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Tema:Is Bitcoin a currency, a technology-based product, or something else?

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Fichamento

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| 1 | A recent survey suggested that there are three major types of cryptocurrency regulatory issues. Put another way, there are three types of activities that may involve cryptocurrencies that are currently of interest and concern (Werbach, 2018). One type is illegal activities, which cryptocurrencies may facilitate by enabling the private, anonymous transfer of money. Another type is record-keeping activities. The last type is legal activities that are already being regulated and which may be applicable to cryptocurrencies. Determining whether these regulations apply depends on whether we classify cryptocurrencies as currencies, securities, derivatives, or a money services (transfer) vehicle. |  |
| 2 | As an innovation, currency grew out of inefficiencies in the bartering system, which has been present since the earliest stages of human development. The traditional view (Smith, 1776) saw currencies as a means for improving liquidity in a quid pro quo barter system: trade between a butcher and brewer was only possible if they each had something the other wanted. Money, on the other hand, was a common store of value that could be used to purchase anything anybody wanted. Currency was born to fill this niche. As discussed in one study (Kiyotaki and Wright, 1989), the most important factor in determining if something can act as a currency is simple: are there enough economic agents that believe it can?  The earliest currencies used materials with a widely-understood intrinsic store of value. Cowry shells were used as currency prior to 1000 BC. (Yang, 2011). Standardized coinage based on electrum, an alloy of gold and silver, was minted in the Mediterranean states of Aegina and Lydia in the decades following 700 BC. (Kagan, 1982). Trade quickly flourished with the introduction of coinage. For nearly two thousand years, currency was transacted with units of traditionally valuable metals: gold, silver, and bronze. Paper currency, present in global commerce for the last thousand years, was often stabilized only when supported by one of these metals.  The establishment of the modern gold standard in the 19th century did much to standardize global currency regimes (Bordo, 2003). However, wars, depressions, and the economic shocks of the 20th century exposed its substantial limitations. After World War II, the Bretton Woods Agreement declared the U.S. Dollar to be solely convertible to gold at $35 per ounce, in turn tethering all other currencies to the dollar (Obstfeld and Rogoff, 1995). The suspension of dollar convertibility to gold in 1971 established the current ‘free floating’ fiat system. The gold standard allowed for decades of low inflation and exchange rate volatility (Bordo, 2003), but was incapable of keeping up with varying monetary demand and the high level of global fiscal discipline required  In our current system, most of our monetary supply is not held as currency, but is created through lending (McLeay et al., 2004). For example, the $1.6 trillion of US Currency currently in circulation (Federal Reserve 2017) is a fraction of the $15.3 trillion of monetary stock redeemable on demand (MZM 2017). Commercial banks issue new loans, in effect creating money by crediting the borrower with a bank deposit equal to the size of the loan. Likewise, repaying these loans destroys money. Central banks can control monetary policy at the national level by setting the interest rate on reserves, encouraging or restraining lending by banks. In turn, this has pronounced effects on inflation, employment, and investment across an economic area.  Much of the initial scholarly research on cryptocurrencies was based on the assumption that they were emerging currencies. Many technical researchers assume Bitcoin to be a currency “ipso facto” by virtue of its existence. Researchers also see Bitcoin as a representative of a practical decentralized currency (Gervais et al., 2014). However, in 2013 it was convincingly demonstrated that Bitcoin failed to perform most of the basic functions of all currencies (Yermack, 2013). This investigation found that cryptocurrencies lacked substantial transaction value and were poor stores of value.  The contemporary case for free-floating currencies (Friedman, 1953) holds that nation states can preserve monetary independence and avoid disruptive economic shocks that occur when a peg is adjusted for value. The novelty of cryptocurrencies is that they are truly supranational, digital, decentralized and independent of national interest. Cryptocurrencies also possess some of the characteristics of gold: the supply is finite, and they are both fungible and universally available.  Interestingly, however, the role of the nation state in currency (Plassaras, 2013) also presents cryptocurrencies with their greatest obstacle for widespread adoption. Successful decentralized currencies like Bitcoin currently offer little incentive to be adopted by national governments, since they offer little in the way of monetary policy control. Likewise, widespread adoption of cryptocurrencies could undermine the effectiveness of central banks, by making legal restrictions surrounding their adoption more likely  The greatest hurdle in establishing any currency is credibility as a means for exchange (Böhme et al., 2015). In this sense, Bitcoin has improved dramatically in recent Years (...)Compared to other currencies in the $5-trillion daily foreign exchange market, the value transacted by Bitcoin approximates the daily turnover of minor currencies such as the Hungarian Forint or Indonesian Rupiah (BIS 2017).  Money serves three functions (Ali et al., 2014): it offers a store of value, a medium of exchange, and lastly, a unit of account. Many objects, including cryptocurrencies, can be stores of value for an individual: examples include real estate, collectibles and art. Mediums of exchange require at least two parties to coordinate their valuation, and this is a hurdle that cryptocurrencies like Bitcoin pass easily. However, units of account require that many people use a currency across many different transactions (Woodford, 2011). Central banks’ primary role is controlling that unit of account. For cryptocurrencies like Bitcoin, this is a harder hurdle to pass. While spot transactions and (as of November 2017) future markets exist for cryptocurrencies, and more specifically Bitcoin, using it in day-to-day society requires another medium of exchange. We cannot, as of yet, take out mortgages exclusively in cryptocurrencies or invest exclusively in investments and markets denominated in cryptocurrencies. For instance, for an employee to be paid wages in cryptocurrency, they must first get an employer to convert their native currency into cryptocurrency. This is a process that would be identical to an employee requesting that their employer pay them in smartphones, golf balls, or any other non-currency item. In this light, the startup costs for digital currencies are immense. |  |
| 3 | An asset was defined in the study as a strong safe-haven if there is evidence of predictability from a stock index to that asset in the low quantiles of both the stock and the asset returns and the sign of this predictability is negative. An asset was defined as a weak safe-haven if there is no evidence of predictability from a stock index to that asset in the low quantiles of both the stock and the asset returns. For potential havens the study utilized daily spot prices data for Bitcoin, Gold, and the S&P Goldman Sachs Commodity Index, which were investigated as potential safe-havens for five Morgan Stanley Capital International stock indices, namely world, developed, emerging markets, China, and the US. It was shown that Bitcoin, gold, and commodities did not show the strong safehaven property for any of the stock indices; Bitcoin, gold, and commodities each showed the weak safe-haven property for the world stock market; only gold showed the weak safe-haven property for developed stock markets; gold and commodities each showed the weak safe-haven property for emerging markets; Bitcoin and commodities each showed the weak safe-haven property for the Chinese stock market; and only commodities showed the weak safe-haven the U.S. stock market (E. Bouri et al., 2019).  Application of MF-ADCCA between leading conventional currencies (Swiss Franc, Euro, British Pound, Yen, and Australian dollar) and main cryptocurrencies (Bitcoin, Litecoin, Ripple, Monero, and Dash) found that Bitcoin and its fork, Litecoin are the cryptocurrencies that exhibit the most multifractal behavior and smaller cryptocurrencies such as Monero and Ripple generally exhibit lower multifractal behavior (Kristjanpoller and Bouri, 2019).  Application of the QARDL found that the relation between Bitcoin price and gold prices is statistically significant but varies between the short and long runs and is asymmetric, non-linear, and quantile dependent; such that Bitcoin and gold markets share some common fundamentals (E. Bouri et al., 2018).  Application of Copulas, in combination with the Granger causality in distribution test, found that global financial stress causes Bitcoin returns at the left tail (deficient performance) and the right tail (superior performance) but not at the middle (average performance) of the joint distribution, suggesting Bitcoin's ability to act as a safe-haven against global financial stress for approximately 60 days (E. Bouri et al., 2018).  Convincing arguments have been made for the speculative nature of cryptocurrency investments from an asset-pricing perspective. Many investment organizations are marketing cryptocurrencies, not as a currency, but as a unique investment product (Burniske and White, 2017). Yet researchers have shown cryptocurrencies to be mainly uncorrelated with major asset classes and that they are used as a primarily speculative tool (Baur et al., 2017). Researchers have postulated that cryptocurrencies are primarily driven by the demand of investors for an alternative investment vehicle, making them a unique (if separate) asset class (Glaser et al., 2014). In particular, Bitcoin has been compared to a limited number of other asset classes (Brière et al., 2015; Wu et al., 2014)  Other researchers have discussed cryptocurrency as a technology rather than a currency (Maurer et al., 2013). Technology-based product diffusion curves present a unique signature, which can be described using the Richards Model.  Are cryptocurrencies acting as a financial bubble? Researchers investigated this issue in 2015 (Godsiff, 2015). We define a financial bubble as the unsustainable increase in asset prices that precedes a price collapse. The question remains a difficult and complex one, as bubbles require a concise definition. Here, we borrow the definition famously used by one seminal study (Case and Shiller, 2003) that a ‘financial bubble’ “refers to a situation in which excessive public expectations of future price increases cause prices to be temporarily elevated.” |  |
| 4 – 5 | A sweeping review of regulatory issues around cryptocurrency (Tu and Meredith, 2015) showed that there is no consensus, national or internationally on whether to regulate cryptocurrency. The review also reported on a survey the Law Library of the U.S. Congress of forty foreign jurisdictions, which showed that most of these jurisdictions had not acted to regulate cryptocurrency. The review also suggested existing U.S. Federal or state laws could be applicable to cryptocurrency depending on how cryptocurrency is classified. Finally, the review examined legislative possible rationale for regulating cryptocurrency and found that such regulation would be justified. A full law review note was devoted to investigating cryptocurrency in the context of money laundering and tax evasion (Sánchez, 2017). The article noted that the only currency that could be used on Silk Road was Bitcoin. It further noted that cryptocurrency exchanges, under the terms of a Department of Treasury Guidance report, are not subject to the Bank Secrecy Act, an anti-money laundering statute. However, the Internal Revenue Service categorized cryptocurrencies as property, making individuals liable for investment gains. We now seek to operationalize our literature review to make comparisons between these instruments and cryptocurrencies in order to more fundamentally understand cryptocurrencies.  Despite Bitcoin's most recent classification and acceptance as a commodity, it resembles none of the other major commodities (Business Insider 2017). Indeed, Bitcoin throughout its history is inversely correlated to gold, silver, and oil. Yet, in the most recent period (2015–2016), Bitcoin is positively correlated to silver and gold, but still strongly negatively correlated to oil prices  Bitcoin also fails to correlate well with major currencies. It has always been negatively correlated to the five major currencies studied, but in the most recent period of appreciation, the negative correlation to the British Pound and Chinese Yuan has been profound. Bitcoin, similar to cryptocurrencies in general, behaves as a contra-currency relative to other entities. It moves in ways and magnitudes that are effectively opposite the major currencies. Most consistently, Bitcoin has been most correlated to bxysm, the CBOE S&P 500 2% OTM BuyWrite Index, and bxmd, the CBOE S&P 500 30-Delta BuyWrite Index. Both are options indices. Furthering the view of some academic experts that cryptocurrencies are de facto havens for speculators, the movement and expansion of Bitcoin has resembled the high growth and volatility found in the derivatives market  To further examine the relative reward-for-risk ratio, we also compute the Sharpe Ratio, defined by the following formula (Sharpe, 1966):  Where Rp is the mean return of the portfolio; Rf is the mean return on three-month U.S. treasury bills (here, the risk-free rate of interest); and σp is the standard deviation of portfolio returns. The R R p f return is also described (Morningstar 2005) as the average monthly excess return  Where Re is the average excess return of the portfolio, computed monthly; Ri is the return of the portfolio in month I; and RFi is the return of the risk-free benchmark.  Additional research (Urquhart, 2016) has gathered evidence demonstrating that Bitcoin's pricing inefficiencies contribute to (often) incorrect valuation, providing the groundwork for speculative bubbles.  Does Bitcoin meet the definition of a bubble? One way of examining Bitcoin is to consider its growth in valuation relative to other speculative assets. For example, one study (Garber, 1990) details the mania surrounding the Dutch Tulip Bubble. Introduced from the Ottoman Empire in the 16th century, tulips were a desirable luxury commodity that appreciated rapidly from 1634–1637, eventually exceeding the price of some luxury houses in Amsterdam before crashing abruptly in 1637. Another study (Thompson, 2007) considers Tulip mania a byproduct of an inefficient futures market, rather than a true bubble, but it remains an often-cited example of early and unsupported rises (and falls) of asset prices |  |
| 5 | The third (and most modern) bubble proxy we examine is the technology bubble and collapse of 1998–2001. Driven by the promise of computer technology, technology stocks rose five-fold between 1997–2000 (Griffin et al., 2011). Many technology firms failed (notably Pets.com and Webvan), while others saw precipitous declines in stock prices. Priceline (PCLN) saw prices surge to nearly $1000 per share in April 1999 before falling to below $10 per share in December 2000. Cisco Systems, Inc. (CSCO) saw prices fall from $80 per share to below $14 in nearly the same period.  This method compares the diffusion of Bitcoin, the Euro, Ether, and the security SPY. If the diffusion was r-shaped, then it occurred through environmental learning-based (individual learning-based) adoption; if the diffusion was s-shaped, then it occurred through cultural transmission-based adoption (Henrich, 2001). The large-scale diffusion of technology-based products generally occurs through cultural transmission and traces out s-shaped curves (Marinakis et al., 2017). The number of euros in circulation shows how currency diffuses. The time series of the total number of Bitcoin that have already been mined was obtained from Blockchain (Blockchain 2019).  Unlike Ether, Bitcoin was not released as part of a programming platform that requires its use in order for programs to function. Users pay miners in Ether to run applications (i.e., record transactions) on the Ethereum blockchain, leading Ether to be compared allegorically to the oil or gasoline that is necessary to run an internal combustion engine. Commodities Futures Trading Commission chairman Heath Tarbet recently opined that he believes Ether is a commodity (Roberts, 2019) |  |
| 6 – 8 | The fact that cryptocurrencies are differentiated by their diffusion patterns suggests that they are differentiated in terms of their elemental nature, i.e., Bitcoin is more like a technology-based product and Ether is more like a currency.  Is Bitcoin a currency, a technology-based product, or something else? Abductive reasoning suggests that Bitcoin's behavior more closely resembles a technology-based product, an emerging asset class, or a bubble event, rather than a currency or a security. It is unclear whether it is a commodity  As a currency, Bitcoin fails as a unit of account, despite its rapidly appreciating physical and transactional value. The high correlation of Bitcoin to derivative indices suggests significant speculative elements in its valuation, making absolute economic valuation difficult. At the same time, its inverse correlation to major currencies and competitive risk/ return characteristics make it a viable portfolio investment. Expansion of the options and futures markets to include Bitcoin will enable greater arbitrage between exchanges and could improve both market liquidity and pricing in the future. Bitcoin behaves like a risky emerging asset class, with high persistent correlations to derivative indices and an inverse relationship to major currencies. In fact, Bitcoin behaves unlike any national currency over at least the last 40 years. The return-for-risk profile has improved substantially since 2015, making Bitcoin potentially appealing as a portfolio investment instrument. However, its resemblance to several historical asset price bubbles poses substantial risks.  When compared to other widely-accepted bubbles, Bitcoin exceeds all others in length and magnitude. The rapid appreciation of Bitcoin, particularly in 2017, has been unprecedented when compared to price increases among historical bubbles. This does not necessarily lead to a valuation market, since Bitcoin certainly possesses some underlying transactional economic value in parallel markets. However, even among economically-viable entities like the South Sea Company in the 18th century or Cisco in the 21st century, substantial price colapses followed periods of rapid appreciation. Applying the most relevant research definitions (Glaser et al., 2014; Brière et al., 2015; Wu et al., 2014; Sugden et al., 1981; Godsiff, 2015; Case and Shiller, 2003; Tu and Meredith, 2015), it appears Bitcoin does indeed suffer from a hazard of great expectations to its future price. Historically, this has been an unsustainable position for such assets. While the collapse of cryptocurrency prices could be severe (as during the technology bubble of 1997–2001), the resulting market will be healthier and more grounded in rational economic value. The market will also determine which of the emerging cryptocurrencies possess the greatest value in the future blockchain economy. Bitcoin's true valuation lies between its basest role as black market tender and the possibility of becoming a globally-recognized alternative currency  Combined with the finding that the diffusion of the Euro traced out an r-shaped curve rather than a sigmoidal curve, these results suggest that Bitcoin is diffusing like a technology-based product rather than like a currency.  The diffusions of the security SPY and the cryptocurrency Ether were shown to trace out r-shaped curves, suggested that Bitcoin also differs from them in its elemental nature. There has been some disagreement over whether Bitcoin is a security (Michaels, 2018). The present study suggests that Bitcoin does not diffuse like a security, or at least not like SPY. The question of whether Ether or Bitcoin is a commodity remains unresolved and will require more extensive analyses of more diffusion data. Crude oil appeared sigmoidal but could not be fit by the Richards model, and corn did not appear sigmoidal but could be fit. |  |
| 8 – 9 | Since Bitcoin's behavior more closely resembles a technology-based product, an emerging asset class, or a bubble event, then it is correct that existing currency and security laws and regulations should not be applicable to it. If it is deemed desirable to apply laws to it such as the Bank Secrecy Act, then it will be necessary to revise those laws. Such revision would be unprecedented as there are currently no technologies or asset classes that are regulated as currencies |  |
| 10 – 11 | While Bitcoin resembled some emerging market currencies in its long and sustained appreciation, the magnitude of Bitcoin's appreciation has been unprecedented. Contrary to its common classification as a commodity, Bitcoin remains most closely related to option indices and inversely correlated to major currencies. Bitcoin's rapid asset appreciation has exceeded the most prominently-studied historical bubbles of the last three hundred years, posing substantial hazards in the near future for investors and technologists alike.  In our research, we found that lower Bitcoin Betas and higher Sharpe Ratios corresponded with the beginning of Bitcoin's rapid recognition as a viable investment commodity in 2017. Identifying and predicting these characteristics would be useful for investors during the transition period from a closely-held niche technology to highly-valued asset class | Conclusão |