Cryptocurrencies as market singularities: The strange case of Bitcoin

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Cryptocurrencies as market singularities: The strange case of Bitcoin

ABSTRACT

Since its creation in 2009 the electronic currency Bitcoin has generated volumes of online debate in the business press. While there have been plenty of economic arguments situating it as a financial bubble about to collapse including from Nobel Prize winning economists; its price value has proven to be more durable than many have predicted. To explain this durability, Karpik’s conception of market singularities is used to understand the Bitcoin phenomenon by outlining the beliefs that maintain Bitcoin’s status as a volatile financial asset. Market singularities are markets for particular kinds of goods and services that are of uncertain and incommensurable value. Singularities markets have communities of followers and a distinctive belief system that ascribes value to a particular product, service, or asset. Developing Karpik’s conception, the paper explores the libertarian political belief system that surrounds Bitcoin’s status as a financial asset. I also outline some political tensions within the electronic currency community concerning governance and centralization.

KEYWORDS

Bitcoin; libertarianism; Karpik; market singularities; judgment devices; beliefs

The electronic currency Bitcoin that emerged in 2009 created by Satoshi Nakamoto (Nakamoto, 2009) (a name widely believed to be a pseudonym of some description) is undoubtedly the most significant intervention in the field of electronic currency. Despite many notable predictions of its imminent demise, coming from Nobel Prize winning economists (Krugman, 2013a; Shiller, 2014) amongst others, it still exists as a significant entity in the financial landscape. Bitcoin has gained widespread recognition through online media, and despite high volatility it remains a marginal but distinctive financial asset (Moore and Christin, 2013). Here I consider why the price value of this peculiar asset has proven to be more durable than many of the critical predictions have suggested (see for example Williams, 2013).
Karpik’s (2010: 10) conception of market singularities can be defined loosely as markets for goods and services, which are of uncertain and incommensurable value. Now this is clearly a broad category but it refers to everyday goods and services, like records or legal services, as well as more exclusive entities, such as works of art or fine wines. Singularities are *distinctive* goods and services that are based around specific kinds of knowledge and judgment (Karpik, 2010: 11). The markets around these goods and services are shaped by communities of followers who believe in these singularities and make a judgment about their worth.

Value is clearly a multifaceted concept and at least two dimensions of value are in play in the following analysis of the Bitcoin market: value established through market price, which is the predominant conception of value within economics; and value understood as a collective ascription of worth (see Burling, 1962; see also Guyer, 2004: 84). The two dimensions of value are complimentary since one is more likely to invest in something if you consider it to have worth, but the key argument here is that one cannot understand the reasons for Bitcoin’s economic value without examining the non-economic and social elements supporting its value. This latter conception of value can be understood as a social ascription of worth that is centred on knowledge, belief and judgment (Karpik, 2010). As Guyer (2004: 84) notes, this cannot be reduced to price, since price indicators do not provide the criteria with which to judge *how* or *why* something has worth or quality. As Karpik (2010) highlights, judgements of worth must be established through social processes of valuation (see also Caliskan, 2004), in which knowledge and belief plays a key role.

Karpik’s conception of market singularities can add to the analysis of Bitcoin by highlighting the role of belief systems and judgment in sustaining its price value. While previous cultural economy analysis of price valuation has focused on how prices are made and produced (Caliskan, 2007) and how ascriptions of quality relate to particular markets (Guyer, 2004), Karpik’s conceptual toolkit gives us some additional tools to examine the social processes of valuation within particular, distinctive and incommensurable, goods and services markets. His analysis also highlights the role of belief which is particularly important in the Bitcoin market.
In this context, beliefs are understood as viewpoints. While belief systems refer to established and interconnected sets of viewpoints and practices. These belief systems can also be named and characterised as ideological and in doing so one situates them as political. The political denotes points of conflict or disagreement, which can occur around and within singularities markets. Broadly speaking, a political belief is a view about how the social world should operate that is in conflict with others.

To a certain extent all markets are underpinned by belief systems, including financial investments. But these belief systems are more pronounced in some markets than others. Conventional economic analysis tends to focus on information and calculation as determinants of price value rather than beliefs. Indeed, economists have often dismissed Bitcoin on the basis that it has no underlying real value (see for example Cheah and Fry, 2015) since it is not supported by the state or any legal authority unlike national fiat currency. In contrast to this, Karpik (2011) draws out the importance of judgment and particular kinds of knowledge which give life to and sustain particular markets through socially ascribing worth. Given that Bitcoin is by far the most widely recognised cryptocurrency, it is the principal focus of the analysis that follows. However, in the final section of the paper in order to highlight the political tensions within cryptocurrency markets I will broaden the analysis to other cryptocurrency communities.

Not a physical entity as such, Bitcoin works through an expanding record of transactions, all of these transactions are readable and the history of previous transactions validates future transactions (Böhme et al., 2015: 215). Thus one of the key advantages that Bitcoin is meant to have over government fiat currencies is that because Bitcoin works through cryptography and peer2peer transactions there is no central authority either issuing the currency or regulating it. Instead, Bitcoin are bundled into blocks, blocks are generated through a computer mining process to discover a hash code, which when discovered releases the next block of Bitcoin. A key claim in this paper is that the durability of Bitcoin’s price value is sustained by the belief system of the community that surround it. Drawing on Karpik’s (2010) conception of market singularities, I situate Bitcoin as a peculiar ideological market singularity, which is characterised by a libertarian belief system.
The contributions of the paper are that I develop a fresh understanding of the Bitcoin market by applying Karpik’s framework to cryptocurrency, and I develop his analysis by highlighting the importance of the political beliefs surrounding Bitcoin. While libertarianism underpins the Bitcoin ecosystem, to be a member of the Bitcoin market one does not have to be a libertarian, since some own Bitcoin out of curiosity or because of an interest in computer programming and cryptography. However, the principal libertarian political belief underpinning Bitcoin is the view that a currency that works through blockchain cryptography, which is not controlled by any state or central authority, is both sustainable and desirable.

I begin by outlining more conventional economic perspectives on Bitcoin and highlight a crucial missing ingredient in these accounts, which is the belief systems that maintain its price value. In the second section, I outline the concept of market singularities and the tools it offers for further empirical analysis of the Bitcoin market. Here the analysis is focused around judgment and judgment devices. After this, the libertarian belief system around Bitcoin is examined. In the final section I point to some of the political tensions within Bitcoin and other cryptocurrency communities concerning both centralization and governance.

Economist Perspectives on Bitcoin

Most academic articles on Bitcoin have focused on the technical concerns of computer programmers and cryptographers, including the degree of anonymity of the currency and technical glitches and hacking dangers (see for example Moore and Christen, 2013). Several other papers and government documents have examined the ambiguous legal status of the currency (see for example FinCEN, 2013).

Bitcoin has been an exploratory subject across a range of disparate fields, including computer science (Grinberg, 2011), social media studies (Garcia, et al., 2014), social network analysis (Meiklejohn, 2013), money laundering (Aldridge and Décary-Hétu, 2014), economics (Cheah and Fry, 2015), political economy (Weber, 2016), and in philosophical discussions about the nature of money (Maurer et al., 2013). This paper approaches Bitcoin and electronic currency from a different angle, which is a cultural
economy perspective focused on an investigation into why Bitcoin continues to have price value, and the importance of the political beliefs that underpinning it.

The most prominent group of Bitcoin critics have been academics working in finance and economists. Economic critiques have been put forward principally via social media; in contrast, academic economic analyses of Bitcoin and electronic currency are relatively scarce (Cheah and Fry, 2015: 35). The economic scepticism around Bitcoin is neatly summarised by Williams (2013) who argues that ‘Bitcoin is not a legitimate currency but simply a risky virtual commodity bet’ with a flawed DNA. These critiques of Bitcoin have been based around the following objections, often with some combination of all three: First, any viable currency requires banking and a central authority and because Bitcoin does not have this it is unsafe and prone to fraud (Williams, 2013). A classic example of this problem was evident during the collapse of what was the largest Bitcoin exchange, Mt. Gox, in February 2014 amidst allegations of corruption (see Greenberg, 2014). Second, Bitcoin is far too volatile to operate as a unit of account and therefore it will never be a sustainable and widely used currency (Ali, 2014). Third, there is no secure basis for Bitcoin’s price and it is simply a speculative bubble with a Ponzi character (see for example Cheah and Fry, 2015). In this kind of economic analysis, value is understood purely through price (see Burling, 1962). The third economic argument centres on the point that, unlike Bitcoin, national fiat currency is backed by the state and this underlies its value. As Krugman (2013b) neatly puts it, ‘fiat currency is backed by men with guns whereas Bitcoin is not, so why should this thing have any value?’

Some of these critiques have proven to be overstated, particularly Williams’s claim that one Bitcoin will be valued at $10 by mid 2014 (Williams, 2013) - the value of one Bitcoin was $319.70 at the close of 2014 (Coin Desk, 2016). Williams’s bold and ultimately incorrect prediction has become an infamous one in the Bitcoin community, but it is a useful one for our purposes here because Williams is specifying a point at which, at least for some economic critics, the Bitcoin bubble will be deemed to have burst and it will no longer have significant value. The paper is intended to provide at least a partial explanation for why the price value of a Bitcoin has not collapsed and continues to be substantially higher than $10.
However, the problems surrounding Bitcoin’s widespread adoption as a currency - its volatility and the technological sophistication required to use it - do tend to push it towards the status of a financial asset more than a currency (see Burniske and White, 2016). This is reflected in the extent to which Bitcoins are stored, or rather hoarded, and not circulating. There are differing estimates of the proportion of Bitcoins that are not circulating, but in a widely cited paper Meiklejohn et al. (2013) put the figure at 64%, and a Bank of England quarterly bulletin notes that a popular online site where people can hold their Bitcoin, known as ‘My Wallet’, had 0.02 transactions per day in 2014 (Alli, 2014: 5). This suggests that Bitcoin have a tendency to be held as a speculative store of value, rather than a currency that is used for the exchange of goods and services even though it continues to be used by a minority for this purpose (Alli, 2014).

The history of Bitcoin price has been marked by extreme volatility driven by various crises at different points. These crises events have been triggered by a variety of concerns about the currency, such as regulatory curbs of Bitcoin activity – for example the Peoples Bank of China’s issued a note in December 2013 which banned financial companies from undertaking Bitcoin transactions (Bloomberg, 2013). Yet the most serious crises have been sparked by problems internal to the Bitcoin community, for example the largest Bitcoin exchange – sites where people buy and sell Bitcoin – Mt. Gox collapsed in February 2014 (Greenberg, 2014).

Dramatic drops in Bitcoin exchange value in short time periods have led a range of online commentators to declare the end of Bitcoin on more than one occasion (see for example Financial Times, 2014; Hearn, 2016). The history of Bitcoin price is characterised by rapid rises and sharp depreciations, which have then been followed by a degree of Bitcoin price recovery (Coin Desk, 2016); illustrating that its price value is far more durable than many, such as Williams (2013), have assumed. From its creation in 2009, Bitcoin was intended to work as an alternative cash payment system that cuts out the need for any central authority through cryptographic innovation (Nakomoto, 2009). Yet there is a tendency to hoard the currency as a speculative asset rather than spend it, at least for a large proportion of Bitcoin owners. Given the many predictions of its immanent demise, how do we explain the continuing market value of Bitcoin? To address this, we need to engage with the
belief systems that surround Bitcoin, in order to better understand the characteristics of this peculiar market asset.

Virtual Currency and Market Singularities

Market singularities are goods and services whose value is multidimensional, uncertain and incommensurable (Karpik, 2010: 16). This incommensurability means that these goods cannot be reduced to an objective determination of price according to a single set of criteria or information. Karpik gives several illustrative examples of singularities markets, including French wines, records, contemporary painters, and French legal services. These examples are illustrative rather than empirically drawn out in depth, and without detailed exploration of the beliefs and judgments that give these markets life (see Healy, 2011). This lack of detail leaves the conceptual framework rather broad and open to interpretation.

One question that arises, when trying to understand what a market singularity is, is the counterfactual: what is not a singularities market? The difference here is one of degree rather than of kind, since any market is likely to have products or entities within it that are distinctive and singular. For example, when purchasing eggs one might choose to buy eggs that have come from a particular collection of chickens that are distinctively reared. Though there are strong trends in many markets that push towards standardisation and homogeneity, such as the purchase and consumption of basic UK supermarket dairy produce. Here standardisation and informational concerns like price and quantity are pervasive in purchasing decisions, and therefore basic supermarket dairy produce would be a market where the dominant trends are not those of singularity and distinctiveness. Karpik gives the example of the standardisation and impoverishment of classical music in which mass production and homogeneity have lessened personal judgment and interpretation within the market (Karpik, 2010: 251-252).

Karpik’s (2010: 51) conceptual schema is focused around the socially constructed dimensions of valuation of distinctive goods and services. Karpik’s conception of value takes us beyond the reduction of value to price, to a broader conception of value that encompasses the social ascription of worth (see also Guyer, 2004). This is
contrary to the efficient markets hypothesis in economics, which is based on the idea that value is determined through market price and reflects the efficient processing of information.

The difficulty that the efficient markets hypothesis has with market singularities is neatly reflected in the American economist Baumol’s (1987) characterisation of art markets as a ‘floating crap game’. As entities of ‘unnatural value’, Baumol argues that works of art do not have any equilibrium price level, and unlike the market for steel bolts fails to conform to economic laws of supply and demand. The economic reduction of price to supply and demand is equally unsuitable for the Bitcoin market because this obscures the crucial social judgments and questions that surround Bitcoin’s price valuation, such as why should Bitcoin have any value? (see Krugman, 2013b). And how does one judge the ‘correct’ price of a Bitcoin when there are conflicting and polarised views about its worth? (see also Caliskan, 2007: 257; Guyer, 2004: 93). Baumol’s difficulty in categorising art markets stems from the fact that, like other market singularities, value in art markets is not strictly quantifiable and not reducible to the ‘neutral’ processing of information; since socially constructed knowledge, beliefs and viewpoints are crucial to the valuation of singularities.

Central to the existence of singularities markets is the classifications of people sharing broadly the ‘same point of view’ (Karpik, 2010: 31). In singularities markets judgment shapes purchasing decisions and judgment has a public, communicative quality (Karpik, 2010: 38). In this sense the two dimensions of value pointed to here, value as price and value as the ascription of worth (Guyer, 2004: 84), are interconnected and complimentary. In purchasing a cryptocurrency one is publically ascribing worth to a cryptographic network, which entails making a supporting judgment about its price.

This act of judgment and ascribing value through purchasing requires networks and market devices to function, what Karpik (2010) refers to as ‘judgment devices’. Judgment devices are a broad ranging category that includes collective networks and expertise (Karpik, 2010: 49). Judgment devices ‘dissipate the opacity of the market’ and reduce the cognitive deficit by providing knowledge and expertise which serves as a guidepost for action (Karpik, 2010: 44-45). As Guyer (2004: 90) notes,
‘judgments can only work to structure pricing if expertise is brought to bear on the problem’. Twitter is an interesting example of a judgment device in the Bitcoin market, which can be classified as a ‘ciceron’ (Karpik, 2010: 45; Healy, 2011) – a judgment device that provides an arena for critics and commentators to comment on, and attempt to direct, the market.

Twitter works differently from more established news media, such as television, because those with Twitter accounts tend to follow individuals with similar belief systems (Halberstam and Knight, 2014). So it serves as a particularly important judgment device in reinforcing ideological belief systems amongst particular communities of Tweeters. Garcia et al. (2014) find that spikes in Tweets about Bitcoin correspond closely to price hikes in Bitcoin and increasing usage. Although this relation seems to be more one of correlation than causation, Kaminski and Gloor (2016) for example find that Twitter signals do not predict Bitcoin price rises but high trading volumes do correspond to emotions flying high on Twitter. As they suggest, Twitter is a ‘virtual trading floor that emotionally reflects Bitcoin market movement’ (Kaminski and Gloor, 2016: 13). Thus Twitter works as an important judgment device in which actors reflect, and try to read, movements in the Bitcoin market.

This application of Karpik’s work into the field of cryptocurrency moves us in a slightly different direction from other analyses of market singularities. In an interesting analysis of invitro-fertilisation and egg markets Waldby suggests that the market for singularities consists of ‘goods that, for the consumer, have no quantifiable equivalence or tradable value’ (Waldby, 2015: 280). While this characterisation does seem to apply to frozen eggs, which have a particularity, and a unique form that is intended to give life that takes precedence over ‘tradable value’, this does not seem to apply to other market singularities.

Clearly in some singularities markets tradable value and appreciation plays a larger role than others. Singularities markets are often characterised by investor speculation. To take one example, consider the substantial holdings of valuable works of art, like great Picassos in free ports such as Singapore, which can then be easily exchanged. A singularities market has developed around great art in which famous pieces become tradable devices for investors to store capital (Knight, 2016). The market for
singularities can never be fully separated from quantifiable equivalence and tradable value. Since in the moment of decision when purchasing a singularity one is necessarily entering the realm of calculation. Karpik (2010: 118) expresses this as follows, ‘decision belongs to a world grounded in generalized equivalence whose actors are guided by a single criterion of action, while judgment belongs to a world… characterised by a plurality of evaluation criteria’. And both calculation and judgment are integral to the decision to purchase a singularity. For some actors entering a given singularities market, profiting from price appreciation is likely to be the predominant motive. The tradable values in singularities markets are speculative and uncertain (see Karpik, 2010: 11), since they depend on the extent to which certain kinds of knowledge and particular viewpoints are adopted and followed. There is a strange hybrid character to markets for singularities because the items in question are not reducible to any simple calculation of price, yet some investors join the market for a projected appreciation of ‘tradable value’ and do not necessarily share in the belief system that gives the entity its worth as a valued singularity. This motivation for investing in Bitcoin is reflected by Michael Novogratz, the co-chief investment officer of Fortress Management Group, who explains his companies’ interest in Bitcoin thus, ‘there are enough libertarian (anti) government guys to at least make this a bubble’ (Foley, 2013). Alongside the important shared belief systems that characterise singularities markets, there are also those who join these markets because of their perception of investor behaviour, deduced from a judgment about the beliefs of other market members.

While judgment devices are central to processes of price formation, singularities markets must also possess some more formalised aspects in how goods are purchased and exchanged. When emphasising the elements of judgment and knowledge, Karpik gives little detail about how singularities markets are actually enacted and here particular sites where exchanges happen are important (see Caliskan, 2007). Sites or places of exchange are strangely absent from Karpik’s account but he does recognise the interpenetration between judgment devices and the act of exchange (Karpik, 2010: 105). However, the concrete site of exchange has its own rules and norms, which he rather neglects. If one takes a singularities market such as antique furniture, the role
of the auction house or websites like eBay are an important component of these markets.

As the concrete sites of exchange that give the market life, Bitcoin exchanges are crucial. Bitcoin are acquired mainly through exchanges but these exchanges are not legally regulated in the way in which the exchange of government backed fiat currencies is, since Bitcoin is not generally considered as legal tender. This makes feedback and trust crucial to the operation of exchanges. Karpik (2010: 66) argues that trust is essential to the maintenance of singularities markets. Trust is a broad and rather ambiguous category in Karpik’s analysis, which has a foundational status connected to knowledge and belief (Karpik, 2010: 60). Trust is important to Bitcoin exchanges because in the absence of the state, one must believe that the exchange site one is undertaking transactions on (and/or storing Bitcoin) will continue to exist, be secure, and not defraud the user. Maurer et al. (2013: 274) describe the networks of trust around Bitcoin as a ‘sociality of trust’, while Karpik (2010: 65) refers to it as ‘relational trust’. Thus the role of user feedback and judgment devices in establishing the reliability and trustworthiness of exchanges becomes central. The importance of trust in the Bitcoin market again highlights the inherently social dimension of singularities markets. And given the uncertainties around price valuation, this sociality is underpinned by beliefs.

**The Bitcoin Community and Libertarianism**

Shared beliefs are crucial to the existence of market singularities. As Karpik (2010: 61-62) describes, ‘to believe is to inhabit a quasi world richer than the real world, a quasi world protected from the world’. In a revealing 2010 quote from Nakamoto on a Bitcoin discussion forum, the electronic currency is characterised as follows, ‘I think the most apt description of Bitcoins is that they are shares of stock in this communal Bitcoin enterprise we are undertaking’ (Nakamoto, 2014: 283, my italics). The notion of Bitcoin as a communal enterprise highlights the shared belief system, a shared act of faith in blockchain cryptography.

While Karpik (2010) places considerable emphasis on shared beliefs as a defining feature of singularities markets, and emphasizes the role of shared ‘points of view’,
the political dimensions of this receive little attention. Yet the implications of this are clearly political, since ‘each viewpoint carries its own criteria of evaluation, which express a principle for organizing the world’ (Karpik, 2010: 40). Indeed, because money is inescapably political, in that monetary choices entail contests that result in decisions that favour some actors over others within a given society (Kirshner, 2010: 646-647), Bitcoin’s status as a trailblazer in the field of electronic currency - the first and most recognised of its kind - means that it is a market singularity with an important ideological and political dimension. And the key political belief underpinning Bitcoin is a broad libertarian conviction that an alternative money system based on cryptography, which is beyond the control of the state, is both sustainable and desirable.

The currency has some natural affinities with the key economic ideas of the Austrian School, such as the ultimate subjectivity of value, an anti-inflationary standpoint and a deep distrust of state intervention. As von Mises (2012: 29) notes, ‘it is not the state but the common practice of all those who have dealings in the market, that creates money’. The idea that the fundamental feature of how money works is not legal tender and state authority, but rather the subjective ascription of value is central to Austrian School thought and chimes with the beliefs of the Bitcoin community.

The subjective conception of value is perhaps most clearly expressed by Carl Menger. Menger argues against the idea that value is inherent in things; for him valuation ‘is a judgment economizing men make about the importance of the goods at their disposal’ (Menger, 2007: 121). Judgments of value involve the subjective ordering of needs and wants for Menger (2007: 194), and – as is customary in economic theory - value is understood ultimately through price. Menger’s arguments for the subjective origins of value are central to economic libertarian thought and are complimentary with the idea that Bitcoin has a sustainable price value; an assumption that other economists have questioned (see for example Cheah and Fry, 2015). His subjective account of value has certain similarities but also important differences from Karpik’s (2010) conception of market singularities. Value is not inherent for either Karpik or Menger, but in Menger’s account the process of ascribing value begins from the subjective, while for Karpik (2010) the starting point of the analysis is quite different. Karpik’s
principal interest is in the social devices and networks that give market singularities life.

Hayek’s (1976) arguments for the denationalisation of money also echo the aims of sections of the Bitcoin community (ECB, 2012: 22). Hayek’s call for an open competition between different forms of currency that are not regulated by the state – essentially a free trade in money and monetary systems - arises from a fundamental distrust of government regulation of the money supply and a faith in the open expression of self-interest through market competition (Hayek, 1976: 130-131). As Hayek sees it, this competition would occur between money systems that can be created by private institutions and individuals who are free to compete with existing state backed fiat currency. Bitcoin is intended to deliver on both these counts: in being released through a mining process at a set rate its issuance is not controlled by a central authority or government; second, because its growth and usage is dependent purely on people choosing to use the currency rather than the requirements of any state authority.

Although I have characterised Bitcoin as assuming more of an asset like status, it should be noted that Bitcoin can also be held as an asset because it projects a libertarian viewpoint about how the money system could or should be (see Dodd, 2012), even if it does not currently serve as money for the majority of users. The development of Bitcoin soon after the financial crisis was partly a reaction to concerns about the government backed fiat currency system, which it was trying to present some kind of alternative to. As Nakamoto (2009) notes, ‘banks must be trusted to hold our money and transfer it electronically, but they lend it out in waves of credit bubbles with barely a fraction in reserve’.

Golumbia (2015; 2016) draws out the key libertarian political beliefs surrounding Bitcoin, characterising it as an ‘extreme rightist-anarchocapitalist, winner-take-all…political vision’ (see also Scott, 2014). This anti-state ideology gives rise to a range of problems and inconsistencies, for example he highlights an interesting tension in Bitcoins’ anti-government libertarian ethos between Bitcoin advocates who celebrate its growing acceptance among banks and established financial players; and other members of the community who are convinced of Bitcoin’s status as an alternative
financial asset that breaks with the existing economic order. The former development
is clearly inconsistent with the latter claim.

While many aspects of Golumbia’s characterisation of the Bitcoin community ring
ture, the approach presented here has two principal differences from his account:
First, Golumbia seems to have little interest in the question which guides this analysis,
which is why has Bitcoin’s price value proven to be more durable than many
economists have predicted? I argue that Karpik (2010) helps us to explain at least
some of the reasons for this and that existing economic critiques miss a crucial
ingredient of Bitcoin’s price valuation, which is the beliefs of the Bitcoin community.
Second, Golumbia’s project is focused on establishing Bitcoin’s connections to right
wing economic libertarianism, but this rather neglects the diversity of the Bitcoin
community and the differences between libertarian perspectives, such as between
cypherpunks and economic libertarians. Cypherpunks are more interested in social
freedoms and have concerns about state monitoring and privacy (for an early
founding statement of the cypherpunk ethos and how it relates to cryptography see
Hamill, 1987). While economic libertarians place a greater emphasis on economic
freedom and an anti-tax, anti-regulatory agenda; the objectives of the cypherpunks are
centred on enabling privacy through cryptography. While the two do overlap in the
Bitcoin case they can also be distinguished. Thus Golumbia tends to overlook
political differences within the Bitcoin community.

This brings us to another dimension of Bitcoin’s economic value, which is the
existence of darknet markets, the most famous of which was Silk Road. Silk Road
became a high profile website for the purchase of illegal drugs and other nefarious
activities from its creation in 2011 to its shutdown and the seizure of the Bitcoin held
on the website by the FBI in 2013. Bitcoin has served as the principal currency with
which to purchase illicit substances online, largely because of the partial anonymity it
provides (see Meiklejohn et al., 2013).

While the purchase of online illegal drugs provides perhaps a more concrete reference
point for Bitcoin’s price valuation than libertarian beliefs, the fact that Bitcoin enables
trades on darknet markets is very much consistent with the libertarian, cypherpunk,
anti-government regulation ethos of parts of the Bitcoin community. Although here
the libertarianism is arguably more social than economic – the concern is less with the perceived threat posed by central banking, and instead the objective is to give people the social freedom to purchase illicit substances online free from the threat of prosecution. The purchase of illicit substances on the darknet market then adds another dimension to the libertarian ideology that helps to sustain Bitcoin’s economic value.

Within the Bitcoin community people believe for different reasons, there are believers who are more interested in its status as a speculative libertarian financial asset and store Bitcoin in the hope that its price value will appreciate; and others of a more socially libertarian persuasion who see it as a means to undertake economic transactions with a greater degree of freedom from state control. While some of the viewpoints within the Bitcoin community are more explicitly politically libertarian than others, they all must share a political belief that it is beneficial or desirable to have a cryptographic currency/asset that operates independently of national governments and central banks.

**Bitcoin Centralization and Governance**

Bitcoin has been characterised as a market singularity underpinned by libertarian political beliefs. In this final part of the paper I draw out some tensions in Bitcoin and other cryptocurrency communities around market centralization and governance. These two issues are often linked, since as we shall see, the debates about whether Bitcoin needs improved governance connect to problems of centralization and ownership concentration. While it is often claimed that Bitcoin is a decentralized peer2peer network, recent challenges in the field of cryptocurrency have brought to the fore operational issues that render this proposition more questionable.

Wilde (2013) reports that 927 people own half of the Bitcoins in circulation, which is clearly a highly a heavily concentrated level of ownership. This runs contrary to the idea that Bitcoin is decentralized, since while the peer2peer network is based on ideals of decentralization, ‘significant economic forces push towards de facto centralization’ (Böhme et al., 2015: 219-220), including ownership concentration amongst a small number of wealthy investors. One of the problems with this
concentration of ownership is that it means that single large transactions can have major effects on value – for example Bovaird (2016) reports that a drop of 5% in Bitcoin price in half-an-hour on 11 September 2016 is likely to have been caused by a single trade. The danger with this high level of ownership concentration is that it can lead to a relatively illiquid market, which works against Bitcoin becoming an alternative money system that is widely used for everyday transactions.

One further centralization in the Bitcoin market concerns mining capacity, which illustrates how dominant parties can exert major political influence on how markets operate. Miners expend large amounts of electricity and increasing levels of computer power to discover hash codes that lead to the release of the next block of transactions for which they receive a Bitcoin payment as a reward. Because of the ever increasing computer power mining requires it has become the province of a small number of institutions with sufficient capacity. Around 70% of Bitcoin mining in June 2016 was carried out by a collection of four Chinese mining institutions (Popper, 2016).

The blockchain has been beset by political disagreements in recent years, because of the increasing amount of time it takes to process transactions due to a 1MB cap on block size. A division emerged between those known as Bitcoin Core, which wants to continue to work with the existing model without fundamentally changing the block size, and Bitcoin Classic who are seeking to increase the block size (see Ennis, 2016). Miners have a crucial position in the Bitcoin ecosystem since the software they choose to run to mine Bitcoin become the software that is used throughout the network, which gives them sizeable decision making power (Popper, 2016). Bitcoin does not have any central authority to resolve these competing conceptions of the blockchain, which means that miners have a major role in deciding the software model that is adopted. The four major mining institutions in China have effectively used their considerable power to prevent any proposed increase in block size from getting off the ground (Hearn, 2016; Popper, 2016). Centralized mining power means that a handful of institutions have substantial decision making power over how the blockchain operates. The existence of heavily concentrated mining capacity translates into sizeable political power for select groups, which illustrates how concentrations of economic power can lead to concentrations of political power in cryptocurrency markets.
Another tension around governance and the blockchain is reflected in other adaptations of the Bitcoin protocol. As an ideological market singularity Bitcoin shows that cryptography can open up a range of different political possibilities in currency design (DuPont, 2014; see also Terranova and Funagalli, 2015). Because Bitcoin works according to ‘predetermined rules encoded in an open source software platform’ (Weber, 2015: 139), an adaption of these rules could potentially create platforms for different ideologies. Although a proviso is in order here, since as Minksy (1986: 228) notes, ‘everyone can create money; the problem is to get it accepted’ and other electronic currencies have far lower capitalisation, acceptance and recognition than Bitcoin does. Having said this, a whole range of other cryptocurrency experiments have developed in recent years which embody slightly different principles in their peer2peer blockchain design, such as Namecoin, Dogecoin, Zcash and numerous others. One interesting case, of this - which brings to the fore questions around the governance of the blockchain - is Ethereum.

Ethereum’s unit of account is Ether, which is intended to facilitate decentralized applications of the blockchain protocol through smart contracts. One application known as the Decentralised Autonomous Organisation (DAO) provided a means to govern investment capital without any central authority. However, due to a transaction vulnerability in the code, the DAO which had received around $1 million in Ether could be moved into another DAO which one exploiter then had total voting power over (Lackness, 2016), enabling them to seize the invested Ether. This left a number of Ethereum investors in the DAO unhappy, because they had lost their Ether investments due to this vulnerability and demanded to be reimbursed. In response to this pressure, the developers created a hard fork in the blockchain in which on one side the exploiter received the Ether and on the other the Ether was returned to investors. The creation of this hard fork to reimburse investors prompted a polarised reaction in the electronic currency community with some critics like the Ethereum developer Felföldi (2016) arguing that the ‘money is the rightful property of the “thief”’. Felföldi (2016) proposes that there should be no recourse to an abstract ‘higher justice’ that takes precedence over the ‘immutable law of code’.
This division and the resulting hard fork within the Ethereum blockchain illustrates how cryptocurrency communities can be divided by competing political ideals. For some participants’ faith in the code as a ‘just’ system takes precedence over abstract normative concerns about ‘justice’ and fairness; while for others providing financial redress to victims of ‘fraud’ took precedence. The absence of any legal authority meant that the developers had to make a decision to resolve the dispute, and decided to fork the blockchain to respect ‘honest’ market investors against such hacks and reimburse the Ether that was lost. Thus as a politicised market singularity Bitcoin and cryptocurrencies can have fundamental political divisions that on occasion come to the fore in the absence of any central authority.

Cryptocurrencies then present an interesting case of political tensions around beliefs within singularities markets – particularly because they operate to a large extent beyond the province of the state (Karpik, 2010: 56). Questions of governance can become significant points of division in singularities markets and this political dimension is given little attention in Karpik’s analysis. The Bitcoin market, in presenting an ideal of what an alternative monetary system might look like, is inevitably political. And this is also a key reason why, despite internal political divisions, its economic value has proven to be a great deal more durable than many sceptical commentators have predicted.

**Conclusion**

Bitcoin has assumed the status of a peculiar speculative asset (Burniske and White, 2016), one that also - although to a lesser degree - serves as a currency with which to purchase particular goods and services. Bitcoin retains a community of followers and has prompted numerous discussions in web forums around its status as an asset and its design.

There is an important ingredient missing from existing accounts of Bitcoin, which is addressed by focusing on how the Bitcoin market operates, and situating the politics surrounding it. Drawing on and developing Karpik’s (2010) conception of market singularities has helped us to engage with the belief systems and judgment devices that underpin this speculative asset. Conventional economic readings that have
understood Bitcoin purely as a speculative bubble (Krugman, 2013a) follow the problematic tendency that Galbraith (2001: 79) notes, which is for economists to understand motivation in purely economic terms. In singularities markets there are other important sources of motivation at work, including political conviction.

Furthermore, the brief discussion of the Ethereum smart contract experiment suggests that there is considerable scope for further case study analysis of the belief systems underpinning different cryptocurrencies. Drawing on Karpik’s (2010) framework, this paper provides an illustration of how the concept of market singularities might be fruitfully applied to different cryptocurrencies in the future, to examine the similarities and differences between them.

While Karpik (2010) draws attention to the importance of beliefs in singularities markets, in the case of cryptocurrency we have seen that belief systems can also contain significant political differences within them. Indeed, the political divisions within singularities markets have thus far been a neglected area of investigation. The analysis of Bitcoin as a market singularity has also highlighted how the design and issuance of any monetary system is essentially political.

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