Applied Economics Letters ›
Volume 26, 2019 - Issue 19

Articles

Weak efficiency of the cryptocurrency market: a market portfolio approach

David Vidal-Tomás, Ana M. Ibáñez & José E. Farinós

Pages 1627-1633 | Published online: 25 Mar 2019

Cite this article https://doi.org/10.1080/13504851.2019.1591583 Check for updates

ABSTRACT

Cryptocu makers
given th
cryptocu rket
portfolio 2015–2017,
2016–20 observe
three ma t due to the
behavio 017, and the
crea y of the
market.

KEYWORI

Cryptocurr

JEL CLAS

G14 G15

Disclosure statement

No potential conflict of interest was reported by the authors.

Notes

1 From 1 January 2014 to 31 December 2017 there are only 13 cryptocurrencies that have been trading the entire sample period. This period has not been analysed due to the scant number of digital currencies in comparison with the rest of the market portfolios.:

2 We have only analysed those cryptocurrencies that have been trading for at least one year (2017) in order to obtain robust results. The list of the different cryptocurrencies is provided as supplementary material.

3 Considering our data, during 2015–2017 there are 59 cryptocurrencies, in 2016
(sample ... o 2015
(sample ... , compared
to 2016 ...

4 Given ... ars (2015–
2017, 20 ... orm
efficienc ... se from a
parti ... ncluded in
the re ... eparately
since the ... he result will
be relate ... l.

5 We use ... perly the
market ... al to the
sum of l ... garithm
returns. For robustness purposes, having calculated the returns of the market portfolio,

we transform the simple market returns into logarithm market returns, ln(1+rm,t)=rm,tl, obtaining similar results (see Table A1 in the Appendix).

[6] This definition of random walk is the most restrictive one, which is denoted as random walk 1 by Campbell, Lo, and MacKinlay et al. (1997). We obtain the random walk 2 and 3 by relaxing the main assumptions. The random walk 2 includes processes characterized by independent but not identically distributed increments. On the other hand, for the random walk 3, we only hold the uncorrelated increments assumption, i.e. processes with dependent but uncorrelated increments (Campbell, Lo, and MacKinlay et al. 1997; Escanciano and Lobato 2009b).

[7] Despite the fact that there is not a strict connection between random walks and the Efficient Market Hypothesis (e.g. LeRoy (1973) and Lucas Jr (1978) show that the Efficient Market Hypothesis holds at the same time that prices do not follow random walks), in the empirical finance literature, authors are focused on the weak-form efficiency to examine whether future price changes are purely unpredictable based on the asset's price history (LeRoy 1973; Escanciano and Lobato 2009b).

[8] We test the joint hypothesis that all the autocorrelation coefficients (up to 3 lags) are simultaneously zero.

[9] Given that in the case of the BDS test it is necessary to choose the embedding dimensi … he statistics and p-va …

[10] The o … eriod 2015–2017 for … ne Appendi …

Add …

Fundin …

This wor … [FPU201 …

Related research