



विद्याविनियोगाद्विकासः
IIMA
AHMEDABAD
IIMA ALUMNI

Public
Policy
SIG

Findings
and
Perspectives

Crypto in India

December 2021

Kamal Gaur | Akhilesh Tilotia

Findings and Perspectives on

Crypto in India

*IIM Ahmedabad
Public Policy
Alumni Special Interest Group*



IIIM
AHMEDABAD
IIMA ALUMNI

Public
Policy
SIG

Published on December 10, 2021

© IIMA Public Policy ASIG

Contents

Foreword: Akhilesh Tilotia and Suhail Kassim	3
Foreword: Kamal Gaur	5
Takeaway notes from Webinar Series on ‘The Cryptocurrency and Regulation of Official Digital Currency Bill’	6
1. Blockchain, Bitcoin and Cryptocurrency	6
2. Crypto in India: The legal perspective	14
3. Crypto in India: The Industry Perspective	18
4. Crypto in India: The Policy Perspective	22
5. Crypto in India: The startup perspective	30
6. Cryptocurrency: Emerging Global Perspectives	34
7. Crypto in India: The Taxation Perspective	39
IIMA Public Policy ASIG Presentation to Parliamentary Standing Committee on Finance	47
IIMA Public Policy ASIG Perspectives	52
1. Crypto and sovereign	52
2. Technology and potential	53
3. Negatives and challenges of crypto	55
4. Regulation	59
5. Bull run and investor protection	61
6. Taxation	63
7. The India perspective	65
8. The global perspective	69
Appendix	71
Acknowledgements	77
Annex: Profile of Webinar Series Speakers	78
Disclaimer	81
Contact Us	82



Foreword: Akhilesh Tilotia and Suhail Kassim

PP ASIG Alumni Coordinators 2021

It was early 2021 and the Public Policy Alumni Special Interest Group (PP ASIG) at the Indian Institute of Management Ahmedabad (IIMA) was emerging from a pandemic-fraught winter. The members of the PP ASIG, keen to pivot to the future, were scouting for a new “hot-button” topic on an emerging theme that would be of interest to policymakers and lay persons alike. On the menu were drones; smart cities; artificial intelligence; and environmental, social and corporate governance. The idea was to pick one of these topics and do a deep-dive, with the intent of developing concrete and fact-based policy recommendations that could tangibly influence policy direction in India.

While the PP ASIG members grappled with which topic to pick, Kamal Gaur – an IIMA 2004 PGP alumnus and “crypto enthusiast” – offered to conduct a “101” session on the basics of blockchain and cryptocurrency to the PP ASIG. As anticipated, the turnout at the webinar was significant. There was clearly an audience that was willing to invest time and effort to learn more about the nuances of this complex topic – including from a public policy angle. Indeed, the feedback from the session was overwhelming: “we want more experts to talk to us about crypto!” The verdict was out – the PP ASIG’s flagship topic of 2021 would be a knowledge development series on crypto.

The timing was ideal: the Government had previously announced a draft regulation titled “Cryptocurrency and Regulation of Official Digital Currency Bill”. Serendipitously, a Bill is now scheduled to be tabled before Parliament during the Winter Session 2021. This was good news. The not-so-good news? It was surprisingly difficult to identify topical experts who were willing to hold a public webinar on this topic. Perhaps because the topic was so new and fluid; maybe because deep expertise had not yet been built up; or was it merely due to an abundance of caution?

And so an extra dose of effort had to be put in by the PP ASIG to arrange the lineup. The six eminent experts who eventually did show up were, to put it mildly, formidable thought leaders in their respective domains. During the course of June and October 2021, we heard from Shri



Subhash Chandra Garg on overall policy perspectives; Ashim Sood on legal aspects; Sumit Gupta on crypto exchanges; Sandeep Nailwal on crypto startups; Meyya Nagappan on taxation; and Erik Feyen on the international perspective. The key takeaways from this rich knowledge development series were distilled into a comprehensive note. And that was that.

Except it was not. In an unanticipated development, the Indian Parliamentary Standing Committee on Finance asked the PP ASIG to come forth as a witness in the hearing on “CryptoFinance: Opportunities and Challenges” on November 15, 2021, at Parliament Annexe, New Delhi. The PP ASIG was represented by Kamal Gaur, Akhilesh Tilotia, and (in his personal capacity) IIMA Professor Anish Sugathan. The Honorable Members of Parliament appreciated the deposition and mentioned that they expect more inputs from IIMA alumni on such complex topics in the future.

This book codifies the new knowledge and insights generated during the PP ASIG’s crypto journey in 2021, encompassing the knowledge development series and – in the immediate aftermath – the Parliamentary Standing Committee hearing. The fact remains that the crypto journey is long and much remains to be discovered. This book encapsulates our attempt to contribute to this journey. We invite you to read this book with a critical eye and share your candid views with us.

Happy reading!

Foreword: Kamal Gaur

Crypto Series Anchor

It's easy to forget, but Blockchain, the foundational technology that underpins cryptocurrency, has just become a teenager this year (at 13). As far as technologies go, it is easy to underestimate the long-standing impacts that blockchain will have on the world – it reinvents trusted networks by removing the need for centralized third-parties that have usually run them. As a result, blockchain will likely underpin the greatest global networks, now and in the future, that benefit from participation that seeks empowerment for participants, transparency to build trust and security that cannot be breached.

Over the same period, cryptocurrency has entered into popular lexicon and become an irrevocable part of the zeitgeist of the times we live in. In living memory, cryptocurrencies have gone from being a vision on a white paper to a reality that is now larger in market cap than the world's most valuable companies like Apple and Microsoft. Along the way, crypto has created an ecosystem that employs millions of people around the world, many of whom come together to build cutting-edge solutions that look to resolve some of the key unaddressed problems of the times we live in. The existence of this ever-growing ecosystem has also made possible tremendous wealth generation opportunities, which millions of people from around the world are beginning to participate in.

In the modern era, every group of people plays its own role. Society is responsible for driving innovation – innovation that is usually enabled by technology. The role of the state is to govern and put in place regulations that can help promote the best innovations, whilst protecting the interests of the individual.

As we embarked upon this journey earlier this year, our vision was to be able to provide insights from civil society that could help all of us, including the state, to better understand the nuances involved in cutting-edge innovations like blockchain & cryptocurrency.

Our journey has been full of learning & discovery, and as you go through the rest of this document, our hope is that yours is too.

Takeaway notes from Webinar Series on ‘The Cryptocurrency and Regulation of Official Digital Currency Bill’

1. Blockchain, Bitcoin and Cryptocurrency

Kamal Gaur

Date: June 20, 2021

YouTube link: <https://youtu.be/SJGMKNCi2fE>

Defining Money, Currency and Value

- The functional definition of ‘money’ includes medium of exchange, unit of account, store of value or as a standard of deferred payment. To qualify as ‘money’, there are primarily seven characteristics – fungible, durable, portable, uniform, limited supply, acceptable and divisible.
- Currency, on the other side, refers to a system of “money” in common use, especially for people in a nation. The emphasis on especially, reflects the non-binding aspect of localized use. The segregation of commodity money and fiat money is based on multiple factors. While the commodity money derives its value from themselves as well as their functional use as medium of exchange, the fiat currency does not hold intrinsic value, instead it derives its value by being declared by government to be legal tender.
- Interestingly, the role of trust in the value of the currency assumes significance and forms the basis for money management in banking system. There is always some non-zero probability of misplaced trust leading to loss of money.
- **Till such time** a set of people mutually **agree to believe** in the value of a medium of exchange, **it will continue to hold value**. One of the interesting examples being that of Mizoram in after-math of demonetization, where people reverted to hand-written coupons till the supply of cash was restored.
- Post the GFC 2008, the Dodd-Frank Act (US) came into action to protect people from a similar financial crisis. Loss of trust in the banking system could potentially lead to Bank run, Bank panic or even a systemic banking crisis.

Bitcoin and its ‘overnight’ success

- “Every overnight success is 10 years in the making” – Tom Clancy. The Bitcoin whitepaper – “Bitcoin: A Peer-to-Peer Electronic Cash system” was published in 2008, post the GFC by Satoshi Nakamoto.
- Important characteristics of Bitcoin
 - Decentralized: It is not controlled by any single entity
 - Limited Supply: The code is designed to limit supply of bitcoins to 21 million
 - Open-source: The code is open-source and verifiable by anyone
- Bitcoin (BTC) as an alternative transfer route: With participating banks, card networks, exchanges charging 2-5% as transaction charges, Bitcoin undercuts this entire market by not linking the cost to the transaction amount. In simpler words, millions/billions of transfers could take place at just ten dollars’ worth of fees.
- Interest from institutions and governments across the world: Square, MicroStrategy, PayPal and Tesla are some of the players that have opened doors to accept BTC either in the form of reserve currency or medium of payment. In June 2021, El Salvador announced their acceptance of BTC as legal tender.
- Getting a chunk of the largest wealth transfer: Close to 70% of +\$60 trillion worth of assets is expected to be transferred from the Baby Boomer generation to Millennials in the next 10 years. BTC is expected to capture some piece of this big pie, with millennials showing interest in crypto assets.

Valuation of BTC – 4 major frameworks

- Tulip Mania [Discarded] – BTC’s rise is equivalent to Tulip Mania, offering no real competitive advantage to existing monetary good, prescribing long term target price of \$0
- Monetary Technology [Quite Possible] – BTC’s use as monetary technology, offering value to tech savvy and libertarian minded people, prescribing long term target price of \$10k- \$100k
- Monetary Good [Quite Possible] – BTC disrupting its closest monetary cousin, gold, due to its superior attributes, prescribing long term target price of \$300k - \$1 mn
- World’s Reserve Currency [Possible post the acceptance as Monetary Good]- Becoming the world’s favorite collateral asset, draining value out of bonds, real-estate, precious metals, and art, prescribing long term target price of +\$10 mn

Fundamentals of network - Blockchain, Nodes and Mining

- **Blockchain**

- Mathematical way of managing ledger of accounts without needing to trust a single 3rd party – trick lies in trusting the majority from a pool of 3rd parties
- Every few minutes, set of transactions is verified in a 'block' of information, and gets added to the end of 'chain' of 'blocks' that have been verified since the inception
- The new block not only contains the set of transactions, but also a link to the block that precedes this block. A chronological chain of transactions is created because of this exercise
- The ultimate objective is to not let anyone tamper with the records, leading to set up of '**nodes**' that are not controlled by a single party
 - Nodes are machines (servers/rigs) connected to the BTC network over the internet
 - Responsible for two things – keeping a copy of the ledger and updating the ledger at their end every 10 minutes
- Incentivizing nodes to keep the system running: Incentives must be paid in a fair, meritocratic manner, so that no one feels cheated, and everyone has some skin in the game, leading to the concept of '**Mining**'
 - Mining is combination of two things – tallying the transactions since the last block, and solving a mathematical puzzle
 - The key to get the reward (incentive) is to solve the puzzle first. The first node to get the correct answer gets to add the block to the network, and receive reward in two parts – freshly minted BTC (current rate – 6.25 BTC per block) and transaction fees of all the transactions present in the added block
 - This cycle repeats every 10 minutes (or so)
- The miners must solve a complex computational math problem, also called a **Proof of Work**. It is a series of guesses, one after another, but that require time and computational horsepower. This ensures the **difficulty** level of mining which in turns ensures robustness of the entire blockchain.
 - The amount of computational power required now to mine the blocks now requires specialized rigs, preferably in cooler countries like Iceland where the cost of cooling is not very high.

- **Block rewards** are the outcomes of the mining work done on the bitcoin networks. These rewards are in the form of blocks, and they get halved after the mining of every 210,000 blocks (roughly every 4 years).
 - Bitcoin started with a 50 BTC rewards, which currently stands at 6.25 BTC (May 2020)
 - Approximately 18.73 million bitcoins have been mined
- Once the network stops generating new bitcoins (in 2140), the only source of incentives will be transaction fees that accompany the transactions in each block
 - It is supposed that by that time the network will be big enough to ensure that the transaction fees will suffice to make the nodes profitable
- The block mining and transaction fee are the solution which incentivizes the growth and adoption of bitcoin by different stakeholders

Bitcoins in the real world

- Bitcoin was the base product which started the crypto revolution in the financial world. It is still the king as it has continued to be trustworthy, reliable and influence free.
- However various other cryptos have evolved from the learnings of bitcoins. Few of the notable examples are –
 - Ethereum – second most popular blockchain network which utilizes the concept of programmable language and is highly useful in uses such as smart contracts
 - Tether – A stable coin pegged to the USD
 - Binance Coin – Issued by the Binance crypto exchange
 - Dogecoin – In news since last year, Doge started as an internet “meme”. Used as tipping system for high quality content on Reddit and Twitter.
- Bitcoin is held in real world in an account, called as **wallet**, with a **private key** – to leverage the strengths of the cryptography
 - It works on the concept of unidirectional function of encrypting the messages by a public key and decrypting only by a means of private key
 - Therefore, the most important information while handling bitcoin is an account address and the private key
 - The safety of the private key must be ensured to access the bitcoin balance in the wallet
- This is where **cryptocurrency exchanges** enter.

- These exchanges takeover the cumbersome task involved in accessing a wallet address with the private key every time you want to access the same
- They maintain a single wallet with them which can be accessed with our email address and password
- However, this also makes them susceptible to cyber-attacks
- A point to note is that while the exchanges have suffered cyber-attacks, bitcoin as a network has never been hacked
- Therefore, to ensure safety of the bitcoins, it is suggested to remove the bitcoins from exchanges to our own wallets
- As the bitcoin is a decentralized network with no singular authority to overlook the working, the updates to the networks and protocols are taken by a decentralized group of software experts. These updates in the **forks** are rolled out regularly. If everybody agrees to the same it is called as a *soft* fork, while if there is no consensus, it is called as a *hard* fork – which can lead to split in chains (e.g., Bitcoin into Bitcoin and Bitcoin Cash, Ethereum into Ethereum and Ethereum Classic). In many instances, it is a nice free windfall of extra value.

Bitcoin in India

- With growing popularity of bitcoins in India, the question of legality of bitcoins and other cryptocurrencies in India arose. The government responded by refusing to recognize it as a legal tender and RBI issued a notification in 2018 to all its member banks to stop serving crypto exchanges in India. News articles indicated that the government was looking to take all measure to eliminate the use of the cryptocurrencies in financing illegitimate activities, or as part of the payment system.
- The crypto exchanges approached the Supreme Court of India against the RBI notification against the ground that it violated Indian Constitution on two grounds – Article 19(1) – Right to carry on any occupation, trade or business and Article 14 – Prohibiting discrimination and mandating equal protection of law to all.
- The Supreme Court directed the Union of India to come up with clear-cut policy statements regarding bitcoins and other cryptocurrencies
- On 4th March 2020, the Supreme Court overturned the RBI notification calling it unconstitutional

- As the exchanges started facing issues with banks again, the RBI clarified in May 2021 that as per the above stated SC ruling, the 2018 notification should no longer be referenced to by the banks
- All these news about banning created a lot of fear in the crypto community in India. This led to various exchanges shutting down, moving out of India, or adopting innovative models of P2P exchanges.
- This question about the legality of bitcoin is not exclusive to India and various other countries around the globe are dealing with it
 - However, very few countries have banned it legally
 - On the other hand, El Salvador has given BTC the status of legal tender
- Indian government introduced the draft cryptocurrency bill in 2019 which went to the extent of criminalizing the possession of bitcoins
 - The draft cryptocurrency bill, 2021 is not out in the public domain yet. However, it is apparent that the use of the term “currency” is causing a lot of friction between the crypto community and the government and regulatory bodies.

The How of Participation

- **Entering the crypto world**
 - Find a trusted crypto exchange which undertakes proper KYC. Lack of KYC only breeds distrust in the system.
 - The exchange that features the preferable cryptocurrencies should be given priority
 - Find a fiat mechanism that works for you. (e.g., NEFT in India)
 - Crypto holdings can be easily moved from one exchange to another
 - However, as already mentioned earlier, it is better if the crypto is not held in exchanges for long period of time. They should be moved to paper wallets or hardware wallets.
 - But is the point too high to enter now?
 - Since bitcoins can be bought in smaller fractions known as **satoshi**, the price of 1 unit of Bitcoin is not the correct attribute to focus on – the decision should be made on the expected percentage profit derived by an appreciation of the asset

- **Exiting the crypto world**

- You can either use the crypto for making payments in exchange of goods or services or liquidate them by selling them on crypto exchanges
- With regards to taxability, there is no formal guidance by Income Tax Department on the same
 - However, Chartered Accountants advise that active traders should show the income under “Income from other sources”
 - If not an active trader – it can be added to “short term/long term” gains based on timelines.
 - For calculating timeline FIFO (First In First Out) principles to be followed
 - Note: No clear definition of active trader is out there yet

Criticisms of Bitcoin

- **Bitcoins as a scam**

- Detractors call cryptocurrencies as a scam, one of the three kinds – get-rich-quick; Ponzi scheme; fraud initial coin offerings
 - The point to note however is that the same is happening with the cash or other digital money around the world and cryptocurrencies have played no role to accentuate the issue
 - It is dependent on individual diligence before investing in the market

- **Bitcoin is a bubble**

- They tend to call it as just another bubble, linking it to the infamous tulip bubble
- However, the following points need to be noted before calling it a bubble -
 - it has already recovered from three boom-and-bust cycles in less than a decade
 - it has solid technological fundamentals backing it
 - it is being widely adapted around the globe
- Therefore, it is wrong to dismiss Bitcoin as just a bubble

- **The greater fool theory**

- When people are selling a not so useful product to a greater fool at higher prices who values it more
- But the same accusations were hurled at the crude oil industry in the late 19th century

- However, as the history showed us, it was only a matter of time before we start utilizing the true potential of bitcoins and blockchains. Ethereum and its applications have started scratching the surface.
- **Funding of terror**
 - This is a false narrative as data shows that 0.34% of all the crypto is used in criminal activity as compared to a 6-times larger share of 2% when it comes to fiat currencies.
 - The non-traceable fiat currency is preferred for the purpose
- **High energy consumption**
 - The energy consumed by the Bitcoin network is primarily to ensure smooth functioning of the proof-of-work (PoW) consensus mechanism of the network
 - Bitcoin proponents believe this energy expenditure is a small price to pay for a **copyright-resistent digital bearer asset**, one that lets citizens of the world escape a broken centralized monetary system
 - This energy expenditure also lets Bitcoin become the **sixth largest base money** on Earth (excluding gold and silver), with only the U.S., China, Eurozone, Japan, and the U.K. ahead of it

At the end, we are seeing greater adoption of bitcoins across the spectrum of society. The financial institutions have also started adopting cryptocurrencies such as bitcoins as a class of asset investment. With its technological fundamentals and increasing adoption, bitcoin looks primed for future success.

2. Crypto in India: The legal perspective

Ashim Sood in conversation with Kamal Gaur

Date: June 26, 2021

YouTube link: <https://youtu.be/mmQEFVyakLM>

The history of the court case: IMAI vs RBI

- There were a set of hearings on the 2018 RBI circular that by April 2019 had reached a situation where the senior judge of the two-judge bench has requested RBI to "reconsider" its stance. Then, it so happened that the bench was reconstituted (it is a routine procedure) and the hearings restarted from scratch again from January 2020.
- Some points to note:
 - The legal system is typically **conservative**: it can engage more easily with something that has a 150-year-old history but can find it difficult to consider something which may be a 150-year-future technology. Given India's evolution in the field of technology, it can engage on par with the world.
 - Life of a case depends on the view of the judge. For example, in the case of civil liberties, judges tend to prioritise. In this case, hence **civil liberty** was argued as the reason for the court as it impacted the ability to do business and earn livelihood for the exchanges. It is not always easy to get the court to consider such a motion and, in this case too, this was a challenge.
 - This is only the second time in India's history that RBI's directive was overturned – so there was **only one precedence of a successful case against the RBI**. Over the last many decades that "monetary policy issues" are left by the courts to the expert regulators. On issues of "economic legislations", courts are little more lenient in upholding the regulations than on issues of fundamental rights. Explaining crypto to very senior learned judges, who are masters in law but not necessarily of technology, can be a challenge.
 - It is widely recognized that there are **serious and justified issues** (for example, money laundering, ransomware) with cryptocurrencies and hence all the varying perspectives must be considered when finally laying down the law (whether by the Parliament, regulator, or the courts). The law and principles that the Supreme Court lays down will last for many

years. If responsible officers of government and RBI say that something is a challenge, court cannot take that lightly.

Legal strategy

- A key aspect of the legal strategy was to go after the decision-making process and not just the decision of the RBI. The legal strategy rested on the idea: “regulate, don't prohibit”. What can be regulated, should not be banned.
- Argument 1: Only the Parliament can make policy on issues which have many aspects to consider. RBI has been founded on an Act and has its role defined: RBI banning any activity on its own is usurping the power of the Parliament.
 - An interesting hypothetical example of RBI taking on a stance that “alcohol is bad” and hence “banks will not do business with alcohol firms” was discussed. Such a stance which disallows access to banking system could spell an end of the business and the judges see this as akin to a ban. More important, this puts RBI in a position to decide social policy (on prohibition), which is not intended in the RBI Act.
 - The argument was known to be weak since cryptocurrency could be shown by RBI to be a monetary matter on which it has jurisdiction.
- Argument 2: Even if it was in its power, it needs to “satisfy” itself in an objective manner. The doctrine of satisfaction means that reasonable material must be brought to bear in the decision making to come to an objective conclusion, which any other reasonable person would also have come to.
 - A Right to Information (RTI) application had shown that RBI had constituted no committee. In a 2017 report of RBI, it had described cryptocurrency as a “fringe activity” even as it proceeded to ban it in 2018. In the court, the RBI could not prove the harm caused by cryptocurrency. This seemed to suggest that the “satisfaction” doctrine was, well, not satisfied.
- Argument 3: Liberty and fundamental rights. If the impact of the actions of a regulation is to stop someone from doing an activity, it must be a "reasonable restriction". A ban is not a "reasonable restriction". A ban is a hard to justify as “proportionality” of regulations is a hallowed doctrine. This doctrine requires three things: (1) a legitimate state interest for the regulation, (2) the measure must be narrowly tailored to reach that interest, and (3)

demonstration to the court that this measure is the only (or the least intrusive way) to reach the goal.

- From the SC Garg Committee minutes, it appeared that RBI (and CBDT) were clear that they wanted to ban cryptocurrency. The Department of Economic Affairs (DEA) of the Ministry of Finance (MOF), Government of India in its note had said that India is a growing powerhouse in information technology and to make it unavailable to people seems excessive. DEA recognised the problems and mentioned that the issues can be dealt in a legislative manner: a ban on owning and trading seemed excessive. This exchange showed that there was an alternative to a ban.
- Argument not taken: The argument that Parliament is considering a bill on cryptocurrencies was not taken. This was done so as not to take away the discussion that RBI had usurped power as part of its circular.

Issues to consider

- As a custodian of a monetary system, a new asset class may undermine monetary policy – this is a common concern that is expressed by central banker and bankers globally
- Is crypto becoming an asset class or a currency? If it is the former, possibly the jurisdiction will lie with a market regulator, like say SEBI in India.
- Philosophically, societies need to reach a social equilibrium on how they want to wall our internet. Different societies may choose differently – and this may not sit as easily in a technological world where access can be difficult to control. However, as has been done in some countries, law can be weaponised to create fear which can limit access.
- Parliament could reach a conclusion and frame a law that “bans” cryptocurrency. In such a case, it is possible that the law will have grandfathering and sunset clauses (which means that actions done before the law came into effect are “grandfathered” or some time is given, say 3-6 months, to reverse the earlier actions)
- A ban can take various shapes: (a) outright, (b) only as a currency, (c) as an asset class, (4) some other way. The judicial recourse to a legislative ban is to rely on the “proportionality” doctrine above
- Given the recent concerns (ransomware, energy usage, etc.), the judicial challenge to a ban or strict regulations may have a higher bar to meet

- Globally countries are now realizing that on issues of tech (privacy, anti-trust, currency, etc.) they will have to sink their teeth into the issues. This is a momentous moment for global internet laws as various countries set up their own equilibrium, either individually or collectively.

P.S.: An interesting point: The use of the word currency in cryptocurrency is used to simplify the description – this is a common practice in the tech world. Just because a mouse is named as such does not make it a rodent; nor does a cloud become a watering bubble.

3. Crypto in India: The Industry Perspective

Sumit Gupta in conversation with Kamal Gaur

Date: August 1, 2021

YouTube link: https://youtu.be/6l2_QM34n4c

Experiences from the crypto industry

- It has been exciting and challenging to run an exchange. Weekends is all about growing the team, talking to customers, going to colleges, etc. Full of challenges and ups and downs – in the journey of three years. RBI circular came in three days prior to starting their business – had to innovate overnight.
- Important for crypto businesses to stay very competitive, as one has to catch up with innovation happening not only within the country but around the world. The need is to not only solve business problems, but also legal, regulatory and compliance challenges that arise as the industry takes shape. The journey is full of learning and challenging, and you must really believe in crypto to keep yourself motivated: x-axis is survival and y-axis is innovation.
- Life is fast paced as innovations keep happening and there is always a lot more scope to learn and grow. Crypto market runs 24x7 – there is no breathing space for maintenance! You must plan for capacity at odd hours also as the triggers can be from quite different sources. The platform, since it is dealing in money, must be updated.
- Three important things happened:
 - Apr 6, 2018 – RBI prohibited banks to work with crypto industry – almost killed the industry.
 - Aug 15, 2018 – DCX Insta – peer-to-peer buying and selling
 - Mar 4, 2020 – Supreme Court quashed the RBI circular (IAMAI and industry)

Banks and RBI

- Banks were stuck in between where RBI has not given explicit instructions to go back to work with crypto industry while the crypto exchanges would quote the Supreme Court judgement. RBI has now left it to the individual banks to take care of various compliances: PMLA, etc.

- Banks can also see the business potential. The lack of clarity from RBI can be challenging sometimes. Similarly, payment gateways have seen the large value in the business model. With the new circular, the bank and PGs will figure out how to make the business work. Any bank that figures out the way to work closely can benefit significantly. As banks get comfortable with the risks and figure out the risk management, there could be significant competition between banks – for example, note the changes taking place in the USA where the large banks are now offering various crypto products to their customers.
- There are no laws in crypto as of now. And that is the challenge. Banks are moving slowly as they understand the dynamics. Crossing the bridge between fiat and crypto: even if there is one bridge, people will cross over. If more bridges can be built, the industry will be a lot more resilient.

Role of the ecosystem

- Fintech companies have a major role to play in the crypto industry. They already have the distribution, KYC ability, wallets, etc. – so they can quickly onboard customers. So, companies like PhonePe, Google Pay, PayTm, etc. can open the floodgates for customers to come on. These entities can then partner with exchanges (like DCX). Like digital gold being sold by some of these entities, crypto can be a new asset class for them to sell. The friction here is clarity on the regulations from the regulators. This could lead to many start-ups also coming up.

Talent

- It has been very difficult to find talent here in India. Many global companies are hiring remote talent in India. For young companies like DCX, this is a real challenge. One needs to consider the passion about the space. Anyone who is in the domain of technology (especially in areas like blockchain, etc.) is and will be in significant demand.

Regulations and KYC/AML

- Crypto is an unregulated space in India. There are no given guidelines on the KYC. Exchanges follow the standard KYC process like PAN, Aadhaar, liveness check, UID, bank account verification (to tie it in with the real person), trade only via banking system, etc. RBI has allowed video KYC – is it possible to do this on scale as say, 50,000 customers come in daily.

- CoinDCX uses on-chain monitoring tool to see the riskiness of the transactions like (a) are the coins coming from and going to the right wallets? (b) are the coins coming from a “stolen wallet”, (c) compliance with sanction jurisdictions, (d) looking into suspicious behaviours, etc. Many of these are the basic/standard aspects of risk management. These tools will need to integrate with the global exchanges: new tools are coming in like Crypto Travel Tool, etc. Many of these tools will also start to become more standard. The idea will be to limit any illicit activities on the exchanges.
- If the whole space must grow to mass adoption, the industry must work with regulators. If you put restrictions, it is not helpful. If someone is not doing a wrong need, what is the need for anonymity. The expectation is that the world regulators and companies will begin to reach some compromise.

Global

- Japan is very progressive with respect to both crypto and crypto exchanges. El Salvador has made bitcoin into a legal tender. Countries like the UK, Australia and Singapore are also moving ahead quickly on this.

How to think about regulation?

- Since regulations typically lag technology, it is useful to not throttle innovation by putting in regulations upfront. Like in the internet boom, many websites did not survive but the underlying technology worked out and some became very large. Anything which is written in stone (i.e., low fluidity in regulations) can create challenges as the technology and tools are evolving rapidly.
- “Crypto is not a currency/legal tender”, as per RBI. And hence laws like FEMA are not applicable. With countries like El Salvador making bitcoin legal tender, can it now be considered “foreign currency”? As of now there is not even a classification: is it a store of value or medium of exchange? Is it an asset? A global body or an independent body looking at the industry and the regulators concerns can help create a common ground.
- One way to think about bitcoin is that the customer is buying a “piece of code” – so this can be covered under Liberalized Remittance Scheme (LRS). Note that there is limited mining in India and so India is a demand-heavy market – if an import category can be created, then India-based premium on crypto will also start to come down.

Customer profile

- Age group is broadly 20-34 (80% of customers are here) – “millennials love it – they don’t like buying gold – you can buy bitcoins in minutes – it is a matter of pride”. South India with its engineers and tech background has a higher proportion.
- Most people are bitcoin investors. Many users just buy and hold (Hold On for Dear Life - HODL) and don’t necessarily trade actively. They have 3 million customers and roughly average investment size is USD 200 (Rs 15,000 or so). Traders are smaller in number but large in volumes; HODLers are large in numbers but show less turnover. CoinDCX wants to bring in a lot of HODLers.

How do you assess the strength of a crypto?

- Go by the fundamentals of the underlying token (crypto). As part of the listing process on the platform, CoinDCX has a bunch of filters which look at market cap, money movement, unique wallets, centralization, management of the token, etc. DYOR (Do Your Own Research) as there is significant information asymmetry. While you might not see the P&L and Balance Sheet in the case of crypto (as you would in the case of companies), you can still track some “fundamentals” like market cap, long history, underlying technology, etc.

Smart contracts

- There are some developments taking place in land registry, transport, etc. As of now, not seeing this in deployment as mass scale in India. The infrastructure deployment for blockchain will hopefully increase over the next few years. Just like you use internet today without knowing the TCP/IP protocols, etc. similarly, you should be able to use smart contracts without knowing much about blockchain.

4. Crypto in India: The Policy Perspective

Subhash Chandra Garg (IAS, Retd.) in conversation with Kamal Gaur and Akhilesh Tilotia

Date: August 21, 2021

YouTube link: <https://youtu.be/eVzFJoGlrTo>

- Currency is primarily a medium of payment and is used to settle trade and other transactions. Anything which is acceptable to both buyers and sellers for settling payments can become currency. Widespread use of common currencies started with gold and other valuable metals. Thereafter we moved from metallic coins to paper notes. Presently, the paper currency issued by central banks and guaranteed by the sovereigns are primarily used to settle transactions. Cryptocurrencies especially bitcoin burst into the scene as currency and promised to facilitating making of payments and settle transactions, especially globally, effectively and with less cost and friction.
- Money is a broader concept. It has two components: the cash you hold in the pocket and the deposits kept in banks. Both can be used to make payments. The moment bank accounts became digital, the payments by using the deposit in accounts became online/digital. Such transactions have massively increased by now everywhere in the world including India. Such transactions can be effected through multiple channels: for example, via UPI, IMPS, RTGS, NEFT, etc. More than 97% of payment and settlement transactions in India by value take place in digital form. Such digital transactions work well for domestic payments but do not effectively and efficiently solve the problem of international payments. This is because international payments involve two main problems: first, the complications in mechanics/process of transferring money and the value of the payment made at the two ends.
- Cryptocurrencies solve the first problem in transferring money internationally. Traditional methods involve multiple intermediaries (sending and receiving banks, intermediating international banks, messaging system like SWIFT, etc. across two different jurisdictions) and are therefore complex and costly. Cryptocurrencies because of its digital and shared ledger architecture simplify the payment transfer transaction. Cryptocurrencies, however, don't solve

the value problem. In fact, by their own volatile nature, the cryptocurrencies complicate payment transactions. That is the reason, very few people and organisations use cryptocurrencies as currencies for making payments globally. In India hardly anyone does. A very large majority of current cryptocurrencies supporters are using crypto for storage of value (investment purpose) and not for effecting currency transactions. So, cryptocurrencies may not be able solve the issue of costless, frictionless global payment transactions.

- The key feature of currencies (cryptocurrencies or paper currency) is keeping its value that is stable and to make it commonly accepted. Inflation is obverse of lack of maintenance of stable value of money. If money is stable, there is no inflation which builds confidence in the currency. Sovereigns and central banks maintain the stable value of currency/money by controlling supply in line with the growth of economy and its need for effecting transactions. As cryptocurrencies issuance by the private parties has no relation with the needs of economy, their values fluctuate depending upon what investors see as increase or decrease in its price. The problem of excessive volatility in private currencies (like Bitcoin which is not backed by a sovereign nation) can have wider implications on domestic economics.
- Time for digital currency has arrived. The alternative to private cryptocurrencies is official cryptocurrencies. In the context of cross border transfers, we will have to invent a common global currency which can be a global (digital) currency with sovereigns coming together, or part-currencies like Special Drawing Rights (SDRs) of the International Monetary Fund (IMF) whose value is based on a basket of currencies can also be developed as a common global currency and if converted into digital SDRs, these could serve as global digital currencies. There could be other alternatives like an official stable coin.

Cryptocurrency vs Crypto assets

- The financial world (assets, credit, etc) is quite fragile and fraud-prone. Therefore, there is a sensitivity in financial world about use of word like bank or currency to describe a financial institution or an asset can cause. That is the reason why even use of bank is not allowed to be used for any institution which is not a bank because of its susceptibility to misinformation. Hence, usage of words which are used to denote confidence (like “bank”) are severely regulated. Likewise, use of nomenclature like “currency” are misleading and cause rightful concern with the regulators and policy makers. It is therefore quite necessary that crypto

currencies are not described as currencies if these are not intended to be used as currencies or are not to be allowed to be used as currency.

- In the Indian context, from an empirical perspective, it is observed that cryptocurrencies have been used as an asset, and not as a currency. Value of an asset need not be same across everyone. In that sense, the value of assets also has a peculiar characteristic, which is that their value lies in the eye of the beholder or the holder. There are three types of crypto currencies/assets- a. which are designed/evolved primarily as currencies like bitcoin, b. which serve as valuable technology platform to provide services like Ethereum where you can use smart contracts to run financial services like decentralised finance or land registry system or whatever and third, which store digital assets or provide services.
- RBI is a regulator of currency and not of assets – most assets, especially the assets which can be traded in the form of securities like equity, bonds, derivatives etc, are in the domain of SEBI. The moment crypto is recognized and trades as an asset and not as a currency, RBI would probably not have any issue. Having said so, credible steps, legal like banning and others will need to be taken to ensure that cryptos are not used as a currencies/money.
- Acceptance and trading of cryptos as asset does not, however, mean that there would not be any public policy concerns left thereafter. People tend to blame the government in times of asset bubble bursts, for example, the tulip bubble or in the case of India, the plantation companies or Ponzi schemes of the mid-1990s. Even when recognised and allowed as an asset, governments will look to regulate cryptos appropriately so that bystanders, and uninformed people are not harmed. We will probably need appropriate legal framework to regulate crypto assets just as we manage derivatives as “securities” or regulation of trading in gold by converting gold assets to gold contracts to gold securities.

Private vs national digital currencies

- When the report by the committee chaired by Mr. Garg (Report of the Committee to propose specific actions to be taken in relation to Virtual Currencies) came out in Feb 2019, the situation was quite different than it is today. There were two big public policy concerns at that time. Cryptocurrencies were widely seen as currency, which was susceptible to misuse by money launderers and secondly, a lot of uninformed people were getting lured into investing in it motivated by the greed to make quick money.

- The report therefore made distinction between three aspects – private cryptocurrencies, blockchain technology and official digital currency. The report talked positively about the digital currency as the future evolution of currency will be from paper to digital. The report in fact recommended a framework for development of official digital currency. The report also spoke highly positively for encouraging development of blockchain technology and its use in financial services. It was only the private crypto currencies which were recommended to be completely banned and punishment provided to its holders, miners, and traders, like the law currency provides for use and holding of counterfeit currencies.
- As the world moves away from a unipolar power and some have also questioned the continued dominance of the USD as largely the sole reserve currency, there is need for working to develop an official global digital currency.
- All currencies have been legitimised by promulgating appropriate legislations. The Coinage Act (1906) regulated the use of metallic coins as currency and Paper Currency Act (1862, followed by several other legislations later) – conferred the legal tender status on bank notes issued by the central bank/government and created the structure of fiat currency in India. Time has now come for legislation for creating a national digital currency.
- The digital currency can be blockchain and cryptography-based currency or it could be in other digital forms like a demat currency. A decentralized model for cryptocurrency perhaps is not the most suited idea for a country like India as it is going to be very difficult and costly for small transactions. A credible and trusted counterparty like the government issuing a digital token/currency can obviate the need for a decentralized ledger where every transaction is recorded.
- Difference between digital payments, which are quite common today and digital currency-based payments will be that while the digital payments today take place via bank accounts. Once there is a digital currency, there will be no need of making payments via the bank accounts. Payments could be made directly from one's digital wallet to another's digital wallet. National digital currency may also require supplementary laws to outlaw the use of private cryptocurrencies as currencies.
- Issuing currency is a source of seigniorage for the central government (via the central bank). Hence, if the any private party issues currencies, it may have fiscal implications for both central bank and the government. This is one more reason why the governments and central banks would not allow private crypto or other digital currencies to work as currencies.

Internationalisation of Money

- India is 100% convertible when it comes to current account transactions and more than USD 500 bn of import and around USD 400 bn of export occurs in India's trade account annually. More monies flow in via services export and import and remittances. Hence, from the currency convertibility perspective, the fact that cryptocurrencies can move assets across borders seamlessly does not appear to be a material issue.
- Further, Liberalised Remittances Scheme (LRS) or Foreign Exchange Management Act (FEMA) comes into picture when you are trying to transfer funds outside India. There are clear guidelines and limits on the use to which LRS funds can be used, which are quite liberal. If cryptocurrencies are classified as assets (and not currencies) and investment in it becomes legally permissible, then LRS or FEMA should not be material issues to worry about.
- However, transfer of money, which is much easier domestically because of UPI, which has virtually integrated all bank accounts in one single database, is still difficult on international side on account of there being no integration of bank accounts and because of no-common reference conversion value. For starters, there is no integration of international accounts, no easy way to value the money being transferred, no common currency that can be used by all parties, and to top it all up, there are multiple players involved across every stage of the transfer. The current day impediment is in the way the system has been structured and how the international financial system of regulated players works. Hence it is likely that in the longer run, even cryptocurrencies will suffer from the impediments.
- To add to that, most current cryptocurrency supporters are using it as a store of value asset and not for transactions. As a result, even cryptocurrencies will not solve the issue plaguing the global transaction industry right now. So, until we resolve the problem of relative valuation of different countries' currencies, this issue is not going away.

Cryptocurrencies: An Asset which is No One's Liability

- A reference was made to a recent speech by a Deputy Governor of RBI on central bank digital currencies¹. The Dy Gov. had mentioned that "Private virtual currencies sit at substantial odds

¹ Central Bank Digital Currency - Is This the Future of Money
(Keynote address delivered by Shri T Rabi Sankar, Deputy Governor, Reserve Bank of India - Thursday, July 22, 2021
- at the webinar organised by the Vidhi Centre for Legal Policy, New Delhi)

to the historical concept of money. They are not commodities or claims on commodities as they have no intrinsic value; some claims that they are akin to gold clearly seem opportunistic. Usually, certainly for the most popular ones now, they do not represent any person's debt or liabilities. There is no issuer."

- It was noted that not all assets need to have corresponding liabilities, for example, someone's home may be his/her asset but maybe no one's liability. Hence, in the case of considering crypto as an asset, one need not be concerned that it is no one's liability. Even when gold was used as an asset, there was no corresponding liability on anyone: indeed, governments used to keep equivalent gold in reserves to prove that their currency was credible. The moment anything which does not have an intrinsic value (or is inherently value-less) starts to appreciate, it becomes an asset in the account of the holder. It was stated that the requirement of a corresponding liability only emerges when an asset starts being used as a currency. If cryptocurrencies start acting as currencies (instead of as assets, as is the case currently), only then does the point about the lack of a corresponding liability arise.
- The conversation also drew upon Keynes' observation that the United Kingdom should not revert to the gold standard at the pre-war (World War 1) rates as it would have dramatic depressionary implications. The idea was to highlight that rigidity in maintaining the value of the currency (as a store of value) can be at odds to its use as a medium of exchange (as the economy grows and so do the underlying transactions requiring more currency).
- Bitcoin touts its 21 million units limit as an important marker for maintaining its value in the long run. However, a currency constrained by a fixed supply (like Bitcoin) may have challenges in adapting to the needs of a growing economy.

Need of Governments to Support Innovations

- It is important to recognize that Governments lag technology, because governments work on precedence and not the future. Governments never innovate – innovation happens from society. It is understandable because government must take care of various perspectives and innovation in one field may have consequences somewhere else. However, governments have the responsibility to promote innovation, especially since they have the power to end up inhibiting or discouraging innovation.
- Indians in general have been good adapters rather than innovators. Today, the digital economy is moving fast with innovations such as fintech, e-commerce, etc. However, we may

have become overcautious on the financial innovations. On the innovation space, a lot more will happen on the private side – India has some vague inhibitions on data localization, regulating data, etc. and we are very conservative. India may lose and be a latecomer in this space after China, the US, and others.

- For example, today there is a major industry player who is supporting the e-commerce rules which will hurt the space – our policy makers are never alone in this sense – and usually our policies end up favouring one or more players against the rest of the industry players. There is, hence, a need to have the voice of respectable industry and thought leaders and it is important to get an independent set of people to take this up with the government.

Public Participation in Policy Formulation

- In India, there are some participative mechanisms around regulations. The Government has a conservative approach, and it treats policy decisions as a secret matter – it is rare that a draft law is published – one hears of it when cabinet has approved a law, and even at that stage, the draft law will not be available in the public domain, and it will only be available when it is introduced in the Parliament. Back in 2019, the SC Garg committee had the courage to put out the draft cryptocurrency bill in the public domain – unfortunately, that consultation led to a lot of online trolling.
- Overall, significant improvement is needed in the way these things are approached by the Government when it comes to public policy. There is ample opportunity for improvement, and people and industry also need to come forward along with neutral, independent, high-quality thinkers to help shape policy. It was also noted that despite the days of the License Raj being over, it was still rare to see industry leaders take public positions contrary to public policy decisions.

Approach of a Paternalistic State

- Indian state was not paternalistic before the British rule. It was only at the end of 20th century that we turned into a welfare state. And today the state is everywhere. However, the state needs to roll back the paternalistic mindset and the ultra-welfare state. Within the state, there is also this misplaced notion that using harsh punishment to create fear of God in minds of people can stop crime. There is enough evidence to show that it does not work, and as a society, we should move towards arriving at more proportional punishments.

Cryptocurrencies as a force for good

- In April-May 2021, there was a clarion call put out by Indians prominent in the cryptocurrency space to ask for donations to help India tide over the second wave of the COVID-19 pandemic that was hitting India hard. There seems to a shift in Indian policy to move away from being a receiver of welfare and aid, to a nation that is self-sufficient and capable in terms of taking care of itself – which has led to some restrictions have put in place on the FCRA side. It was also noted that this act of donation seemed to be driven by business objectives rather than only support – if the objective was support, it could have been sent over in fiat currencies recognized the government of India.

5. Crypto in India: The startup perspective

Sandeep Nailwal in conversation with Kamal Gaur

Date: October 16, 2021

YouTube link: <https://youtu.be/C74qio4-ehg>

Experiences from the crypto industry

- The industry is very rewarding but very stressful: this combines the stresses of industries like Finance and new-age Tech. The 24x7x365 nature of the business along with the market volatility make it very stressful. The regulatory changes and uncertainty do not help. In crypto start-ups that are “token” driven, the effective business model is a Day 0 public launch, which means that you are constantly under scrutiny by the market and the analysts, who are watching your every move on development as well as tokenomics, so overall things are pretty hectic.
- Polygon bootstrapped itself into existence in the deep-tech space without the help of VC money, which has now changed since there is enough funding available now. Polygon is part of the Top 20 projects globally in terms of market cap (~\$15.5 bn). Polygon is currently focusing strongly on the technology around “zero knowledge proofs” as the future of scaling – and has created a \$1 bn fund, and also acquired 2-3 startups in this space. Polygon is also partnering with E&Y to take Blockchain deployments back to the Enterprise space.
- Overall, at both the local and global level, crypto businesses are very synergistic, unless they are competing in the same exact niche space. Overall, fintechs and crypto start-ups are bound to come together and work closely with each other, although Sandeep is not able to comment on specificities for the India context, as many things are still under wraps for now.

Public adoption of blockchain and crypto

- One way that the blockchain space will enter the public sphere is through NFTs (non-fungible tokens) that are representations of unique assets on blockchain. Historically, the Indian market has not been very big on collectibles due to us being a low-trust society, but NFTs offer on-chain credibility in terms of authenticity which can be verified by anyone. So in that sense,

the popularity of NFTs can actually help them acting as trojan horses when it comes to helping mass adoption of blockchain-related content within society.

Regulatory trends around the world

- Looking at countries like Japan and South Korea which are now moving from being open and receptive to crypto to a space where a lot of KYC/AML regulations are being brought in, it is important to understand that Bitcoin has never been very anonymous. In fact, if one has to participate in money-laundering, etc, Bitcoin and other blockchains are the worst option to use, because all your transactions are forever saved publicly, and can be tracked down sooner or later – and it is nowhere as fingerprint-free as just using cash. The challenge has been that such negative use cases have captured the imagination of policy makers and since they don't have a strong in-depth understanding of how blockchain actually works, public policies around the world tend to get influenced by this limited understanding and the associated negative use cases that we see being discussed.

Policy approach for regulators

- In terms of public policy, it is important for regulators to accept the fact that the genie is now out of the bottle. There is no way that you can actually stop the industry because it just boils down to software code. There are governments which also try to restrict on-ramp/off-ramp flow of funds, but even that doesn't work well. There are countries like China which have tried to clamp down on the crypto space, but with very limited success. When policy makers get recommendations, they get inputs from consultants who are coming from an Enterprise perspective, so their inputs are also fairly superficial. One recommendation to policy makers is that they should engage with industry experts and consultants who are crypto-native – they could be young guys who are 30-35 years old – but the upside is that they will also be the closest to the crypto ecosystem.
- If we take the example of a crypto start-up, it is dealing with digital-only assets and a global audience. Entrepreneurs can literally pack their laptop and take a flight and go to a neighbouring country like Dubai or Singapore which are favourable jurisdictions and set up shop. Close to 50% of crypto entrepreneurs Sandeep knows are in the middle of moving out of India and the remaining are figuring out how to move out of India. As an entrepreneur, Sandeep wants to tell policy makers that unless they come out with really positive regulations,

there is no way that they will be able to stop the brain drain that will happen in the crypto space. In a connected world such as today, out of 200-odd different jurisdictions (countries) around the world, some country or the other will always offer safe haven for the industry, and we cannot ignore that reality. It would be great if India regulators could look at creating Special Crypto Zones (SCZs) akin to Special Economic Zones (SEZs) and set them up in locations like Vishakapatnam or Goa, where favourable terms are offered to crypto-entrepreneurs to not only avoid brain drain, but also help nurture the industry.

- Sandeep would also like to recommend to everyone watching this to read up more about DAOs (Decentralized Autonomous Organizations) and understand how it will be the future for how human being collaborate with each other. People should also research and understand more about the metaverse which offers sovereign ownership of assets.

Impact on economy

- In the crypto space, we are seeing developers get \$100K salaries as they start out, which is higher than what you see even with the IITs and IIMs. Even skillsets like Marketing are seeing recruitment happening at salary levels of \$200K. It is easy to see the wealth that has been generated in the crypto space as the overall space is now valued between \$1.5 to \$1.8 trillion. As a start-up owner, there is significant value to be created – and there is a high likelihood of 10+ unicorns emerging from the Indian crypto space (all in the non-exchange startup space). India can offer a captive talent pool for crypto startups from around the world which can offer global-level salaries, so the gap between what a typical Indian developer gets via the traditional ecosystem (\$50K) vs what the same skillset gets sitting in California (\$150K) will reduce. As a result, one could say that being receptive to the crypto space will melt away borders and lead to more wealth creation in terms of salaries on offer.

Using crypto as a force for good

- When it comes to COVID-19, it was a very trying time for Sandeep and his family as all of us contracted it sooner or later, and he also knew of many people for whom he was trying to arrange for oxygen cylinders, but who could not survive. Human beings usually have a default flight-or-fight response to most dangers, and in this situation, he realized that it was better to try and fight it best he could – which led him to take the initiative to ask for donations to help with the fight against COVID-19. He wanted to do whatever he could to help, and nobody was

doing it because people didn't know how to get the donations to come to India, but everyone was playing safe, which he did not want to do. He was willing to take full responsibility and offer transparency in bringing this money to India – he was not expecting a lot of traction, maybe \$1 mn or so, but within 2-3 days, they had \$10 mn, and then finally they raised about \$500 mn in all. In terms of bringing this money in, because of local regulations, there was no way to bring the crypto into India and convert it to India, so the way they set it up is by creating a foreign entity, which holds this crypto, which converts it into fiat currency outside India, and that is sent to India as INR through the traditional banking channels, resulting in no crypto touchpoint within India. They also found out that one cannot donate foreign funds to Indian NGOs as the NGOs need to have FCRA (Foreign Contribution Regulation Act) approval. They were lucky to have a very solid volunteer group that helped them forge relationships with a lot of FCRA-approved NGOs. They are now working closely with NGOs in India like UNICEF who have FCRA approval and their only requirement from these NGOs is to provide absolute transparency because this is an on-chain fund and everybody wants to know where every single penny is going, and the team publishes online spending reports every few weeks, and anybody can question them on any of these spends.

Closing comments

- Sandeep also took a moment to appreciate IIM Ahmedabad as their Crypto Relief team is working with the Entrepreneurship Cell to create a small fund with CIIE to jointly invest in health-tech startups which can create larger-scale impacts on the Indian healthcare infra.
- Sandeep does not think any ban is in the offing, especially since people like Elon Musk and large-scale hedge funds and global banks are opening up their crypto desks, and a ban will only adversely impact this space which is likely going to touch every individual's lives in the future in some form or another. Sandeep believes that the government should regulate the space by providing clarity on disclosures, identity, reporting, etc. From what he has seen, there has been no negative experience for crypto startups in terms of harassment by authorities or difficulty in doing business, so that's a positive situation, but he expects that the Government should now broadcast this so that the world knows that India is favourable towards the crypto space.

6. Cryptocurrency: Emerging Global Perspectives

Erik Feyen in conversation with Kamal Gaur

Date: October 22, 2021

(Presentation section)

Opportunity, challenges, and financial sector policy implications

- Our lives are becoming digital, and financial services and money has to follow. Digital and decentralized vehicles for payment, store of value, investment and financial services can be disruptive and offer new opportunities.
- But with any disruptive technology, there are risks which require careful monitoring and mitigation by both policy makers and industry – some examples include: (1) money laundering and illicit financing activity, (2) financial stability risks could emerge as the sector grows and becomes more interconnected with the traditional financial system, (3) consumer protection on frauds, Ponzi schemes, key-loss, etc. – this is compounded by financial illiteracy, (4) on the investor-side, some crypto projects have security-like features – and hence, such regulations of disclosure and transparency must be in place, (5) monetary sovereignty challenges – currency substitution for some countries (this is similar to dollarization).
- For crypto to safely become mainstream, the legal, regulatory, and supervisory framework needs to be “fit for purpose” at the international and national level. The key for policymakers is to harness new opportunities while proactively mitigating the risks – in this regard some national policy makers have embraced the industry, while others have sought to limit or ban it.

Current state of market and policy

- Crypto offers two innovations: decentralized networks and new synthetic digital assets. Trust does not scale with the number of participants in a network. So historically, trust has been delegated to a central authority. These authorities may give rise to challenges of single point of failure, issues with trust, inefficiencies, etc. The idea of new decentralized networks for transfer of value across space and time with cash-like finality in a low-trust environment without the need for an intermediary is revolutionary – that offers opportunities, but also

risks. Second, open protocols creates new synthetic digital assets with specific programmed characteristics which are enforced by the network – e.g., scarcity, verifiable/auditable/transparent, fungibility, governance, programmability, etc. There is rapid innovation and growth like Lightning Network (easier, faster transactions at lower costs), stablecoins, decentralized finance (DeFi), DAOs, non-fungible tokens, etc.

- Crypto growth shines a welcome spotlight on the weakness in the monetary and financial systems. (1) financial inclusion, cross-border payments, remittances can be slow, opaque, expensive, (2) trust in and efficiency of financial system is sometimes in question, and (3) macroeconomic issues (e.g., structurally very high inflation and/or currency depreciation).
- Crypto is increasingly regarded as an emerging asset class. (1) Retail: ~200mn people own it or use it now (2) Institutional: seeing nascent adoption from corporations, pension funds, etc. (3) Financial: Players and intermediaries are bringing instruments (e.g., derivatives, ETFs) for investments as well as for bridges (e.g., stablecoins) as they see staying power in the idea of crypto. However, crypto volumes are still low at ~0.2% of GDP on volume and ~0.02% of GDP on value.

Policy challenges

- The decentralized nature of crypto poses serious policy challenges – these include:
 - 1) Illicit activity: pseudonymous, instantaneous, borderless (can lead to serious money laundering)
 - 2) Consumer and investor protection
 - 3) Financial stability on exchanges, cyber risk, interconnectedness, exposure of financial institutions (there is no lender of last resort)
 - 4) Supervisory challenges: no intermediaries, data gaps (on linking wallets to beneficial owners), agency and mandates are not clear
 - 5) Monetary sovereignty: capital controls and currency substitution are key concerns
- Various international Standard Setting Bodies provide guidance, set minimum requirements, mitigate arbitrage (e.g., since crypto transcends national borders by design), and promote collaboration:
 - FATF: 2019 updated recommendation on virtual assets and service providers requires licence, register, reporting, authorities need to have general framework, etc.

- Financial Stability Board (FSB): closely monitoring the crypto asset development; cross-regulatory coordination
- Basel Committee on Banking Supervision (BCBS): prudential treatment by banks is being detailed via a consultative document (risk weights, stress testing, etc.)
- International Organization of Securities Commissions (IOSCO): security regulations coordination, investor protection, market integrity, price discovery, etc.
- Committee on Payments and Market Infrastructure: safety and efficiency of payment, clearing and settlement systems (also together with IOSCO).

(Discussion section)

- **Financial inclusion** – Some crypto enthusiasts promote crypto as a panacea for financial inclusion and banking the unbanked -- while there are interesting opportunities, that is not necessarily the case. Whether they talk of bitcoin or stablecoin, how financial inclusion comes about depends on whether the crypto-assets can be used in daily life. Take for example payments. Even for e-money, most transactions are “cash-in/cash-out” which requires an agent network, documentation for KYC, etc. and hence financial inclusion issue is back to square one. When it comes cross-border payments and remittances, there may be opportunities to reduce costs inefficiencies (but they do not yet operate scale).
- **Integration with existing fintech ecosystem** – Many fintechs operate on existing rails and offer very competitive services – so whether the fintech operators or the crypto-based operators win needs to be seen. The transfer via crypto (which can be faster) has a regulatory arbitrage as the crypto is not necessarily complying with all the regulatory requirements; also note that when crypto is transferred there are risks on the overall journey (counterparty risks, liquidity risks, exchange/value risks, etc.) It remains to be seen if crypto-based services can scale to the level of the fintechs that are currently servicing the traditional fiat-based global ecosystem.
- **Financial Action Task Force (FATF)** – Complex issue of FATF grey list and cryptos: FATF is concerned about convertible assets and their possibilities of money laundering or illicit activities. In 2018, there was a call from G20 to clarify the applicability of FATF recommendations for regulatory agencies and industry. There can be a race-to-the bottom on

regulatory arbitrage: need to create a sustainable basis which is not based on regulatory arbitrage.

- **Defining virtual assets** – The definition of a virtual asset is an interesting discussion. The intermediaries include those who either facilitate virtual-for-fiat or virtual-to-virtual or offer custody services or have any form of definitive control over users' assets – current regulatory perspectives now look at bringing VASPs (Virtual Asset Service Providers) under FATF's regulatory framework. However, note that peer-to-peer transfer is not covered in the FATF rules. Now, in the case of smart contracts and decentralized applications – there have been interesting questions to solve for. Technology, software code, and software developers are explicitly excluded under the FATF rules. In practice, it is possible to identify a group of people behind some decentralized application projects who de facto conduct VASP-like activities through the app, so this group should comply with the FATF rules. However, it is important to note that the rise of truly decentralized applications and Decentralized Autonomous Organizations (DAOs) might pose a credible challenge to regulators -- time will tell how this plays out.
- **Crypto vs cash** – Similarity between crypto and cash: (1) payment is near-immediate, (2) no intermediary involved, (3) irreversible. However, an important difference to note between cash and crypto: one cannot send a container of cash across the ocean instantaneously. When you transcend borders and can transfer very large value this creates both opportunities, but also risks (e.g., money laundering). Hence, there are good grounds to treat crypto differently from cash in some respects.
- **The future of crypto** – How the traditional financial ecosystem and the crypto ecosystem co-exist in the future remains the million-dollar question. There was a massive activity in 2018, followed by a crash, and then there was another spurt in 2021. In the latest spurt, the movement has been to beyond crypto enthusiasts to more institutional investors that are warming up (not only from an investment/exposure point of view but also around providing custodial, advisory services, banking, etc services). Banks were reluctant to engage with crypto (on balance sheet, for providing services to crypto intermediaries and stablecoin projects, etc.) – many factors including regulatory uncertainty and AML/CFT requirements played a role. With regulatory clarity increasing, banks are beginning to come in. A lot of what the future

holds depends on the legal and regulatory environment and whether the current momentum within the crypto ecosystem will sustain on an ongoing basis, leading to enough change to bring both ecosystems closer together. It was also discussed how the activity in the crypto space is primarily related to the market-facing elements, primarily driven by price action and the corresponding public attention that comes with it – however, the crypto space has been maturing in the background, as many of the relevant and successful projects currently were launched after the 2018 bull phase, but well before the 2021 bull run.

- **The opportunity upside for countries** – Open and interoperable networks can benefit from strong global network effects and may boost innovation as anyone can directly build on top of it. History has shown this for other open-source technologies such as TCP/IP, Linux, etc. There could be value that the countries find in different ways – whether in the space of payments and remittances, emerging store of value, broader innovation and competition in financial services, and as a source of revenue taxation.
- **Policy approach for regulators** – At the global scale, it is important to keep in mind that there will be regulatory oversight that is needed across countries. At the domestic scale, it is important for countries to hold public consultations and discussions with civil society to arrive at what is the right balance of regulations that would work well for the domestic ecosystem – i.e., whether those regulations need to be retained at the minimum level set by global regulations, or tightened up further (including limiting certain crypto-assets activities).

All views are personal and do not represent that of the employer/World Bank.

7. Crypto in India: The Taxation Perspective

Meyyappan Nagappan in conversation with Kamal Gaur

Date: October 28, 2021

YouTube Link: <https://youtu.be/jdGePq6D4HI>

- **Opening remarks** – Before we get into taxation, one needs to look at legality first, and then look at taxation. Crypto is not illegal in any sense or banned, and people are free to participate in the crypto economy.
- **Foreign Exchange Management Act (FEMA)** – When it comes to the FEMA, the idea behind it is to control the cross-border flow of money inside and outside of India to ensure that the price of the rupee doesn't devalue significantly, although very few countries in the world have exchange control regulations. FEMA not only regulates remittances (inwards and outwards) of fiat currencies, but it also applies restrictions on imports of goods or exports of services that could have cross-border impacts. Also, since countries like El Salvador have now recognized Bitcoin as legal tender, there are also open questions on whether cryptos like Bitcoin can be automatically considered as currency. Even the Supreme Court in its landmark ruling took a close look at it but did not conclusively rule crypto as currency (or not).
- **Regulatory uncertainty** – Irrespective of whether crypto is considered as a currency or an asset, the challenge for regulators around the world is that it's now an easy way for wealth to flow in or out of the country. The hesitancy around regulating crypto is understandable because tracking crypto is challenging but there are solutions to this predicament by strengthening KYC and working closely with exchanges to request for any specific information so crypto is not an unregulatable asset in that sense, and it is something that can be figured out since other countries are also solving for the same.
- **Liberalized Remittance Scheme (LRS)** – When we look at the LRS, it is actually one of the sub-regulations under FEMA, where Indian residents can remit up to USD 250,000 in a year. If one takes the view that crypto is an asset, then it would be challenging to say that the remittance can be done within that limit. Under LRS, one can take money out of the country,

but we have seen that the enforcement mechanism breaks down because once the money is in a bank account outside India, the authorized dealer (e.g., sending bank) might not be able to track the money or how it is used once the money is remitted to a foreign country.

- **Crypto locations** – When it comes to the question of whether purchasing crypto on a foreign exchange can be termed as money having left the country, another grey area is to arrive at a conclusive answer to what is the location of a crypto asset – does it reside with the exchange, on the wallet where it is owned, the server where it is hosted, or where the company that issued the token is located, or where the transaction actually happened. There is not much direct guidance around this but we believe there are learnings to be taken from the way Intellectual Property rights are managed – where the general rule of thumb is to say that the IP is located where the owner is located. So by that logic, it could be said that irrespective of which platform the crypto was purchased on, if the buyer is based out of India, then the crypto is located in India, and has not left the country at all. This also has implications on the Black Money Act and things like GST, where IGST/CGST/etc all depend on where the asset is located.
- **Foreign Contributions Regulation Act (FCRA)**
 - Talking about using crypto to raise funds through donations, the speed at which the funds were raised and pooled and remitted definitely show that there is a lot of potential when it comes to rapid deployment of capital that can be used in a transparent and reliable manner. Globally, there have been many cases of crypto being used for relief purposes towards social or charitable causes. There is great potential for the cash-strapped not-for-profit organizations to leverage technologies like blockchain and crypto to design and implement more efficient programs on the ground. The ability to accept donations through crypto will definitely help non-profits bring more transparency and efficiency to their causes. UNICEF has used crypto for quicker fund transfers, more transparent beneficiary cash transfers, or even pooling it in funds that invest in social enterprises. In India, the policy stance has been 'blockchain is good but crypto is bad'. From a non-profit perspective, there is great potential to leverage crypto as they are always cash-strapped and looking to leverage technology for having more efficient programs on the ground, so being able to accept crypto would help non-profits tremendously.

- The FCRA looks to regulate grants that come into India - so the recipient in India needs to be an FCRA-registered entity to be able to receive the funds from a cross-border donor. The issue of whether the crypto is a currency or an asset is not so much a concern because everything is treated as a donation from a foreign source, However, there are income tax requirements on non-profits are that 85% of funds received need to be spent towards charitable purposes in the same year. In the case of crypto, some of the challenges could be around the valuation of this crypto, or whether that crypto needs to be liquidated within the year, or the legal treatment afforded to crypto within that country, as some countries treat crypto as securities whereas non-profits are expected to hold their funds in low-risk investments. Non-profits are usually risk-averse on the regulatory front, and the FCRA is a bit draconian and regulators have taken tough stances in the past, so it does not seem that the environment is currently conducive enough for this to become a big use case, although globally there is enough evidence to show that crypto can and has been used as a force for good by non-profit organizations.
- **Taxation (Asset Class)** – The treatment of crypto is still evolving all over the world. We are seeing many countries around the world are categorizing it as an asset – and it seems like the best way forward. With the variety in the types of crypto assets around us with smart contracts and governance rights, it is difficult to say that crypto can be called an asset all the time. However, treating some cryptos as securities, will mean the introduction of a completely different set of regulations, like Securities Contract Regulation Act (SCRA) that come to bear when it comes to securities. So it is seen that crypto is mostly being treated as an asset, unless there is a strong reason to say otherwise. That also fits what we are seeing in the Indian market as most of the cryptos we have advised on fit in the construct of an asset.
- **Taxation (Treatment)**
 - We have seen that in the US, crypto donations to a charity are accorded tax benefits, which bring about parity with other forms of donation. On the face of it, there are no visible policy reasons to justify either a reduced taxation approach (lower on crypto vs others) or a higher taxation approach (higher on crypto vs others). Generally, governments impose a higher tax only on usage of goods or services that are harmful to society or have a direct impact on public health (e.g., sin tax for tobacco or alcohol products).

- All investors make investments to make gains, and the profits on investor gains should ideally not be significantly impacted by the tax regime. Hence, there is a strong need to provide clarity on taxation-related aspects to ensure that people are not unnecessarily exposed to taxation issues.
- **Taxation (Investor vs Trader)**
 - It is important to note that the crypto markets behave differently from traditional equity markets. Many investors look to temporarily convert their crypto into stablecoin-pegged currencies (like USD Tether) to protect their asset from being devalued due to the high volatility in the crypto markets. However, most investors do not recognize that this conversion between crypto and stablecoins also ends up effectively increasing the number of trades executed, which could lead to some regulators labelling these investors as traders. Hence it is important to try and arrive at the intent of the investor, and whether the intent behind is to actively trade as a form of profession/occupation or merely to behave as investors who are being risk-averse and financially-savvy.
 - There was also a discussion on whether other parameters can be looked at to distinguish between investors and traders – whether someone is paying full price for a crypto asset can be termed an investor vs someone purchasing it on margin is termed a trader, or whether someone who purchases/sells cryptos directly is an investor vs someone trading in instruments like futures and options is termed as a trader. It seems that the laws in their current form might not allow for these nuances to play a role – generally, we have seen that the intent of most participants is to genuinely be an investor and not a trader – just that the number of transactions make it seem that the participants are traders, not investors.
 - This underlines the need and scope for clarifications on how to differentiate traders vs investors, as well as revisit the parameters that are currently used in the equity space as they don't lend themselves equally well to the crypto space.
- **Taxation (Provisions for losses)** – When it comes to tax provisions for losses, it comes down to whether we treat crypto as capital assets or as inventory of goods. If there is a capital loss, one does get the carry-forward provision for capital losses under the catch-all provisions that cover any other type of capital asset as long as it qualifies as a capital asset (e.g., 3-year rule). If it is treated as an inventory, and if one is categorized as a trader, then you will need to do a valuation at the end of the year which will mean that any change in valuation at the end of

the year will need to be treated accordingly – a devaluation in market prices of holdings will be filed as a capital loss, and an appreciation in market prices of holdings will be filed as a capital gain. However, if one is categorized as an investor, then tax liability is not linked to appreciation/devaluation of your holdings at the end of the year – an investor is only triggering tax liability at the time of liquidation, which would be taxable as profit in case of a profit, or carried forward as a loss in case of a loss.

- **Taxation (Provisions for profits)**

- Historically, we have seen some of the provisions around reinvestment gains are akin to incentives towards encouraging investments in certain activities (e.g., property), and in that context, capital gains from any source (including crypto) should qualify. That said, there do not seem to be pressing reasons to incentivize crypto with lower taxes - the intent might not be to penalize crypto but merely to recover the full effect of the applicable taxes.
- We have hit the stage where personal income tax collections are second only to GST collections, and higher than corporate income tax collections. It would seem that usually during a bull run, the enforcement side seeks out information from exchanges on individuals who have traded heavily so as to recover taxes. However, this approach is not sustainable in the long run, as this is a ticking bomb and there are investors who don't fully understand regulatory requirements or taxes. Also, it's become a volume game with youngsters in Tier 2/3 cities playing with small amounts (as low as INR 50-100) which essentially means you're exposing a huge part of the population to these regulatory uncertainties and risks. There is a strong need for a regulatory regime and clear policy because unclear policy doesn't help anyone in the long run – in the past, we have seen that the lack of a coherent policy means you're leaving people to the mercy of individual tax officers to take their own view, and then those issues go up through the system through the courts with conflicting rulings through multiple tribunals, and even if those are resolved much later, there is this huge invisible cost to everyone in the system that is completely avoidable with the help of clear regulations. In a complex topic like this with multiple views, it is appropriate for policy makers to step in and nip this in the bud before it becomes a problem that affects the lives of a lot of people.

- **Taxation (Taxable events)** – Taxable event is the occurrence of something that triggers a tax payment. For example, in the case of GST, the act of providing a service is the taxable

event; for income tax, it is the receipt of income that is the taxable event. In the case of crypto, it will depend on the circumstances (trader/investor, business income/capital gains, etc.)

When it comes to calculating the tax liability, in the case of an asset, the taxable event is on the date of sale, but in the case of trading income, it is linked to the valuation of your inventory at the end of the year. When it comes to valuation, there is no standardized value for a given crypto on a given date as the valuation can differ not only across geographies, but also across exchanges, because there is no standardized and agreed international guidance on the appropriate valuation methodology. Practical compliance problems include: (1) which exchange to refer to, (2) whether or not to take weighted average, (3) what prices to take from the selected exchange, (4) whether to use FIFO/LIFO, etc. All of these could lead to widely different profit calculations. Taxation in India is in INR – and hence all the calculations need to be based on the INR-equivalent value of the transactions. The currently prevailing idea is to provide tax submissions in “good faith”. There might also be a market opportunity for crypto exchanges to step in and fill this need for clear and accurate crypto taxation calculations by providing it as an automated service to their customers.

- **Taxation (Compliance overheads)**

- There also seems to be enough to make a case that taxation should only look at crypto-to-fiat or fiat-to-crypto transactions, whilst excluding crypto-to-crypto transactions. This will have benefits not only in terms of simplifying the tax regime but also help cast the tax net wider on a larger base population. This will also tremendously ease the compliance burden on millions of people, whom we have seen are coming from all parts and strata of society now that the crypto markets have gone wider and deeper across the country in the last few years. Without this simplification, there is otherwise this significant risk that no one is aware of, which can always be triggered by any income tax officer anytime during a 7-year window.
- Even for people who get income tax notices and who are trying to show statement of accounts for the last 4 years, there are many different ways to calculate tax liability and show ‘good faith’ – and without a simplification of the tax regime, even taxpayers who genuinely want to pay taxes will struggle.

- **Taxation (Disclosures)** – When it comes to disclosures, you are expected to report any income, not so much whether you categorize crypto as an asset or an inventory. The last set of

notices that went out to retail investors around disclosures happened in 2018 around the bull run, however, there doesn't seem to be any new disclosures required around crypto right now. The Companies Act now, however, requires companies to disclose crypto holdings.

- **Goods and Services Tax (GST)**

- On the GST side, there seem to be many gaps as they are primarily designed for traditional business models, not for crypto. If crypto is money, then GST doesn't apply. However, there are still other gaps when it comes to GST and crypto. If we take the case of staking, where users stake crypto with an entity to earn crypto tokens, if the crypto is issued by a decentralized autonomous organization (DAO), can that even be considered as supply as the definition of supply under GST requires that an identifiable supplier exists (a DAO doesn't fit that requirement) – also are you getting consideration (payment) for staking the crypto or are you getting a supply of that crypto? Also, in the same example of staking, if you go through an exchange, there is a concept of a 'pure agent' who is someone who receives services on your behalf (e.g., paying a travel platform a service fee where GST is applicable only on the commission (e.g., transaction fee), and completely delinked from the size of the rest of the underlying transaction (e.g., flight cost). In all this, there is no clarity on whether the user is the one providing the service by providing the staking liquidity to the blockchain, or whether the blockchain is providing the service by providing fresh tokens to the user, or whether the intermediary exchange is an agent or not, and so on.
- All these clarifications are important, because unlike in the case of income tax where the liability is on the net gain, in the case of GST, the implications are potentially on the value of the entire crypto. In case of the GST news on crypto exchanges, the view taken by taxation firms and crypto exchanges is that the business model is an exchange model and not an over-the-counter (OTC) model where the trade is actually between two individuals and the exchange is only charging commission. We have seen similar issues arise in the case of GST in the context of gaming or gambling platforms, but it seems that the current industry practice of treating only the commissions as applicable for GST seems to be getting accepted by the GST department without contest.

- **Taxation (Depreciation)** – It does not seem that there could be a case to be made that crypto is treated as a depreciable asset as it's not a revenue-generating asset or an asset linked to a certain limited shelf life.

- **Taxation (Input Tax Credits)** – On the topic of whether input tax credit could be claimed in ‘reverse charge’, it was discussed that one pays reverse charge only in a few limited circumstances – one of which is around the import of goods into India. In that case, one needs to pay GST at the point in time when customs is payable on the goods – but in the case of digital goods, there is no customs payable, so effectively there is no GST payable on the import of digital goods.
- **Regulatory clarity (PIL)** – A question was asked whether a writ petition or a public interest litigation (PIL) could force the government to expeditiously provide regulatory clarity. In terms of legality, it is the Parliament’s prerogative to make laws and to go to court, one must show that a fundamental right has been infringed and all other remedies have been exhausted (e.g., government has not been responsive, or harm to society has occurred). Even in that case, the court will give time to the government to consider and respond to the issue, but not necessarily direct the Government to come out with a law. Sometimes nuances might get missed even at the highest court level – so this may be a hit or miss, and may not be the best strategy to get clarity.

IIMA Public Policy ASIG Presentation to Parliamentary Standing Committee on Finance

Presentation to the Standing Committee on Finance

Crypto: Opportunities and Challenges - **A policy perspective**

15 Nov 2021, New Delhi

IIM Ahmedabad Public Policy Alumni Special Interest Group (IIMA PP ASIG)

Kamal Gaur, IIM Ahmedabad, PGP 2004; blockchain expert

Akhilesh Tilotia, IIM Ahmedabad, PGP 2004; alumni coordinator, IIMA PP ASIG

IIMA Public Policy Alumni Special Interest Group

- ASIGs are platforms that bring together students, alumni, and faculty and leverage the collective intellectual resources engaged in specific areas such as consulting, marketing, healthcare, education, technology, analytics, public policy, entrepreneurial ecosystem etc to bear on the most challenging issues of our times
- ASIG platform allows students, faculty, and alumni to collaborate with each other intimately and to engage with industry and practitioners in a multifaceted manner
- PP ASIG is a group of alumni and faculty of the institute with expertise and interest in the fields of public policy and India's development. Backed by the institute, the PP ASIG aims to foster collaboration among the IIMA community (faculty, students and alumni) and the wider world of public policy practitioners to contribute to India's inclusive development agenda
- Views shared here are on behalf of the IIMA Public Policy Alumni Special Interest Group, and may not represent the views of IIM Ahmedabad

Backdrop

- The webinar series on cryptocurrency (held from Jun to Oct 2021) was designed to bring the ideas, insights, and expertise of practitioners and experts to IIMA and wider community
- Consisted of 7 sessions with leading experts & industry participants
 - Blockchain, Bitcoin and Cryptocurrency: Kamal Gaur <https://youtu.be/SJGMKNCizfE>
 - The **Legal** Perspective: Ashim Sood <https://youtu.be/mmQEFVvakLM>
 - The **Industry** Perspective: Sumit Gupta, CoinDCX https://youtu.be/6l2_QM34n4c
 - The **Policy** Perspective: SC Garg, IAS, Retd. <https://youtu.be/eVzFJoGlrTo>
 - The **Startup** Perspective: Sandeep Nailwal, Polygon <https://youtu.be/C74qio4-ehg>
 - **Taxation**: Meyyappan Nagappan, Nishit Desai Associates <https://youtu.be/idGePa6D4HI>
- This presentation represents IIMA PP ASIG's synthesized thoughts based on the collective inputs received from these discussions and also conversations with other local and global experts

3

Context on blockchain and crypto

Blockchain provides key innovations -

- Decentralized networks that transfer value
 - Removes the need for a trusted third-party
 - Leverages cryptography to build world-class security
- Cryptocurrencies
 - Automatically generated by the network as an in-house currency
 - Distributed amongst network participants as incentive to -
 - Add value to the network to solve for a particular use case
 - Remove dependency on external participants to provide rewards to participants
 - Protect and safeguard the network against malicious actors
- Cryptocurrencies are used as an incentive mechanism by public blockchains to avoid meeting fate of 'tragedy of the commons' (as a reward for those who contribute to the robustness of the network, as opposed to utilizing the benefits at the expense of others)

4

Crypto: CBDC/non-CBDC, Asset/Currency

- RBI's Central Bank Digital Currency (CBDC)
 - RBI CBDC should be pegged 1:1 to INR making it India's stablecoin
 - RBI will act as the trusted counterparty and retain purview as 'sole custodian of national currency'
 - RBI's CBDC will possibly be designated as "legal tender"
- Cryptocurrencies should be regulated, not banned
 - Regulation helps highlight and address issues or gaps, banning will push it underground
 - Non-CBDC cryptocurrencies (like Bitcoin, Ethereum, others) need not be given the status of "legal tender"
 - This engagement with key industry stakeholders a good positive step - we detail our thoughts in the coming slides
- Cryptocurrency is a misnomer - crypto is an asset, not a currency
 - Proof is in the pudding - people are treating it as an investment, not a medium of exchange
 - Crypto being treated as an asset (and not a currency) will mean no regulatory overlaps with FEMA or LRS regulations
 - Guidance to be taken from how Intellectual Property is managed - rule of thumb is that IP is said to reside with owner, and hence, said to reside in the location where the owner is present (and not on the location of the server or the exchange)

5

Regulate to nurture and protect

- Regulation of industry
 - All industry exchanges to be required to register themselves with a regulator
 - SEBI could be a natural regulator if crypto is treated as an asset, not currency
 - Crypto offerings to adhere to strict disclosure and risk guidelines if raising public funds from Indian investors through Initial Coin Offerings (ICOs)
 - Prospectus, like in the case of IPO, needs to be released with clear identification of corporate/individuals who are offering the coins
 - Intermediaries involved in enabling financial investments in crypto should clearly communicate to investors that -
 - cryptocurrencies are highly volatile
 - all investments are subject to market risks (price, liquidity, exchange, cyber, etc.)
 - adequate due diligence should be performed before investing - there may be a complete loss of capital
- Regulation of investments
 - KYC/AML policies for all clients to be followed by crypto exchanges
 - All fiat inflow/outflow to happen via formal banking channels (bank accounts, not cash)
- Investor protection
 - Create a market with disclosure and risk-mitigation techniques
 - Caveat emptor for investors: any gains or losses will be their own

6

Perspectives on crypto taxation

- Treat crypto as a **capital asset** (leverage existing tax structures to simplify rollout of guidance)
- **No concessionary tax slabs** compared to other asset classes
- Treat **longer holding periods** (say 3-year holdings) more favourably from a tax-rate perspective than shorter ones (helps inculcate responsible investor behaviour since crypto markets are volatile)
- Account for differences in **behaviour that are unique to crypto markets** (parameters that distinguish investor vs trader in equity markets need to be modified for crypto - e.g. replace 'number of trades' as qualifying criteria for trader with 'usage of margin' and/or 'buying of crypto futures & options')
- Increase voluntary tax compliance by **removing complexity and reducing compliance overheads** on citizens (to start with, tax liabilities to be calculated only on 'fiat-to-crypto' and 'crypto-to-fiat' transactions, not on 'crypto-to-crypto')
- Tax assessee in India (above a certain threshold) may be required to **disclose all their crypto holdings** (balances) as part of annual tax filings
- Tax liability will be incurred by the assessee **irrespective of the jurisdiction** in which crypto trades are made
- Existing rules should be clarified that **GST** is applicable only on the 'brokerage + transaction fees' charged by exchanges (similar to equity broking platforms)

7

Upside Opportunities (1 of 2)

- CBDCs
 - Can help in nation's vision of 'banking the unbanked' (could work in places where banks are unable to service, due to infra or profitability challenges)
 - Can help with universal basic income (UBI) pilots (ensuring benefits directly accrue to individuals using Aadhaar, minimizing risk of abuse by middlemen)
 - Decentralized Finance can be leveraged for use cases like lending (e.g. small business owners, entrepreneurs)
- Smart contracts
 - Tremendous scope to make data-driven processes more efficient by reducing human effort, shortening time requirements, and removing human error from the equation
 - Explore and encourage use of smart contracts to streamline processes within Government & industry (public construction bids, land registry, healthcare, insurance, transport and tax filings)
 - One way could be that funds for public construction projects (e.g. roads) are loaded in smart contracts, which then automatically trigger either on the basis of completion of project milestones (as validated by an agreed-upon auditor) or even on the basis of feedback received by public through digital voting (if >80% are happy with quality)
- Non-Fungible Tokens (NFTs)
 - Ongoing Govt efforts to leverage blockchain technology for property management should take a close look at features possible with NFT technology (e.g., code that allows for future royalty payments to NFT creators at time of resale can be repurposed as replacements for property registration charges that are automatically paid to the Government at every future resale)

8

Upside Opportunities (2 of 2)

- Economy and job creation
 - Crypto industry thrives on cross-border collaboration - great opportunity for India's young talented workforce to engage on cutting-edge work from around the world
 - Open & collaborative culture provides for global-level salaries (reducing the wage gap that persists in traditional offshoring ecosystem due to foreign exchange rates and purchasing power parities)
- Crypto as a force for good
 - Crypto can help not-for-profit organizations leverage technology to raise and deploy funds more efficiently
 - Leveraging public blockchain solutions like crypto to raise funds globally will improve speed of fund-raising, transparency of where funds were spent, and auditability of trail of money - thereby increasing **impact** as well as **accountability**
 - FCRA regulations can be revisited in light of these technological advantages (including accounting for disclosures of international donors)
- Countries
 - History has shown that open and interoperable networks (e.g., TCP/IP, Linux, etc) have benefited from strong global network effects and have boosted innovation since anyone can directly build on these networks
 - Countries could find value in myriad ways – international payments and remittances, emerging stores of value, broader and deeper competition in financial services, and as a source of revenue taxation

9

Recap - Building the ecosystem for industry

- Regulatory approach
 - Proactively transition from 'wait and watch' mode to 'comprehensive regulatory mode'
 - Support market development and fintech innovation, while ensuring consumer protection and systemic risk management
 - Build a common taxonomy with industry
- Have clear compliance requirements, like
 - Registration with regulator
 - Adoption of KYC/AML norms
 - Availability only through formal banking channels
 - Auto-generated tax declarations for users
- Encourage risk management mechanisms at exchanges, like
 - Investor education
 - Insurance against fraud/theft
 - Minimum capital requirements (e.g. for margin trading)
 - Analytics to flag suspicious transactions
- Investor protections
 - Implement strict disclosure & risk guidelines for projects raising funds from Indian investors via ICO route (prospectus, etc)
 - Clear communication to investors about volatility and other risks (caveat emptor)

10

IIMA Public Policy ASIG Perspectives

1. Crypto and sovereign

Currency as the domain of the sovereign

We believe that the term ‘cryptocurrency’ is a misnomer. We prefer the term “crypto assets” or the more neutral, “crypto tokens”.

Trusting the lack of centralization

For human beings, the default intuitive way of building trust has been centered around individuals - one first trusts an individual (based on evidence/emotion), and then assigns trustworthiness to things associated with said individual.

The spirit of blockchain is to move away from putting trust in any single third party. It does so through:

- Putting trust in the collective (thousands of nodes) instead of the individual (single third party)
- Putting trust in code (machines) instead of people (individuals)
- Putting trust in transparency (open source) instead of closed source (proprietary)

Even though the first blockchain/crypto project of Bitcoin was designed to be as decentralized as possible, we have seen crypto projects across the spectrum between centralization and decentralization. Even though centralization increases the risk of a rogue third party taking decisions, centralization of a network helps improve speed (due to fewer nodes needed to validate transactions and add blocks to the network).

Every crypto project does have a team that launches it - even in the case of Bitcoin, although the world does not know the identity of Satoshi Nakamoto, there is still a set of developers currently involved in Bitcoin development. As we explore and understand the vision and use case behind different crypto projects, and follow their journey, it requires due diligence to trust crypto projects.

The trust challenge for the investor has hence moved from trusting a centralized party (like a central bank) to knowing which team behind which crypto token is trustworthy.

2. Technology and potential

Understanding crypto to define it

Blockchain provides a key innovation: it creates a decentralized network that can attest credibility by removing the need for a trusted third-party and leveraging cryptography to build world-class security. As a corollary, it also creates crypto tokens.

Crypto tokens are automatically generated by the network as an "in-house currency". These tokens are distributed amongst network participants as an incentive to add value to the network to solve for a particular use case and to protect and safeguard the network against malicious actors. This internal token removes dependency on external participants to provide rewards to participants. Crypto is hence used as an incentive mechanism by public blockchains to avoid meeting the fate of 'tragedy of the commons': there is now a reward for those who contribute to the robustness of the network, as opposed to only utilizing the benefits at the expense of others.

(As an aside, please note that the word "public" in the crypto ecosystem does not mean "owned or operated by the government"; it means that the item under discussion is open source and available for the common public to examine and work with.)

It is pertinent to note that the value of the crypto token is inherently linked to the blockchain on which it originates.

With this background, one can now try to answer whether crypto is an asset, commodity, security, or currency. It is clear that crypto tokens are currency only in the context of their network - they are not synonymous with 'fiat currencies' that have strong real-world usage as mediums of exchange used for goods and services. Crypto tokens themselves are not securities (however, 'smart contracts' based on some crypto technologies may be looked upon as having security-type features). Since crypto is digital, it is difficult to make a case of it being a commodity (which typically has a physical manifestation).

This leaves crypto as an asset: a store of value that might appreciate or depreciate in price based on changes in its inherent or ascribed value.

Blockchain value beyond crypto

We list down a few thoughts on six themes:

- Central Bank Digital Currencies (CBDCs)
 - Can help in nation's vision of 'banking the unbanked' by working in places where banks are unable to service, due to infra or profitability challenges
 - Can help with universal basic income (UBI) pilots ensuring benefits directly accrue to individuals using Aadhaar, minimizing risk of abuse by middlemen
 - Decentralized Finance can be leveraged for use cases like lending, e.g. small business owners, entrepreneurs
- Smart contracts
 - Tremendous scope to make data-driven processes more efficient by reducing human effort, shortening time requirements, and removing human error from the equation
 - Explore and encourage use of smart contracts to streamline processes within Government and industry (public construction bids, land registry, healthcare, insurance, transport and tax filings)
 - One way could be that funds for public construction projects (e.g., roads) are loaded in smart contracts, which then automatically trigger either based on completion of project milestones (as validated by an agreed-upon auditor) or even on the basis of feedback received by public through digital voting (say, if >80% are happy with quality)
- Non-Fungible Tokens (NFTs)
 - Ongoing Govt efforts to leverage blockchain technology for property management should take a close look at features possible with NFT technology (e.g., code that allows for future royalty payments to NFT creators at time of resale can be repurposed as replacements for property registration charges that are automatically paid to the Government at every future resale)
- Economy and job creation
 - Crypto industry thrives on cross-border collaboration – it offers great opportunity

for India's young talented workforce to engage on cutting-edge work from around the world

- Open and collaborative culture provides for global-level salaries reducing wage gaps that persist in traditional offshoring ecosystem due to foreign exchange rates and purchasing power parity
- Crypto as a force for good
 - Crypto can help not-for-profit organizations leverage technology to raise and deploy funds
 - Leveraging public blockchain solutions like crypto to raise funds globally will improve speed of fund-raising, transparency of where funds were spent, and auditability of trail of money - thereby increasing impact as well as accountability
 - FCRA regulations may need to be revisited in light of these technological advantages (including accounting for disclosures of international donors)
- Countries
 - History has shown that open and interoperable networks (e.g., TCP/IP, Linux, etc) have benefited from strong global network effects and have boosted innovation since anyone can directly build on these networks
 - Countries could find value in myriad ways – international payments and remittances, emerging stores of value, broader and deeper competition in financial services, and as a source of revenue taxation

3. Negatives and challenges of crypto

Downsides or negatives - Blockchain

- As a technology, blockchain solves for some key shortcomings of large networks, like the need for centralization, and the dependency on a trusted third party. With blockchain, one can build a decentralized network that runs without depending on any single trusted third party.
- However, blockchain does not solve for the problems of speed or efficiency. Blockchain is not as fast (measured in transactions per second) or efficient (multiple nodes effectively doing the

same work till one of them is randomly rewarded with the right to add a block, thereby earning a reward) as a traditional centralized network can be.

Downsides or negatives - Crypto

- The popularity of crypto, and the following proliferation of crypto offerings (coins/tokens/etc) on the internet, have led to a few challenges that could be termed as downsides or negatives.
- Investor protection - since anyone with access to the internet and basic coding skills can launch a crypto offering, there is an extremely low bar (if any) when it comes to quality control. This development has the possibility (and as we have seen, the reality) of exposing the most cunning of financial criminals to the most gullible of financial victims.
- Market volatility - Crypto markets are global and run 24x7. There is hardly, if any, price action that is localized to a country/region level. There are innumerable things that could affect crypto prices, including but not limited to, the following -
 - Commentary on crypto by politicians, governments, central banks, market players (banks, institutions)
 - Developments in the financial ecosystem (capital and other markets, interest rates, quantitative easing, etc.)
 - Geo-political developments that affect public sentiment
- Energy efficiency - Mining of crypto and verification of transactions on the public blockchain consumes enormous amounts of energy. Some countries, like China, have banned mining and crypto partly on account of concerns on energy usage (and the consequent impact on climate given that coal is still a large part of the energy generated in China).

Role of crypto in in illicit activity

- Studies have shown that the share of crypto transactions connected to money laundering and illicit activity is estimated to be 0.34%, which compares with a 6-times higher estimate of 2% arrived at for fiat currency transactions. ^{1and2}
- The challenge is not so much the financing of terror or other illicit activities (which can happen in various other currencies or in gold, etc.) but the ability to trace back the money trail between the terror perpetrator, instigator, and financier. The questions from a public policy point are (a) the ability to trace the ultimate beneficial ownership (UBO) of the tokens and (b) ability to trace the money trail.

¹ - <https://www.forbes.com/sites/haileylennon/2021/01/19/the-false-narrative-of-bitcoins-role-in-illicit-activity/>

² - <https://go.chainalysis.com/rs/503-FAP-074/images/Chainalysis-Crypto-Crime-2021.pdf>

Crypto traceability

- It may not be easily possible to identify the individual behind a pseudonymous wallet address, nor is it possible to identify who is transacting with whom on-chain. As a direct result of said pseudonymity, we have seen hackers often demand payment in crypto due to its near-instant speed of global transfer and perceived lack of traceability.
- However, over time, law enforcement agencies as well as forensic analytics firms have become better at tracking down the flow of illicit funds (like ransomware) on the blockchain. In the recent past, some efforts by law enforcement agencies have succeeded in identifying the culprits behind crimes like money laundering and illicit activity. The way this is usually achieved is by tracking the funds from the source of the crime (e.g., a wallet where the ransom was paid) across multiple hops on the blockchain till the time it is sent to a crypto exchange to be liquidated into fiat. This usually requires the cooperation of the crypto exchanges involved to help identify individuals involved in those transfers, on the operating assumption that the crypto exchange in question is KYC/AML compliant.

- The recent ransomware attacks in the USA [Colonial Pipeline] showcases the ability of the FBI to trace the money trail and eventually also find the UBO for at least a part of the tokens. International collaboration - both on intelligence and technology - will be required in tracking terror or illicit funding.
- Contrary to popular opinion, a publicly visible ledger that allows anyone to track the flow of funds is far from an ideal solution for criminals. Cash continues to remain the most preferred form of currency used by people who are looking to cover their footprints.

Tracking crypto can be broadly described as having two elements -

- A. tracking the transaction (identify units moving from wallet X to Y) and
- B. identifying the participants in the transaction (name/identity of sender/receiver)

Due to the public ledger design of blockchain crypto networks, it is trivial for anyone with access to the internet to track step A.

However, due to the pseudonymous and account-based design of blockchain networks, none of the security organizations in the world (including NATGRID) can guarantee that they will be able to complete step B for every transaction.

- There are analytics firms (like Chainalysis and Coinfirm) that try to maintain information about each wallet address on the blockchain, labeling them as 'exchange' or 'high risk' or 'stolen funds' or 'suspicious source' or the like - but no individual firm has been able to completely map the blockchain thus far.
- It also seems highly unlikely because the total number of wallet addresses for only the Bitcoin blockchain can go up to a number of 2^{160} , which is an unimaginably large number.

How secure is crypto?

Cryptocurrencies, that are built on blockchain technology, are secure due to their distributed decentralized structure as well as their use of cryptography. The distributed, decentralized nature prevents malicious actors from tampering with the ledger (thereby avoiding the double-spend

problem) whereas the cryptographical foundations prevent reverse-engineering of the private key from the wallet address (thereby preventing unlawful access to users' funds).

However, on the road to mass adoption, crypto exchanges play a key role in which they abstract away the technical foundational layer of the blockchain by providing a user experience/user interface (UX/UI) layer for users to access crypto markets. As they do this, they also take collective charge of users' crypto funds on the exchange, so as to allow for ease of deposits/withdrawals. Media reports that refer to 'Bitcoin hack' or 'Bitcoin scam' are usually referring to a compromise of private keys that safeguard funds inside Bitcoin wallets - this could happen via an exchange or directly with an end user.

Bitcoin, and the underlying blockchain technology founded on cryptography, have not been hacked. However, since the interface of the customers (traders/investors) is via the exchange, robust risk management guidelines for exchanges is critical. This needs to be around various dimensions of cyber security, credit and liquidity risk management, KYC/PMLA risks, counterparty and clearance/settlement risks, quality of tokens floated, etc. Exchanges and other intermediaries (advisors) may be the weakest link between consumers and crypto tokens.

4. Regulation

Pros and cons of banning

Providing a time window for people to liquidate crypto holdings will not work well in the real world. For every trade to happen, one requires a buyer and a seller. If everyone in Indian crypto exchanges tries to sell, markets may crash since there may be limited buyers. Based on the severity of the ban, crypto prices in the Indian market might (or might not) approach zero.

We can take guidance from the history of what transpired when the RBI circular banning member banks from providing services to crypto exchanges was released in April 2018. Anecdotal evidence suggests that on the day of the announcement, crypto in the Indian markets were trading at price points 35% lower than global prices prevailing at the time. It remains to be seen how much the Indian crypto markets would crash if a ban on investor participation is brought

about, instead of the 2018 circular that had only asked regulated banks to stop servicing crypto exchanges.

Having said so, we note that the number of investors and the quantum of wealth associated with crypto in India is likely not as large as made out in recent media articles and advertisements.

The importance of regulation

Regulation is a win-win-win outcome for all law-abiding participants involved. Regulation allows for the following -

- Structure, guardrails, and redressal mechanisms for industry players
- Awareness, guidance and education for investors
- Oversight, control, and revenue taxation for governments

If the government were to not regulate crypto, then the usage of crypto would move underground, with no standardized set of rules, and zero recourse to law in cases of investor protection, etc. Without regulation, industry players, investors and government would all be poorer for the same.

- Regulation of industry
 - All industry exchanges to be required to register themselves with a regulator
 - SEBI could be a natural regulator if crypto is treated as an asset, not currency
 - Crypto offerings to adhere to strict disclosure and risk guidelines if raising public funds from Indian investors through Initial Coin Offerings (ICOs)
 - Prospectus, like in the case of IPO, needs to be released with clear identification of corporate/individuals who are offering the coins
 - Intermediaries involved in enabling financial investments in crypto should clearly communicate to investors that -
 - cryptocurrencies are highly volatile
 - all investments are subject to market risks (price, liquidity, exchange, cyber, etc.)
 - adequate due diligence should be performed before investing - there may

be a complete loss of capital

- Regulation of investments
 - Know your customer (KYC)/Anti-money laundering (AML) policies for all clients to be followed by crypto exchanges
 - All fiat inflow/outflow to happen via formal banking channels (bank accounts, not cash)
- Investor protection
 - Create a market with disclosure and risk-mitigation techniques
 - Caveat emptor for investors: any gains or losses will be their own

5. Bull run and investor protection

The current bull run is likely due to multiple factors like -

- Heightened awareness about crypto
 - In all human-driven markets (including crypto), upward price action creates higher awareness that creates greed that leads to an increase in upward price action - it's a virtuous cycle that ends up snowballing into a bull run. Sooner or later, the sentiment does turn negative, and the same virtuous cycle becomes a vicious cycle as downward price action creates higher awareness that creates fear that leads to an increase in downward price action, leading to a bear market run.
- Increase in circulating capital within the world
 - Global quantitative easing (which has been ongoing since the Global Financial Crisis of 2008 and has been heightened recently to arrest slowdown from COVID-19) has led to a glut of money supply which has led to concerns around inflation. This smart money is likely moving to assets traditionally considered as hedges against inflation, like gold and now, bitcoin.
- Maturing of the crypto ecosystem since the 2017 bull run
 - The previous bull run was more centered around Bitcoin and other Layer 1 blockchains that are primarily focused on on-chain transactions on a public ledger.

Since then, a lot of progress has happened on Layer 2 solutions for off-chain transactions (like Lightning Network) that solve for the slow speed and high transaction costs that are prevalent in Layer 1 solutions.

- Apart from Layer 2 solutions, a lot of progress is also being made around smart contracts, which are pieces of code that do not require human intervention for execution. As smart contracts have become more prevalent, different use cases require third-party info to be brought into the blockchain network (via oracles) for decision-making of the smart contracts.
- There have also been other solutions that are looking to solve for interoperability between chains, which would mean the ability to swap one crypto for another (e.g. BTC for ETH) without having to go through a centralized platform like an exchange.
- Based on this, we believe that the crypto ecosystem has matured since 2017 and currently contains many projects looking to build elegant solutions for complex problems.

Protecting interests of small investors

Blockchain and crypto has democratized access to global projects for retail investors, and access to retail investors for global projects. As is the nature of this arrangement, this can expose the most vulnerable of investors anywhere to the savviest of financial criminals everywhere.

Protecting the interests of small investors needs to be taken up as a joint responsibility by the industry and the State. A five-pronged strategy can be considered -

1. Inform - Help people understand that crypto offerings are not regulated by governments around the world, and are fraught with market risks (including fraud and outright loss of capital)
2. Forewarn - Advise people that crypto markets are extremely volatile and require an extremely high-risk appetite (one which can cause some investments to lose up to 100% value)

3. Educate - This is a must for every participant in the crypto markets. Help people understand how the crypto markets work (bull and bear cycles), and what are the best practices as investors and traders.
4. Protect from self-harm: Have a definition of an “accredited investor” which can mean some combination of (1) minimum investment corpus, (2) net worth, (3) income criteria, etc.
5. Positive regulations: Provide guidance and clarity on tax liability calculation, regularization of income, etc to encourage people to bring their profits back the traditional financial ecosystem

Unfortunately, there is no easy way around this problem - the most effective reliable long-term way to protect small investors in today’s age where they can invest money in global offerings at the click of a button is to raise the overall financial-savviness of investors.

There is no way to ensure Ponzi schemes do not take place in crypto - the best we can do is focus on investor education and train them to conduct due diligence before making investment decisions, with the disclaimer of ‘caveat emptor’.

6. Taxation

Assessing crypto adoption

Unlike equity broking platforms, which have to register their clients with a CDSL or NSDL, crypto exchanges are currently not required to register their customers with a centralized depository. As a result, there is no easy way to know how many unique investors have registered with crypto exchanges. The numbers being mentioned in the media likely range from simple summation of all investors across exchanges (without accounting for duplication) to extrapolated and unverified figures (based on growth rates in investor base).

The industry has mentioned that it has a self-regulating organization (SRO) in place. The industry should be encouraged to follow the disclosure guidelines of well-established SROs like Association of Mutual Funds of India (AMFI) when it comes to disclosures: number of folios,

gross and net inflows and outflows, aging of accounts, balances in accounts, frequency of trading, etc. Many countries, especially South Korea, seem to have better disclosure standards - the industry should come together to voluntarily adopt these. If the industry is unable or unwilling to do this in say the next six months, it may be required to bring in regulatory directions on these aspects.

Tax on mined cryptos

There are multiple ways to account for mined crypto from a taxation point of view -

- For those who are doing mining as a key business activity, it can be treated as such. Net-off from revenue the cost of goods manufactured. In this case, the miner would declare the running costs of mining equipment as the Cost, and the value of the crypto being mined as Revenue, and then account for the difference in both as the profit/loss, and accordingly file taxes.
- Others who are engaging in mining but not as a key business activity, may be allowed to show it as Revenue/Income, and declare it as Income from Other Sources as part of their tax filings.

It is also possible that miners are not declaring mined crypto as part of their Earnings/Income, and not paying any taxes on the same. Tax compliance needs to start with disclosure of crypto interests.

Identifying Indian taxpayers

Participants on crypto blockchain networks are identified only with the help of wallet addresses, which are alpha-numeric strings of text, like “1BvBMSEYstWetqTFn5Au4m4GFg7xJaNVN2”. Every wallet address is unique, and can be generated trivially by any user at any time, without the need for KYC. Hence, wallet addresses act as pseudonyms, and there is no way to identify the actual user behind the wallet. The blockchain also does not capture IP addresses of the participants who transact on the network, and hence, there is no way to cluster certain wallets as having been accessed from certain geographical parts of the world. In summary, there is no straightforward way to identify an Indian citizen or taxpayer in the crypto ecosystem, unless the individual is required to voluntarily to reveal himself/herself.

Approach towards taxation

Our recommendations on taxation are as follows:

- Treat crypto as a capital asset with tax slabs at par compared to other asset classes
- Treat longer holding periods (say 3-year holdings) more favorably from a tax-rate perspective than shorter ones (helps inculcate responsible investor behavior since crypto markets are volatile)
- Account for differences in behavior that are unique to crypto markets
 - parameters that distinguish investor versus trader in equity markets need to be modified for crypto - e.g. replace ‘number of trades’ as qualifying criteria for trader with ‘usage of margin’ and/or ‘buying of crypto futures and options’
- Increase voluntary tax compliance by reducing compliance overheads on citizens
 - to start with, tax liabilities to be calculated only on ‘fiat-to-crypto’ and ‘crypto-to-fiat’ transactions, not on ‘crypto-to-crypto’
- Tax assesseees in India (above a certain threshold) may be required to disclose all their crypto holdings (balances) as part of annual tax filings
- Tax liability will be incurred by a resident assessee irrespective of the jurisdiction in which crypto trades are made
- Existing rules should be clarified that GST is applicable only on the ‘brokerage + transaction fees’ charged by exchanges (similar to equity broking platforms)

7. The India perspective

Assessment of crypto holdings

At the outset, it is important to note that there is no known and accurate way to identify crypto holdings within the borders of nation states.

However, we are sharing some statistics as published by Chainalysis, a blockchain analytics firm, along with their disclaimer about country-level estimations -

“Please note that due to the decentralized nature of cryptocurrency, it is difficult, if not impossible to know the true amount of cryptocurrency usage in a country. We estimate

country-level on chain activity based on the distribution of cryptocurrency services' web traffic among visitors to a service's website. Our methodology allows us to produce estimates that have never been approached before.”

Cryptocurrency use in India (11 Sep 2020)

In terms of **crypto adoption index**, which looks at parameters like on-chain value received, on-chain number of deposits, on-chain retail value and P2P trade volume, India ranks **11th out of 154** countries globally (exhibit A) and **2nd out of 28** countries in Central and Southern Asia and Oceania (exhibit B)

In terms of **on-chain volume received**, India ranks **13th out of 154** countries globally (exhibit C) and **2nd out of 28** countries in Central and Southern Asia and Oceania (exhibit D), with **\$6.6 bn** worth of value received

In terms of **P2P trading volume**, India ranks **8th out of 154** countries globally (exhibit E) and **1st out of 28** countries in Central and Southern Asia and Oceania (exhibit F), with **\$104 mn** of P2P volume

In terms of illicit value sent and received on-chain (exhibit G), stats derive \$112 mn illicit value received by India and \$53 mn illicit value sent by India

The 2021 Geography of Cryptocurrency Report (October 2021)

In terms of global **Crypto Adoption Index**, Chainalysis shows India at rank **#2** (exhibit H), and is derived from -

- rank **#2** - On-chain value received
- rank **#3** - On-chain retail value received
- rank **#72** - P2P exchange trade volume

In terms of **Decentralized Finance**, Chainalysis shows India at rank **#6** (exhibit I), and is derived from -

- rank **#1** - On-chain DeFi value received

- rank **#120** - On-chain number of DeFi deposits
- rank **#1** - On-chain retail DeFi value received

In terms of **cryptocurrency value received** (Jul 2020 to Jun 2021) (exhibit J), Chainalysis shows India around the **\$90 bn** mark with

- **\$50 bn** coming from DeFi, and
- **\$40 bn** coming from centralized services

In terms of **share of cryptocurrency activity by currency type** for India (exhibit K),

- ETH/wETH seems to be **~50%**
- BTC seems to be **~20%**
- stablecoins at **~10%** and
- altcoins around **~5%**

In terms of **share of cryptocurrency value sent by transaction size** for India (Jul 2020 to Jun 2021) (exhibit L), Chainalysis shows -

- Small retail (<\$1K) at **~1%**
- Large retail (\$1K-\$10K) at **~4%**
- Professional (\$10K-\$1M) at **~32%**
- Institutional (\$1M-\$10M) at **~20%** and
- Large institutional (>\$10M) at **~43%**

Bitcoin mining

The website <https://bitnodes.io/> publishes a daily distribution of Bitcoin nodes by Country (exhibit M).

As of 19 Nov 2021, out of **12702** nodes around the world, India appears at **rank #46** with **10 nodes**, although it is important to note that the largest set of nodes actually falls under the unidentified cluster of **'n/a'** with **5319** nodes (~42% of network size).

Also, the share of nodes is not necessarily equal to the share of bitcoin mined by those nodes, as the latter depends on the competitiveness of said nodes (in terms of computing power) and collaboration with other nodes (participation as part of a mining pool).

However, if we were to presume that only 10 nodes are based out of India, and they earn a share of mined bitcoins commensurate with their share of nodes on the network, then simple math would say that these **10** Indian nodes are collectively mining **~0.70 BTC** per day (as of 2021) (= $10 \text{ nodes} / 12702 \text{ nodes} * 6.25 \text{ BTC per block} * 6 \text{ blocks per hour} * 24 \text{ hours per day}$).

Outward remittances

Within the world of crypto, there is no concept of geography, and there are no wallets that are designated as domestic or foreign wallets.

As we look to estimate size of money remitted outside India, there are three important points to be noted:

1. It is likely that a majority of the initial seed crypto units (primary sale, so to speak) in possession of Indians might have come through one of three sources -
 - a. Supplied by Indian miners
 - b. Bought off international exchanges
 - c. Received through airdrops (free crypto provided at launch by some projects to trigger usage)
2. However, since Indian exchanges only allow Indian participants on their platforms, all secondary / tertiary / later sales that have happened in India, which has also led to a significant rise in the value of crypto, have been amongst Indian participants who are exchanging INR fiat with each other for crypto
3. Markets are priced at the margin, which means that the increase in value of dormant holdings because of upward price action, does not automatically imply that said collective increase in value of holdings has now 'left the country'.

Keeping these aspects in mind, it would seem that arriving at any reasonable estimate of money being remitted out of India would be extremely difficult, if not impossible.

If an Indian user creates a fresh wallet address off an internet website and sends his crypto there, it cannot be said that the crypto has left the country, as the Indian user is still in full control of the crypto. An analogy that might help is that of email - if an Indian user logs on to Gmail.com and sends an email, could it be said that the user has sent his message outside India (just because he/she logged on to an international email service provider)?

The only association that one can make is to state that the label of ‘domestic’ vs ‘foreign’ depends on the geographical origin of the wallet owner. This is in line with our perspective that we should be guided by laws around Intellectual Property - where the rule is that IP resides with the owner, and hence, by association, in the location where the owner resides.

8. The global perspective

Regulating the unregulated

It is true that there are multiple corners of the internet that are unregulated and outside of the reach of governments. However, we believe that the internet does not, cannot and should not operate in a vacuum away from real human society. There is a case to be made regulations are needed wherever the virtual world interfaces with the real world, and there is the possibility of things going awry and impacting real-world people in adverse ways. Case in point - actions that are crimes in the real world also remain crimes if committed in the virtual world.

Crypto has an investor protection angle that requires governments to be conscious. Given the ease of investing in cryptos, this has become very popular very quickly. We have highlighted above that the current bull run is operating in a virtuous cycle which could also end up in a vicious cycle. This requires the government to be aware of the social and economic consequences. It is for governments to ensure that the channelization of money in crypto happens to regulated players (exchanges, etc.) and the investors who are participating in these markets are informed, educated and aware of the risks of the market they are investing in.

Challenge to established order

Countries that take a narrow and shorter-term view of crypto might perceive it as a threat to their sovereignty over fiat currency and a challenge to the established order of the nation state.

However, history has shown that open and interoperable networks (e.g., TCP/IP, Linux, etc) have benefited from strong global network effects and have boosted innovation since anyone can directly build on these networks. Countries could find value in myriad ways – international payments and remittances, emerging stores of value, broader and deeper competition in financial services, and as a source of revenue taxation.

Note that the fact that the crypto is being measured in terms of market-cap suggests that this is more an asset than a currency. When a stock of currency is measured, it is with reference to the underlying economy (GDP, etc.) Market-cap suggests that participants also look at crypto as an asset (like gold, equity, etc.) To the extent, crypto remains as an asset/token, it does not threaten the established order of monetary seigniorage of the sovereign.

Having said so, the role of public policy may not necessarily be to promote stability of the established order - reevaluation of the established order is an important part of social and political evolution of civilizations.

Appendix

India ranks 11th on our global crypto adoption index (out of 154 countries)

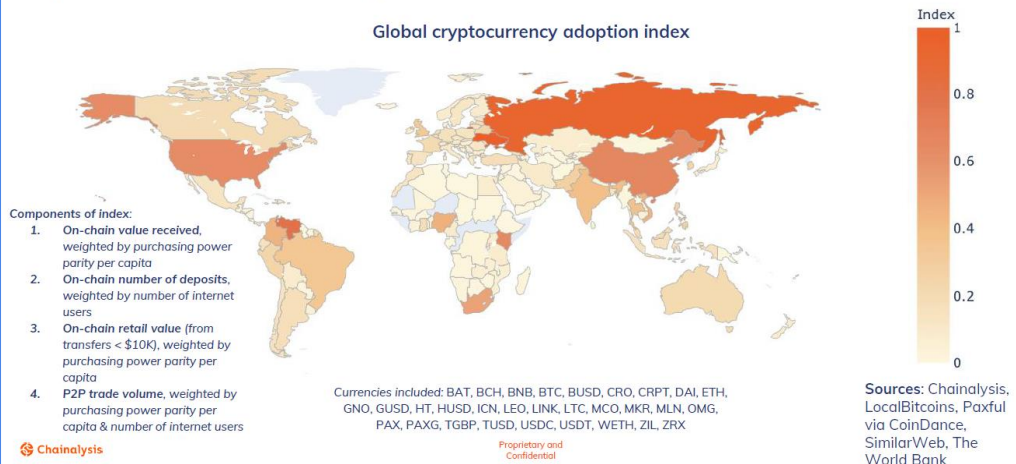


Exhibit A -

India ranks 2nd on our region-specific crypto adoption index (out of 28 countries)

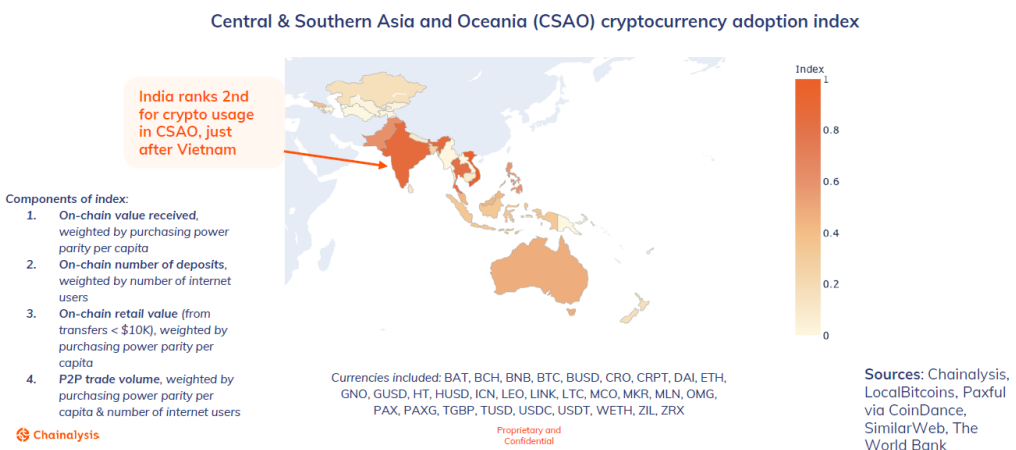
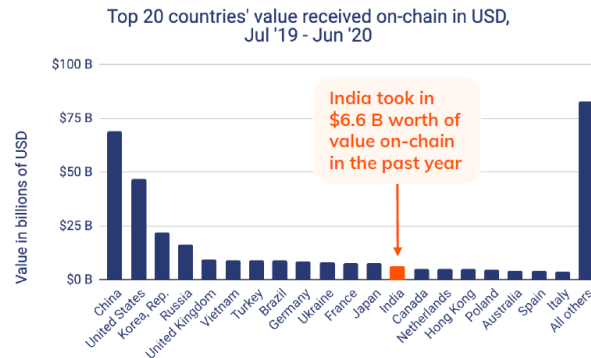


Exhibit B -

India ranks 13th in terms of on-chain volume received globally (out of 154 countries)



Sources:
Chainalysis,
SimilarWeb

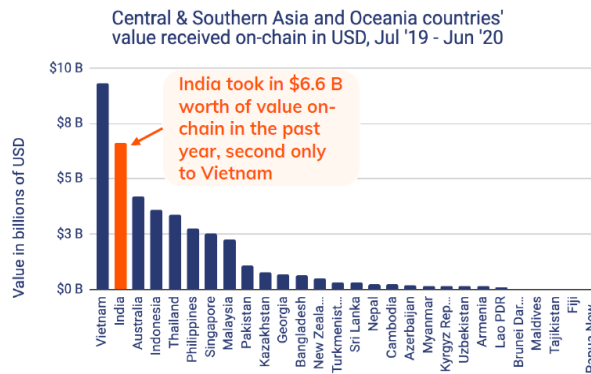
Exhibit C -

Chainalysis

Currencies included: BAT, BCH, BNB, BTC, BUSD, CRO, CRPT, DAI, ETH, GNO, GUSD, HT, HUSD, ICN, LEO, LINK, LTC, MCO, MKR, MLN, OMG, PAX, PAXG, TGBP, TUSD, USDC, USDT, WETH, ZIL, ZRX

6

India ranks 2nd in terms of on-chain value received among 28 countries in Central & Southern Asia and Oceania



Sources:
Chainalysis,
SimilarWeb

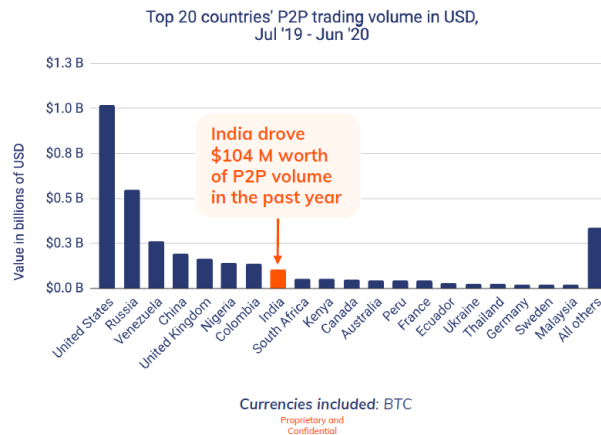
Exhibit D -

Chainalysis

Currencies included: BAT, BCH, BNB, BTC, BUSD, CRO, CRPT, DAI, ETH, GNO, GUSD, HT, HUSD, ICN, LEO, LINK, LTC, MCO, MKR, MLN, OMG, PAX, PAXG, TGBP, TUSD, USDC, USDT, WETH, ZIL, ZRX

7

India ranks 8th in terms of P2P trading volume globally (out of 154 countries)

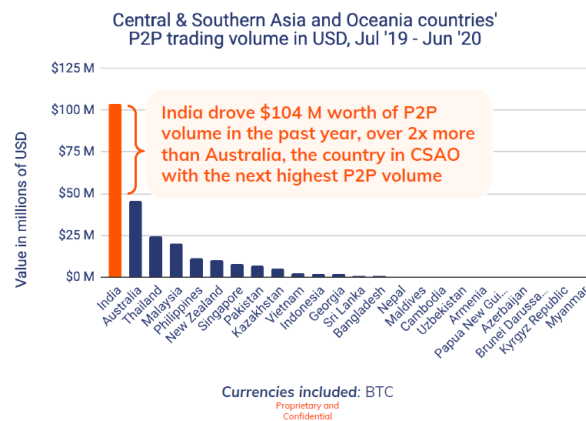


Sources: Chainalysis, LocalBitcoins, Paxful via CoinDance, SimilarWeb

8

Exhibit E -

India ranks 1st in terms of P2P trading volume among 28 countries in Central & Southern Asia and Oceania (CSAO)



Sources: Chainalysis, LocalBitcoins, Paxful via CoinDance, SimilarWeb

9

Exhibit F -

India ranks 13th
for value received
out of out of all
154 countries
globally

India's total and illicit value sent and received on-chain,
Jul '19 - Jun '20

\$6.6 B × **1.7%** = **\$112 M**

On-chain value
received by India

Illicit share of
value received
(Central & Southern Asia
and Oceania average)

Illicit value received
by India

\$6.7 B × **0.8%** = **\$53 M**

On-chain value
sent by India

Illicit share of
value sent
(Central & Southern Asia
and Oceania average)

Illicit value sent
by India

Please note: illicit
values are estimated
based the region's
share of illicit activity
on average and
could therefore be
higher or lower.

Illicit categories: child abuse material, darknet markets,
ransomware, sanctions, scams, stolen funds, terrorism financing

Currencies included: BAT, BCH, BNB, BTC, BUSD, CRO, CRPT, DAI, ETH, GNO, GUSD, HT, HUSD, ICN,
LEO, LINK, LTC, MCO, MKR, MLN, OMG, PAX, PAXG, TGBP, TUSD, USDC, USDT, WETH, ZIL, ZRX

Sources:
Chainalysis,
SimilarWeb

Exhibit G -

The 2021 Global Crypto Adoption Index Top 20

The table below shows the top 20 countries in our 2021 Global Crypto Adoption Index, as well as their rankings in the three component metrics that make up the overall rankings.

Country	Index score	Overall index ranking	Ranking for individual weighted metrics feeding into Global Crypto Adoption Index		
			On-chain value received	On-chain retail value received	P2P exchange trade volume
Vietnam	1.00	1	4	2	3
India	0.37	2	2	3	72
Pakistan	0.36	3	11	12	8
Ukraine	0.29	4	6	5	40
Kenya	0.28	5	41	28	1
Nigeria	0.26	6	15	10	18
Venezuela	0.25	7	29	22	6
United States	0.22	8	3	4	109
Togo	0.19	9	47	42	2
Argentina	0.19	10	14	17	33

Exhibit H -

Country	Index score	Overall index ranking	Ranking for individual weighted metrics feeding into Global DeFi Adoption Index		
			On-chain DeFi value received	On-chain number of DeFi deposits	On-chain retail DeFi value received
United States	1.00	1	3	47	4
Vietnam	0.82	2	4	64	3
Thailand	0.68	3	5	46	5
China	0.62	4	2	113	2
United Kingdom	0.60	5	9	40	6
India	0.59	6	1	120	1
Netherlands	0.55	7	24	11	18
Canada	0.52	8	17	30	15
Ukraine	0.49	9	11	50	7
Poland	0.46	10	18	36	17

Exhibit I -

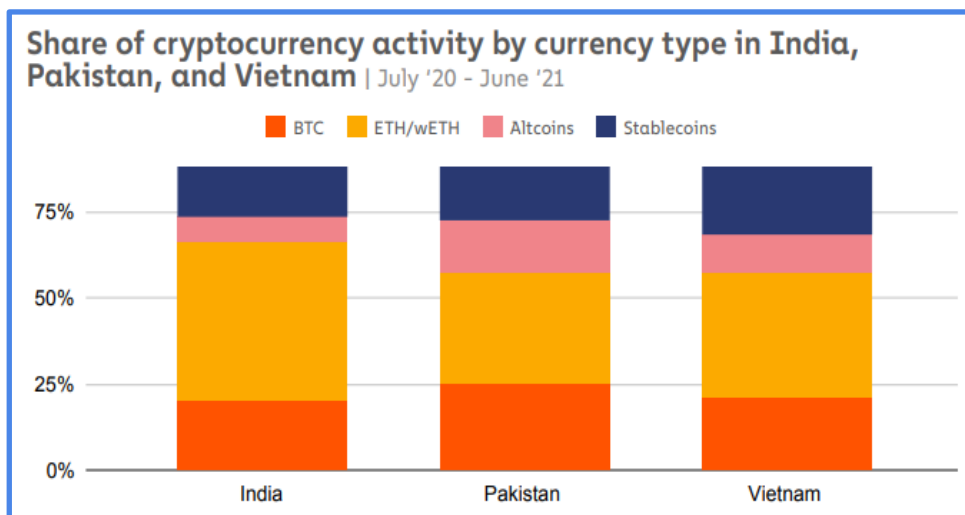


Exhibit J -

Share of cryptocurrency value sent by transaction size for India, Pakistan, and Vietnam | July '20-June '21

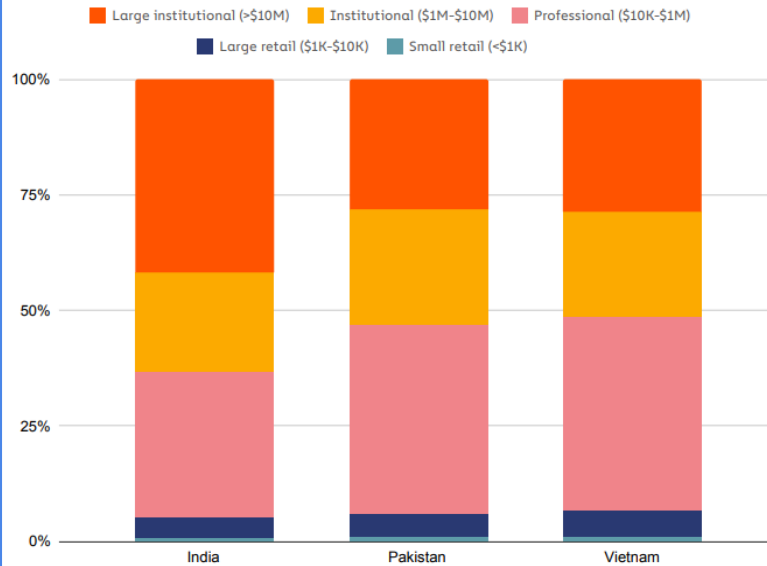


Exhibit K -

GLOBAL BITCOIN NODES DISTRIBUTION

Reachable nodes as of Fri Nov 19 01:36:45 2021 IST.

12702 NODES

24h

90d

1y

Top 10 countries with their respective number of reachable nodes are as follow.

RANK	COUNTRY	NODES
1	n/a	5319 (41.88%)
2	United States	1834 (14.44%)
3	Germany	1813 (14.27%)
4	France	551 (4.34%)
5	Netherlands	383 (3.02%)
6	Canada	304 (2.39%)
7	United Kingdom	245 (1.93%)
8	Finland	187 (1.47%)
9	Russian Federation	186 (1.46%)
10	China	134 (1.05%)

More (88) »

Exhibit L -



Acknowledgements

Alumni Coordinators

Akhilesh Tilotia, IIMA PGP 2004

Suhail Kassim, IIMA PGP 2003

Institute Coordinators

Prof. Anish Sugathan, Faculty, IIMA

Prof. Rakesh Basant, Faculty, IIMA

Anurag Choudhury, Associate VP - Alumni and External Partnerships, IIMA

Special Thanks

Kamal Gaur, IIMA PGP 2004

Vidhi Desai, Executive - Special Interest Group, IIMA



Annex: Profile of Webinar Series Speakers

Alphabetical with first names

Akhilesh Tilotia

Akhilesh has experience in areas of public policy, strategy formulation, and entrepreneurship. He is currently Principal – Strategic Initiatives and Policy Advisory at NIIF’s Mumbai office. In this role, Akhilesh is responsible for building research and a few strategic initiatives.

Prior to joining NIIF, Akhilesh was a part of the Axis Bank where he led strategy for the Axis group. He has served in a unique position of Officer on Special Duty with a Union Minister in New Delhi where he was closely involved in public policy formulation and implementation in the civil aviation sector. He has also worked with Kotak Institutional Equities and set up their thematic research unit. He co-founded Park Financial Advisors, a boutique wealth management and financial planning company. Akhilesh started his career with The Boston Consulting Group.

He is a prolific columnist and commentator in the business media and has been known for bringing his unique perspectives to his commentary on topical issues primarily through the lens of a Government officer, a thematic analyst, an investment banker, a consultant, and a personal financial advisor. His best-selling book, ***The Making of India – GameChanging Transitions***, makes a case for converting the gaps in public services and economic fulfilment into opportunities for the private sector. His upcoming book, ***Through the Looking Glass***, views the India story from the perspectives of the various arms of Government which he observed closely in his three-year stint in New Delhi with a Union Minister.

Akhilesh has done his Bachelors from St. Xavier’s College, Calcutta and holds a PGDBM from IIM Ahmedabad.

Ashim Sood

Ashim Sood is a lawyer involved in constitutional and commercial law cases in the Supreme Court, High Court, other courts and before arbitral tribunals, and that my areas of interest include technology, free speech, censorship, and privacy law.



He appears as counsel for litigants in claims and defences in courts and arbitral tribunals in India as well as internationally. He is briefed to represent parties in the Supreme Court; for writs and original side litigation before state High Courts, and for shareholder and commercial disputes before arbitral tribunals (ICC Rules; SIAC Rules; LCIA Rules). He also appears regularly in cases before the National Company Law Appellate Tribunal and the Securities Appellate Tribunal. From 2017 until July 2020, Ashim served as the Government of India's standing counsel in the Delhi High Court. He has also acted extensively for the Serious Fraud Investigation Office. In 2021 Ashim was named a ranked lawyer for arbitration by Chambers and Partners.

Erik Feyen

Erik Feyen is Head of Global Macro-Financial Monitoring in the Finance, Competitiveness, and Innovation Global Practice of the World Bank Group. In this capacity, he leads the global monitoring and analysis of key macro-financial vulnerabilities and trends. He co-leads the Bank's analytical work on the future of finance, advises on fintech-related country operations, and regularly coordinates IMF - World Bank collaborative efforts such as the Bali Fintech Agenda and the joint staff position on the regulatory and supervisory implications for the banking sector stemming from the impact of the COVID-19 pandemic. Erik holds a Ph.D. in Finance from the University of Amsterdam and an M.S. in Technology, Policy, and Management / Electrical Engineering from Delft University of Technology. He regularly lectures at Columbia University.

Kamal Gaur

Kamal Gaur is a PGP from the IIMA 2004 batch and is a blockchain enthusiast who is passionate about helping people understand the world of blockchain, bitcoin and cryptocurrency. In his non-crypto avatar, Kamal is a management professional with experience across various domains, including analytics & strategy, and is currently based out of Bangalore/Bombay. Kamal has volunteered to help work with IIMA PP ASIG drive this webinar series, in which we will be talking to multiple stakeholders to better understand this space and come up with a set of recommendations towards public policy.

Meyyappan Nagappan

Meyyappan Nagappan is a Leader in the International Tax practice at Nishith Desai Associates. He leads the tech and tax practice, impact investment, social finance, tax policy and GST practices at NDA. He regularly advises several top technology companies on tax and structuring



issues, from an international tax and GST perspective including on upcoming technologies and digital products such as blockchain, crypto and gaming. He regularly speaks at the International Bar Association conferences and other tax conferences both in India and abroad.

Sandeep Nailwal

Sandeep Nailwal is a Co-Founder of Polygon (previously Matic Network). He has been involved with many tech businesses since his very early days. Scaling is his key focus, be it in businesses or blockchains, but he is an all-around business buff. Sandeep had his 'lightbulb moment' about the revolutionary nature of blockchain in 2017, found his calling in the scalability arena and co-founded Matic Network (now Polygon) alongside Jaynti Kanani and Anurag Arjun. As a Co-founder of Polygon, Sandeep is based out of India with their tech teams. His main responsibilities include spearheading the branding, marketing, adoption and operations at Polygon, and partnering with key stakeholders to push forward the vision of Polygon.

Subhash Chandra Garg

Subhash Chandra Garg is Economy, Finance and Fiscal Policy Strategist. He served as Finance Secretary (March 2019-July 2019) and Economic Affairs Secretary (July 2017-July 2019) of India. He has also served as an Executive Director in the World Bank (September 2014-June 2017). Shri Garg is a 1983 batch IAS officer of Rajasthan cadre. Shri Garg has over 34 years of experience in administration, management, and public policy, in finance and several development sectors - agriculture, education, energy and rural development. He has managed government finances both at the Centre and in the State of Rajasthan.

Sumit Gupta

Sumit Gupta is co-founder and Chief Executive Officer (CEO) of CoinDCX, the cryptocurrency exchange and liquidity aggregator. Beginning his journey in the world of business at the age of eight, Sumit showed an early proclivity for entrepreneurship. When Bitcoin began gaining traction in 2014, Sumit saw the potential of leveraging blockchain technology to enable financial inclusion. He actualised this vision by founding CoinDCX, which has grown to become India's largest cryptocurrency exchange. At CoinDCX, Sumit has been the driving force behind onboarding millions of Indians into crypto. He holds an Undergraduate and master's degree from the Indian Institute of Technology Bombay.

Disclaimer

- The views expressed here by participants are their own, and do not necessarily represent the views of the IIMA Public Policy ASIG
- There may be some inadvertent errors in transcribing session notes – kindly refer to original video links for reference, as needed
- The views expressed here were made during the period of June to Dec 2021 – since crypto is an evolving topic, it is possible that some of the views expressed by participants might have changed. This document should not be seen as representing a fixed unchanging portrayal of participants’ views across time
- It is important to note that views on certain topics might be contradictory across participants
- The recommendations and perspectives within this document should not be considered as legal or tax advice. Kindly consult your own trusted and professional advisors before making any decisions

Contact Us

Public Policy ASIG: pp-asig@iima.ac.in

Akhilesh Tilotia (Alumni Coordinator 2021 and 2022): tilotia.akhilesh@gmail.com

Suhail Kassim (Alumni Coordinator 2021): suhailkassim@gmail.com

Praveen PA (Alumni Coordinator 2022): praveen.pa@gmail.com

Kamal Gaur (Crypto Series Anchor): kamalgaur@gmail.com

Anurag Choudhury (AVP – Alumni and External Partnerships, IIMA):

avp-aep@iima.ac.in

Vidhi Desai (SIG Executive – Alumni and External Relations, IIMA): vidhid@iima.ac.in