Zeppelin University

Master Thesis

Chair of International Economic Theory and Politics

Prof. Dr. Jarko Fidrmuc

Developing a Bitcoin Block Parser & Analysis Package:
Event Analysis using Network Characteristics

Name: Lucas Wiese
Matriculation Number: 19103752
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Course: Corporate Management & Economics
Primary Supervisor: Prof. Dr. Jarko Fidrmuc
Secondary Supervisor: Dr. Petr Koráb
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Abstract

This thesis explores the intricate world of Bitcoin, a leading cryptocurrency, tackling its big data aspects. At this paper's core is the development of an innovative end-to-end solution - a Bitcoin Block Parser & Analysis Package, which is tailored to facilitate a comprehensive analysis of Bitcoin blockchain data, marking a significant stride in cryptocurrency research tools. It paves the way for future explorations and a deeper understanding of the Bitcoin ecosystem, highlighting the potential of big data in unveiling the complexities of this revolutionary digital currency. Utilising the package towards an event analysis on the Bitcoin transactional network revealed how historical economic and geopolitical events have tangibly influenced the structure of the Bitcoin network. Results suggest that events with a financial impact on individuals, such as the Cyprus Banking Crisis of 2013, have led to heightened Bitcoin network activity and increased adoption of the cryptocurrency. The insight is not only valuable in understanding the dynamics of Bitcoin but also sets the stage for more extensive macroeconomic analysis using Bitcoin data with the help of the developed package.