

On the Predictability of Bitcoin Price: Evidence from Variance Ratio Tests

Khaled Guesmi ¹

IPAG Business School
Paris, France

Stephane Goutte

Department of Economics and Management
University of Paris VIII
Saint-Denis, France

Fathi Jouini

Faculty of Economic and Management Sciences
University of Sousse
Sousse, Tunisia

Samir Saadi

Telfer School of Management
University of Ottawa
Ottawa, Ontario, Canada
&
IPAG Business School
Paris, France

Abstract

Cryptocurrencies are commonly perceived as a disruptive technology that raises both hopes and fears in the minds of different categories of investors within the economy. This paper examines the informational efficiency of Bitcoin prices, which is by far the most widely known cryptocurrency with a market capitalization close to seventeen billion dollars. Using a battery of individual and multiple Variance Ratio tests we find that Bitcoin price changes follow Random Walk over short period of time intervals in 2013, 2016 and early 2018 but fail to do so during the rest of our sample period. Further analyses accounting for non-linear dynamics corroborate our findings from Variance Ratio tests. Our paper contributes to the intense debate on the informational efficiency of cryptocurrencies.

Key words: Bitcoin, Random Walk, Information Asymmetry, Variance Ratio.

JEL classification: G10, G14, G34, G39

¹ Corresponding Author: 184 Boulevard Saint-Germain, 75006 Paris, France, Email : Khlaed.guesmi@ipag.fr