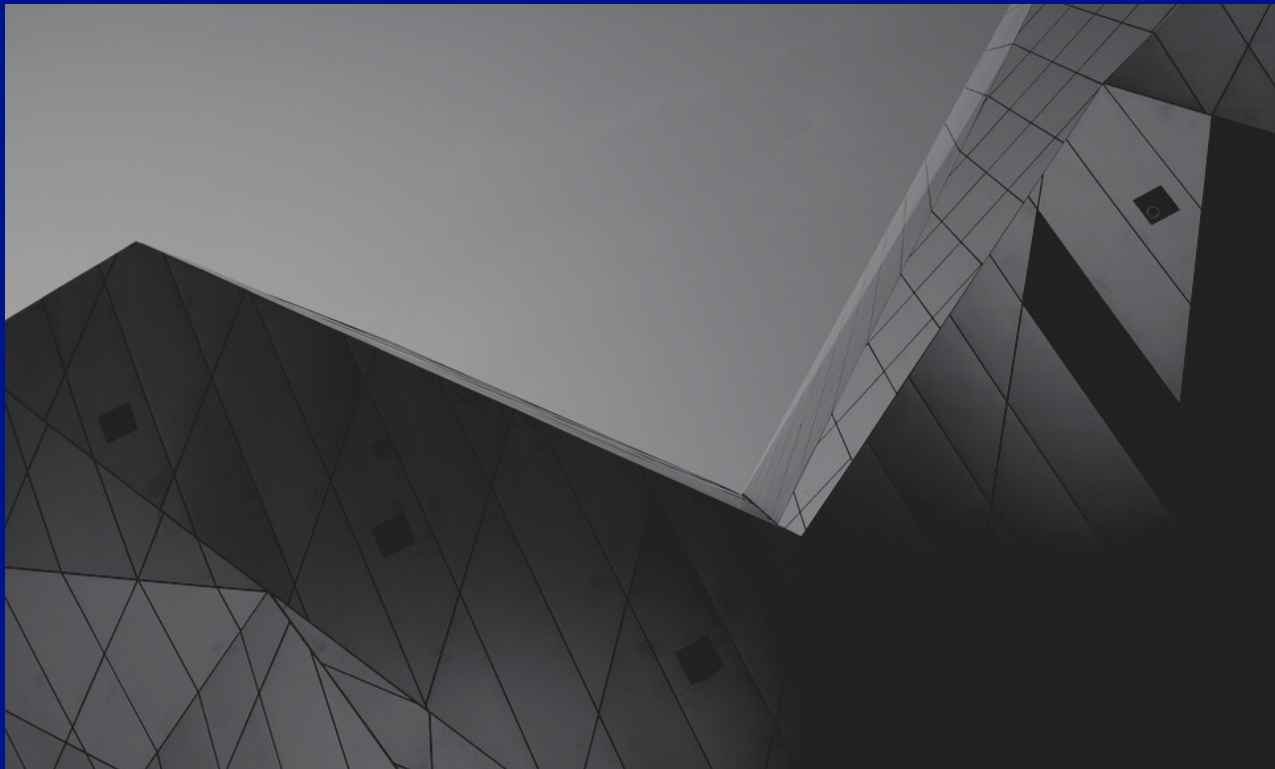


CRYPTO DERIVATIVES

Analytics Report

31ST AUGUST 2023

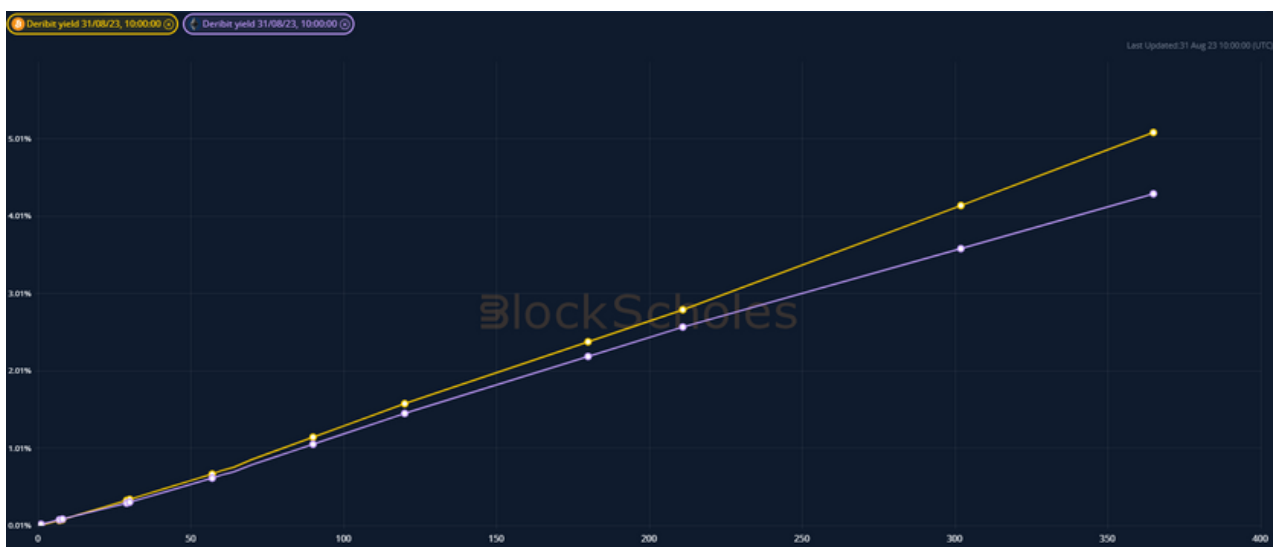


At a Glance

KEY INSIGHTS

A Grayscale-inspired retrace of last week's spot market selloff saw at-the-money volatility rise for BTC and ETH options alike. However, neither event managed to cause a sustained recovery from the historically low range in which volatility has traded throughout the last six months. Neither has this week's rally seen a return to the strong and positive funding rates paid by long positions in perpetual swap contracts - a fact reflected by the subdued spot-yields implied by Futures.

FUTURES IMPLIED YIELD TERM STRUCTURE



VOLATILITY SURFACE METRICS

Tenor ▲	ATM			Skew			Butterfly		
	ATM	YTD	24hr Change	25 Delta	YTD	24hr Change	25 Delta	YTD	24hr Change
1d	33.90%	3.54% ▲	-3.98% ▼	3.85%	5.47% ▲	0.13% ▲	2.46%	2.10% ▲	-0.24% ▼
1W	34.39%	3.19% ▲	-3.94% ▼	-0.81%	3.13% ▲	-1.45% ▼	1.92%	-0.20% ▼	-0.29% ▼
2W	33.43%	-1.87% ▼	-2.94% ▼	-0.52%	4.67% ▲	-1.42% ▼	2.06%	-0.08% ▼	-0.27% ▼
1M	33.73%	-8.46% ▼	-1.42% ▼	0.23%	8.59% ▲	-1.33% ▼	2.28%	-0.25% ▼	-0.44% ▼
3M	38.66%	-15.73% ▼	-1.55% ▼	1.28%	10.34% ▲	-0.85% ▼	2.37%	0.17% ▲	-0.35% ▼
6M	43.79%	-15.91% ▼	-0.31% ▼	2.73%	8.11% ▲	-0.36% ▼	2.63%	0.60% ▲	-0.29% ▼
1Y	42.54%	-16.57% ▼	-0.25% ▼	4.72%	6.33% ▲	-0.20% ▼	3.01%	1.46% ▲	-0.18% ▼

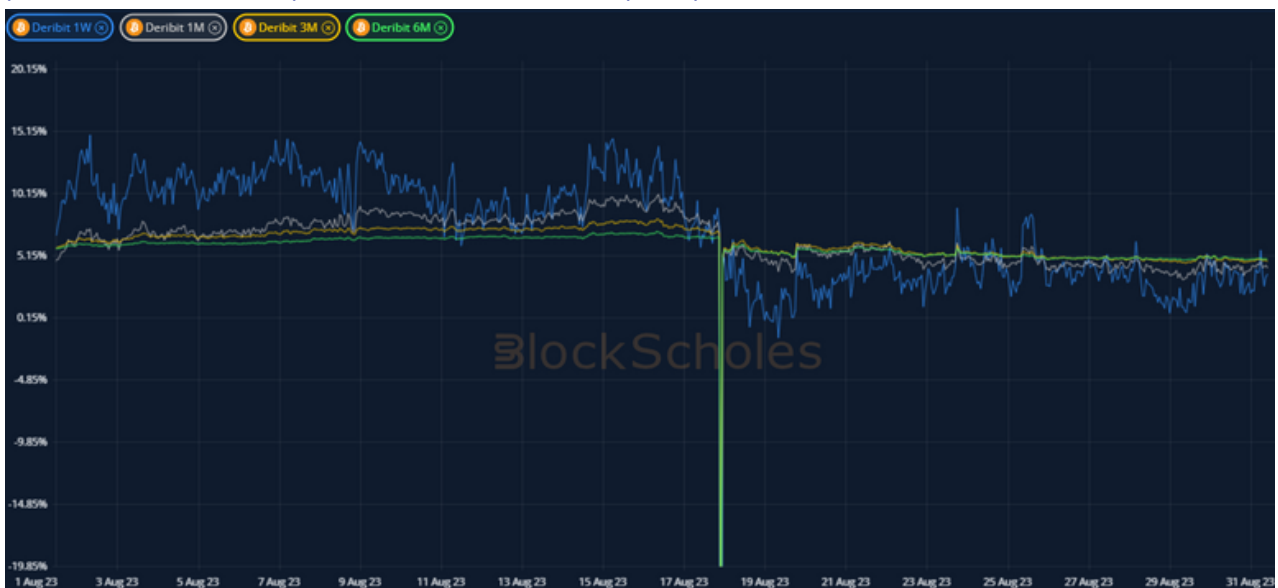
Tenor ▲	ATM			Skew			Butterfly		
	ATM	YTD	24hr Change	25 Delta	YTD	24hr Change	25 Delta	YTD	24hr Change
1d	33.29%	-8.42% ▼	6.30% ▲	-0.50%	0.85% ▲	0.58% ▲	4.03%	3.58% ▲	0.04% ▲
1W	29.69%	-12.72% ▼	1.00% ▲	-2.50%	1.23% ▲	0.14% ▲	2.85%	0.04% ▲	-0.15% ▼
2W	28.84%	-16.83% ▼	-0.03% ▼	-2.74%	4.36% ▲	-0.36% ▼	2.80%	-0.37% ▼	-0.12% ▼
1M	29.84%	-25.89% ▼	-1.03% ▼	-1.98%	7.31% ▲	-1.23% ▼	2.97%	-0.28% ▼	-0.18% ▼
3M	33.55%	-33.09% ▼	-0.79% ▼	-1.70%	7.92% ▲	-0.40% ▼	2.63%	0.34% ▲	-0.22% ▼
6M	38.61%	-27.77% ▼	-0.11% ▼	-0.31%	10.12% ▲	-0.29% ▼	3.16%	1.03% ▲	-0.07% ▼
1Y	38.72%	-30.09% ▼	-0.10% ▼	2.03%	12.27% ▲	-0.17% ▼	3.18%	3.33% ▲	-0.06% ▼

*All data in tables recorded at a 10:05 UTC snapshot unless otherwise stated.

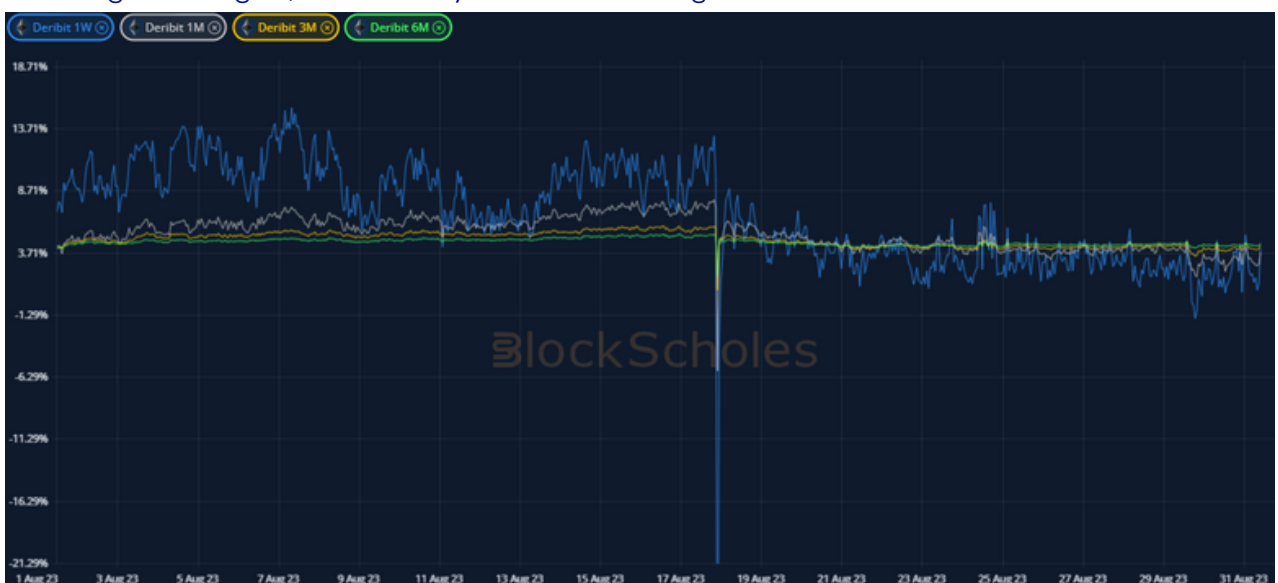
Futures

Price (24hr Change) ⬆	Last Traded (\$) ⬆	Contract ⬆	Last Traded (\$) ⬆	Price (24hr Change) ⬆
-0.86% ▼	27,200	1SEP23	1,704.50	-0.68% ▼
-0.84% ▼	27,220	8SEP23	1,704.50	-0.70% ▼
-0.86% ▼	27,285	29SEP23	1,707.75	-0.74% ▼
-0.56% ▼	27,382.50	27OCT23	1,715.50	-0.61% ▼
-0.86% ▼	27,635	29DEC23	1,728.75	-0.73% ▼
-1.73% ▼	28,042.50	29MAR24	1,745.50	-1.88% ▼
-0.97% ▼	28,372.50	28JUN24	1,757.50	-1.00% ▼

BTC ANNUALISED YIELDS - have repeated last week's subdued performance despite the retrace in spot prices to the \$27K level



ETH ANNUALISED YIELDS - have also repeated last weeks' behaviour, trading in a tight, relatively subdued range above zero



Perpetual Swap Funding Rate

BTC FUNDING RATE - has moved close to zero since the selloff appeared to moderate some of the sentiment that saw high rates paid by longs



ETH FUNDING RATE - has reported a more consistently positive rate paid by longs than BTC's, but remains below the levels seen in early August



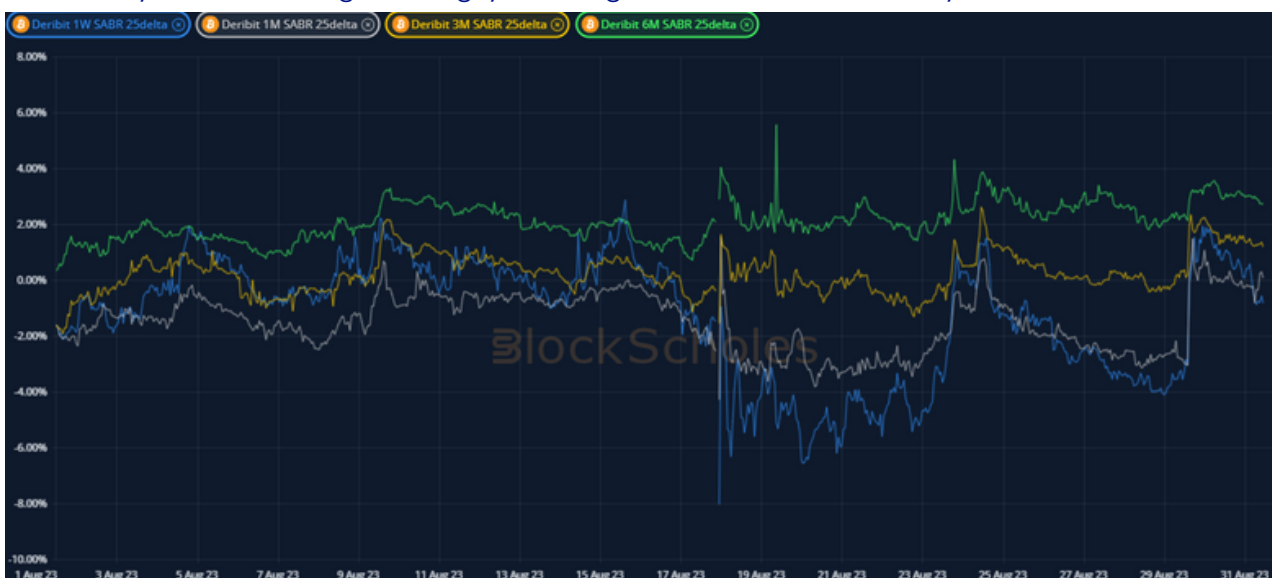
BTC Options

Tenor ^	ATM			Skew			Butterfly		
	ATM	YTD	24hr Change	25 Delta	YTD	24hr Change	25 Delta	YTD	24hr Change
1d	33.90%	3.54% ▲	-3.98% ▼	3.85%	5.47% ▲	0.13% ▲	2.46%	2.10% ▲	-0.24% ▼
1W	34.39%	3.19% ▲	-3.94% ▼	-0.81%	3.13% ▲	-1.45% ▼	1.92%	-0.20% ▼	-0.29% ▼
2W	33.43%	-1.87% ▼	-2.94% ▼	-0.52%	4.67% ▲	-1.42% ▼	2.06%	-0.08% ▼	-0.27% ▼
1M	33.73%	-8.46% ▼	-1.42% ▼	0.23%	8.59% ▲	-1.33% ▼	2.28%	-0.25% ▼	-0.44% ▼
3M	38.66%	-15.73% ▼	-1.55% ▼	1.28%	10.34% ▲	-0.85% ▼	2.37%	0.17% ▲	-0.35% ▼
6M	43.79%	-15.91% ▼	-0.31% ▼	2.73%	8.11% ▲	-0.36% ▼	2.63%	0.60% ▲	-0.29% ▼
1Y	42.54%	-16.57% ▼	-0.25% ▼	4.72%	6.33% ▲	-0.20% ▼	3.01%	1.46% ▲	-0.18% ▼

BTC SABR ATM IMPLIED VOLATILITY - has spiked upwards twice this month, but has struggled to sustain a rise above its historically low levels



BTC 25-Delta Risk Reversal - has continue to trade with significant volatility, recovering strongly during this week's re-rally to the \$27K level



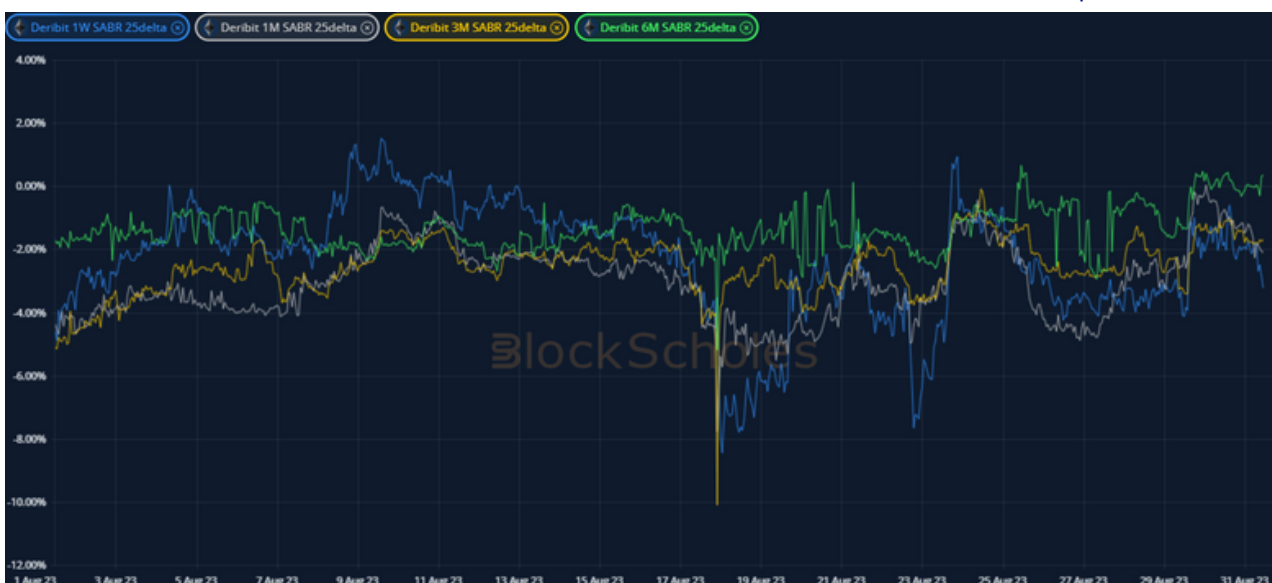
ETH Options

Tenor ▲	ATM			Skew			Butterfly		
	ATM	YTD	24hr Change	25 Delta	YTD	24hr Change	25 Delta	YTD	24hr Change
1d	33.29%	-8.42% ▼	6.30% ▲	-0.50%	0.85% ▲	0.58% ▲	4.03%	3.58% ▲	0.04% ▲
1W	29.69%	-12.72% ▼	1.00% ▲	-2.50%	1.23% ▲	0.14% ▲	2.85%	0.04% ▲	-0.15% ▼
2W	28.84%	-16.83% ▼	-0.03% ▼	-2.74%	4.36% ▲	-0.36% ▼	2.80%	-0.37% ▼	-0.12% ▼
1M	29.84%	-25.89% ▼	-1.03% ▼	-1.98%	7.31% ▲	-1.23% ▼	2.97%	-0.28% ▼	-0.18% ▼
3M	33.55%	-33.09% ▼	-0.79% ▼	-1.70%	7.92% ▲	-0.40% ▼	2.63%	0.34% ▲	-0.22% ▼
6M	38.61%	-27.77% ▼	-0.11% ▼	-0.31%	10.12% ▲	-0.29% ▼	3.16%	1.03% ▲	-0.07% ▼
1Y	38.72%	-30.09% ▼	-0.10% ▼	2.03%	12.27% ▲	-0.17% ▼	3.18%	3.33% ▲	-0.06% ▼

ETH SABR ATM IMPLIED VOLATILITY - remains below that of BTC's options, but has traced similar paths throughout the past month



ETH 25-Delta Risk Reversal - does not enjoy the same positive sentiment as BTC's surface and continues to reflect a skew towards OTM puts



Volatility Surface

BTC IMPLIED VOL SURFACE - Highlights the increase in implied volatility over the last week in response to the retrace of the spot market selloff, with a rise most prominent at longer-dated expiries



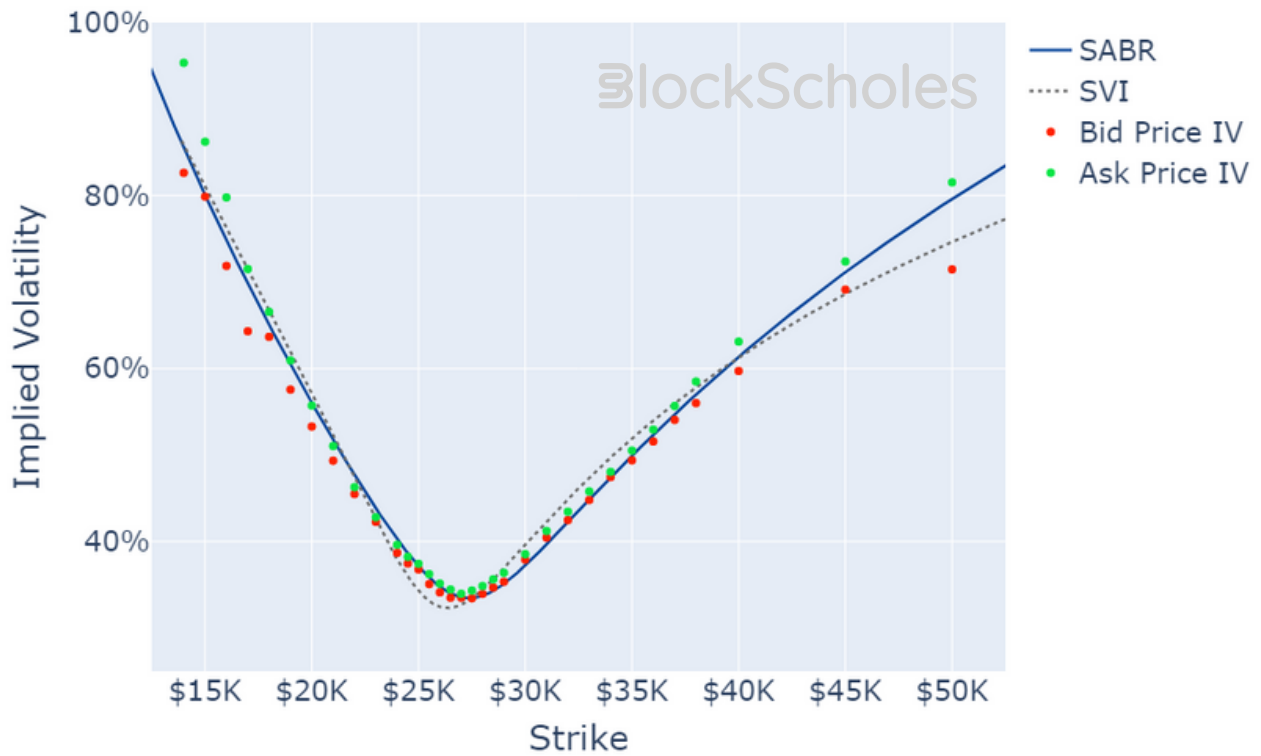
ETH IMPLIED VOL SURFACE - shows a similar but smaller rise in implied volatility that leaves ETH's surface distinctly below BTC's



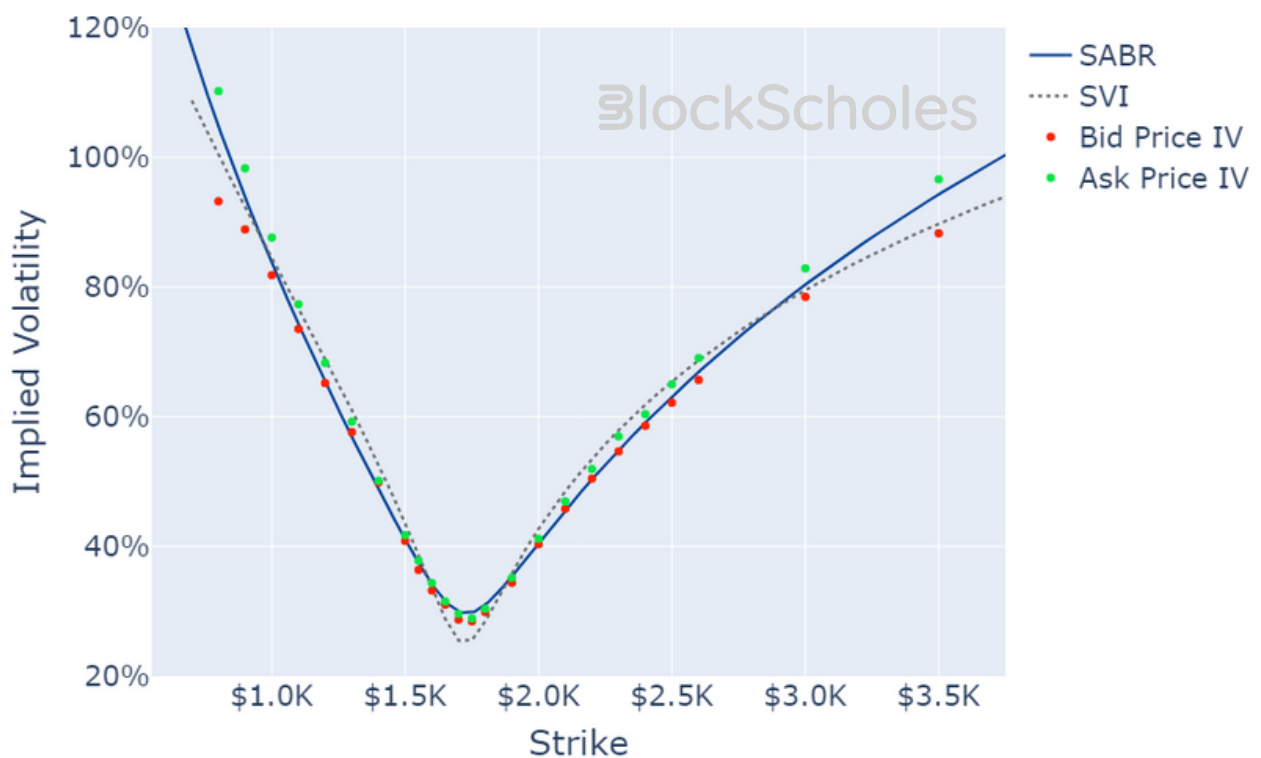
Z-Score calculated with respect to the distribution of implied volatility of an option at a given delta and tenor over the previous 30-days of hourly data, timestamp 10:00 UTC, SABR smile calibration

Volatility Smiles

BTC SMILE CALIBRATIONS - 29-Sep-2023 Expiry, 10:05 UTC Snapshot

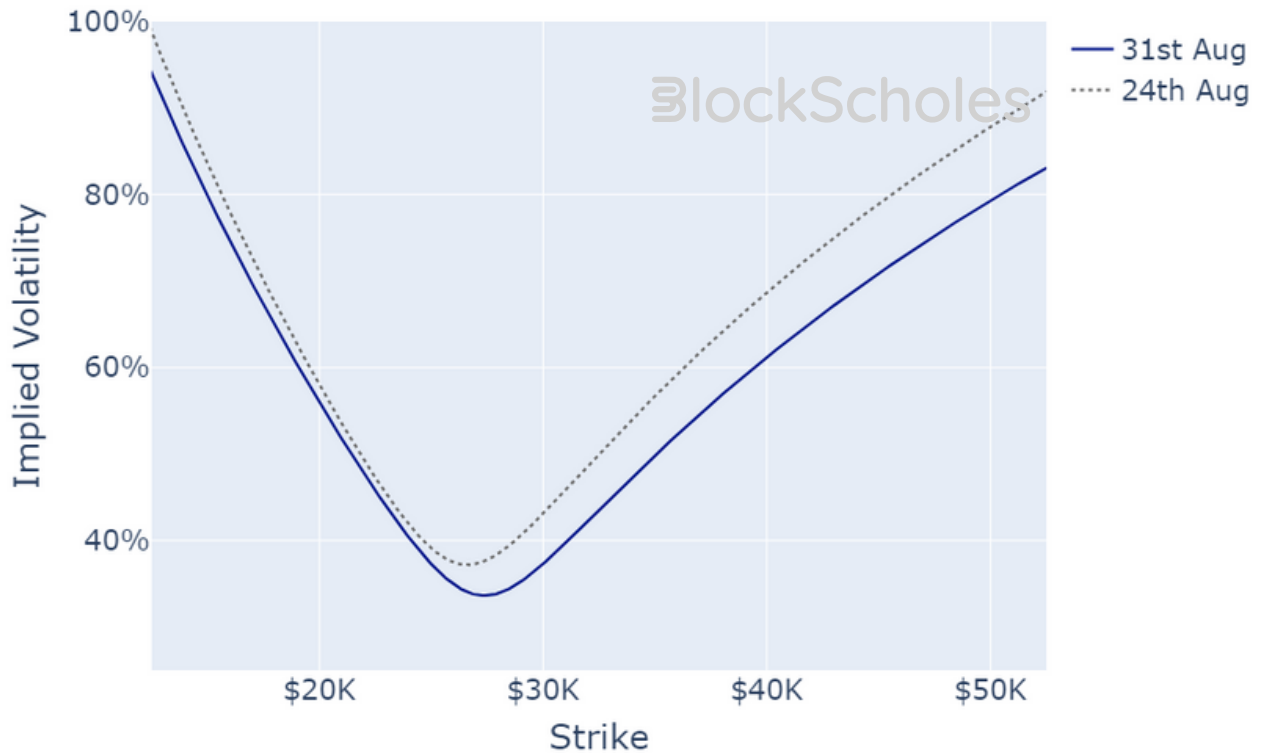


ETH SMILE CALIBRATIONS - 29-Sep-2023 Expiry, 10:05 UTC Snapshot

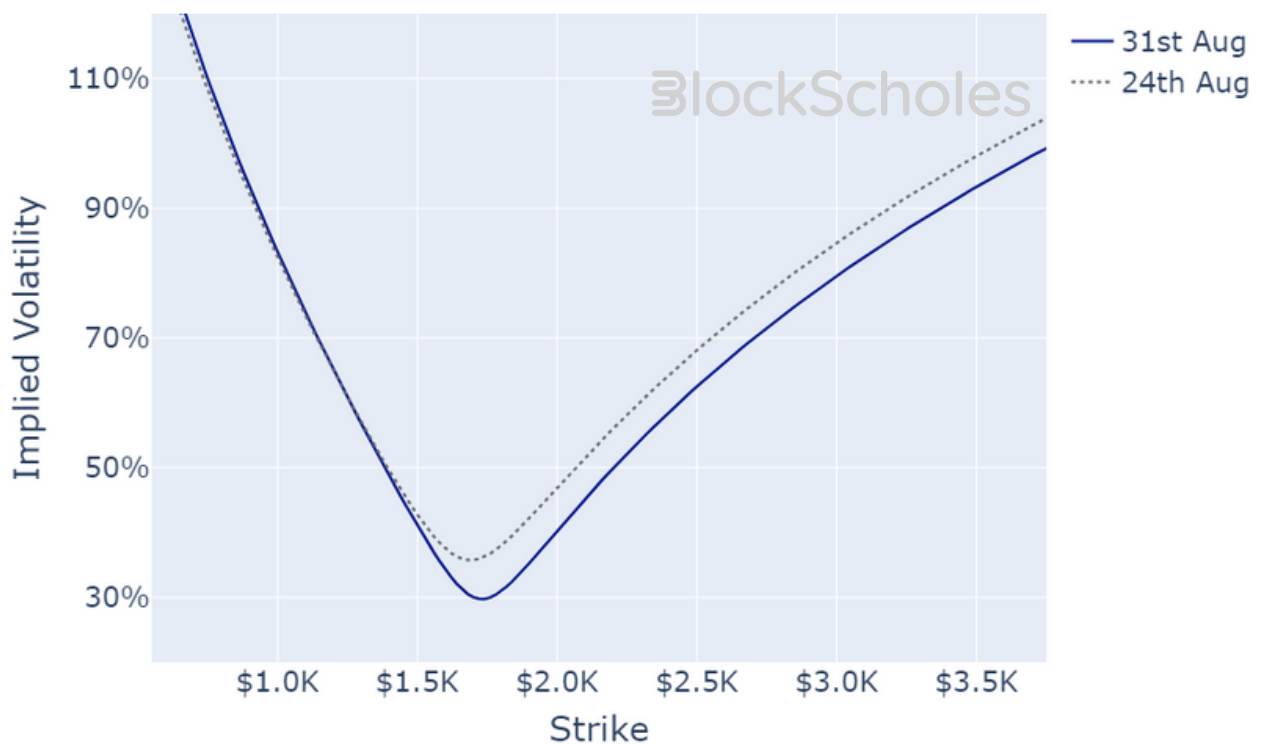


Historical SABR Volatility Smiles

BTC SABR CALIBRATION - 30 Day Tenor, 10:05 UTC Snapshot



ETH SABR CALIBRATION - 30 Day Tenor, 10:05 UTC Snapshot



AUTHORS



ANDREW MELVILLE

Research Analyst

andrew.melville@blockscholes.com



Block Scholes Ltd.



27 Old Gloucester Street
London WC1N 3AX



research@blockscholes.com

SUBSCRIBE TO OUR PLATFORM