

Efficiency, Risk and Fraud - The Bitcoin Price Discovery Network Under the Microscope

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Units 1101-1102 & 1121-1123,
Building 19W Science Park West Avenue,
Hong Kong Science Park, Shatin, Hong Kong

Zoom Online Conference



URL: <https://cityu.zoom.us/j/3560816699>
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■ Abstract

Understanding multi-market interactions and identifying leading markets in the global financial network is of interest to investors, regulators and policymakers. We study the price discovery network between Bitcoin exchanges with a focus upon market efficiency, market manipulation identification and systemic risk. We found that the market became more efficient over the years and that the systemic risk in the market decreased as well. We identified an exchange linked to fraud and another one which shows similar patterns in the network, which calls at question if it might be used for fraudulent behaviour as well. To study price discovery networks we propose a model, called TriSNAR, which is capable of identifying the leading exchanges in the network. We study the asymptotic and finite sample properties of TriSNAR. Compared to the other methods, TriSNAR excels in terms of accuracy, runtime and its ability to discover the network's structure. This study improves the understanding of the price discovery in the Bitcoin market and proposes a model, TriSNAR, to study such multi-market networks which outperformed competing methods.

■ Biography

Simon Trimborn is an Assistant Professor at the Department of Management Sciences at College of Business and an Affiliate Assistant Professor with the School of Data Science, both at City University of Hong Kong. He received his doctorate (summa cum laude) in 2018 from the Humboldt-Universität zu Berlin for his thesis on "Statistics of Digital Finance". Before he took on his appointment as Assistant Professor at CityUHK, he was employed as Research Fellow for 2 years at National University of Singapore.

His work spans the areas of network & complex systems analysis, FinTech & investment methodologies, text mining & dimension reduction techniques, as well as cryptocurrency & blockchain analysis. He organized a seminar series on cryptocurrency and blockchain at National University of Singapore and created the market index and volatility index for the cryptocurrency market, CRIX and VCRIX: thecrix.de. The codes underlying his work serve as a basis for software packages, which are available via GitHub and CRAN. He has published in journals such as Journal of Financial Econometrics, The R Journal, Quantitative Finance, Journal of Empirical Finance, and is an Associate Editor of the journal Digital Finance. His work was featured in various media outlets. For more detailed information and updates, one may visit simontrimborn.de.

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