

S&P Dow Jones Indices

A Division of **S&P Global**

INDEX INVESTMENT STRATEGY

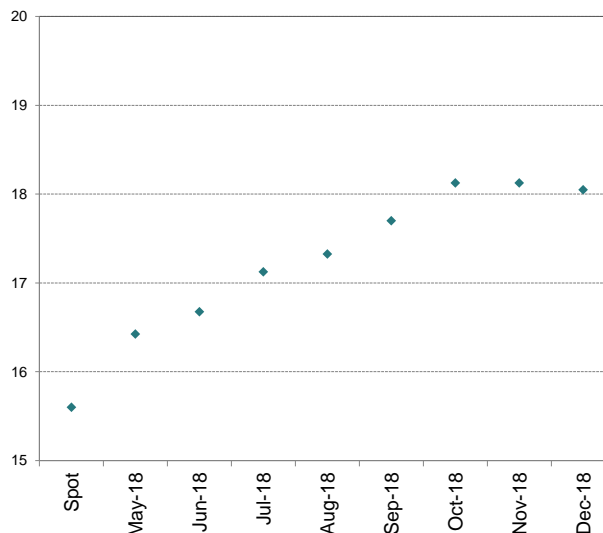
Index Dashboard: Risk & Volatility April 18, 2018

VOLATILITY MEASURES

Implied Volatility Measures	VIX	1m ±	200D Ave	Realized 1Yr
CBOE Volatility Index® (VIX®)	15.60	-7.74	13.24	12.19
CBOE Short-Term Volatility Index (VXST)	14.64	-11.67	12.71	12.19
CBOE 3-month Volatility Index (VXV)	16.80	-4.86	14.90	12.19
CBOE DJIA Volatility Index (VXD)	17.88	-4.18	13.61	12.96
VSTOXX® (V2X)	13.04	-5.51	14.82	10.61
S&P/ASX 200 VIX (A-VIX)	11.91	-0.47	12.86	10.03
S&P/TSX 60 VIX (VIXC)	12.36	-0.62	12.85	8.64
HSI Volatility Index (VHSI)	18.67	-4.06	16.98	15.12
CBOE/CME FX Yen Volatility (JYVIX)	7.19	-1.95	8.85	7.51
CBOE/CME FX GBP Volatility (BPVIX)	7.84	-0.08	8.27	7.87
CBOE/CME FX Euro Volatility (EUVIX)	6.59	-0.75	7.58	7.28
CBOE / CBOT 10Yr US Tsy (TYVIX)	3.66	-0.34	4.12	3.51
CBOE Interest Rate Swap (SRVIX)	71.25	-2.51	71.92	69.60
S&P/JPX JGB VIX® (SPJGB)	1.31	-0.16	1.61	1.09
CBOE Gold ETF Volatility Index (GVZ)	13.46	2.22	12.01	10.19
CBOE Oil ETF Volatility Index (OVX)	29.42	2.95	26.60	25.34
CBOE VIX of VIX (VVIX)	92.41	-32.71	100.55	154.54
Investable Volatility	1m ±	YTD	12m ±	
S&P Daily Inverse Short-Term VIX	11.02%	-95.71%	-91.31%	
CBOE S&P 500 Buy-write Index	2.83%	1.27%	10.52%	
S&P 500 Stock Covered Call Index	2.61%	0.96%	13.02%	
S&P 500 VEQTOR Switch Index	-0.62%	-0.27%	15.53%	
S&P Dynamic VIX Index	-1.72%	-14.33%	-22.60%	
S&P 500 Dynamic VEQTOR Index	-2.38%	3.77%	15.90%	
S&P VIX Mid-Term Futures Index	-3.20%	16.56%	-21.45%	
S&P VIX Short-Term Futures Index	-12.58%	45.65%	-40.22%	
S&P 500	2.46%	1.31%	15.65%	

HEDGING COSTS

VIX Futures Term Structure



VIX Futures Indices Roll Costs (Monthly)

Short-term futures	1.52%
Mid-term futures	1.49%

REALIZED MEASURES

S&P 500 Correlations (Month-end)	1 Year	3 Year	10 Year
S&P Europe 350	0.80	0.80	0.89
S&P 500 Bond	0.15	0.28	0.36
S&P GSCI Commodity	0.51	0.22	0.57
U.S. Dollar Index	-0.56	-0.12	-0.55
S&P 500 Single Stocks	21-Day	12M Ave	3Y Ave
Dispersion (annualized)	18.39%	18.56%	19.03%
Volatility (annualized)	29.64%	20.34%	21.31%
Correlation (pairwise)	0.53	0.23	0.26

COMMENTARY

- Tariffs, military action in Syria and the start of earnings season competed for headlines this month. VIX closed yesterday at 15.60, down 7.74 percentage points since our last report. The VIX futures curve steepened, as shorter-dated volatility measures declined more than longer term.
- Most of our other reported measures also fell this month; the exception provided by our measures for oil and gold. There is currently an even split between those above and those below their 200-day trailing average.
- In signs that the current U.S. equity environment remains fragile, correlations among S&P 500 constituents have continued at high levels. The average pairwise correlation of 0.53 between daily price changes of the large-cap stocks suggests that prices are being determined more by macro effects, despite the mixed responses to so-far impressive earnings announcements.
- While increases in volatility are typically associated with declining prices, the opposite may sometimes occur in commodities – particularly in energy – if supply chains are threatened by disruption. The recent rise in oil prices has been driven in part by the increasing tensions in the Middle East; oil volatility has duly increased along with prices.

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 April 18, 2018. **Volatility measures:** respective VIX and changes in those levels 22 March to April 18, 2018. 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 March 2018. **Stock Correlations, Dispersion and Volatility** based on index-weighted averages as of April 18, 2018. 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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Prospective application of the methodology used to construct the index(es) as well as revisions to economic data may not result in performance commensurate with the back-test returns shown. The back-test period does not necessarily correspond to the entire available history of the index(es). Please refer to the index methodology for the particular index in question, available at www.spdji.com, for more details about such index, including the manner in which it is rebalanced, the timing of such rebalancing, criteria for additions and deletions, as well as all index calculations.

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