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# CURRENT CHALLENGES OF CRYPTOCURRENCIES FACED BY GOVERNMENTS

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## Abstract

Cryptocurrency is a digital currency and payment system devoid of institutional dependencies, instead of relying on peer-to-peer systems for global payments. Despite major advancements in block chain technology, particularly in the financial sector, certain challenges persist that impede its spread including, but not limited, to government accessibility, institutionalization, tracking, and transparency. To overcome such challenges, some governments resorted to developing their own digital currencies as an alternative to crypto currency. Crypto Ruble and Digital Yuan – both relatively new alternatives – hail from Russia and China respectively and are start-to-end state-owned and controlled. Substantial research in the field has uncovered three primary problems stemming from state-owned approaches to regulating cryptocurrencies. These center around money laundering, the development of an investment 'bubble,' and the ease of terrorist financing, all of which point towards using these currencies for criminal misconduct. While theoretical evidence exists on the topic, empirical indices were missing, necessitating a systematic study centering on the effects of regulations on digital currencies and market activities. With the above in mind, this paper investigates the potential challenges governments may face should they adopt crypto currencies as digital modes of payment. This study provides content on and review of studies regarding the challenges of cryptocurrencies, especially by governments, in order to provide relevant systematic grounds to policymakers and enabling them to make appropriate decisions and develop strategies to deal with the aforementioned situation. The study reveals that two key aspects and/or challenges – restrictions and centralization – are key to controlling misconduct stemming from the use of cryptocurrencies.

## 1. Introduction

### *1.1 What is Cryptocurrency?*

For the past few years, cryptocurrency has been on the rise as an exciting investment opportunity for individuals. As of 13th November 2021, the total market capitalization of cryptocurrency was USD 2.87 Trillion, an exponential rise compared to the USD 458 billion capitalizations almost a year ago (1). This is largely driven by the drive to purchase cryptocurrency for transactional use or as an investment. The two biggest cryptocurrencies are Bitcoin and Etherium (ETH), which are considered as the gold and silver equivalents of cryptocurrency.

Bitcoin was the first and has been the most popular among all cryptocurrencies over the last decade. Bitcoin initially surfaced in a paper written by an unknown authority named, "Satoshi Nakamoto" (2). The idea behind Bitcoin was to develop a peer-to-peer digital currency that can be used for monetary transactions without needing the involvement of any third-party system, vendor, or centralized authority (2). The added advantages Bitcoin offers to its users make it highly attractive. It offers complete anonymity, privacy, and transparency in transactions. The element of transparency is prominent as Bitcoin works on an open and decentralized distributed ledger known as a blockchain, allowing everyone on the network to see the transactions made. Additionally, the nodes present on the block contain a copy of the ledger, making it impossible to forge, which is what makes Bitcoin so transparent. The other competitive edge Bitcoin offers as mentioned earlier is complete anonymity/privacy. The anonymity comes from the fact that the user for transaction use pseudonym addresses instead of their identity. These pseudonyms (addresses) are not related to individuals but are generated from the public key of the user (2). Furthermore, Bitcoin addresses can be computed very easily, allowing users to generate a different number every time they commence a transaction.

### *1.2 The Evolution of Cryptocurrency and the Realization of its First Major Challenge*

In order to understand the problems that governments face when it comes to cryptocurrency, it's crucial to understand its evolution as a system that aimed to overcome issues with current systems.

The current currency system was developed to cater to the challenges of the barter system, whose own problems stemmed from differences in valuation methodologies, storage of goods and its value, and payment deferments. Our modern currency system overcomes many of these issues. With paper taking place as a guarantee of the value of goods, stored in the value of gold with a central bank, storage became easy. Since indivisibility is easy, and currency can be transferred, recovering deferred payments became easy too. Finally, because the value of currencies can be determined rather easily, it solves the biggest issue with the barter system.

As these systems progressed, coins and paper notes evolved in order to meet the needs of their economies and encourage regional trade. The currency system is centralized and state-owned; government can easily tax the amount, monitor the transaction among the masses and [1]can stop any

illegal transaction they identify. Although there are many advantages of a currency system there are certain disadvantages and challenges to them too. Here are a few that arise from its natural evolution. There is no universal currency that can be used around the globe as one common currency that is endorsed by every country. Every country has its own currency in the form of paper notes or coins which is acceptable in that particular country, For Example, the Pakistani Rupee is only accepted in Pakistan it cannot be used as a medium of exchange in any other country, so in order to trade in another country, one first has to convert the currency of their country in the residing countries currency and then they can trade. Moreover, the exchange of one currency into another currency is not free since governments utilize exchange rates to convert different currencies, using the United States Dollar as the central value. Also, inflation leads to an increase in prices for goods and services within an economy and, subsequently, erodes a currency's purchasing power. With these disadvantages rampant in the current system, cryptocurrency became prominent as a way to solve most of these issues. Everything is stored digitally, so the need for such large reserves of gold isn't as required. Because cryptocurrencies are more universally accepted and easily exchanged, their value doesn't erode as quickly or intensely. Finally, the transactional costs related to cryptocurrencies are rather minimal. In fact, compared to current taxation and banking systems, they're seen as rather negligible. Despite all the issues it resolves, it creates a host of its own problems that governments, banks, and its related business, more than regular cryptocurrency users, have to face and they all start with its biggest benefit-cum-problem – anonymity.

### *1.3 Anonymity - The Cryptic Double-Edged Sword of Cryptocurrencies*

In explaining what cryptocurrency is, we touched base on the fact that users utilize pseudonym addresses instead of their identity for transactions. More importantly, that they're generated from the public key of the user rather than an identity document (2). Finally, because addresses are easily computable, Bitcoin ensures users have a new address every time they commence a transaction. While this is what makes cryptocurrencies like Bitcoin great, it also makes them rather problematic.

On one side of this cryptic sword, you gain anonymity, privacy, and transparency, while on the other side; you lose the ability to track users. While the additional layer of privacy that cryptocurrencies provide is great for users, ensuring you cannot link an address with an owner (2), this inability is, for governments, the biggest problem, and it enables the proliferation of a host of other key problems.

## 2. The Challenges Governments Face with Cryptocurrencies

If you haven't realized this by now, the nature of cryptocurrency transactions opens up the realm of illegal activities, such as money laundering, terror financing, and the creation of 'pump and dump' investment bubbles such as DEFI hacks. In addition to issues stemming from the problem of anonymity, the ecosystem of cryptocurrencies also creates a host of other challenges that governments must face such as those related to taxation and environmental damage.

### *2.1 Money Laundering*

In essence, money laundering is the illegal process of converting money acquired via illegal activities using processes to make it clean. Banks in authority have separate departments with employees that detect and suspect such activities since the repercussion of such a crime are significant as a result; banks are required to report suspicious activity. Criminals can only put money in banks if they can verify a legitimate source of income (3), (4). The laundering process typically involves three steps; placement, layering and integration. The newest frontier of money laundering involves cryptocurrencies, whose increasing use in illegal activities such as drug trading, blackmail, and terror financing are becoming increasingly known.

### *2.2 Pump and Dump*

An investment bubble or, in the case of cryptocurrencies, pump and dump is an illegal act of a pool of investors or an individual promoting their held stock and selling once the price has surged as a result of an endorsement. What makes this troubling is the surge is artificial since it is based on misleading information. Generally, the opposing investors lose their money after falling for the bubble, while the one who created the bubble makes money out of it and sells his or her shareholding (5), (6), (7). The regulatory authority around the globe has strictly scrutinized the process and has made it difficult for an investor to create a bubble on its own but since the introduction of cryptocurrency, investors have found an alternative for their pump and dump scheme. Since cryptocurrency is based on a decentralized ledger and is not controlled by any authority. Investors use it to their advantage, even sabotaging ethical boundaries to do so. The 'pump and dump' phenomenon is also known as a "rug pull." One such recent example of a rug pull is the play-to-earn token (squid token) scam that took place in November 2021. The squid token was developed on the theme of a famous Netflix series known as "Squid Games." Within a week of its launch, the token soared to the price of $2,861.80. This price attracted many investors since the price was at an all-time high for the token. However, when the buying began to reach its peak, the price suddenly crashed to $0.0007926 within a matter of minutes. Individual investors lost millions in a matter of minutes (8). Unfortunately, these types of scams are very easy to execute when it comes to cryptocurrency due to its anonymity and decentralized nature.


*Graph # 1*

### *2.3 Terror Financing*

One key problem that surfaced because of cryptocurrencies is the ease of terror/terrorist financing. Before the launch of cryptocurrency, Hawala was used as a medium to transfer money from one place to another without getting caught. Hawala works on the model of trust among the parties involved and a 'middle-man of sorts. Hawala is based on the buyer using a network of money brokers without actually moving the cash from one place to another (9). Moreover, since it doesn't go through regular banking channels, payments are not intercepted by governments, allowing the involved parties to dodge taxes too, leaving governments without the equivalent of billions in lost revenue.

A buyer gives the money to the local Hawala broker who then contacts another middleman close to the seller. This contact is close to the seller and pays directly to the seller, the transfer is quick and there is no record as such. People rely on the Hawala system because it is cheaper than banks and the transaction takes place very quickly. However, cryptocurrency has replaced this system because the element of anonymity has made it even easier to transfer money from one place to another. Additionally, unlike the Hawala system, there is no need for a middleman to transfer money (10). While it makes lives easier for individuals, this element of anonymity also makes it easier for terrorist organizations to transfer their money from one person, region, and/or organization to another without getting traced.

**Table # 1**

| No. | Reference | Published Year | Journal/Conference | Crime Type | Cryptocurrency |
|---|---|---|---|---|---|
| 1. | 9 | 2014 | Journal | ML | BTC |
| 2. | 3 | 2015 | Conference | ML | BTC |
| 3. | 10 | 2016 | Journal | ML | BTC |
| 4. | 11 | 2018 | Conference | ML | BTC |
| 5. | 12 | 2018 | Conference | ML | BTC |
| 6. | 6 | 2018 | Journal | P & D | BTC, ETH. |
| 7. | 13 | 2018 | Journal | ML | BTC |
| 8. | 14 | 2019 | Conference | ML | BTC |
| 9. | 15 | 2019 | Conference | P & D | BTC |
| 10. | 8 | 2019 | Conference | P & D | BTC,ETH. |
| 11. | 16 | 2019 | Conference | P & D | BTC,ETH |
| 12. | 17 | 2020 | Journal | ML | BTC |
| 13. | 19 | 2020 | Conference | ML | BTC |
| 14. | 23 | 2020 | Conference | ML | BTC |
| 15. | 21 | 2020 | Conference | ML | BTC |
| 16. | 22 | 2020 | Conference | ML | BTC |
| 17. | 20 | 2020 | Conference | ML | BTC |
| 18. | 18 | 2020 | Journal | ML | BTC |

Scam, money laundering, terrorist financing, and rug pulls have all become widespread since 2020, with damages reaching $1.9B, which includes theft, fraud, and misappropriation as per cipher trace. While these numbers are staggering, they are is not the only problems that have been reported through

cipher trace. In fact, a new kind of scam is now on the rise known as DEFI hacks.

## 3. The Challenges Governments will face once they accept Cryptocurrencies

There has been a lot of debate regarding whether the leaders of the world will accept cryptocurrency as a legal tender or perhaps even a universal currency. The three major issues that the world is facing due to cryptocurrencies right now have already been discussed, which are money laundering, pump and dump schemes, and terror/terrorist financing. There are certain other barriers a country will face on an individual basis if they accept cryptocurrency as a legal tender.

### *3.1 Taxation*

One of the major reasons cryptocurrency has been discouraged around the globe is the tax evasion issue that governments face. Tax collection is the primary form of revenue collection for any government. To do so, governments need proper data of individuals along with their transaction history. With fiat currency and centralized bank accounts, it is easy to track the transaction, as well as calculate and collect the tax. However, the anonymity of the transaction creates a barrier for the government to regulate, monitor, and/or control transactions (2) that eventually lead to tax evasion. The United States of America has drafted up a law about taxing cryptocurrency but the law is a bit complicated and it doesn't cover all the aspects of the transaction. Transferring cryptocurrency from one wallet to another or donating crypto to a non-profit or charity and buying fiat money with crypto is not taxed in the US, whereas paying crypto to buy a good or services and exchanging one crypto for another crypto is taxable (12). Opinion on taxing is split between the experts (12) because of its anonymity and decentralized nature.

### *3.2 Proposed Solutions*

Since every country has its own rule about cryptocurrency, it is difficult to form a law that will be universal. The role of financial watchdogs such as the FATF becomes pivotal at this stage in making sure that at least the developed countries are on the same page when it comes to cryptocurrencies. As such, the first solution revolves around the strengthening of such watchdogs to ensure uniformity in cryptocurrency monitoring similar to conventional paper-based currency monitoring.

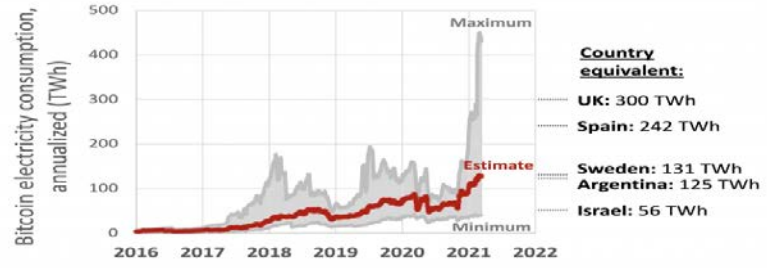
The lack of education regarding tax around cryptocurrencies is another factor that needs to be addressed as clarity about the status of cryptocurrencies is missing (13). Greater education surrounding cryptocurrency taxation will help alleviate concerns and lead to greater acceptance of its safe usage. State-owned digital wallets can also be a game-changer at this point. Governments can work on a hybrid model to tax cryptocurrencies by applying taxes on digital wallets since the digital wallet will be owned by the state and/or individual and will be easy to monitor, control and tax the transaction, while still allowing individuals the freedom they desire.

### *3.3 Energy Consumption and Emissions*

The world's largest and oldest cryptocurrency uses "proof of work" as a consensus mechanism. Proof of work, originally dated back in 1993 to, the proof of work concept was developed to prevent denial of

service attacks (DDoS) and other service abuses such as spam on a network, by requiring some work from the service user. More often than not, this means processing time by a computer. In 2009, Bitcoin used an innovative way of using proof of work as a consensus algorithm to validate transactions and broadcast new blocks into the blockchain. Since then, it has become the widely used consensus algorithm associated with many cryptocurrencies. This is key to cryptocurrency mining, which is one major reason why digital currency has exploded. In other words, miners on a network will compete against each other in solving the complex computational puzzles that provide payment to them. These puzzles are very difficult to solve but very easy to verify the correct solution. Once the miner can solve the puzzle, they will be able to broadcast it on a network, where all the other miners will verify that the solution is correct. Proof of work protects the network against numerous different attacks because a successful attack will require a lot of computational power and a lot of time to do the calculation. Since such an attack would be inefficient, the incurred cost will be greater than the potential rewards for attacking the network.

The biggest issue with proof of work is that crypto mining requires expensive computer hardware and in turn, requires and consumes a lot of power. In fact, when you consider the hundreds of thousands, if not millions or more, computers churning out estimations, each Bitcoin transaction is projected to cost 707 kwH. Add to this the fact that computers require additional energy since they generate heat and must be kept cool. It's also difficult to predict how much electricity Bitcoin uses because different processors and cooling systems have different levels of energy efficiency (14). In fact, Bitcoin mining consumes 121.36 terawatt-hours per year, according to a University of Cambridge research. This is greater than Argentina's total usage, or the combined usage of Google, Apple, Facebook, and Microsoft (14).




Graph # 2[(15)]

The situation is just growing since miners must constantly enhance their computational power in order to compete with other miners. As a result, Bitcoin's energy usage nearly doubled between March 2015 and March 2021 (14). Approximately 39% of this energy comes from renewable sources, with hydropower accounting for the bulk, which might have detrimental consequences for ecosystems and biodiversity according to Cambridge University. Bitcoin's power usage has grave ramifications for climate change and for governments trying to reach the Paris Accord's goals since it equates to an estimated 22 to 22.9 million metric tons of $CO_2$ emissions per year—equivalent to the $CO_2$ emissions

from 2.6 to 2.7 billion houses in a year. According to one study, Bitcoin has the potential to increase global warming by more than 2 degrees Celsius. According to another estimate, Bitcoin mining might release 130 million metric tons of CO2 in China alone by 2024. However, until more renewable energy is used, if more mining moves to the United States and other countries, this figure might skyrocket (14).

### *3.5 Proposed Solution*

In order to cater to the proof of work algorithm's energy consumption problem, experts have come up with the idea of Proof of Stake. This algorithm was introduced in 2011 to curb the environmental problem caused by proof of work. Rather than using high computational power or powerful GPUs, ASIC's proof of stake uses a pseudo-random selection process to select a node to become a validator for the next block on a blockchain. This validation process can be done through a normal computer and it doesn't require any high computational power hardware at all. POS takes the following into account while selecting the next validator, staking age, node's wealth and randomization. Proof of Stake can become a potential solution to the proof of work environmental issues. Etherium the second-biggest cryptocurrency has announced that it will completely shift its consensus mechanism to proof of stake in 2022 (15).

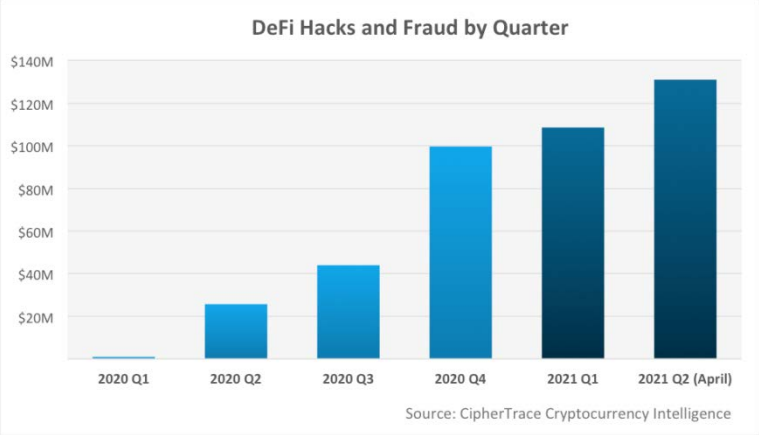
### *3.4 Financial Action Task Force*

The FATF's latest advice draws on previous instructions given in 2019, as well as a 2020 follow-up study. They take on a sector that says it is exempt from many current financial laws and they impose new controls on everything from cryptocurrency exchanges to custodians in the $2.8 trillion cryptocurrency market. Here are some key points from the FATF guidelines:

- Stable coins: Effectively, stable coin providers, as well as exchanges and custodians that offer stable coins, will be required to follow all current standards and undergo extensive anti-money-laundering and anti-terrorism-financing inspections. FATF recommended nations to address risks before launching new stable coins, and to continue monitoring efforts afterward.
- Peer-to-peer transactions. According to the FATF, nations can impose restrictions like as increased record-keeping or restricting transactions to just specific recognized locations. "Because of the sector's fast growth, changes in the amount and kind of risk are expected to occur quickly and need concentrated supervisory attention," the guide says.
- DeFi: According to the recommendations, creators, owners, and operators – or persons who have control over the functions of a DeFi app – may be required to comply with FATF standards. "It is rather usual for DeFi arrangements to label themselves decentralized when they involve a person with control or substantial influence," the recommendations stated. "Jurisdictions should use the VASP definition without regard to self-description." Even if a development team behind a DeFi dapp – designed to allow individuals to trade, lend, and borrow without the need of intermediaries – sold or distributed relevant governance tokens to investors and users, the team would be liable for

anti-money-laundering measures, according to the guidelines.

DEFI is the short form of decentralized finance, which is a system that allows for financial products to become available on a public, decentralized blockchain network. Instead of going through third parties such as banks. Buyers, sellers, lenders, and borrowers can interact peer to peer through DEFI when facilitating transactions.




*Graph # 3*

- As per cipher trace, there was no existence of DEFI hacks back in 2019. However, a negligible amount of DEFI hacks took place in the first quarter of 2020; from there it has grown exponentially. As shown in fig 2. The DEFI hacks have been on a rise alone in 2021 first quarter the DEFI hack fraud has sore to an enormous amount of $130 M and it is cont. on the rise. DEFI hacks, money laundering and P and D are adding trouble for the individuals whereas the scammers are making a lot of money out of it. These frauds are on the rise due to the lack of regulation (16).

### *3.6 Proposed Solution*

Watchdogs like the FATF and IMF, as well as other financial forces, will make the law tougher for all the countries to abide by if they accept cryptocurrencies. Getting into the blacklist is one of the biggest threats, in addition to losing their moody credit rating. In truth, no country can live in isolation and compliance with these institutions is necessary. Taming the beast as per their regulation is not easy. A simple and effective solution would be to develop central bank-based digital currencies that can be a solution to the root problem of cryptocurrency i.e. anonymity and transparency. Since digital currencies will be backed by the governments that make them, they will be less volatile. Moreover, since the currency will be state-owned, it will be centralized and thus, the government can control, monitor and tax it accordingly. Some of the countries have even started developing their own digital currency to tame the beast.

## 4. How Governments are facing these Challenges

### *4.1 What El Salvador did to become the first country to accept Bitcoin as Legal Tender?*

El Salvador became the first country to introduce cryptocurrency as a legal tender. After carefully evaluating the pros and cons of the biggest cryptocurrency i.e. Bitcoin, the government decided to accept the currency as a legal tender apart from the US Dollar, which is their main currency. El Salvador country depends heavily on remittances that come through different countries, overall it makes more than 24% of their GDP (17), the number is staggering. One of the problems remittance-based countries face is that the money that comes through the remittance has to come through a proper banking channel. Charges that hit remittance when transferred from one country to another include, exchange rate charges, bank charges and not forgetting the time duration it will take for the transaction to complete, which also takes into account the banking holidays too – all of this is too great for many. As almost 70% of people do not have access to this traditional financial service, adopting cryptocurrency will prove to be a ray of hope for them. The government decided to give every individual $30 Bitcoin to all the users who will download the digital wallet application named Chivo Wallet (18) (19) (20), in order to attract the citizen to use the currency and the digital wallet. The Chivo wallet is a government-backed and controlled wallet given to every citizen to acquire Bitcoin in it. The traceability of Bitcoin becomes very easy through the Chivo wallet as the digital wallet is centralized and controlled by the state. This hybrid model of cryptocurrency and digital wallet can be a potential solution to the uprising challenges of cryptocurrency, as it allows the citizen to keep the cryptocurrency and they can monitor it too. The world's financial watchdogs have been very strict when it comes to issues related to money laundering and terrorist financing. The impact of crypto mining on the environment is also a grave concern for them; even the request of El Salvador to the World Bank regarding the implementation of Bitcoin has been rejected. After the Bitcoin law's approval, rating agency Moody's downgraded El Salvador's creditworthiness; this is one of the impacts. World Bank and IMF have also shown environmental and transparency concern over the adoption of Bitcoin (21). FATF will also be monitoring El Salvador very closely as the country has to comply with the regulation of FATF, any hiccup can lend them in FATF grey list which can also lead to FATF black list.

## 5. Government-owned Digital Currency

### *5.1 Digital Yuan*

Since China is one of the leading countries in innovation and technological advancements, the country wasn't behind when it came to the ideation and implementation of a Central Bank Digital Currency (CBDC). China completed a trial of the DC/EP, as its digital currency in September moreover; they are implementing it across major e-commerce platforms within China. Let’s briefly take a look at this digital currency.

### *5.2 What is DC/EP?*

The Digital Currency Electronic Payment (DC/EP) in simple terms is a digital version of the “Yuan” which is China’s National Currency. The Yuan deposits back up the DC/EP which are held by China’s central bank and have been in the development phase for over 5 years. Currently, the

banks in China are required to convert a part of their Yuan holdings into a digital form and disburse them to citizens and businesses through the utilization of mobile technology.

***Key Takeaways***

- DC/EP is considered a digital version of Yuan and has been in the development phase for over 5 years.
- DC/EP is centralized, not anonymous and legal tender so; this reason is what makes it differ from other cryptocurrencies.
- DC/EP could enable China to bring its unbanked population into the mainstream economy, help in the rapid movement towards a cashless society and help trade settlements internationalize the renminbi's use.

### *5.3 How is DC/EP different from existing cryptocurrencies?*

One of the potent differences between DC/EP and the existing cryptocurrencies is their legal status. The DC/EP is supposedly used as a payment mechanism as well as, it is accepted as legal tender. However, the concept of legality regarding the utilization of cryptocurrencies to be used as a form of payment for goods and services in China is still undecided. The second point of difference between DC/EP and existing cryptocurrencies in the market is the concept of decentralization. Cryptocurrencies inherently are decentralized in nature in other words; the economics and supply of these cryptocurrencies are not controlled by a single entity. As a result, the vital point of the difference is that the levers for the digital Yuan will solely be controlled by China's government. The third difference between the standard cryptocurrency and the digital Yuan is "anonymity". Cryptocurrency is anonymous, to a varying degree which mainly depends on the coin whereas digital Yuan is not anonymous. As mentioned earlier the Chinese government will be tracking the currency movement and usage diligently to monitor its economy and minimize any fraudulent activity that might take place.

### *5.4 What are the benefits of the digital Yuan for the Chinese government?*

First and foremost, the digital currency will aid the Chinese government in better tracking of the flow of money through the economy and as result, of successful tracking the government can make sound planning decisions.

Secondly, cash remains one of the most popular modes of transaction for payments in China, this new form of payment the leapfrog card system is also gaining popularity at an accelerated pace. These new payments rely mainly on digital transfers of money by the usage of an assortment of technology intermediaries such as mobile devices, QR codes and last but not least, token systems.

### *5.5 Crypto Ruble*

Crypto Ruble is a digital currency that is in the development phase, under the orders of Russian President Vladimir Putin. It will be distinctively different from the way Bitcoin operates as it is planned to be issued by the Russian government with no mining involved. The value of the Crypto Rubble will be similar or it's safe to say identical to the value of a regular ruble. The initial pilot group for testing of the digital ruble came into being in June 2021 and it also includes 12 banks.

***Key Takeaways***

- Vladimir Putin stated in October of 2017 that Russia would issue Crypto Rubble as a state-sponsored cryptocurrency.
- The live transactions of this national digital currency are expected to start in 2022 after the testing is completed in the last quarter of 2021.
- The uniqueness of the currency is that it will not be mined and instead will be issued by the Russian government.

*5.6 Understanding Crypto Ruble*

The announcement of the Crypto Rubble was done in October 2017, by the Russian president Vladimir Putin. He also mentioned that the digital currency will be state-sponsored. The Crypto Ruble has not been formally launched however; the testing began in June 2021. The Crypto Ruble will be issued by the Central Bank of Russia as a central bank digital currency (CBDC) and additionally, managed by the Russian government. A handful of banks in Russia have expressed their interest in testing out the digital ruble, some of the renowned banks are Moscow and Crimea's Russian National Commercial Bank. The testing was expected to start in the second half of 2021. In the year 2022, it's decided that the banks will allow citizens to test the currency. The idea is mainly that Crypto Ruble will help in decreasing the costs that are present within the financial system and secondly, it will give a boost to competition among banks. However, one vital point of consideration is that Russia still does not recognize digital tokens or cryptocurrencies as legal tender. The downside mentioned is that the digital currency will be centralized in nature because it will be issued by the Central Bank. In simpler terms, the Crypto Ruble will operate in the same manner as the Russian Ruble, but only in digital and encrypted form. Moreover, the Crypto Ruble will have the same price point the ruble has so, an exchange is also possible. Both the digital currencies Crypto Ruble and Digital Yuan are solving the transparency and anonymity issue; both the digital currencies will be centralized with certain restrictions, as both are state-backed coins means both will be stable coins. However, making any prediction will be pretty early as both the coins are in their development, testing phase. CBDC does solve the anonymity and transparency issue, but the problem which may arise once the CBDC is launched properly will be to make it attractive for the citizen of the respective country, as the element of decentralization will be not there. Individuals are more attracted to the decentralized element because it makes sure that the transaction cannot be forged and the data is secure.

## 6. Conclusion

It's been a decade since cryptocurrency has been launched, but the regulation and efforts made to tame the elephant in the room are still in the infancy stage. Although some of the countries have launched their digital currency as a step to create an alternative currency. CryptoRuble and Digital Yuan both are in the development and testing phase now, apart from these two countries there are numerous other countries too which are working on their own Central Bank Based Digital Currency, namely Tunisia is working on developing "edinar", Venezuela is working on developing,"Petro", Estonia is working on developing, "Estcoins", Japan

is working on developing,"Jcoins", Sweden is testing their own digital currency named, "ekrona". All these countries are taking steps to create their own digital currency which they will be able to control and monitor however; the element of anonymity will be compromised. All these CBDC will be unable to get rid of cryptocurrency because of its unique features which no other currency can offer that is complete anonymity and decentralization, all these currencies are centralized and government based control. Although this is the first step toward catering to the elephant in the room from the globe however, certain other steps need to be taken. El Salvador has become the first country to accept cryptocurrency as a legal tender. Legal tender has its own issue. People lack trust in crypto due to its high volatility, compliance with financial watchdogs is not that easy. El Salvador Bitcoin move is a success or failure time will tell, however one thing is for sure in order to implement it successfully the country has to mount an Everest.

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