

Index Investment Strategy

VOLATILITY AND CORRELATIONS				HEDGING COSTS			
Volatility Measures	VIX	1m ±	Realized (1Yr)	Vix Futures Term Structure			
S&P 500® (VIX)	16.21	3.17	11.4				
S&P ASX 200 (VIX)	14.89	2.54	12.38				
S&P TSX 60 (VIX)	13.35	2.13	10.37				
Hang Seng (VIX)	15.92	0.69	15.51				
10 Year US Treasury Note (VIX)	5.18	-0.54	5.18				
Gold ETF (VIX)	21.79	0.36	21.84				
Investable Volatility Indices	1 Month	YTD	1 Year			VIX Futures Indices Roll Costs (Monthly)	
S&P VIX Short-Term Futures Index	-5.66%	-61.54%	-58.33%			Short-term futures	1.26%
S&P VIX Mid-Term Futures Index	-3.96%	-39.75%	-37.57%			Mid-term futures	-2.25%
S&P Dynamic VIX Index	-1.31%	-23.93%	-23.32%			Credit Default Swap Indices	
S&P 500 Dynamic VEQTOR Index	2.25%	11.89%	11.38%	Current	1m ±		
S&P CBOE Buy-write Index	1.57%	10.73%	10.55%	S&P US Investment Grade CDS	59.51 bps -11.49 bps		
Correlations (Month-end)	1 Year	3 Year	10 Year	S&P US High Yield CDS	261.89 bps -35.91 bps		
S&P 500 / 10 Year US Treasuries	26.03%	-51.15%	-24.85%	COMMENTARY			
S&P 500 / Commodities Correlation	7.58%	67.69%	45.78%	Volatility and Credit Risk (as of Dec 17th)			
S&P 500 / US Dollar Correlation	-28.64%	-62.71%	-54.69%	<ul style="list-style-type: none"> Equity implied volatilities are all up on the month (vs Nov 18th). Rising sharply in advance of the FOMC announcement this afternoon, the S&P 500 VIX is up a couple of points at 16.21. Improved jobs data have added to the possibility of an early market-moving announcement by the Fed and, with the January future trading a few points below spot, the VIX futures markets are reflecting a front-loaded risk profile in the short term. Providing a context for this relative weakness, the US credit markets are signalling robust health: the S&P/ISDA indices of high yield and investment grade CDS both broke post-crisis record lows this week. Europe kicked off December badly with news that France's economy was contracting while the ECB warned of deflation. Concern for the region pulled equity markets down across the globe and - while weakness in Asia was limited - in Australia the S&P/ASX 200 recorded its longest losing streak in two years. ASX vol is up accordingly. Treasuries have had a volatile year, and the market is predicting a similar degree of movement in the near future. Implied 10-year UST volatility is currently around its long term average; close to the previous 1-year's realized volatility. This relationship suggests that the large moves in Treasury yields earlier this year may prove a dress rehearsal for the impact of any tapering in the new year. 			
Emerging / Developed Correlation	80.93%	88.65%	88.63%	Correlation and Dispersion (as of Nov. 30th)			

Volatility and Credit Risk (as of Dec 17th)

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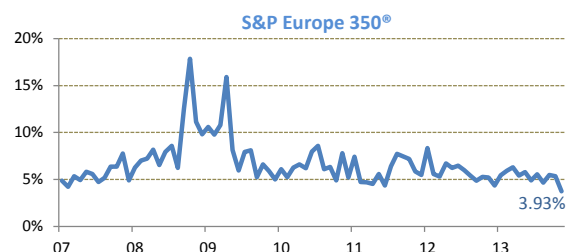
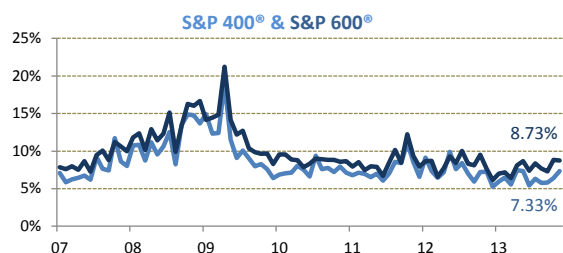
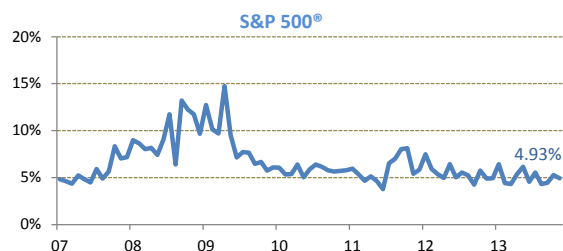
Correlation and Dispersion (as of Nov. 30th)

- November's figures indicate that dispersion (the average deviation among equity returns) has been low in most markets. Consequently, opportunities for alpha generation via factor tilts or security selection within equity markets remained close to all-time lows. The large-cap segment was particularly homogeneous: the current reading of 4.93% dispersion for the S&P 500 is lower than 90% of monthly readings in the past 20 years.
- On a longer term basis, the strength of U.S. equity correlations to bonds, commodities and the dollar is declining across the board: less strong in nearly every instance on a 1-year basis than on 3- or 10- year measures. Looking beyond the immediacy of today's FOMC announcement, the data suggest a slightly declining influence of monetary policy as the most dominant factor in cross-asset returns. Outside the U.S., developed/emerging equity correlations are largely unchanged.

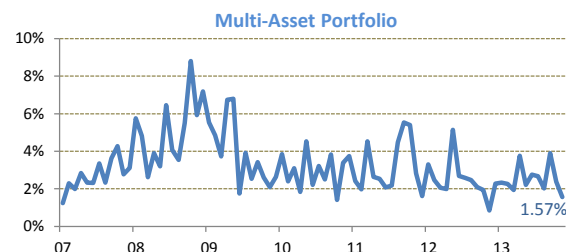
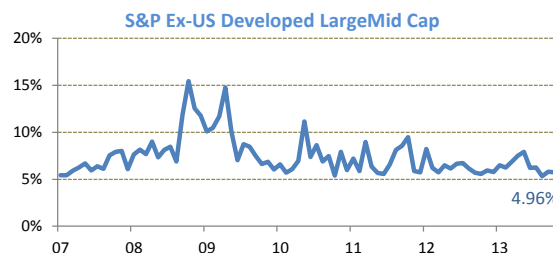
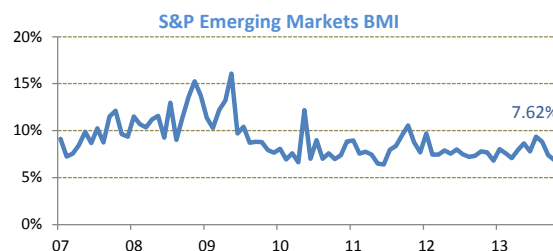
Source: S&P Dow Jones Indices LLC and/or its affiliates as of December 17, 2013. See notes for additional sources. Index performance based on total return. Charts and graphs are provided for illustrative purposes. Past performance is no guarantee of future results. For more information, please visit our website at www.spdji.com

Index Investment Strategy

DISPERSION: US & EUROPE



DISPERSION: GLOBAL & MULTI-ASSET



Notes

- Volatility measures:** Sources S&P Dow Jones Indices / CBOE. Respective VIX and 1 month changes in those levels as of December 17, 2013. 1 year realized volatility calculated according to previous 1 years daily returns, annualised.
- Investible Volatility Indices:** Sources S&P Dow Jones Indices / CBOE as of December 17, 2013. More information is available on each of these indices at www.spdji.com.
- Correlations:** Sources S&P Dow Jones, NYSE. Correlations of monthly returns between total return indices, in USD. Commodities are represented by the S&P GSCI Total Return index, US dollar represented by the DXY Index (Source: NYSE). All provided to month-end November 2013.
- VIX Futures Indices Roll Costs (Monthly):** VIX futures roll costs are expressed as the weighted sum of the percentage difference in price between each future and the future next closer to expiry (or the spot price in respect of the first future), expressed as a fraction of that futures price and weighted according to that future's weight in the either the S&P VIX Short-Term Futures Index, or the S&P VIX Mid-Term Futures Index, as appropriate.
- Dispersions:** See the paper "Dispersion: Measuring Market Opportunity" for a definition of index dispersion (www.spindices.com/documents/research/research-dispersion-measuring-market-opportunity.pdf). Dispersions are calculated monthly to November 2013 in each instance. The Multi-Asset Portfolio comprises equal weights in each of: the S&P 500®, S&P Europe 350®, S&P Emerging Market BMI, S&P GSCI Commodities, S&P TOPIX 150, Barclays Aggregate U.S. Corporate High Yield, Barclays Aggregate U.S. Bond and Citigroup WorldBIG Non-US issuers excluding Domestic Sovereign Indices. All total returns in USD unhedged.

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