

S&P Dow Jones Indices

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INDEX INVESTMENT STRATEGY

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Index Dashboard: Dispersion, Volatility & Correlation

December 31, 2021

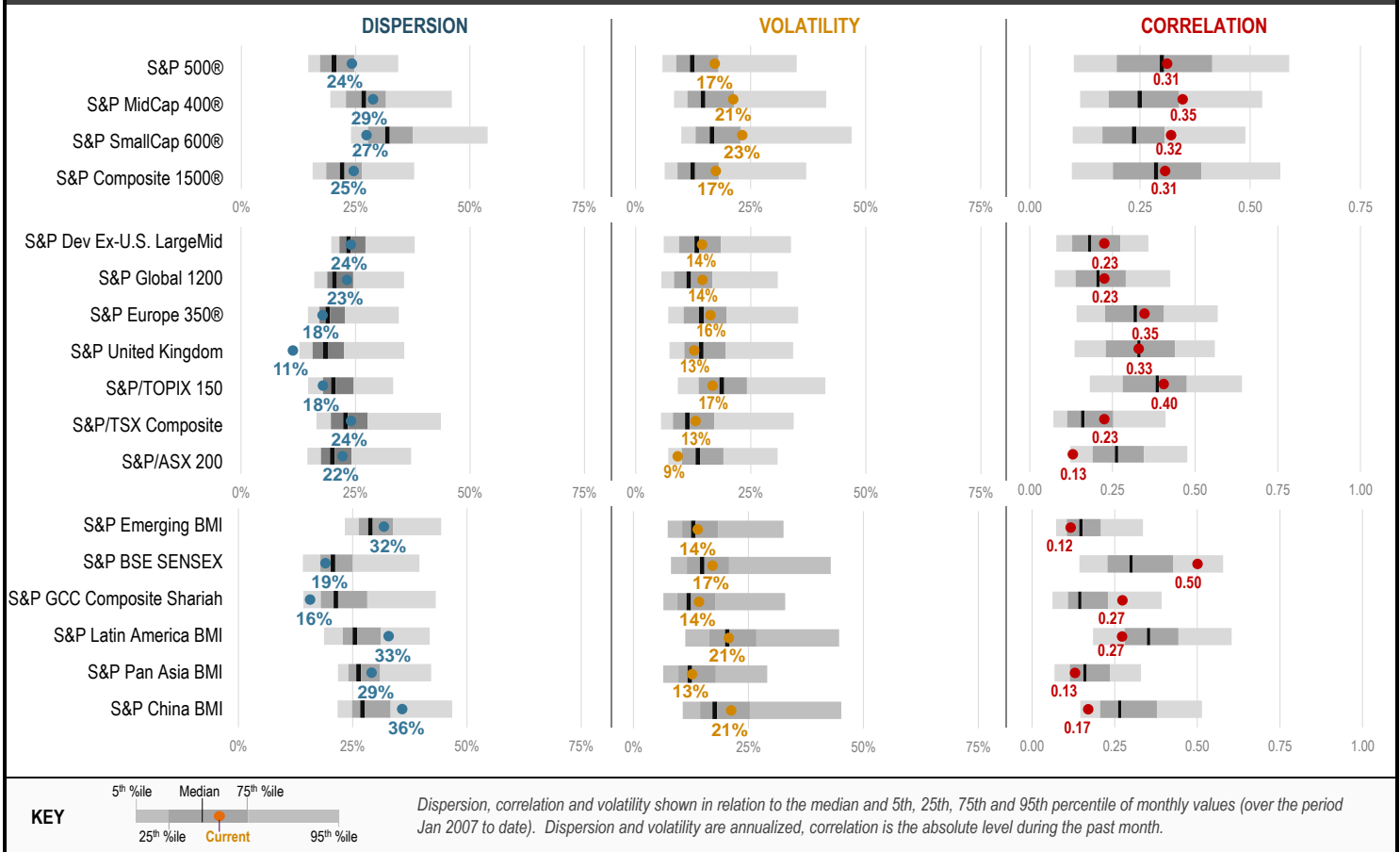
COMMENTARY

The rapid spread of the new Omicron variant brought higher volatility and increased correlations to global equity markets in early December, although the subsequent lack of commensurate spikes in hospitalizations and worse acted to calm markets by the year's end.

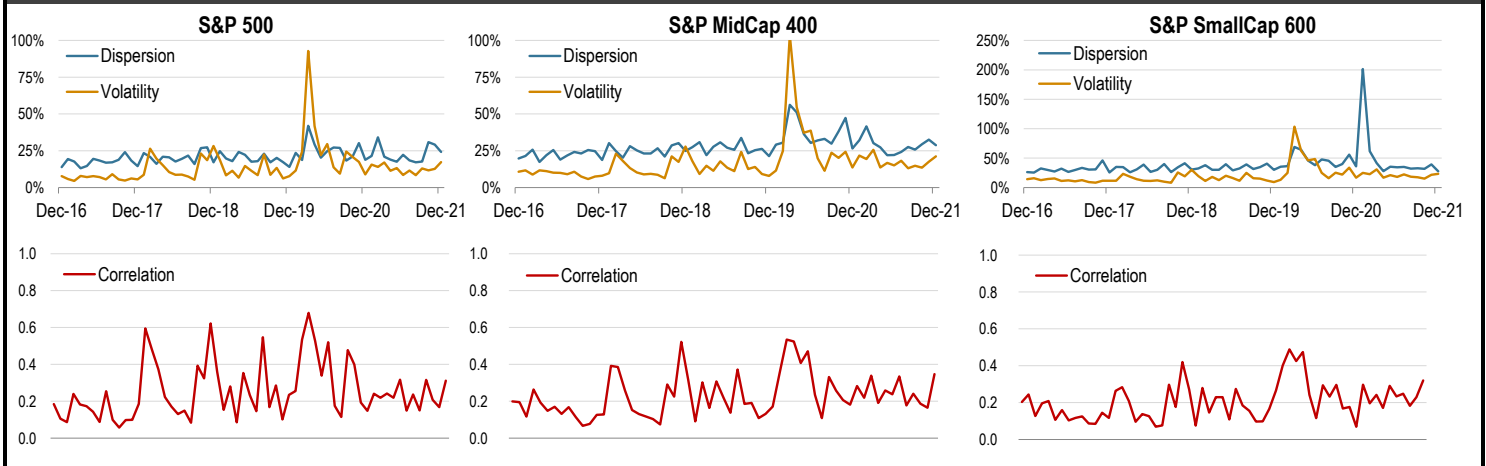
With quarterly earnings largely wrapped up and market participants closing out their years, U.S. equity dispersion is typically lower in December than in other months. S&P 500 dispersion declined from November but, at 24% annualized, was still the highest December reading since 2008.

Equity dispersion was generally above average this year across a range of global markets, providing ample opportunity for "stock-pickers". However, the generally lower-than-usual level of correlations suggest that foregoing the available diversification would have led to a significant increase in risk for more concentrated portfolios.

GLOBAL DASHBOARD



MAJOR BENCHMARKS - PAST FIVE YEARS



Source: S&P Dow Jones Indices as of Dec 31, 2021 * See "Notes" for explanations and definitions.

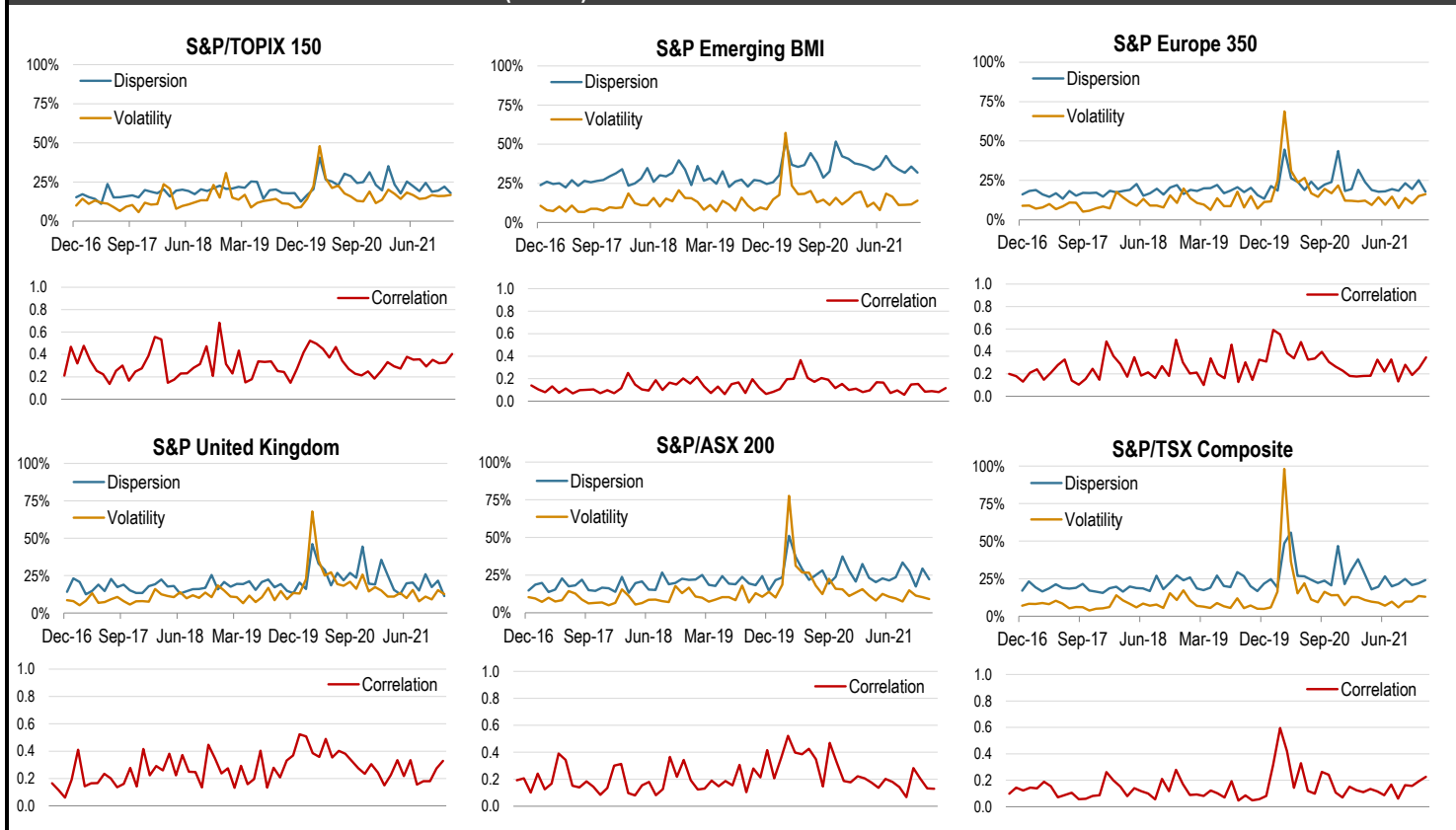
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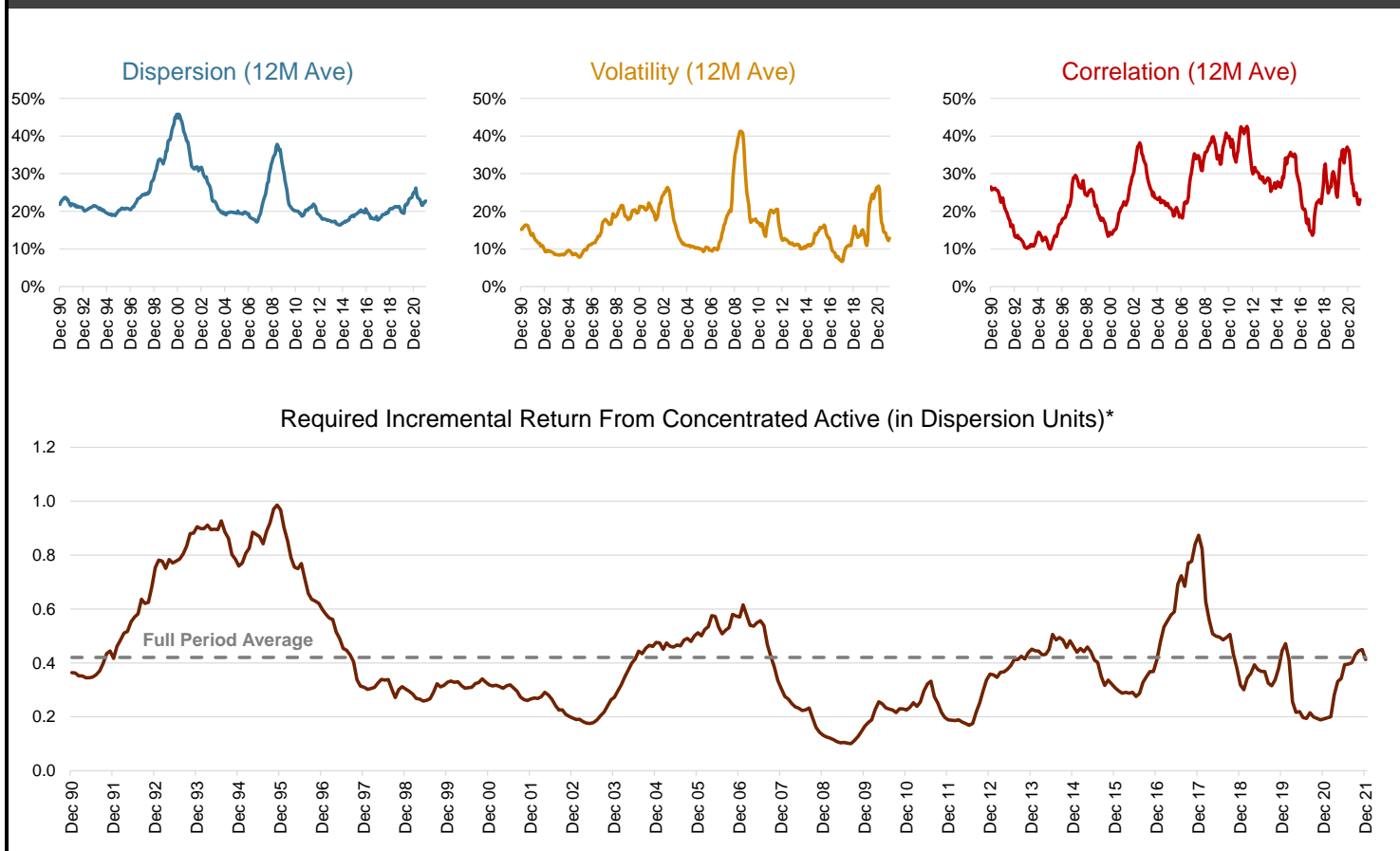
Index Dashboard: Dispersion, Volatility & Correlation

December 31, 2021

MAJOR BENCHMARKS - PAST FIVE YEARS (cont'd)



S&P 500 - 12M TRAILING AVERAGES & ACTIVE RETURN DIFFICULTY



Source: S&P Dow Jones Indices as of Dec 31, 2021 * See "Notes" for explanations and definitions.

NOTES

Definitions

Dispersion for each index is the annualized, index-weighted standard deviation of the index constituents' full-month total returns. See "[Dispersion: Measuring Market Opportunity](#)" for a formal definition of dispersion and more information on its uses.

Correlation for each index measures the correlation among the daily returns of the index constituents during the month, calculated via the ratio of index variance to the index-weighted average constituent variance. See "[At the Intersection of Diversification, Volatility and Correlation](#)" for a more detailed explanation of the calculation.

Volatility for each index is the annualized standard deviation of daily index price returns during the month. See "[The Landscape of Risk](#)" for details on the relationship of correlation, volatility and dispersion.

Required Incremental Return From Concentrated Active (in Dispersion Units) provides the excess return, in multiples of 12M trailing average dispersion, required from a concentrated position in a single index constituent with 12M trailing volatility equal to the index-weighted average, such that the ratio of return to volatility of the position matches that of an investment with volatility matching the index's trailing 12M volatility, and an annual return of 10%. For further details, see "[The Active Manager's Conundrum](#)".

Measurement Periods For Historical Ranges (p1)

The time period over which the median and percentiles of dispersion and correlation are measured begins with January, 2007 and ends with the current month except in the case of the S&P GCC Composite Shariah (which has a history to April, 2007).

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