

LEGALITY OF BITCOINS - INDIAN AND INTERNATIONAL PERSPECTIVE

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Abstract

Bitcoin is a crypto currency and digital payment system developed by an anonymous programmer or group of programmers known as Satoshi Nakamoto. It was made available as open-source software in 2009. The system is peer-to-peer, and transactions take place directly between users, without the involvement of an intermediary. These transactions are validated by network nodes and recorded in a block chain, which is a public distributed ledger. Bit coin is known as the first decentralized digital money since it operates without a central repository or a single administrator.

Bit coin, in addition to being created as a reward for mining, can be exchanged for other currencies, products, and services in both legal and illegal marketplaces. Over 100,000 retailers and vendors accepted bit currency as payment as of February 2015. According to Cambridge University research from 2017, there are 2.9 to 5.8 million unique users utilizing a crypto currency wallet, with the majority of them using bit coin.

Bitcoin (BTC -0.02%) has been a revolutionary digital currency since its inception in 2009. Because it allows peer-to-peer payments without the assistance of a third party (like as a bank), it has triggered a flood of additional cryptocurrencies and digital assets that employ blockchain technology.

Blockchain is a digital public ledger in which each transaction is assigned a unique "hash" (or identity) and is appended to the ledger's end. The success of Bitcoin has put blockchain on the map, putting its potential to decentralise and strengthen the digital economy on a collision course with the current quo.

Keywords: Bitcoins, Currency, Risk, Ownership, Revolution, Transaction, Law

An infographic comparing the similarities and differences between cryptocurrency coins and tokens.

First and foremost: Understand the distinction between a coin and a token. When discussing cryptocurrency, the phrases "coin" and "token" are frequently used. Although they may appear to be synonymous, there is a distinction. It's critical to keep them straight.

A digital coin is formed on its own blockchain and functions similarly to traditional money. It can be used to hold value and as a medium of exchange between two people conducting business. Bitcoin and Litecoin (LTC -1.9%) are two such currency.

Tokens, on the other hand, can be used for much more than just digital money. Tokens are built on top of an existing blockchain and can be used as part of a software application (for example, to allow access to an app, authenticate identification, or track products as they move through a supply chain). They can be used to represent digital art (similar to NFTs, or "non-fungible tokens" that certify something as unique). There has even been some testing with NFTs and actual assets like as art and real estate. Tokens, like as Ether, are used to conduct transactions on the Ethereum (ETH -0.75%) network.

HOW IT WORKS

Bitcoin was among the first digital currencies to make advantage of peer-to-peer technology to enable fast payments. The "miners," or independent individuals and companies who control the governing processing power and participate in the Bit coin network, are motivated by rewards (the production of new bit coin) and transaction fees paid in bit coin. These miners are the decentralized authority enforcing the credibility of the Bit coin network.

New bit coins are distributed to miners at a fixed, but decreasing, rate, so that the total quantity of bitcoins approaches 21 million. A Satoshi is the smallest unit of currency that is divisible to eight decimal places (100 millionth of a bit coin). If necessary, and if the participating miners agree, Bit currency could be made divisible to even more decimal places in the future.

The method by which bit coins are released into circulation is known as mining. It entails solving a computationally tough challenge to discover a new block, which is added to the block chain, and earning a reward in the form of a few bit coins as a reward. In 2009, the block reward was 50 new bit coins; it diminishes every four years. As more bit coins are created, the difficulty of mining - that is, the amount of computer power required - rises.

When Bit coin first appeared in 2009, the mining difficulty was 1.0; by the end of the year, it had dropped to 1.18. The mining difficulty is currently around 4.24 billion as of April 2017. Previously, a standard desktop computer was sufficient for mining; however, to overcome the difficulty level, miners must now employ faster hardware such as Application-Specific

Integrated Circuits (ASIC), more complex processing units such as Graphic Processing Units (GPUs), and so on.

OWNERSHIP

The bitcoin whitepaper depicts a simplified line of ownership. In practise, a transaction can have several inputs and multiple outputs.

Bitcoins are registered to bitcoin addresses on the blockchain. Creating a bitcoin address is as simple as selecting a valid private key at random and computing the related bitcoin address. This calculation can be completed in a fraction of a second. However, computing the private key of a particular bitcoin address is nearly impossible. Users can share or make public a bitcoin address without jeopardising the private key associated with it. Furthermore, there are so many viable private keys that it is exceedingly unlikely that someone will compute a key pair that is already in use and has cash. Due to the large number of valid private keys, brute force cannot be used to compromise a private key. To spend their bitcoins, the owner must have access to the accompanying private key and digitally sign the transaction. The public key is used by the network to verify the signature; the private key is never released.

If the private key is lost, the bitcoin network will not accept any other proof of ownership, rendering the coins useless and effectively lost. In 2013, for example, one user claimed to have lost \$7,500, which was worth \$7.5 million at the time, when he unintentionally tossed a hard drive with his private key. About 20% of all bitcoins are thought to have been lost, with a market worth of almost \$20 billion at July 2018 prices.

MINING

Bitcoin mining firms now dedicate facilities to housing and operating massive amounts of highperformance mining technology.

Mining is a record-keeping service performed using computer computing power. Miners maintain the blockchain's consistency, completeness, and immutability by regularly assembling newly broadcast transactions into a block, which is subsequently broadcast to the network and verified by recipient nodes. Each block contains a SHA-256 cryptographic hash of the previous block, which connects them and gives the blockchain its name.

A proof-of-work (PoW) is required for a new block to be acknowledged by the rest of the network. PoW requires miners to identify a number known as a nonce (a number used only once), such that when the block content and the nonce are hashed together, the result is numerically less than the network's difficulty target. This PoW is simple for any node in the network to validate, but it takes a long time to construct. Miners must try several alternative nonce values (typically in ascending natural numbers: 0, 1, 2, 3,...) before a result is found that is less than the difficulty target. Because the difficulty target is so low in comparison to a regular SHA-256 hash,

The amount of work required to generate a block can be modified by altering this difficulty target. Nodes deterministically alter the difficulty target based on the recent pace of block generation every 2,016 blocks (about 14 days given roughly 10 minutes per block), with the goal of keeping the average duration between new blocks at ten minutes. As a result, the system adapts automatically to the overall amount of mining power on the network. As of April 2022, generating a block hash smaller than the difficulty target takes an average of 122 sextillion (122 thousand billion billion) attempts. Computations of this scale are prohibitively expensive and require specialised technology.

The proof-of-work approach, combined with block chaining, makes blockchain adjustments exceedingly difficult, as an attacker must modify all subsequent blocks in order for the modifications of one block to be accepted. Because new blocks are constantly being generated, the difficulty of altering an old block grows as time passes and the number of succeeding blocks (also known as confirmations of the current block) grows.

To limit volatility in miner income, the vast bulk of mining power is put together in mining pools. Independent miners may have to work for several years before receiving compensated for mining a single block of transactions. When any participant in a mining pool generates a block, all participating miners are compensated. This reward is proportional to how much effort each miner put to the pool.

MAIN TYPES OF CRYPTOCURRENCY

Bitcoin is the first cryptocurrency, and other individual cryptocurrencies are referred to as "altcoins" (a combination word derived from "alternative coin"). It's tough to tell which cryptos are the best, but Bitcoin and other of the larger altcoins are top-tier possibilities because to their scalability, privacy, and breadth of functionality.

There is no such thing as the "best" cryptocurrency because each has distinct features built in depending on what the developer intended it for. Here's a rundown of some of the most popular digital coins and how they're utilised.

1. Bitcoin

Bitcoin is widely considered as the first decentralised cryptocurrency that makes use of blockchain technology to conduct payments and digital transactions. Instead of relying on a central bank to control an economy's money supply (such as the Federal Reserve in collaboration with the United States Department of Treasury) or third parties to verify transactions (such as your local bank, credit card issuer, and merchant's bank), Bitcoin's blockchain serves as a public ledger of all transactions in Bitcoin's history.

The ledger enables a party to prove ownership of the Bitcoin they are attempting to use and can aid in the prevention of fraud and other unauthorised tampering with the currency. Peer-to-peer money transfers (such as those between parties in different countries) can also be faster and less expensive with a decentralised currency than traditional currency swaps through a third-party agency.

2. Ethereum

Ether is a cryptocurrency that is used to conduct transactions on the Ethereum network. Ethereum is a platform that uses blockchain technology to enable the creation of smart contracts and other decentralised applications (software that does not have to be distributed on app exchanges like Apple's (AAPL -0.62%) App Store or Alphabet's (GOOGL 0.69%)(GOOG 0.65%) Google Play Store, where they may have to give the tech giants a 30% cut of any revenue). Ethereum is both a cryptocurrency (the coins themselves are measured in Ether units) and a software development sandbox.

3. Tether

Tether is a stablecoin, or cryptocurrency that is linked to a fiat currency, in this case the US dollar. Tether's concept is to combine the advantages of a cryptocurrency (such as eliminating the need for financial intermediaries) with the stability of a currency issued by a sovereign government (as opposed to the wild price volatility inherent in many cryptos).

4. Binance Coin

Binance Coin is accessible for trading on the Binance cryptocurrency exchange platform, along with other digital coins. Binance Coin can be used as currency, but it can also be used to pay fees on the Binance exchange and to fuel Binance's DEX (decentralised exchange) for app development.

5. USD Coin

USD Coin is a stablecoin that, like Tether, is linked to the US dollar. USD Coin, like Tether, is housed on the Ethereum blockchain. The goal of USD Coin was to create a "fully digital" dollar that had the stability of US fiat currency but does not require a bank account or the bearer to live in a specific nation. Rather than being an investment, USD Coin is envisioned as everyday money that may be spent with online merchants.

WHY ARE THERE SO MANY TYPES OF CRYPTOCURRENCY?

Blockchain technology is open source, which means that any software developer can utilise the original source code to build something new. That is exactly what developers have done. At the time of writing, there are more than 10,000 different cryptocurrencies in circulation, and the number is growing. Only four years ago, the number of cryptos topped 1,000.

The relative simplicity with which new cryptocurrencies can be created is one of the reasons for the growth. One's source code can be utilised to create another. The Ethereum network, for example, might be used to produce your own personal digital currency. There are "forks" in the

3340

software code that change the laws of how a cryptocurrency is regulated, which can result in the formation of a new cryptocurrency. Bitcoin Cash (BCH 1.26%) was developed in 2017 as a result of a Bitcoin fork that allowed for more transactions to be recorded on a single blockchain block.

The rise in cryptocurrency values has prompted many developers to try to get a piece of the action. And blockchain technology has applications beyond digital money. While some cryptos may be a bubble that will eventually burst, the decentralised nature of the technology and the enormous scope of how it may be utilised in the software world are two of the reasons for the proliferation of cryptos.

LEGALITY AND VALIDITY OF BITCOINS

The legal position of bitcoin varies greatly between countries and is still unclear or changing in many of them. While most nations do not deem the use of bitcoin illegal (with the exceptions of Bangladesh, Bolivia, Ecuador, and Kyrgyzstan), its status as money (or a commodity) differs, with varying legislative ramifications. While some governments openly permit its use and commerce, others prohibit or restrict it. Similarly, different government agencies, ministries, and courts have classed bit coins in different ways. While this article discusses the legal position of bit coin, the restrictions and prohibitions that apply to this crypto currency are likely to apply to similar systems as well.

RISK INVOLVED

Though Bit coin was not intended to be a traditional equity investment (no shares were issued), some speculative investors were enticed to the digital currency after it dramatically rose in May 2011 and again in November 2013. As a result, many people buy bit coins for their investment value rather than as a medium of exchange. However, because to their lack of guaranteed value and digital nature, the purchase and usage of bit coins includes a number of inherent dangers. The Securities and Exchange Commission (SEC), the Financial Industry Regulatory Authority (FINRA), the Consumer Financial Protection Bureau (CFPB), and other agencies have issued several investor alerts.

The concept of a virtual currency is still unique, and in comparison to traditional investments, Bitcoin lacks a long track record and a history of credibility. Bitcoins, of course, are becoming less experimental with each passing day; yet, after eight years, they (like all digital currencies) remain in a development phase, changing.

"It is pretty much the highest-risk, highest-return investment that you can possibly make," says Barry Silbert, CEO of Digital Currency Group, which creates and invests in Bitcoin and blockchain startups. Not for the risk-adverse, in other words. If you are considering investing in bitcoin, understand these unique investment risks:

Regulatory Risk: Bitcoins compete with government money and can be used for black market transactions, money laundering, illegal operations, or tax evasion. As a result, governments may strive to regulate, restrict, or outright prohibit the use and selling of bitcoins, and some have already done so. Others are making up their own regulations. For example, in 2015, the New York State Department of Financial Services finalised regulations requiring enterprises that buy, sell, transfer, or store bitcoins to keep customer identity records and maintain capital reserves. Transactions of \$10,000 or more must be recorded and reported.

Although other government agencies will follow suit by releasing rules and guidelines, the lack of clear regulations for bitcoins (and other virtual currencies) raises concerns about their lifespan, liquidity, and universality.

Security Risk: Bitcoin exchanges are fully digital and, like any other virtual system, are vulnerable to hackers, viruses, and operational flaws. If a thief gains access to a Bitcoin owner's computer hard drive and steals his private encryption key, the stolen Bitcoins could be transferred to another account. (Users can avoid this by storing bitcoins on a computer that is not connected to the internet, or by using a paper wallet, which involves printing out the Bitcoin private keys and addresses and not storing them on any computer at all.) Hackers can also attack Bitcoin exchanges and obtain access to thousands of accounts and digital wallets containing bitcoins. One particularly infamous hacking event occurred in 2014, when Mt. Gox, a Japanese Bitcoin exchange, was forced to close down after millions of dollars in bitcoins were stolen.

This is especially troubling when you consider that all Bitcoin transactions are permanent and irreversible. It's the same as dealing with cash: any bitcoin transaction can only be reversed if the person who got them refunds them. There is no third party or payment processor, as there is with a debit or credit card, and thus no source of protection or appeal if a problem arises.

Insurance Risk: The Securities Investor Protection Corporation insures some investments. Normal bank accounts are protected up to a specified amount by the Federal Deposit Insurance Corporation (FDIC), depending on the jurisdiction. Bitcoin exchanges and accounts are not covered by any federal or government programmes.

Fraud Risk: While Bitcoin employs private key encryption to authenticate owners and record transactions, fraudsters and scammers may try to sell counterfeit bitcoins. For example, in July 2013, the SEC filed a lawsuit against the operator of a Bitcoin-related Ponzi scam.

Market Risk: Bitcoin valuations, like any other investment, can vary. Indeed, the currency's value has experienced huge price changes during its brief life. It is subject to high volume buying and selling on exchanges and has a high sensitivity to "news." According to the CFPB, the price of bitcoin decreased by 61% in a single day in 2013, and by 80% in a single day in 2014.

If fewer individuals accept Bitcoin as a currency, the value of these digital units may fall and they may become worthless. There is already plenty of competition, and though Bit coin has a huge lead over the other 100-odd digital currencies that have sprung up, thanks to its brand recognition and venture capital money, a technological break-through in the form of a better virtual coin is always a threat.

Tax Risk: Because bit coin is prohibited for inclusion in any tax-advantaged retirement funds, there are no good, legal ways to protect investments from taxes.

LEGALITY AND VALIDITY OF BITCOINS IN INDIA

In India, there are currently no regulations controlling virtual currencies such as bitcoins. The RBI released a press release on virtual currencies such as bitcoins, light coins, bbq coins, and doge coins on December 24, 2013, noting that the creation, trade, and use of virtual currencies as a medium of payment is not authorised by any central bank or monetary authority.

Furthermore, the RBI has warned virtual currency merchants and consumers about different security threats like as hacking and malware attacks. While the RBI has not legalised bitcoins, it has declared them illegal for the time being. The Reserve Bank of India is actively investigating the risks connected with the use, holding, and trading of virtual currencies under India's existing legal and regulatory framework, which includes foreign exchange and payment system rules and regulations.

2.1 Risks

According to the RBI, virtual currencies are held on digital/electronic devices known as electronic wallets (e-wallets). As a result, they are vulnerable to losses caused by hacking, password loss, compromised access credentials, malware attacks, and so on. Because they are not established or traded by any authorised central registry or agency, the loss of an e-wallet may result in the permanent loss of the virtual currencies stored in it.

Payments done with virtual currencies, such as bitcoins, are peer-to-peer, with no authorised central entity controlling them. As a result, there is no set framework for dealing with consumer issues/disputes/chargebacks, etc. Furthermore, virtual currencies have no underlying or backing asset. The value of bitcoin appears to be speculative. Because virtual currencies are volatile in nature, users are vulnerable to possible losses as a result of such volatility. According to reports, virtual currencies are traded on exchange platforms set up in several jurisdictions, the legal status of which is also unknown. As a result, traders of virtual currencies on such platforms face legal as well as financial dangers.

Several media reports have surfaced on the use of virtual currencies, including bitcoins, for unlawful and illegal activities in a variety of jurisdictions. The lack of information about

counterparties in such peer-to-peer anonymous/pseudonymous systems may expose users to inadvertent violations of anti-money laundering and counter-terrorism funding laws.

2.2 Scope

As previously said, bitcoins are not yet legal, however there is potential for them to be legalised under various laws. Currency is defined as "all currency notes, postal notes, postal orders, money orders, cheques, draughts, travellers cheques, letters of credit, bills of exchange and promissory notes, credit cards, or such other similar instruments, as may be notified by the Reserve Bank." The RBI has the authority to incorporate bitcoins in the definition of currency, according to the definition.

Currency that is not "Indian currency" is referred to as "foreign currency," and it is governed by foreign exchange legislation. Bitcoins are most likely subject to foreign exchange laws. Furthermore, Bitcoins can be included in the definition of "security," which specifies that "such other instruments as the Central Government may declare to be securities."

Furthermore, the Indian Copyright Act of 1957 defines "computer programmed" as "a set of instructions expressed in words, codes, schemes, or any other form, including a machinereadable medium, capable of causing a computer to perform a specific task or achieve a specific result." After reviewing the numerous definitions, it is possible to conclude that there is sufficient possibility for legalising bitcoins. One must wait and see which strategy the Indian government would take.

2.3 Bitcoin transactions

HighKart.com is India's first e-commerce site to accept bitcoins as a payment method. WERWIRED, a Bangalore-based geospatial, security, and entertainment consulting firm, accepted bitcoin as payment from customers. Castle Bloom, a salon in Chandigarh, became the first physical location to accept bitcoin. Buysellbitco.in was an Indian internet platform for purchasing and selling bitcoins. However, the Enforcement Directorate raided it. Preliminary investigations revealed that it violated foreign exchange laws. Following the RBI news statement, traders and customers have been wary about using bitcoins until they are legalised.

If bitcoins are used in transactions, the question of whether they can be controlled under the Sale of Goods Act arises. A price is an essential component of a sales contract. Barter is an exception to the sale of goods transaction. This means that any transaction in which payment is made in bitcoins falls under the category of "barter" and is not subject to the Sale of Goods Act. As a result, such a transaction will be unenforceable in India. However, a transaction that meets the foundations of contract law and is for a valid consideration that is not contrary to public interest might be regarded legitimate.

Though the taxation of bitcoins is also a grey area, in order to comply with income tax regulations, a person accepting bitcoins in exchange for services must pay income tax after converting bitcoins into rupees, and bitcoin sellers who earn a profit must pay capital gains tax (if selling after a long period of time). Such initiatives will help to legitimise unregulated bitcoin transactions.

RBI NOTIFICATION ON BITCOINS

In a press release dated December 24, 2013, the Reserve Bank of India warned users, holders, and traders of Virtual Currencies (VCs), including Bitcoins, about the potential financial, operational, legal, customer protection, and security risks that they were exposing themselves to. The Reserve Bank of India informs that it has not granted any business or company a licence or authority to conduct such schemes or deal with Bitcoin or any virtual currency. As a result, any user, holder, investor, trader, or other person dealing with Virtual Currencies does so at their own risk.

Despite the Reserve Bank's warning against using virtual currencies, a domestic Bitcoin exchange today announced that it is adding over 2,500 customers per day and has achieved five lakh downloads.

According to the startup, which was founded in 2015, the increasing downloads demonstrate the "growing acceptability of Bitcoins.

The RBI has often expressed worries about virtual currencies such as Bitcoin, claiming that they pose serious financial, legal, customer protection, and security problems.

Recently, "ransomware" hackers held victims hostage by encrypting their data and demanding bitcoin payments to restore access to their devices.

WANNACRY RANSOMEWARE ATTACK IN INDIA

At least 80% of Indian ATMs use Windows XP and use firmware that restricts the machine's operations to the bare minimum, such as issuing cash on demand and verifying the account balance.

Other operations are blocked, which prevents a ransomware assault on an ATM.

After WannaCry disrupted more than 200,000 computer systems in 150 countries on Friday, there was widespread concern in India about the safety of ATMs.

The Indian cyber security agency has warned Internet users about a worm that locks down files on an infected computer and demands \$300 in Bitcoin virtual currency to unlock the machine.

The virus exploits a Windows vulnerability for which Microsoft issued a security fix in March, leaving PCs that had not been updated vulnerable.

WannaCry has infected banks, hospitals, and government entities all across the world. This sort of ransomware is intended to locate and encrypt valuable data on the computer, rendering the data worthless until the user acquires the decryption key. People are storing more vital data on their personal computers and devices as their lives grow more digital. Many people are unaware of the importance of creating backups to protect against hard disc failures, computer loss or theft, and probable crypto ransom ware attacks.

This could be due to users lacking knowledge or failing to recognise the significance of data until it is lost. Setting up a good backup procedure demands some effort and discipline, making it unappealing to the ordinary user. Crypto ransomware exploits these flaws in the average user's security posture to extract money. Figure-2 is a diagram. Several police enforcement-themed demand notifications have been detected in locker ransom ware. Page 7 The Development of Ransom ware Crypto ransom ware authors are aware that data kept on personal computers is likely to be essential to users.

For example, the data could include things like memories of loved ones, a college project due for submission, or perhaps a financial report for work. The ransomware victims may be desperate to get their data back, preferring to pay the ransom to restore access rather than simply lose it forever and suffer the consequences. After installation, a typical crypto ransomware threat quietly searches for and encrypts files. Its goal is to stay below the radar until it can find and encrypt all of the files that could be of value to the user. The damage is already done by the time the victim receives the malware's message informing them that their data has been encrypted. With most crypto ransomware infections, the affected computer continues to work normally because the malware does not target critical system files or deny access to the computer's functionality. This means that users can still use the computer for a variety of activities other than accessing the encrypted data

IS IT LEGAL TO ACQUIRE BITCOIN IN INDIA?

In India, Bit coin is currently legal. Because there are still no laws and regulations in place to manage Bit coin, the government has imposed a 30% level rate crypto charge on digital money transfers in India. There is no central expert in India who has sponsored or governed Bit coin as a payment method. Furthermore, there are no acknowledged rules, guidelines, or conventions for resolving disagreements that may arise while managing Bit coins. As a result, Bit coin exchanges have their own set of procedures. Because there have been no restrictions on Bit coins in India until now, it is impossible to establish that they are illegal.

In Internet and Mobile Association of India v. Reserve Bank of India (2018), the Supreme Court of India directed the public authority to put down digital money management norms in a ruling given on February 25, 2019.

THE LAWS THAT REGULATE BITCOIN IN INDIA

India has not established any regulations to govern cryptographic forms of money or virtual monetary standards. The Crypto currency and Regulation of Official Digital Currency Measure, 2021, is a proposed measure by the government to control cryptographic forms of money, despite the fact that the government's position on the subject is unclear. A "virtual computerized resource" is defined in the Finance Bill of 2022 as "any data, code, number, or token (not being Indian cash or unfamiliar money), made utilizing cryptographic procedures, etc."

CONCLUSION

Though the use of bitcoins is gaining traction around the world, a number of challenges remain unresolved: Is bitcoin worth investing in?

Can it be used as a currency?

Can other "crypto currencies" compete or replace bitcoin?

Because the use of bitcoin entails a significant level of risk, its usage cannot be guaranteed unless the ambiguity surrounding bitcoins is resolved.

Bitcoins are digital cash and a peer-to-peer payment system that is decentralized. Because of their volatile nature, it is critical that a framework be developed to address the risks connected with fraud and money laundering. Regulators will need to take efforts to give individuals and businesses with regulations that will allow them to connect this new technology with the established regulated financial systems. In general, bitcoins have a variety of advantages, such as dramatically lowering transaction costs, facilitating the growth, simplicity, and security of e-commerce and physical transactions, and so on. To keep up with the times, the Indian government will need to make suitable adjustments to the foreign exchange and information technology legislation to specifically include bit coins.