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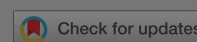
Bitcoin for energy commodities before and after the December 2013 crash: diversifier, hedge or safe haven?

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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 Bitcoin and energy commodities are dissimilar

Disclosure

No potential conflicts of interest exist between the authors and the publisher, or between the authors and the reviewers.

Notes

¹ For details on the data sources, see Segendorf (2014) and Segendorf (2015).

² Other cryptocurrencies include Ethereum (ETH) and Litecoin (LTC). Each of these three currencies has a market capitalization in excess of 100 million US dollars.

³ That energy expenditure secures Bitcoin from attacks by speculators or criminals: it is required to increase security for the network by solving series of cryptographic 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 discussion of the role of Bitcoin in the global financial system, readers can refer to Cappiella and Wright (2016).

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