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History of Crypto Derivatives

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Research and Insights

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Content

Executive Summary

Welcome to our crypto derivative series. This article will guide you to walk through the history of crypto derivatives.

Key Takeaways

- The Crypto market is much more volatile than the traditional market, which creates a massive demand for derivatives to hedge the risk, speculate, and leverage.
- The first bitcoin futures platform emerged in 2011 but didn't attract much market attention. BitMEX joined in 2014 to foster bitcoin derivatives market and invented perpetual swaps in 2016.
- CBOE and CME offered bitcoin derivatives in December 2017, since then crypto derivatives can be traded in regulated exchanges. However, severe selloffs followed, and the crypto market cooled down.
- 2019 is a big year for crypto derivatives. Lots of famous derivatives exchanges were launched. Even some big names of spot exchange joined to offer crypto derivatives for investors.
- Crypto market attracted more and more retail and institutional investors in 2020 during the pandemic. The bitcoin price soared to sky high, and demand for derivatives surged accordingly.
- Thanks to the development of DeFi, Ether derivatives have become much more popular recently.
- As more regulations are carried out in Europe and the US, many crypto derivative platforms relocate, and Asia becomes the new center.

Introduction

What Are Crypto Derivatives?

Derivatives are closely linked to expectations of market participants. Simply put, a crypto derivative is an agreement that arranges the purchase or sale of a crypto money or an asset based on a pre-determined price and time in the future.[1] There are mainly two types of crypto derivatives: futures and options. Here we use bitcoin as an example to illustrate.

A bitcoin futures contract is an agreement between a buyer and a seller to trade bitcoin at a pre-determined price at a pre-determined date in the future. At the expiration date, some futures can be physically-settled, some can be settled by cash. There're two positions for a bitcoin futures contract: long and short. The long position agrees to buy the bitcoin at a specific price in the future, while the short position agrees to sell. In a bullish market, more people open long contracts since they expect the price to rise. The higher the price can achieve in the future, the more profitable people holding long position will be.

There's a special type of future called a perpetual swap. It is a unique invention in the crypto world. As the name suggests, a perpetual contract is a futures contract without an expiry date. The buyers and sellers can choose to keep their position open as long as they have enough assets in their margin account to cover the price swings. Perpetual holders' gain or loss is denoted by the funding rate, which is calculated based on the difference between the contract price and the bitcoin spot price. In other words, the long holders need to pay the short holders if the spot price is lower than the contract price and vice versa. In most exchanges, the funding rate is refreshed every 8 hours.

Bitcoin options and bitcoin futures are similar in many aspects. The key difference is that unlike the futures that the transaction has to happen at the expiration date, the trader who bought the option can choose whether to trade. Options are categorized into two types: call and put. People holding the call option can choose to buy bitcoin at the expiry date at the pre-determined price, while people holding the put option can choose to sell. If the price

[1] Yakup Söylemez (2019) "Cryptocurrency derivatives: the case of bitcoin". Retrieved from https://link.springer.com/chapter/10.1007/978-3-030-25275-5_25

change disagrees with the expectation (e.g. an investor holds a call option while the price keeps dropping), then he/she can simply not execute the option and the value of the option goes to zero.

Why Do We Need Crypto Derivatives?

Crypto markets are much more volatile than markets for traditional assets. The following charts show the price change for crypto assets since 2020. During this period, the max BTC price is more than eight times its lowest price, and the max ETH price is more than fifteen times the min price. This level of volatility is almost impossible for stock prices in the traditional market, except in extreme circumstances like we recently saw in Gamestop's stock. Meanwhile, the highest level of the S&P index is less than twice the minimum.

Because of the high risk in crypto market, introducing derivatives becomes crucial to its development.

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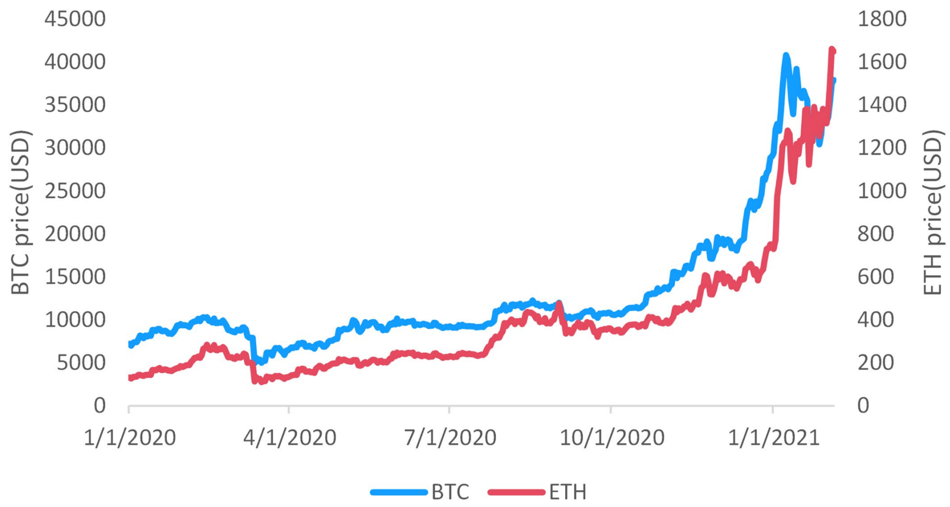
Spot Price of BTC And ETH Since 2020

Crypto price can be very volatile, the max is more than 10 times of the min



As of Feb 4th, 2021 *Source: Yahoo Finance, Crypto.com Research*

Generally speaking, crypto derivatives have three functions for investors' sake:

1. Managing risk

   The volatility of crypto price makes it risky for people who live on crypto assets, like bitcoin miners. By setting the pre-determined price in advance can largely hedge the risk from future price changes. This is mainly for optimistic crypto enthusiasts.

2. Speculation

   One of the main drivers behind crypto derivatives is speculation. speculators can be anyone who simply wants to benefit from price volatility. In this case, bearish investors can also join and gain by shorting the crypto if they expect the price to drop. This is exactly what happened after the 2017 bitcoin mania.

3. Leverage

   Investors can amplify their risks and rewards by leveraging in the derivatives market. As most derivatives allow for margin trading, the investors can open positions larger than their deposits. This function is essential for investors who have a strong belief in future price trends and can help them gain more benefits.

For the whole market, crypto derivatives can support the "determination of price." As Hunain Naseer puts it, "Derivatives such as futures and options support the underlying asset's price discovery by giving the market tools necessary for expressing sentiment."

Bitcoin is well understood by the market and has good name recognition in the crypto world. Accordingly, bitcoin derivatives is the most commonly traded product among all kinds of derivatives. So this article mainly focuses on bitcoin derivatives. We'll walk through the bitcoin derivatives history step by step in the following sections.

As the most popular crypto asset, bitcoin has dominated the crypto derivatives market for long. However, the DeFi (mostly on Ethereum) summer came in 2020. As a result, Ether derivatives grew tremendously and attracted market attention. Exchanges like BitMEX, OKEx, FTX, and Huobi all offered Ether derivatives to the market. What's more, in December 2020, CME announced that it plans to add Eth futures in early 2021. As the blueprint for decentralized finance, Ethereum might be the next "bitcoin."

Besides Bitcoin and Ether, many other altcoins offer to trade in derivatives. However, the investors are mainly retail traders. Institutional adoption for financial products is critical to promote the assets. As most altcoins don't have institutional adoption, their popularity and influence are still very limited so far.

History Of Bitcoin Futures

Early-Stage (2011-2017)

Bitcoin futures is the first crypto derivatives in history, and it goes mainstream later on. As early as 2011, physically-settled bitcoin futures emerged in a small platform called ICBIT. It attracted some crypto investors immediately, and bitcoin futures started to be traded in early 2012. Meanwhile, platforms like IRC channels created space for investors to write options and negotiate futures. However, this great idea hasn't been appreciated by the market immediately as the mass adoption of the underlying asset, bitcoin, is still low. What's more, all these platforms are primitive without good user experiences.

Investors' interests in bitcoin increased after 2012 as several platforms encouraged both retail and institutional bitcoin adoption. In November 2012, the trading platform 1Broker (which was closed in September 2018) was launched. It allowed users to trade on various financial markets with bitcoin as the settlement currency. This platform connects bitcoin to the traditional market and encourages investors to accept bitcoin. Grayscale followed to foster institutional investment into bitcoin in 2013. The increasing popularity of bitcoin increases the demand for more complicated financial products based on it. Experts in traditional markets started to be attracted to this crypto world, and many of them joined to design some derivative products for this new market.

As we just mentioned, lacking an easy-to-use platform is an obstacle for the development of bitcoin futures. The turning point came in 2014, when the derivatives platform BitMEX was launched. Although its interface wasn't fancy, it was a big step forward. Notably, the perpetual swap is an innovative product invented by BitMEX in 2016, which became so important that it continues dominates the crypto derivatives market and is offered by most major exchanges today.

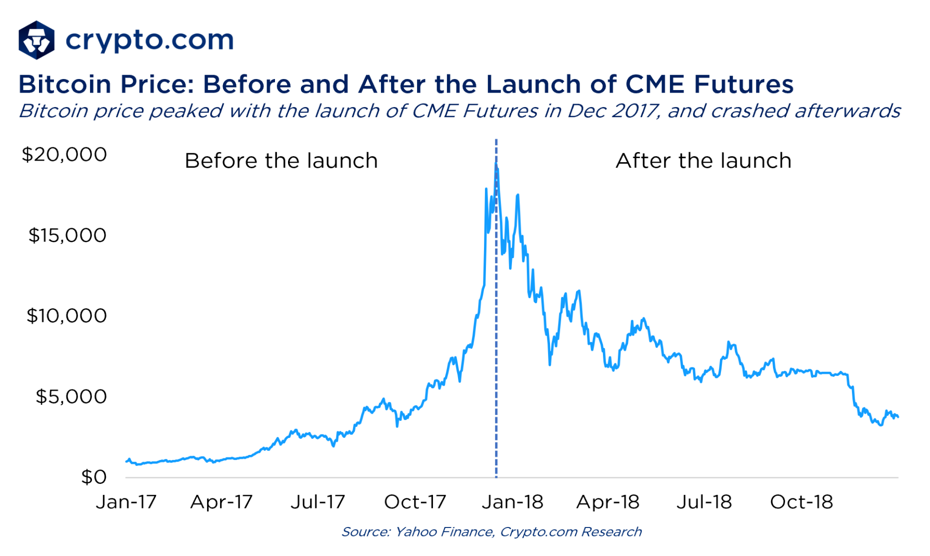
Bitcoin Futures and Bitcoin Winter (2017-2018)

2017 was a big year for crypto derivatives. In December 2017, as the bitcoin price reached an all-time high of around $20k, Chicago Board Options Exchange (CBOE) and Chicago Mercantile Exchange & Chicago Board of Trade (CME) decided to offer futures contracts based on bitcoin, which gave market players a regulated venue on which they could trade derivatives.

CME Group Cboe Global Markets

The transactions on both CBOE and CME are all cash-settled. For instance, the CBOE futures track the price of bitcoin on a cryptocurrency spot exchange, Gemini. The CME aggregates the price information in multiple exchanges and creates a bitcoin reference ratio as the value of the underlying assets. This is a safer and generally more palatable option for traditional investors to speculate, hedge, and trade. Cash-settled bitcoin futures allow investors to trade the value of bitcoin without actually owning it. People in countries where bitcoin is banned could use futures to access the crypto world.

This positive news encouraged optimists to further invest in bitcoin, which pushed bitcoin price to surge rapidly. The market experienced an unprecedented bull run. Investors quickly adopt bitcoin futures after it launched. However, a dramatic selloff followed thereafter, where the price of bitcoin fell by more than 60% over the next few months.

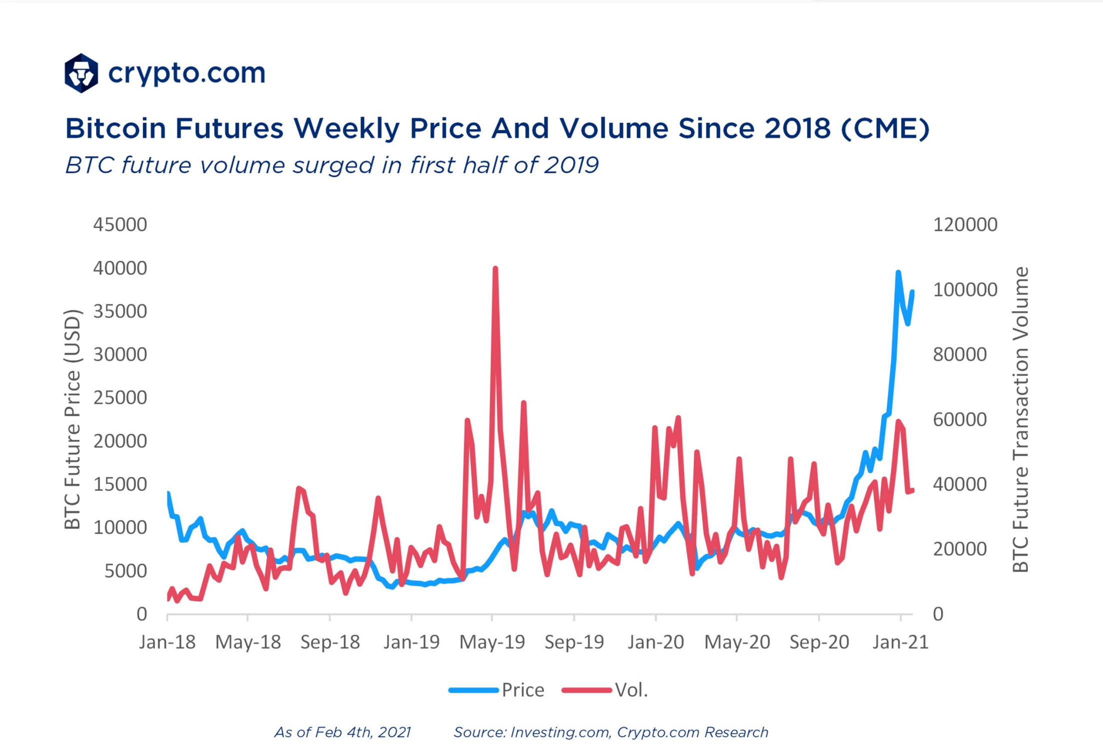


The article: “The Role Of Derivatives in Bitcoin Rallies and Selloffs” in our derivatives series has studied this event in depth. To understand the logic behind this event in a simple way, we cite the [FRBSF Economic Letter](): The introduction of bitcoin futures contract “allowed pessimists to enter the market, which contributed to the reversal of the bitcoin price dynamics.” And so, the crisis happened.

Investor interest in cryptocurrency has cooled due to the drop in its price. Some financial institutions gradually lost their enthusiasm for cryptocurrency and exited the market. In March 2019, CBOE stopped listing bitcoin futures.

Summer for Bitcoin Futures (2019-today)

Although the bitcoin price faced some pressure in 2019, it was a big year for bitcoin derivatives: the crypto derivatives market experienced exponential trading volume growth. Some exchanges even posted record volumes. Using the CME as an example, the following chart shows how popular bitcoin futures were in May of 2019. As the growth of bitcoin futures continued, the trading volume of bitcoin derivatives gradually overtook the spot market, similar to what happened in the traditional financial market.



Many currently-famous bitcoin future platforms joined during this period. Bybit launched at the end of 2018, it focused on perpetual swap and offered investors up to 100:1 leverage. In July 2019, Quedex, a Gibraltar based crypto derivative exchange was granted a license by the Gibraltar Financial Services Commission (GFSC) for trading cryptocurrency derivatives. Bakkt (founded by Intercontinental Exchange, which is the creator of NYSE) launched bitcoin futures in September 2019. It offers physically-settled bitcoin future contract, and it's mainly targeting institutional investors.

Now it comes to 2020. It is a special year because of the pandemic: the world economy was seriously damaged. Governments respond with massive stimulus packages and QE. However, this raises a concern of inflation, which prompt some investors to turn to the crypto market. As more and more institutional investors like MicroStrategy and Square show strong interest in bitcoin, the bitcoin mass adoption rises sharply and even boosts the price to above $40k in January 2021. This bitcoin frenzy contributes to a robust demand to hedge crypto risks, and leads to surging popularity of crypto derivatives market.

Accompanied with the market growth, more and more regulations are carried out in Europe and the US. Many crypto exchanges chose to relocate their offices. As a result, Asia becomes the new global hub for cryptocurrency derivatives, particularly Singapore, where the openness to innovation gave it a good reputation in the crypto world.

Recently, Crypto.com just launched its Derivatives Exchange with up to 50x leverage on BTC perpetuals! Check it out here.

History of Bitcoin Options

Unlike bitcoin futures, whose underlying assets can only be bitcoin, bitcoin options can be pegged to either real bitcoin or bitcoin futures.

The pioneer for bitcoin options is a platform operated in Netherlands: Deribit. Arguably, it was the first crypto options platform in the world offering plain "vanilla" bitcoin options in 2016. To be specific, the platform gives users the ability to purchase European-style cash-settled bitcoin options. It gained the exposure during the bull market period in 2017. Nowadays, Deribit is still the biggest player in the bitcoin options market.

Similar to bitoin futures, the early bitcoin options platforms were not regulated by jurisdictions. LedgerX got approval for options trading from CFTC in July 2017 and became the first regulated bitcoin options exchange. In October 2017, the LedgerX website reported the first bitcoin option and saw an explosive trading volume after its first week's launch.

Deribit LedgerX

After the bitcoin price crash in 2017-2018, bitcoin options market boosted again. Bakkt joined to provide bitcoin options in December 2019, and CME also announced to launch bitcoin options in January 2020. Another strong competitor, Bit.com joined in August 2020, it showed strong momentum in growth after launch. And it will be launching the first bitcoin cash (BCH) options in Feb 2021.

CME Group bit.com

Some big names spot exchanges also followed the trend: OKEx launched options trading at the end of Dec 2019. In April 2020, Binance launched Bitcoin options on its futures trading platform. Huobi Futures, the crypto derivatives unit of Huobi Group, entered bitcoin options in September 2020. And many more.

OKEX BINANCE Huobi Futures

Conclusion

The table below summarizes crucial steps in the history of crypto derivatives. In the grand scale of things, crypto derivatives markets are still at a nascent stage, and we should look forward to their further development as more institutional players join the market!

Year	Event
2011	The first bitcoin futures platform ICBIT emerged
2014	BitMEX launched
2016	BitMEX invented perpetual swap; Deribit offered the first bitcoin options
2017	LedgerX became the first regulated bitcoin options exchange; CBOE and CME launched bitcoin futures, but bitcoin price crashes shortly after the launch
2018	Bybit offered bitcoin derivatives
After 2019	The volume of bitcoin derivatives surged around May 2019; Many spot exchanges like OKEx (2019), Binance (2020), Huobi Futures from Huobi Group (2020) started to offer crypto derivatives; Crypto derivatives platforms like Quedex (2019), Bakkt (2019) launched; Bit.com joined to offer bitcoin options and plan to launch BCH options in August 2020; CME launches Ethereum futures in February 2021 Crypto.com launches Derivatives Exchange in February 2021

Summary

Key Takeaways

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- CBOE and CME offered bitcoin derivatives in December 2017, since then crypto derivatives can be traded in regulated exchanges. However, severe selloffs followed, and the crypto market cooled down.
- 2019 was a big year for crypto derivatives. Lots of famous derivatives exchanges were launched. Even some big names of spot exchange joined to offer crypto derivatives for investors.
- Crypto market attracted more and more retail and institutional investors in 2020 during the pandemic. The bitcoin price soared to sky high, and demand for derivatives surged accordingly.
- Ethereum futures were launched by CME in February 2021, allowing more options for the institutional trading of ETH.
- As more regulations are carried out in Europe and the US, many crypto derivative platforms relocate, and Asia becomes the new center.

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