Crypto Currency – Currency of the Fintech Era

SushmaCatherine.P, Shruthi.R
[1]*Assistant Professor,Ethiraj College For Women*
[2]*Assistant Professor,Ethiraj College For Women*

1. INTRODUCTION

A Cryptocurrency is a digital or virtual currency designed to work as a medium of exchange. It uses cryptography to secure and verify transactions as well as to control the creation of new units of a particular cryptocurrency. Essentially, cryptocurrencies are limited entries in a database that no one can change unless specific conditions are fulfilled. It is a new concept in the economy and hasattracted huge attention.

Since dotcom crisis, E- commerce has been rapidly rising and retailers are undergoing a revolution as internet sales is booming with more and more technological development. The appetite of stock market investors for e –commerce shares seemed insatiable as investments on internet retail were massively oversized. This was until the birth of crypto currency in the year 2009.

There have been many attempts at creating a digital currency during the 90s tech boom, with systems like Flooz, Beenz and DigiCash emerging on the market but inevitably failing. There were many different reasons for their failures, such as fraud, financial problems and even frictions between companies' employees and their bosses.Notably, all of those systems utilized a Trusted Third Party approach, meaning that the companies behind them verified and facilitated the transactions. Due to the failures of these companies, the creation of a digital cash system was seen as a lost cause for a long while.

Then, in early 2009, an anonymous programmer or a group of programmers under an alias Satoshi Nakamoto introduced Bitcoin. Satoshi described it as a 'peer-to-peer electronic cash system.' It is completely decentralized, meaning there are no servers involved and no central controlling authority. The concept closely resembles peer-to-peer networks for file sharing.

One cryptocurrency, in particular, has entered the public lexicon as the go-to digital asset: Bitcoin, often is regarded as father of cryptocurrencies and all other cryptocurrencies are referred as altcoins. Since 2009, the finance world has been watching the crackerjack rise of Bitcoin with a combination of fascination and, in many cases, severe skepticism. Characteristics of Bitcoin make it fundamentally different from a fiat currency, which is backed by the full faith and credit of its government. Fiat currency issuance is a highly centralized activity supervised by a nation's central bank. On the other hand, the value of a Bitcoin is wholly dependent on what investors are willing to pay for it at a point in time. It uses peer-to-peer blockchain network (chronologically arranged chain of blocks where each block has a list of transactions information) where all members are equal and there is no central server that tells everyone what to do (Nakamoto, 2008).

TYPES OF CRYPTO CURRENCY

Though Bitcoin is the most widely known cryptocurrency, there are many more types of crypto currencies which are listed below:

Litecoin (LTC)was launched in 2011 as an alternative to Bitcoin. Like other cryptocurrencies, Litecoin is an open source, global payment network that is completely decentralized, meaning there are no central authorities.

Ethereum (ETH)is a type of cryptocurrency that is an open source platform based on blockchain technology. While tracking ownership of digital currency transactions, Ethereumblockchain also focuses on running the programming code of any decentralized application, allowing it to be used by application developers to pay for transaction fees and services on the Ethereum network.

Ripple (XRP)was released in 2012 that acts as both a cryptocurrency and a digital payment network for financial transactions. It is a global settlement network that is designed to create a fast, secure and low-cost method of transferring money. It allows for any type of currency to be exchanged, from USD and Bitcoin to gold and EUR and connects to banks, unlike other currencies. Ripple also differs from other types of digital currencies because its primary focus is not for person-to-person transactions, rather for moving sums of money on a larger scale**.**

International Journal of Research in Advent Technology (IJRAT) Special Issue
E-ISSN: 2321-9637
Available online at www.ijrat.org
International Conference "ICFTWF-19", February 4ᵗʰ & 5ᵗʰ 2019

Bitcoin Cashis a type of digital currency that was created to improve certain features of Bitcoin. Bitcoin Cash increased the size of blocks, allowing more transactions to be processed faster.

Ethereum Classicis a version of the Ethereumblockchain. It runs smart contracts on a similar decentralized platform. Smart contracts are applications that run exactly as programmed without any possibility of downtime, censorship, fraud or third-party interface. Like Ethereum, it provides value token called "classic ether," which is used to pay users for products or services.

CRYPTOCURRENCY IN INDIA

"The discussion on whether crypto-currencies should be banned or regulated has been on for some time. Back in 2013, India distrusted Bitcoin as "Wild West territory", where scams like Silk Road, a dark net market for smuggling drugs thrived, and where greedy geeks conned gullible individuals into wasting their money. Although India didn't know it at the time, its political and economic conditions made the country a perfect match for Bitcoin.

In the year 2017, more than 500 merchants in India and five of India's largest companies, including Dell, acceptedcryptocurrency as payment. The number grows day by day. Bitcoin is far from popular, and most Indians prefer fiat money, but a recent Forbes article reports Bitcoin's craze is catching on and that, to date, there are more than 600,000 users in the country.

BAN ON CRYPTOCURRRENCY

India's central bank, the Reserve bank of India or the RBI, which regulates Indian rupee, had earlier cautioned users, holders and traders of Virtual currencies (VCs), including Bitcoins. In January 2018, Government caveats were issued to clarify that cryptocurrencies are not a legal tender. The income tax department began sending tax notices to investors. Banks suspended the withdrawal and deposit facilities of some exchanges. In his annual budget speech, Finance minister ArunJaitley once again came down heavily on virtual currencies. The government, he said, will go all out to eliminate their use in financing illegitimate activities. They won't be included as part of the payments system, Jaitley added. Due to regulatory ambiguity and a correction in prices, investor interest took a beating.

"The creation, trading or usage of VCs including Bitcoins, as a medium for payment are not authorised by any central bank or monetary authority.

No regulatory approvals, registration or authorisation is stated to have been obtained by the entities concerned for carrying on such activities," the central bank had said. In March 2018, RBI Deputy Governor R Gandhi warned against crypto-currencies such as Bitcoin. "They pose potential financial, legal, customer protection and security-related risks," Gandhi said. "Payments by such currencies are on a peer-to- peer basis and there is no established framework for recourse to customer problems, disputes, etc. Legal status is definitely not there," he added.

On April 05 2018, the RBI had directed all banks to wind up within three months any existing banking relationships with virtual currency exchanges and traders. The ban kicked in from July 06 2018. In the legal challenge before the Supreme Court, the RBI said Bitcoins cannot be treated as currency under India's existing law that mandates coins to be made of metal or exist in physical form and stamped by the Government. This decision of RBI was backed by the Supreme Court.

2. REVIEW OF LITERATURE:

Sarah Meiklejoh (2013) in his study, presented a longitudinal characterization of the Bitcoin network, focusing on the rise of services and the growing gap due to certain idioms of use between the potential Anonymity available in the Bitcoin protocol design and the actual anonymity that is currently achieved by users. To accomplish this task, they developed a new clustering heuristic based on change addresses, allowing them to cluster addresses belonging to the same user. Then, using a small number of transactions labeled through their own empirical interactions with various services, they identified major institutions and the interactions between them. Though a relatively small experiment, it demonstrated that this approach can shed considerable light on the structure of the Bitcoin economy, how it is used, and those organizations who are party to it.

Bouoiyour and Selmi (2016)studied daily Bitcoin prices using an optimal-GARCH model and show that the volatility has decreasing trend comparing pre- and post-2015 data. Even tough, they still observed significant asymmetries in the Bitcoin market where the prices are driven more by negative than positive shocks. Likewise, **Dyhrberg (2016)**investigated the asymmetric GARCH methodology to explore the hedging capabilities of Bitcoin and he finds that it can be used as a hedging tool against stocks in the Financial Times Stock

International Journal of Research in Advent Technology (IJRAT) Special Issue
E-ISSN: 2321-9637
Available online at www.ijrat.org
International Conference "ICFTWF-19", February 4ᵗʰ & 5ᵗʰ 2019

Exchange Index and against the American dollar in the short term.

El Bahrawy and Alessandretti (2017)examined the behavior of entire market (1469 cryptocurrencies) between April 2013 and May 2017. They find that cryptocurrencies appear and disappear continuously and their market capitalization is increasing (super-) exponentially, several statistical properties of the market have been stable for years. Particularly, market share distribution and the turnover of cryptocurrencies remain quite stable.

Katsiampa (2017) estimated the volatility of Bitcoin through a comparison of GARCH models and finds that the AR-CGARCH model gives the most optimal fit. He underlines that the market is high speculative.

NEED FOR THE STUDY

Before the ban, almost 10% of theworld's bit coin transactions happened in India. This study tries to find out the performance of the cryptocurrency during the announcement of ban.
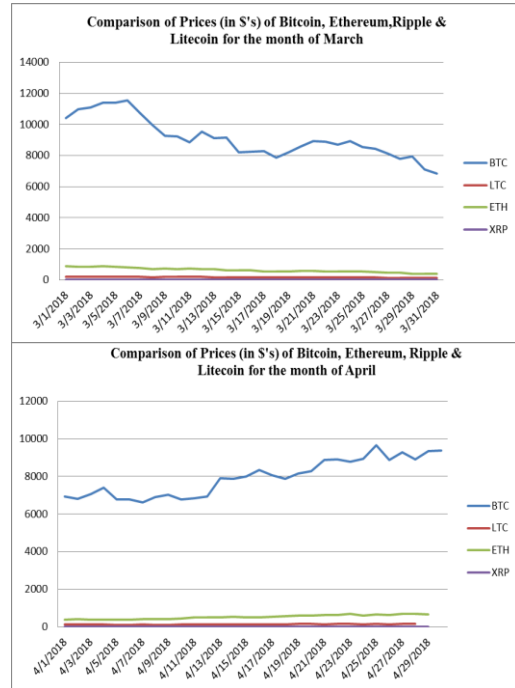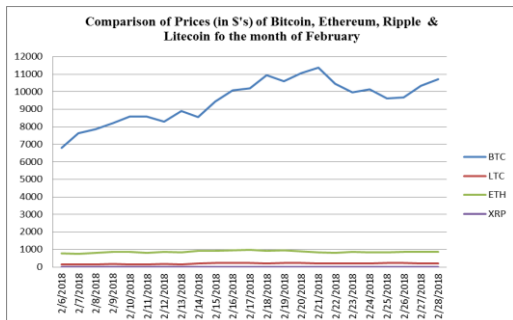
OBJECTIVES OF THE STUDY:

- To find out the volatility of monthly prices of cryptocurrency.
- To study the performance among the cryptocurrencies.

3. RESEARCH METHODOLOGY

The closing prices of popular cryptocurrencies like Bitcoin, Ethereum, Litecoin and Ripple were compared from February to April 2018 as there was some uncertainty about the future of cryptocurrencies in India. The prices for cryptocurrencies are gathered from Coindesk website and from Yahoo Finance. The data was analyzed using various statistical formulae.

FINDINGS

The data is analyzed to find out whether there is volatility in the prices after RBI's announcement to cease cryptocurrencies as a legal tender. The below three charts depicts the movement of prices of Bitcoin, Ethereum, Litecoin and Ripple for the three months.

Comparison of Prices (in $'s) of Bitcoin, Ethereum, Ripple & Litecoin fo the month of February

Comparison of Prices (in $'s) of Bitcoin, Ethereum,Ripple & Litecoin for the month of March

Comparison of Prices (in $'s) of Bitcoin, Ethereum, Ripple & Litecoin for the month of April

It is observed from the figures above that the performance of the currencies showa declining trend for the past three months. Theprices of cryptocurrencies show a steep fall from the month of February following ArunJaitley's budget speech. The Bitcoin prices plummeted to $6,941.26 from an all-time high of $11,090.06 barely a month earlier.

Table :1 :Descriptive Statistics for the 3 coins: Bitcoin, Ethereum, Litecoin and Ripple

	Bitcoin	Ethereum	Litecoin	Ripple
Mean	8794	665.9	162.1	0.779
Standard Error	144.2	19.62	3.66	0.01945
Median	8753	670	155.3	0.795
Standard Deviation	1322	185.1	34.33	0.1835
Sample Variance	1748000	34250	1179	0.0336
Kurtosis	2.274	1.74	2.031	2.104
Skewne	0.2676	-0.012	0.4261	0.0039

International Journal of Research in Advent Technology (IJRAT) Special Issue
E-ISSN: 2321-9637
Available online at www.ijrat.org
International Conference "ICFTWF-19", February 4ᵗʰ & 5ᵗʰ 2019

ss				12
Range	9088.05	698.26	171.29	0.7069
Minimum	6620.40	370.35	113.18	0.4731
Maximum	11555.69	1026.18	229.41	1.18
Sum	738680.939	59269.52	14264.19	69.33
Count	84	84	84	84

1. The average price for the Bitcoin was $8794 over a given period, with a standard deviation of around 1322. So coefficient of variation can be calculated as COV = (Standard deviation* 100) / Mean= (σ * 100) / μ.
   In order to judge the consistency in the performance, coefficient of variation is computed as 15.032%

2. The average price for the Ethereum was $665 over a given period, with a standard deviation of around $185. So coefficient of variation can be calculated as COV = (Standard deviation * 100) / Mean
   In order to judge the consistency in the performance, coefficient of variation is computed as 27.81%

3. The average price for the Litecoin was $162.1 over a given period, with a standard deviation of around $34.33. So coefficient of variation can be calculated as COV = (Standard deviation * 100) / Mean
   In order to judge the consistency in the performance coefficient of variation is computed as 21.17%.

4. The average price for the Ripple was $0.779 over a given period, with a standard deviation of around $0.1835. So coefficient of variation can be calculated as COV = (Standard deviation * 100) / Mean
   In order to judge the consistency in the performance coefficient of variation is computed as 23.55%

Comparison of Prices (in $'s) of Bitcoin, Ethereum, Ripple & Litecoin from 1/02/2018 to 30/04/2018
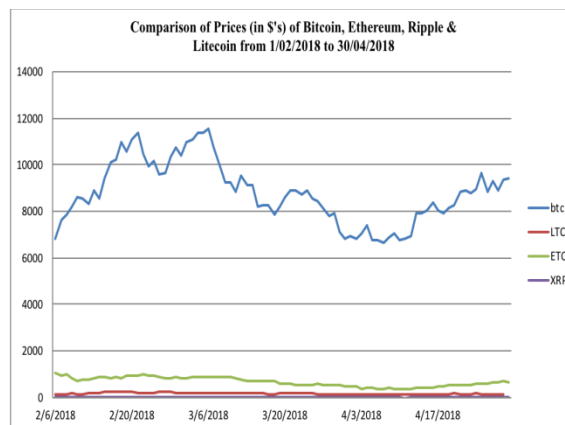
From the figure above, it can be concluded that bitcoins enjoy a large market share. In terms of stability of performance bitcoin is much more consistent than the others. Comparing the prices of the Ethereum and Litecoin, the performance of both are consistently declining. But the prices of Litecoinsare much more steady when compared Ethereum. The smallest market share is held by Ripple.

Coefficient of variation allows investors to determine how much volatility or risk is assumed in comparison to the amount of return expected from investors. Lower the co-efficient means better risk return trade off.

When analyzed, the coefficient of variation of Bitcoin is less than other crypto currencies proving it to be a better investment.

5. **CONCLUSION:**

This paper examines the volatility of the prices of cryptocurrencies in India during the announcement of Ban on cryptocurrency.Bitcoin, Lite coin, Etherum and Ripple are taken for the study. The performance of prices is studied from February 2018 to April 2018. There are multiple aspects of cryptocurrencies and their use in the economy. This study indicated and confirmed enormous volatility of cryptocurriencies' exchange rates during the period. Their high volatility causes high risk of trading in cryptocurrency. It is seen that the prices are continuously declining for all the three months. Bitcoin is found to be most traded than its rivals. As the coefficient of variation is the least for bitcoin, it is considered to be a better investment than the others.

FUTURE RESEARCH:

Though crypto currencies are banned in India, there is a wide speculation that India will make crypto currency a legal tender or introduce its own

International Journal of Research in Advent Technology (IJRAT) Special Issue
E-ISSN: 2321-9637
Available online at www.ijrat.org
International Conference "ICFTWF-19", February 4ᵗʰ & 5ᵗʰ 2019

cryptocurrency in future. If that happens, there will be a lot of untapped research on crypto currency as a legal tender. In this study only four crypto currencies are considered. There are many more crypto currencies to be studied. A short period of three months is only taken for this research. A longer period study can give different results.

REFERENCES:

[1] Arvind Kumar singh& Karan Veer singh, Cryptocurrency in India- its effect and future on economy with special reference to bitcoin, Vol 6 Issue 2 .

[2] Babaioff, M. S. (2012). On Bitcoin and Red Balloons.
http://dl.acm.org/citation.cfm?id=2229022

[3] Christin, N. (2013). Traveling the Silk Road: A Measurement Analysis of a Large Anonymous Online Marketplace. International World Wide Web Conference, (pp. 213-224). Rio de Janeiro.

[4] Dwyer, G. (n.d.). "The Economics of Private Digital Currency.
http://brianmlucey.files.wordpress.com /2014/01/gerald-dwyereconomicsdigitalcurrency.pdf.

[5] JaysingBhosale&SushilMavale, Voltality of cryptocurrencies- A comparison of Bitcoin, Etherum and Litecoin, Vol 6, March 2018.

[6] Nakamoto, S. (n.d.). Bitcoin: A Peer-to-Peer Electronic Cash System.
https://bitcoin.org/bitcoin.pdf.

[7] Raymaekers. (2014). CryptocurrencyBitcoin: Disruption, challenges and opportunities. Journal of Payments Strategy & Systems, 1-40.

[8] Robb, A. B. (2017). Block chain, forensic accounting and research. Working paper.

[9] www.coindesk.com

[10] www.yahoofinance.com