



Risk management in the digital age Bitcoin futures and hedge accounting

On October 31, 2017, the Chicago Mercantile Exchange's ("CME") Group [announced](#) their intention to offer Bitcoin futures, and subsequently launched their Bitcoin futures trading platform on December 18, 2017. Following the announcement by the CME, the Chicago Board of Exchange ("CBOE") announced their intention to offer their own [Bitcoin futures product](#), which was successfully launched on December 10, 2017.

The new contracts will be cash-settled and based on a once-a-day reference rate of the U.S. dollar price of Bitcoin. For CME futures, amounts will be based on the CME CF Bitcoin Reference Rate ("BRR"), which aggregates bitcoin trading activity across four bitcoin exchanges (Bitstamp, GDAX, itBit and Kraken), while the new CBOE contract is based on a single auction price from a different bitcoin exchange (Gemini) on the final settlement date.

Bitcoin is a cryptocurrency, or an open-sourced software based payment system, that was introduced in 2009. Bitcoin is based on a peer-to-peer payment system and unlike physical currencies, such as the United States dollar ("USD"), it is not a fiat currency that derives its value from government regulation or law. The value of Bitcoin in relation to fiat currencies has historically been subject to significant volatility, with a high of \$19,205.11 USD and a low of \$801.98 USD in 2017.¹ As more entities accept Bitcoin as a form of payment for goods and services provided, and hold Bitcoin, either for their proprietary accounts or for their customers, those entities face an increasing risk due to price fluctuations in the value of the Bitcoin compared to fiat currencies. Bitcoin futures may help mitigate certain risk exposures related to Bitcoin.

As of March 2018, there is no explicit guidance on how entities should account for Bitcoin, including subsequent remeasurement.² Instead, entities should evaluate Bitcoin under the Conceptual Framework³ and use judgment in determining the accounting treatment in their situation. In June of 2017, the Digital Asset Chamber of Commerce submitted an [agenda request](#) to the Financial Accounting Standards Board ("FASB") but as of the date of this publication, the FASB has not added accounting for Bitcoin as an agenda item.

Hedge Accounting Under ASC 815

Provided Bitcoin futures meet the definition of a derivative*, under ASC 815 they would be recognized at fair value, with subsequent changes in fair value through earnings. ASC 815 allows for all or a portion of a derivative to be used as a hedging instrument, and how an entity may apply the hedge accounting rules to a hedging relationship involving Bitcoin futures generally depends on the nature of the risk being hedged. For example, if an entity has an exposure to market price fluctuations related to a holding of Bitcoin recorded as an asset on the balance sheet, then a fair value hedge may be appropriate. Alternatively, if an entity has an exposure to market price fluctuations as a result of future forecasted purchases or sales of Bitcoin, the entity may enter into a cash flow hedge. Clearly understanding the risk exposure an entity desires to hedge is the critical first step in applying hedge accounting treatment. Below we will discuss considerations for both fair value and cash flow hedges.

* ASC 815 requires that except, for certain foreign currency transactions, a nonderivative instrument cannot be used in a hedging relationship as a hedging instrument. For an instrument to be considered a derivative, it must have 1) one or more underlyings, 2) one or more notional amounts or payments provisions (or both), 3) require no or a small initial investment and 4) may be net settled. Based on the information provided by the CME and CBOE, it would appear that the Bitcoin futures in both cases would meet the definition of a derivative in that they would have an underlying (the price of Bitcoin in USD), a notional amount of Bitcoin in each contract, require only the premium upon entering into the Bitcoin futures contract, and may be net settled, either through an offsetting futures position or in cash (USD).

Fair Value Hedge Accounting

A fair value exposure exists when changes in market prices can change the fair value of an existing asset, liability, firm commitment or a homogenous group of each of these and that change in fair value could potentially impact earnings. Examples include a fixed interest rate asset or liability, inventory on hand, or a fixed price firm commitment that meets the definition in ASC 815-10-20.

The risks that can be hedged for a financial asset, liability or firm commitment are benchmark interest rates, creditworthiness, foreign currency or a combination thereof, including the overall change in fair value. If an entity is hedging a nonfinancial asset, liability, or firm commitment, the risk being hedged should be the overall change

in fair value. As a result, entities' determination of the nature of Bitcoin may impact the risk exposures eligible for hedge accounting treatment.

An entity may designate a derivative instrument as a fair value hedge of an exposure to changes in the fair value of the hedged item attributable to the risk being hedged. When a fair value hedge is highly effective and meets all of the hedging criteria of ASC 815, both the changes in the fair value of the hedging instrument and the changes in the fair value of the hedged item (attributable to the risk being hedged) are recorded in earnings. For Bitcoin, an entity may conclude all changes in fair value of the hedged item are being hedged. Effectiveness for a fair value hedge is the extent to which the changes in the fair value of the hedging instrument offset the changes in the fair value of the hedged item based on the risk being hedged.

Subsequently measuring an asset or liability at fair value with changes in fair value recorded currently in earnings would obviate fair value hedge accounting treatment. That is, because both the hedge item and hedging instrument would both be fair valued at each reporting date, changes would offset in earnings each period, provided the Bitcoin future is an effective economic hedge of the asset or liability.



Connecting the Dots

As noted above, in the event entities apply fair value hedge accounting treatment and the relationship is demonstrated to be highly effective, the changes in fair value attributable to the risk exposure being hedged are recorded in earnings each period. As a result, the application of fair value hedge accounting may allow entities to subsequently measure Bitcoin holdings at an amount closer to the Bitcoin's fair value versus how entities subsequently measure Bitcoin holdings without fair value hedge accounting treatment, given the current lack of directly applicable accounting literature.

Cash Flow Hedge Accounting

A cash flow exposure exists when an entity may be exposed to variability in the cash flows of a recognized asset or liability, or of a forecasted transaction, that is attributable to a particular risk. Examples include forecasted cash flows related to revenue denominated in a foreign currency, forecasted cash outflows related to the payments made on variable rate debt issued by an entity, or forecasted variable cash flows on the purchase of goods or services whose value is derived from an observable market (e.g., the purchase or sale of a commodity).

An entity may designate a derivative instrument as a cash flow hedge of an exposure to the variability in the expected cash flows of a recognized asset or liability, or of a forecasted transaction. When a cash flow hedge is highly effective and meets all of the hedge accounting criteria of ASC 815, changes in the fair value of the hedging instrument are recorded in other comprehensive income and released into earnings in the period in which the variability from the forecasted transaction is also recorded in earnings.

Effectiveness for a cash flow hedge is the extent to which changes of the cash flows in the hedging instrument are expected to offset the changes of variability in the expected cash flows of the hedged item.

When an entity subsequently remeasures Bitcoin holdings at fair value, cash flow hedge accounting is not permissible. Instead, the changes in fair value of the Bitcoin future and the Bitcoin holdings would offset in earnings in the period the changes are recorded.

Hedge Effectiveness

Hedge accounting treatment is limited to relationships that are expected to be “highly effective” in achieving offset in either the changes in fair value (for a fair value hedge) or variability in cash flows attributable to a hedged risk (for a cash flow hedge) during the hedging period.

While entities must assess hedge effectiveness prospectively at hedge inception and both retrospectively and prospectively on an ongoing basis, there is no prescribed method in how entities must do so. Instead, ASC 815 indicates that the assessment should be based on the objective of an entity’s risk management strategy. Entities typically use one of two approaches depending on the nature of the hedging relationship; 1) the “long-haul” method or, if an entity in performing its assessment determines the critical terms of the hedging instrument and the hedged item match, and 2) the critical-terms-match method.

If an entity concludes that the critical terms of the Bitcoin future and the hedged item are the same (the critical-terms-match method), the entity may be able to conclude that changes in fair value or cash flows attributable to the risk being hedged are expected to completely offset at inception and on an ongoing basis. As a result, an entity may only have to perform a qualitative assessment each period when performing their hedge effectiveness assessment. The critical-terms-match method differs from the shortcut method in that under the critical-terms-match method the full provisions of ASC 815 must be applied at inception and at least every quarter.

If an entity concludes they will assess effectiveness under the long-haul method, the entity should clearly document how they will do so. Typically, entities utilize either statistical regression, dollar-offset, or a combination of the two in their approach to assessing effectiveness using the long-haul method. Additionally, an entity may elect to only include changes in fair value of the hedging instrument as a result in changes in the spot price, with the excluded changes in the fair value of the hedging instrument from changes in the forward price recognized currently in earnings.

The results of an entity’s effectiveness assessment will indicate whether or not ineffectiveness will be recorded in any given period, and how ineffectiveness is recorded differs depending on whether an entity has a fair value hedge or a cash flow hedge. For a fair value hedge, any ineffectiveness is recorded in earnings in the period it occurs, whereas for cash flow hedge, ineffectiveness is only recorded to the extent the change in forecasted cash flows exceeds the change in fair value of the hedged item. To the extent the change in forecasted cash flows is less than the change in fair

value of the hedged item, that difference would be recorded in other comprehensive income and released in earnings in the same period the hedged item impacts earnings.

When hedging the risk in changes in the cash flows in the purchase price or sales price of an asset, ASC 815 requires entities to hedge the price based on the physical location of the asset. When considering the hedging of Bitcoin, we believe entities should consider, and include in their effectiveness assessment, the difference between the Bitcoin futures reference rate and the rate on the exchange used in the transactions being hedged. As mentioned previously, the BRR reference rate is derived from trading activity on four Bitcoin exchanges. The historical volatility between exchange prices and the fact that the BRR is derived from some of the less liquid exchanges could result in a wide spread between the price at which Bitcoin futures are settled at and the price that can actually be realized by entities. Similarly, in the case of CBOE futures, the reference rate is derived from daily auction prices on the Gemini exchange and would represent a realizable price only for entities using the same rate for transactions being hedged. Entities applying hedge accounting should carefully consider whether the rates they are using in hedged transactions versus the exchange auction prices the reference rates are derived from cause any inherent ineffectiveness that may preclude hedge accounting.

Consideration of ASU 2017-12

On August 28, 2017, the FASB issued ASU 2017-12,⁴ which amends the hedge accounting recognition and presentation requirements in ASC 815. The Board’s objectives in issuing the ASU are to (1) improve the transparency and understandability of information conveyed to financial statement users about an entity’s risk management activities by better aligning the entity’s financial reporting for hedging relationships with those risk management activities and (2) reduce the complexity of and simplify the application of hedge accounting by preparers.

In this section we will discuss some of the more notable changes we believe would be relevant to a hedging relationship involving Bitcoin futures. For further discussion on ASU 2017-12 see Deloitte’s August 30, 2017, [Heads Up](#) newsletter.

The requirement that an entity determine at inception of the hedging relationship that a hedging relationship will be highly effective has not changed with the adoption of ASU 2017-12. Similar to ASC 815, ASU 2017-12 requires an entity to perform an initial prospective quantitative assessment unless the hedging relationship qualifies for the application of one of the expedients that permits an assumption of perfect hedge inception (e.g., the shortcut method or the critical-terms-match method). However, if an entity can, at inception, “reasonably support an expectation of high effectiveness on a qualitative basis in subsequent periods,” the entity may elect to perform subsequent retrospective and prospective effectiveness assessments qualitatively under ASU 2017-12. This change may lessen the operational burden for entities that apply hedge accounting using Bitcoin futures for reporting periods subsequent to hedge inception.

Under preadoption guidance, the excluded component from a hedge effectiveness assessment is required to be recorded currently in earnings. With the adoption of ASU 2017-02, the base recognition for excluded components is an amortization approach. That is, amounts related to the excluded component will initially be recognized in other comprehensive income and released into earnings using a “systematic and rational method” over the life of the hedging instrument. Any differences in subsequent periods between, 1) the change in fair value of the excluded component and 2) the amount recognized in earnings from amortization, will be recognized in other comprehensive income. Entities may still elect to recognize excluded components currently in earnings, with such election being applied consistently to similar hedges. To the extent hedge ineffectiveness exists in a hedging relationship with Bitcoin futures, under ASC 2017-02, this change may be beneficial in “smoothing” the impact of any ineffectiveness over the life of the Bitcoin futures.

ASU 2017-12 also expands an entity's ability to apply the critical-terms-match method to cash flow hedges of groups of forecasted transactions. If all other critical-terms-match criteria are satisfied, such hedges will qualify for the critical-terms-match method “if those forecasted transactions occur and the derivative matures within the same 31-day period or fiscal month.” Under preadoption guidance, entities would have had to have shown that there was a de minimis amount of ineffectiveness when there was a mismatch in the timing of the forecasted transactions and the settlement of the derivative. This may make it easier for entities that are transacting and exposed to the variability in the cash flows from Bitcoin to apply critical-terms-match using a single instrument to hedge variability over a one month period, notably entities that transact in Bitcoin on a daily basis.

Beyond Bitcoin

With the increasing number of cryptocurrencies and tokens available, entities may look to use Bitcoin futures to hedge exposure to other cryptocurrencies. Known as a “proxy hedge”, this practice is most common on exposures to foreign currency risks, but may also be found in commodity markets. Similar to using Bitcoin futures to hedge Bitcoin exposures, entities will need to demonstrate prospective effectiveness between the Bitcoin future and the exposure being hedged to qualify for hedge accounting treatment. That is, entities should demonstrate a high correlation between the changes in price of Bitcoin and changes in price of the cryptocurrency or token entities wish to hedge.

The cryptocurrency space is a fast-changing and dynamic space, and while this publication focuses on bitcoin futures, many other unregulated products exist that may meet the definition of a derivative and provide for exposure to various cryptocurrencies and tokens. To the extent entities are considering using these unregulated products to hedge various risk exposures, and obtain hedge accounting treatment, the concepts discussed in this publication may be considered. Entities should clearly understand all

the risks associated with a new structured product, such as Bitcoin futures, before using such products to manage risk exposures in the digital age.

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¹ Historical data from <https://www.coinbase.com/charts>

² Certain entities that are either regulated through the Investment Company Act of 1940 or that has the characteristics of an investment company pursuant to ASC 946-10 may determine investments in Bitcoin should initially be measured at the transaction price and subsequently measured at fair value pursuant to ASC 946-325.

³ FASB Concepts Statement No. 8, Conceptual Framework for Financial Reporting - Chapter 1, The Objective of General Purpose Financial Reporting, and Chapter 3, Qualitative Characteristics of Useful Financial Information (a replacement of FASB Concepts Statements No. 1 and No. 2).

⁴ FASB Accounting Standards Update (ASU) No. 2017-12, Targeted Improvements to Accounting for Hedging Activities

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