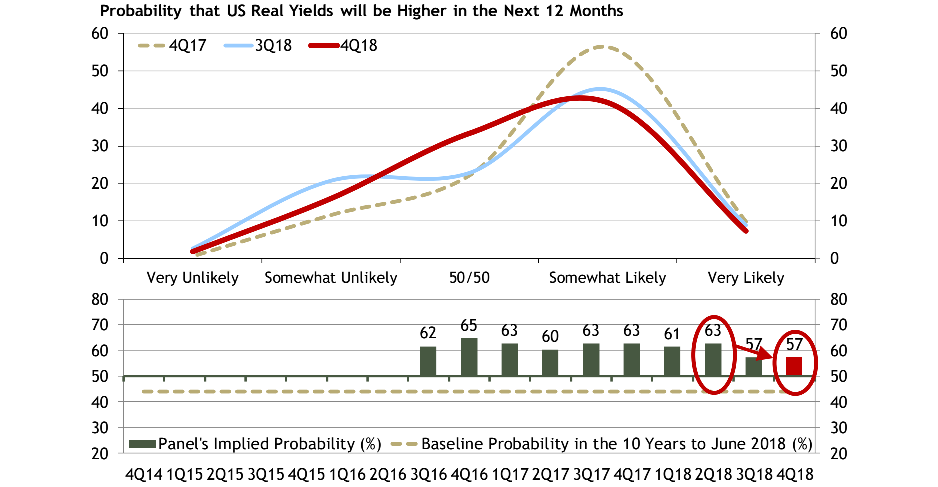
Chart 19: Probability of a rise in the USD trade-weighted index



Source: ASR Ltd. / Refinitiv

Investors see a 57% probability of a rise in US real yields in the coming year, down significantly from 63% in June.

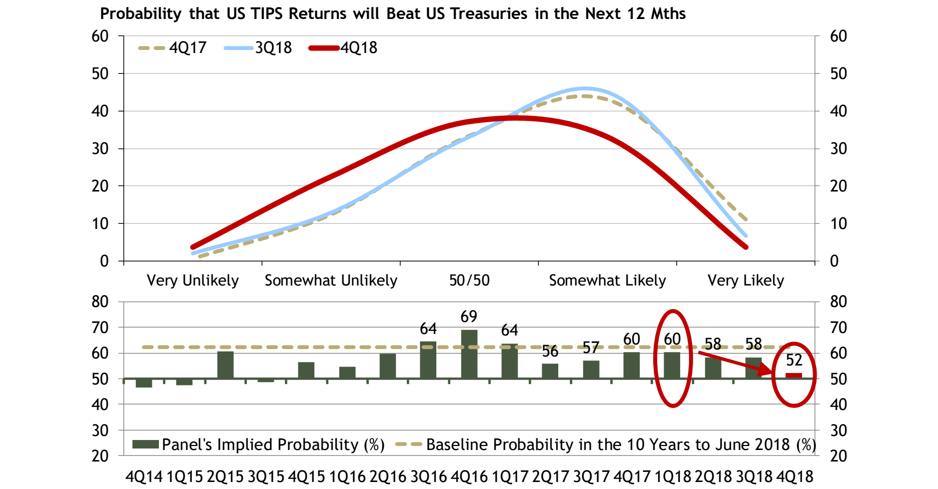
Chart 20: Probability that US real yields will be higher



Source: ASR Ltd. / Refinitiv

Consistent with their reduced inflation expectations in the US, investors have significantly reassessed their views on US TIPS vs. Treasuries. They now only see a 52% probability that US TIPS will outperform USTs, down from 58% in September.

Chart 21: Probability that US TIPS will outperform US Treasuries



Source: ASR Ltd. / Refinitiv

Survey Responses: US Corporate Credit & EM Debt

Consistent with their view that global business confidence is unlikely to improve from current elevated levels and that rates will move higher, investors have become significantly less confident on US credit in recent months.

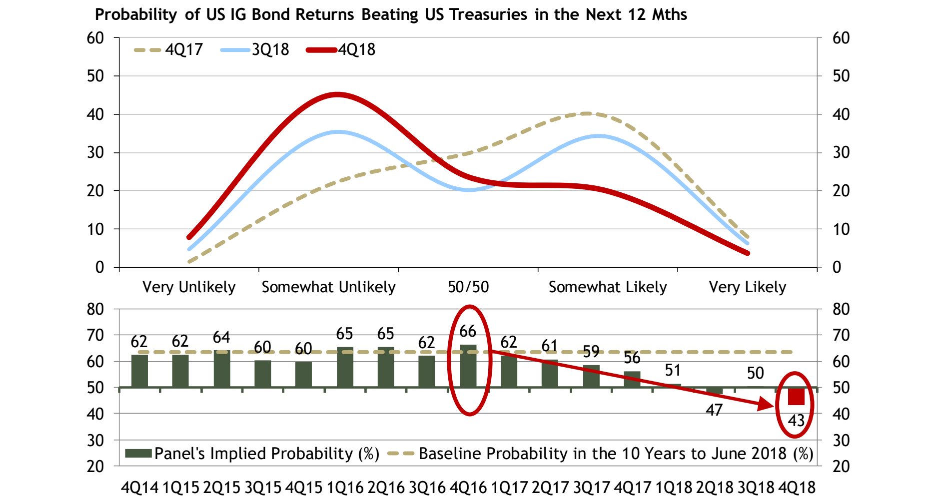
The probability of US investment grade bond returns outperforming USTs in the next 12 months has declined sharply from 66% in Dec. 2016 to 43% in Dec. 2018 (Chart 22).

Similarly, investors have become more confident that US HY will underperform US IG credit (vs neutral a year ago, Chart 23).

However, in line with their renewed preference for EM vs. DM equities, they have also become more positive on EM sovereign bonds vs US High Yield corporate bonds (Chart 24). They now see a 55% probability that EM sovereigns will beat US HY, up from 49% in June 2018 (Chart 24).

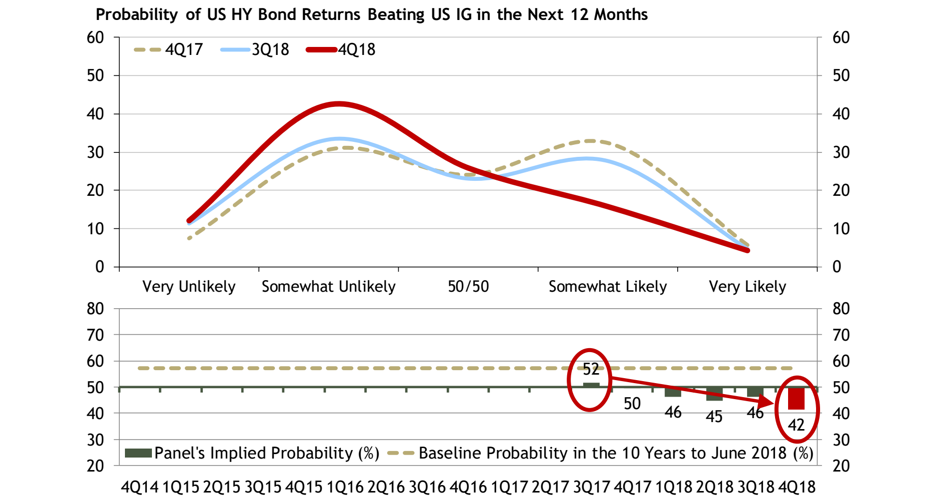
In the past 10 years, EM bonds have tended to outperform US HY in periods when Global bonds outperformed Global equities (79% correlation of the 6-month changes).

Chart 22: Probability that US IG bond returns will beat US Treasuries



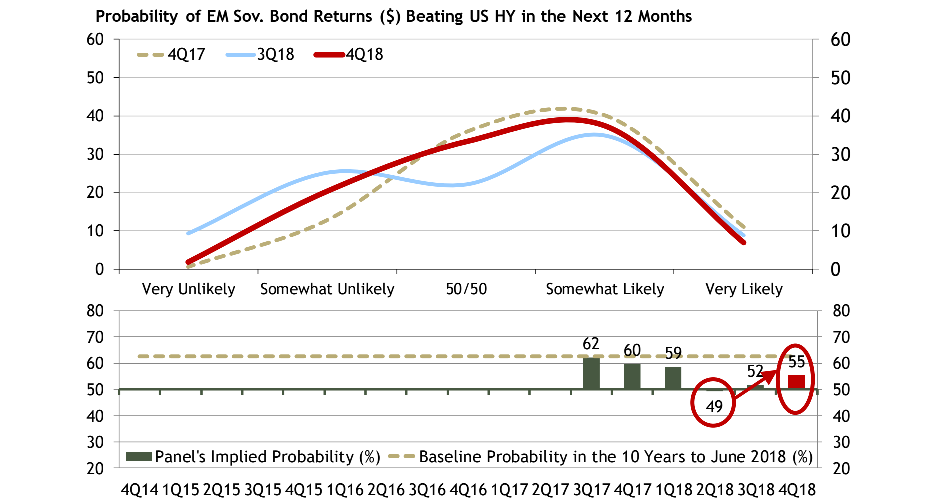
Source: ASR Ltd. / Refinitiv

Chart 23: Probability that US HY bond returns will beat US IG



Source: ASR Ltd. / Refinitiv

Chart 24: Probability that EM sovereign bond returns will beat US HY



Source: ASR Ltd. / Refinitiv

Survey Responses: Global Equity Drivers

After being positive on global equities for the past four years, investors have now become evenly split on the asset class (see Chart 25).

They see a 52% probability that global equities will rise, down substantially from 61% a year ago.

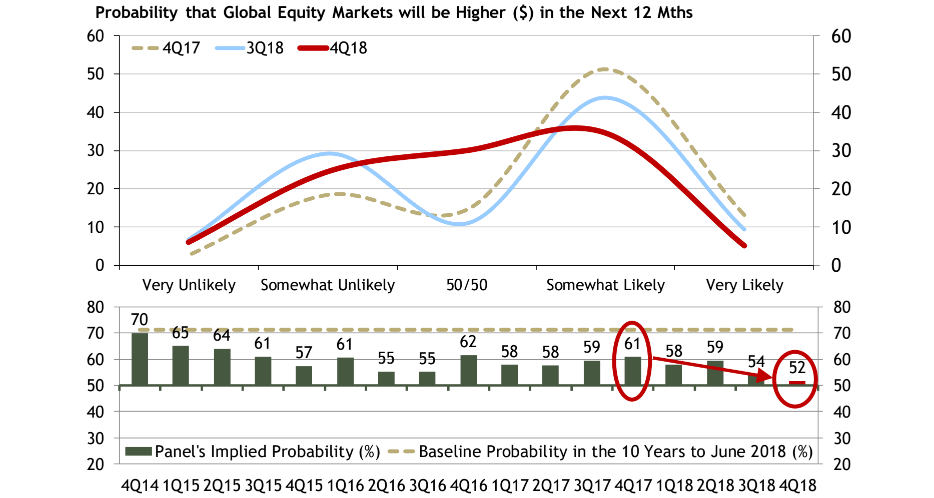
This reflects expectations of positive earnings growth, mostly offset by valuation compression.

The loss of conviction in global equities in the past year has been driven primarily by a sharp drop in confidence in corporate earnings growth, and to a lower extent by valuations.

The implied probability of an increase in corporate profits has declined sharply to 59% in December, from 74% a year ago (see Chart 26).

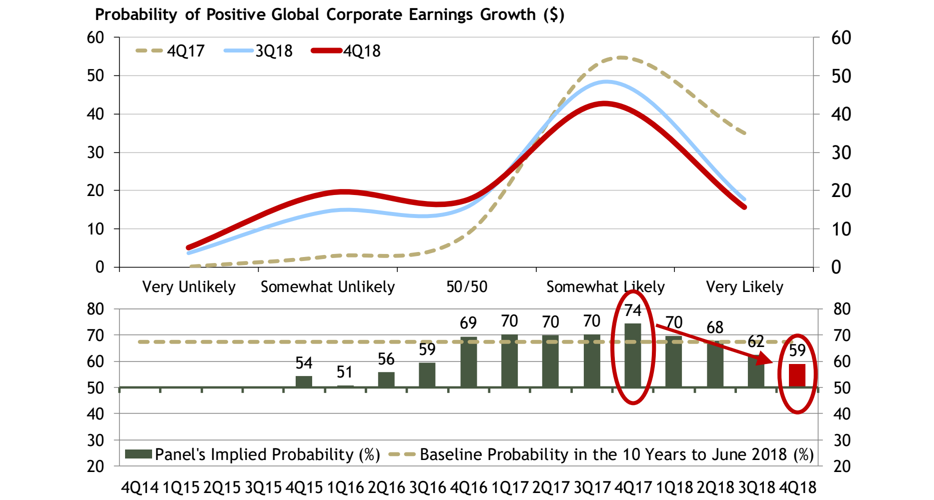
Moreover, over the same period, investors have turned bearish on valuations. The probability of a rise in valuations has declined to 47%, from 54% a year ago (Chart 27).

Chart 25: Probability that global equity markets will be higher



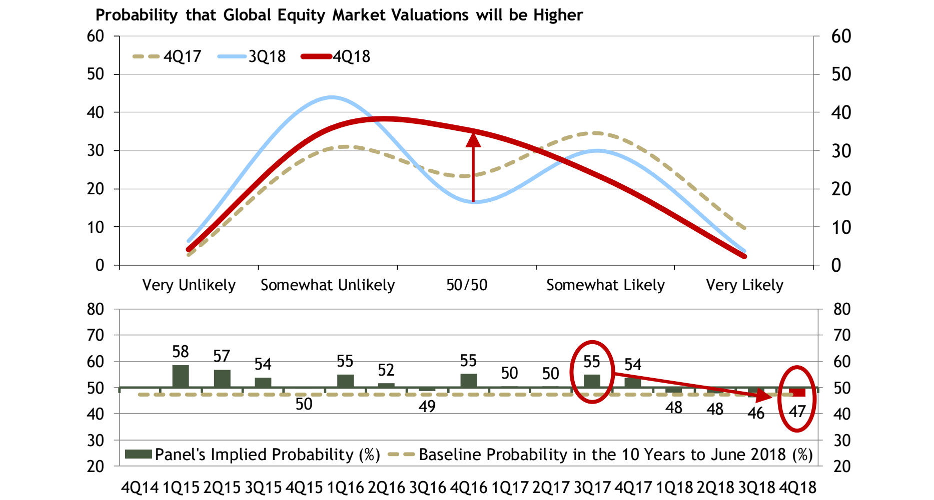
Source: ASR Ltd. / Refinitiv

Chart 26: Probability of positive global corporate earnings growth



Source: ASR Ltd. / Refinitiv

Chart 27: Probability that global equity valuations will be higher



Source: ASR Ltd. / Refinitiv

Survey Responses: Equity Risk Appetite

Similarly, investors have now become equally split on the likelihood of a bear market in US equities in the next 12 months. This represents the second biggest change in expectations this quarter (Chart 28).

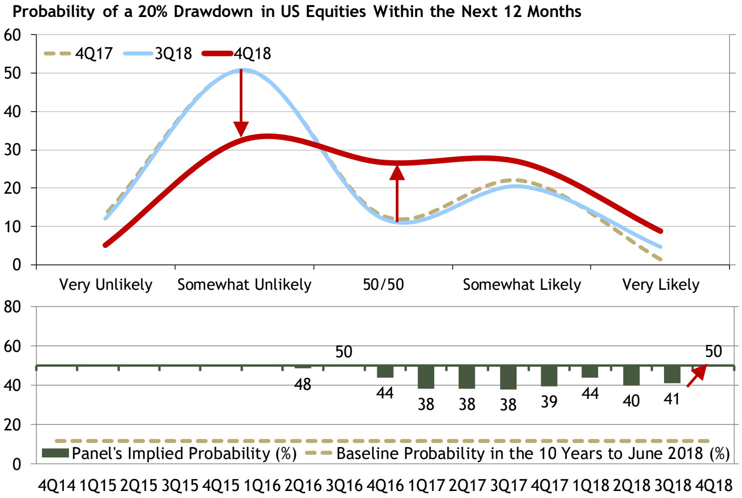
Investors remain confident that equity volatility will rise in the next 12 months, placing a 63% probability on that event, down markedly from 70% only three months ago (Chart 29).

This follows a significant jump in the VIX, from an average of 14 during the 3Q polling period, to 19 during the 4Q polling period.

Historically, periods of rising equity volatility have been associated with the under-performance of stocks vs bonds, credit vs Treasuries and cyclical stocks vs defensives.

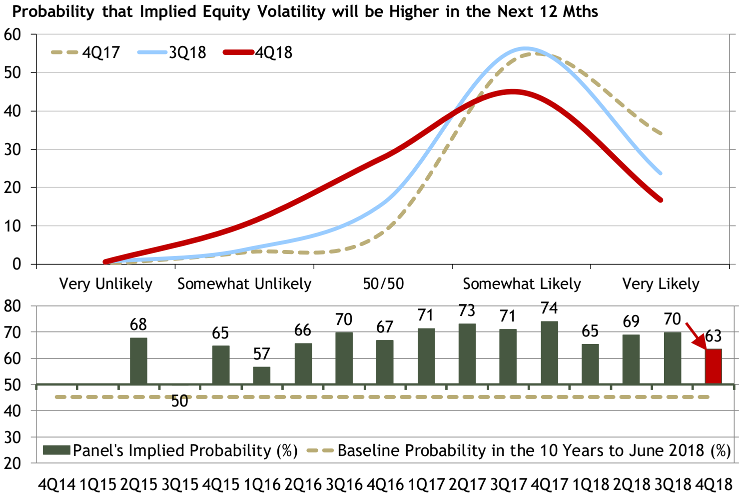
Investors have become more bearish on Cyclicals vs Defensives, with the probability of a Cyclicals' outperformance falling to 41% vs 48% three months ago and 67% two years ago (see Chart 30).

Chart 28: Probability of a 20% drawdown in US equities



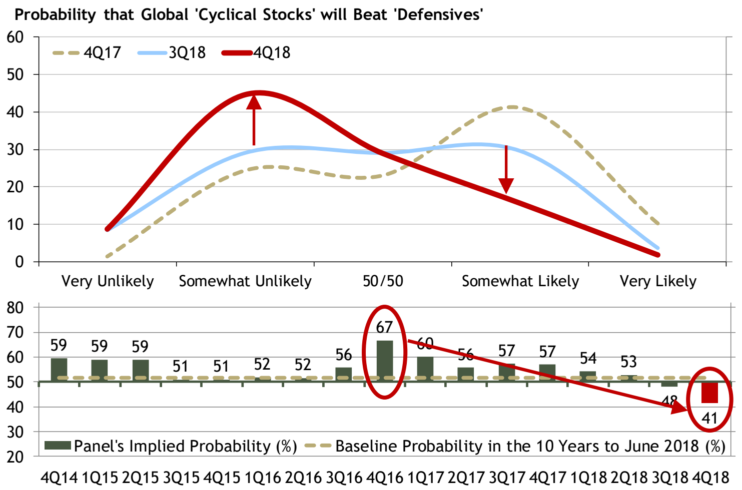
Source: ASR Ltd. / Refinitiv

Chart 29: Probability that the VIX will be higher



Source: ASR Ltd. / Refinitiv

Chart 30: Probability that Global Cyclicals will beat Defensives



Source: ASR Ltd. / Refinitiv

Survey Responses: Regional Equity & Factor Allocation

This quarter, we have seen notable reversals in regional equity preferences.

The third biggest change in expectations this quarter relates to the view on EM / DM, with our panel now bullish on emerging markets (Chart 31).

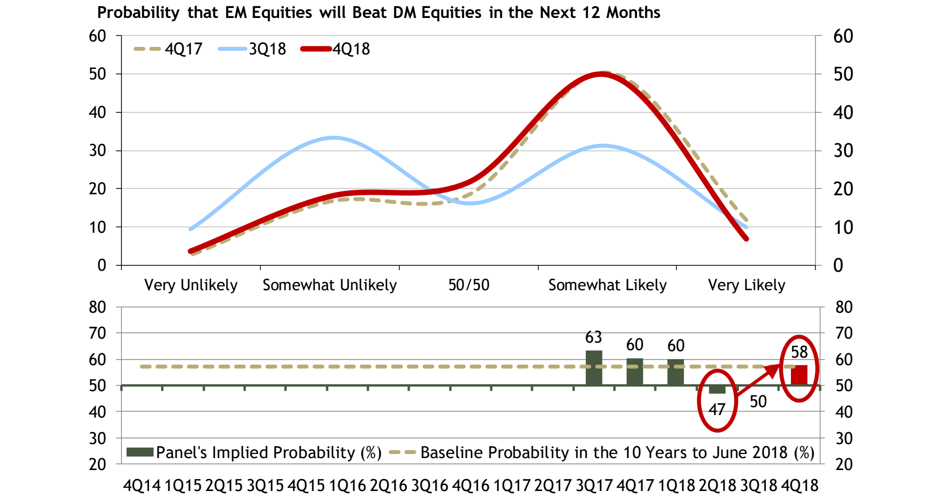
Investors now see a 58% probability of EM outperforming DM in the next 12 months, up from 50% in September and 47% in June.

This follows the 6% outperformance of EM vs DM between the 3Q and the 4Q polling periods, and it is consistent with the bearish view on the USD. In the past decade, EM have tended to outperform in periods when the USD has depreciated.

Linked to that call (US equities make up over half the market cap of developed markets), investors have now become slightly bearish on US equities in a relative context.

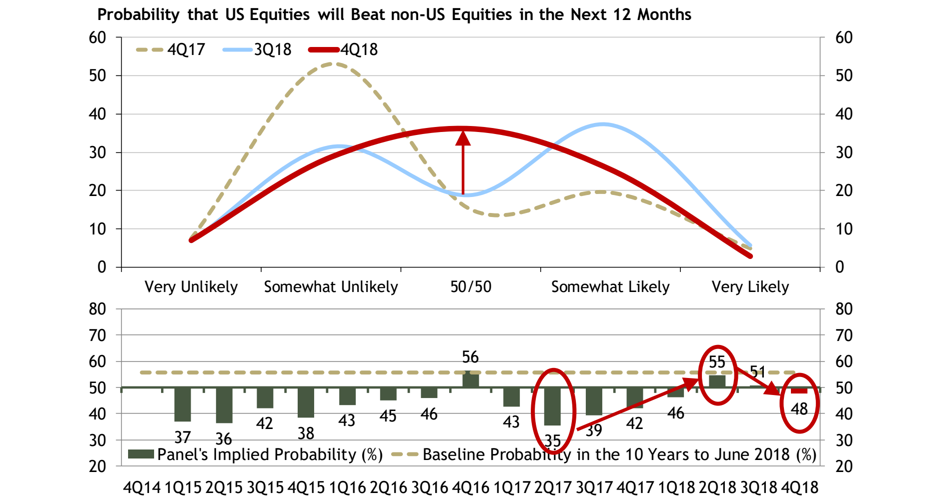
They now see a 48% probability of US equities outperforming the rest of the world in the coming year, down from 51% in September and 55% in June (see Chart 32).

Chart 31: Probability that EM equities will outperform DM equities



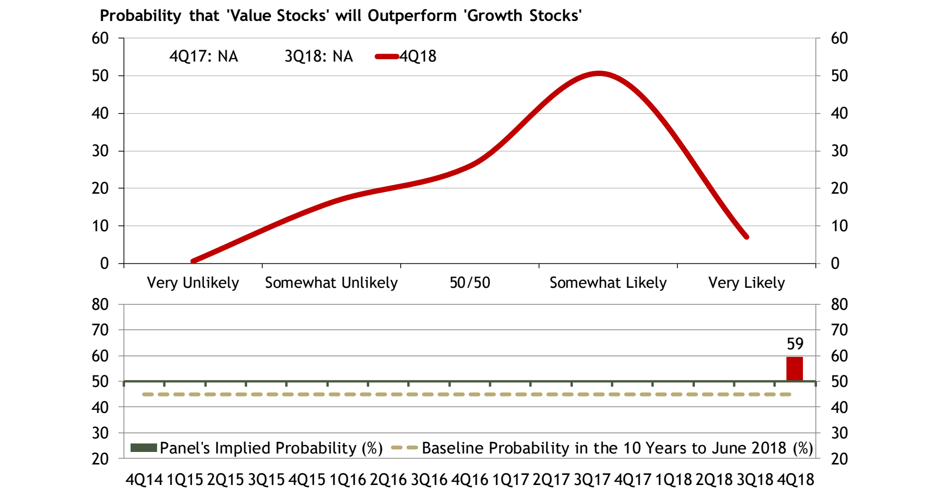
Source: ASR Ltd. / Refinitiv

Chart 32: Probability that US equities will beat non-US equities



Source: ASR Ltd. / Refinitiv

Chart 33: Probability that Value stocks will beat Growth stocks



Source: ASR Ltd. / Refinitiv

Survey Responses: Asset Allocation

Investors continue to believe that equities will beat bonds globally in the next 12 months, albeit with significantly less confidence than six months ago (Chart 34).

The probability of stocks outperforming bonds has declined to 59% in December, from 69% in June.

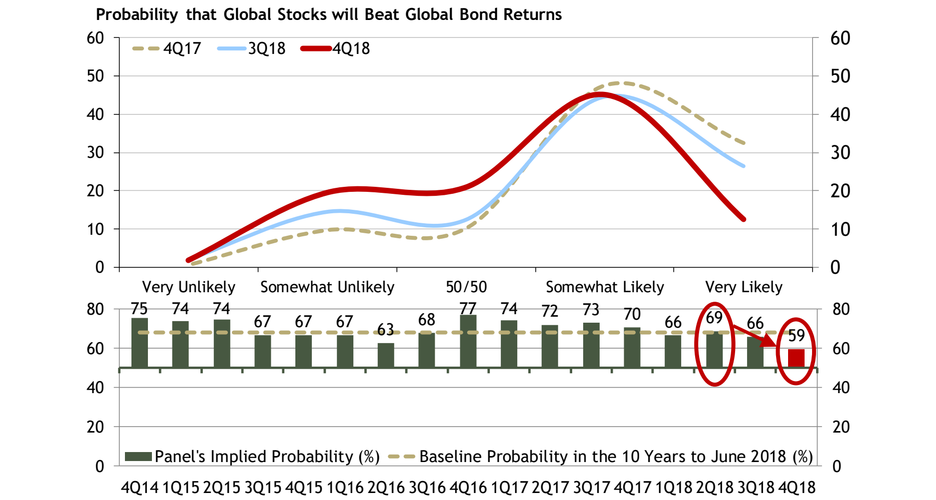
The preference for stocks vs bonds is primarily driven by expectations of lower bond returns globally (higher bond yields in the US, Germany and Japan), as opposed to higher equity returns in the coming year.

For the first time in three years, a small majority of investors believe that the US unemployment rate is likely to rise in the coming year (52% probability, Chart 35).

This is an important development, as historically, increases in US unemployment have been associated with rotation out of stocks into bonds.

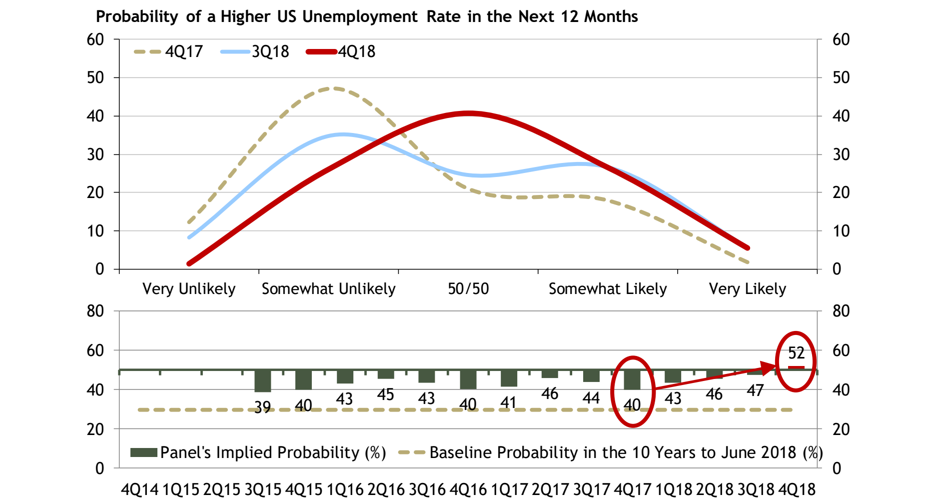
Another important reassessment this quarter shows investors turning bearish on US Investment Grade credit vs Treasuries, for the 2nd time in four years (Chart 36).

Chart 34: Probability that global stocks will beat global bond returns



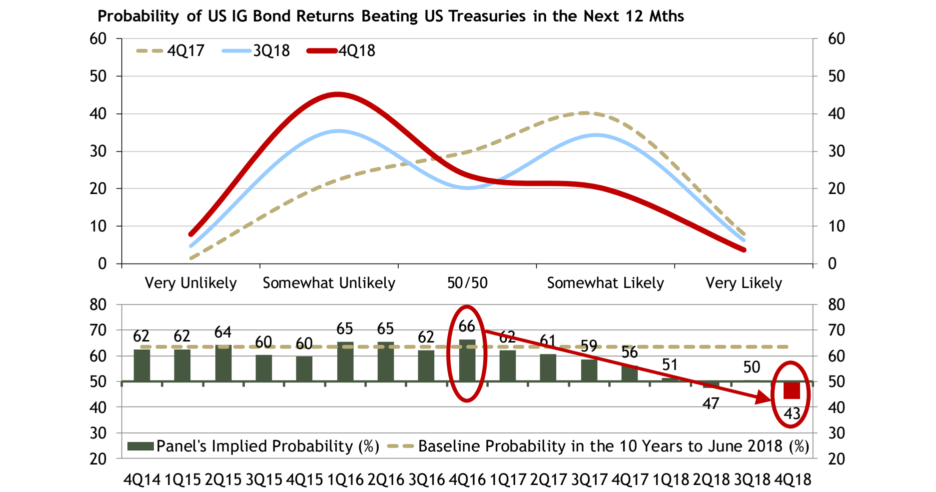
Source: ASR Ltd. / Refinitiv

Chart 35: Probability of a higher US unemployment rate



Source: ASR Ltd. / Refinitiv

Chart 36: Probability that US IG credit will beat US Treasuries



Source: ASR Ltd. / Refinitiv

Survey Responses: Commodities

Consistent with their bearish macro outlook and their preference for defensive assets, investors expect Gold to appreciate in the next 12 months and outperform Industrial Metal prices.

They see a 58% probability that the price of Gold will rise, up from 54% three months ago (Chart 37).

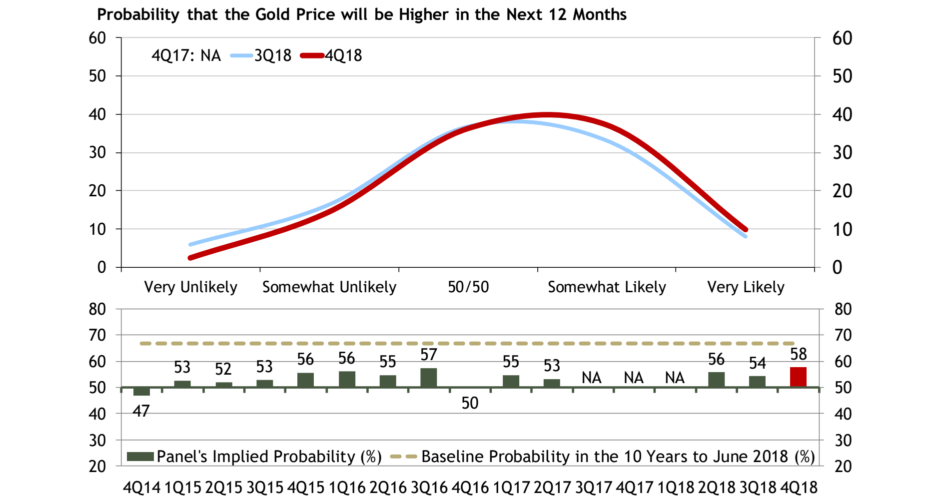
Similarly, they see Industrial Metal prices underperforming Gold, with a probability of 47%, down from 53% three months ago (Chart 38).

Investors maintained a small preference for Oil vs Gold (54% probability of Oil outperforming Gold, Chart 38).

This follows the 23% underperformance of Oil vs Gold between the 3Q and the 4Q polling periods.

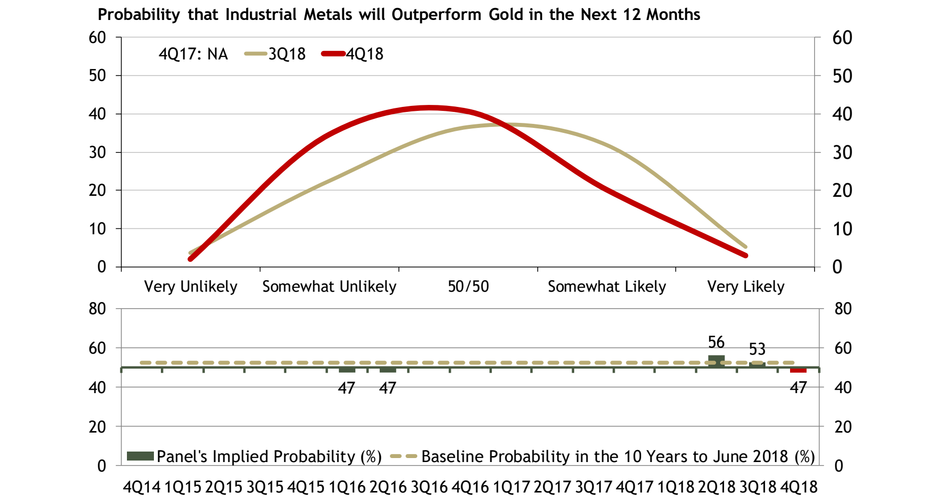
Oil / gold and industrial metals / precious metals have historically been good cross-checks for other risk-on pairs such as equities / bonds, cyclical stocks / defensive stocks, US high yield / investment grade credit (strong positive correlation).

Chart 37: Probability that the gold price will be higher



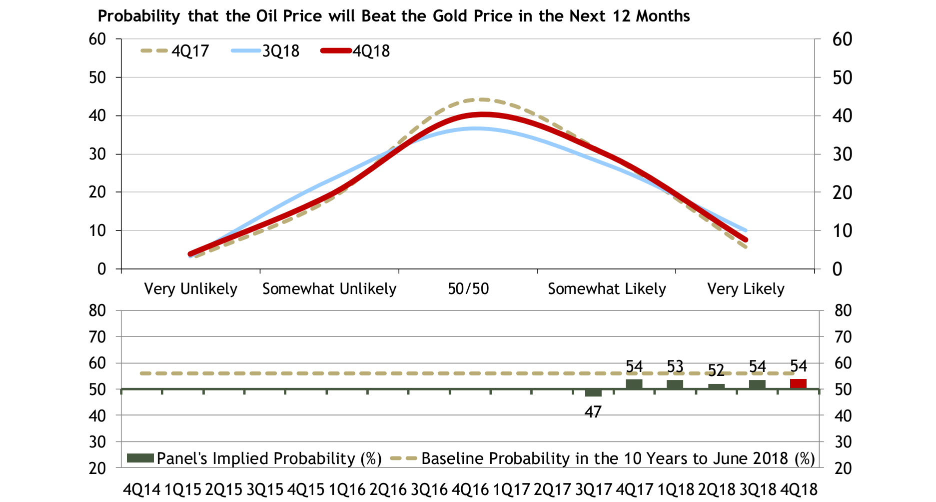
Source: ASR Ltd. / Refinitiv

Chart 38: Probability that industrial metals will outperform gold



Source: ASR Ltd. / Refinitiv

Chart 39: Probability that oil will outperform gold



Source: ASR Ltd. / Refinitiv

Indicators of Anchoring, Responsiveness & Capitulation

Charts 40 to 45 illustrate the degree of 'anchoring' in investors' views.

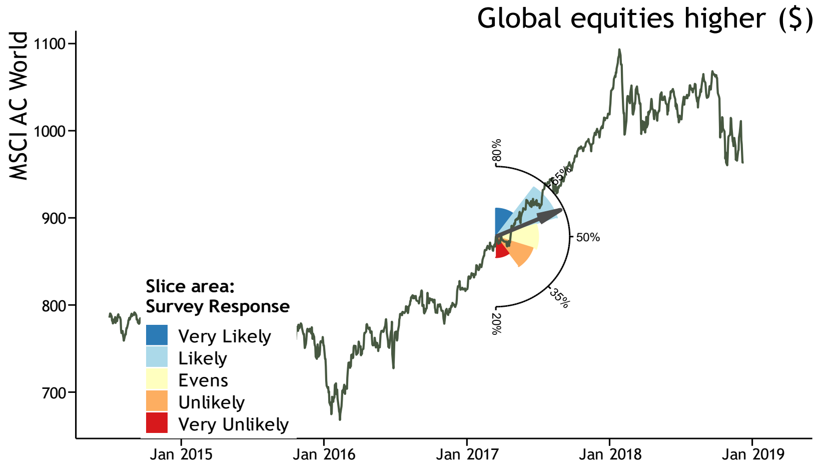
They highlight the degree to which investors' expectations have changed (or not) in the past 3 years, following changes in the macro-environment or financial market performance.

The implied probabilities in the survey are represented by the angle of the arrows. An arrow pointing upwards is consistent with the panel expecting the financial measure to rise, or the event to materialise, in the following 12 months and vice versa. Blue (red) arrows highlight a significant increase (decline) in implied probability versus the previous quarterly survey, i.e. greater than 4%. Click here for more details.

Chart 41 and 42 are good examples of 'anchoring' in investors' views.

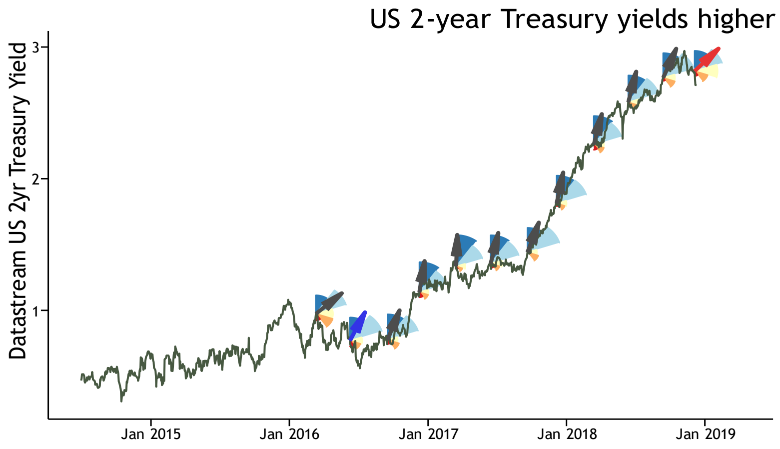
Expectations of a rise in 2Y UST yields and global equity markets have been very stable in recent quarters. This may be partially due to the trending nature of those series

Chart 40: How to Read the Following Charts - More details here



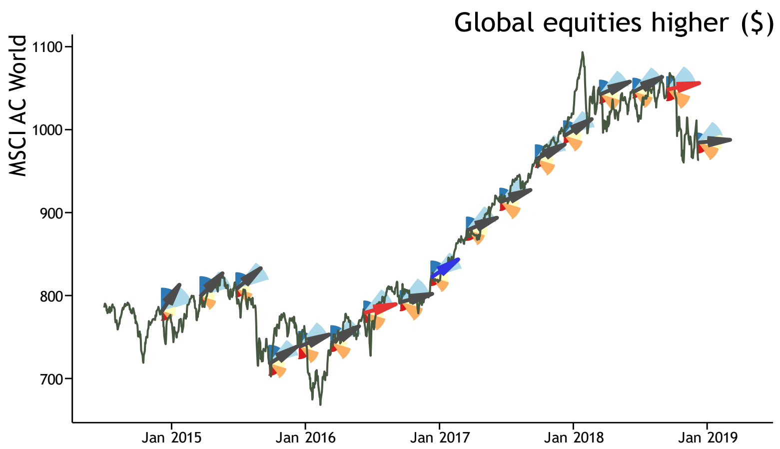
Source: ASR Ltd. / Refinitiv

Chart 41: Probabilities of US 2-year Treasury yields moving higher



Source: ASR Ltd. / Refinitiv

Chart 42: Probabilities of a rise in global equity prices in USD terms



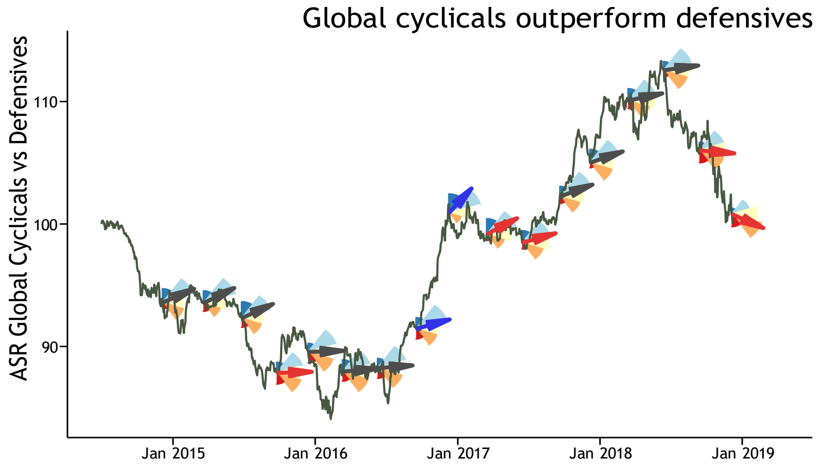
Source: ASR Ltd. / Refinitiv

during the period. However, in the case of global equities, there might be some element of behavioural bias. When global stocks lost -9% of their value between 2Q15 and 3Q15, or -6% between 3Q18 and 4Q18, investors barely reassessed their expectations. The probability of a rise in equities went from 64% in 2Q15 to 61% in 3Q15, and from 54% in 3Q18 to 52% in 4Q18 (Chart 42). Similarly, in the past 12 months, the outlook for equities has been revised downward, but to a much smaller extent than the views on corporate earnings.

In contrast, Charts 43 to 45 offer good examples of more dynamic behaviours on the part of investors.

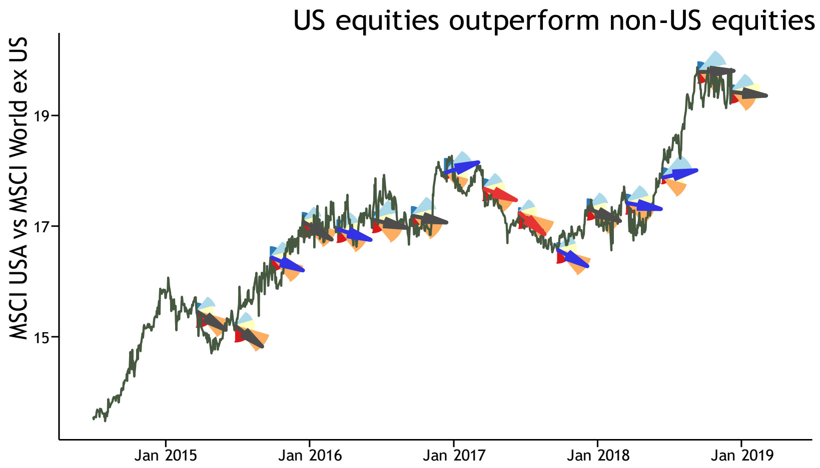
In recent quarters, investors have been more active in revising their views about Cyclicals/Defensives, US/non-US equities and EM/DM equities (Charts 43 to 45). This could be explained by the 'less-trending' nature of those series, by more frequent or more sudden changes in their fundamental drivers, or simply by different behavioural biases.

Chart 43: Probabilities of Global Cyclicals outperforming Defensives



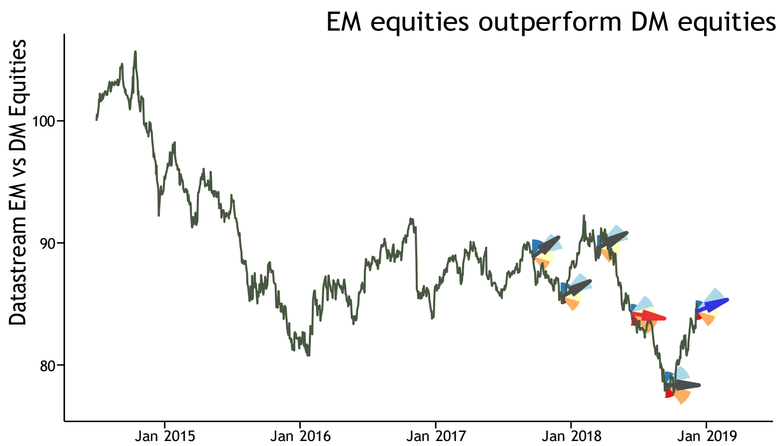
Source: ASR Ltd. / Refinitiv

Chart 44: Probabilities of US equities outperforming non-US



Source: ASR Ltd. / Refinitiv

Chart 45: Probabilities of EM equities outperforming DM



Source: ASR Ltd. / Refinitiv

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Inflation Views Divide the Bears

An AI based analysis divides our panel into 3 groups of which two are risk averse. The optimistic group remains positive on equities even though they don't expect the economy to accelerate. Among the cautious investors the big division is over whether inflation and bond yields rise further.

Three major groupings of investors

Each quarter, we use artificial intelligence or machine learning techniques to categorise our panellists into different groups, to get more detail about how investors' viewpoints are changing. Our approach is 'unsupervised' which means we don't predefine the size or characteristics of the groups, but instead find the 'most likely' way our panel would divide. We then interpret the average views of each of the groups (Charts 46 to 50).

Again, this quarter our analysis says that the optimal split of our panellists is into 3 groups.

Continuing Growth (49%):
Business confidence steady, unemployment flat, inflation and bond yields rising. Positive on most risk assets.

The largest group (**Continuing Growth, 49%**) with almost half of the panellists is positive on risk assets even though they don't expect the economy to accelerate. They expect business confidence to be largely stable, like unemployment and can't see a recession on the horizon. To them, US inflation will continue to rise leading to higher bond yields around the world and along the curve. Corporate earnings will remain good and so credit will not be an issue. For these panellists, the opportunity lies in EM equities, although they are not willing to venture into Cyclicals or Value stocks, despite a view that the oil price will rise.

Inflationary Slowdown (28%):
Falling business confidence, but still expect inflation and bond yields to rise. Cautious on risk assets and bonds.

The other two groups are cautious about the economy and risk assets. What splits them is their view on inflation and bond yields.

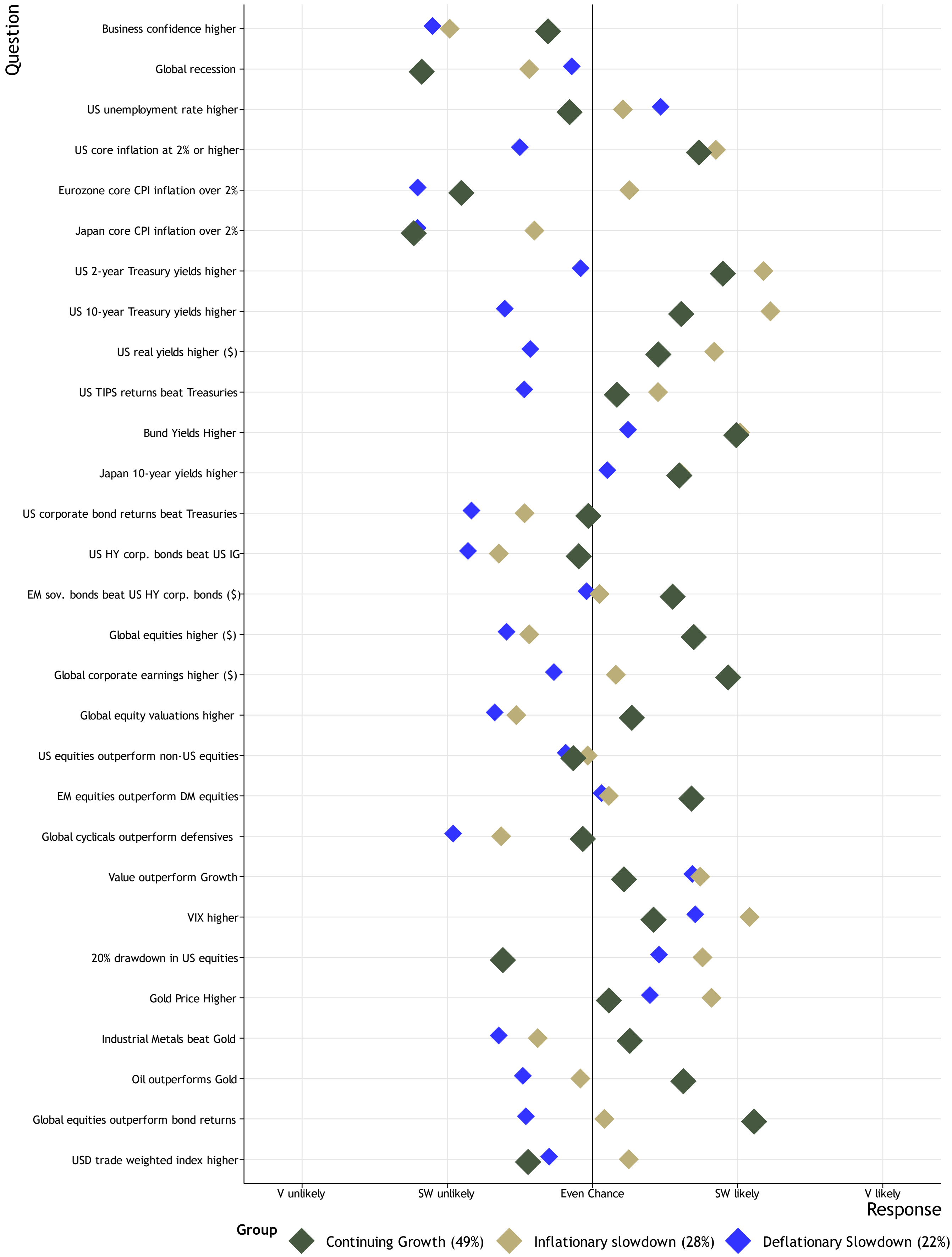
The larger group (**Inflationary Slowdown, 28%**) expects business confidence to fall and US unemployment to edge higher. But importantly these panellists expect inflation to rise both in the US and around the world. This group sees equities de-rating and so falling, but by the same amount as bonds. They prefer defensives and Value stocks.

Deflationary Slowdown (22%):
Falling business confidence, and rising unemployment. Inflation and bond yields to fall. Cautious on risk assets and favours defensive stocks.

Our final group (**Deflationary Slowdown, 22%**) expects business confidence to fall as well, but these panellists see unemployment rising and so expect inflation rates to decline, rather than rise. This feeds through to a view that bond yields are going to fall and credit spreads widen. So US Treasuries are expected to outperform equities and corporate credit. This generalised risk aversion pushes them strongly into Defensive stocks. But they see equities in all the regions being equally at risk.

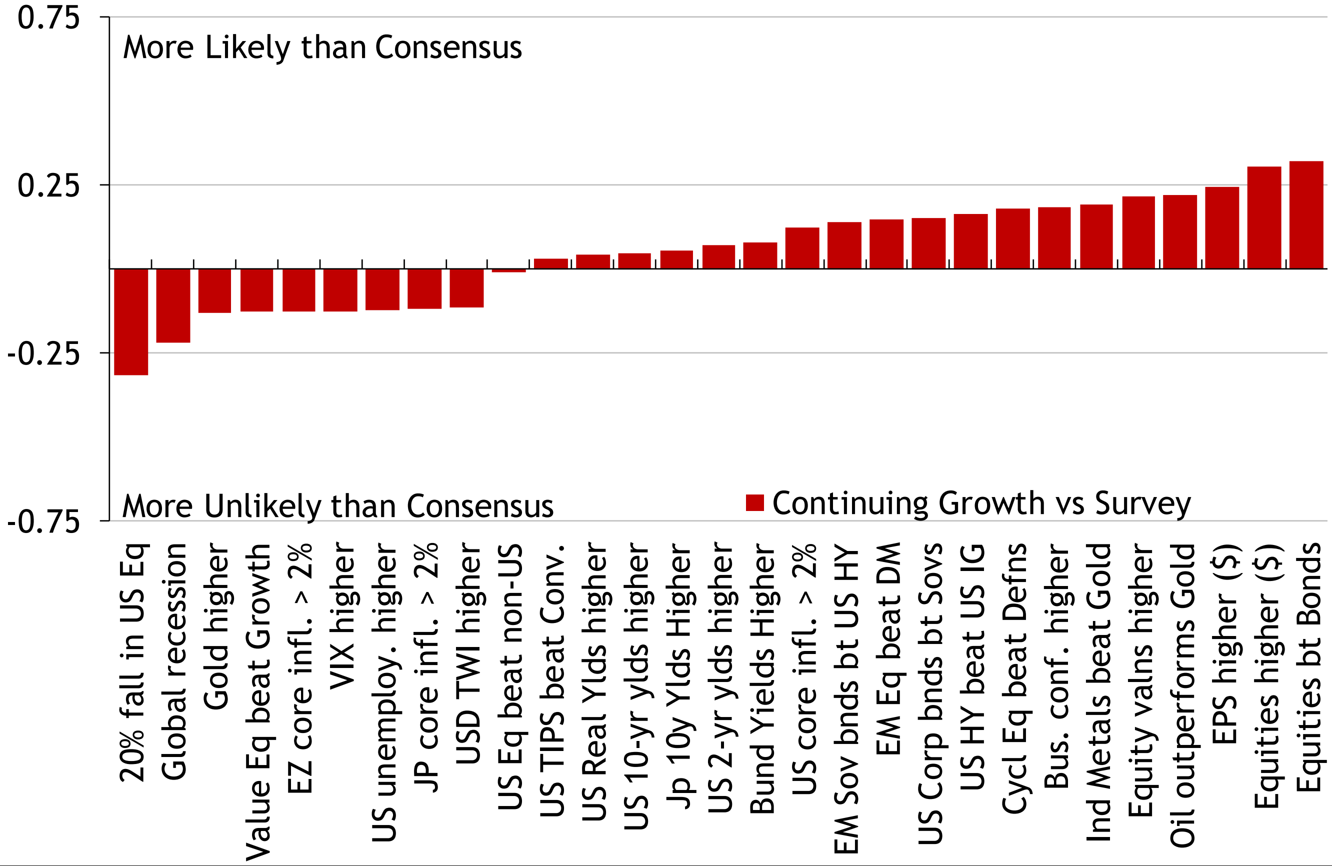
Methodology
We use a 'model-based clustering' technique to group together respondents with similar views. We determine the optimal number of groups by finding the smallest number of groups that maximises the (Bayesian) information coefficient. Further details are at the end of this article.

Chart 46: Average response of the three groups identified in our Machine Learning Analysis



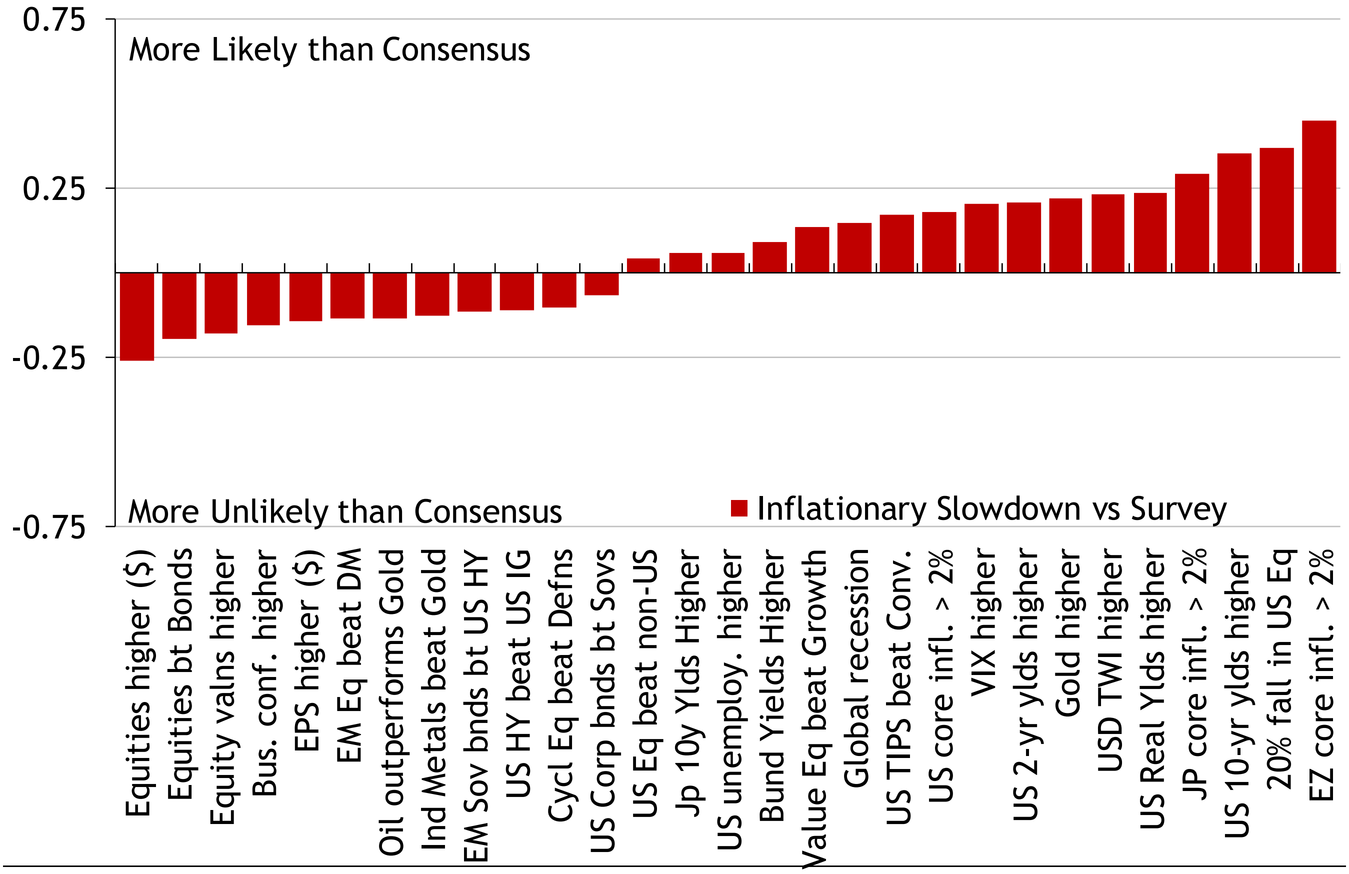
Source: ASR Ltd. / Refinitiv

Chart 47: Comparison of 'Continuing Growth' Group (49%) with Survey



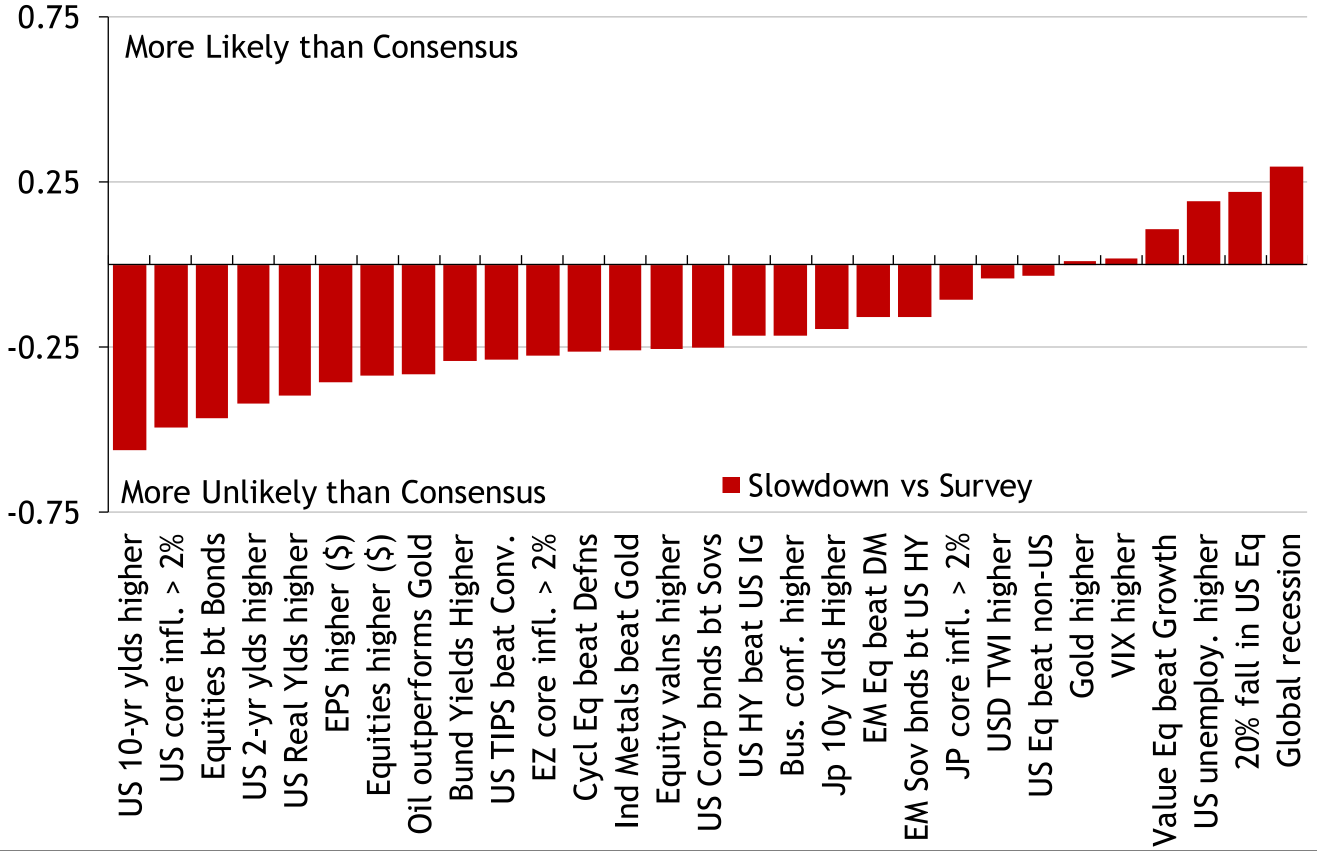
Views expressed in 'notches' Source: ASR Ltd. / Refinitiv

Chart 48: Comparison of 'Inflationary Slowdown' (28%) Group with Survey



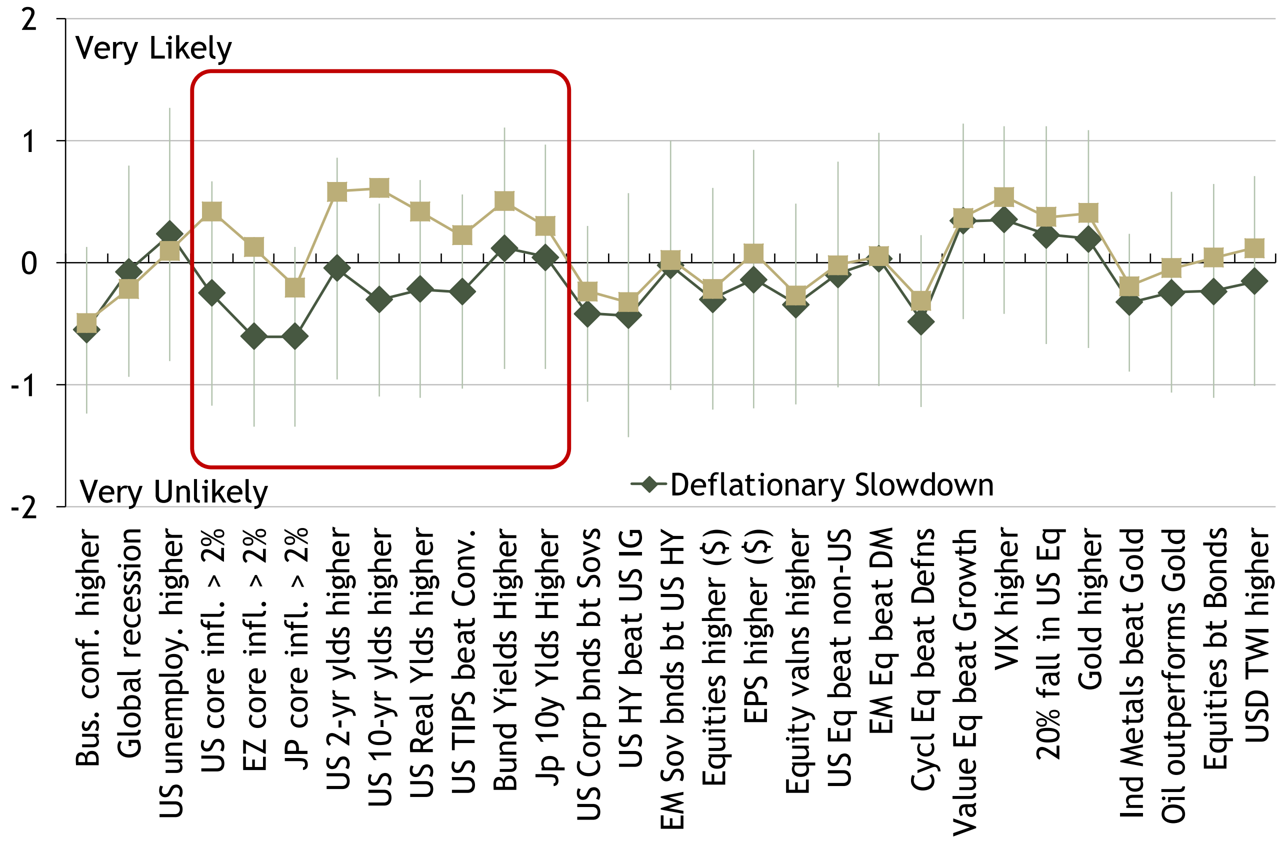
Views expressed in 'notches' Source: ASR Ltd. / Refinitiv

Chart 49 Comparison of 'Deflationary Slowdown' (22%) Group with Survey



Views expressed in 'notches' Source: ASR Ltd. / Refinitiv

Chart 50 Comparison of 'Deflationary Slowdown' (22%) Group with 'Inflationary Slowdown' (28%) Group

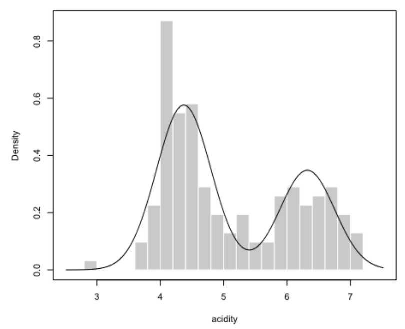


Views expressed in 'notches' Source: ASR Ltd. / Refinitiv

How we find our groups of similar investors

The basis of this group analysis is that there are only a limited number of generic categories of investors. An investor's answers are the combination of their generic categories' answer and some individual variation (i.e. 'noise'). We want to classify investors into the right generic category.

Chart 51: Fitting two normal distributions to a dataset



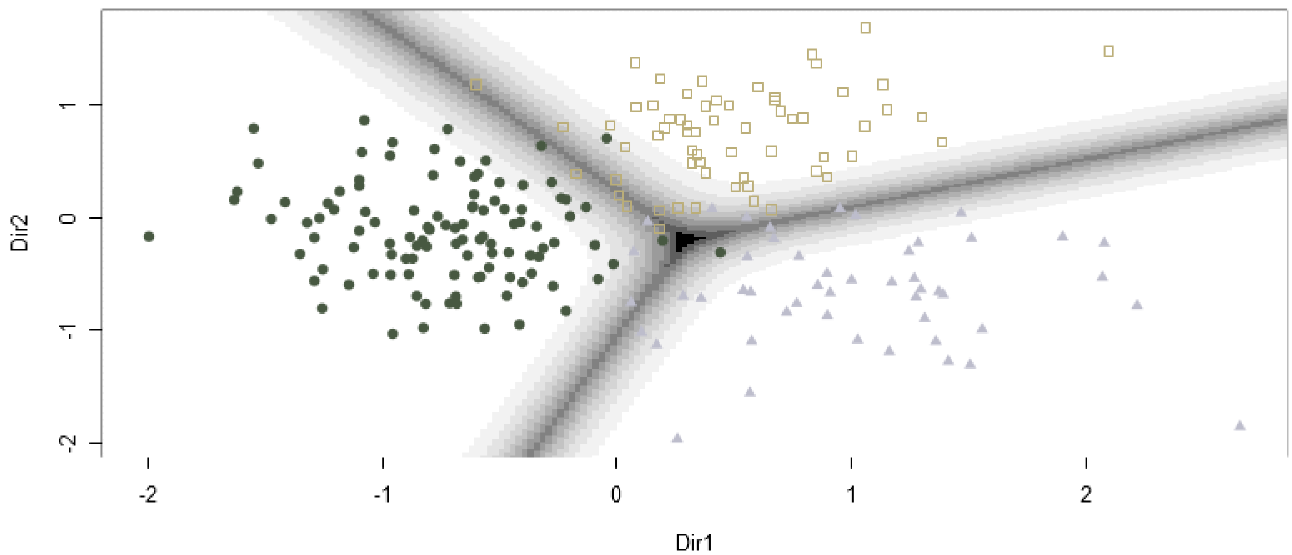
Source: W. Härdle, Fraley & Raftery

Our approach is 'unsupervised': ahead of the analysis we do not know either the number of generic categories, or even their views! However, this is not an insurmountable problem. We can use a Bayesian approach: that is, we create a model of the generic categories and see whether we can get it to fit the data. The parameters of the model (the number of clusters and their means and variances) are then adjusted until the 'most likely' model is found. So, in the example in Chart 51, the data is the bars, which are modelled by superimposing two normal distributions (each distribution represents a generic type). Increasing the number of distributions might lead to a better fit. However, this runs the risk of over-fitting, and so each extra group increases a penalty factor when calculating the how good a fit the model is. This technique is widely used in the pharmaceutical industry.

Transferring this idea to our survey, the bars would be the responses to a question, and so the two distributions in the chart are equivalent to two basic investor categories. Of course our survey has 29 questions with discrete responses which makes the maths more complex. We start with a PCA to reduce the number of dimensions. For our survey the fitting of answers to categories results in Chart 52.

We have used the algorithms provided by the `mclust` package in R.

Chart 52: MAS categorisation of panellists, plotted on against first 2 PCA components



Views expressed in 'notches' Source: ASR Ltd. / Refinitiv

Multi-Asset Survey – A Glance at the History

Table 53: ASR Multi-Asset Survey – Implied probabilities since the survey was launched

Question	4Q14	1Q15	2Q15	3Q15	4Q15	1Q16	2Q16	3Q16	4Q16	1Q17	2Q17	3Q17	4Q17	1Q18	2Q18	3Q18	4Q18
Global business confidence higher		62	63	54	53	55	51	49	58	55	50	52	47	43	40	40	37
Global recession	27	30	28	39	36	38	36	38	33	29	28	30	27	31	31	34	35
US unemployment rate higher				39	40	43	45	43	40	41	46	44	40	43	46	47	52
US core inflation at 2% or higher								56	69	70	56	53	59	67	69	71	60
Eurozone core inflation at 2% or higher										46	37	38	42	40	40	42	37
Japanese core inflation at 2% or higher										31	26	27	31	31	28	32	30
US 2-year Treasury yields higher						64	71	73	77	79	76	73	76	75	76	72	65
US 10-year Treasury yields higher	70	70	74	68	68	63	65	70	74	75	71	72	69	70	70	66	60
US real yields higher								62	65	63	60	63	63	61	63	57	57
US TIPS returns beat US Treasuries	47	48	61	49	56	55	60	64	69	64	56	57	60	60	58	58	52
German 10-year Bund yields higher															72	71	67
Japanese 10-year JGB yields higher																	60
US IG corp. bonds beat US Treasuries	62	62	64	60	60	65	65	62	66	62	61	59	56	51	47	50	43
US HY corp. bonds beat US IG												52	50	46	45	46	42
EM sov. bonds beat US HY corp. bonds ($)												62	60	59	49	52	55
Global equities higher ($)	70	65	64	61	57	61	55	55	62	58	58	59	61	58	59	54	52
Global corporate earnings higher ($)					54	51	56	59	69	70	70	70	74	70	68	62	59
Global equity valuations higher		58	57	54	50	55	52	49	55	50	50	55	54	48	48	46	47
US equities outperform non-US equities ($)		37	36	42	38	43	45	46	56	43	35	39	42	46	55	51	48
EM equities outperform DM equities ($)												63	60	60	47	50	58
Global cyclical stocks outperform defensives ($)	59	59	59	51	51	52	52	56	67	60	56	57	57	54	53	48	41
Value stocks outperform Growth stocks ($)																	59
VIX higher			68	50	65	57	66	70	67	71	73	71	74	65	69	70	63
20% drawdown in US equities							48	50	44	38	38	38	39	44	40	41	50
Gold higher	47	53	52	53	56	56	55	57	50	55	53				56	54	58
Industrial Metals outperform Gold						47	47								56	53	47
Oil outperforms Gold												47	54	53	52	54	54
Global equities outperform bond returns	75	74	74	67	67	67	63	68	77	74	72	73	70	66	69	66	59
USD trade weighted index higher	73	66	64	65	63	56	59	61	65	58	51	54	55	53	55	53	46
Conviction level (5=high ; 1=low)																	57
Number of Participants	**100**	**120**	**165**	**210**	**183**	**210**	**221**	**201**	**202**	**243**	**192**	**207**	**229**	**204**	**214**	**196**	**219**
Asset under Management ($ billion)	**1,197**	**2,193**	**2,812**	**2,631**	**2,919**	**3,014**	**3,160**	**2,976**	**4,200**	**5,821**	**4,458**	**5,319**	**6,013**	**5,303**	**4,065**	**4,135**	**4,223**

Source: ASR Ltd. / Refinitiv.

Market Levels During the Fieldwork Periods

Table 54: Average levels of market & macro series during field work periods

	4Q17	4Q17 vs. 3Q17	1Q18	1Q18 vs. 4Q17	2Q18	2Q18 vs. 1Q18	3Q18	3Q18 vs. 2Q18	4Q18	4Q18 vs. 3Q18
Global Composite PMI	54.2	0.4 Pts	53.3	-0.9 Pts	54.1	0.8 Pts	53.1	-1.0 Pts	NA	NA
US unemployment rate	4.1	-0.1 % Pts	4.1	0.0 % Pts	3.9	-0.2 % Pts	3.8	-0.1 % Pts	NA	NA
US core inflation	1.6	0.2 % Pts	2.0	0.3 % Pts	2.0	0.0 % Pts	1.9	0.0 % Pts	NA	NA
Eurozone core inflation	0.9	-0.2 % Pts	1.1	0.1 % Pts	1.0	-0.1 % Pts	0.9	-0.1 % Pts	NA	NA
Japanese core inflation	0.3	0.1 % Pts	0.5	0.2 % Pts	0.3	-0.2 % Pts	0.4	0.1 % Pts	NA	NA
US 2Y Treasury yields	1.77	41 b.p.	2.25	48 b.p.	2.50	26 b.p.	2.68	18 b.p.	2.83	14 b.p.
US 10Y Treasury yields	2.36	18 b.p.	2.86	51 b.p.	2.94	7 b.p.	2.91	-3 b.p.	3.02	11 b.p.
US real yields	0.42	22 b.p.	0.56	13 b.p.	0.72	17 b.p.	0.82	9 b.p.	1.14	32 b.p.
German 10Y Bund yields	0.34	-6 b.p.	0.64	30 b.p.	0.44	-20 b.p.	0.37	-6 b.p.	0.33	-5 b.p.
US TIPS / US Treasuries	51.21	1%	52.64	3%	53.22	1%	53.25	0%	52.42	-2%
Janapese 10Y JGB yields	0.04	3 b.p.	0.04	0 b.p.	0.05	1 b.p.	0.11	7 b.p.	0.09	-3 b.p.
US IG corp. bonds / US Treasuries	496.34	2%	505.38	2%	503.40	0%	505.34	0%	500.51	-1%
US HY corp. bonds / US IG	43.46	0%	44.28	2%	44.87	1%	45.18	1%	44.90	-1%
EM sov. bonds ($) / US HY corp. bonds	109.70	-1%	108.13	-1%	104.21	-4%	101.51	-3%	103.37	2%
Global equities	998	4%	1035	4%	1040	1%	1046	1%	986	-6%
Global trailing earnings	30.6	0%	32.8	7%	33.6	2%	34.8	4%	35.1	1%
Global equities PE	19.1	3%	18.8	-2%	18.1	-4%	17.5	-3%	15.9	-9%
US / non-US equities	1707.13	3%	1748.51	2%	1782.34	2%	1961.89	10%	1944.37	-1%
EM / DM equities	7.05	-4%	7.33	4%	6.94	-5%	6.46	-7%	6.82	6%
Global cyclicals / defensives	58.46	5%	60.53	4%	61.99	2%	58.71	-5%	55.69	-5%
Global Value / Growth stocks	106.27	-1%	102.88	-3%	99.93	-3%	99.08	-1%	104.85	6%
VIX	11	1%	18	66%	13	-28%	14	7%	19	42%
US Equities maximum annual drawdown	-0.2	0.0 % Pts	-4.6	-4.4 % Pts	-4.1	0.5 % Pts	-0.7	3.4 % Pts	-8.2	-7.5 % Pts
Gold higher	681.20	-3%	702.11	3%	687.44	-2%	633.31	-8%	648.98	2%
Industrial Metals / Gold	199	5%	198	0%	214	8%	196	-8%	190	-3%
Oil / Gold	71.66	20%	73.36	2%	89.96	23%	100.13	11%	77.33	-23%
Global stock returns / global bond returns	186.95	5%	191.30	2%	196.83	3%	199.28	1%	190.18	-5%
USD trade weighted index (DXY)	93.14	1%	89.91	-3%	93.78	4%	95.12	1%	97.00	2%

Source: ASR Ltd. / Thomson Reuters Datastream

Survey Methodology: What we Mean by Implied Probabilities

- ASR's Multi-Asset Survey is a Survey of Probabilities.
- Every quarter we contact around 200 asset allocators and multi-asset strategists from around the world.
- We ask them "how likely" they think certain financial and economic events are to occur in the next 12 months. All thirty questions are framed with a binary outcome (will 'X' happen or will it not happen?) within a fixed time horizon.
- Each question offers five options: (1) very likely (2) somewhat likely, (3) even chance, (4) somewhat unlikely, (5) very unlikely.
- We then ascribe notional probabilities to each of the five options. For example, if someone responds "very likely", we apply a 90% probability to their response. If they reply "very unlikely", we apply a 10% probability. If someone says "even chance", then we apply a 50% probability.
- By applying the different probabilities to all the responses, we can calculate an overall probability. This is more sophisticated than other surveys, which just calculate a "net balance" (e.g. % respondents that are 'optimists' minus % respondents that are 'pessimists'). Our approach better captures differences in convictions.
- Small changes in the implied probabilities matter: a 5% point change over a quarter often indicates an important shift. A 10% point change can reflect a profound change in expectations.
- These "implied probabilities" are powerful as they can be used in multiple ways. First, we can compare them with the probabilities that are implied in the market. Secondly, we can compare them with our views and see where we are most different from the consensus. And thirdly, we can compare them with the historic base (how often has this event occurred over the past decade). An implied probability of 50% may sound like a neutral call but if the event has only occurred 20% of the time over the past decade, then this 50% probability is in fact a much more aggressive call that it appears.
- This approach has one additional benefit, in that we can see how investors' expectations are affected by changes in the financial markets themselves. Is there evidence of momentum – to what extent do respondents' expectations for the next 12 months move with what has happened over the past 12 months? Can we see evidence of anchoring – to what extent do investors cling onto their views even when the market is going against them? Is there evidence of crowding and contrarian tendencies – when investors think something is "very likely", does that indicate a crowded trade?

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