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BTC Backed Loans are Compelling Allocation for Fixed Income Portfolios

Key Takeaways:

1) One need not believe in BTC to understand that it is good as collateral
2) We look at historical data, theoretical modelling, and options implied movements
3) It is very unlikely that BTC will move more than posted margin; interest rates compensate sufficiently
4) **BTC backed USD loans are a compelling allocation for a fixed income portfolio**

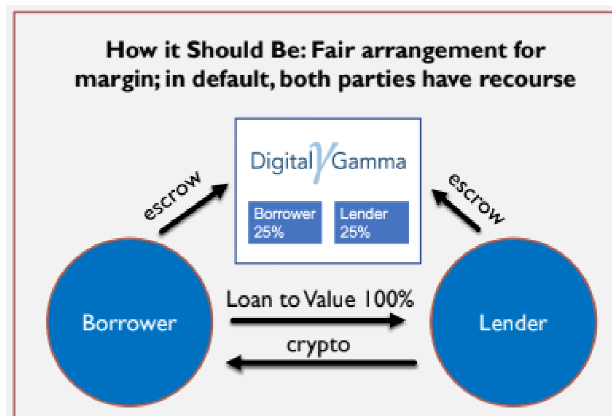
Background:

2020 has turned expectations about what can occur in fixed income markets on its head. It is exceedingly difficult to find ways to earn yield. One answer is to apply a well-known strategy to a new market lacking financial infrastructure.

Digital Gamma has leaned heavily on inspiration from financial markets to create a deal structure that brings together a legal framework, full collateralization, margin as security against performance, and daily rebalancing (mark to market).

The TPR Structure

Pictured at right is at the heart of what makes it possible to invest safely in a world where there are no credit ratings, few audited financials, and little transparency. Digital Gamma TPR (Tri-Party Repo).



Our Research

Instinctually, we believed that the TPR structure is robust, and we decided to do the research to verify our instincts. Our conservative margining runs at 25% of the value of the transaction and there is a daily rebalancing. Further, a USD lender receiving BTC runs a risk when their collateral – the BTC – falls. Therefore, our question to answer is "What is the likelihood that BTC moves more than 25% down in a single one-day period?"

We looked at this in three ways: actual historical data, modelling the distribution using a Student's-t distribution, and using the implied movement from BTC option markets. Please look at the full paper because the results speak clearly. Our data analysis is from fall 2015 onward and there is 1 day in 1679 that there is a move outside of a 25% band. Of course, the move itself does not mean that one's counterparty will default – in fact, the evidence is that crypto institutions overwhelmingly fulfilled their obligations. And even if BTC moved down sufficiently AND one's counterparty defaulted; the sustained loss would be the move less the cushion. Consider a 33% move down in BTC. For the case where a USD lender receives only BTC as collateral, the recovery rate is 83.8% (100% - 33% + 25% x [100%-33%]).

No analyst would be satisfied with only an historical back-test. So, we fit a Student's-t distribution, a "fat-tail" distribution as compared to the ubiquitous normal distribution, to the data. The data indicated to use 4 degrees of freedom and that indicates that there is the potential for BTC to exceed a 25% down move 1 day in 588.

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Importantly, BTC now has a tradable universe of options. While the most liquid market is Deribit, institutions are still able to transact at CME and ICE Bakkt for options using a clearinghouse with A or better credit rating. Why is this important? For two reasons. First, option prices imply the forward distribution of prices, including the likelihood of a daily move down greater than 25%. Second, utilizing options offers the possibility to hedge part or all of a potential loss from a loan portfolio.

These probabilities for daily moves roughly correspond to junk bond default rates. What makes this significantly different is that when a high yield note falls into default, the recovery rate is typically very low (~20%). Whereas in a BTC backed loan, 1) the counterparty will still likely make good and 2) even if not, the recovery rate is extremely high since any losses start with a 25% of notional cushion.

Credit in Cryptocurrency

It may come as some surprise to those outside of the crypto markets but institutional players – market makers, funds, corporates, and traders – respect their contracts. The once incident in the historical data referenced above occurred on March 12, 2020 when BTC dropped in excess of 35%. Nevertheless, reports are that the vast majority of margin calls were honored. It is difficult to assess counterparty credit risk in crypto and that is why we created TPR. However, that does not necessarily imply that everyone is a bad credit.

Diversification vs hedging

Markowitz said the only free lunch in finance is diversification. How does one diversify a portfolio of notes all backed by BTC? It is all BTC so there is no diversification. It turns out that this is a strength. Investors can utilize the option market, especially of CME and Bakkt, to exactly hedge their risk at a price and profile that makes sense for their business case. Even so, the authors would argue that the investment potential works without hedging.

Conclusion

Fixed income for cryptocurrency is a brand-new market. The very first steps are being taken and there are few large institutions willing or able to enter. This is creating opportunities. Bitcoin backed loans structured in the right way offer compelling risk profiles and even more compelling yields. This is a market reminiscent of mortgages, high yield, and asset backed securities in the eighties. They are both emerging markets and offer significant opportunities.

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