

S&P Dow Jones Indices

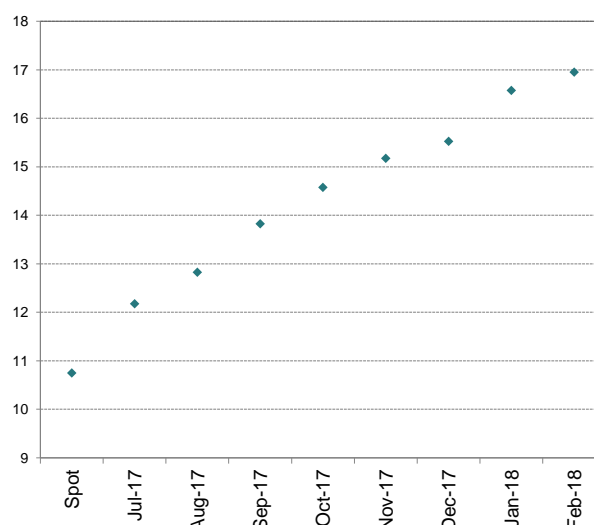
A Division of **S&P Global**

Index Dashboard: Risk & Volatility June 21, 2017

VOLATILITY MEASURES				
Implied Volatility Measures	VIX	1m ±	200D Ave	RLZ (1Yr)
CBOE Volatility Index® (VIX®)	10.75	-4.84	12.66	9.63
CBOE Short-Term Volatility Index (VXST)	9.56	-10.61	11.76	9.63
CBOE 3-month Volatility Index (VXV)	12.76	-2.84	14.97	9.63
CBOE DJIA Volatility Index (VXD)	10.40	-3.30	12.49	9.26
VSTOXX® (V2X)	14.18	-1.97	17.39	13.74
S&P/ASX 200 VIX (A-VIX)	14.41	+ 1.93	12.96	11.56
S&P/TSX 60 VIX (VIXC)	11.06	-3.58	12.99	9.58
HSI Volatility Index (VHSI)	12.63	-0.21	15.18	13.61
CBOE/CME FX Yen Volatility (JYVIX)	8.71	-1.69	11.38	11.36
CBOE/CME FX GBP Volatility (BPVIX)	8.64	+ 1.36	9.62	13.22
CBOE/CME FX Euro Volatility (EUVIX)	6.54	-1.94	8.74	7.54
CBOE / CBOT 10Yr US Tsy (TYVIX)	4.24	-0.76	5.14	4.39
CBOE Interest Rate Swap (SRVIX)	75.47	-7.50	85.53	79.71
S&P/JPX JGB VIX® (SPJGB)	1.45	-0.33	2.14	1.93
CBOE Gold ETF Volatility Index (GVZ)	11.25	-1.78	14.51	12.98
CBOE Oil ETF Volatility Index (OVX)	33.32	-0.58	33.70	32.90
CBOE VIX of VIX (VVIX)	88.07	-23.41	89.13	123.92
Investable Volatility	1m ±	YTD	12m ±	
S&P Daily Inverse Short-Term VIX	23.37%	78.54%	199.09%	
S&P 500 VEQTOR Switch Index	3.66%	10.11%	22.37%	
S&P 500 Stock Covered Call Index	2.41%	7.58%	13.66%	
CBOE S&P 500 Buy-write Index	2.06%	7.19%	12.87%	
S&P 500 Dynamic VEQTOR Index	2.88%	6.83%	6.04%	
S&P Dynamic VIX Index	-2.58%	-11.77%	-9.92%	
S&P VIX Mid-Term Futures Index	-9.92%	-33.28%	-46.40%	
S&P VIX Short-Term Futures Index	-20.13%	-49.44%	-77.87%	
S&P 500	3.33%	8.79%	16.60%	

HEDGING COSTS

VIX Futures Term Structure



VIX Futures Indices Roll Costs (Monthly)

Short-term futures	5.34%
Mid-term futures	3.78%

REALIZED MEASURES

S&P 500 Correlations (Month-end)	1 Year	3 Year	10 Year
S&P Europe 350	0.33	0.76	0.88
S&P 500 Bond	-0.03	0.18	0.36
S&P GSCI Commodity	-0.15	0.25	0.52
U.S. Dollar Index	0.01	-0.13	-0.50
S&P 500 Single Stocks	21-Day	12M Ave	3Y Ave
Dispersion (annualized)	16.87	18.01	18.67
Volatility (annualized)	16.57	17.46	20.74
Correlation (pairwise)	0.12	0.20	0.33

COMMENTARY

- Be it through complacency or prescience, the market is intensely relaxed at present. Most of our volatility measures are down, and several to unusually low levels.
- VIX not risen above 12 for over a month, closing last night at 10.75. Although not quite an all-time-low, VIX recorded its lowest closing value in 23 years when it ended June 2nd at 9.75.
- The CBOE Gold ETF Volatility index set an all-time low of 10.16 on June 16th
- The sustained low volatility environment has provided a boon to volatility sellers; the S&P Daily Inverse Short Term VIX Futures index has tripled over the past twelve months. In signs that such outsized returns may be attracting more participants, the VIX futures curve is unusually shallow. Only 5% separates the price of the front future from that of the front-next.
- Exceptions to the rule were provided by the British pound, which continues to reflect the political uncertainty generated by the start of the "Brexit" negotiations and the failure of any party to secure a Parliamentary majority in the recent election, and Australian equities - the latter rattled by signs of a downward turn in the property market.

Sources: S&P Dow Jones Indices LLC and/or its affiliates, CBOE, U.S. Federal Reserve (Dollar index and 10Yr Swap Rate), all as of June 21, 2017. **Volatility measures:** respective VIX and changes in those levels May 17 to June 21, 2017. 200D Average is the moving average based on trading days, colour coded by whether current respective VIX is above or below average. 1 year realized volatility calculated according to previous 1 years daily returns, annualised. **Investable Index performance** based on total return. **Index Correlations** of monthly returns between total return indices, in USD to month-end May 2017. **Stock Correlations, Dispersion and Volatility** based on index-weighted averages as of June 21, 2017. VIX futures **monthly roll costs** are expressed as the weighted sum of the percentage difference in price between each future and the future next closer to expiry, 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. 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

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