Original Research Paper

Volume - 11 | Issue - 09 | September - 2021 | PRINT ISSN No. 2249 - 555X | DOI : 10.36106/ijar

Economics

THE GROWTH OF CRYPTOCURRENCIES - INVESTMENTS , STARTUPS, AND REGULATION

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ABSTRACT Due to a rapid expansion in retail investors following the onset of the COVID-19 pandemic, cryptocurrencies similar to many other asset classes have received heavy retail investments. This paper seeks to understand how retail investors have facilitated an environment for blockchain start-ups to flourish, and how the unforeseen growth in the adoption of these decentralized assets has called for potential government regulation.

Objectives

- To understand the working and purpose of cryptocurrencies.
- To understand the growth of retail investments in cryptocurrencies and correlate it with emerging blockchain start-ups.
- To discuss the risks possessed by these digital assets and potential government interventions to protect investors.

Methods

The study uses quantitative methods (surfacing statistics) as well as qualitative methods (attributes intrinsic to blockchain technology and cryptocurrencies) for analysis.

KEYWORDS :

4. INTRODUCTION

I. Blockchain

Blockchain technology forms the foundation of cryptocurrencies. Blockchain is a database that is decentralised, peer-to-peer, transparent, and irreversible in nature. Data is stored in blocks of predetermined sizes, once a block is full a new block is formed, hence forming a chain of blocks. Each block is timestamped and tied to the preceding block which ensures that once data is recorded, it cannot be altered. The technology perfectly allows for the "digital currency" use case by mitigating the "double spend problem" - the possibility of using the same digital token twice.

Blockchains work on cryptographic algorithms to attain security, decentralized nodes (computers) on the network expend high amounts of CPU power to solve mathematical puzzles to validate data and are awarded for participation. This ensures that a blockchain is self-sustaining - nodes log onto the network and participate in the database, they are rewarded for their efforts at validating data, the rewards incentivise more nodes to join the network, as the nodes increase so does the security of the database - the cycle continues.

ii. Cryptocurrency and Bitcoin

Cryptocurrency is simply an application of blockchain technology. Unlike fiat currency, cryptocurrency is created, distributed, traded, and stored with the use of a decentralized ledger system - blockchain. [3] The tokens have no intrinsic value, they are not backed by any assets, the economic forces of supply and demand coupled with backend technology is what determines the value of such tokens.

The purpose of crypto is to firstly offer a much more robust, transparent, accessible, and legitimate medium of exchange as an alternative to fiat currencies and secondly, alleviate the need of intermediaries like banks.

When it comes to cryptocurrencies, Bitcoin tops the charts both in market capitalisation and blockchain length.

According to Bitcoin's white paper, Bitcoin is a purely peer-to-peer version of electronic cash that allows online payments to be sent directly from one party to another without going through a financial institution.[1] We define an electronic coin as a chain of digital signatures. Each owner transfers the coin to the next by digitally signing a hash of the previous transaction and the public key of the next owner and adding these to the end of the coin.[2]

Nodes on the database work together to validate transactions (a process called mining) and are compensated in Bitcoin, this is how new coins are minted. The bitcoin supply is capped at 21 million coins.

To explain, bitcoin or any other cryptocurrency is simply a digital claim on value, exchanged between peers on a decentralised database. Decentralisation is achieved by thousands of participating members (nodes) that validate the exchange transactions. The nodes are rewarded in these tokens for their honest efforts, the coins thus minted further grow the exchange of value.

5. Growth of Retail Investors during the COVID-19 Pandemic

The sudden growth of retail investors during the pandemic was a combined result of declining income and returns from non-equity asset classes owing to low interest rates and a weaker economy, all time market-lows, a surge in low brokerage investment platforms that made entry cheaper and accessible, and on top of all of this, general boredom and increased time at home.

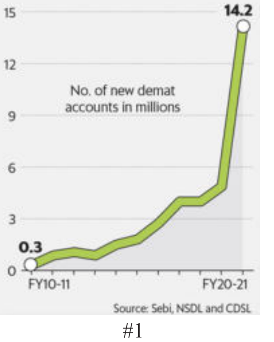
i. Equity

a. The Global Scenario

To highlight the statistics, more than 25% of all trades made in the US markets in August 2020 were by retail investors, to compare, in January of 2020 the same figure was 17.1%. According to a Jeffries analyst, the retail volumes could climb up to one third of the market in the near future. [3]

a. The Indian Scenario

To provide figures for India, data from the two major Indian depositories, National Securities Depository Ltd (NSDL) and Central Depository Services Ltd (CDSL), revealed that 1.42 crore (14.2 million) demat accounts (+25% YOY) were added in FY21 taking the total number of demat accounts in India to around 6.9 crores. Previously, about 49 lakh (4.9 million) were added in FY20 (+9.81% YOY), and the three year average from FY18 to FY2O was poised at 43 lakh (4.3 million) accounts. [4]



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ii. Cryptocurrency

a. The Global Scenario

The growth of individuals looking to deploy their savings initially spurred investments in equity, but the trend made its way to digital currencies as well. Bitcoin's market capitalisation has increased about 847% from March 2020 ($117 billion) to March 2021 ($1100 billion/1.1 trillion).

Investors have flocked towards cryptocurrency to ride the recent uptrend. The high risk-high reward nature of investments has primarily attracted younger investors - 74% of cryptocurrency owners today fall **between the ages of 25 and 44.** Furthermore, with the promise of becoming the future of currency, investors also view cryptocurrencies as a long term investment - a robust store of value hedging inflation.

According to a survey by Gemini, a major cryptocurrency exchange, 14% of the US population own cryptocurrencies, which translates to about 21.2 million individuals. Furthermore, 87% of these investors claim to have owned Bitcoin. The company expects the number to climb to 19.3% of the population "very soon". [5]

Coinbase, the second largest cryptocurrency exchange in the US, added 22 million users (+64% YoY) between March 2020 and March 2021. To compare, from March 2019 to March 2020, the platform added 7 million users (+26% YoY). This evidently highlights a surge in crypto investors amidst the pandemic.

From Q1 2020 to Q1 2021, transacting users on Coinbase have surged from 1.3 million to 6.1 million - a meteoric 369.2% YoY increase. [5]

b. The Indian Scenario
Statistics for India highlight a similar trend.

According to blockchain data platform, Chainanalysis, Indian investments in crypto grew from about $923 million in April 2020 to nearly $6.6 billion in May 2021 - a 612% increase.[6] The growth in investments continued despite historical bans over cryptocurrencies by the RBI and more recent regulatory uncertainty.

The largest cryptocurrency exchange in India, WazirX, claims its registered users have quadrupled in the second quarter of 2021 to hit 6.5 million while trading volume in June reached $6.2 billion.

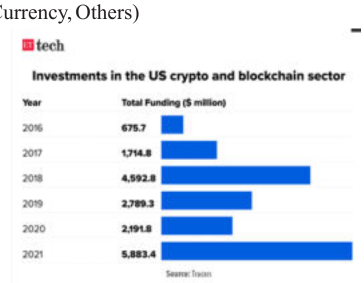
Further statistics reveal that WazirX processed $500 million of trades in December 2020, the figure increased 10 fold to $5.4 billion in April 2021. The company claims to have processed up to $380 million of trades in a single day in April 2021.

To highlight the magnitude of volume growth, WazirX's recent daily trade volumes are equivalent to its monthly trade volumes from just 6 months ago. [7]

6. The Growth of Crypto Startups
i. Blockchain Market Growth
The pandemic has significantly accelerated the adoption of blockchain technology and this growth is expected to sustain itself. The global blockchain market size is expected to grow from USD 3.0 billion in 2020 to USD 39.7 billion by 2025, at an impressive Compound Annual Growth Rate (CAGR) of 67.3% during 2020–2025.[8]

ii.Crypto Market Growth
a. The Global Scenario
According to the research report by Facts and Factors, the global Cryptocurrency Market was estimated at USD 792.53 Million in 2019 and is expected to reach USD 5,190.62 Million by 2026. The global Cryptocurrency Market is expected to grow at a compound annual growth rate (CAGR) of 30% from 2019 to 2026.[9]

The report establishes an all encompassing result by taking into consideration multiple facets of the cryptocurrency market including -
- Cryptocurrency Market By Type (Bitcoin, Ethereum, Ripple, Litecoin,Dashcoin, Others)
- By Component (Hardware, Software)
- By Process (Transaction, Mining)
- By End-Users Analysis (Banking, Real Estate, Stock Market & Virtual Currency, Others)



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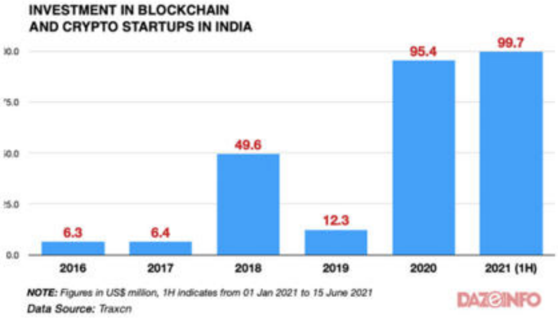
b. The Indian Scenario
- Crypto and blockchain startups in India attracted a total investment of just $6.3 million in 2016.
- In 2020, total investment in crypto and blockchain startups in India totalled $95.4 million
- India crypto and blockchain startups have already attracted $99.7 million investment by June 15 2021.10.



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iii. Prominent Global and Indian Crypto Startups
a. **Coinbase** - It is the largest cryptocurrency exchange in the US. Coinbase essentially allows investors to invest in cryptocurrencies without having to participate in the tedious mining process. The startup was listed on April 14, 2021 and attained a market valuation of a whopping $86 billion.

Financially, Coinbase's Q1 2021 revenue ($1.8 billion) has surpassed their entire 2020 revenue ($1.14 billion).

The user growth and trading volume figures for the startup have been provided earlier in the paper.

Coinbase's IPO is promising and symbolically significant for the crypto landscape - the offering solidifies crypto's future as an asset class. Furthermore, the IPO might also prompt other major startups to gain additional funding via the markets.

b. **WazirX** - The startup founded in March 2018 is India's largest cryptocurrency exchange, witnessing daily trade volumes of over $200 million. In 2019, WazirX was acquired by Binance, the world's largest cryptocurrency exchange. During the peak of the crypto rally, WazirX's native tokens, WRX token, momentarily touched the market capitalization of $1 billion. With growing Indian users, fresh foreign investments, and successful global crypto IPOs, WazirX's founder, Nischal Shetty, believes to soon morph his start-up into India's first crypto unicorn. Further user and volume statistics for WazirX have been provided earlier in the paper.

c. **Polygon (Formerly MATIC) -** Christened "Ethereum's Internet of Blockchain", the Mumbai based startup aims to solve persistent blockchain scalability issues - heavy fees, poor user experience and low transactions per second (TPS).[11]

The startup boasts a multifaceted approach with operations ranging from Decentralised Finance to Digital Art.

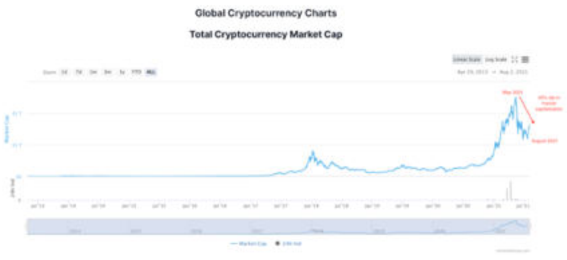
Investments by and collaborations with technology giants Google and Infosys, supplemented with backing from billionaire investor Mark Cuban has enabled the startup to briskly extend its market share. Polygon's native token is currently the 17th largest crypto with a market capitalization of $6.5 billion.

7. Risks and Regulation
i. Market Risks
Cryptocurrency being decentralised operates in the absence of a central issuing authority like a central bank. Furthermore, cryptocurrencies are not backed by any tangible asset - therefore the lack of regulation and a barometer to determine their value makes them highly volatile.

A lot of additional factors also contribute to this volatility -
1. Emerging regulation and scrutiny against cryptocurrencies
2. Emerging technologies leading to the obsolesce of existing tokens
3. Partial public understanding of cryptocurrencies
4. Concentrated holdings by individuals with the ability to disrupt

markets
5. Security breaches, illicit activity, scams, tax evasion due to the infancy of regulation

All of these factors compound to make investments in the digital assets heavily risky. Post the crypto bull run, between May and June 2020, Bitcoin has lost around 40% of its market capitalisation. Furthermore, total cryptocurrency market cap which peaked around May 2021 at almost $2.5 trillion is now at $1.5 trillion (as of July 2021) - that is $1 trillion of wealth eroded within weeks.[12]



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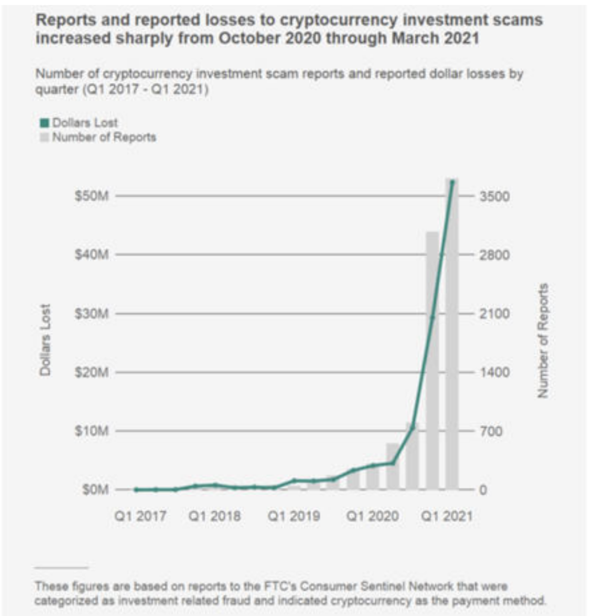
Still, capital losses aren't the only concern, scams pertaining to fraudulent new coins, pump and dump schemes, and wallet theft are surging too.[13]

According to the Federal Trade Commission, consumers have reported losing more than $80 million to cryptocurrency investment scams since October 2020 - a 1000% YoY increase. 7,000 scam reports were received in the last quarter of 2020 and the first quarter of 2021, 12 times the number reported over the same period a year earlier. The median amount consumers lost in the scams was $1,900.[14]



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ii. Regulation

There is no uniform global protocol for cryptocurrency regulation. Furthermore, different nations have varying regulations, with institutions within each nation having varying policies. For instance, in the US the Commodity Futures Trading Commission(CFTC) treats bitcoin as a commodity while the Internal Revenue Service (IRS) treats it as property.[15]

To mitigate the risks discussed above, it is imperative to formulate a uniform protocol to police these digital tokens. Varying interests, different perceptions, and constantly evolving technology makes the task difficult. However, recent developments by the IMF and the Uniform Law Commission (ULC) "sought to create a statutory structure for regulating virtual-currency business activity in an effort to provide innovators and customers certain assurances with respect to the regulatory landscape".[16]

Different nations adopt different approaches to cryptocurrency regulation depending on their perception of the technology.

Some perceive it as a "threat" or "disruption" to the existing financial system, thereby, implementing policies which voids the digital tokens from being used as legal tender. Furthermore, bans on mining, trading, and possession of these tokens are also common. While others perceive it as a breakthrough technology and the future of the monetary system.

a.China

China, in 2013, announced that cryptocurrencies will not be considered as legal tender and would not be accepted as an alternative to fiat currency to avail services. Additional policies to tighten China's restriction on cryptocurrencies are routinely passed. In 2017, China banned Initial Coin Offerings and more recently, laws to curtail mining activities were put in place.

b.India

In 2018, the Reserve Bank of India ordered banks to stop holding and facilitating cryptocurrency transactions, effectively banning them in the nation. However, the ban was later lifted in March 2020 following Supreme Court orders. The Indian Government is set to pass a cryptocurrency bill soon, many speculate that it could call for heavy regulation on private cryptocurrencies and subsequently lay the foundations for India's own digital coin. However, recent statements by the Indian Finance Minister, Nirmala Sitharaman, have clarified that the government has no intention to issue an outright ban on digital tokens and that they wish to explore and promote cryptocurrencies and affiliated technologies.

"From our side, we are very clear that we are not shutting all options. We will allow certain windows for people to do experiments on blockchain, bitcoins or cryptocurrency,"; Once Parliament is over, I will probably spend more time executing and planning that. On fintech and blockchain, there is a lot of work going on in India and we will certainly encourage that," ; Financial technology (fintech) firms depend on blockchain, the backbone of cryptocurrencies, and they should have a window available. - the I Finance Minister stated in a conference.

8. CONCLUSION

It can be inferred that the pandemic induced economic situation has not only bolstered retail investments in cryptocurrencies but has also enabled new startups to attain sizable funding and customer volumes, thereby advancing the entire "crypto economy". Furthermore, this sudden advancement has enabled crypto startups to garner the attention of existing technology giants - yielding them the expertise and resources to operate at scale. In simple words, "the crypto hype" is much more deep rooted than millennials trading bitcoin, and has inevitably helped to rapidly expand the adoption of blockchain technologies in general.

However, cryptocurrency regulation, much like the technology itself, is in its infancy stages. Recent global efforts to streamline regulatory laws do promise to curtail some of the risks posed by these assets, however, a lack of short-term clarity stemming from nations having contrasting perceptions will only compound the volatility of these assets.

Exponentially increasing investments in blockchain startups and the asset itself will likely accelerate global regulatory efforts, but until a consensus is achieved, cryptocurrencies will remain highly volatile, posing major risks to individuals who invest in them.

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