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EXECUTIVE SUMMARY

Valuation of Cryptoassets: A Guide for Investment Professionals

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This guide covers valuation methodologies—currently in discussion or in use among practitioners—for valuing cryptoassets. The rise in popularity of cryptoassets over the past decade raises the issue of how to value the different types of cryptoassets in the market. Investment practitioners who are interested in or investing in cryptoassets should have a thorough and reasonable basis for their investment decision making, grounded in an analysis of the intrinsic value of these assets wherever possible. This guide is designed to equip professionals with the most relevant valuation models and tools to support their analysis.

The methodologies analyzed here are derived from interviews with industry practitioners and a review of the literature analyzing these models. We specifically cover smart contract platforms, decentralized applications, and Bitcoin.

Bitcoin has the largest market share among cryptoassets and has been in existence longer than its counterparts; consequently, it has the most literature covering the question of how to value it and the most models attempting to answer this question of all the cryptoassets thus far.

We include in our analysis models adapted from traditional finance, such as the discounted cash flow model, and models developed specifically for cryptoassets, presenting the benefits and limitations of each. We illustrate these models with example calculations.

Industry surveys conducted in 2022 that we cite in this report showed that institutional adoption of cryptoassets remains mired by issues of regulation, custody, and valuation. The need to bridge the infrastructure and operational gaps between traditional finance and the cryptoasset ecosystem remains. The valuation issue is still a debated topic among industry stakeholders, where some recognize cryptoassets as an investable asset class in portfolio construction, while others question their legitimacy and value proposition. We do not endorse a particular view but seek to inform the debate by setting out relevant valuation methodologies. One of the biggest issues that valuation of cryptoassets faces today is the short duration of their existence, which limits historical data and hence robust statistical testing. However, there have been numerous

endeavors to construct valuation models, some unique to the fundamentals of cryptoassets and some borrowed from traditional finance.

Current valuation models and approaches carry a number of limitations and require further development; thus, a single model or metric should not be used in isolation to value any given cryptoasset. Despite the limitations of the valuation models addressed in this report, they offer insights into the functionality and mechanics of the respective assets. Disagreement on existing models should be welcomed and embraced. Such counter analysis and critique can lead to the development of improved valuation approaches, and the introduction of new concepts and more robust datasets will improve our understanding and modeling capabilities over time.

Key Takeaways

- Valuation of smart contract platforms, such as Ethereum, can be approached from two viewpoints: The platform is considered either as a network or as a cash flow asset.
 - When considering smart contract platforms to be a network, a qualitative framework based on on-chain data can be used to assess these platforms on a relative valuation basis. Metcalfe's law, which values a network based on the square of its number of users, can be continually used to value the network relative to its market capitalization.
 - The view of smart contract platforms as a cash flow asset involves using the discounted cash flow (DCF) model. The DCF model considers the transaction fees collected by these platforms as cash flows, allowing for the implementation of the model based on assumptions regarding applicable growth rates and discount rates.
- Valuation of decentralized applications can be performed using either a relative valuation approach or an intrinsic value approach using the DCF model.
 - Such metrics as the price-to-sales, price-to-fees, and market capitalization to net assets ratios can be used to relatively value decentralized applications within the same sector or to compare them with their traditional finance counterparts.
 - The DCF model considers protocol revenue collected by a decentralized application as a cash flow, enabling the calculation of intrinsic value based on growth and discount rate assumptions.
- For bitcoin, we show the strengths and limitations of four models: the total addressable market approach, the stock-to-flow model, Metcalfe's law, and the cost of production model. Each model is derived from an underlying characteristic of bitcoin and takes differing viewpoints by assessing the store-of-value or medium-of-exchange approach for bitcoin.
 - Basing each model on just one of bitcoin's fundamentals leads to certain limitations; there is no single model that encompasses all the characteristics of bitcoin.
 - These models do provide a theoretical understanding of the underlying dynamics of the cryptocurrency and can form part of a fuller analysis of cryptoassets.

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Complete Guide

Read the complete guide at <https://rpc.cfainstitute.org/en/research/reports/2023/valuation-cryptoassets>.



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