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Bitcoin for energy commodities before and after the December 2013 crash: diversifier, hedge or safe haven?

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ABSTRACT

We study the relationship between Bitcoin and commodities by assessing the ability of Bitcoin to act as a diversifier, hedge, or safe haven against daily movements in commodities in general, and energy commodities in particular. We focus on energy commodities because energy, in the form of electricity, is an essential input in the Bitcoin p g hedge and a safe-h amine whether alysis show insign al com sh and our results r dities and energy c e post-crash period B ne-varying

role of Bitcoin, we highlight the dissimilarity in the dynamic correlations between the extreme downward and extreme upward movements.

KEYWORDS: Cryptocurrency Bitcoin crash commodities energy commodities diversifier hedge safe haven

JEL CLASSIFICATION: C1 G1 Q4

Highlights

- We uncover the time-varying diversification ability of Bitcoin
- Bitcoin is a strong hedge and safe haven for energy commodities, but not for non-energy commodities.
- The price crash of 2013 affects the relation between Bitcoin and energy commodities
- Dynamic correlations between the extreme downward and upward movements are dissimilar

Disclosure statement

No potential conflict of interest was reported by the authors.

Notes

[1] For det… o Segendorf (2014) a…

[2] Oth… coin. Each of these… n US dollars.

[3] That e… iminals: it is required… hic puzzles,

hereby raising the computer power needed to attempt to gain control of Bitcoins transactions on the network.

[4] Computer cooling firm Allied Control estimates the power consumption per Bitcoin transaction to be equivalent to around 1.6 times the daily usage of electricity of an average US household. Thus, a Bitcoin transaction requires 5,000 times more energy than, for instance, a VISA transaction.

[5] We thank the referee for mentioning this important point.

[6] Several studies so far find very weak relation between Bitcoin and conventional assets (e.g. Baur, Lee, and Hong 2015), suggesting that Bitcoin is a useful diversifier.

[7] For further discussion of Bitcoin price determinants, readers can refer to Kristoufek (2015) and Ciaian, Rajcaniova, and Kancs (2016).

[8] This is confirmed also empirically by Hayes (2016), who estimates that at the time of his calculation, the marginal cost of mining one Bitcoin was $415, whereas the Bitcoin price was $420.

[9] For a detailed explanation on the ADCC model and its estimation, the reader can refer to Cappiello, Engle, and Sheppard (2006).

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