

HEADLINES

Understanding Sep 25th's BTC Price Volatility with On-Chain Data
Using Outflow for Anticipating Short Term BTC Price Changes
BitMEX Futures and Outflow as Predictor of Low Liquidity
BitMEX Margin and the Premium Establishing Directional Bias

WEEKLY PRICE OVERVIEW

BTC	\$10,181.08	-16.61%	LTC	\$75.48	-23.29%
ETH	\$217.68	-20.90%	BSV	\$122.61	-29.56%
XRP	\$0.29822	-10.48%	EOS	\$3.92	-26.36%
BCH	\$318.69	-27.44%	BNB	\$21.35	-23.81%

Attempting to Understand Sep 25th's BTC Price Volatility with On-Chain Data

After the recent drop in price, using our on-chain data, the research team at CryptoQuant looked for a potential cause. Although we didn't find a cause for the most recent price movement, we found a correlation between the BitMEX withdrawal system and the timing of big price movements.

Using Outflow for Anticipating Short Term BTC Price Changes

Using our on-chain data, investors can look into BitMEX outflows as a leading indicator for mass liquidations and the large volatility that results. It is then possible to more successfully hedge against this risk.

BitMEX, as the most liquid BTC exchange and the largest physically settled futures exchange, exerts a large impact on price. It is well understood that the effect of margin calls, specifically cascading margin calls on BitMEX, can cause large swings in price much like yesterdays. But a more in-depth look is required.

BitMEX Futures and Outflow as Predictor of Low Liquidity

Flow models have been consistently used as a metric for understanding price. Here inflows and outflows of BTC and stable coins can be interpreted to have specific implications on price. Analysis regarding this is well established, but standard models of Inflow/Outflow aren't compatible with BitMEX.

Traditional exchanges trade between BTC and fiat. This is why Inflow/Outflow metrics are used as indicators in order to understand market structure. For example, when large amounts of BTC are withdrawn from an exchange, it can be viewed as an increase in the amount of HODLERS, drying up supply, and pushing price up.

BITMEX Outflow and BTC Price



During these three periods (2018.11.15 ~2018.11.21, 2019.03.17~2019.04.05, 2019.07.17~2019.07.19, 2019.07.29~2019.08.09) during which BTC experienced a similar change in price, BitMEX Outflow has been overlaid onto the graph. The large Outflow that takes place immediately prior to high volatility is clearly illustrated.

Source: CryptoQuant

Conversely, BitMEX BTC outflows have a large impact on volatility, but this can lead price to increase as well as decrease. This is a result of BitMEX's unique withdrawal policy. Deposits are constantly available, but withdrawals are only conducted once daily, at UTC 13:00. During this short period, outflows exceed inflows by large multiples. Immediately following this, a liquidity shortage, and an increase in the spread can often be observed. These properties lead BitMEX margin positions to be exposed to a liquidity shortage and cascading liquidations.

This idea is supported by the BitMEX wallet Outflow data pulled from on-chain. Using this data, it is possible to anticipate these large volatility moves caused by BitMEX withdrawals. When the Outflow on BitMEX exceeds a certain point, the potential for these large moves increases significantly. Based on on-chain data, it currently appears that when more than 5,000 BTC are withdrawn in one day, the exposure to this volatility increases significantly.

Looking at our on-chain data regarding inflows and outflows from BitMEX on 18.11.14, and 19.04.02, we can see that there is a clear correlation price volatility and outflows. On each of these dates, the volatility occurred within a short period following the BitMEX daily withdrawal at 13:00 UTC. Once the ability of the market to absorb small changes in price decreases, price quickly responds, moving in one direction or another.

BitMEX Price and Withdrawals (2019.09 ~ 2019.09)



Data Source: CryptoQuant

For example, looking at the outflows on 18.11.14, we can see that price moved within a few hours of the UTC 13:00 mark. Within 3 hours it had fallen 11% and a total of 15.6% after 8 hours.

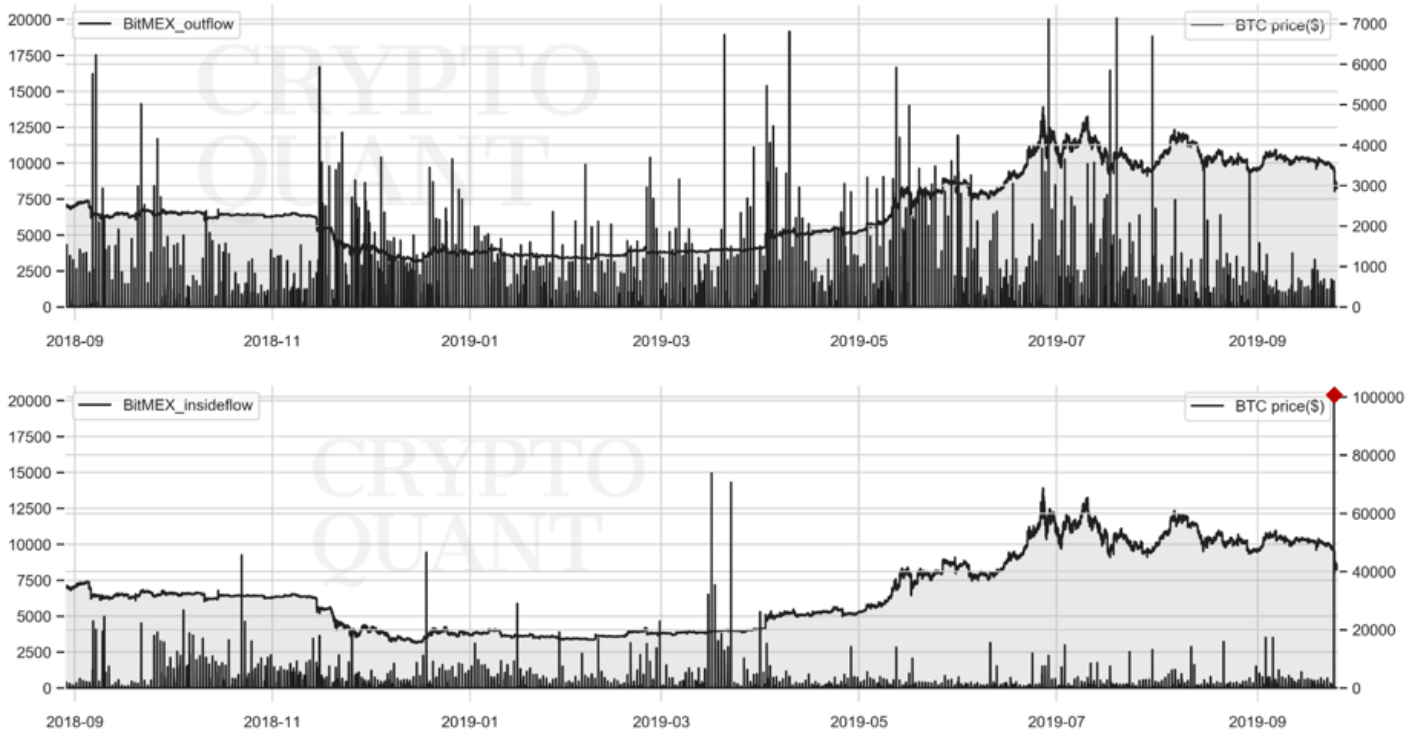
Because of the precision of the on-chain data, we can see the exact block in which the BitMEX outflows spiked. Without consistent and precise on-chain data, on-chain metrics like outflow lose their utility and become lagging instead of leading indicators. The shortness of the window here cannot be overemphasized.

BitMEX Margin and the Premium Establishing Directional Bias

Although Outflow allows us to obtain an understanding of incoming volatility, it falls short of providing insight into the direction which this volatility will lead. For this, the BitMEX Funding and Premium Index provided by NeoButane proves to be useful in gauging whether longs or shorts are overly margined, and thus more vulnerable to the incoming liquidity risk.

Again referring to 19-04-01, the premium was in favor of shorts, with longs paying the funding fee. Price responded as the indicators anticipated, and fell as longs were exposed to the liquidity risk and cascading liquidations ensued.

BITMEX Outflow and Inflow



Data Source: CryptoQuant

Further Research

During our research into BitMEX's withdrawal system, we also noticed a record large internal movement of BTC on 19.09.24. During one hour, nearly 100,00 BTC was moved between BitMEX wallets. Although we don't believe this would have a direct on price, it is worth looking more into. We will provide analysis regarding this in a future report.

Conclusion

Currently most on-chain data is used for long term metrics. These include NVT and MVRV as developed by Willy Woo and Adaptive Capital. Their and others work has shown the significance of on-chain analytics for long term positions. BitMEX Outflow is somewhat unique in that it is a short term on-chain metric. It enables traders to quickly identify a coming liquidity crisis and hedge accordingly. This expanding use of on-chain data furthers the ever-growing importance of on chain data in building a winning strategy when operating in BTC markets.

BITMEX In/Outflow and Inflow(2019.09.24)

	inflow	outflow	insideflow
2019-09-24 10:00:00	36.429291	0.000000	0.000000
2019-09-24 11:00:00	98.500438	0.000000	0.000000
2019-09-24 12:00:00	51.004913	0.000000	0.000000
2019-09-24 13:00:00	50.548887	641.291749	2587.219149
2019-09-24 14:00:00	328.328233	145.961965	99199.655760
2019-09-24 15:00:00	281.181584	395.429338	1610.363820
2019-09-24 16:00:00	155.497886	0.000000	0.000000
2019-09-24 17:00:00	280.762065	0.000000	0.000000
2019-09-24 18:00:00	77.577073	0.000000	0.000000
2019-09-24 19:00:00	3383.053483	0.000000	0.000000
2019-09-24 20:00:00	3182.132198	0.000000	0.000000

Data Source: CryptoQuant

Daily Hashrate and BTC Price



Data Source: CryptoQuant

Q. Was the crash caused by the Sudden Hash rate Decrease?

Many sources are claiming that the hash rate fall is the source of the drop in price. But hash rate acts as a lagging indicator, following Bitcoin price. Its role as a factor in price is minimal. Looking at the hash rate chart overlaid onto the price chart, it is difficult to establish a correlation between the two.

Our analysis found that the price of BTC and the hash rate at both 1 day and 10 day averages have no correlation, as the coefficient doesn't exceed $-0.2 \sim 0.2$. The recent decline was also the case, as miners didn't impact price. The decline in hash rate was instead a result of miners decreased profitability.

To investigate the idea of little to no correlation, we conducted analysis into the correlation between the price and hash rate. Correlation was measured by comparing the price and the average hash rate over 1 day and 10 day periods.

Correlation of 1 Day Hash rate and BTC Price



Correlation of 10 Day Hash rate and BTC Price



Data Source: CryptoQuant

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About Us

CryptoQuant provides personalized on-chain and market data, empowering them to value cryptocurrencies and uncover actionable signals.

We utilize machine learning technology to deanonymize bitcoin addresses and uncover the purpose of each transaction. We have rich entity address labels, such as exchanges and miners, and we extract meaningful information from them. Our team has a number of experienced machine learning experts, quantitative analysts, graph mining experts and engineers.

Based on the unique insights we gain, we periodically publish on-chain data based high quality reports. Moreover, we provide detailed historical data for various on-chain and market metrics, including all metrics included in this report. For further details, please contact us.

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