

Quantitative analysis of Bitcoin exchange rate and transactional network properties

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Abstract

The role of Bitcoin – open source virtual peer-to-peer money – in finance has become more important with the increasing acceptance by service providers. Nevertheless several financial institutes and governments explain their revulsion against Bitcoin, due to the unknown financial risks behind it which could have an impact on the global financial world. In this paper we examine the relationship between BTC/USD exchange rate and the network properties of the underlying transactional graph. The main goal of our research is to get a deeper understanding on the behavior of Bitcoin and ground further researches on exploring the financial risk. To characterize the transactional graph network analysis techniques, while to examine the relationship data mining and time series analysis techniques were used.

Keywords: Bitcoin, Network analysis, Graph, Data mining, Time series