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Asia-Pacific (Online) Panel Discussion on Blockchain and Cryptocurrencies

On September 3, 2021, the Indian Journal of Law and Technology organized a panel discussion on "Blockchain and Cryptocurrencies". The panel consisting of Prof. Andrew Godwin,[1] Prof. Tatiana Cutts,[2] Mr. Anuj Ranjan,[3] Mr. Mukul Sharma,[4] Prof. Rahul Singh[5] and Prof. Tatheer Fatima[6], aimed to examine the question of how to regulate cryptocurrencies, the scope for cross-border regulatory coordination, the competition law and economics implications and the private law challenges that exist, in treatment of cryptocurrencies.

[1] Prof. Godwin serves as Associate Professor, Director of Transactional Law, Director of the Graduate Program in Banking and Finance Law, and Associate Director of the Asian Law Centre, at the Melbourne Law School, Australia

[2] Prof. Cutts's research spans law and technology, private law and legal theory. She has written extensively on blockchain technology and cryptoassets. She received her D.Phil, BCL and LLB from the University of Oxford.

[3] Mr Ranjan currently serves as General Manager, RBI.

[4] Mr. Sharma currently serves as the Joint Director (Economics), Advocacy Division at the Competition Commission of India.

[5] Prof. Singh is currently Associate Professor of Law at the National Law School of India University, Bangalore. He is a member of the Competition Commission of India'a Advisory Committee on Regulation. He graduated with a Master of Laws (LLM) degree from Harvard Law School and a BA.LLB degree from NLSIU.

[6] Prof. Fatima is Assistant Professor of Law at the School of Law, Mahindra University. She is pursuing her PhD in National Law University, Delhi, in regulation of Cryptocurrencies. She holds a Master of Laws (LLM) degree from NLSIU.

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Executive Summary

On cryptocurrencies: cryptocurrencies cannot be classified as a currency, asset or commodity, they have no intrinsic value, are volatile and driven by speculation. Their impact on the market has to be considered.

On regulation of cryptocurrencies: they cannot be regulated in their entirety. They have inherent features that undermine anti money-laundering guidelines.

On blockchain: blockchain is the underlying technology for cryptocurrencies, which may have other legitimate uses.

On terminologies: terms such as virtual currencies, digital currencies, distributed ledger technology ("DLT") and blockchain are almost used synonymously, and are yet different.

On sovereign digital currencies: involves converting the fiat currency issued by the state into a digital currency by using blockchain technology. They have the risk of extracting liquidity from private markets, yet have advantages such as better access and reduced dependency.

On the economic and legal perspective: entities are shifting away from a proof of work model to proof of stake, which can mitigate environmental concerns. The risk of collusion shall remain, a balance of trust and distrust will have to be maintained

On regulatory design: there are 4 approaches being utilized today – complete ban, warning, regulation by analogy and bespoke regulation. India and Australia use a combination of warnings and regulation by analogy. There is now a move towards a principles-based regulation, focusing on the user entities rather than the technology itself. Gibraltar has been innovative in regulating distributed ledger technology. We need to ensure that parties do not game the system. We need to achieve the right balance between human involvement, human supervision, and an appropriate amount of regulation or involvement by technology.

On smart contracts and private law implications: there is a difference between Permissioned Ledgers and Open Ledgers. An open network may appear more desirable. However, the risks of using open ledgers to form contracts are acute. Smart contracts have negative automation and cannot be interfered with, which may not be always desirable.

On proof of stake: we cannot escape questions of governance in an open ledger model. If we are to determine who is to be part of the network, we need internal governance structures.

On competition law and blockchain: blockchain has introduced new kinds of business models. It eases information exchange and validations. Exchange of business-sensitive information on real time basis using blockchain may facilitate collusion. There are factors like barriers to entry in a blockchain and network effects that have to be taken into account. The decentralised nature of blockchain would make it difficult to control, may require cross-border cooperation.

On regulatory convergence: there has been an increase in cross border regulatory cooperation arrangements entered into - with respect to Fintech and other areas of innovation. There has, however, been divergence in areas such as ICOs and peer-to-peer lending. While bespoke regulations may seem attractive, their practicality is doubtful from a law and economics perspective.

I. What are cryptocurrencies?

The session begins with a brief introduction by Devansh Kaushik (Chief Editor of IJLT).

The moderator, Prof. Tatheer Fatima began the discussion with a brief recapitulation of the evolution of cryptocurrency and its regulation in India. She briefly touched upon how Bitcoin emerged post the 2008 global economic crisis which set up a chain of events that has culminated to the existence of more than 11,000 cryptocurrencies today. Prof. Fatima also highlighted the fact that cryptocurrency and its underlying technology, i.e., blockchain have managed to make the functions of the central banks appear as a thing of the past. However, there does exist reasonable apprehension about whether cryptocurrencies are the next step in the evolution of money as a social technology or as a disruptive force that threatens the financial order and economic sovereignty. In this regard, Prof. Fatima talked about the unclear stand of the Government of India on cryptocurrencies and blockchain despite the rise in cryptocurrency investments and use of blockchain technology by government marketplaces for the purpose of Server Message Block ("SMB") verification.

Mr. Anuj Ranjan began the discussion by outlining the stance of the Reserve Bank of India ("RBI") on the nature of cryptocurrencies. He stated that *firstly*, cryptocurrencies cannot be classified as a currency because every modern currency has to be issued by the central bank or the government. Cryptocurrencies on the other hand are mined and not issued by either of these two entities. *Secondly*, they cannot be classified as a financial asset as they do not have any underlying cash flow. *Thirdly*, they cannot be treated as a commodity as they are not tangible in nature like other commodities such as gold. Hence, cryptocurrencies cannot be classified as a currency, asset or commodity. He further stated that the only reason that cryptocurrencies have any value today is because of the 'hype' that has been created around it. What started as a mode of exchange has now been transformed into a store of value today. However, considering that they have no intrinsic value, their impact on the market has to be considered.

Cryptocurrencies are extremely volatile in nature, but since market is driven by speculation, it draws many gullible investors who believe that they can get exponential returns on their investment. However, it can lead them to face unanticipated losses during a downturn in the economy. To prevent this, the RBI has been issuing advisories since 2013 along with its counterparts in the United Kingdom and the European Union.

II. Regulating Cryptocurrencies

Mr. Ranjan stated that while some activities of cryptocurrency can be regulated, it cannot be done in its entirety. This happens due to the fact that certain segments of the transaction of cryptocurrencies remain outside the regulatory and supervisory perimeter of any intermediary owing to the design of the peer-to-peer ("P2P") transactions. The unregulated and unsupervised nature of the cryptocurrencies can lead to various problems. For example, the Financial Action Task Force ("FATF") had recently introduced a travel rule for cryptocurrencies under which any crypto asset transfer would require the service provider to store information about the originator as well as the beneficiary.[7] The stored information would have to be transferred to the next financial intermediary during the course of the transactions. However, on a survey conducted by the Financial Stability Institute, it was found that almost no jurisdiction can implement such a rule as the technology required for it simply does not exist. Hence, any regulation would have to be coupled with effective supervision and implementation as well.

Cryptocurrencies have inherent characteristics that can undermine anti money laundering guidelines and hence its enforcement is crucial to maintain the integrity of the financial system of any country. Decentralisation is one of its key characteristics which makes any attempt at regulating it a catch-up game for the Central Banks. To substantiate on this issue, Mr. Ranjan cited an excerpt from a recent blog by the International Monetary Fund ("IMF"):

> "*Without robust anti-money laundering and combating the financing of terrorism measures, crypto assets can be used to launder ill-gotten money, fund terrorism, and evade taxes. This could pose risks to a country's financial system, fiscal balance, and relationships with foreign countries and correspondent banks. The Financial Action Task Force has set a standard for how virtual assets and related service providers should be regulated to limit financial integrity risks. But enforcement of that standard is not yet consistent across countries, which can be problematic given the potential for cross-border activities*."[8]

[7] Erik Lie, *FATF Travel Rule* (Crypto 2020) < https://assets.ctfassets.net/hfgyig42jimx/7ezqnx47HERbjVAofseOnf/792ed1f4c49384a65541aa4456cf037d/Crypto.com_Macro_Report_-_FATF_Travel_Rule.pdf> accessed 15 September 2021.

[8] Tobias Adrian and Rhoda Weeks-Brown, 'Cryptoassets As National Currency? A Step Too Far' (IMFBlog, 2021) <https://blogs.imf.org/2021/07/26/cryptoassets-as-national-currency-a-step-too-far/> accessed 15 September 2021.

Furthermore, Mr. Ranjan pointed to the recent consultative paper by Basel Committee on Banking Supervision wherein it was recommended that the risk weight for Bitcoin should be 1250%.[9] If we apply 1250% risk weight to Bitcoin, it will have an effect similar to the deduction of assets from the capital. For example, if we take $100 worth of Bitcoin, it will give rise to risk weighted assets of $12.50 which when multiplied by the minimum capital requirement, i.e., 8%,[10] would mean that one would have to set aside $100 to hold $100.

III. The Supreme Court judgment and the way ahead

Considering all the reasons pointed above, the RBI had issued guidelines in 2018 banning all regulated banks from dealing with cryptocurrencies. Mr. Ranjan states that while it was struck down by the Supreme Court,[11] it was only done on the account of proportionality and not on the principle of cryptocurrencies. So, the present status of cryptocurrency in India is that while they are legal, they are largely unregulated.

Keeping the *status quo* in mind, in May 2021, the RBI cautioned people that they should be aware of the Anti-Money Laundering ("AML") guidelines, Know Your Customer ("KYC") guidelines and Prevention of Money Laundering Act while dealing in cryptocurrencies.[12] So till the time the government prepares a bill on cryptocurrencies, it is being regulated analogously by the existing regulatory guidelines.

IV. Blockchain

Mr. Ranjan states that there exists a general misconception that cryptocurrency and blockchain are intertwined. However, blockchain is merely the underlying technology for Bitcoin. Citing Paul Krugman, he stated that while Bitcoin has been around for 12 years, there has been no legitimate use found for it.[13] On the other hand, the central bank has found use for the

[9] Basel Committee on Banking Supervision, 'Prudential treatment of cryptoasset exposures' (Bank for International Settlements 2021) < https://www.bis.org/press/p210610.htm> accessed 15 September 2021.
[10] Basel Committee on Banking Supervision, 'Minimum Capital Requirements For Market Risk' (Bank for International Settlements 2019) s.40.61.
[11] *Internet and Mobile association of India vs Reserve Bank of India* (2020 SCC Online SC 275)
[12] Reserve Bank of India, 'Customer Due Diligence For Transactions In Virtual Currencies (VC)' (2021).
[13] Carla Mozee, 'Paul Krugman Throws In The Towel On Calling The Demise Of Bitcoin: 'Think Of It As A Cult That Can Survive Indefinitely' (Business Insider, 2021)

blockchain technology. For example, in RBI's 'Enabling Framework for Regulatory Sandbox' has marked blockchain as an innovative technology and its use is being encouraged to make cross border transactions more monitorable, cheaper and efficient.[14]

Hence, while concluding he states that there are obvious advantages of the technology that cannot be overlooked. However, all the stakeholders need to step and look for the means to incorporate the new technology while maintaining financial stability.

V. Cryptocurrency and its terminologies

Agreeing with the concerns about cryptocurrency put forth by Mr. Ranjan, Prof. Andrew Godwin continued the discussion by elaborating on the challenges faced while regulating cryptocurrency. He states that the first and possibly the biggest challenge regarding cryptocurrencies is the terminology used to describe it. For example, terms such as virtual currencies, digital currencies, distributed ledger technology ("DLT") and blockchain are almost used synonymously. However, there lies some differences between these terms that need to be recognized. Starting with virtual currencies, Prof. Godwin cited the definition put forth by the FATF in 2014:

> "*Virtual currency is a digital representation of value that can be digitally traded and functions as (1) a medium of exchange; and/or (2) a unit of account; and/or (3) a store of value, but does not have legal tender status (i.e., when tendered to a creditor, is a valid and legal offer of payment) in any jurisdiction. It is not issued nor guaranteed by any jurisdiction, and fulfils the above functions only by agreement within the community of users of the virtual currency. Virtual currency is distinguished from fiat currency (a.k.a. "real currency," "real money," or "national currency"), which is the coin and paper money of a country that is designated as its legal tender; circulates; and is customarily used and accepted as a medium of exchange in the issuing country. It is distinct from e-money, which is a digital representation of fiat currency used to electronically transfer*

<https://www.businessinsider.in/cryptocurrency/news/paul-krugman-throws-in-the-towel-on-calling-the-demise-of-bitcoin-think-of-it-as-a-cult-that-can-survive-indefinitely/articleshow/82784951.cms> accessed 15 September 2021.

[14] Reserve Bank of India, 'Enabling Framework For Regulatory Sandbox' (2020).

value denominated in fiat currency. E-money is a digital transfer mechanism for fiat currency—i.e., it electronically transfers value that has legal tender status."[15]

So, at a basic level, a virtual currency is a digital representation of value, except when issued by a sovereign state. They do not have a legal tender status, i.e., they are not what is normally referred to as fiat currencies.[16] Coming to the term 'cryptocurrency', Prof. Godwin says that the term itself is a misnomer as it suggests that it is the same as fiat currency or electronic money. He refers to the FATF report again for the definition of cryptocurrency which states that:

"*Cryptocurrency refers to a math-based, decentralised convertible virtual currency that is protected by cryptography.—i.e., it incorporates principles of cryptography to implement a distributed, decentralised, secure information economy. Cryptocurrency relies on public and private keys to transfer value from one person (individual or entity) to another and must be cryptographically signed each time it is transferred. The safety, integrity and balance of cryptocurrency ledgers is ensured by a network of mutually distrustful parties (in Bitcoin, referred to as miners) who protect the network in exchange for the opportunity to obtain a randomly distributed fee (in Bitcoin, a small number of newly created bitcoins, called the "block reward" and in some cases, also transaction fees paid by users as an incentive for miners to include their transactions in the next block)*."[17]

He states that this definition of 'cryptocurrency' is a useful starting point to understand how cryptocurrency might differ from the concept of a virtual currency. Cryptocurrency arises from the concepts of virtual currency and cryptography. Cryptography is the use of technology to achieve secure communications through a process of encryption and decryption. Hence this definition tells us that these currencies are based on an algorithm, a set of rules or protocols that enables computers to process data. It is also often said that since cryptocurrencies are decentralized, it warrants the use of distributed ledger technology as reflected in the blockchain technology. But a key point to note here is that there is no central administering authority that undertakes the monitoring or oversight of cryptocurrencies, and it creates challenges because it is difficult to identify who should be regulated, and who would be liable if something goes wrong. The answer that is often given against this question is that safety is ensured by a network

[15] FATF, 'Virtual Currencies Key Definitions And Potential AML/CFT Risks' (2014) 4.
[16] Currencies that are guaranteed by sovereign nations or central banks.
[17] *FATF* (n15) 5.

of mutually distrustful parties. In other words, the parties transact with each other without the need to rely on trust. And to a large extent, what DLT and blockchain technology does, or attempts to do, is to replace human trust with computational or algorithm-based trust.

Lastly, Prof. Godwin states that it is important to discuss cryptocurrencies alongside initial coin offerings ("ICOs") because ICOs can be used both as a means of creating cryptocurrencies and also as a means of raising finance. He cites the definition of ICOs from the regulatory documents of Gibraltar to showcase how the different terminology employed in relation to ICOs divides it into two categories:

> "*An ICO is a means of raising finance by, typically, early stage startups. Most often, ICOs involve the sale of tokens or (virtual) coins created using Distributed Ledger Technology (DLT). In an ICO, tokens are sold to early supporters of a project in exchange for cash or cryptocurrency, such as bitcoin or ether. Tokens vary widely in design and purpose. In some cases, tokens represent securities, such as shares in a company, and their promotion and sale are regulated as such. More often, tokens serve some cryptocurrency or functional use that is unregulated, such as prepayment for access to a product or service that is to be developed using funds raised in the ICO*."[18]

The *first* category is ICO issued tokens. These confer the right to access products or services on a preferential basis, once the products or services become available, and in that way the tokens represent prepayment or advance payments for goods or services. Now, some tokens in this category does function as virtual currencies. In other words, they act as a medium of exchange, and they can be electronically traded, and used to pay for relevant goods and services. The *second* category is referred to as the issue of coins, which generally represents some form of entitlement or rights to assets. For example, it might involve an entitlement to share in the profits of the business and it is in this category that the tokens or coins start to look a lot like the units in a managed investment scheme or shares in companies; And that has implications for regulation. The final challenge that is encountered while dealing with ICOs is that they are largely unregulated.

[18] Gibraltar Finance, 'Token Regulation' (2018).

VI. Sovereign digital currencies

Prof. Godwin provides a perspective on sovereign digital currencies in the context of its development in Australia. He states that Australia presently has a senate committee that is looking into the issue of how Australia can maintain and enhance its position as a financial centre. One of the key issues that has come in front of the committee is the question of sovereign digital currencies or central bank digital currencies ("CBDCs"). The concept of sovereign digital currency involves converting the fiat currency issued by the state into a digital currency by using blockchain technology. While the concept sounds good in theory, the regulation aspect of it is still doubtful. The Reserve Bank of Australia has stated that no policy has currently emerged for issuing a central bank digital currency in Australia and it is still studying the developments or implications of banks and other regulated entities trading in these currencies.[19]

He further states that there exist significant policy concerns around the operation of six central bank digital currencies. One of the major concerns is the central bank digital currency would extract a lot of liquidity out from private markets. This threatens market-based capitalism as if there was ever an event of economic trouble or economic downturn, then people could simply withdraw their money from banks and convert them into sovereign digital currency. Hence, the RBA has currently adopted the 'wait and see approach' and is monitoring the trends around the world in an attempt to find ways to regulate the sovereign digital currencies.

Continuing the discussion with the Indian perspective, Mr. Ranjan states that the RBI is considering a pilot launch of CBDCs in six months. The reason for going ahead with this experiment were the benefits that the CBDCs provide such as reduced dependency, better access and lesser risk as it will be regulated by the central bank. There is another added benefit wherein the currencies can be programmed to only be utilized for targeted welfare schemes which prevents swindling of the money to another sector. However, the roll out of any such currency would be in a phased manner to avoid any disruption to the existing ecosystem. The roll out would also involve amending the current legal framework as the current system only provides for the provisions of issuing currency notes.[20]

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[19] James Eyers, 'RBA Discussing Digital Money With Global Central Banks' (Australian Financial Review, 2021) <https://www.afr.com/companies/financial-services/rba-discussing-digital-money-with-global-central-banks-20210714-p589hp> accessed 14 September 2021.
[20] Reserve Bank of India Act,1934 s. 22.

While answering the question whether the introduction of CBDCs would cannibalise the UPI system to an extent, Mr. Ranjan stated that the CBDCs are more inclusionary in nature. This is owing to the fact that even people who are apprehensive about digital wallets or UPIs would consider dealing in CBDCs as it is being issued by the central bank of the country.

VII. Economic and Legal Perspective

Prof. Fatima posed a question to Prof. Rahul Singh asking him whether the different incentives placed under the proof of stake (PoS) consensus mechanism are sufficient to prevent the majority of the miners or validators from attacking or gaming the system which relies largely on the notion of a decentralised network of honest miners who ensure the integrity of the blockchain. Prof. Singh responds to the first part of the question by stating that one concern that stands out for cryptocurrencies is the environmental concern. However, it is seen that entities are shifting away from a proof of work model to proof of stake. According to some experts in the field of cryptocurrency, these concerns of mining on the environment are almost negligible. Hence, in theory such concerns should not exist as long as there is a real shift to a proof of stake model.

Responding to the second part of the question, he states that there will always exist concerns of collusion in the case of mining. It would not completely vanish by shifting to a proof of stake model. However, as pointed out by Prof. Godwin before, after reaching a stage where there is sufficient decentralization, a healthy balance of trust and distrust looks promising which Prof. Singh refers to as the 'Goldilocks formula'.

VIII. Regulatory Design

After highlighting numerous issues that arise with cryptocurrency, Prof. Godwin shifts the attention to designing a regulatory system that deals with all the challenges. To deal with first issue of classifying or categorizing cryptocurrencies, he takes the example of the United States of America ("USA"). In the USA, the Howey Test[21] is applied to determine if tokens that are issued pursuant to an ICO fall into the category of investment contracts as defined in the USA

[21] SEC v. W. J. Howey Co. 328 U.S. 293.

and whether they should be regulated as securities. And that is indeed what happened back in 2017, the Securities and Exchange Commission announced that it would treat certain ICOs as securities and would regulate them accordingly. At the same time, however, the Commodity Futures Trading Commission decided to treat Bitcoin and other virtual currencies as commodities, for certain purposes. This led to a situation wherein there were two or more regimes that were applicable depending on the specific issue and purpose.

Currently, from a general perspective, there have been four regulatory approaches today in terms of dealing with cryptocurrencies and ICOs. The *first* regulatory approach involves a complete ban on trading. However, the problem with a complete ban is that it completely stifles innovation and pushes certain activities into the shadows or what is referred to as the dark web. The *second* approach involves warnings which is currently being practiced by both, Australia and India. Jurisdictions would particularly have to be active in issuing warning to retail investors about the dangers or risks of purchasing cryptocurrencies. However, there currently lies uncertainty whether such warnings achieve the purpose that they were designed for. The *third* approach is regulation by analogy, which means that cryptocurrencies and ICOs are regulated by their closest equivalent legislation. So, for example, if they operate like securities, they should be regulated as though they were securities. However, this creates problems for jurisdictions like Australia as they have a laundry list of definitions as to what a security is. This makes it easy for certain players to gain the system and avoid regulation by designing products and transactions that don't fall exactly within the legislative or statutory definitions. The *fourth* approach is bespoke regulation which essentially means that there exists a specific bespoke regulation for cryptocurrencies and its related activities.

Prof. Godwin then shifts his focus to the regulatory design in Australia which he says is a combination of warnings and regulation by analogy, similar to that of India. The Australian Securities and Investments Commission ("ASIC") has issued a number of regulatory documents, including information sheets and warnings which state that if the ICO constitutes a financial product, it will then attract consumer protections and prohibitions that are that are applicable to financial products. General law will be applied for ICOs or cryptocurrencies that are not treated as financial products. ASIC has also included a number of information, sheets and warnings on its Financial Education website, called Moneysmart. Australia has also taken steps to minimise the risks from an anti-money laundering perspective as the concern is that virtual currencies might be exploited by criminals and terrorists. In April 2018, digital currency exchange providers became subject to a requirement under the legislation in Australia to

register, track and comply with the anti-money laundering and counterterrorism financing requirements. They were also required to report the requirements that follow developments in the EU, where it was agreed that providers of exchange services custodian wallet providers as well must comply with the anti-money laundering ("AML") requirements. Lastly, as stated above, a Senate committee chaired by Senator Bragg has recently made references to the need to achieve convergence with international standards, particularly in areas such as cyber security and data protection. Senator Bragg himself states that cryptocurrency is here to stay, and it is imperative to formulate a legislation that can deal with it.[22]

Professor Godwin then answered the question of what could be done by arguing that there were many regulatory and legal issues that needed to be taken into account, including privacy and data protection, cyber security, tax, AML, etc. He further notes that there are also a number of issues from a private law perspective, which his colleague Professor Tatiana would comment on at a later point. Since his area of expertise is insolvency, he notes that there have been a few cases where cryptocurrency exchanges have become bankrupt or insolvent. Some of the questions which then arise are - Who owns the cryptocurrency in the accounts? Is it a form of property? Or is it purely contractual in nature? He then cites the example of the Mount Gox hacking case in Japan and the manner in which its effects played out to demonstrate the importance of these questions.

On the topic of trades that are currently underway, Professor Godwin observed that we are moving towards a form of functional regulation, where the focus is less on labels and entities that engage in this activity and more on the function of the activity, and how it should be regulated. He notes that there has been a move towards a 'principles-based regulation', where the focus is on imposing principles on those entities that utilise the technology and are responsible for the technology. It is also very difficult to regulate the technology itself because it is not a regulated party. However, it is possible to regulate DLT providers, intermediaries, and also infrastructure like exchanges. In New York, for example, a license has to be obtained in order to engage in certain activities. This approach in New York has served as a model for other jurisdictions in America, and he thinks that it is serving as a model for development internationally.

[22] Senator Andrew Bragg, 'Cryptocurrency Markets Must Be Regulated Properly' (*Andrew Bragg*, 2021) <https://www.andrewbragg.com/post/cryptocurrency-markets-must-be-regulated-properly> accessed 14 September 2021.

Professor Godwin then cites the example of Gibraltar, an active funds management jurisdiction, which, along with other jurisdictions like Malta, have been quite innovative in issuing regulations with respect to distributed ledger technology. This legislation sets out the regulatory principles that certain parties need to comply with, with the caveat that the parties run the risk of losing their licence if they do not comply. Some of the provisions are -

- A DLT Provider must pay due regard to the interests and needs of each and all of its customers.
- A DLT Provider must have effective arrangements in place for the protection of customer assets.

On the issue of the lack of trust and detractors, he observes that cryptocurrencies continue to have their detractors, one of them being Agustín Carstens, the general manager of the Bank of International Settlements. He is concerned with the fact that bitcoins and other cryptocurrencies are often used to easily game or cheat the system. There is a need to have very robust legal and regulatory frameworks in place to ensure that parties don't game the system or take advantage of it. Some others, like the Chairman and CEO of JP Morgan Jamie Dimon, came out initially as a Bitcoin detractor and called it a fraud. Subsequently, he changed his mind and said, "Well, actually, they are here to stay. And whether we like it or not, we need to work out what to do with them." In fact, JPM ended up liking it so much that they issued their own digital coin, although this was one that was tied to fiat currencies. Hence, it was not really a truly digital currency like Bitcoin.

Finally, Professor Godwin thinks that it is important to look at the question of trust, and the extent to which we need to achieve the right balance between human involvement, human supervision, and an appropriate amount of regulation by technology.

IX. Smart Contracts and Private law implications of blockchain.

Professor Cutts first talks about the private law implications of blockchain technology and cryptocurrencies. She revisits a point that was made right at the beginning - which is that cryptocurrencies are not currencies because they are not issued. Noting that all of this depends on how these terms are used, she cites Professor Godwin's observation about these terms being associated with particular ideas and thus becoming very powerful. Using money as a starting

point, she states that money is a form of negotiable credit, and we can have private monies i.e., monies that circulate within a particular community, or something that is accepted in satisfaction of debts within that community. Hence, currency may be defined as whatever money is used across the breadth of a particular state, which she believes is a fairly ordinary use of the term' currency' and the one that has been used in the context of cryptocurrencies.

Consequently, that is probably the money that is issued by a particular state. Though this is where the idea of issuing money comes in, it should not be assumed that that means that a cryptocurrency cannot be money. It can, if and only if it is negotiable debt or has purchasing power within a community - whether that is a private community, or a community that is defined in some manner (geographic, etc).

On the question of how much cryptocurrency is worth, she argues that, like Bitcoin, it is a manifestly speculative asset. That is the way in which it is ordinarily used and is the strategic trajectory that a lot of cryptocurrencies have taken. She emphasises the need to be very clear about the way in which these terms are used while talking about things like money and currency, and the purpose for their usage. The term 'currency' can also be used to answer questions like - What can be accepted as legal tender? What are the ramifications of accepting cryptocurrencies in terms of taxation, regulation, and other issues? Thus, the term 'currency' can be used in both economic theories as well as legal theory, adopting a variety of meanings.

Professor Tatiana Cutts raises the question of 'proof of stake' and observes that it is probably fair to want an open ledger model. This would include a network that people can join and leave at will, rather than a network that limits who can join it. Proof of stake certainly helps with environmental concerns, but it also raises the spectre of what sort of network design is desirable.

Professor Cutts then proceeds to discuss the second set of questions concerning smart contracts or contracts formed using blockchains. She is of the opinion that this connects closely to questions about government, governance, design, and the types of networks that we wish to support and be current with, in particular communities. Firstly, she explains the distinction between Permissioned Ledgers and Open Ledgers, which was also mentioned earlier in this report. Permissioned Ledgers are ledgers with a small number of identified actors. These have been around for a number of decades and are also the most commonly talked about, making them very familiar and easy to use. In the context of blockchain technology and its applications such as banking, the term used to describe the ability to create a chronological record of

transactions is called 'timestamping'. When those transactions refer to one another in a specific way, it makes it very difficult to tamper with the historical record of transactions. In order to make sure, everyone then agrees on the same history of transactions, called 'state replication', thereby producing a fault-tolerant system. Hence, a system where everybody can agree that a particular state of the network is the correct state of the network is created. Using timestamping and the history of transactions, it becomes very difficult to interfere with a state replication. She proposes that everybody would then agree that the history of transactions now and going forward would be the truth of the network - both of which would be very useful. These ledgers have been very useful and have been used for a very long time.

On the other hand, it is quite difficult to persuade actors to adopt the same system. That is why the term blockchain is being used and heard a lot recently, primarily because it helps people produce systems that bring these ideas together. These ideas and solutions have been around for a long time, but actually getting people to use them is another matter and that is where blockchain comes in. It has very little, if nothing, to do with the sort of incentivized consensus and proof of stake that is present in Bitcoin. The proof of stake model consists of networks where actors can join and leave the network at will. This can create a huge problem for getting everyone to agree about a particular state of the network at any given moment in time, or what she calls state replication. She proposes to solve this problem by requiring actors to commit computational resources, or in the case of the proof of state model - ownership over a particular sector of the network. If actors do not join and leave at will, because of the presence of trusted actors and a 'permission network', there is simply no need for these overkill solutions. She is therefore talking about two very different things - 'permission networks' where the identity of the person who is acting within the network is known, thus allowing one to specify certain parameters. This is what is going to be talked about when people think about issues of finance, land registry, asset management, etc. On a more cautious note, she believes that open ledgers were on the more worrying side of issues that were discussed by the panellists.

Professor Cutts then argues that there are advantages to being able to transact digitally in a way that is visible to multiple parties in a controlled way. Smart contracting with Permission Ledgers, therefore, has many advantages and she additionally points out the questions of interpretation of contracts. Specifically, whether they will be resolved as they always are - by referring to the context within which this question applies to a contract.

However, the risks of using open ledgers to form contracts are acute, and there are serious questions about the benefits that they provide. The Bitcoin blockchain and Ethereum are some examples of this type of ledger. Ethereum is more commonly discussed in the context of smart contracts and their usage within cryptocurrency theory and not smart contracts as purely digital contracts. She then cites Episode 76 of Blockchain Insider,[23] where Vitalik Buterin poses a scenario in which the auction host of a platform like eBay colludes with the seller to artificially inflate the price of an asset. The host has access to all maximum bids and might bolster and bid up an asset. Buterin argues that Ethereum, by precluding such interference, offers greater transparency and reliability. He imagines a two-stage model, where everybody publishes invisible commitments to bid during the first stage. At stage two, those bids are revealed. One might ask whether the risk of collusion by and large really exists? According to Professor Cutts, the answer to that question is in the negative, because the reputational costs of mismanagement are far too high. This is more obviously true wherever there exists a strong supportive system of regulatory oversight, which has been talked about earlier. Also, reputational costs are worth something, particularly to the user. If something goes wrong with a contract, perhaps the seller of a car on eBay tries to defraud someone of their money, the platform is going to step in with a remedy. Hence, eBay has a merchant vehicle policy to that effect. From a remedial perspective, this raises serious questions about whether it is desirable to try and cut out the middleman.

On the issue of the end-goal of Smart contracting, when that term refers to open ledgers, Professor Cutts notes that it is to make contracts very difficult for anyone to interfere with. Consequently, that is the difference between positive and negative automation. Positive automation is simply when humans trigger some sort of activity, but then no longer interfere with it beyond that point. Negative automation is when that activity cannot be interfered with. Not only does it not need human involvement, there simply cannot be any human involvement. She remarks that this is where the vending machine analogy comes in. If a vending machine provides snacks for you, you put your money into the machine, and it hopefully provides the snack in return. The idea is that this is done in a way that no outside actor can stop it from happening. This is why attempts are being made to replicate this in the digital world.

She then poses the question of whether this was really what we wanted for contracts? Do we want contracts that proceed in ways that nobody can stop or interfere with? She remarks that it

[23] <https://bi.11fs.com/78> accessed 15 September 2021.

would be hugely problematic for vulnerable actors while highlighting the fact that it would be perfectly fine for people who are powerful, and for whom the risks are not high. It would, however, be very difficult for those who are liable to be defrauded or persuaded in some way to enter into a transaction that they might subsequently come to regret.

If something goes wrong with the contract formation and there is a mistake or a misrepresentation, there are a range of techniques, both legal and extra-legal, that exist to allow one to recoup their losses. If contracts are made unstoppable, those techniques become unavailable. When designing the future of contracting, she believes that we need to think seriously about whether the tools that we use serve the powerful or whether they also serve the vulnerable.

X. Proof of Stake

On the question of proof of stake, Professor Cutts raises some pertinent questions. What model of rulemaking, and that includes setting monetary policy and deciding the sort of activities, are acceptable on the network? She argues that we cannot escape questions of governance in an open ledger model. It is possible, however, to determine who gets to be part of the network. Therefore, do we want our decision-makers to be accountable and bound by a specified Constitution? She makes a reference to models like Ethereum and Bitcoin, both of which have informal governance structures, which have been hugely problematic in the past in relation to questions like block size. To her, a closed network that is well designed and accountable to its users and to national governments is better than an open network that washes its hands of thorny questions concerning all users. The overarching point here is that the trust that we have in one another is often undervalued. This trust can often be considerably more valuable than trusting a machine to do the job that it has been told to do because that machine cannot be sufficiently flexible to adapt to the many things that might go wrong or be difficult to anticipate in the context of user-to-user transactions.

She further clarifies that this does not mean that she disagrees with anything that has been said previously, including the fact that cryptocurrencies are here to stay and that difficult decisions have to be made regarding their governance within our legal systems. Thinking about how, and what sort of resources have to be dedicated to supporting or managing these innovations is crucial. She is of the opinion that we must not undervalue accountable, open and trusted

decision making actors, who we can hold to account for the decisions that they make, and about the way that we transact with one another.

The moderator, Professor Fatima appreciates Professor Cutts's insights on smart contracts and negative automation and how it may affect vulnerable players. She then introduces Mr Mukul Sharma from the Competition Commission of India (CCI) and mentions the Competition Commission of India's recent comprehensive discussion paper on blockchain technology and competition. In light of this fact, she calls upon Mr Mukul Sharma to talk about the competition law aspects of blockchain technology.

XI. Competition Law and Blockchain

Mr Sharma begins by noting that blockchain is such . revolutionary concept, it may well be labelled as Internet 2.0. From the point of view of the competition regulator, digitization of business has already brought its own set of challenges. It has introduced business models which are not found in textbook economics, and technologies like blockchain take this advancement a step ahead, as they do not only change the business model, but also the way economic agents interact with each other. According to Mr Sharma, one thing about technology is that it not only gives one a better way of doing the right things, it also provides efficient ways of doing the wrong things as well. This is why a regulator has to be a step ahead in terms of anticipating the various ways in which technology can precipitate contravention of the law. At the same time, businesses that are eager to adopt such technologies need to be cautious that they do not find themselves on the wrong side of the law.

Mr Sharma further explained that earlier this year, the CCI sought to explore scenarios like what the use of blockchain technology could bring forth, and therefore brought out a discussion paper on the competition aspects of blockchain. Launching cryptocurrency eases the exchange of information and also affects validation. According to Mr Sharma, the exchange of business-sensitive information like price, cost, capacity, and output may facilitate collusion among participants, especially, if such information is updated on a real-time basis, and notes that this was already pointed out by one of his fellow panellists earlier. Such technology can even set predefined algorithms of market behaviour through smart contracts. These contracts can also set triggers for punishing any deviation from collusion by any market player. Therefore, Mr Sharma cautions that this needs to be watched out for.

Further, he notes that this technology would have its own version of a chain of production, where upstream and downstream plants would interact with each other. The possibility of any vertical agreements being potentially anti-competitive in nature and or having negative implications always exists in this scenario. Further, market structures that are created may end up giving an entity a dominant market path, which may be potentially abused. This may fall under Section 34 of the Competition Act, 2002. It may also happen that the regulator has ordered compliance of a certain nature. According to Mr Sharma, the concerned entities are advised to ensure that the governing mechanism of the blockchain makes consideration for the implementation of such compliance.

Certain issues concerning blockchain technology do come up for examination at some point and Mr Sharma poses several questions in this regard. "Does taking part in a blockchain come under the definition of an agreement under the Competition Act (2002) which deals with cartelisation?" He believes one could argue that when two firms or individuals take part in a blockchain application with predefined rules, they have entered into a legal agreement. If this is the case, how does one determine the relevant product and geographic markets which are necessary both for determining abuse of dominance and investigating budgets and acquisitions? He notes that for product markets, the determination may be made on the basis of substitutability. But the problematic area will be more in terms of the geographic markets given the fact that different loads may be operating from different regions in the world.

On the issue of the creation of a dominant enterprise or the dominant product of an enterprise, he asserts that they are now of a distributed nature and are not controlled by a single entity. This raises some pertinent questions. Can one blockchain be termed as a dominant enterprise? If so, how is the market power calculated to determine dominance? Market power can be defined by the number of users, the number of blocks, or the number of recorded transactions. Then there are factors like barriers to entry in a blockchain and network effects that have to be taken into account.

Mr Sharma then discusses the challenges that such technologies would bring to a vast country like India. He observes that the opaque nature of 'permission blockchains' would restrict access to data and identity of nodes, which are operating within that blockchain. Then there would be challenges regarding the implementation of cease and desist orders. Given that the tools of a blockchain cannot be changed, or the fact that they are decentralised, no central authority has complete control over its decision making. Blockchain will be spread across geographies,

which will necessitate international cooperation and make it a very crucial factor between competition agencies.

On the positive side, he is of the opinion that blockchain technologies can also help agencies like the CCI access validator data in a pattern or module, which may be of great use to them. Compliance of remedies and commitments can be structured through smart contracts. Leniency applicants can provide information in a more structured manner. As part of an existing blockchain, information about illegal collusion can also be accessed. Mr Sharma notes that blockchain technology, along with its benefits, will also bring about certain challenging scenarios for the antitrust world, along with its own set of questions. There are no straightforward answers to these questions, at least at the moment. Specific answers will depend on the facts and circumstances of each case. The reason that the CCI brought out their discussion paper is not only to help them understand the technology and future scenarios better but also for the business enterprises. The CCI believed that it was important that these enterprises make sure that the adoption of new technologies in their business processes is done in a competition compliant manner.

Professor Fatima thanks Mr Sharma and observes that these were interesting points on blockchain not being either pro or anti-competitive and depended on one's point of view. She then invites Professor Andrew to conclude the discussion by talking about possibilities of regulatory convergence and cooperation.

XII. Regulatory Convergence and Cross-border Collaboration

Professor Godwin notes that competition law is an area in which it would be good to strengthen cross border collaboration. He states that the discussion paper issued by the Competition Commission of India is very helpful and observes that it is a very thorough and comprehensive paper that looks at a number of issues that arise in the area of competition law. He further asserts that he would share Mr Sharma and the CCI's concerns about the extent to which technology might favour big players like large companies, and also stressed the need to maintain innovation and competition in the market. He references Mr Sharma's point about market dominance further asserted that we do not want to end up in a position where the global financial system is managed or dominated by a handful of large technology companies.

Interestingly, Professor Godwin notes that over the past few years, there has been a huge increase in cross border regulatory cooperation arrangements and agreements entered into - with respect to FinTech and other areas of innovation. This also includes ethics and anti-money laundering, particularly with global payment systems. Vast amounts of money generated as proceeds from criminal activity are being laundered by transferring it from one jurisdiction to another. A lot of such activity is being witnessed, at least in Australia, in these areas.

Professor Godwin further argues that the primary purpose of many of these arrangements or agreements is to provide a framework for cooperation. In the case of FinTech, there is an opportunity for one state to refer participants to other states and to support trials in areas of innovation, new products, and the use of technology to propel and promote innovation. On the previously mentioned topic of the sandbox that India has, he notes that Australia also has a sandbox. He states that there has been quite a bit of cross border regulatory cooperation in relation to sandboxes. In particular, referring parties in one jurisdiction to the regulators in another jurisdiction to take advantage of the sandbox or innovation hubs that exist in the other jurisdiction is becoming more common. Some agreements, interestingly, just provide a framework for information sharing and don't involve active referrals or cooperation with specific parties or entities.

Keeping this in mind, he states that Australia has entered into cooperation agreements in both forms - ones that involve referrals and ones that simply involve information sharing. In some cases, the agreements emphasise the importance of information sharing in respect of regulatory technology or Reg-tech. Consequently, we are starting to see regulators sharing information with each other about how they are utilising new technology for blockchain regulation and supervision. In Professor Andrew's opinion, competition law is a good example of recent international convergence in these areas - at least in relation to legal principles, if not the specific rules.

There has, however, been quite a bit of divergence in areas such as ICOs and peer-to-peer lending. Inevitably, the extent to which states and jurisdictions have their own ways of doing things becomes visible. More importantly, the need to take into account the local legal system, and in particular, transactions and private law issues, are of paramount importance. He further states that a lot of movement is beginning to occur and that it is very early to tell whether these arrangements have been effective. This is partly because of difficulties in getting access to information because a lot of it is subject to confidentiality restrictions. In general, he argues

that the trade is positive and that there has been increased cooperation between jurisdictions in areas like FinTech and competition law, and hopes that it will continue. He believes that achieving true convergence is still a long way off, but hopes that it will be possible eventually.

Professor Rahul Singh talks about the idea of bespoke regulations, previously mentioned by Professor Godwin and Mr Sharma. In his opinion, it may be interesting from a competition law or even a general regulation perspective. He postulates that all regulators potentially like the idea of an 'all things considered' bespoke kind of regulation so that they might get to have a unique view about each case that they receive. However, he is unsure of the stakeholders' perspective as they usually like to have some kind of predictability and certainty. Otherwise, the transaction costs of doing business go up substantially, thereby affecting its real-world application.

While bespoke regulations may seem like a good idea, in theory, Professor Rahul expressed his reservations about considering them from a competition law and regulation perspective. Looking at it from a law and economics, as well as competition law perspective, he doubts its practicality, especially in light of important factors like the stakeholder perspective, predictability, certainty and consequent transaction costs.

XIII. Q&A Session

Q 1) Comment on the news that financial institutions in Germany and other countries have been permitted by law to invest in cryptocurrency.

Professor Godwin answers this question by arguing that it is very difficult to prohibit financial institutions and other entities from investing in these assets, products, or arrangements because increasingly, a lot of activity is moving into the technology space. He notes that there is an increased interest in derivatives and that there were attempts initially to ban derivatives, and subsequently, regulate them. Derivatives can be used for risk management, hedging, and also speculative purposes.

He then poses this question - How is the technology being used and regulated? Citing his earlier speech, he observes that it is important to ensure that activity in this area is on the regulatory radar to the greatest extent possible because it becomes very difficult to regulate if it is off the radar. He suggests that permitting institutions to acquire crypto assets is not usually a bad thing.

However, he cites Mr Ranjan's observation regarding the issues of capital adequacy and asks whether regulation gets in the way and makes it difficult for institutions to satisfy their regulatory capital requirements because of the restrictions that might be imposed. He stresses that the question once again is - How do we achieve the right balance? He asserts that it starts with terminology and references the point that Professor Cutts made - that we need to achieve some consensus with respect to the terminology that we use. This is because it affects our understanding of these assets and activities. He is of the opinion that that is an area in which it would be good to achieve international convergence in terms of taxonomy, terminology, and regulation methods.

Q 2) What are the RBI's views on the issue of Non Fungible Tokens (NFTs)?

Mr Ranjan, to whom this question was directed, answers in the negative and states that the RBI was not concerned with the issue of handling NFTs at that time. He states that this was because the RBI was not at all convinced by cryptocurrencies. He notes that Professor Andrew had argued that banning cryptocurrencies was not going to help because there would always be people who would still invest. In this context, Mr Ranjan draws attention to the fact that cryptocurrencies have been there for the last 12 to 13 years and have still not earned the confidence and trust of a lot of people. He thinks that when something has not yet taken off in 12 to 13 years in an infotech environment, it raises a lot of questions. That is why NFTs are also an area with several issues - Whether the tokens issued against some commodity or asset can be used as an asset, and if so, how can it be regulated? How would banking and financial institutions handle this change? Since the technology of NFTs is in a very nascent stage, Mr Ranjan concludes that the RBI has not taken any stand on this issue.

Q 3) Is there any regulation for non-fungible tokens (NFTs), in both the Indian and international contexts?

Professor Cutts, to whom this question was addressed, remarks that even though she was not an expert on the regulation of NFTs, she is of the opinion that NFT's are not particularly beneficial. They are useful when they help people generate forms of wealth and income that they might not otherwise be able to. For example, artists can launch NFTs to raise money that will help them to continue performing an activity that everybody thinks is valuable. On the

other hand, NFTs are also often used to buy and sell assets that have no discernable utility - for example, the first tweet that was ever made. This leads you to ask yourself what you are actually buying. She notes that you were buying a representation of that tweet, but there is nothing that you could do with the underlying asset. You cannot go back and edit that tweet.

She then provides a personal anecdote to illustrate her point. Her partner's mother told him that he should watch the 'Charlie Bit My Finger' video for the last time because it was about to be sold as an NFT. So her partner got out his phone and captured a video of the 'Charlie Bit My Finger' video being played on YouTube. The point being made by Prof Tatiana is that it might have been taken down after the NFT was sold. Of course, that does not preclude someone from performing all the activities that they might have done in relation to the video before it was taken down. She also talks about the hype involved and poses the serious question of how we propose to help people create a wider range of revenue sources for valuable activities in the future.

Q 4) Should we incentivize correct behaviours through smart contracting, rather than creating unstoppable contracts?

Professor Cutts states that in principle, she thinks that it is a great idea and a very interesting question. Rather than preventing people from turning around and saying, "No, I don't want to do this", how do you encourage the correct behaviour? It is interesting that these models focus on persuading people to perform, rather than thinking about what we should do if there are problems in contract formation. Therefore, they tend not to encode for things like vulnerability, misstatements, representation and all of those irrationalities that the legislative system doesn't currently code for. Nudging correct behaviours is exactly what the legal system should do if it's operating correctly. Professor Tatiana agrees with the overall principle of 'nudge' but has doubts about the processes for encoding it. It should be done in a way that takes into account the fact that nobody approaches these transactions with perfect rationality or perfect foresight. She cites COVID as a great manifestation of all sorts of problems that can arise when we do not foresee events happening in the future. Also, if we are financially weaker going into these transactions, they can hit us much harder.

Q 5) What is Mr Ranjan's view on WazirX, a crypto exchange in India? What is the worst-case scenario an individual who has purchased crypto in this Indian exchange can face with respect to tax laws, etc?

Mr Ranjan replies that action has been taken by the Enforcement Directorate against WazirX in a suspected money laundering case. He mentions that AML and CFT is the real concern and based on that, the Enforcement Directorate has issued a notice to them under various provisions of the law. While Wazirx is just one case, the same could apply to anybody. On the second part regarding tax, he notes that the RBI is awaiting the Cryptocurrency Bill, which would clarify whether there is going to be a total ban on cryptocurrencies. If there is a ban, the question does not arise and the scenario described by Professor Andrew could occur, that cryptocurrencies will continue to exist in the shadows, which would not be preferred by any jurisdiction or country.

If a partial ban does occur, there would be some tax implications and companies who are dealing with cryptocurrency must be aware that they have to specifically mention the size of the asset in their balance sheets. Hence, India's tax laws will depend on what the law on cryptocurrency contains and then accordingly, capital gains and other taxes will be definitely put into place. He concludes by asserting that the RBI is awaiting a final bill passed by Parliament and based on that, action would be taken.

The session ends by a vote of thanks by Lakshmi Nambiar (Deputy Chief-Editor of IJLT).

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