Real-Time Volatilities

A service to access implied market volatilities in B-PIPE.

Overview

Market volatilities are one of the most important inputs into derivatives pricing models across all asset classes. Accessing accurate and reliable volatilities is key to properly price and risk-manage vanilla and exotic derivatives.

Also, volatilities represent the market expectations on future price movements, therefore they're extremely valuable in generating trading signals.

Bloomberg calculates implied volatilities on all asset classes using a variety of methodologies that have been developed in the last ten years by our quantitative research and development groups. Together with other derivatives data like curves and dividends, Bloomberg Volatilities are leveraged in the Bloomberg Terminal pricing functions, in the Bloomberg Risk and Portfolio systems and offered as premium dataset in Bloomberg Data License.

The Real-Time Volatilities service in B-PIPE adds further value to the overall business proposition by allowing clients to consume volatilities as a real-time stream, to feed black box and derived applications, and display applications for Bloomberg Terminal users.

Real-Time Volatilities are beneficial for all the front office applications that are real-time in nature, where a subscription (stream) service is preferred..

The Real-Time Volatilities are provided by two calculation engines – BVOL and LIVE, with different methodologies and calculation frequencies depending on the type of underlying.

Current coverage includes:

BVOL & LIVE – Equity indexes, single names, ETFs, on all major exchanges.

BVOL – FX currencies on over 200 currency pairs.

For listed underlyings, the volatilities are offered in real time, with no need for clients to have a real-time exchange subscription and no reporting requirements. Available fields include bid/ask quotes, timestamps among others.

The BVOL equity engine

The BVOL equity engine produces large and arbitrage free surfaces, that are robust, stable and subject to extensive quality controls. They can be used as reference for pricing and risk applications.

The surfaces are based on prices of liquid listed options and completed with OTC sourced volatility contribution. They are snapshot based and produced at discrete intervals during the day.

Implied forwards are calculated to correctly replicate market conditions at each snapshot time and are available for consumption in B-PIPE.

Expiry	Exp Date	ImpFwd	0%	60.0%	80.0%	90.0%	95.0%	97.5%	100.0%	102.5%	105.0%	110.0%	120.0%	130.0%	150.0%	175.0%
			.6	1737.9	2317.2	2606.9	2751.7	2824.1	2896.6	2969.0	3041.4	3186.2	3475.9	3765.5	4344.8	5069.0
1W	24 Sep 2018	2897.82	98	52.24	31.44	18.76	17.04	13.52	8.07	8.18	9.42	11.95	13.98	15.20	17.16	19.05
1M	17 Oct 2018	2899.39	90	54.83	34.67	22.76	14.58	11.23	8.97	7.72	8.22	8.57	9.08	11.67	15.23	18.11
2M	17 Nov 2018	2900.52	50	40.80	28.20	19.42	14.09	12.07	10.30	8.52	8.54	9.11	9.42	9.54	11.98	14.20
3M	17 Dec 2018	2901.97	16	35.62	26.28	18.29	14.52	12.97	11.34	9.48	8.81	9.63	10.35	10.82	13.67	16.12
6M	17 Mar 2019	2910.88	53	33.05	23.37	17.80	15.11	13.88	12.62	11.24	9.94	9.23	9.91	10.62	13.70	16.62
9M	17 Jun 2019	2919.99	05	30.50	22.35	17.79	15.64	14.61	13.56	12.43	11.26	9.72	10.03	10.38	11.55	14.02
1Y	17 Sep 2019	2929.70	48	28.92	21.80	17.96	16.08	15.17	14.25	13.28	12.29	10.64	10.20	10.47	11.03	13.05
18M	17 Mar 2020	2949.95	04	26.89	20.89	17.99	16.51	15.78	15.06	14.33	13.61	12.21	10.68	10.49	10.67	12.33
2Y	17 Sep 2020	2971.05	39	25.55	20.45	18.09	16.89	16.30	15.71	15.13	14.56	13.43	11.63	10.97	10.75	11.63
3Y	17 Sep 2021	3009.82	66	24.40	20.42	18.67	17.78	17.34	16.89	16.46	16.03	15.23	13.95	13.10	11.49	11.10
4Y	17 Sep 2022	3047.89	92	24.13	20.62	19.12	18.42	18.07	17.74	17.41	17.08	16.47	15.39	14.54	13.31	12.08
5Y	17 Sep 2023	3085.63	64	24.14	21.03	19.71	19.10	18.80	18.52	18.24	17.97	17.46	16.55	15.79	14.66	13.53
7Y	17 Sep 2025	3163.76	34	24.73	22.15	21.07	20.58	20.34	20.12	19.90	19.69	19.29	18.57	17.96	16.96	15.91
10Y	17 Sep 2028	3293.41	75	26.18	24.25	23.46	23.11	22.94	22.78	22.62	22.46	22.17	21.63	21.15	20.31	19.40

The SPX BVOL Volatility Surface. Each point is available for consumption in the Real-Time Volatilities service, across different formats (moneyness/deltas, listed expiries/tenors).

The LIVE equity engine

The LIVE engine calculates implied vols and greeks on each individual listed option, feeding the OMON function in the Bloomberg Terminal.

The Real-Time Volatilities service offers access to a subset of what the LIVE engine produces, e.g., a standardized grid of interpolated asynchronous points (the LIVE grid), that are produced in real time and based on changes in the listed option bid/ask quotes.

The LIVE grid gives a very faithful representation of the listed market and can be used to feed trading algos.

SPX Index | 95) Actions | 97) Settings | Option Monitor
S&P 500 INDEX ↑2897.51 -7.47 -.2571% 2897.15 / 2897.92 Hi 2904.65 Lo 2893.10 Volm 0 HV 6.70
Center 2897.43 Strikes 25 Exp 21-Sep-18 Exch US Composite 92) Events Calendar | EVTS »
Calc Mode
81) Center Strike | 82) Calls/Puts | 83) Calls | 84) Puts | 85) Term Structure | 87) Moneyness
Bid | Mid | Ask

Tenor	80	85	90	95	97.5	100	102.5	105	110	115	120
1W	59.46	47.41	34.32	22.19	14.62	8.66	10.18	15.93	26.21	36.67	46.77
2W	44.49	36.01	27.30	17.70	13.06	8.76	8.24	11.92	18.27	25.03	31.71
3W	40.71	33.01	25.06	16.59	12.58	8.86	7.91	10.77	16.13	21.98	27.55
1M	35.98	29.17	22.11	15.09	11.95	8.83	7.57	9.31	13.38	18.00	22.15
2M	28.78	23.73	19.05	14.54	12.32	10.14	8.50	8.17	10.45	12.90	15.70
3M	25.80	22.02	18.35	14.79	12.94	11.09	9.44	8.65	9.65	11.69	13.45
6M	23.01	20.47	17.91	15.25	13.89	12.44	11.24	10.02	9.10	10.03	11.53
9M	22.15	20.05	17.96	15.79	14.65	13.51	12.40	11.34	9.80	9.63	10.34
1Y	21.74	19.91	18.09	16.15	15.17	14.18	13.21	12.28	10.68	9.94	9.89
18M	20.90	19.45	18.00	16.53	15.76	15.02	14.29	13.58	12.30	11.28	10.64
2Y	20.49	19.29	18.11	16.86	16.29	15.73	15.10	14.57	13.50	12.54	11.72

The LIVE grid for SPX Index. Each point is available for consumption in the Real-Time Volatilities service.

The BVOL FX engine

The BVOL FX surfaces are based on contributions from a large number of market makers and brokers. They update in real time based on changes on each individual contributed point. The surfaces provide a very accurate representation of the FX options market, for both derivatives pricing and algo trading.

EURUSD Curncy | 90) Asset | 91) Actions | 92) Settings | Volatility Surface
Bloomberg Volatility | Offshore | New York 10:00 | Calendar Days | As of 09/17/2018
1) Vol Table | 2) 3D Surface | 3) Term | 4) Smile | 5) Dep and Fwd Rates | 6) Contribution Metrics | 7) Correlation
Format RR/BF Put/Call | Side Bid/Ask Mid/Spread

	ATM		25D RR		25D BF		10D RR		10D BF		5D RR		5D BF	
Exp	Mid	Spread	Mid	Spread	Mid	Spread	Mid	Spread	Mid	Spread	Mid	Spread	Mid	Spread
1D	6.725	2.600	-0.310	1.820	0.145	1.300	-0.525	3.120	0.475	2.080	-0.615	5.460	0.700	3.640
1W	6.002	0.725	-0.410	0.510	0.137	0.365	-0.705	0.870	0.350	0.580	-0.830	1.520	0.488	1.015
2W	6.530	0.560	-0.517	0.395	0.140	0.280	-0.888	0.675	0.360	0.450	-1.045	1.180	0.502	0.785
3W	6.480	0.350	-0.582	0.245	0.137	0.175	-0.990	0.420	0.385	0.280	-1.167	0.735	0.550	0.490
1M	6.598	0.235	-0.683	0.165	0.143	0.115	-1.147	0.285	0.417	0.185	-1.348	0.495	0.605	0.330
2M	7.067	0.225	-0.833	0.155	0.170	0.110	-1.420	0.270	0.483	0.175	-1.675	0.470	0.703	0.315
3M	7.090	0.220	-0.928	0.155	0.195	0.110	-1.605	0.260	0.607	0.175	-1.895	0.460	0.902	0.305
4M	7.190	0.220	-0.940	0.150	0.220	0.110	-1.637	0.265	0.698	0.175	-1.945	0.460	1.035	0.310
6M	7.252	0.225	-0.977	0.155	0.267	0.115	-1.723	0.275	0.875	0.180	-2.042	0.475	1.290	0.320
9M	7.350	0.210	-1.000	0.150	0.297	0.105	-1.762	0.255	0.990	0.170	-2.087	0.445	1.455	0.300
1Y	7.455	0.200	-1.005	0.140	0.320	0.100	-1.790	0.240	1.095	0.160	-2.125	0.420	1.615	0.280
18M	7.660	0.240	-0.912	0.165	0.325	0.120	-1.632	0.285	1.095	0.190	-1.945	0.500	1.613	0.335
2Y	7.775	0.280	-0.873	0.195	0.335	0.140	-1.558	0.335	1.152	0.225	-1.865	0.590	1.692	0.395
3Y	8.102	0.255	-0.745	0.180	0.338	0.125	-1.348	0.305	1.188	0.205	-1.625	0.540	1.745	0.360
4Y	8.400	0.300	-0.595	0.210	0.340	0.150	-1.150	0.360	1.200	0.240	-1.425	0.630	1.760	0.420
5Y	8.640	0.300	-0.535	0.210	0.340	0.150	-0.990	0.360	1.200	0.240	-1.220	0.630	1.755	0.420
7Y	8.830	0.300	-0.335	0.210	0.335	0.150	-0.570	0.360	1.075	0.240	-0.814	0.630	1.594	0.420
10Y	9.145	0.300	-0.300	0.210	0.330	0.150	-0.700	0.360	1.070	0.240	-0.999	0.630	1.595	0.420

The BVOL surface for EURUSD. Each point is available for consumption in the Real-Time Volatilities service, in risk reversal/butterfly or put/call delta formats.

Delivery & support

The Real-Time Volatilities are offered as a service in B-PIPE. Bloomberg's global teams of financial engineers, along with strong data and quant teams, provide 24/7 support. Bloomberg values client suggestions and continues to improve service and data coverage.

Take the next step.

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