

## **A Conceptual Study on the Impact of Bit Coins On the Indian Economy**

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**ABSTRACT:** *The silence of the RBI on the regulatory status of bitcoins may prove to be damaging. An industry has grown around bitcoins in India- traders, exchanges and merchants who accept payments in bitcoins. Bitcoins have already gained wide acceptance around the world- hence banning them would not be an option in India. Instead, this industry would need to be regulated. The sooner this is done, the better. A bitcoin is a virtual currency first introduced in the year 2008 by an anonymous group called Satoshi Nakamoto. It's an open source peer-to-peer cryptographical system (direct connections without an intermediary) where transactions happen through a public ledger called blockchain, handling users' data anonymously. Eight years since its introduction, bitcoin is today the most widely used and accepted digital currency. By categorically reiterating that cryptocurrencies could not be part of the 'payment process', India buries the economic possibilities of crypto as a currency. However, the positive focus on blockchain technology is redeeming.*

**KEY WORDS-**Bitcoin, cryptocurrency, RBI, virtual currency.

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### **I. INTRODUCTION**

After independence, Indian government has adopted the socialistic way of managing business and introduced license raj to run Indian companies. So, 'Made in India' brands were noncompetitive in the international market, leading to decline in export. Simultaneously, India import bill of capital goods, crude oil & petrol products increased the Forex outgo. Settlements in both terms were in USD, so resulted in severe scarcity of foreign exchange. The Foreign Exchange Regulation Act (FERA) enacted in 1973. As per the guidelines, all forex earnings by companies and residents have to reported and surrendered (immediately after receiving) to RBI (Reserve Bank of India) at a rate which was mandated by RBI. FERA strictly controlled any activities related to foreign exchange. Forex market in India formally initiated in 1978 when Central government allowed interbank foreign exchange trading. At that time, Indian forex market has been a highly regulated one. Post liberalization, the Government of India felt the necessity to liberalize the foreign exchange policy. Hence, Foreign Exchange Management Act (FEMA) 2000 was introduced. FEMA expanded the list of activities in which a person/company can undertake forex transactions, liberalized the export-import policy, limits of FDI (Foreign Direct Investment) & FII (Foreign Institutional Investors) investments and repatriations, cross-border M&A and fund raising activities. Prior to 1992, Government of India strictly controlled the exchange rate. After 1992, Government of India slowly started relaxing the control and exchange rate became more and more market determined. Foreign Exchange Dealers association of India (FEDAI), set up in 1998, helped the government of India in framing rules and regulation to conduct forex exchange trading and developing forex market in India. Since 2001, clearing and settlement functions in the foreign exchange market are largely carried out by the Clearing Corporation of India Limited (CCIL). Another major development of Indian forex market happened in 2008, when currency futures (Indian Rupee And US Dollar) started trading at National Stock Exchange (NSE). Since the introduction, the turnover in futures has increased leaps and bound. Though banks and authorized dealers were undertaking forex derivatives contracts, but the introduction of exchange traded currency futures marked a new beginning as the retail investors were able to participate in forex derivatives trading. This paper aim at study on cryptocurrencies which affecting on Indian economy.

#### **Crypto currency;-**

Since the creation of Bitcoin in 2009, numerous private cryptocurrencies have been introduced. Bitcoin is by far the most successful one. It has been getting a lot of media attention, and its total market value has reached 20 billion USD in March 2017. More importantly, a number of central banks started recently to explore the adoption of cryptocurrency and block chain technologies for retail and large-value payments. For example,

the People's Bank of China aims to develop a nationwide digital currency based on blockchain technology; the Bank of Canada and Monetary Authority of Singapore are studying its usage for interbank payment systems; the Deutsche Bundesbank has developed a preliminary prototype for blockchain-based settlement of financial assets. Many proponents believe that cryptocurrency and blockchain technology will have a significant influence on the future development of payment and financial systems. Over the last few years, the term cryptocurrency has rapidly gained visibility in the public eye. In today's day and age, cryptocurrency is fast becoming essential to people who value privacy, and for whom the idea of using cryptography to control the creation and distribution of money does not sound too far-fetched.

Today, cryptocurrency, led by Bitcoin, Litecoin, Ether, etc. are taking the financial world by storm as more people invest and buy these currencies. At the same time, there is still widespread confusion and bias which detracts from the overall effectiveness of Cryptocurrency. Educating users about such alternative forms of currency is extremely important given its volatile nature. In this article, we will try to provide a holistic outlook towards Cryptocurrency and how it's affecting the world we know today.

## **II. LITERATURE REVIEW**

**Jonathan Chiu (2017)** explained that General equilibrium monetary model is developed to study the optimal design of a cryptocurrency system based on a blockchain. The model is then calibrated to Bitcoin transaction data to perform a quantitative assessment of the scheme. We formalize the critical elements of a cryptocurrency: the blockchain to keep a history of transactions, the distributed updating of information and consensus through competition for such updating. We show that, unlike cash, a cryptocurrency system does not support an immediate, final settlement. In addition, the current Bitcoin scheme generates a welfare loss of 1.4% of consumption. Such loss can be lowered substantially to 0.08% by adopting the optimal policy which reduces mining and relies on money growth rather than transaction fees to finance mining rewards. The efficiency can potentially be improved further by adopting an alternative consensus protocols such as the proof-of-stake. A key economic feature of a cryptocurrency system is that mining is a public good, while double spending to defraud the cryptocurrency depends on individual incentives to reverse a particular transaction. As a result, a cryptocurrency works best when the volume of transactions is large relative to the individual transaction size.

**Sarah Meiklejohn (2013)** in this study, we 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, we developed a new clustering heuristic based on change addresses, allowing us to cluster addresses belonging to the same user. Then, using a small number of transactions labeled through our own empirical interactions with various services, we identify major institutions and the interactions between them. Even our relatively small experiment demonstrates 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.

**Sid Angeles and Eric Gonzalez (2013)** ;-Bitcoin 2: Freedom of Transaction Researcher presented a set of changes to the original Bitcoin protocol that would lead to much better security, resilience and decentralization: A sliding block chain with lottery for dead coins, forced Zero coin mixing, and miner ostracism. These changes would require a

Proactive fork of the blockchain, but the presented devaluating transactions are a practical way to gradually shift the Bitcoin economy over to a better system. A shift that is absolutely necessary, if we want to keep a truly alternative payment system

## **III. OBJECTIVES OF THE STUDY**

- To study conceptual background of bitcoin
- To understand the mechanism of bitcoin
- To analyze the impact of bit coin on Indian Economy.
- To understand the major influences.

## **IV. METHODOLOGY**

The present study is based on certain facts and data which are being collected from secondary data including periodicals, journals, reports of RBI, websites, the economic times of India, business line, and research articles.

### **Importance of Cryptocurrency;-**

Cryptocurrency is designed from the ground up to take advantage of the internet and how it works. Instead of relying on traditional financial institutions that verify and guarantee your transactions, cryptocurrency transactions are verified by the user's computers logged into the currency's network. Since the currency is protected and encrypted, it becomes impossible to increase the money supply over a predefined algorithmic rate.

All users are aware of the algorithmic rate. Therefore, since each algorithm has a roof limit, no cryptocurrency can be produced or "mined" beyond that.

Since Cryptocurrency is completely in the cloud, it does not attain a physical form but have a digital value, and can be used for digital equivalent of cash in a steadily increasing number of retailers and other businesses. Bitcoin was the first cryptocurrency that was ever created, and while there is a small fee for every cryptocurrency transaction, it is still considerably lesser than the usual credit card processing fees.

Bitcoin is the most popular cryptocurrency which has seen a massive success. There are other cryptocurrencies such as Ripple, Lit coin, Peer coin, etc. for people to transact in. But for every successful cryptocurrency, there are others which have died a slow death because no one bothered to use them, and a cryptocurrency is only as strong as its users. Some of the salient features of Cryptocurrency include -

- Cryptocurrency can be converted into other forms of currency and deposited into user's accounts at a lightning speed
- Most Cryptocurrency can be transacted anonymously, and can be used as discreet online cash anywhere in the world. Users therefore do not have to pay for any currency conversion fees
- While not 100% immune from theft, Cryptocurrency is generally safe to use and difficult for malicious hackers to break
- Bitcoin and other Cryptocurrency can be saved offline either in a "paper" wallet or on a removable storage hard drive which can be disconnected from the internet when not in use.

#### **Bitcoin - a glimpse into the Future;-**

2016 was the year of Bitcoin, and saw this digital currency grow almost 79% as compared to Russia's Ruble and Brazil's Real, the world's foremost hard currencies. As a result, it emerged as a better bet for investors while beating foreign exchange trade, stock exchange trade, and commodity contracts. There are many reasons why the impact of Bitcoin is exceptionally relevant today, and why the Cryptocurrency of 2018 is now

**BIT-COIN;-** Like any other currency, Bitcoin is also a type of currency, but it is a decentralized cryptocurrency that is virtual money. It is a system without the central bank or single administrator. It has acquired the status of the worldwide payment system. Though, most countries have not given it any legal status to it. Mostly it is used by illegal channels. It was launched in 2009.

A bitcoin is a virtual currency first introduced in the year 2008 by an Anonymous group called Satoshi Nakamoto. It's an open source peer-to-peer cryptographical system (direct connections without an intermediary) where transactions happen through a public ledger called blockchain handling users' data anonymously. Eight years since its introduction, bitcoin is today the most widely used and accepted digital currency.

Bitcoin is a unit which is further subdivided into milibitcoin (1 milibitcoin = 0.001 Bitcoin) and Satoshi (1 Satoshi = 0.00000001 Bitcoin). Satoshi is the smallest unit in Bitcoin parlance.

All transactions are recorded in a block which acts like the ledger. Once the block is filled, a new block is created. All these blocks are connected to each other by hashtags. A linear sequential record of events of these block forms a blockchain. It should be noted that though transactions are recorded but the information of the participants in the transaction is not revealed. Hence it becomes impossible to trace both the parties the receiver and giver.

**As of April 2017, the following cryptocurrencies are the largest after bitcoin in terms of market capitalization:**

1. Ethereum (Eth) 2015
2. Dash 2014
3. Monero (Xmr) 2016
4. Ripple (Xrp)
5. Litecoin (Ltc) 2011
6. Bitcoin 2012

**The Real-world Impact of Virtual Money -** While Cryptocurrency and its usage is at an all-time high, so are the misconceptions about it. Most people still seem to ask - Why use Bitcoins since such currencies use different algorithms and are traded in unconventional ways, it is important to look out for some important characteristics before investing in Bitcoin or others of its ilk. This includes -

- **Daily Trading Volume and Overall Market Capitalization;-**  
Market capitalization of a cryptocurrency is the total worth of all its forms which are currently in circulation. New forms of Cryptocurrency might not be widely available, and therefore might not have high market capitalization. Similar to this is the daily trading volume, and a cryptocurrency which has higher trading volume than the others is considered more successful.
- **Verification Channels;-**  
Each cryptocurrency has its own verification method. One of the most common methods for verification is called "Proof of Work". Herein, to verify a transaction, a computer has to spend time and computing power

to solve difficult mathematical problems. On the other hand, "Proof of Stake" method allows users with the largest share of the cryptocurrency to verify the transactions, which requires far less computing power.

- **Acceptance of Cryptocurrency;-**

Unless a cryptocurrency is not accepted by major retailers or other businesses that you deal with, it doesn't stand much use. That is why Bitcoin still remains the most popular form of digital currency, since its reach is widespread and is accepted by many businesses and retailers alike.

- **Challenges Ahead for Bitcoin-**

While Bitcoin's astronomical growth cannot be understated, Cryptocurrency in general have several challenges to meet before finding universal acceptance. These challenges include -

- **Safety and Reliability;**

Purely based on its digital form, Bitcoin and other types of Cryptocurrencies are nowadays the favorite mode of payment for both hackers and criminals because of the air of anonymity it lends. This instantly makes the general populace weary of using it. In 2014, Mt.Gox, the largest Bitcoin exchange was hacked and robbed of almost \$69 million, thereby bankrupting the whole exchange. While the people who lost money have now been paid back, it still leaves a lot of people wary of the same thing happening again.

- **The Debate on Bitcoin Scalability;**

The cryptocurrency community is up in arms over how the blockchain will be upgraded for future users. As the time and fees required for verifying a transaction climbs to record highs, more businesses are having a tough time accepting Bitcoins for payment. In early 2017, more than 50 companies came together to speed up transactions, but till now the results have not yet been felt. As a result, more users might start using normal modes of currency to overcome such blockchain hassles.

- **The Rise of the Rivals;**

Today, Bitcoin is not the only game in town, and while its value has increased by almost 100% since the beginning of 2016, its share of the digital currency pile is rapidly reducing owing to almost 700 different competitors. Its market share has reduced to 50% from 85% a year before, a sign of the times to come.

- **Unrecognized by Governments;**

Most of the general populace doesn't understand Bitcoins, and nor does most of the world's governments. The cost of gaining a license to set up cryptocurrency companies is sky-high, and there are no regulations in sight which might make it easier for people looking to invest into them. The U.S. Securities and Exchange Commission recently rejected a proposal by Bitcoin to run a publicly traded fund based on the digital currency, which in turn led to a big plummet in Bitcoin's shares.

**Bitcoin in India** -Bitcoin is a potential way to improve the basic financial services and the quality of life of the people in developing nations, which is a promising antipoverty technique. An estimated 64% people in developing countries do not have access to these services, maybe it is because the traditional financial institutions find it very expensive to serve the poor people in rural areas. People living in such countries are reaching out to mobile banking services for their financial needs. With the adoption of Bitcoin in developing countries mobile banking services can be further supplemented. Since bitcoin is an open-system payment facility therefore it can provide access to inexpensive financial services on a global level to the people in developing nations. In countries with strict capital controls, it might provide relief to people. The total amount of bitcoin that can be mined is capped at 21 million and it cannot be manipulated. Since bitcoin is an open network therefore there is no central authority which can repeal the exchange of bitcoins between countries or reverse transactions. Thus, Bitcoin provides an emergency exit for the people in countries whose currencies are devalued. For example, some Argentines have adopted Bitcoin in response to the country's dual burdens of strict capital controls and a 25% inflation rate. Due to high demand of bitcoins in Argentina, one popular bitcoin exchange is thinking of opening an Argentine office.

India is a tech-savvy country and the rapid spread of smartphones and internet access allows for information to spread faster than ever before. In addition, several techies are investors or owners of restaurants and pubs across the country. This gives a tremendous opportunity in the entertainment businesses. One buzzing industry in India which seems to be super-excited about the usage and potential appreciation of Bitcoins is that of technology startups. A number of start-ups now favor dealing in Bitcoins while setting up a business rather cash. This is because the crypto-currency can be integrated into almost any software build that can be monetized. It can act as an alternative to gold for the purpose of investment. This can lessen the demand for gold, which ultimately can bring down imports and ameliorate the balance of payments situation. Furthermore, it is going to have a deep impact on the banking revolution.

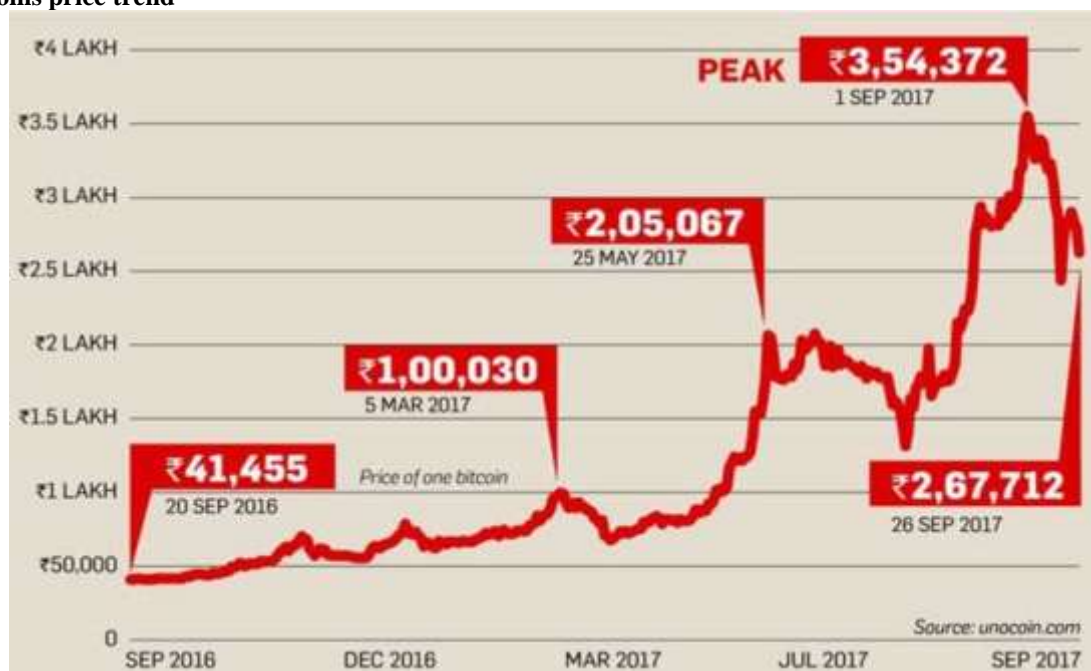
Bitcoins are fast gaining favor in India. According to SourceForge, there have been about 36,000 downloads in India since the launch of Bitcoins on 9 November 2008. Experts estimate there are 2 to 3 users for every download. Of these, close to 70%, or 24,723 downloads, took place in 2013. In October, there were about 2,100 downloads of Bitcoin and moving India's ranking one place up to 16.

It's a bit strange that a currency which is slowly becoming so popular in the country and is increasingly being used by more and more people has no standing as far as legality is concerned. Till now, the Indian Government has only been watching and studying how virtual currencies work. By the looks of it, probably they are going to be patient and will wait to see how the developed economies respond to it before adopting cryptocurrency as it straddles two very radical and dynamic topics— economy and technology. The Reserve Bank of India (RBI) issued an advisory to public not to buy and sell virtual currency Bitcoins. The biggest fear of the RBI, and the income tax department is that Bitcoins will help to circulate black money internationally because of the simplicity with which the digital currency can be transacted as opposed to doing it through banks which is unregulated and unacceptable in Indian financial system as of now.<sup>21</sup>

The Bitcoin community in India wants the RBI to step in, not just to create policies to enhance safety of the consumer and impose a strict Know Your Customer system to circumvent its use for black money but also to establish its own exchange and influence all Bitcoin traders to use its own setup to make payment.

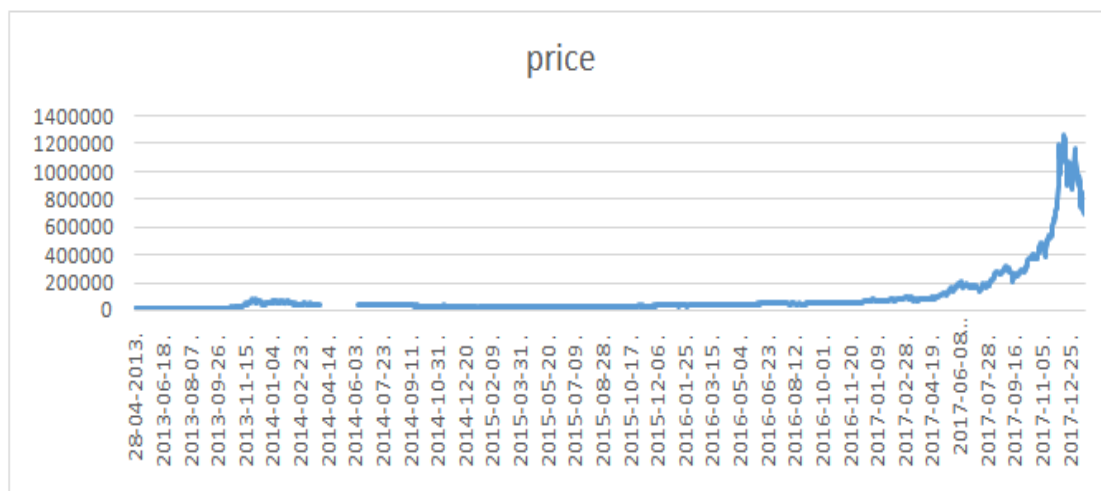
- Bitcoins are fast gaining favor in India. Looking at the number of downloads India has moved to 16th rank in the world
- Indian government is employing wait and watch policy. How developed countries across the globe respond to cryptocurrency. Though Reserve Bank of India has clearly advised general public not to buy or sell virtual currency.
- RBI feels Bitcoin will help to circulate black money internationally, as it is very simple to transact without leaving any traces. It is unacceptable and unregulated in Indian financial system.
- Though Bitcoin community is small in India, it wants RBI to step in. They want RBI to create policies to improve the safety of the consumer. The community feels strict guidelines of know your customer (KYC) will help to curb illegal transactions of cryptocurrency.
- The community has suggested to the government to set up its own exchange, just like the stock exchange, where all Bitcoin traders can trade, as they trade with other currencies of the world. You can trade with commodity tips.
- RBI along with central banks of the world are unable to track economic activities of this cryptocurrency. Hence they are worried about this unpredictable and uncontrolled form. It is impacting banking, finance, and economies of the world. These are the backbone of every country's progress.

#### Bitcoins price trend



Source (unocoin.com)

### Bit coin and Indian Rupee chart



(Sources ([https://www.coingecko.com/en/price\\_charts/bitcoin/inr](https://www.coingecko.com/en/price_charts/bitcoin/inr)))

### Impact of Bit Coin on economy and banking and finance;

#### Power to the Dark Web:

Dark web is the section of the web that is not accessible through the search engine. What we are given access to is the surface web which is not even half of the existing internet. Dark web is accessible only through special software like Tor Browser which enables anonymous searching of the internet.

Dark web is the place where you can find assassins, weapons and a lot more illegal stuff. By using crypto currencies like Bitcoins people can make illegal transactions without giving any information about them. Cryptocurrencies like Bitcoins are a way to empower such transactions across the globe which will ultimately result in increased

#### Speculations:

As on 14th January 2015, Bitcoin was valued at \$170 and as on 24th July 2017, it values at \$2772. There have been many ups and downs in the value of Bitcoins and this scenario is likely to continue. Due to the extreme highs and lows BitCoins present a massive possibility for speculation. Just like trading in shares, trading in Bitcoins is massive and seeing the rise in traction around cryptocurrencies it is likely to grow further.

#### Politicization of Money:

Earlier all the monetary transactions were enabled through central banks (directly or indirectly). Now, with the evolution of Bit coins, the scenario has changed. The power that was vested in the governments and central banks is shifting to the masses. This revolutionary change in transaction handling has the power to change the economic structure. To bring security and enable scrutiny, central banks and financial institutions maintain a record of all the transactions undertaken by the people. Now with digital currencies, this economic power can be challenged by people. This has led to the creation of a new autonomous body which can facilitate transactions. Ultimately if adopted on a large scale, Bitcoins can lead to the politicization of money.

#### Apprehension among the Central Banks:

There have been implications that Bitcoins can be used to secretly launder money outside the country. Central banks across the world have been wary of Bitcoins as an uncontrollable and unpredictable form of currency. Cryptocurrencies are leading to loopholes in the current bank's data about the money transactions leading to inability to track economic activities. Crypto and Cyberspace has emerged as a power in itself thus bringing a check on the activities of the so powerful governments.

#### The Emergence of New Markets:

Cryptocurrencies have led to the emergence of new markets. Currencies like Bitcoin and Ethereum have opened gates for a new kind of market which unlike present money market is controlled by no one. Cyberspace will rise up as the managing body that will handle and maintain such disruptive markets. The near zero transaction cost (along with other characteristics) has made these currencies even superior to the traditional money we are accustomed to using. What can be surely stated is that it is just the beginning and the number of possibilities is endless.

## V. CONCLUSION

RBI has sent out repeated warnings on virtual currencies such as bitcoins, on the potential financial, operational, and legal and security related risks. It also states that bitcoins may pose many security risks the possibility of the misuse of bitcoins are high, as there are no regulations. The government should not recognize cryptocurrency as legal tender or coin and government must take all measures to eliminate the use of these cryptoassets in financing illegitimate activities or as part of the payments system as bitcoins or virtual currencies are illegal and unregulated in the country. Even social media companies like Facebook announced that it was banning all ads related to cryptocurrencies in an effort to fight scams. According to the updated advertising policies, Facebook said it is barring ads for “financial products and services that are frequently associated with misleading or deceptive promotional practices, such as binary options, initial coin offerings and cryptocurrency”.

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