Has Bitcoin Achieved the Characteristics of Money?

Donovan Peter Chan Wai Loon
University of Malaya, Malaysia

Sameer Kumar
University of Malaya, Malaysia

INTRODUCTION

In late 2013 and early 2014, the term bitcoin had made headlines in the global financial news. Designed and developed by Satoshi Nakamoto[1] (Nakamoto, 2008), this "virtual money" was propelled by cyber lobbyist and at the end of 2013 the exchange rate per bitcoin had multiplied more then five times over a space of several weeks. Supporters claim that the fundamental objective of bitcoin is to act as a substitute to the current payment systems and to allow dealings internationally, across currency denominations, without intervention of dominant bodies or central banks, and without the abuse of traditional financial institutions such as banks. According to followers of electronic currencies, government administrations regularly enforce unwanted controls and constraints and central banks may expedite oversupply of money leading to increased inflation. In addition, a large number of supporters also complain on the overpriced fees charged among other claimed exploitations done by banks. The dramatic rise in bitcoin's value in November 2013 had triggered exceptional interest to it. The trading price of a bitcoin was only USD0.05 when it begun in 2010 and had reached and all time high exceeding USD1, 200.00 (Wood, 2013)

As the main role of Bitcoin's creation is to function as an alternate form of currency that individuals can use to conduct transactions with each another without the interest of governing bodies such as banks, the main question that arises is "how well can bitcoin serve the role of currency?" Money is commonly accepted to be a mechanism that functions as a medium of exchange, a unit of account, and a store of value (Halaburda & Gans, 2014). For the purpose of this paper we will be looking at how bitcoin has achieved these three functions.

BACKGROUND

Essentially, bitcoin is a peer-to-peer network version of e-cash that facilitates transactions between parties minus the proof requirement of an appointed third party; i.e. banks or financial institutions. This unit of network is denoted as bitcoin, which is considered by most to be the greatest digital currency to date (Brito & Castillo, 2013; Lo & Wang, 2014).

The advantages that bitcoin (Rogojanu & Badea, 2014) seems to offer are: 1) it is believed to be a completely decentralized method not linked with any predominant bodies, central banks, or recognized payment systems, which are ruled by banks and therefore it is thought to be less susceptible to exploitation or fraud; 2) it has pseudonymous characteristics; 3) it forces no direct charges on transactions and shows the possibility for transaction fees in general to be lesser. A person can use a bitcoin, by sending his or her account number which is the "public key" and a password which is the "private key" for authentication on the public transaction record,

known as the '"block chain" (Reid & Harrigan, 2013) Certain individuals or "miners" will then use their computers processing power to authenticate if the transaction is real by solving a rigorous computational task also known as "finding the hash of a nonce" (Lo & Wang, 2014). As a payment for validating the transaction, the first person or party to provide the answer to the task will be compensated with a certain number of bitcoin, accumulating to the available stock of bitcoin and consequently generate money creation.

There is a process in the system, which routinely regulates the computational difficulty of validating transactions to guarantee that each transaction is normally verified within 10 minutes (Bamert, Decker, Elsen, Wattenhofer, & Welten, 2013). However, it is unavoidable that there are some uncertainties in the actual extent of time taken to verify each transaction. The same process also dictates the eventual quantity of bitcoin, which is estimated to be 21 million units by 2140.

BITCOIN AS MONEY

Medium of Exchange

While bitcoin has no inherent value, its price eventually depends on its practicality as a form of money in the consumer market. Indication of bitcoin's mark in daily business is mostly hearsay, comprising of articles about individuals simply living by using bitcoin or estimations of big statistics of industries that are eager to agree to bitcoin. Majority of the high-ranking traders receiving bitcoins are led by companies in the software and hardware industry concentrated on marketing products dedicated to bitcoin applications and by exchange markets offering facilities to bitcoin investors.

Accurate understanding into the implementation of bitcoin can be acquired from data of the universal record of bitcoin transactions (Vandervort, 2014). Data from numerous websites show that bitcoin daily transactions count has reached

capacities of tens of thousands but it is widely believed that most of these transactions comprise of activities between speculators, and only a few are actually used for trading of goods and services.

In March 2014, a co-founder of Coinbase Fred Ersham, the prominent digital wallet service, anticipated that 80% of activity on his site was associated with speculation. He also adds that 24,000 vendors are registered with Coinbase (Yermack, 2013). In a global market of billions of consumers, who make numerous commercial transactions everyday, bitcoin seems to have an extremely insignificant market presence.

Another barrier for bitcoin in developing as a general used means of exchange rises from the scarcity of obtaining new bitcoins. A user typically obtains bitcoins from vendors or virtual exchanges(Chowdhury & Mendelson, 2013). The user then needs to find a safe place to store the bitcoins such as digital wallets. Purchases of bitcoins cannot be usually made by credit card or via Paypal, however the user needs to connect his bank account or do a bank transfer to the exchange. The present bitcoin exchanges come with several issues such as low liquidity and to a certain extent execution risks. Another way is for users to mine bitcoin; but this is highly unlikely due to the huge capital investments needed to purchase supercomputers for the mining activity.

Lastly, bitcoin does not allow for users to receive goods and services from a vendor in advance without making prior payment for it. In most current online markets, users are constantly able to make purchases for items and services without money in hand. This is done through credit card facilities backed by the vendor or a third-party credit card company. Till date, there are no bitcoin related credit cards and the idea of such a facility seems to be unknown.

Unit of Account

Bitcoin is faced with a number of challenges for it to become a suitable unit of account. The first reason is due to its great instability. Bitcoin's value

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