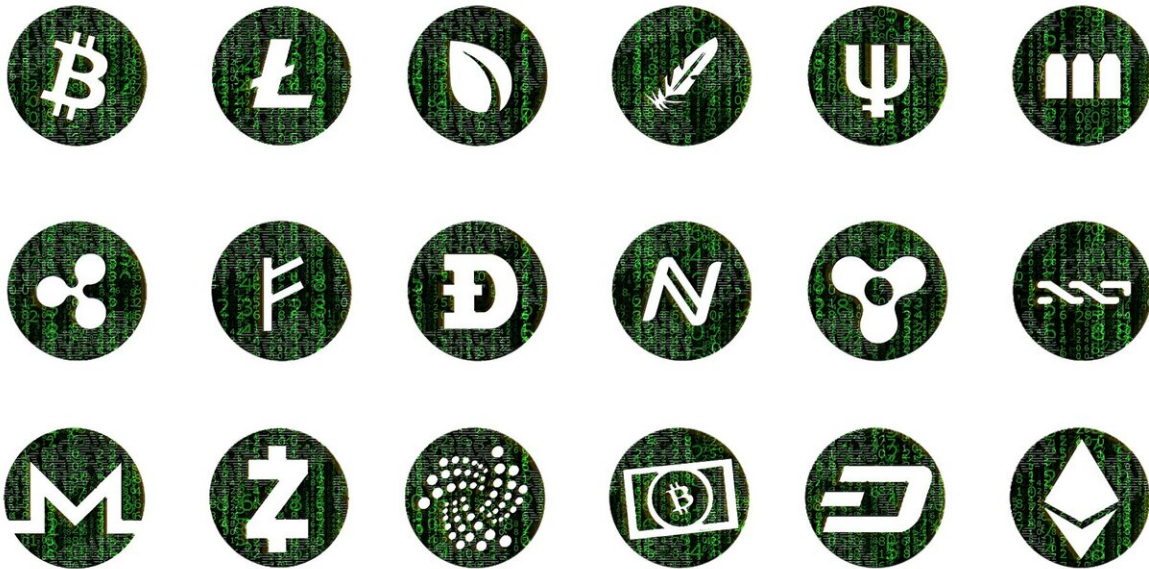# An app-based recommendation framework for investor adoption of crypto assets

January 27 2021

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Consumers regularly choose books, music, travel destinations and other activities based on recommendations by many people on e-commerce or social media platforms.

A study co-authored by Andrei Kirilenko, Reader in Finance at Cambridge Judge Business School, as well as Founding Director of the School's Centre for Finance, Technology & Regulation, develops an app-

based modeling framework for investors' selection of crypto assets such as stable coins and cryptocurrencies grounded on a similar type of recommendation system.

The study was published in the journal Royal Society Open Science, and Andrei presented the findings on 18 January at the CERF in the City event organized by the Cambridge Endowment for Research in Finance (CERF) at the University of Cambridge in collaboration with CCLA. The annual event, held online this year, allows finance practitioners to interact with academic researchers.

"Platforms or apps of such companies as Amazon or Tripadvisor serve as a kind of filtering system based on previous recommendations," says Andrei, whose research focuses on the intersection of finance, technology and regulation. "The study basically extends this concept to crypto assets, with the crypto app tailoring recommendations to the preferences and needs of individual investors."

This new model for the selection of crypto assets assumes that crypto assets can be characterized by two key features: security from fraud, abuse and manipulation (based on technological aspects) and stability (based on governance) in the form of a credible legal and regulatory framework.

The model then simulates the optimal selection decisions of investors based on their attitudes toward various crypto asset features such as their specific cryptographic technology, information about the adoption trends of crypto assets, and expected economic benefits of adoption of such crypto assets.

Based on these modeling scenarios, "we are able to predict the subset of the most widely adopted crypto assets and their features," the study says.

A crypto asset has no physical form, but is issued, sold or transferred based on cryptographic technology that is shared via an electronic blockchain (distributed ledger), and there have been thousands of crypto assets since the Bitcoin cryptocurrency was issued in 2008. These various crypto assets have different electronic sharing protocols and other technological features, as well as varying governance solution such as private versus open access to the ledger.

The newly developed model works by creating an app that presents each investor with a pair of crypto assets along with certain characteristics to compare regarding security and stability. When the investor submits his or her preference for adopting one of the two assets, the app "provides a recommendation on whether the proposed adoption is sensible given the assets' essential features, information about the adoption choices of all other investors, and expected future economic benefits of adoption."

Investors then continue choosing among pairs of crypto assets until their expected future economic benefits can no longer be improved upon—and these outcomes provide the framework for determining which crypto assets are likely to be most broadly adopted by investors in the future.

The choice of crypto assets by investors will likely fall into one of four categories: – high security-high stability, low security-high stability, high security-low stability, and low security-low stability—which the app associates with certain existing types of crypto assets. For example, central bank digital currencies are high security-high stability assets; stablecoins are considered low security-high stability; cryptocurrencies are high security-low stability; and crypto tokens are low security-low stability based on various factors outlined in the study.

The study notes that such features and classifications could "dynamically evolve" over time depending on events; for example, an asset now seen

as low security could become more secure through widespread adoption by investors.

The study is designed to provide a guide to which crypto assets may become more widespread over time. "While the majority of crypto assets will eventually become worthless, some could end up being adopted widely enough to ensure their survival," the study says, adding that a very small number of crypto assets could become "preferred assets" used by large and small investors to store and transfer wealth.

The study, titled "A Model of the Optimal Selection of Crypto Assets," is co-authored by Silvia Bartolucci of the Department of Finance at Imperial College Business School and UCL Centre for Blockchain Technologies, and by Andrei Kirilenko of Cambridge Judge Business School.

Provided by University of Cambridge