

EXPENSE DISCREPANCY AND THE EXPENDITURE OF BITCOIN PRAGMATIC ANALYSIS IN AFRICA

¹ Ramkumar Ramasamy, ² Anandaraj Shunmugam, ³ Sydney Nyasulu

^{1,2}Lecturer II, ³Final year B.Sc (CS), ^{1,2,3}School of Computer Science & Information Technology,

^{1,2,3}DMI- St. John the Baptist University, Mangochi, the Republic of Malawi

ABSTRACT

In recent years, interests have been shown and they are growing at an alarming rate by every second in Bitcoin an innovation which has been somehow rebelled to potentially play undeniable major role in e-commerce above and beyond. It has been predicted that in a decade or few to come, Bitcoin and other crypto currencies available will be the backbone of e-commerce. The objective of this study is to come up and provide a comprehensive empirical study on the payment and investment features of Bitcoin and their implications for the conduct of e-commerce with great focus in Africa as a whole. Bitcoin is a purely peer to peer version of electronic cash which allows online payments to be sent directly from one party to another without going through a financial institution. Computerized marks give some portion of the arrangement; however, the primary advantages are lost if a believed outsider is as yet required to forestall double spending. Satoshi Nakamoto proposed an answer for the double spending issue utilizing a friend to peer network. The system timestamps exchanges by hashing them into a continuous chain of hash-based evidence of work, framing a record that can't be changed without re-trying the verification of work.

Keywords; Bitcoin, cryptocurrency, peer to peer, Electronic cash system, online payments,

General overview and concept of money

At its core money represents value. For example, if you do work for someone you will be given money in exchange for the value of work you gave, you can then use this money to get something of value from someone else in the future. Throughout history, value has taken many forms and people have used a lot of different materials to represent money (salt, wheat, gold) used as a medium of exchange. However, in order for something to represent value, people have to trust that it is indeed valuable and will stay valuable long enough for them to redeem that value in the future. This has always been the means of exchange up until some few centuries ago were, we changed from trusting something (gold, salt, wheat) to represent money into trusting someone (the government). People started finding it too cumbersome to walk around the world carrying bars of gold or other forms of money so paper money was invented. A bank or government would offer to take your bar of gold (i.e worthy a thousand kwacha) and in return that bank would give you receipts certificates referred to as bills amounting to the gold they have taken (One thousand kwacha). These pieces of paper were so much easy to carry and also allowed one to spend some part of the money without having to cut your gold bar into thousand pieces and if you wanted your gold back you simply took a thousand kwacha in bills back to the bank to redeem them for the actual form of money which is your gold bar whenever you needed. This led to the evolution of paper being used as money and as the instrument of practicality and convenience. As time progressed this bond between the paper receipts and the gold bar it represented was broken due to macro-economic changes. The governments told their people that the government itself will be reliable for the value of the paper money. Basically, we excluded gold and started trading paper instead, people continued to trade with receipts that are backed with nothing but the government's promise. This continued to work because of trust even though there was no actual commodity backing paper money, people trusted the government and that's how fiat money was created. Fiat is a Latin word which means by decree, meaning the dollars; Euros; Kwacha or any other currency have value because the government orders it to. This is what is referred to as legal tender to mean to say that coins or bank notes must be accepted if offered as payment.

Introduction to Bitcoin

Once fiat money was in place, the move to digital money was somehow easy and simple since there is already a central authority that issues money so why not make money mostly digit and let that authority keeps track of who owns what. Nowadays we mainly use credit cards, wired transfers, PayPal and other forms of digital money. The amount of physical money in the world is almost negligible and it is getting smaller with each year that passes. With digital money came the issue of double spend problem. This is when given a file that represents a certain amount of money (i.e 20\$ or 20M\$) is copied and duplicated a number of times to make cheat the system into having more money than there actually is. The solution which banks have come up to tackle this problem is by applying a centralized solution. This is a process of keeping a ledger on the computer which keeps track of who owns what. Everyone has an account and this ledger keeps a tally for each account, we all trust the banks and the bank trust their computers so the solution is a centralized in the ledgers in the computers. There were many attempts to create alternative forms of digital currencies but non were successful in solving the double spend problem without a central authority. Whenever control power is given to anyone over the money supply, you are giving them enormous power which creates three major issues. Power corrupts hence absolute power corrupts absolutely. When banks have a mandate to create money or value, they basically control the flow of value in the world which gives them almost unlimited.

Understanding Bitcoin

Bitcoin is also decentralized as there is no one computer that holds the ledger and with Bitcoin every computer that participates in the system also keeps a copy of the ledger also known as the blockchain. This means that if you want to take down the system or hack the ledger, you will have to take down thousands of computers which are keeping a copy and constantly updating it. Like most money today, Bitcoin is also digital which means there is nothing physical you can actually touch in Bitcoin. Bitcoin are not actual coins which some believe them to be but there are only rows of transactions and balances. When you own Bitcoin, it means you own the right to access a specific Bitcoin address record in the ledger and send funds from it to a different address. Bitcoin has gained and attracted a lot of attention from many because for the first time since the introduction of digital money there is now an alternative to the current system.

This has helped Bitcoin to make headlines almost everywhere in the world and become the topic that everyone is talking about. Bitcoin is a form of money that no government or bank can control.

Bitcoin Wallets

A Bitcoin wallet is a program used to send and receive Bitcoins, store Bitcoins and monitor Bitcoin balances. The same way you need an email program like Gmail or outlook to manage your emails, you also need a Bitcoin wallet to manage your Bitcoins. These Bitcoin wallets interface with the Bitcoin blockchain the global and decentralized ledger of Bitcoin transactions. Wallets monitor Bitcoin addresses on the blockchain and update their own balances with each transaction. The most important concept to remember about Bitcoin wallets is that a place where the private key is stored it is what defines that wallet. A *private key* is a very long string of numbers and letters that acts as the password to your Bitcoin wallet. It is from this string of numbers and characters that your wallets get its power to send your Bitcoins to other people. It is also regarded as the secret coordinates of locating your Bitcoins which means whoever knows your private key has control over your Bitcoins. The private key is also used to generate your Bitcoin address. Bitcoin address can be compared and likened to your email address; it is something you give out to people who want to send you Bitcoins. However, there is no way one can figure out what the private key is just by examining a Bitcoin address. The wallet's core function is the creation, storage and use of the private key meaning that it automates Bitcoin's cryptography for you. As Bitcoin wallets evolved, Hierarchical Deterministic wallets were created. Hierarchical Deterministic wallets generates an initial phrase known as a seed or also referred to as a pneumatic phrase. This seed is a string of common words or phrase which you can easily memorize instead of the long and confusing private key. If your wallet gets stolen or destroyed, you can enter this seed in order to reconstruct the private key. In addition, a Hierarchical Deterministic wallet can create many Bitcoin addresses from the same seed. Also, with Hierarchical Deterministic wallets all of the transactions sent to addresses created by the same seed will be part of the same wallet. You must keep secret and safe all the private keys and seeds since they have complete power over your Bitcoins. Once you fail to keep these private keys and seeds secret and safe, the Bitcoins it controls can be irretrievably lost.

RESEARCH IDEA

Bitcoin price formation

To fully grasp and understand how prices are formulated and value given to Bitcoin, we have to look at some of traditional market factors like market risk and currency risk among others and also the properties of Bitcoin and its market by assessing some specific assets factors like individual users and some of the harsh rates available out there just to name a few. Quantifying the impact of these factors can determine the drivers of Bitcoin returns which can help inform future use cases after developing a risk measurement framework. The analysis pending to this can be broken down into two. Firstly, there is a need of quantifying the impacts of assets specifically on demand and supply factors with respect to Bitcoin's daily price return and volatility and determination of the relative efficiency of the nascent Bitcoin market. To achieve this, there is a specific need of **GARCH model** to enable measurements of any return impacts and volatility in one model. After the GARCH model, a forecast and back test are conducted so as to determine if the conditional value at risk and expected shortfalls can be precisely captured accurately using the model.

Bitcoin usage in E-commerce payments

Using the research conducted by CoinDesk in June 2014, it was estimated that the number of wallets in connection to Bitcoin was roughly about 5.3 million which totaled about seven folds within just a year from 2013. In this research companies like WordPress, Wikipedia, Google, PayPal, Dell, universal store at Microsoft and US online retailer overstock.com patronized in this research of Bitcoin usage. It was found that there are a couple of ways or instances where Bitcoin was and can be seen as a platform which puts E-commerce on a higher ground than before. The following advantages were uncovered which deemed to paint a promising future in Bitcoin technology; Bitcoin seems to have opened the door for innovation and programmatic money in the now moment and years to follow, it was also found out that Bitcoin serves as a platform for most new types of business to boost up various economics of techno centric people and also it has been recorded that Bitcoin has unraveled and unlocked opportunities for new global trade routes where consumers are considered to have guaranteed and accountable access to their funds and eradicating the process of carrying large sums of money with you around.

Looking at these advantages and many others, Bitcoin has managed to establish itself and again level of acceptance from people and institutions as it gains high grounds and increase its level of popularity. The decentralization feature of Bitcoin makes it have a fascinating character as opposed to the normal centralized currency which has attracted a lot of people as they find it an interesting feature which has persuaded most to be on board for its implementation and its usage.

SURVEY

CRYPTOCURRENCY IN AFRICA, ITS OPPORTUNITIES AND CHALLENGES

Popularity of Cryptocurrency in Africa

Google Trends data conducted a survey and found that Lagos in Nigeria has the world's highest volume of online searches for Bitcoin in April of 2019. Follow up research awareness suggested that this was merely driven by the frustration of most Nigerians towards the existing payment systems available like the likes of PayPal actually barring Nigerians from receiving international money transfers because of the country's reputation for fraud. As a result, millions of innocent consumers have suffered a great deal and are still suffering since they have no choice but to use alternatives which charge high fees.

some tout digital currencies as an ideal arrangement, Cryptocurrency empowers most ambitious Africans to get installments as they structure business associations around the globe and can be gotten to or utilized around the world. As per most studies led, it has demonstrated that Africa (a center point for m-business) is a hotspot with regards to owning crypto as about 5.5% of grownup web clients overall claim some type of advanced cash with three African countries laying over this normal. In Hootsuite's 2019 Global Digital Yearbook, South Africa lead the chart with 10.7% as the country which possess crypto the highest of any country surveyed with Nigeria also making the list and being evaluated at 7.8% and Ghana at 7.3%. Another factor which has contributed to the popularity of Bitcoin in Africa is due to the misuse of power by most governments which has left Africans questioning their beliefs and trust in governments. Like earlier explained that it is value which instigate any form of exchange to take place, either fiat money or cryptocurrency is paid or given in exchange for something worth of value as the fiat money or cryptocurrency in question.

The reason why cryptocurrency is becoming popular and Africans are keen on it

The unpredictability of fiat currencies in most African countries which has as well prompt most of its consumers to seek protection for their money through other value exchange medium hence relying on Bitcoin and Altcoins available in the market, a good example of this is when last year the South African rand returned to form as the world's most volatile currency. Africans living in other countries on the continent have also been losing faith in their central banks. Just like the case with Zimbabwe where levels of hyperinflation have been quite rife, the faith of most Africans has drastically dwindled over the years. In Africa Bitcoin has become so popular to the extent that demand has dramatically surpass supply which has led to Bitcoin sometimes being traded at a sizeable premium to prices in the rest of the world. The system being used nowadays to send money to family and friends from other continents to Africa and likewise from Africa to other continents is very long.

What cryptocurrency and blockchain actually solve in Africa

Blockchain is additionally indicating a lot of guarantee. As an ongoing Coin broadcast article clarified, partners in the area state appropriated record innovation will be instrumental in understanding long-standing formative issues and opening genuinely necessary monetary development. Nigerian government officials accept that blockchain will drive the world's fourth mechanical unrest, and, just because, Africa has the chance to take a load off at the table. Fintech organizations over the mainland are developing considerably. Hotspots incorporate Cape Town, where the quantity of new companies being set up has risen 23%, and Nairobi, where there has been a 28% ascent. There is additionally trust that blockchain innovation can help bring around sensational improvement to the framework in Africa. In Nigeria, organizations are cooperating to see whether blockchain can be actualized in a push to make the country's streets more secure. The West African country of Sierra Leone has been dealing with the advancement of a block chain based ID framework for its residents in the midst of expectations it could empower budgetary foundations to confirm characters and assemble records of loan repayment such that was beyond the realm of imagination previously. Uganda has likewise collaborated with a blockchain startup to cinch down on the inventory of fake medications across the nation, with reports proposing that up to 10% of solutions bring about phony medication.

3.4 cryptocurrency regulations in Africa

A bunch of African nations have prohibited crypto out and out, including Morocco, Algeria, Libya, Zambia and Namibia. Others have made considerable measures of vulnerability by neglecting to offer a reasonable position, leaving purchasers in a hazy area. South Africa has been fairly a brilliant spot on the mainland, where controllers have communicated excitement about crypto's latent capacity. Official bodies have really been working together with crypto organizations and monetary establishments to locate the most ideal route forward. This year, work has been in progress to build up an intergovernmental digital currency administrative structure, however the report is yet to be discharged. Numerous crypto advocates keep on being floated by a playful position paper discharged by the South African Reserve Bank right in 2014, in which it stated: "Expanding dealer acknowledgment, coordinating existing traditional installment instruments with decentralized convertible virtual money, and advancing the points of interest inalienable in such frameworks. In this manner, there is potential for genuine development of Bitcoin in its current operational condition."

3.5 Other obstacles standing in the way of cryptocurrency in Africa

For what reason will appropriation be a test? Mostly as a result of the way that it could be difficult to get the word out about crypto's latent capacity, and a few customers might be procrastinated on for dread that it's essentially too specialized to even think about using every day. It's additionally reasonable for state that BTC probably won't be the best money to use for every day buys for Africans who are moving ceaselessly from their neighborhood fiat since it's excessively unpredictable. There is additionally a genuine hazard that dependable access to the web over the whole landmass may be overestimated, particularly thinking about that network lingers a long way behind different pieces of the world. Also, convincing crypto and blockchain ventures that are custom-made to the African market will rely upon engineers and business people who can convey it, which means preparing new ability and luring aptitude from around the globe will be pivotal in improving degrees of standard selection.

CONCLUSION

This paper has endeavored to provide empirical evidence on the recent innovation Bitcoin, which can be considered as a new digital currency that is inextricably linked to a decentralized electronic payment system. The initial intention of its founder was that it could be an equivalent of cash that could be used in e-commerce. However, in addition to its payment function, it also acts as an investment asset. This double nature has demonstrated vital to its prosperity up until this point and this paper has examined both of these functions, guaranteeing that we gave adequate consideration to their interconnection. While there has been a lot of thought of the mechanical and cryptographic points, information on the monetary angles, particularly its utilization as an installment system in internet business, are rare. Here, I have endeavored to fill this void through analyzing Bitcoin's value arrangement and the drivers of its prosperity with online traders who acknowledge it for installments. In doing as such, I have recognized the two factors that are significant for the proclamation of this innovation and the worth that showcase members join to it.

There is still no undeniable hypothesis portraying how Bitcoin ought to be estimated since, by its very nature, it yields no profits, incomes or income. Without evident standard valuation draws near, I chose to utilize an exploratory experimental examination. All the more explicitly, the technique utilized here rests after taking a gander at both the stock side and the components that drive request. Our outcomes demonstrate that ubiquity of this digital currency is one of the fundamental components driving the cost. I saw that profits will in general be raised at whatever point paper articles notice Bitcoin all the more much of the time and at whatever point the quantity of individuals searching for it on Google increments. Besides, the tone of paper articles likewise impacts the estimation of Bitcoin as horrible notices may have negative outcomes, while exhortatory pieces increment the cost.

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