

THE CASE FOR REGULATING CRYPTO-ASSETS: A CONSTITUTIONAL PERSPECTIVE

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ABSTRACT *In July 2019, the Ministry of Finance, Government of India announced that an Inter-Ministerial Committee (the ‘Committee’) had submitted its report (the ‘Committee Report’) recommending that possessing or dealing with cryptocurrency be banned and made a criminal offence. This article examines whether such a ban is justified under our constitutional scheme. The article finds that the right to carry on various kinds of crypto-asset activities can be traced to various enumerated fundamental rights under the Constitution of India. Analyzing the Committee Report, the article finds that its recommendation of an outright ban is unlikely to be a reasonable restriction on these rights, as such a ban is likely arbitrary and excessive. Since crypto-assets are a value-neutral platform technology - akin in many ways to the Internet - the article recommends that an empirical approach be adopted towards studying any risks associated with crypto-assets, and that a regulatory approach be adopted to mitigate these risks rather than an outright prohibition. This would comport with the interests of liberty, innovation, and consumer protection.*

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I. NATURE OF CRYPTO-ASSETS

Traditionally, reliable transfers of value on the Internet required central intermediaries, eg, banks and clearing houses. This was in order to ensure that bad actors did not use the same units of value more than once (a phenomenon known as ‘double-spending’; the physical world analogy is counterfeiting).

Cryptocurrencies, or ‘crypto-assets’,¹ generally aim to enable the reliable transfer of value over the Internet without central intermediaries, while still not allowing double-spending.² In other words, they seek to provide a secure and decentralized means of transferring value online.

The first crypto-asset was Bitcoin, introduced by a seminal white paper in 2008.³ Other cryptographic systems had tried and failed to achieve a similar end.⁴ For this reason, among others, the Bitcoin system has been globally recognized as a breakthrough in computer science and cryptography.⁵ The Institute for Development and Research in Banking Technology (IDRBT), established by the Reserve Bank of India (RBI), has called Bitcoin a “*ground-breaking application*”.⁶

¹ This article uses the term ‘crypto-assets’ in line with the international legal trend, because crypto-assets have so far not shown wide adoption as a currency.

² Satoshi Nakamoto, ‘Bitcoin: A Peer-to-Peer Electronic Cash System’ <<https://bitcoin.org/bitcoin.pdf>> accessed 4 June 2020.

³ *ibid.*

⁴ Arvind Narayanan and Jeremy Clark, ‘Bitcoin’s Academic Pedigree’ (2017) 15(4) ACM Queue <<https://queue.acm.org/detail.cfm?id=3136559>> accessed 4 June 2020.

⁵ *ibid.* 15 which states that ‘*Understanding all these predecessors that contain pieces of bitcoin’s design leads to an appreciation of the true genius of Nakamoto’s innovation*’; See Yossi Gilad and others, ‘Algorand: Scaling Byzantine Agreements for Cryptocurrencies’ (2017) Proceedings of the 26th Symposium on Operating Systems Principles 51, 51 <<https://people.csail.mit.edu/nickolai/papers/gilad-algorand-eprint.pdf>> accessed 4 June 2020 which states ‘*Cryptographic currencies such as Bitcoin can enable new applications, such as smart contracts and fair protocols, can simplify currency conversions, and can avoid trusted centralized authorities that regulate transactions*’; Luke W. Vrotsos and Cindy H. Zhang, ‘Harvard Invests Millions in New Cryptocurrency’ *The Harvard Crimson* (12 April 2019) <<https://www.thecrimson.com/article/2019/4/12/hmc-crypto-investment/>> accessed 4 June 2020; Digital Currency Initiative <<https://dci.mit.edu/>> accessed 4 June 2020.

⁶ Institute for Development and Research in Banking Technology, *Applications of Blockchain Technology to Banking and Financial Sectors in India* (IDRBT, White Paper, 2017) chs 1, 3 <<https://www.idrbt.ac.in/assets/publications/Best%20Practices/BCT.pdf>> accessed 4 June 2020.

II. CRYPTO-ASSETS ARE A VALUE-NEUTRAL, PLATFORM TECHNOLOGY

Bitcoin was introduced to reduce transactions costs of financial intermediaries and mitigate a certain type of credit card fraud known as chargeback fraud.⁷ Its benign goal was to increase efficiencies in e-commerce transactions.⁸ It also appears to have sought to preserve privacy to the extent that stock exchanges and banks already did.⁹ This is not to run away from the fact that crypto-assets have also proven to be a vehicle for crime in many cases, and present new challenges to law enforcement.¹⁰ Rather, it is meant to show that the system is not designed with any negative values embedded, but rather was intended to create a new technology to facilitate existing commerce.

For reasons beyond the scope of this article (but most notably, price volatility), crypto-assets like Bitcoin have not made a compelling case to be used as a means to purchase and sell everyday goods and services. However, crypto-assets still present some tangible benefits, some of which have materialized and some of which are emerging. Some examples are discussed below:

- **Software applications:** Most notably, after the creation of Bitcoin, crypto-asset networks like Ethereum emerged, which allow computer programmers to run their software applications on a decentralised network, as opposed to a central server or a set of servers.¹¹ This aims to decentralise the risk associated with running a software application on a single server maintained by a single entity, in case that server suffers from downtime or is compromised, or the entity is

⁷ Nakamoto (n 2).

⁸ Nakamoto (n 2).

⁹ Nakamoto (n 2) states, *'The traditional banking model achieves a level of privacy by limiting access to information to the parties involved and the trusted third party. ... The public can see that someone is sending an amount to someone else, but without information linking the transaction to anyone. This is similar to the level of information released by stock exchanges, where the time and size of individual trades, the "tape", is made public, but without telling who the parties were.'* One notes that stock exchanges and banks are generally regulated by Know Your Customer (KYC) obligations. However, this is a matter of regulation and not the design of the system. As discussed subsequently, jurisdictions like the E.U. and Canada have begun to impose KYC obligations on crypto-asset intermediaries. Further, there is still generally no KYC system globally for physical cash.

¹⁰ Eg, Water Pavlo, 'Crime and Punishment in the Cryptocurrency World' <<https://www.forbes.com/sites/walterpavlo/2020/02/25/crime-and-punishment-in-the-cryptocurrency-world/#5ac7ede748fe>> accessed 4 June 2020.

¹¹ *A Next-Generation Smart Contract and Decentralized Application Platform* (An introductory paper to Ethereum, introduced before launch, which is maintained) (White Paper, Ethereum Foundation, 2013-19) <<https://github.com/ethereum/wiki/wiki/White-Paper>> accessed 4 June 2020.

untrustworthy. Programmers run their software applications on the network by paying fees to the network in crypto-assets (in Ethereum, the crypto-asset is known as ‘Ether’).¹² The network in turn allocates these fees to the participants per a pre-determined logic. Instead of fees accumulating to a single entity, fees are distributed to a greater network of participants, in small chunks. This system of compensation may not be feasible through the traditional financial system due to the number of participants, the small size of transactions, and the automated exchange of value through ‘smart contracts’. As institutional endorsement of this technology, over 500 firms globally (including Accenture, AMD, BBVA, BP, Credit Suisse, Deloitte, Government of Andhra Pradesh, HP, Infosys, ING, Intel, JP Morgan, Microsoft, Pfizer, Thomson Reuters, Samsung, and Santander) chose to form the ‘Enterprise Ethereum Alliance’, a non-profit corporation, to collaborate to develop enterprise blockchain solutions based on the Ethereum network (there are other platforms like Ethereum such as EOS and Stellar, and each – being at a relatively early stage – is finding its feet technologically). With these innovations, the wider software development community in India and abroad is now looking to acquire skills in developing decentralized software applications using crypto-assets.¹³

- **Remittance:** India was found by the World Bank to be the largest receiver of inward migrant remittances globally in 2018, receiving USD 79 billion.¹⁴ The same report of the World Bank also noted that the average cost of receiving remittances in South Asia was 5.2% in the first quarter of 2018, which would translate to a cost of approximately USD 4.1 billion, or approximately INR 28,914 crore, annually for India. By contrast, some crypto-asset networks promise cost-savings of up to 60% on cross-border remittances.¹⁵ This would translate to cost-savings of approximately INR 17,348 crore a year for the

¹² *ibid.*

¹³ Eg, Khwaja Shaik, ‘The Top 10 Blockchain Skills you Need to Develop’ (*IBM*, 1 March 2018) <<https://www.ibm.com/blogs/blockchain/2018/03/the-top-10-blockchain-skills-you-need-to-develop/>> accessed 4 June 2020.

¹⁴ World Bank Group and Knomad, *Migration and Remittances, Recent Developments and Outlook* (Migration and Development Brief, April 2019) <<https://www.knomad.org/sites/default/files/2019-04/Migrationanddevelopmentbrief31.pdf>> accessed 4 June 2020; World Bank Group, *Record High Remittances Sent Globally in 2018* (Washington, Press Release No. 2019/1488, April 2019) <<https://www.worldbank.org/en/news/press-release/2019/04/08/record-high-remittances-sent-globally-in-2018>> accessed 4 June 2020.

¹⁵ Monica Long, ‘Ripple and XRP Can Cut Banks’ Global Settlement Costs Up to 60 Percent’ (*Ripple: Insights*, 23 February 2016) <<https://ripple.com/insights/ripple-and-xrp-can-cut-banks-global-settlement-costs-up-to-60-percent/>> accessed 4 June 2020.

country; for perspective, this amounts to the expenditure of India's nationwide Mid Day Meals scheme for close to 2 years.¹⁶

- **Store of value:** Individuals today choose a variety of investment avenues including bank deposits, company shares, real estate, foreign currency, and commodities. Crypto-assets present an additional investment avenue for those who see promise in the future of the technology, based on the above or other use-cases.

The above illustrations are not intended to comment on whether crypto-assets and blockchain technology will ultimately prove to be effective or successful. Of that, time may be the best judge, and the technology is still finding its feet. However, the above illustrations are meant to show that crypto-assets are not inherently good or bad, but are a platform technology holding significant promise. They can only be normatively or legally assessed based on the use to which they are put. In that aspect, they can be likened to platform technologies of yore, each of which did not emerge without societal fears of severe harm: electricity, railways, telecommunications, motor vehicles, aircrafts, mobile phones, and the Internet.¹⁷ In fact, in its early years, even the company business structure was criticized by well-known thinkers of the time.¹⁸ These technologies and innovations are different in nature to phenomena which are considered by Indian law to be inherently pernicious, such as gambling, immoral trafficking, alcohol, or narcotic substances (activities known as *res extra commercium*).¹⁹ Crypto-asset systems should hence be treated by the law on the same plane as platform technologies like the Internet (which are regulated), rather than as vices or socially harmful activities (which are banned outright).

¹⁶ Ministry of Finance-Government of India, *Expenditure Profile 2017-2018* (2018) 25 <<https://www.indiabudget.gov.in/budget2017-2018/ub2017-18/eb/stat4a.pdf>> accessed 4 June 2020.

¹⁷ Nishith Desai and others, *Building a Successful Blockchain Ecosystem for India: Regulatory Approaches to Crypto-Assets* (Research Paper, December 2018) 2 <http://www.nishithdesai.com/fileadmin/user_upload/pdfs/Research_Papers/Building-a-Successful-Blockchain-Ecosystem-for-India.pdf> accessed 4 June 2020; See Nathaniel Whittemore, 'PODCAST: Josh Brown on Why Bitcoin is like the 1800s Railroad Boom' (*Coindesk: Bitcoin Macro*, 8 November 2019) <<https://www.coindesk.com/podcast-josh-brown-on-why-bitcoin-is-like-the-1800s-railroad-boom>> accessed 4 June 2020.

¹⁸ Adam Smith, *An Inquiry into the Wealth of the Nations* (Book V, 1776) 374 <<http://media.bloomsbury.com/rep/files/primary-source-93-adam-smith-the-wealth-of-nations-on-joint-stock-companies.pdf>> accessed 4 June 2020.

¹⁹ *Khoday Distilleries Ltd. v State of Karnataka*, (1995) 1 SCC 574, para 60 (*Khoday case*).

III. CONSTITUTIONAL FREEDOMS ASSOCIATED WITH CRYPTO-ASSETS

In our constitutional scheme, it is well-settled that fundamental rights are to be construed liberally with rights-holders being at center stage and the State being highly accountable.²⁰ Ten Judges of the Supreme Court of India in *Rustom Cavasjee Cooper v. Union of India*²¹ (known as the Bank Nationalisation case) held:

Impairment of the right of the individual and not the object of the State in taking the impugned action, is the measure of protection. To concentrate merely on power of the State and the object of the State action in exercising that power is therefore to ignore the true intent of the Constitution. ... Protection of the right to property or personal freedom is most needed when there is an actual threat. To argue that State action which deprives a person permanently or temporarily of his right to property, or personal freedom, operates to extinguish the right or the remedy is to reduce the guarantee to an empty platitude. Again to hold that the extent of, and the circumstances in which, the guarantee of protection is available depends upon the object of the State action, is to seriously erode its effectiveness. (emphasis added)

With that in mind, various constitutional and fundamental rights dealing with crypto-assets are discussed below. It goes without saying that these rights are subject to reasonable restrictions contemplated by the Constitution.

- i. The right to trade and do business under Articles 19(1)(g) and 301: Persons carrying out commercial activities such as mining crypto-assets, buying and selling crypto-assets, or bartering crypto-assets would be doing so in exercise of their fundamental right under Article 19(1)(g) and constitutional right under Article 301. The Supreme Court has interpreted the aforesaid Articles to include the right to carry on any trade which is not *res extra commercium* i.e., (“*inherently vicious and pernicious, and is condemned by all civilised societies*”, “*immoral and criminal*”, and “*articles or goods which are obnoxious and injurious to health, safety and welfare of the general public*”).²² Prominent examples of activities held to be *res extra commercium* in India are alcohol, gambling, and human trafficking.²³ For reasons

²⁰ Eg, *PUCI v Union of India*, (2005) 2 SCC 436.

²¹ *Rustom Cavasjee Cooper v Union of India*, (1970) 1 SCC 248.

²² *Khoday case*.

²³ *Khoday case*; *State of Bombay v R.M.D. Chamarbaugwala*, AIR 1957 SC 699 : 1957 SCR 874; *Cooverjee B. Bharucha v Excise Commr., Ajmer* AIR 1954 SC 220 : 1954 SCR 873.

stated above, crypto-assets are a platform technology with benefits and risks, and dealing with them does not have an immoral or inherently pernicious element. Countries around the world, including the Indian government in various reports as described in this article, have recognized its benefits (while also acknowledging risks). As discussed subsequently, no developed and democratic country has chosen to prohibit crypto-asset activity.

The Supreme Court in *Internet and Mobile Assn. of India v. RBI* (the ‘IAMA’ case) has recognized that all those who carry out crypto-asset business activity (other than those who do so as a hobby without any expectation of profit) are entitled to the right under Article 19(1)(g) in respect of such activity.²⁴

2. The right to life, liberty and privacy under Article 21: In *K.S. Puttaswamy v. Union of India* (the now famous ‘Right to Privacy’ case) decided by a Nine Judge Bench of the Supreme Court, various opinions of the learned Judges referred to the autonomy and dignity of the individual as being fundamental to the freedoms guaranteed under the Constitution.²⁵ The learned Judges upheld the right of individuals to make decisions autonomously as a fundamental right. For instance, Chandrachud, J. (for four learned Judges) held:

“Life is precious in itself. But life is worth living because of the freedoms which enable each individual to live life as it should be lived. The best decisions on how life should be lived are entrusted to the individual. They are continuously shaped by the social milieu in which individuals exist. The duty of the state is to safeguard the ability to take decisions – the autonomy of the individual – and not to dictate those decisions.” (emphasis added)

Similarly, Nariman, J. held that the fundamental right of privacy would include the “*privacy of choice, which protects an individual’s autonomy over fundamental personal choices. ... The dignity of the individual encompasses the right of the individual to develop to the full extent of his potential. And this development can only be if an individual has autonomy over fundamental personal choices.*” (emphasis added)

²⁴ *Internet and Mobile Assn. of India v RBI*, 2020 SCC OnLine SC 275.

²⁵ *K.S. Puttaswamy v Union of India*, (2017) 10 SCC 1. (*Right to Privacy* case)

Observations to a similar effect were made by all the remaining learned Judges who authored opinions viz. Chelameswar, Bobde, Sapre, and Kaul, JJ.

The decision of an individual to participate in a technological and mathematical breakthrough acknowledged by leading institutions worldwide, like crypto-assets, is a fundamental personal choice. Individuals exercise their fundamental personal choice to participate in crypto-assets, whether by writing software programs which use crypto-assets, buying and selling crypto-assets based on the promise of the underlying technology, or ‘mining’ crypto-assets which contributes to the maintenance of the global network. They do so in exercise of their autonomy to take decisions regarding their own lives. Therefore, it is submitted that the right to participate in a legitimate technological innovation such as crypto-assets would be a part of individuals’ right to liberty and privacy under Article 21 of the Constitution.

3. The right to property under Article 300A: In *K.T. Plantation (P) Ltd. v. State of Karnataka*, a Constitution Bench of the Supreme Court held that the term ‘property’ under Article 300A includes intangibles like copyrights and other intellectual property and embraces every possible interest recognised by law.²⁶ Similarly, according to Black’s Law Dictionary, ‘property’ includes the rights in an intangible, and the said dictionary states that these rights include the right to possess and use, the right to exclude, and the right to transfer.²⁷ It alternatively defines property as “*any external thing over which the rights of possession, use, and enjoyment are exercised*”.²⁸

A crypto-asset is a unit on an Internet-based ledger which can be transacted using a unique ‘private key’, which is a cryptographic series of characters. Only those who know the private key possess and may transfer the crypto-asset. Crypto-assets are generated or ‘mined’ by the exertion of computer power to solve non-obvious cryptographic problems, and are thereafter transacted on the basis of the value ascribed by market forces. The holder of the private key excludes

²⁶ *K.T. Plantation (P) Ltd. v State of Karnataka*, (2011) 9 SCC 1 (*K.T. Plantation case*).

²⁷ *Black’s Law Dictionary* (11th ed 2019) states that ‘*property (14c) 1. Collectively, the rights in a valued resource such as land, chattel, or an intangible. It is common to describe property as a “bundle of rights.” These rights include the right to possess and use, the right to exclude, and the right to transfer. — Also termed bundle of rights. 2. Any external thing over which the rights of possession, use, and enjoyment are exercised <the airport is city property>’.*

²⁸ *ibid.*

others from possession and the ability to transfer. Since crypto-assets can be possessed, used, and transferred, and their holder can exclude others from doing these actions, it is submitted that they have the legal characteristics of ‘property’.²⁹

Since the *K.T. Plantation* case expressly recognizes intangibles, it is difficult to argue that crypto-assets, as a representation of value on the Internet, are not ‘property’ under Article 300A merely because they are intangible. Importantly, in the *IAMAI* case, the Court recognized that virtual currencies / crypto-assets are a form of ‘intangible property’.³⁰ Its finding that virtual currencies can act under certain circumstances as money does not hamper the argument that crypto-assets are ‘property’ under Article 300A, since money has been treated as a form of property under the Constitution and under Indian statutes.³¹

Holders of crypto-assets should hence not be deprived of their crypto-assets except in accordance with the principles laid down under Article 300A, i.e., for a public purpose and with payment of compensation in a just, fair, and reasonable manner.³²

4. Right to free speech and expression under Article 19(1)(a): While the argument is novel and untested globally, it is worth considering whether crypto-asset activity may be protected under Article 19(1)(a) of the Constitution. It is well settled that the freedom of speech and expression under Article 19(1)(a) includes the freedom of propagation

²⁹ Under the General Clauses Act 1897, s 2(36) ‘movable property’ means ‘property of every description, except immovable property’. See also *infra* n. 31. Crypto-assets would hence be movable property and holders of them would have the rights of holders of any other movable property, such as civil and criminal remedies against theft.

³⁰ *IAMAI case*, para 6.87.

³¹ Eg, *Dwarkadas Shrinivas v Sholapur Spg. & Wvg. Co. Ltd.*, AIR 1954 SC 119 : 1954 SCR 674 para 33 in which while holding a measure to infringe the right to property under (then) Article 31 of the Constitution, Mahajan, J observed, ‘[t]he plaintiff and the other preference shareholders therefore are in imminent danger of losing the shares themselves or losing valuable property in the nature of money which they will have to pay out in order to meet the call.’ (emphasis added); Sale of Goods Act 1930, s 2(7) provides that ‘goods’ means ‘every kind of moveable property other than actionable claims and money’, thereby demonstrating that the term ‘moveable property’ includes ‘money’. In addition, as mentioned above, a Constitution Bench in the *KT Plantation* case held that ‘property’ under art 300A embraces ‘every possible interest recognized by law.’ Further, the Court in the *IAMAI* case recognized that virtual currencies can have characteristics of *both* goods and money, holding at para 6.86, “[t]herefore, it is not possible to accept the contention of the petitioners that VCs are just goods/commodities and can never be regarded as real money” (emphasis added).

³² *K.T. Plantation case*.

of ideas.³³ This freedom has been held to extend to the Internet medium which provides a market place of ideas to persons of all kinds.³⁴ To the author's knowledge, no Indian court has considered the application of Article 19(1)(a) to computer software programmes or cryptography. However, the U.S. Court of Appeals (Ninth Circuit) has held, in the context of the First Amendment of the U.S. Constitution (providing the right to free speech), that encryption software, in its source code form and as employed by those in the field of cryptography, was protected by the First Amendment.³⁵ It was held that cryptographers use source code to express their scientific ideas in much the same way that mathematicians use equations or economists use graphs. Separately, the U.S. Supreme Court has also held certain types of election-related corporate expenditure to be protected by the First Amendment, hence showing that free speech can extend to economic elements of expression.³⁶ In the context of crypto-assets, possibilities of expressive activity include: writing and publishing of the underlying software code; running the code on a computer system; writing, publishing, and running software code for decentralised applications such as 'smart contracts'; expressing the value of things in terms of crypto-assets; and using crypto-assets in contexts intended to be expressive of ideas, such as decentralisation.³⁷ Due to the lack of judicial precedents on

³³ *Romesh Thappar v State of Madras*, AIR 1950 SC 124 : 1950 SCR 594.

³⁴ *Shreya Singhal v Union of India*, (2015) 5 SCC 1.

³⁵ *Daniel J Bernstein v US Department of Justice* (9th Cir) No. 97-16686 (May 6, 1999) ("*encryption software, in its source code form and as employed by those in the field of cryptography, must be viewed as expressive for First Amendment purposes... Cryptographers use source code to express their scientific ideas in much the same way that mathematicians use equations or economists use graphs. Of course, both mathematical equations and graphs are used in other fields for many purposes, not all of which are expressive. But mathematicians and economists have adopted these modes of expression in order to facilitate the precise and rigorous expression of complex scientific ideas. Similarly, the undisputed record here makes it clear that cryptographers utilize source code in the same fashion*").

³⁶ *Citizens United v Federal Election Commission*, 2010 SCC OnLine US SC 10 : 558 US 310 (2010).

³⁷ Crypto-assets operate only by way of cryptography-based software programmes, written by software programmers in the field of crypto-assets and blockchain technology. Underlying each such software programme is the source code. Further, every crypto-asset transaction is nothing more than a software message propagated to the participants of the network. Every software programmer creating a crypto-asset network and every participant transacting in crypto-assets can therefore be said to be expressing, through source code or software messages, their participation in the new technological innovation. In addition, many blockchain software programs, such as those written on the popular Ethereum network, use a crypto-asset (in Ethereum, 'Ether') as the 'fuel' to enable the operation of the software program. They cannot execute their software programs on these networks without using crypto-assets like Ether. Further, crypto-asset technology has created a new form of transactions which can be enabled over the Internet. Such transactions earlier were not possible

the subject in India, whether Indian courts will recognize crypto-asset activity to be protected by Article 19(1)(a) is uncertain and may depend on the context of the activity over which the right is being asserted.³⁸ Broadly speaking, any expressive activity which is directly affected³⁹ by a prohibition on crypto-asset activity may be held to be covered by Article 19(1)(a). Importantly, if a right under Article 19(1)(a) is recognized in the context of crypto-asset activity, the main consequence is that any restriction on the same must necessarily be traced to the itemised grounds under Article 19(2), rather than the more sweeping ground for a restriction under Article 19(6) (“*in the interests of the general public*”) vis-à-vis Article 19(1)(g).

5. Rights under Article 14: All persons in India have the right under Article 14 to be free from arbitrary or discriminatory State action. As far as arbitrariness is concerned, a legislation would be invalidated under Article 14 when it is done capriciously, irrationally, without adequate determining principle, and/or is excessive and disproportionate.⁴⁰ It must be supported by a relevant consideration of material facts.⁴¹ As far as non-discrimination is concerned, Article 14 essentially requires that among equals the law should be equal and equally administered, and that likes should be treated alike.⁴² Any distinction made by the law between persons (i.e., any classification of persons) must be based on intelligible differentia, and the intelligible differentia must have a rational relation to the object sought to be achieved by the Act.⁴³

These principles are applicable to legislative actions and not just administrative actions.⁴⁴ For instance, the Supreme Court in the 2013 case of *State of Maharashtra v. Indian Hotel & Restaurants Assn.* struck down a Maharashtra Act prohibiting dance performances in eating houses and bars as there was little or no material on the basis of which the State concluded that dancing in the prohibited establishments was likely to deprave, corrupt, or injure public morals.⁴⁵

without central intermediaries. By participating in the technology, individuals may express their endorsement and belief in the new ideas introduced by this technology.

³⁸ *Maneka Gandhi v Union of India*, (1978) 1 SCC 248.

³⁹ *Bennett Coleman and Co. v Union of India*, (1972) 2 SCC 788.

⁴⁰ *Shayara Bano v Union of India*, (2017) 9 SCC 1.

⁴¹ *Shri Sitaram Sugar Co. Ltd. v Union of India*, (1990) 3 SCC 223 (*Sitaram case*).

⁴² *K.R. Lakshman v Karnataka Electricity Board*, (2001) 1 SCC 442.

⁴³ *Special Courts Bill, 1978, In re*, (1979) 1 SCC 380.

⁴⁴ *Sitaram case*.

⁴⁵ *State of Maharashtra v Indian Hotel and Restaurants Assn.*, (2013) 8 SCC 519 as discussed by *Indian Hotel and Restaurant Assn. v State of Maharashtra*, (2019) 3 SCC 429.

The Court also held that it was not a permissible classification to distinguish between exempted establishments (gymkhanas and 3-star or higher hotels) and prohibited establishments (all other establishments) as the class of a person could not speak for a person's morality or decency. This case was specifically applied in the *IAMAI* case in the context of the RBI circular on virtual currencies. Persons carrying out crypto-asset activity therefore would have the fundamental right to be free from arbitrary or discriminatory restrictions by the State on this activity.

IV. REASONABLE RESTRICTIONS

The above rights are not absolute and are subject to reasonable restrictions in accordance with the Constitution. These restrictions are of slightly varying nature depending on the corresponding right. The rights under Article 19 are subject to “*reasonable restrictions*”,⁴⁶ the right under Article 21 can only be taken away by “*fair, just and reasonable*” procedure established by law,⁴⁷ the right under Article 14 can only be taken away on the basis of a reasonable classification as described above, and the right under Article 300A can only be taken away if the State action was for a public purpose and with compensation to the affected persons.⁴⁸

Broadly speaking, fundamental rights can only be impinged upon if the measure is not arbitrary or disproportionate.⁴⁹ While non-arbitrariness is a multi-faceted concept, its elements which are relevant to this article are (as held by several cases): (i) a measure is taken with due application of mind and consideration of relevant facts,⁵⁰ and (ii) a measure is founded on intelligible differentia (i.e., does not treat equals unequally) which have a rational relation to the objects sought to be achieved.⁵¹

The test of proportionality requires that: (i) the restrictive measure is designated for a proper purpose; (ii) the measure is rationally connected to the fulfilment of the purpose; (iii) there are no alternative less invasive measures; and (iv) there is a proper relation between the importance of achieving the aim and the importance of limiting the right.⁵²

⁴⁶ *Papnasam Labour Union v Madura Coats Ltd.*, (1995) 1 SCC 501.

⁴⁷ *Right to Privacy case*.

⁴⁸ *K.T. Plantation case*.

⁴⁹ *K.S. Puttaswamy v Union of India*, (2019) 1 SCC 1. (*Aadhaar case*)

⁵⁰ *Sitaram case*.

⁵¹ *Special Courts Bill, 1978, In re*, (1979) 1 SCC 380.

⁵² *Aadhaar case*.

Two recent examples of cases where the Supreme Court has held State action to be arbitrary and disproportionate are *K.S. Puttaswamy v. Union of India*.⁵³ (the ‘Aadhaar’ case) and the *Indian Hotel and Restaurant Assn. v. State of Maharashtra* (the ‘dance performances’ case).⁵⁴ In the Aadhaar case, decided by a Constitution Bench, the majority struck down subordinate legislations requiring Indian residents to compulsorily link their mobile numbers and bank accounts with their Aadhaar numbers, finding the linkage requirements to be disproportionate. It found that, in the context of bank account-Aadhaar linkage, though the State claimed that such linkage was in order to tackle money laundering, the State had not explained how such linkage would in fact reduce money laundering. It also found that the State had not discharged its burden of why Aadhaar linking was imperative when banks were already carrying out alternative Know Your Customer (KYC) methods. It held that the presumption of criminality is treated as disproportionate, and that “[u]nder the garb of prevention of money laundering or black money, there cannot be such a sweeping provision which targets every resident of the country as a suspicious person.” It found that the State should have carried out a proper study about the methods adopted by persons who indulge in money laundering and the kinds of bank accounts which such persons maintain, and targeted those bank accounts for the purpose of Aadhaar linking. Similarly, it held that the circular requiring persons to link their mobile numbers with Aadhaar was “disproportionate and unreasonable State compulsion”. It held that there could be less intrusive alternatives to this mandatory linkage, and that “for the misuse of such SIM cards by a handful of persons, the entire population cannot be subjected to intrusion into their private lives.”

In the dance performances case, the Court struck down various provisions of a Maharashtra Act restricting dance performances in certain kinds of commercial establishments. An example of a provision it found arbitrary and disproportionate was a provision proscribing the serving of alcohol in rooms where dance was performed. It found that the State was influenced by moralistic overtones, and that even if there are isolated incidents of misbehaviour with dancers, alternative measures – and not a complete prohibition – would have to be adopted.

However, the *locus classicus* on the reasonableness of a restriction on fundamental rights is (arguably) the early case of *Chintaman Rao v. State of M.P.*, decided by a Constitution Bench of the Supreme Court in 1950.⁵⁵

⁵³ *Aadhaar case*.

⁵⁴ *Indian Hotel and Restaurant Assn. v State of Maharashtra*, (2019) 3 SCC 429.

⁵⁵ *Chintaman Rao v State of M.P.*, AIR 1951 SC 118 : 1950 SCR 759.

In *Chintaman Rao*, the Court struck down a restriction on the manufacture of *bidis* during the agricultural season, holding that alternative, less invasive measures were available (such as a regulation of the hours of work) and that the impugned measure went much in excess of its object (adequate supply of agricultural labour in *bidi* manufacturing areas). It also found that the effect of the measure was that a manufacturer of *bidis* could not employ persons even from places not covered by the notification. It held that such a prohibition was of an arbitrary nature as it had no relation to the object of the legislation.

The right to property under Article 300A too, though not a fundamental right, cannot be restricted in a disproportionate or excessive manner. This has been held by a Constitution Bench in the *K.T. Plantation* case.⁵⁶ The Court held that before depriving persons of their right under Article 300A, there has to be a ‘public purpose’ and the right to claim compensation. The Court held further that the measure (including the compensation) must always be “*just, fair and reasonable*” as understood in terms of Articles 14, 19(1)(g), and other Articles.

This article analyzes whether these criteria of reasonableness and proportionality are met by the Committee’s recommendation of an outright ban on crypto-asset activity.

V. ANALYZING EACH REASON IN THE COMMITTEE REPORT

The Committee Report was completed in February 2019 and released publicly in July 2019.⁵⁷ The Committee consisted of the following members:

- a) Secretary, Department of Economic Affairs, Ministry of Finance, who was the Chairman;
- b) Secretary, Ministry of Electronics and Information Technology (MeitY);
- c) Chairman, Securities and Exchange Board of India (SEBI); and

⁵⁶ *K.T. Plantation case*.

⁵⁷ Department of Economic Affairs, *Report of the Committee to Propose Specific Actions to be Taken in Relation to Virtual Currencies* (Ministry of Finance-Government of India, 28 February 2019) <<https://dea.gov.in/sites/default/files/Approved%20and%20Signed%20Report%20and%20Bill%20of%20IMC%20on%20VCs%2028%20Feb%202019.pdf>> accessed 4 June 2020; Press Information Bureau, Government of India, Inter-Ministerial Committee on Virtual Currencies submits its Report along with Draft Bill ‘Banning of Cryptocurrency & Regulation of Official Digital Currency Bill, 2019’ (Press Release, 22 July 2019) <<https://pib.gov.in/Pressreleaseshare.aspx?PRID=1579759>> accessed 4 June 2020.

d) Deputy Governor, RBI.

The minutes of the Committee's meetings suggest that it also closely consulted the Chairman of the Central Board of Direct Taxes.⁵⁸

The Committee Report recommends the introduction of a Draft Banning of Cryptocurrency and Regulation of Official Digital Currency Bill, 2019 (the 'Draft Bill') which provides for an outright ban on the use of 'cryptocurrency' (as defined in the Draft Bill) for any purpose, including buying, selling, and storing. The Draft Bill in fact criminalizes activities relating to 'cryptocurrency' with a fine or imprisonment of up to ten years.

In light of the constitutional principles discussed above, this is on its face an extreme step since it criminalizes all uses of a value-neutral technology. As stated above, crypto-assets are a platform technology which can be used for beneficial or harmful purposes, like the Internet. The Draft Bill would prevent all useful applications of the technology which, as described above, include applications which can bring significant cost-savings in cross-border inward migrant remittances, and innovations in decentralized software applications by India's software community. Importantly, it would, in one fell swoop, bring 50 lakh persons in India under the threat of criminal prosecution, facing a potential ten-year jail term, forcing them to dispose of a legitimate and valuable asset. Because of these severe repercussions, the Draft Bill needs close scrutiny on whether it is a reasonable restriction on the fundamental freedoms discussed above with respect to crypto-assets.

Below, each reason given by the Committee Report in support of the Draft Bill is set out along with responses setting out why – it is submitted – the reason is specious and/or can be effectively addressed with a less invasive measure.

Committee Report's Reason: Crypto-assets do not have any of the benefits of fiat currency and cannot replace fiat currency.⁵⁹

Response: The mere fact that the technology has a value-transfer or value-storage role does not mean that it has to be fiat currency or legal tender. There are many systems of value transfer or stores of value which work in tandem with fiat currency, including gold and loyalty points systems. In fact, the largest multi-brand loyalty points system in India consists of over 100

⁵⁸ Committee Report (n 57) 84-85.

⁵⁹ Committee Report (n 57) 27.

million customers and over 100 leading, mainstream commercial enterprises.⁶⁰ Customers earn ‘points’ by making purchases and the points can in turn be redeemed for value at a large network of merchants.⁶¹ These points are not legal tender or fiat currency in India and are purely contractual. Similarly, gold, which is used as a store of value and investment asset by many persons (including the RBI) is not legal tender or fiat currency in India.

Therefore, the use of crypto-assets cannot be prohibited merely because it is not fiat currency or does not have its characteristics. Rather, an empirical economic assessment of the financial stability or monetary policy implications of the use of crypto-assets should be carried out, and its usage regulated accordingly. No such empirical assessment appears to have been carried out by the Committee or any other authority in India.

Committee Report’s Reason: Crypto-assets have no inherent value beyond the utility their underlying technologies represent.⁶²

Response: In economic theory, value is widely acknowledged to be determined by individuals’ subjective preferences, which dictate demand and supply for a particular item.⁶³ This is clearly borne out by the high values often paid for antiques, artwork, and other collectors’ items, which go far beyond the cost of labour and materials associated with such items. For instance, a gold coin – one of the last gold coins to be minted in the United States – was sold for 7.6 million USD in 2002.⁶⁴ The most valuable work of art ever sold at an auction was Pablo Picasso’s 1955 painting, *Les femmes d’Alger*, which was sold for 179.3 million USD in 2015.⁶⁵ It is difficult to say that the Committee Report would have ascribed such a high ‘inherent value’ to these items. Yet, it could be nobody’s case that transactions in collectors’ items should be banned. It would be difficult to justify a restriction on a constitutional freedom merely because the State is of the view that the activity lacks

⁶⁰ See *Payback* <<https://payback.in>> accessed 4 June 2020; also InterMiles <intermiles.com> accessed 4 June 2020.

⁶¹ *ibid.*

⁶² Committee Report (n 57) 27.

⁶³ Edward P. Stringham, ‘Economic Value and Costs are Subjective’ in Peter J. Boettke (ed), *Handbook on Contemporary Austrian Economics* (Edward Elgar Publishing 2010) ch 4 <<https://ssrn.com/abstract=1676261>> accessed 4 June 2020 states, ‘*With a few exceptions, almost all modern economists believe that goods are valued based on how they satisfy individuals’ subjective preferences.*’

⁶⁴ ‘The Most Expensive Items Ever Auctioned: Double Eagle Coin’ (*CNN Business*, 2 March 2016) <<https://money.cnn.com/gallery/luxury/2016/03/02/most-expensive-auction-items/7.html>> accessed 4 June 2020.

⁶⁵ ‘The Most Expensive Items Ever Auctioned: Pablo Picasso’s *Les Femmes d’Alger*’ (*CNN Business*, 2 March 2016) <<https://money.cnn.com/gallery/luxury/2016/03/02/most-expensive-auction-items/index.html>> accessed 4 June 2020.

value. As Chandrachud, J. observed in the Right to Privacy case, “[t]he duty of the state is to safeguard the ability to take decisions – the autonomy of the individual – and not to dictate those decisions.”

In any case, crypto-assets are founded on the scientific breakthrough made in Satoshi Nakamoto’s 2008 paper,⁶⁶ a breakthrough that has been acknowledged by computer scientists worldwide⁶⁷ as well as by the RBI and other Indian government authorities in various reports. In short, crypto-assets enable the transfer of value over the Internet without central intermediaries, something that was not achieved prior to 2008 despite various attempts. In fact, even the Committee Report states that crypto-assets do not have inherent value “*beyond the utility their underlying technologies represent*”, thereby in fact recognizing that there is value in crypto-assets due to the utility of the technology.

Further, the market forces ascribing value to crypto-assets make it clear that such value is not a result of the irrational exuberance of a few participants. The total market capitalization of crypto-assets listed on coinmarketcap.com (considered one of the leading market data websites in the crypto-asset industry) as of May 2020 was approximately 261 billion USD.⁶⁸ In addition, crypto-assets have received investment and recognition from reputed institutions and individuals including Massachusetts Institute of Technology, Harvard University, JP Morgan, Fidelity, Samsung, Visa, Mastercard, Microsoft, Ratan Tata, Khosla Ventures, and many others.⁶⁹

⁶⁶ Nakamoto (n 2).

⁶⁷ For example, Arvind Narayanan and Jeremy Clark (n 4) 15 states, ‘*Understanding all these predecessors that contain pieces of bitcoin’s design leads to an appreciation of the true genius of Nakamoto’s innovation*’; Yossi Gilad (n 5) states, ‘*Cryptographic currencies such as Bitcoin can enable new applications, such as smart contracts and fair protocols, can simplify currency conversions, and can avoid trusted centralized authorities that regulate transactions.*’

⁶⁸ Based on data from coinmarketcap.com as of May 2020.

⁶⁹ MIT Digital Currency Initiative <<https://dci.mit.edu/>> accessed 4 June 2020; Luke W. Vrotsos and Cindy H. Zhang, ‘Harvard Invests Millions in New Cryptocurrency’ (*The Harvard Crimson*, 12 April 2019) <<https://www.thecrimson.com/article/2019/4/12/hmc-crypto-investment/>> accessed 4 June 2020; ‘J.P. Morgan creates Digital Coin for Payments’ (*J.P. Morgan*, 14 February 2019) <<https://www.jpmorgan.com/global/news/digital-coin-payments>> accessed 4 June 2020; Colin Harper, ‘J.P. Morgan Opens Accounts for Bitcoin Exchanges- Coinbase and Gemini Up First’ (*Forbes*, 12 May 2020) <<https://www.forbes.com/sites/colinharper/2020/05/12/jp-morgan-opens-accounts-for-bitcoin-exchanges--coinbase-and-gemini-up-first/>> accessed 4 June 2020; *Fidelity Digital Assets* <www.fidelitydigitalassets.com> accessed 4 June 2020; Billy Bambrough, ‘Samsung is Quietly Becoming A Major Bitcoin, Crypto and Blockchain Player’ (*Forbes*, 18 February 2020) <<https://www.forbes.com/sites/billybambrough/2020/02/18/samsung-is-quietly-becoming-a-major-bitcoin-crypto-and-blockchain-player/>> accessed 4 June 2020; Michael del Castillo, ‘Visa Grants Coinbase Power to Issue Bitcoin Debit Cards’ (*Forbes*, 19 February 2020) <<https://www.forbes.com/sites/michaeldelcastillo/2020/02/19/>>

This indicates a degree of sophistication in the crypto-asset market which cannot be written off with a cursory remark.

Committee Report's Reason: Crypto-assets are volatile and the subject of speculation and price manipulation.⁷⁰

Response: Recent events in the stock and commodities markets have shown that volatility is a characteristic not unique to crypto-assets. For instance, in October 2019, the shares of a large telecom company fell by 35% in two days and by over 80% since the start of the year.⁷¹ The crises affecting banks and non-banking financial institutions also took their toll. In February 2018, in just two days, approximately 5 lakh crore Indian Rupees of value was erased from stocks listed on the Bombay Stock Exchange (BSE).⁷² In September 2018, the market capitalization of BSE-listed stocks fell by 8.47 lakh crore Indian Rupees in five days.⁷³ The price of certain stocks fell by up to 60% within a single day.⁷⁴

visa-grants-coinbase-power-to-issue-bitcoin-debit-cards/#34061f3b2e83> accessed 4 June 2020; Kevin Helms, 'Visa Files Patent for Cryptocurrency System to Replace Cash' (*Bitcoin.com*, 15 May 2020) <<https://news.bitcoin.com/visa-cryptocurrency-system/>> accessed 4 June 2020; Avi, 'Mastercard Patents a Method to Manage Cryptocurrency "Fractional Reserves"' (*Bitcoin.com*, 18 July 2018) <<https://news.bitcoin.com/mastercard-patents-a-method-to-manage-cryptocurrency-fractional-reserves/>> accessed 4 June 2020; 'Ethereum Cryptocurrency and Blockchain Full Guide' (*Microsoft*) <<https://www.microsoft.com/en-us/p/ethereum-cryptocurrency-and-blockchain-full-guide/9n-0mjg5x40n8>> accessed 4 June 2020; 'Ratan Tata, American Express invest in digital currency startup Abra' (*The Economic Times*, 24 October 2015) <<https://economictimes.indiatimes.com/small-biz/startups/ratan-tata-american-express-invest-in-digital-currency-startup-abra/articleshow/49496937.cms>> accessed 4 June 2020; Jeff Kauflin, 'Startup Raises \$23 Million to Make Crypto Trades Faster and Stealthier' (*Forbes*, 16 August 2018) <<https://www.forbes.com/sites/jeffkauflin/2018/08/16/startup-raises-23-million-to-make-crypto-trades-faster-and-stealthier/>> accessed 4 June 2020.

⁷⁰ Committee Report (n 57) 29.

⁷¹ 'Vodafone Idea Share hits Fresh All-time Low on SC Verdict, Nosedives 35% in Two Days', (*Business Today*, 25 October 2019) <<https://www.businesstoday.in/markets/company-stock/vodafone-idea-share-hits-fresh-all-time-low-on-sc-verdict-nosedives-35-in-two-days/story/386718.html>> accessed 4 June 2020.

⁷² Sriram Iyer, 'Indian Markets Have Just Lost Over \$75 Billion—But it's Not all Jaitley's Fault' (*Quartz India*, 6 February 2018) <<https://qz.com/india/1199373/bse-blowout-indian-markets-have-lost-over-75-billion-but-its-not-all-arun-jaitleys-fault/>> accessed 4 June 2020.

⁷³ 'Investors Poorer by Rs 8.5 lakh Crore as Market Turmoil Continues for Fifth Day' (*Times of India*, 24 September 2018) <<https://timesofindia.indiatimes.com/business/india-business/investors-poorer-by-rs-8-5-lakh-crore-as-market-turmoil-continues-for-fifth-day/articleshow/65935108.cms>> accessed 4 June 2020.

⁷⁴ 'On Edge: On the Volatility in Indian Markets' (*The Hindu*, 24 September 2018) <<https://www.thehindu.com/opinion/editorial/on-edge/article25022243.ece>> accessed 4 June 2020.

In October 2019, shares of certain mid-sized banks fell by over 21% in intraday trade, and the shares of one of these banks – Yes Bank – shot back up by 33% two days later.⁷⁵ At its low in October 2019, shares of this bank – which was once the country's sixth largest private sector lender – had fallen so as to erode 92% of investors' wealth from its record high just 14 months earlier.⁷⁶ Later, in the same month, the price rose by 39% in intraday trading and by 60% in one month.⁷⁷

In March 2020, the COVID-19 pandemic resulted in 52 lakh crore Indian rupees of investor losses on the Indian equity market, erasing nearly six years of gains in one fell swoop.⁷⁸

To compare, the annualized volatility of Bitcoin was 166.45% as of March 27, 2020,⁷⁹ while the annualized volatility of Yes Bank and Zee Entertainment Enterprises Limited derivatives as of March 28, 2020 was 428.5% and 170.65% respectively.⁸⁰

Yet it cannot be the Committee Report's case that securities trading ought to be prohibited because of high volatility.

This is not to say that volatility and price manipulation in the crypto-asset market ought to be ignored; instead, it should be dealt with by regulation.

⁷⁵ Shubham Raj, 'After Market: Tuesday Turmoil Costs Equity Investors Rs 1.85 Lakh Crore; YES Bank, RBL Bleed' (*ET Markets*, 1 October 2019) <<https://m.economictimes.com/markets/stocks/news/after-market-tuesday-turmoil-costs-equity-investors-rs-1-85-lakh-crore-yes-bank-rbl-bleed/articleshow/71394559.cms>> accessed 4 June 2020.

⁷⁶ Ami Shah and others, 'Death by a Thousand Cuts! How Rana Kapoor's 'Diamond' YES Bank Turned into a Smallcap' (*ET Markets*: 2 October 2019) <<https://economictimes.indiatimes.com/markets/stocks/news/death-by-a-thousand-cuts-how-rana-kapoors-diamond-yes-bank-turned-into-a-smallcap/articleshow/71396716.cms?from=mdr>> accessed 4 June 2020.

⁷⁷ 'Yes Bank Shares Rally 39% on Binding Offer of \$1.2 bn From Global Investor' (*Moneycontrol News*, 31 October 2019) <<https://www.moneycontrol.com/news/business/markets/yes-bank-shares-rally-25-on-binding-offer-of-1-2-bn-from-global-investor-4589871.html>> accessed 4 June 2020.

⁷⁸ Amit Mudgill, 'Corona Carnage Threatens to Wipe Off Market's Entire Modi-era Gain' (*ET Markets*, 23 March 2020) <<https://economictimes.indiatimes.com/markets/stocks/news/corona-carnage-threatens-to-wipe-off-markets-entire-modi-era-gain/articleshow/74771891.cms>> accessed 4 June 2020.

⁷⁹ 'BVOL: Annualized Historical Volatility Index' (*BitMEX*) <<https://www.bitmex.com/app/index/BVOL>> accessed 4 June 2020.

⁸⁰ 'Quote Yes Bank Limited-YESBANK' (NSE as on April 30, 2020 15:30:31 IST) <https://www1.nseindia.com/live_market/dynaContent/live_watch/get_quote/GetQuoteFO.jsp?underlying=YESBANK&instrument=FUTSTK&type=-&strike=-&expiry=30APR2020> accessed 4 June 2020; 'Quote Zee Entertainment Enterprises Limited-ZEEL' (NSE as on April 30, 2020 15:30:31 IST) <https://www1.nseindia.com/live_market/dynaContent/live_watch/get_quote/GetQuoteFO.jsp?underlying=ZEEL&instrument=FUTSTK&type=-&strike=-&expiry=30APR2020> accessed 4 June 2020.

This is why securities regulators around the world, including the SEBI, regulate the securities market to a granular level of detail. In fact, the securities market in India in its early stages suffered from the same concerns stated in the Committee Report. Interestingly, a 1948 Government of India report titled 'Report on the Regulation of the Stock Market in India' by P. J. Thomas, independent India's first economic advisor, found as follows:

The enquiry soon disclosed a serious state of things in the stock market, one which clearly demands Government intervention in the public interest. ...

Not only the organisation of the stock market was found defective: its functioning has also often been detrimental to the interests of investors and of the national economy as a whole. Safety for dealings is largely non-existent and proper provision does not exist for equity between parties. Perhaps the most objectionable feature is the violently fluctuating character of prices in the stock market. This has also worked to the detriment of the investing public. Occasionally the market is pushed up by reckless bull operators to unwarranted heights, and the crash that necessarily follows leads to wide-spread liquidation and loss: even such a pitiable situation, let it be noted, is utilised by powerful bear syndicates to hammer prices down and to extort as much money as possible from investors by causing panicky selling in the market. This has been going on for long in the Indian stock market...⁸¹

This report ultimately recommended regulation (and not prohibition) of the stock market to counter these negative aspects.

Similarly, any volatility and price manipulation in crypto-asset markets ought to be dealt with by regulation and not an outright prohibition. Besides market regulatory measures to prevent sharp price swings and price manipulation, regulators may also consider imposing statutory warnings (akin to those issued for securities market investments) with respect to the crypto-asset market.

Committee Report's Reason: Crypto-assets carry risks for the wider financial system, compromising the ability of central banks to monitor and stabilise the economy.⁸²

⁸¹ P.J. Thomas, *Report on the Regulation of the Stock Market in India* (Glasgow Printing Co, Howrah for the Ministry of Finance-Government of India 1948) (i) <https://www.sebi.gov.in/sebi_data/commondocs/may-2019/HistoryReport1948_p.pdf> accessed 4 June 2020.

⁸² Committee Report (n 57) 30.

Response: The Committee Report does not discuss any empirical evidence to support this reason. Its only analysis in support of this reason is as follows:

Central banks cannot regulate the money supply in the economy if non-official virtual currencies are widely used, as these are decentralised. This restricts their ability to stabilise the economy. In addition, cross-border transactions with non-official virtual currencies can violate limits on the inflow and outflow of money, particularly as such transactions happen irreversibly. This compromises another important lever of monetary policy.

The second point is easily dealt with, since the solution is to regulate cross-border crypto-asset transactions under the Foreign Exchange Management Act, 1999 ('FEMA'). FEMA regulates all transfers of value into and outside India, whether of money or goods and services (including 'software').⁸³ Crypto-assets, which are intangible information, can be subject to the same regime as 'software' under FEMA, and their export and import regulated accordingly.

Regarding the first point on the regulation of money supply and financial stability, a parallel can again be drawn between crypto-assets on the one hand and gold and loyalty points systems on the other. The latter are not legal tender but are widely used in the mainstream economy for the storage and transfer of value and, yet, are not banned. Some aspects relating to gold are specifically regulated by various Indian laws,⁸⁴ and holding and trading it is a lawful activity. Similarly, to this author's knowledge, loyalty points systems— despite wide mainstream use among a number of popular merchants⁸⁵— are not specifically regulated⁸⁶ and would only be subject to generally applicable laws like the contract law and consumer protection law. Being similar in many aspects to gold (which is also decentralized and an

⁸³ Eg, Foreign Exchange Management Act 1999 (FEMA), ss 2 (l), 2 (p), and 7, which present the definitions of 'export', 'import', and provision on export of 'goods', read with reg 2 (vii), Foreign Exchange Management (Export of Goods & Services) Regulations 2015 which gives the definition of 'software' and treatment in line with 'goods'; FEMA, s 5, read with RBI Master Direction – Import of Goods and Services (RBI/FED/2016-17/12, FED Master Direction No. 17/2016-17, as amended), which provides for a regime on import of 'goods'.

⁸⁴ Eg, RBI Master Direction – Import of Goods and Services (RBI/FED/2016-17/12, FED Master Direction No. 17/2016-17, as amended).

⁸⁵ The Most Expensive Items Ever Auctioned: Double Eagle Coin (n 64).

⁸⁶ Reserve Bank of India, *Certificates of Authorisation issued by the Reserve Bank of India under the Payment and Settlement Systems Act, 2007 for Setting up and Operating Payment System in India* (2009) <<https://rbidocs.rbi.org.in/rdocs/Publications/PDFs/ATH190315ENTPSP.PDF>> accessed 4 June 2020, where no authorization(s) appears to have been issued for loyalty points systems.

important store of value), crypto-assets can be regulated similarly by the RBI as far as monetary policy and financial stability goes.

Importantly, there has been no empirical finding by the Committee Report or the RBI (the regulator of monetary policy and financial stability) showing a current or threatened risk posed by crypto-assets to monetary policy or financial stability. In fact, the RBI publishes detailed biannual financial stability and monetary policy reports,⁸⁷ where it empirically analyses the impact of various global and domestic factors on the Indian economy. These factors include stressed sectors of the economy, asset quality and other aspects of the health of financial institutions, consumer behaviour, geopolitical risks, global economic conditions, commodity prices (including gold and oil prices), and U.S. dollar liquidity, among others. On the contrary, there is no such economic analysis on crypto-assets in the RBI's financial stability reports or monetary policy reports barring a high-level summary on 'virtual currency' in 2013.⁸⁸ That summary included all types of virtual currencies including in-game virtual currencies, and only concluded that "[t]he regulators are studying the impact of online payment options and virtual currencies to determine potential risks associated with them."⁸⁹ There has since been no empirical, economic finding on any such potential risks.

In fact, the RBI found in a 2017 working group report that "*their [crypto-assets'] influence on financial services and the wider economy is negligible today, and it is possible that in the long term they may remain a product for a limited user base on the fringes of mainstream financial services*"⁹⁰ and in its 2018 annual report that "*cryptocurrency may not currently pose systemic risks*".⁹¹

⁸⁷ Reserve Bank of India, *Half Yearly Financial Stability Report* <<https://www.rbi.org.in/Scripts/FsReports.aspx>>; <<https://www.rbi.org.in/Scripts/HalfYearlyPublications.aspx?head=Monetary%20Policy%20Report>> accessed 4 June 2020.

⁸⁸ Reserve Bank of India, 'Financial Sector Regulation and Infrastructure' in *Financial Stability Report June 2013* (June 2013) ch III, 62 <<https://www.rbi.org.in/scripts/PublicationReportDetails.aspx?ID=709>> accessed 4 June 2020.

⁸⁹ *ibid.*

⁹⁰ Reserve Bank of India (Central Office-Mumbai), *Report of the Working Group on FinTech and Digital Banking* (November 2017) 9 <<https://rbidocs.rbi.org.in/rdocs/PublicationReport/Pdfs/WGFR68AA1890D7334D8F8F72CC2399A27F4A.PDF>> accessed 4 June 2020 (Digital Banking report).

⁹¹ Reserve Bank of India, 'Economic Review' in *Annual Report 2017-18* (August 2018) ch II, 48 <<https://www.rbi.org.in/scripts/AnnualReportPublications.aspx?Id=1229>> accessed 4 June 2020.

At a global level, India is a member of both the G20 and the Financial Stability Board – a global, multilateral expert body – which have found that crypto-assets do not pose a threat to global financial stability.⁹²

In case an argument is advanced that a ban on crypto-assets is a pre-emptive measure by way of abundant caution to prevent any potential risk to the financial system, any such pre-emptive measure ought to be – based on the constitutional principles discussed above – a proportionate and reasoned decision based on a consideration of the material facts. To find examples of a proportionate and empirical approach to preventive measures to address financial stability and monetary policy risks, one need not look further than the RBI. In its financial stability reports, it provides detailed empirical economic analysis on the performance and risks of financial institutions and carries out stress tests for factors such as credit risk (including sectoral credit risk), interest rate risk, equity price risk, and others.⁹³ For preventive measures, it has implemented a Prompt Corrective Action ('PCA') framework which it has described as follows:

The global financial crisis demonstrated the shortcomings of the framework for effective financial crisis management and in many cases the absence of effective resolution mechanism to handle systemic financial institutions. A resolution mechanism is put in place when a financial institution has weakened substantially, but a framework of preventive as well as early intervention measures could potentially arrest the deterioration in financial institutions in the first place. Putting in place a prompt corrective action (PCA) framework that incorporates graded triggers at prespecified levels for taking early actions by the regulators is important for the financial sectors. ...

The Reserve Bank of India initiated a Scheme of Prompt Corrective Action (PCA) in 2002 in respect of banks which hit certain regulatory trigger points in terms of capital to risk weighted assets ratio (CRAR), net non-performing assets (NNPA), and return on assets (RoA). ... Under the Revised PCA framework, apart from the capital, asset quality and profitability, leverage is being monitored additionally. Under PCA, banks face restrictions on distributing dividends, remitting

⁹² Ministry of Finance, Japan, *Communiqué: G20 Finance Ministers and Central Bank Governors Meeting* (Fukuoka-Japan, 9 June 2019) <<http://www.g20.utoronto.ca/2019/2019-g20-finance-fukuoka.html>> accessed 4 June 2020. Financial Stability Board, *Crypto-assets: Report to the G20 on Work by the FSB and Standard-setting Bodies* (16 July 2018) 1 and 6 <<https://www.fsb.org/2018/07/crypto-assets-report-to-the-g20-on-the-work-of-the-fsb-and-standard-setting-bodies/>> accessed 4 June 2020.

⁹³ Reserve Bank of India (n 87).

profits and even on accepting certain kinds of deposits.⁹⁴ (emphasis added)

As shown above, PCA is a financial stability measure imposed by the RBI on particular banks based on a detailed empirical assessment of their asset quality and other factors. Therefore, even assuming crypto-assets were a potential threat to financial stability (though the findings are to the opposite effect as discussed above), a proportionate approach by the Committee to any perceived financial stability or monetary policy concern would have been to carry out – with the help of the RBI and/or independent economic experts – an empirical economic analysis of the issue and propose a balanced response rather than an outright prohibition. An example of such a balanced response could have been for the Committee Report to recommend that the RBI (the relevant regulator) monitor whether particular banks hit the regulatory trigger points with regard to any exposure to crypto-asset activity and impose a suitably tailored form of PCA accordingly. In a similar vein, in its June 2017 Financial Stability Report, the RBI found that the telecom and power sectors were stressed sectors of the economy and, therefore, as a preemptive measure, advised banks to make provisions at higher rates in respect of advances to stressed sectors of the economy, specifically mentioning the telecom sector.⁹⁵ There was no outright prohibition on any activities of these stressed sectors.

On the contrary, the Supreme Court in the *IAMAI* case noted that the RBI did not show any semblance of damage to its regulated entities as a result of their relationship with crypto-asset exchanges.⁹⁶

Committee Report’s Reason: Crypto-asset transactions are time-consuming and “[t]he large gap in transaction processing speed between cryptocurrencies (especially Bitcoin), and other electronic payment methods, hinders their ability to be used as medium of exchange [sic].”⁹⁷

Response: There are over 2000 crypto-assets in existence, some of which can process thousands of transactions per second, and some of which are

⁹⁴ Reserve Bank of India, *Financial Stability Report Issue 17* (RBI-Financial Stability Unit, June 2018) 29 <https://rbidocs.rbi.org.in/rdocs//PublicationReport/Pdfs/0FSR_JUNE2018A3526EF7DC8640539C1420D256A470FC.PDF> accessed 4 June 2020.

⁹⁵ Reserve Bank of India, *Financial Stability Report Issue 15* (RBI-Financial Stability Unit, June 2017) <https://rbidocs.rbi.org.in/rdocs//PublicationReport/Pdfs/0FSR_30061794092D8D036447928A4B45880863B33E.PDF> accessed 4 June 2020.

⁹⁶ *IAMAI case* paras 6.172 and 6.173.

⁹⁷ Committee Report (n 57) 27.

much slower.⁹⁸ However, no crypto-asset network, to the author's knowledge, takes more than a day to process a transaction. On the contrary, and by comparison, cheques – a widely accepted and regulated form of payment – typically take at least a day or two to be processed.⁹⁹ Ultimately, as stated above, the State is not an authority to dictate the decisions of its citizens and other rights-holders. It is up to rights-holders to decide how they wish to transfer and store value, subject to reasonable restrictions. While some technologies have succeeded, others have failed, and the decisions of the general public determine which technology will succeed. Meanwhile, if the State believes, with rational basis, that intervention is necessary, the constitutional principles above tell us that the answer lies in introducing proportionate consumer protection norms rather than an outright prohibition.

Committee Report's Reason: “[Cryptocurrencies] provide a degree of pseudonymity, although not complete anonymity, to participants in a transaction. ... In some cases, virtual currencies have made criminal activity harder to stop, given the pseudonymity they provide and their cross-border nature.”¹⁰⁰

Response: Where criminal activity is suspected, law enforcement authorities have been able to use technology to trace the persons behind Bitcoin transactions by analyzing the blockchain and de-anonymizing Bitcoin transactions.¹⁰¹ The pseudonymous proprietor of the infamous Silk Road network too was uncovered and prosecuted (interestingly, through a low-tech method involving Google searches).¹⁰² Law enforcement authorities in India have also successfully obtained information from Indian crypto-asset exchanges in order to trace criminal suspects and enforce tax obligations.¹⁰³ There

⁹⁸ Zane Witherspoon, ‘A Hitchhiker’s Guide to Consensus Algorithms: A Quick Classification of Cryptocurrency Consensus Types’ (*Hackernoon*, 29 November 2017) <<https://hackernoon.com/a-hitchhikers-guide-to-consensus-algorithms-d81aae3eb0e3>> accessed 4 June 2020.

⁹⁹ Eg, State Bank of India, *Cheque Collection Policy – 2015* <<https://www.sbi.co.in/portal/web/customer-care/cheque-collection-policy>> accessed 4 June 2020.

¹⁰⁰ Committee Report (n 57) 27.

¹⁰¹ Kelly Phillips Erb, ‘IRS Followed Bitcoin Transactions, Resulting in Takedown of the Largest Child Exploitation Site on the Web’ (*Forbes*, 16 October 2019) <<https://www.forbes.com/sites/kellyphillipserb/2019/10/16/irs-followed-bitcoin-transactions-resulting-in-takedown-of-the-largest-child-exploitation-site-on-the-web/#2c55a0971ed0>> accessed 4 June 2020. This fact has also been recognized by the Committee Report, which states, ‘since the underlying Blockchain broadcasts a new transaction whenever it is verified under the consensus systems, some extent of linkability is possible.’

¹⁰² Nathaniel Popper, ‘The Tax Sleuth Who Took Down a Drug Lord’ (*The New York Times*, 25 December 2015) <<https://www.nytimes.com/2015/12/27/business/dealbook/the-unsung-tax-agent-who-put-a-face-on-the-silk-road.html>> accessed 4 June 2020.

¹⁰³ Archana More, ‘Hackers Siphon Off Funds from BoM to Invest in Bitcoin’ (*Pune Mirror*, 25 April 2017) <<https://punemirror.indiatimes.com/pune/cover-story/>

are some crypto-assets, known as ‘privacy coins’ (ZCash and Monero are common examples), where transactions may be difficult to trace if not carried out on an exchange which verifies the identity of its participants.

To the extent that crypto-asset transactions are pseudonymously, universally, and irreversibly recorded on the blockchain, or are carried out on an exchange which verifies identity, crypto-asset transactions are more traceable than transactions in physical cash or goods which are not recorded on any such distributed ledger. To the extent that crypto-asset participants may obfuscate their identity, whether by using privacy coins or otherwise, transactions resemble physical cash or goods transactions, where forensic analysis may or may not lead to traceability. Therefore, crypto-asset transactions are either more traceable or at par with physical cash and goods transactions, depending on the context.

Just as existing laws, including the Information Technology Act, the Indian Penal Code, 1860 (‘IPC’), Prevention of Money Laundering Act, 2002 (‘PMLA’), the Income Tax Act, 1961, the Prize Chits and Money Circulation Schemes (Banning) Act, 1978, FEMA, and other laws are effectively used to enforce criminal law, tax, and regulatory obligations on participants in other kinds of transactions, the same laws are already being used to investigate and prosecute fraudulent activity in crypto-asset transactions. For instance, proponents of the allegedly fraudulent GainBitcoin scheme (cited in the Committee Report as an instance of criminal activity involving crypto-assets) were arrested and prosecuted on the basis of some of these laws.¹⁰⁴ The Central Government has stated in Parliament,

Presently, there is no separate law for dealing with issues relating to cryptocurrencies. Hence, all concerned Departments and law enforcement agencies, such as RBI, Enforcement Directorate and Income Tax

hackers-siphon-off-funds-from-bom-to-invest-in-bitcoin/articleshow/58350202.cms> accessed 4 June 2020; Vishwas Kothari, ‘Pune Cops Move Sessions Court Seeking Rs 8.42 Crore’ *The Times of India* (Pune, 3 October 2019) <<https://timesofindia.indiatimes.com/city/pune/cops-move-sessions-court-seeking-rs-8-42-crore/articleshow/71414172.cms>> accessed 4 June 2020; ‘Bitcoin Crackdown: Income Tax Department to Send Notices to 4-5 Lakh HNIs for Suspected Tax Evasion’ (*Business Today*, 19 December 2017) <<https://www.businesstoday.in/current/economy-politics/bitcoin-cryptocurrency-income-tax-notices-hnis-bitcoin-trading/story/266269.html>> accessed 4 June 2020.

¹⁰⁴ Archana More, ‘Court Denies Bail to Six Key Accused’ (*Pune Mirror*, 15 August 2018) <<https://punemirror.indiatimes.com/pune/crime/court-denies-bail-to-six-key-accused/articleshow/65406906.cms>> accessed 4 June 2020; Outlook Web Bureau, ‘Raj Kundra Grilled by Enforcement Directorate in Bitcoin Money Laundering Case’ (*Outlook India*, 5 June 2018) <<https://www.outlookindia.com/website/story/raj-kundra-grilled-by-enforcement-directorate-in-bitcoin-money-laundering-case/312317>> accessed 4 June 2020.

authorities, etc. take action as per the relevant existing laws. Similarly, police/courts take action on IPC offences.

India has seen a plethora of high-stakes frauds in the securities market, commodities market, and financial sector over the past few decades;¹⁰⁵ yet these markets continue to be permitted within the bounds of regulation, with criminal activity prosecuted under the above laws. There is no reason why the crypto-asset market should be singled out as a case to be prohibited and not regulated.

In a paper by Nishith Desai Associates, titled ‘Building a Successful Blockchain Ecosystem for India: Regulatory Approaches to Crypto-Assets’ (the ‘**Regulatory Suggestions Paper**’), co-authored by this author, we have proposed a detailed set of regulatory options, including bringing crypto-asset activity within the PMLA and licensing crypto-asset intermediaries like exchanges, to further address the concerns regarding the use of crypto-assets for illegal activity.¹⁰⁶

Therefore, a mere possibility of use in criminal activity is not a ground for an outright prohibition, but calls for regulation.

¹⁰⁵ ‘PACL Head Bhangoo Arrested Over Alleged Rs 45,000-Crore Investment Scam’ *NDTV Profit* (New Delhi, 9 January 2016) <<https://www.ndtv.com/business/head-of-pacl-arrested-over-alleged-rs-45-000-crore-investment-scam-1263707>> accessed 4 June 2020; Samanwaya Rautray, ‘Sahara Group Says it Cannot Pay Rs 36,000 Crore in 18 Months Time’ (*ET Bureau*, 8 July 2015) <<https://economictimes.indiatimes.com/news/politics-and-nation/sahara-group-says-it-cannot-pay-rs-36000-crore-in-18-months-time/article-show/47981154.cms?from=mdr>> accessed 4 June 2020; ‘Karnataka Ponzi Scam: IMA Jewels Chief Mansoor Khan Summoned to Appear Before ED on June 24’ (*India Today*, 20 June 2019) <<https://www.indiatoday.in/india/story/-karnataka-ponzi-scam-mansoor-khan-summoned-to-appear-before-ed-on-june-24-1552834-2019-06-20>> accessed 4 June 2020; ‘All You Need to Know About the Saradha, Rose Valley Scams: 10 Points’ (*NDTV*, 4 February 2019) <<https://www.ndtv.com/india-news/all-you-need-to-know-about-the-saradha-rose-valley-scams-10-points-1987848>> accessed 4 June 2020; ‘Rs 2,276-Crore Speak Asia Scam Mastermind Held’ (*Deccan Herald*, 27 November 2013) <<https://www.deccanherald.com/content/371301/rs-2276-crore-speak-asia.html>> accessed 4 June 2020; Vivek Law, ‘Home Trade Scam: Beyond its Star-studded Campaign, the Financial Services Portal had Nothing’ (*India Today Magazine*, 20 May 2002) <<https://www.indiatoday.in/magazine/economy/story/20020520-home-trade-scam-beyond-its-star-studded-campaign-the-financial-services-portal-had-nothing-795259-2002-05-20>> accessed 4 June 2020; Press Trust of India, ‘Ketan Parekh Sentenced to 2 Years RI by CBI Court’ (*Financial Express*, 4 March 2014) <<https://www.financialexpress.com/archive/stock-broker-ketan-manharlal-parekh-sentenced-to-2-years-ri-by-cbi-court/1230877/>> accessed 4 June 2020; Securities and Exchange Board of India, *Action against Harshad Mehta, Videocon, BPL and Sterlite* (Ref No. PR 71/2001, 19 April 2001) <https://www.sebi.gov.in/media/press-releases/apr-2001/action-against-harshad-mehta-videocon-bpl-and-sterlite_17608.html> accessed 4 June 2020.

¹⁰⁶ Nishith Desai (n 17).

Committee Report's Reason: “[Cryptocurrencies] are decentralised networks with no central authority. ... Transactions are irreversible, and if a wrong transaction is made, there is no method of redress.”¹⁰⁷

Response: Examples of decentralized phenomena which are not banned include: commodities, including gold and other precious metals; and the Internet. To take the example of gold, there is no central authority which issues gold or regulates its supply. Similarly, there is no central authority regulating messages or content on the Internet. With regard to irreversibility, transactions in physical cash and goods, and the messages on the Internet are also irreversible. A mistakenly sent email or message online cannot be recalled except if the relevant intermediaries allow it. The handing over of physical cash or physical goods cannot be ‘reversed’ except by consent, contract, or by process of law. With respect to the Internet, consumers have recourse mainly because of the intermediaries they deal with e.g., financial institutions or e-commerce businesses, and not because the Internet has any grievance redressal mechanism of its own. Similarly, consumers are protected with respect to physical cash or goods transactions by merchants and generally applicable laws like criminal laws and consumer protection laws, rather than any feature of the cash or goods themselves.

To this extent, crypto-assets are at par with the above phenomena. The lack of a central authority or the irreversibility of transactions is therefore not a cause for an outright ban. However, intermediaries in the crypto-asset space perform a crucial function because they may hold consumer assets and funds in trust and settle purchase and sale transactions. To that extent, they resemble custodians or securities market intermediaries.¹⁰⁸ Our Regulatory Suggestions Paper proposes that such intermediaries should be licensed and supervised, and suggests the routes under Indian law by which this can be done.¹⁰⁹

Committee Report's Reason: “Miners of a currency can collude to earn more revenue by “forking”, a currency, or changing the programming protocol to benefit themselves. This could put consumers’ finances at risk.”¹¹⁰

Response: The extent of control of miners (who are essentially validators of transactions) over a crypto-asset network varies according to the particular crypto-asset. Many new crypto-assets have tried to avoid the

¹⁰⁷ Committee Report (n 57) 27 and 29.

¹⁰⁸ This is not to say that crypto-assets are necessarily ‘securities’ (see the Regulatory Suggestions Paper, supra).

¹⁰⁹ Nishith Desai (n 17).

¹¹⁰ Committee Report (n 57) 29.

concentration of power in particular miners, eg, Algorand.¹¹¹ In any event, the control of miners or other participants on a crypto-asset network is akin to the control of a Board of Directors or majority shareholders over a company. Participants in a crypto-asset network should do their due diligence on the technology underlying the network, the development team, and other participants in the network, just as shareholders in a company should do their due diligence on the management and fundamentals of a company. This is not to say that the issue of potentially *mala fide* forking in certain crypto-assets should be left unaddressed. Rather, just as shareholders' rights are protected in companies, regulation (rather than an outright prohibition) should be introduced to protect consumers. Because crypto-assets are generally global networks, with participants scattered around the world, such regulation should ideally be introduced by way of a multilateral treaty at the international level. Because a less invasive measure is available and because a similar phenomenon (shareholder rights) is addressed differently, an outright prohibition on this ground would be disproportionate and arbitrary.

Committee Report's Reason: *"The loss of a private key, analogous to a password, of a virtual currency wallet could mean that the amount held in the wallet is lost permanently. ... Balances in wallets can be stolen by the use of malware, and there is evidence that such malware is resistant to anti-virus software."*¹¹²

Response: This reason is essentially a cybersecurity concern. Interestingly, there were 53,081 cyber-security incidents in India during the year 2017 alone.¹¹³ This was stated by the Minister for electronics and information technology in 2018, who also stated, "[w]ith the proliferation and vast expansion of Information Technology and related services, there is a rise in instances of cyber crimes including financial frauds, using bank cards and e-wallets in the country like elsewhere in the world."¹¹⁴ Cybersecurity concerns are endemic to all online businesses, including regulated financial intermediaries and other established enterprises. Indian corporations which have been subjected to cyberattacks include Axis Bank, Bank of Maharashtra,

¹¹¹ Jing Chen and Silvio Micali, 'ALGORAND' (2016) <https://algorandcom.cdn.prismic.io/algorandcom%2Fcece77f38-75b3-44de-bc7f-805f0e53a8d9_theoretical.pdf> accessed 4 June 2020.

¹¹² Committee Report (n 57) 29.

¹¹³ Government of India-Ministry of Home Affairs, Rajya Sabha, *Unstarred Question 891* ('Technology to Stop Cyber Crimes') dated February 9, 2018.

¹¹⁴ *ibid.*

Cosmos Bank, Indian Railway Catering and Tourism Corporation (IRCTC), Reliance Jio, Star, and Union Bank.¹¹⁵

Cyber-crimes are actionable under the Information Technology Act, 2000.¹¹⁶ The Information Technology Act also prescribes reasonable security practices and procedures with regard to sensitive personal data or information. Crypto-asset activity is also subject to this regime.¹¹⁷ If crypto-assets are subject to heightened cybersecurity risk, there is no reason why heightened obligations cannot be prescribed under the Information Technology Act for crypto-asset intermediaries.¹¹⁸

As far as the loss of a private key is concerned, many crypto-asset intermediaries provide a 'forgot password' facility if they are in control of the crypto-assets.¹¹⁹ If they do not, the answer lies in an analogy with the physical world. The loss of valuable things is an issue as old as civilization, and it can only be addressed by the holder exercising due care and caution, and the legal system prosecuting theft.

In addition, there is no evidence provided as to how malware targeting crypto-asset wallets is any more resistant to security / anti-virus software than any other type of malware. It is well-known that in the cybersecurity sphere in general, malware developers and security researchers are involved in an ongoing 'technological arms-race'.¹²⁰

Therefore, cybersecurity is not a reason to prohibit the use of crypto-assets. A proportionate approach would require any cybersecurity concerns to be addressed through regulation and not a prohibition.

¹¹⁵ PTI, 'Cosmos Bank's Server Hacked; Rs 94 Crore Siphoned Off in 2 Days' (*The Economic Times*, 14 August 2018) <<https://economictimes.indiatimes.com/industry/banking/finance/banking/cosmos-banks-server-hacked-rs-94-crore-siphoned-off-in-2-days/article-show/65399477.cms>> accessed 4 June 2020; Vinod Mahanta and Sachin Dave, 'How India Inc is Losing its Cybersecurity War' (*The Economic Times*, 14 October 2017) <<https://economictimes.indiatimes.com/tech/internet/how-india-inc-is-losing-its-cybersecurity-war/articleshow/61074845.cms>> accessed 4 June 2020.

¹¹⁶ Eg, s 66.

¹¹⁷ Crypto-asset activity would involve a 'computer' and would hence be covered by s 43 read with s 2(1)(i) of the Information Technology Act 2000.

¹¹⁸ There is a fairly broad power to make rules under s 87 of the Information Technology Act 2000.

¹¹⁹ Eg, *Unocoin* <<https://www.unocoin.com/in>> accessed 4 June 2020; *Coinbase* <https://www.coinbase.com/password_resets/new> accessed 4 June 2020.

¹²⁰ Eg, Alex Ayers, 'Security Think Tank: Addressing the Malware Arms Race' (*Computer Weekly*, 2 September 2016) <<https://www.computerweekly.com/opinion/Security-Think-Tank-Addressing-the-malware-arms-race>> accessed 4 June 2020.

Committee Report's Reason: “*The mining of non-official virtual currencies is very resource intensive. ... Already, Bitcoin mining has used as much electricity as all of Switzerland, with the [Bank for International Settlements] report terming it an environmental disaster. ... The diversion of such large amounts of energy resources to mining virtual currencies can have unfavourable long-term economic consequences. Further, the energy-intensive nature of cryptocurrencies must be examined along with the data localisation requirements proposed by the RBI as well as the proposed Personal Data Protection Bill, 2018. The proposed Bill provides that the Central Government may notify categories of personal data that shall only be stored or processed in India. Reading that with another provision, which already provides for at least one copy of personal data to be stored in India, cryptocurrencies could potentially take up an enormous amount of energy in an already power-starved India.*”¹²¹

Response: The Committee Report provides no data on how much electricity is consumed by crypto-asset mining in India. It also does not attempt to provide an estimate of the same. While the statement that Bitcoin mining has used as much electricity as all of Switzerland initially appears convincing as a supporting fact, it breaks down on closer analysis. The data shows that 74% of Bitcoin mining nodes are concentrated in 10 countries, and India is not even in the top 20 countries.¹²² Japan, which is ranked number 10, contributes to 2.04% of Bitcoin mining nodes. While data regarding the percentage contribution to Bitcoin mining of India does not appear to be available, given its rank at number 28, it can be surmised to contribute significantly less than 2.04%. The United States and Germany, the top 2 countries, contribute to 25.70% and 20.06% of mining nodes respectively, and neither have prohibited crypto-asset activity but take regulatory approaches towards it. Interestingly, Switzerland, a country with a population less than Bengaluru,¹²³ is number 13 on the list (implying that Bitcoin mining is a non-trivial proportion of its electricity consumption). Still, Switzerland does

¹²¹ Committee Report (n 57) 29 and 30.

¹²² *Datalight* <<https://datalight.me/blog/researches/infographics/datalight-publishes-a-list-of-countries-with-the-largest-number-of-bitcoin-nodes/>> accessed 4 June 2020; Matthew Beedham, ‘3 Countries Host Over 50% of the World’s Bitcoin Nodes’ (*The Next Web*, 2 February 2019) <<https://thenextweb.com/hardfork/2019/02/27/3-countries-50-percent-bitcoin-network/>> accessed 4 June 2020.

¹²³ ‘Swiss Population Hits 8.5 Million Mark for First Time’ (*The Local*, 27 August 2019) <<https://www.thelocal.ch/20190827/85-million-inhabitants-and-rising-what-switzerlands-latest-population-figures-reveal>> accessed 4 June 2020; ‘Bengaluru’s Migrants Cross 50% of the City’s Population’ (*The Times of India*, 4 August 2019) <<https://timesofindia.indiatimes.com/city/bengaluru/bengalurus-migrants-cross-50-of-the-citys-population/articleshow/70518536.cms>> accessed 4 June 2020.

not prohibit Bitcoin mining but regulates crypto-asset activity in a nuanced manner.¹²⁴

Regarding the potential consequences of the draft Personal Data Protection Bill, 2018, the Committee Report does not analyze why the effect of any data localization requirements on the crypto-asset industry would be more than the effect on any other industry e.g., online cloud storage platforms. According to Fortune, data centers consume about 2% of electricity worldwide whereas Bitcoin is estimated to consume much less (between 0.165% and 0.33% of electricity worldwide).¹²⁵

Interestingly, the Committee Report cited a study to state that an estimated 19 households in the United States can be powered for one day by the electricity consumed in a single Bitcoin transaction. By contrast, the Fortune report mentioned above contained this anecdote: “*The music video for “Despacito” set an Internet record in April 2018... In the process, ‘Despacito’ reached a less celebrated milestone: it burned as much energy as 40,000 U.S. homes use in a year.*”¹²⁶ Yet it could be nobody’s case that there should be a ban on online cloud or streaming services due to energy consumption.

In any case, technological advances are reducing the energy consumption concern. In November 2018, Intel was awarded a patent for “*energy-efficient high performance bitcoin mining*”.¹²⁷ Further, many newer crypto-assets are more energy-efficient than Bitcoin,¹²⁸ and new consensus mechanisms like proof-of-stake could end concerns about energy consumption.¹²⁹

Still, if the Committee was apprehensive about the impact of crypto-asset mining on power consumption, it ought to have sought an expert opinion

¹²⁴ FINMA, ‘FINMA Publishes ICO Guidelines’ (16 February 2018) <<https://www.finma.ch/en/news/2018/02/20180216-mm-ico-wegleitung/>> accessed 4 June 2020.

¹²⁵ Naomi Xu Elegant, ‘The Internet Cloud Has a Dirty Secret’ (*Fortune*, 18 September 2019) <<https://fortune.com/2019/09/18/internet-cloud-server-data-center-energy-consumption-renewable-coal/>> accessed 4 June 2020; Nicola Jones, ‘How to Stop Data Centres from Gobbling up the World’s Electricity’ (*Nature*, 13 September 2018) <<https://www.nature.com/articles/d41586-018-06610-y>> accessed 4 June 2020.

¹²⁶ Elegant (n 125).

¹²⁷ Nikhilesh De, ‘Intel Wins Patent for Energy-Efficient Bitcoin Mining’ (*Coindesk*, 30 November 2018) <<https://www.coindesk.com/intel-just-won-a-patent-for-an-energy-efficient-bitcoin-miner>> accessed 4 June 2020.

¹²⁸ Eg, Rob Matheson, ‘A Faster, More Efficient Cryptocurrency’ (*MIT News*, 23 January 2019) <<http://news.mit.edu/2019/vault-faster-more-efficient-cryptocurrency-0124>> accessed 4 June 2020.

¹²⁹ GF, ‘Why Bitcoin Uses so Much Energy’ (*The Economist*, 9 July 2018) <<https://www.economist.com/the-economist-explains/2018/07/09/why-bitcoin-uses-so-much-energy>> accessed 4 June 2020.

on the topic based on empirical data and scientific analysis. Energy consumption is an inherently statistics-driven field. None of the Committee's members were experts in the field. The Ministry of Power has, to the author's knowledge, to date expressed no concern on the energy consumption associated with crypto-assets.¹³⁰ Instead of an empirical analysis, however, the Committee Report has made a speculative statement that crypto-asset activity “*could have unfavourable long-term economic consequences*” and “*could potentially take up an enormous amount of energy in an already power-starved India*”. In the event any negative impact of crypto-assets on energy consumption in India is actually found after a scientific study, it should be addressed by proportionate regulation rather than an outright prohibition.

VI. OTHER INFIRMITIES IN THE COMMITTEE REPORT

The Committee Report also suffers from the following defects:

- i. Contradictions with other government reports: A ‘Steering Committee on Fintech Related Issues’¹³¹ (‘**Steering Committee**’) released its report in September 2019. Significantly, the Steering Committee was chaired by the same official who chaired the Committee. MeitY, RBI, and SEBI, which were also part of the Committee, were also represented on the Steering Committee. Yet, the Steering Committee, whose report was published a few months after the Committee Report, acknowledged the benefits associated with crypto-assets and did not discuss any of the disadvantages cited in the Committee Report.¹³² Similarly, other government reports as well as publications of reputed

¹³⁰ Based on an automated search of Ministry of Power-Government of India <<https://powermin.nic.in/>> accessed 4 June 2020.

¹³¹ Department of Economic Affairs, *Report of the Steering Committee on Fintech Related Issues* (Ministry of Finance-Government of India, 2019) 43 <<https://dea.gov.in/sites/default/files/Report%20of%20the%20Steering%20Committee%20on%20Fintech.pdf>> accessed 4 June 2020 (Steering Committee report).

¹³² The Steering Committee report (n 131) 11, 16, 20 and 21 states, “However, the broader fintech landscape all over the world comprises of a variety of day-to-day financial services enhanced by technology. Mobile payments, cryptocurrency, investment advisory, insurance aggregators, peer-to-peer lending and some more services which traditionally required human capital, now form the fintech landscape. fintech comprises of technology-based businesses that compete against, enable and/or collaborate with financial institutions. ... Cryptography, as an instrument for fintech, has four key benefits for financial firms: (a) confidentiality, (b) privacy, (c) non-repudiation, and (d) integrity. ... Cryptography also forms the backbone of DLT and blockchain based systems such as Virtual Currencies. ... 1.2.3 Digital currencies and tokens ... The mechanisms surrounding cryptocurrencies, particularly the Blockchain and Initial Coin Offerings (ICOs), are revolutionising the global fintech landscape. The issue of initial coin offerings has emerged as an innovative way of capital raising by fintech businesses. ... ICOs generally operate as blockchain-based

institutions have acknowledged both benefits and risks associated with crypto-assets.¹³³ The Committee Report, however, presents a one-sided picture, discussing none of the benefits associated with crypto-assets. The contradictions between the Committee Report and these other government reports, and the fact of the Committee Report not considering any benefits of crypto-assets (which are material facts which were readily available and ought to have been considered), disclose a non-application of mind that could well be found to fall foul of Article 14 in the event the Draft Bill is enacted into law.

2. Lack of deliberation: The Committee held three formal meetings over its 15-month tenure: on November 27, 2017, February 22, 2018, and January 9, 2019. Until the third meeting, the Committee was split as to whether crypto-assets should be regulated or prohibited. In fact, minutes of the first meeting record that the Committee agreed that “[t]he banning option is very difficult to implement. It may also drive some operators underground which may encourage use of such ‘currencies’ for illegitimate purposes.”¹³⁴ In the second meeting on February 22, 2018,¹³⁵ two members favoured a regulatory approach and two members favoured the banning approach, with the Chairman appearing to lean towards the regulatory option. The Secretary, MeitY, in fact stated that “*India, being a very large economy and in the forefront of technological innovation, should have [an] open attitude towards this phenomenon and develop its options accordingly.*” The Committee then resolved that the Department of Economic Affairs and SEBI would each prepare papers, including a draft law, on the option of regulating crypto-asset activity, while the RBI and CBDT would prepare detailed papers, along with a draft law, on the option of banning crypto-asset activity. However, in the third meeting, held almost a year later, the Committee abruptly appears to have decided on a prohibition and approved a draft report and bill to this effect.¹³⁶

funding process that enables the issuance of virtual coins or tokens in exchange for fiat currency or cryptocurrency payment.”

¹³³ Ministry of Finance-Government of India, *Committee on Digital Payments Medium Term Recommendations to Strengthen Digital Payments Ecosystem Report* (December 2016) <https://dea.gov.in/sites/default/files/watal_report271216.pdf> accessed 4 June 2020; Digital Banking report (n 90); Institute for Development and Research in Banking Technology, *Blueprint of Platform for Banking Sector and Beyond* (IDRBT, White Paper, January 2019) <https://www.idrbt.ac.in/assets/publications/Best%20Practices/BCT_2019.pdf> accessed 4 June 2020; Institute for Development and Research in Banking Technology (n 6).

¹³⁴ Committee Report (n 57) 82.

¹³⁵ Committee Report (n 57) 84-85.

¹³⁶ Committee Report (n 57) 90-93.

There is no reasoning provided anywhere in the minutes or elsewhere in the Committee Report as to why prohibition was chosen rather than regulation, especially when members of the Committee were actively considering regulation in just the previous meeting.

Every new technology comes with its share of risks and potential abuse, eg, the Internet as a vehicle for fraud and child pornography. Merely reciting the risks associated with a technology would not show application of mind as to a regulatory solution. The Committee's approach, if followed for the Internet, may have resulted in a law banning the use of the Internet. The Committee Report does not engage with why a balanced regulatory solution, or any measure less invasive than a ban, was not appropriate. Given the constitutional law precedents above emphasizing the importance of rational deliberation, this lack of reasoning in the Committee Report on the choice of a prohibition, and the unexplained change in approach from one meeting to the next, demonstrates a non-application of mind.

3. Lack of expertise and representation: Despite crypto-assets being a technical subject, the Committee did not consist of any technical experts on mathematics, cryptography, crypto-assets or blockchain technology, or any private sector representatives from the software or technical community in India or globally. On the other hand, reports of the IDRBT, a technical body and a government institution set up by the RBI, recognize the benefits associated with crypto-assets.¹³⁷ Similarly, the Secretary, MeitY, as stated above, was wary of a prohibitive approach. The Committee Report does not engage with the question of why the benefits of crypto-assets should not be allowed to develop in India. Further, as stated above, though the RBI was represented on the Committee, the Committee Report and the annexed minutes do not indicate whether any theoretical or empirical economic analysis was done on the impact of crypto-assets on the economy. Therefore, as far as both technology and economics are concerned, the Committee Report indicates a lack of expert study.
4. Vagueness: Moreover, certain key provisions of the Draft Bill are legally and conceptually vague. For instance, the very definition of the term 'Cryptocurrency' appears to be misdirected¹³⁸ and the operative

¹³⁷ Institute for Development and Research in Banking Technology (n 133); Institute for Development and Research in Banking Technology (n 6).

¹³⁸ The said definition in cl 2(1)(a) reads as follows, "*Cryptocurrency*", by whatever name called, means any *information or code or number or token not being part of any Official Digital Currency, generated through cryptographic means or otherwise, providing a*

clauses imposing the prohibition appear to conflict with each other.¹³⁹ Further, unless the State purchases the crypto-assets held by existing holders, it is unclear how such holders are expected to dispose of these crypto-assets, since there would be no willing buyer in India (in view of the threat of criminal prosecution) and there is no clarity on selling to a foreign buyer under FEMA.¹⁴⁰ Regardless of the policy position ultimately taken, the Draft Bill needs to be overhauled by the Legislative Department of the Ministry of Law and Justice. As it currently stands, it could well be argued that it is unconstitutionally vague.

5. 'Blockchain good, crypto bad' narrative: There is a popular narrative, including in the Committee Report, that blockchain technology is desirable while crypto-assets are undesirable. However, a closer examination of the technology suggests otherwise. In a blockchain network with a native crypto-asset, it is the crypto-asset which acts as the incentive to participants to validate transactions. Traditionally, a central party (such as a clearing agency) would validate transactions in exchange for fees, but in crypto-asset networks, the entire network of participants validates transactions in exchange for the crypto-asset as mining rewards or transaction fees. This distributes the risk associated with a central party. While there can be 'blockchain' or distributed ledger technology implementations which do not use a crypto-asset, any blockchain implementation which seeks to be minimize centralization by incentivizing a wide variety of participants will need to have a crypto-asset. These are usually, but not always, public blockchains. This understanding has been expressly confirmed by multiple computer scientists and blockchain technology experts, including Arvind Narayanan, Associate Professor,

digital representation of value which is exchanged with or without consideration, with the promise or representation of having inherent value in any business activity which may involve risk of loss or an expectation of profits or income, or functions as a store of value or a unit of account and includes its use in any financial transaction or investment, but not limited to, investment schemes." (emphasis added).

¹³⁹ Cls 8(1) and (2) appear not to reconcile with each other, since they provide different punishments for the same offences. Cl 8(1) provides a certain punishment for the violation of '*clauses (e), (g) and/or (h) of sub-section (1) of Section 7*' and cl 8(2) refers to '*subsection (1) of section 7 or clauses (a), (b), (c), (d) and/or (f) of sub-section (1) of Section 7*'. The text in bold indicates overlap between the two, and therefore, uncertainty on the punishment provided for (emphasis provided).

¹⁴⁰ RBI response dated May 9, 2018, to Varun Sethi, stating, '*Virtual Currency is not recognized as currency under Section 2(b) of Foreign Exchange Management Act 1999 (FEMA). Hence, no guidelines have been framed on virtual currencies under FEMA.*' <https://drive.google.com/file/d/1TeePIKQx5G--mg5dsDMHfCH89q7dUHZM/view?usp=drive_open> accessed 4 June 2020.

Princeton University;¹⁴¹ Vitalik Buterin, co-founder, Ethereum (one of the leading blockchain networks used by both enterprises and governments);¹⁴² and Andreas Antonopoulos, author, ‘Mastering Bitcoin’ and ‘Internet of Money’;¹⁴³ and implicitly by Turing award winners and Massachusetts Institute of Technology professors who have developed the crypto-asset system ‘Algorand’.¹⁴⁴ There is also literature to suggest that ‘private blockchains’ are not particularly innovative, and have been in existence since the 1990s.¹⁴⁵ The following are some examples showing that crypto-assets are demonstrably intertwined with blockchain technology:

- ‘Bankchain’ (an alliance of over 35 reputed banks and institutions including State Bank of India SBI, HDFC Bank, ICICI Bank, Deutsche Bank, Citibank, and National Payments Corporation of India (NPCI)), whose slogan is ‘Blockchain for Banks’ and which is the leading body in the Indian financial sector seeking to implement blockchain technology, cited the use of a “*crypto-token*” for its use-cases.¹⁴⁶
- The Enterprise Ethereum Alliance, which is a global consortium of over 500 reputed institutions globally, including Accenture, Deloitte, Government of Andhra Pradesh, HP, Infosys, J.P. Morgan, Microsoft, and Samsung seeking to implement blockchain technology, uses the Ethereum blockchain, which natively has a crypto-asset, Ether.¹⁴⁷
- The IDRBT report titled ‘Blueprint of Blockchain Platform for Banking Sector and Beyond’ (2019) contains multiple references to

¹⁴¹ Arvind Narayanan and Jeremy Clark (n 4); Arvind Narayan, “‘Private Blockchain’ is Just a Confusing Name for a Shared Database’ (*Freedom to Tinker*, 18 September 2015) <<https://freedom-to-tinker.com/2015/09/18/private-blockchain-is-just-a-confusing-name-for-a-shared-database/>> accessed 4 June 2020.

¹⁴² Allen Scott, ‘Vitalik Buterin: Russia’s Crypto Ban Would Stifle Blockchains’ (*Bitcoin.com*, 17 May 2016) <<https://news.bitcoin.com/buterin-ban-russia-stifle-blockchains/>> accessed 4 June 2020.

¹⁴³ Andreas Antonopoulos, ‘Bitcoin Q&A: “Blockchain, not Bitcoin”’ (*YouTube: aantonop*, 7 June 2018) <<https://www.youtube.com/watch?v=r2f0HlaRdgo>> accessed 4 June 2020.

¹⁴⁴ Yossi Gilad (n 5).

¹⁴⁵ Arvind Narayanan (n 141); Also see (n 7 and n 8).

¹⁴⁶ Eg, A Bankchain document titled ‘Primechain-P5: The Blockchain for Moving Money Globally’ dated 19 March 2018, on file with the author, states a ‘key feature’ of the solution to be ‘[r]eal world asset-backed crypto tokens provide liquidity’ and that ‘[b]lockchains are provably immutable and enable the rapid transfer and exchange of crypto-tokens (which can represent assets) without the need for separate clearing, settlement and reconciliation.’ (emphasis added).

¹⁴⁷ *Enterprise Ethereum Alliance* <<https://entethalliance.org/>> accessed 4 June 2020.

the use of the Ethereum blockchain network (which functions based on the crypto-asset Ether) as well as to the term “*digital assets*”.¹⁴⁸

- A report co-authored by the National Association of Software and Services Companies (NASSCOM), whose members include Infosys, Microsoft, Wipro, Cognizant, Tata Consultancy Services and many others, states,

“There is need for positive signaling from the Government of India, and efforts to drive the growth of the Blockchain ecosystem in India through provision of timely and well-defined regulatory guidance. ... India needs to act fast and work consultatively with the key stakeholders in the crypto/blockchain community and provide regulatory certainty and clarity around blockchain technology (specifically around cryptocurrencies and digital tokens).”¹⁴⁹ (emphasis added)

A subsequent statement of NASSCOM – after taking note of the Committee Report – recommends a regulatory rather than prohibitory stance towards crypto-assets.¹⁵⁰

- Similarly, a study by Incrypt, a non-profit organisation, based on a survey of 97 blockchain software developers in India, found that open, public blockchains (powered by crypto-assets) can be a new growth driver of the Indian economy in a similar manner that the IT services industry was, and that 84% of the blockchain developers surveyed believed that if the government does not allow crypto-assets, they may move abroad or only work on foreign projects / startups.¹⁵¹

The above reasoning may have been dealt a blow by the decision in the IMAI case which states that distributed ledger technology and virtual

¹⁴⁸ Institute for Development and Research in Banking Technology (n 133).

¹⁴⁹ NASSCOM *Avasant India Blockchain Report 2019* <<https://www.nasscom.in/knowledge-center/publications/nasscom-avasant-india-blockchain-report-2019>> accessed 4 June 2020.

¹⁵⁰ “NASSCOM believes that the recent proposal of the Inter-ministerial Committee of the Government to ban all cryptocurrencies barring those that are backed by the Government, is not the most constructive measure. Instead, the government should work towards developing a risk based framework to regulate and monitor cryptocurrencies and tokens. A ban would inhibit new applications and solutions from being deployed and would discourage tech Startups. It would handicap India from participating in new use cases that cryptocurrencies and tokens offer.” NASSCOM, *Banning Cryptocurrency is not the Solution, a Regulatory Framework must be Developed*: NASSCOM(2019) <https://www.nasscom.in/sites/default/files/media_pdf/Banning_cryptocurrencies_is_not_the_solution_a_regulatory_framework_must_be_developed.pdf> accessed 4 June 2020.

¹⁵¹ Incrypt, *The Incrypt Policy Report: Realising India’s Blockchain Potential* (August 2018) 22 <<https://www.incrypt.co/policy>> accessed 4 June 2020.

currencies can be separated.¹⁵² However, the Court does not appear to have entered into a consideration of the above factors. Moreover, it is not being contended in this article that there can be no distributed ledger technology / blockchain technology without crypto-assets. It is only being stated that crypto-assets are essential to many important applications of blockchain technology, as demonstrated by the examples above. In the words of Vitalik Buterin, one of the foremost experts in the space and the person who conceived of the Ethereum network, “*if there’s no cryptocurrency [...] then at least public blockchains would not work. Private chains could if some kind of solution is developed but the blockchain as a system would be severely restricted.*”¹⁵³ Therefore, the Committee Report’s stated recommendation to promote distributed ledger technology would mean that what would be promoted is a limited, narrow use of the technology, rather than its full potential. There is no discussion of this nuance in the Committee Report.

VII. COMPARATIVE PERSPECTIVE

The G20 is an international forum consisting of the world’s leading economies, which is recognized as the “*premier forum for international economic cooperation*”.¹⁵⁴ According to a 2014 statement, G20 members represented around 85 per cent of global gross domestic product, over 75 per cent of global trade, and two-thirds of the world’s population.¹⁵⁵ The members of the G20 are: Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Republic of Korea, Mexico, Russia, Saudi Arabia, South Africa, Turkey, United Kingdom, United States, and European Union.¹⁵⁶

While these jurisdictions differ in political and constitutional values, none of the G20 members have introduced an outright ban on crypto-asset activity. The Draft Bill, if introduced, would be the most extreme measure

¹⁵² *IAMA case* paras 6.136 and 6.137.

¹⁵³ Scott (n 142).

¹⁵⁴ G20 2020 Saudi Arabia, *About the G20* (g20.org) <<https://g20.org/en/about/Pages/default.aspx>> accessed 4 June 2020.

¹⁵⁵ G20 Australia 2014, *G20 Members* <https://web.archive.org/web/20140203221840/http://www.g20.org/about_g20/g20_members> accessed 4 June 2020.

¹⁵⁶ G20 2020 Saudi Arabia, *G20 Participants* (g20.org) <<https://g20.org/en/about/Pages/Participants.aspx>> accessed 4 June 2020.

introduced by any of these jurisdictions. China,¹⁵⁷ India,¹⁵⁸ Indonesia,¹⁵⁹ and Saudi Arabia¹⁶⁰ are the countries which currently contain severe restrictions on crypto-asset activity, although none of these restrictions amount to an outright ban in the nature of the Draft Bill. More importantly, jurisdictions which India draws guidance from and whose constitutional values resemble those of India, including Australia,¹⁶¹ Canada,¹⁶² the European Union

¹⁵⁷ Chi Jingyi, 'Ruling Signals Nation Likely to Loosen Controls Over Digital Currencies' (*Global Times*, 18 July 2019) <<http://www.globaltimes.cn/content/1158377.shtml>> accessed 4 June 2020; Jacob Blacklock and Steve Shi, 'China' in Josias Dewey (ed), *Blockchain and Cryptocurrency Regulation 2020* (2nd edn, Global Legal Insights 2020) <<https://www.globallegalinsights.com/practice-areas/blockchain-laws-and-regulations/china>> accessed 7 June 2020.

¹⁵⁸ The RBI circular dated 6 April 2018, prohibiting banks and other financial institutions from facilitating crypto-asset transactions (which was set aside by the Supreme Court in the *IAMAI case*). <<https://www.rbi.org.in/Scripts/NotificationUser.aspx?Id=11243&Mode=0>> accessed 4 June 2020.

¹⁵⁹ 'Futures Exchange Authority Issues Regulation on Cryptocurrency' (*The Jakarta Post*, 13 February 2019) <<https://www.thejakartapost.com/news/2019/02/13/futures-exchange-authority-issues-regulation-on-cryptocurrency.html>> accessed 4 June 2020; *Regulation of Cryptocurrency Around the World* (Law Library of Congress, June 2018) <<https://www.loc.gov/law/help/cryptocurrency/cryptocurrency-world-survey.pdf>> accessed 4 June 2020.

¹⁶⁰ 'The Virtual Currencies Are Not Regulated Inside the Kingdom of Saudi Arabia' (*Saudi Arabian Monetary Authority*, 12 August 2018) <<http://www.sama.gov.sa/en-US/News/Pages/news12082018.aspx>> accessed 4 June 2020; 'A Statement on Launching "Aber" Project' (*Saudi Arabian Monetary Authority*, January 2019) <<http://www.sama.gov.sa/en-US/News/Pages/news29012019.aspx>> accessed 4 June 2020; Stephen O'Neal, 'From Qatar to Palestine: How Cryptocurrencies Are Regulated in the Middle East' (*Coin Telegraph*, 4 September 2018) <<https://cointelegraph.com/news/from-qatar-to-palestine-how-cryptocurrencies-are-regulated-in-the-middle-east>> accessed 4 June 2020.

¹⁶¹ Australian Securities and Investments Commission, *Senate Inquiry into Digital Currency, Submission by the Australian Securities and Investments Commission* (Submission 44, December 2014) <<http://www.aph.gov.au/DocumentStore.ashx?id=4b6d105f-3e0a-4d52-aaab-1f35842ed5f1&subId=302297>> accessed 4 June 2020; Webb Henderson, 'Australia' in *The Virtual Currency Regulation Review* (The Law Reviews, 2nd edn, November 2018) <<https://thelawreviews.co.uk/edition/the-virtual-currency-regulation-review-edition-1/1176625/australia>> accessed 4 June 2020; Peter Reeves, 'Australia' in Josias Dewey (ed), *Blockchain and Cryptocurrency Regulation 2020* (Global Legal Insights, 2nd edn, 2020) <<https://www.globallegalinsights.com/practice-areas/blockchain-laws-and-regulations/australia>> accessed 4 June 2020.

¹⁶² Alix d'Anglejan-Chatillon and others, 'Canada' in *The Virtual Currency Regulation Review* (The Law Reviews, 2nd edn, November 2018) <<https://thelawreviews.co.uk/edition/the-virtual-currency-regulation-review-edition-1/1176638/canada>> accessed 04 June 2020; Canadian Staff Notice, Guidance on the Application of Securities Legislation to Entities Facilitating the Trading of Crypto Assets (CSA Staff Notice 21-327, 16 January 2020) <https://www.osc.gov.on.ca/documents/en/Securities-Category2/csa_20200116_21-327_trading-crypto-assets.pdf> accessed 4 June 2020.

(‘E.U.’),¹⁶³ South Africa,¹⁶⁴ the United Kingdom,¹⁶⁵ and the United States¹⁶⁶ all allow crypto-asset activity within the bounds of regulation. Other common law jurisdictions not in the list, such as Hong Kong,¹⁶⁷ New Zealand,¹⁶⁸ and Singapore,¹⁶⁹ too follow this approach.

¹⁶³ European Commission, ‘Strengthened EU Rules to Prevent Money Laundering and Terrorism Financing’ (European Commission Fact Sheet, 15 July 2018, vol VI, annex A 22) <https://ec.europa.eu/newsroom/just/item-detail.cfm?item_id=610991> accessed 4 May 2020; Directive (EU) 2018/843 of the European Parliament and of the Council of 30 May 2018 amending Directive (EU) 2015/849 on the prevention of the use of the financial system for the purposes of money laundering or terrorist financing, and amending Directives 2009/138/EC and 2013/36/EU <<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32018L0843>> accessed 4 June 2020.

¹⁶⁴ Angela Itzikowitz and Ina Meiring, ‘South Africa’ in Josias Dewey (ed), *Blockchain and Cryptocurrency Regulation 2020* (Global Legal Insights, 2nd edn, 2020) <<https://www.globallegalinsights.com/practice-areas/blockchain-laws-and-regulations/south-africa>> accessed 4 June 2020; *Regulation of Cryptocurrency Around the World* (Law Library of Congress, June 2018) <<https://www.loc.gov/law/help/cryptocurrency/cryptocurrency-world-survey.pdf>> accessed 4 June 2020.

¹⁶⁵ Peter Chapman and Laura Douglas, ‘UK’ in *The Virtual Currency Regulation Review* (The Law Reviews, 2nd edn, November 2018) <<https://thelawreviews.co.uk/edition/the-virtual-currency-regulation-review-edition-1/1176672/united-kingdom>> accessed 4 June 2020; Stuart Davis, Sam Maxson, and Andrew C. Moyle, ‘United Kingdom’ in Josias Dewey (ed), *Blockchain and Cryptocurrency Regulation 2020* (2nd edn, Global Legal Insights 2020) <<https://www.globallegalinsights.com/practice-areas/blockchain-laws-and-regulations/united-kingdom>> accessed 6 June 2020; UK Government, *Cryptoassets Taskforce: Final Report* (October 2018) <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/752070/cryptoassets_taskforce_final_report_final_web.pdf> accessed 4 June 2020.

¹⁶⁶ Michael S. Sackheim and others, ‘USA’ in *The Virtual Currency Regulation Review* (The Law Reviews, 2nd edn, November 2018) <<https://thelawreviews.co.uk/edition/the-virtual-currency-regulation-review-edition-1/1176673/united-states>> accessed 4 June 2020; Joe Dewey, ‘USA’ in Josias Dewey (ed), *Blockchain and Cryptocurrency Regulation 2020* (Global Legal Insights, 2nd edn, 2020) <<https://www.globallegalinsights.com/practice-areas/blockchain-laws-and-regulations/usa>> accessed 4 June 2020.

¹⁶⁷ Henry Yu, ‘Hong Kong’ in Josias Dewey (ed), *Blockchain and Cryptocurrency Regulation 2020* (2nd edn, Global Legal Insights 2020) <<https://www.globallegalinsights.com/practice-areas/blockchain-laws-and-regulations/hong-kong>> accessed 4 June 2020.

¹⁶⁸ Deemle Budhia and Tom Hunt, ‘New Zealand’ in *The Virtual Currency Regulation Review* (2nd edn, The Law Reviews, November 2018) <<https://thelawreviews.co.uk/edition/the-virtual-currency-regulation-review-edition-1/1176659/new-zealand>> accessed 4 June 2020; Individual income tax (Questions & Answers: Cryptocurrency and tax), New Zealand Inland Revenue (undated) <<https://www.classic.ird.govt.nz/income-tax-individual/cryptocurrency-qa.html>> accessed 4 June 2020; Tax Information Bulletin, Inland Revenue Department (July 2019) <<https://www.classic.ird.govt.nz/resources/1/c/1c6029d0-611c-4a15-9cbf-b712129ab76c/tib-vol31-no7.pdf>> accessed 4 June 2020.

¹⁶⁹ Lancy Zhang, ‘Singapore: Payment Services Act Passed, Regulating Cryptocurrency Dealing or Exchange Services’ (Global Legal Monitor, 17 April 2019) <<https://www.loc.gov/law/foreign-news/article/singapore-payment-services-act-passed-regulating-cryptocurrency-dealing-or-exchange-services/>> accessed 4 June 2020; Adrian Ang V-Meng and others, ‘Singapore’ in *The Virtual Currency Regulation Review* (2nd edn, The Law Reviews, November 2018) <<https://thelawreviews.co.uk/edition/the-virtual-currency-regulation-review-edition-1/1176666/singapore>> accessed 4 June 2020.

This is not to say that India should not think for itself. However, all of these jurisdictions, as well as the G20 as a body, have recognized that there are risks associated with crypto-assets, and the risks they recognize resemble some of the risks cited in the Committee Report. However, their reaction has not been to resort to an outright prohibition. They have sought to extend existing laws to crypto-asset activities and develop new regulations where necessary (specific anti-money-laundering laws in Canada and the E.U. being examples). There are at least 41 significant jurisdictions adopting a regulatory approach (these include countries with foreign exchange controls, such as South Africa).¹⁷⁰ While all of these laws are in their infancy, and may well require reiteration as the technology progresses, the key learning for India is that the risks cited in the Committee Report do not necessitate a prohibition.

The international experience hence shows that less invasive measures are available, and that there is no reason why India cannot regulate crypto-asset technology – giving a nod to both liberty and innovation – rather than prohibiting it outright.

The Supreme Court in the *IAMAI* case appears to deal a blow to the comparative approach by rejecting it in the context of the RBI circular on virtual currencies.¹⁷¹ However, it does so because: (a) of India's statutory scheme, (b) of India's economic conditions, and (c) it appears to consider whether the global approach was *by itself* a ground to challenge the RBI circular. However, the reason for the comparative approach in this article is on a different footing: (a) since the Draft Bill is itself a statute, it is the constitutional scheme that is relevant and not the statutory scheme; (b) the comparative approach can be applied if it is shown that the impact of crypto-assets on India's economic condition is not unique to India; and (c) most importantly, the comparative approach in this article is not intended to be a ground of challenge in itself, but to merely act as persuasive evidence demonstrating the availability of less invasive measures to address a similar problem. The Court in the *IAMAI* case in fact endorses this approach since it referred to an E.U. Parliament report rejecting an outright ban while examining whether the RBI had considered the availability of alternative, less invasive measures.¹⁷²

¹⁷⁰ Based on the author's analysis as of August 2019, these jurisdictions are as follows: 1. Argentina, 2. Australia, 3. Brazil, 4. Canada, 5. The EU, 6. France, 7. Germany, 8. Italy, 9. Japan, 10. Mexico, 11. Russia, 12. South Africa, 13. South Korea, 14. Turkey, 15. UK, 16. USA, 17. Austria, 18. Belgium, 19. Czech Republic, 20. Denmark, 21. Finland, 22. Greece, 23. Hong Kong, 24. Hungary, 25. Iceland, 26. Ireland, 27. Israel, 28. Malaysia, 29. Malta, 30. Netherlands, 31. New Zealand, 32. Norway, 33. Philippines, 34. Poland, 35. Portugal, 36. Singapore, 37. Spain, 38. Sweden, 39. Switzerland, 40. Taiwan, 41. Thailand.

¹⁷¹ *IAMAI* case paras 6.129 and 6.130.

¹⁷² *IAMAI* case paras 6.162-6.164.

VIII. CONCLUSION: IS THE DRAFT BILL A REASONABLE RESTRICTION?

The *IAMAI* case, in its setting aside of the RBI circular on virtual currencies, is a powerful affirmation that the Supreme Court's long-established principles of proportionality squarely apply to the crypto-asset sphere.

For the reasons stated in this article, the Draft Bill is unlikely to be a reasonable and proportionate restriction on the fundamental rights named above. It proposes an imprisonment term of up to 10 years for the use of 'cryptocurrency' for nearly any purpose, including buying, selling, storing, and providing 'cryptocurrency-related services'.¹⁷³ As stated in the *Aadhaar* case, cited above, the presumption of criminality is treated as disproportionate and there cannot be sweeping provisions targeting entire categories of persons (in this case, persons dealing with crypto-assets, estimated to be 50 lakh in number) as suspicious. In line with the *Chintaman Rao* case, the banning of legitimate activity has no rational connection to, and goes much in excess of, the purpose of the draft legislation, which is only intended to curb unlawful activity, protect consumers, and preserve financial stability.

As shown by the above point-by-point responses, none of the Committee Report's reasons in support of the Draft Bill hold up to close scrutiny when one examines whether they can be used to justify an outright prohibition. Further, any remaining concerns which are legitimate can be effectively addressed with less invasive measures. There is no rational basis for the proposed prohibition or for why less invasive measures cannot be implemented to achieve the Draft Bill's objectives. Even violations of FEMA – which is a statute with similar aims to the Draft Bill – are civil offences and not criminal offences; moreover, FEMA is a regulatory statute and not an outright prohibition. Similarly, the PMLA provides checks and balances on various sectors prone to money laundering (eg, real estate and precious metals),¹⁷⁴ rather than ban such activities altogether. We have suggested many less invasive options for crypto-asset regulation in India in our Regulatory Suggestions Paper.¹⁷⁵ The international experience, summarized above, also provides persuasive evidence to show that a variety of less invasive measures are available to address the same concerns.

¹⁷³ Draft Bill, cl 7.

¹⁷⁴ Prevention of Money Laundering Act 2002, s 2(1)(sa).

¹⁷⁵ Nishith Desai (n 17).

In fact, as the Committee itself recognized in its first meeting, and as discussed in our Regulatory Suggestions Paper,¹⁷⁶ banning crypto-asset activity is likely to be counter-productive. Legitimate activity is stopped while the government loses oversight of illegitimate activity, which can in fact be monitored through the records maintained by regulated crypto-asset exchanges and wallet providers. The government has already used the records maintained by crypto-asset exchanges to aid in its criminal investigations and prosecutions. A ban on crypto-asset activity would remove this important law enforcement aid. Signs of this counter-productive effect already emerged after the RBI circular on virtual currencies.¹⁷⁷

Further, for the detailed reasons stated above, the Draft Bill may be considered arbitrary to the extent that:

- (a) crypto-assets are being treated differently from other phenomena like physical cash, commodities (particularly, gold), securities, loyalty points systems, and the Internet, though each of the concerns in the Committee Report applies to one or more of these phenomena;
- (b) the underlying Committee Report is one-sided and does not proceed on a rational and scientific basis; and,
- (c) certain provisions like the very definition of, and prohibition of dealing in, crypto-assets are vague, leading to a “*boundless sea of uncertainty*”, a phenomenon frowned upon by the Supreme Court.¹⁷⁸

As far as the interest of commerce and innovation is concerned (a factor which may be relevant in an assessment of a restriction “*in the interest of the general public*” under Article 19(6)), as stated above, various software industry voices, including NASSCOM, the leading software industry trade body, have stated that the Committee Report’s recommendation of an outright ban is excessive, and that risk-based regulation should be adopted instead.

¹⁷⁶ Nishith Desai (n 17).

¹⁷⁷ Reserve Bank of India (n 91) which states, ‘*Developments on this front need to be monitored as some trading may shift from exchanges to peer-to-peer mode, which may also involve increased usage of cash. Possibilities of migration of crypto exchange houses to dark pools/cash and to offshore locations, thus raising concerns on AML/CFT and taxation issues, require close watch.*’; ‘Dabba Trading sees an Upsurge in Wake of RBI’s Cryptocurrency Ban’ (Business Today, 30 July 2018) <<https://www.businesstoday.in/current/corporate/dabba-trading-sees-an-upsurge-in-wake-of-rbi-diktat-banning-crypto-currencies/story/280800.html>> accessed 4 June 2020 which states, ‘*Ever since the banks were stopped from providing financial services to digital exchanges, the trade of Bitcoin through Dabba trading has increased manifold, and the whole purpose of stopping the flow of illicit money seems to have been defeated.*’

¹⁷⁸ *State of M.P. v Baldeo Prasad*, AIR 1961 SC 293.

The balanced outlook has perhaps been best summarized by Christine Lagarde, Managing Director of the International Monetary Fund, who wrote,

A judicious look at crypto-assets should lead us to neither crypto-condemnation nor crypto-euphoria. Just as a few technologies that emerged from the dot-com era have transformed our lives, the crypto-assets that survive could have a significant impact on how we save, invest and pay our bills. That is why policymakers should keep an open mind and work toward an even-handed regulatory framework that minimizes risks while allowing the creative process to bear fruit.¹⁷⁹

¹⁷⁹ Christine Lagarde, 'An Even-handed Approach to Crypto-Assets' (*IMF Blog*, 16 April 2018) <<https://blogs.imf.org/2018/04/16/an-even-handed-approach-to-crypto-assets/>> accessed 4 June 2020.