October 2018

EQUITY MARKET STRESS MONITOR

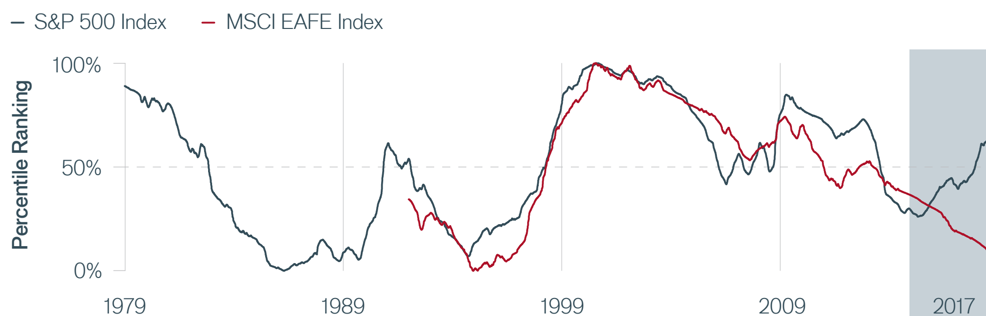
A Perspective on the Current Stability of Global Equity Markets

The Intech Equity Market Stress Monitor™ is a collection of five metrics we believe are reliable indicators of equity market stress based on Intech's 30-year history of studying volatility. You can use the monitor to gain insight to market risk regimes, contextualize beta risk management and complement your conventional risk metrics.

Executive Summary

- Equity markets recorded solid gains during the third quarter, helping some U.S. indices reach record highs. U.S. equity markets strongly outperformed the other developed markets. Emerging markets posted another negative quarter as investors continued to be concerned by the potential impact of rising trade tensions and a stronger U.S. dollar on emerging economies.
- Most of the gains made by U.S. equities were driven by the strong performance of some mega-cap technology-oriented stocks, which led to a continued increase in the capital concentration in the U.S. market during the quarter. While the current level of concentration in larger-cap stocks has not reached a record high, the Intech® Equity Market Stress Monitor shows a steady increase in the capital concentration in U.S. markets over the last three years with no signs of slowing down.
- Non-U.S. stock indices on the other hand, non-U.S. stock indices as measured by the MSCI EAFE Index are experiencing a decrease in capital concentration, reflecting a preference for mid-cap stocks by investors. In fact, this marks the lowest concentration level observed in over 20 years, and is the first time we've seen a divergence in capital concentration of this magnitude between U.S. and non-U.S. equity markets. Despite trending in opposite directions, the capital concentration in U.S. and non- U.S. developed markets continues to deviate from their median levels, which should be considered a sign of stress in the market for both regions.
- While not as extreme as what could be observed at the beginning of the year, the risk metrics tracked by the Intech Equity Market Stress Monitor™ continue to exhibit signs of stress across equity markets that could potentially bring increased volatility.

Capital Concentration



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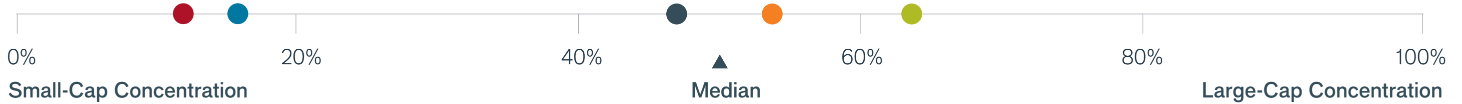
Intech Equity Market Stress Monitor Data as of 09/30/2018

We've identified a collection of risk metrics that we believe are reliable indicators of equity market stress. For each of these metrics, our observations have shown that when markets deviate substantially from typical levels, they eventually return to it. Moreover, the greater the deviation and persistency of extreme values across a larger collection of metrics, the more likely it is that the return to the mean will be abrupt and accompanied by substantial volatility.

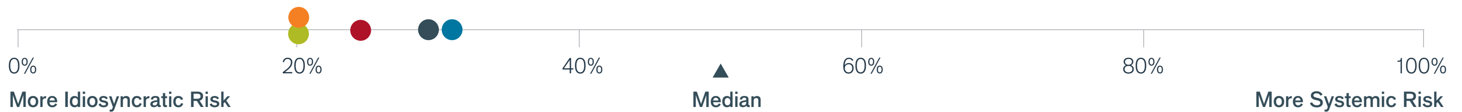
Capital Concentration

Do winners take all? Capital concentration measures how the capital is distributed among stocks within an index. An increase means that more capital is allocated to larger-cap stocks. A decrease indicates that capital is moving to smaller-cap stocks. Our research has shown that the capital distribution among stocks is remarkably stable over the long term and tends to revert to median levels.



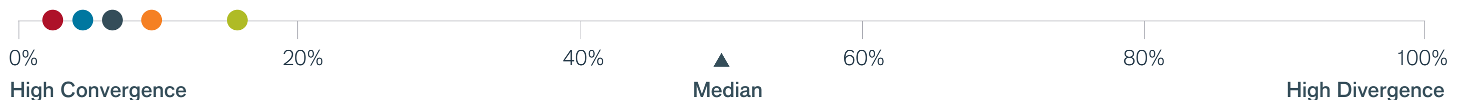
Correlation of Returns

How similar are stocks' absolute returns? Correlation measures the market-weighted average pair-wise correlation of stocks in the index. It quantifies the similarity of stocks' returns as a fraction of their volatility. As correlations rise, stocks' returns tend to move in tandem with each other as the common component of return – the market – begins to dominate. As correlations decline, stocks' returns exhibit less similarity among stocks because idiosyncratic factors dominate the market component.



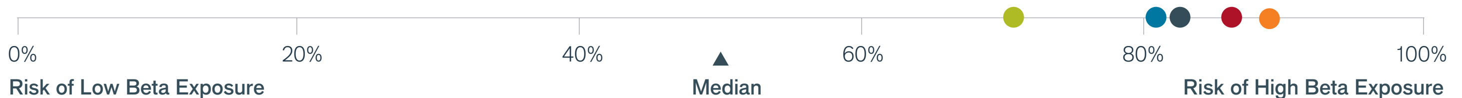
Dispersion of Returns

How different are stocks' relative returns? Also known as cross-sectional volatility, dispersion measures whether stocks' returns relative to their respective benchmarks are converging (low dispersion) or diverging (high dispersion). As dispersion increases, underlying stock or portfolio returns begin to diverge from the overall benchmark. We find that the market eventually reverts to long-term levels when return dispersion is substantially low or high, which is associated with strain on the market.



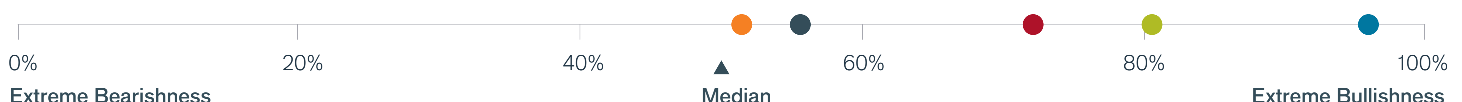
Index Efficiency

How much beta risk should you take? Market efficiency measures the level of index diversification versus the potential diversification available given the volatility characteristics of index constituents. Low market efficiency makes it possible for a skilled manager to achieve above-market outcomes with lower beta exposure, but the risk is lower upside capture potential. Conversely, high market efficiency means that reliably outperforming the index requires a manager to have similar beta risk, exposing a portfolio to higher downside capture.



Skewness of Returns

How fat are the tails? Skewness measures the asymmetry of index returns around the mean. Logarithmic returns tend to exhibit a left-skewed distribution, meaning the most extreme returns are below the mean, as investors tend to react more strongly to negative news. When there is irrational exuberance among investors, market returns tend to become less negatively, or even positively, skewed.. Conversely, low levels of skewness often coincide with the market shock itself and eventually manifest into positive outcomes as markets stabilize.



MSCI World   MSCI EAFE   S&P 500   MSCI Europe   MSCI Emerging Markets

Regional Insight by Index

Global Equity Market – MSCI World Index[SM]

- Global developed equity markets currently demonstrate the least amount of risk relative to other segments, with only two of the five indicators at extreme readings. This marks a notable decline from the beginning of the year when three of five indicators were near historic levels.
- The largest change since last quarter is in the index efficiency measure, which declined from near historically high levels at the end of June. While this change is a move toward more normal levels, the decline perhaps suggests a greater potential for active managers to achieve a better risk/reward trade-off in a less efficient market.
- Capital concentration continued to increase in global markets during the quarter, largely attributable to the strong performance of some high-performing U.S. mega-cap technology stocks on a year-to-date basis. This is a continuation of an upward trend in concentration that began a little more than three years ago.

Non-U.S. Developed Equity Market – MSCI Eafe Index

- Risk indicators in international equity markets are relatively unchanged since last quarter and continue to suggest signs of strain, with four of five risk indicators at extreme levels.
- The largest change quarter over quarter was an increase in the skewness indicator. This increase was a deviation from more normal levels, and is a return to levels observed at the beginning of the year. Despite the changes during the year, this indicator is the only metric currently not at extreme levels.
- Contrasting sharply with what can be observed in the U.S., capital concentration in international equity markets remains low compared to past observations. Concentration in international markets has been on a noticeable downward trend for the past five years, perhaps suggestive of a continued appetite for risk-taking by investors in international equity markets.

U.S. Equity Market – S&P 500 Index

- With the exception of capital concentration, Intech's U.S. risk indicators continued to move further away from their normal ranges and have now reached extreme levels.
- Index efficiency has increased sharply since the end of last year and is now at its highest level in history. Similar levels were last seen in mid-2014 and leading up to the global financial crisis and tech wreck periods.
- Dispersion of returns is moving downward, confirming that stocks' relative volatility in the market remains low. This trend likely reflects a market driven by sentiment and macroeconomic dynamics rather than stocks' underlying fundamentals.

European Equity Market - MSCI Europe Index

- The European equity market continues to be the region where we observed the most market strain, with four of five indicators at extreme values.
- The largest change since last quarter is in the index efficiency measure, which declined from near historically high levels at the end of June. While this change is a move toward more normal levels, the current value is still well within the upper tail of all historical observations. A continued decline would potentially indicate an increased opportunity for a skilled active manager to achieve above-market outcomes with lower equity risk through diversification.
- Unlike the U.S. markets, European equity markets are not experiencing an increase in the capital concentration measure. In fact, capital concentration now ranks near the bottom decile across all historical observations, suggesting that capital is moving to smaller-capitalization stocks more than usual, a continuation of a trend that began over five years ago.

Emerging Markets Equities – MSCI Emerging Markets Index

- Emerging markets is the segment that has endured the biggest change in risk recently, according to our risk metrics. Less than a year ago, this was the segment demonstrating the least amount of risk. However, over the past few months, emerging markets have quickly become one of the riskier equity market segments, with four of five indicators now at extreme levels.
- The largest change since last quarter is in the index efficiency measure, which declined notably from historically high values when compared to historical observations. While this change is a move toward more normal levels, the decline perhaps suggests a greater potential for active managers to achieve a better risk/reward trade-off in a market that is becoming less efficient.
- Capital concentration continued to increase in emerging markets during the quarter, reaching the highest level observed since 2007. This is a continuation of a trend that began in early 2016, when concentration levels started to increase after reaching near historically low levels when compared to all historical observations.

Intech Equity Market Stress Monitor

Intech® is a specialized global asset management firm that harnesses stock price volatility as a source of excess return and a key to risk control. Founded in 1987 in Princeton, NJ, by pioneering mathematician Dr. E. Robert Fernholz, Intech serves institutional investors across five continents, delivering relative return, low volatility, adaptive volatility and absolute return investment solutions.

For more information, please visit **janushenderson.com.**

Janus Henderson INVESTORS

Intech is a Janus Henderson subsidiary and subadvisor that uses a mathematical investment process to harness stock price volatility as a source of excess return and a key to risk control.

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Beta measures the volatility of a security or portfolio relative to an index. Less than one means lower volatility than the index; more than one means greater volatility.

Substantial Volatility refers to volatility which can sometimes lead to positive returns but is mostly associated with negative outcomes from equity markets.

Capture Ratio measures the percentage of index (market) performance an investment "captured" during periods when the index achieved gains (up capture) or declined (down capture). A capture ratio of 100% means investment performance went up or down exactly the same amount as the index.

Median measures the value in the midpoint of distribution of values. These are recalculated on a daily based on data from inception through the prior day's close.

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