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DIGITAL ASSETS IN INSOLVENCY: LEGAL CLASSIFICATION, VALUATION, AND THE IMPERATIVE FOR HARMONISED REFORM – A COMPARATIVE STUDY OF INDIA AND SINGAPORE

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ABSTRACT

The burgeoning proliferation of digital assets (cryptocurrencies, non-fungible tokens, stablecoins and other forms of financial instruments, which exist on a blockchain) has revealed deep flaws in established insolvency frameworks around the world. This article considers the three inseparable legal issues of the legal characterization of digital assets as 'property', 'valuation' of volatile digital assets during insolvency and 'recovery' of such assets in an era of borderless technology. It uses the jurisdictions of Singapore and India as models in an effort to show that Singapore's forward-looking legislative framework—supported by the Payment Services Act 2019, the Insolvency, Restructuring and Dissolution Act 2018 and a robust case law framework—offers a robust and informative blueprint for states seeking to revise their insolvency frameworks. Despite being home to more than 115 million digital asset users and a large domestic market, India lacks legislative provisions to deal with digital asset insolvency. Finally, this article offers specific suggestions for the amendment of India's Insolvency and Bankruptcy Code 2016, trans-border insolvency regimes and the regulatory framework applied to digital asset service providers.

I. INTRODUCTION

The insolvency of FTX Trading Ltd in November 2022, Celsius Network LLC in July 2022 and Voyager Digital Ltd in July 2022 have dragged digital asset insolvency from the fringes of legal scholarship to its very center. The bankruptcies in which over \$100bn dollars have been written off, and millions of creditors around the globe have been affected—have unveiled how ill-equipped insolvency frameworks are to cope with tangible assets, traditional financial instruments and geographically defined businesses. Digital assets (including Bitcoins, Ethereum, stable coins and non-fungible tokens) are an intangible class of asset: a characteristic that makes them attractive from a commercial perspective but fundamentally clashes with the

traditional principles underpinning insolvency law that assets are traceable, location-specific and uniquely owned and that the value of an asset remains relatively stable over time.

The legal questions raised by digital asset insolvency are not simply technical, but impact the fundamental design of property law, national court jurisdiction, the fairness of creditor recovery, and regulatory systems' responsiveness to change. Three questions are structurally critical. First, the characterization of digital assets as property (a prerequisite for entry into an insolvency estate) is still unresolved in many jurisdictions. Second, the high volatility of digital assets leads to unavoidable issues in determining a valuation methodology, where the timing of valuation has

the potential for radically different outcomes for creditors. Third, the Borderless character of block-chain systems means that tracing digital assets through an international insolvency proceeding is immensely complex, illustrating the limitations of both the domestic asset recovery tools available, and the international cooperation procedures employed to handle pre-digital assets.

This paper sets out to answer these questions by means of both a doctrinal and comparative approach. Part II considers the legal characterisation of digital assets as property using criteria developed by Lord Wilberforce in the context of the decision of *National Provincial Bank Ltd v Ainsworth* and applied in key jurisdictions. Part III analyses the peculiar valuation problems arising from the nature of digital assets. Here we will pay close attention to the lessons from both the FTX and the Mt. Gox failures. In Part IV we will study tracing issues and asset recovery in relation to digital assets, and discuss the private key problem and the development of forensics in block-chain technology. In Part V we shall perform a comparative analysis of the insolvency governance regimes applicable in Singapore and India, and highlight Singapore's structural advantages in this space. We will then set out specific reform recommendations for India in Part VI. Finally, we will make some remarks regarding the general trajectory of international digital asset insolvency law.

II. THE LEGAL CLASSIFICATION OF DIGITAL ASSETS AS PROPERTY

A. The Foundational Framework: *Ainsworth* Criteria

The threshold issue in any insolvency proceedings involving a digital asset is whether the relevant asset can be regarded as 'property' forming part of the insolvent's estate. With no consensus legislatively reached worldwide, courts of common law have largely looked to the framework laid down by the House of Lords

in *National Provincial Bank Ltd v Ainsworth*⁸⁸⁶. Here, the House of Lords concluded that for a right to be proprietary in nature, four cumulative conditions must be met: the right must be definable, capable of identification by third parties, capable of assumption by third parties and enjoy permanence and continuity. These conditions, established in the context of the rights of a deserted wife's license to remain in the matrimonial home, have proved surprisingly capable of adaptation to the nature of blockchain-based digital assets.

The Indian position is embodied in s 3(27) of the Insolvency and Bankruptcy Code 2016. 'Property' has been broadly defined as 'money, goods, actionable claims, land and every description of property, whether movable or immovable' and rights including 'interests in property whether present or future, vested or contingent, arising out of or incidental to property.'⁸⁸⁷ In the Insolvency Law Committee's Report of 2020, it was confirmed that this definition was 'deliberately worded widely.'⁸⁸⁸ Whether digital assets come within this statutory definition has already been subject to some judicial consideration.

B. Judicial Recognition Across Jurisdictions

For the first time in common law, an authoritative judgment by the Singapore International Commercial Court, namely *Quoine Pte Ltd v B2C2 Ltd*⁸⁸⁹, recognized that the cryptocurrency met the *Ainsworth* criteria, and constituted a form of intangible property. The Court reasoned that while the cryptocurrency may not be a legal tender it was identifiable from its specification and the records of the blockchain. It was transferable and sufficiently permanent as a subject matter—not in terms of its value—so as to pass the permanence test. The New Zealand High Court further applied and extended this in the case of *Ruscoe v Cryptopia*

⁸⁸⁶ *National Provincial Bank Ltd v Ainsworth* [1965] AC 1175 (HL)

⁸⁸⁷ Insolvency and Bankruptcy Code 2016 (India), s 3(27)

⁸⁸⁸ Insolvency Law Committee, 'Report of the Insolvency Law Committee' (2020) para 8.5.

⁸⁸⁹ *Quoine Pte Ltd v B2C2 Ltd* [2019] SGHC(I) 3, [2019] 4 SLR 17.

Ltd (in Liquidation)⁸⁹⁰, in the context of crypto currency held at exchange. Not only did the Court accept that the cryptocurrency itself was property, it further held that assets held on customers' account at the exchange was held on trust, such that customer maintained proprietary interests in the assets at insolvency, and the assets did not fall into general estate available for creditors. The outcome is tremendously significant in that it allows differentiation between creditors of the exchange and customers. The beneficial interests of the latter are not subject to claim by unsecured creditors of the exchange. In England and Wales, the High Court confirmed that Bitcoin is capable of being property for the purposes of obtaining a proprietary injunction (AA v Persons Unknown)⁸⁹¹. It also indicated that common law categories of chose in possession and chose in action are no longer exhaustive, that the third category of intangible property may be created for digital asset. This was confirmed in Singapore High Court (Janesh s/o Rajkumar v Unknown Person⁸⁹²), which extended proprietary treatment to NFTs, where the private key control was deemed functionally analogous to possession. The same was later held in ByBit Fintech Ltd v Ho Kai Xin⁸⁹³ (Singapore High Court), that the misappropriated cryptocurrency was held on a constructive trust and proprietary injunctive relief was available. In India, the Indian Supreme Court stated that virtual currencies could be treated as property, commodities, money or as a form of non-traditional currency (Internet and Mobile Association of India v Reserve Bank of India⁸⁹⁴). Although this observation was not definitive for purposes of insolvency, it has provided the doctrinal basis for Indian courts to develop a clearer stance on this subject in insolvency matters. Later the Madras High Court clarified

⁸⁹⁰ David Ian Ruscoe and Malcolm Russell Moore v Cryptopia Limited [2020] NZHC 728.

⁸⁹¹ AA v Persons Unknown & Others Re Bitcoin [2019] EWHC 3665 (Comm).

⁸⁹² Janesh s/o Rajkumar v Unknown Person ('CHEFPIERRE') [2022] SGHC 264.

⁸⁹³ ByBit Fintech Ltd v Ho Kai Xin and others [2023] SGHC 199.

⁸⁹⁴ Internet & Mobile Association of India v Reserve Bank of India (2020) 10 SCC 274.

that the currency was property under Indian law, relying on both foreign decisions and legislative framework under the Income-tax Act, 1961, in which virtual digital assets were clearly defined as property.⁸⁹⁵

C. The Classification Challenge Under the IBC

The other complication in the Indian context is that structural segregation in between 'financial debt' under section 5(8)⁸⁹⁶ and 'operational debt' under section 5(21)⁸⁹⁷ of IBC decides which class of creditor can have access to which procedure rights in case of a corporate insolvency resolution. The multi-pronged nature of digital asset transactions- these can be used for investments, as a commodity or medium of exchange, or as a tokenized claim over something- truly makes their classification within either category problematic. A debt incurred due to cryptocurrency lending, from an exchange contract or an NFT contract cannot be properly classified under either head; this leads to questions of both ranking and procedure rights for creditors in the case of digital asset related debts. This lack of certainty within the structural setup of the IBC in absence of any direct legislation, appears to be a serious flaw of the code that is going to increasingly matter as digital assets becomes part of every day business in India.

III. VALUATION OF DIGITAL ASSETS IN INSOLVENCY: VOLATILITY AND ITS CONSEQUENCES

A. The Date-of-Valuation Problem

Valuation is the corner stone on which insolvency is built - and it is on this aspect of insolvency law that issues will arise, to establish the value of the estate, the quantum of creditor claims, and the amount to be distributed. But the corner stone itself will not be stable where the assets comprise digital assets: at no point between December 2020 and December 2021

⁸⁹⁵ Madras High Court in Rhutikumari v Zanmai Labs Pvt Ltd (2025), cited in 'Crypto in India: How IBC Handles

Crypto in Corporate Insolvency' (CryptoTimes, 3 March 2026).

⁸⁹⁶ Insolvency and Bankruptcy Code 2016 (India), s 5(8)

⁸⁹⁷ Insolvency and Bankruptcy Code 2016 (India), s 5(21)

was the value of Bitcoin less than two times and more than four times that of its current price, and significant price falls can occur within a day; Bitcoin's high levels of volatility, where swings of more than 70% in a single calendar year can be observed are not uncommon. The similar high levels of volatility in Ethereum and other cryptocurrencies will similarly be familiar to all; even stablecoins—intended to maintain a fixed price relation to fiat currencies—have proven capable of experiencing value collapses, with the destruction of nearly \$40 billion of value within days during the collapse of the algorithmic stablecoin, TerraUSD, in May 2022.⁸⁹⁸

The FTX filing, in November 2022⁸⁹⁹ before the United States Bankruptcy Court for the District of Delaware, will probably serve as the most significant illustration of the date-of-valuation problem: Bitcoin traded at roughly \$16,000 on the date of filing. By the date of confirmation 18 months later it was trading at over \$70,000. In terms of a reorganization plan confirmed in October 2024, payment to creditors will be made in fiat currency at petition-date values with interest; the effect of this is to lock in losses for creditors who would have profited enormously if the assets had been retained in kind. Major distribution will begin 18 February 2025, with a third distribution of about \$1.6 billion made September 30, 2025; recoveries are projected to exceed estimates with nearly 98% of creditors recovering at least 118% of filed claims—but the decision that fiat-currency valuation should apply to petition-date values has attracted enduring criticism from larger non-convenience claimants.⁶

The bankruptcy of the Mt. Gox exchange in Japan in February 2014, following the loss of approximately 850,000 Bitcoins will offer an

illustration of how the choice of bankruptcy liquidation versus civil rehabilitation proceedings can determine whether creditors are paid in fiat or in kind: Tokyo District Court's initial decision that creditors' claims would be paid in yen at the date of filing—when Bitcoin was trading at around \$480, was demonstrably insufficient over the course of the following decade⁹⁰⁰; eventually the choice was changed to civil rehabilitation, preserving creditors' entitlement to Bitcoin rather than yen, which has been considered one of the more positive developments in the law of digital assets insolvency, a judicial decision, made pragmatically rather than rigidly, to prevent the rigid fiat-currency valuation system from imposing formally appropriate, substantively unfair, results on creditors.

B. Methodological Approaches

Numerous methodologies have been proposed for valuing digital assets in insolvency proceedings. Valuations based on market prices—or prices on an active exchange at a particular time—can be transparent but are volatile, subject to insider trading and price manipulation and are sensitive to intraday fluctuations. Valuations that average trading prices over a certain period (thirty days to ninety days is typical) provide more stable prices, but may undervalue or overvalue assets depending on whether there was a price run-up or decline leading to the petition date. Valuation based on cash flows may be appropriate for a revenue-producing digital asset such as an interest-earning arrangement or DeFi Protocol, but requires assumptions about adoption rates, interest rates, and regulatory trends—uncertainty amplified in the digital asset context. Valuations based on cost-of-production will be relevant to mining, proving that, for example, a proof-of-work currency could never sell below the cost of production and that it represents some kind of floor to its

⁸⁹⁸ The collapse of TerraUSD (UST) and its sister token Luna in May 2022 erased approximately USD 40 billion in value within days, illustrating the systemic risks of algorithmic stablecoins. See generally Financial Stability Board, 'Assessment of Risks to Financial Stability from Crypto-assets' (February 2022).

⁸⁹⁹ In re FTX Trading Ltd, Case No. 22-11068 (JTD) (Bankr. D. Del. filed Nov. 11, 2022). FTX's reorganization plan was approved by the Delaware Bankruptcy Court in October 2024. The FTX Recovery Trust commenced its first major distribution to creditors on 18 February 2025, with a third distribution of approximately USD 1.6 billion commencing on 30 September 2025. See FTX Recovery Trust, Press Release (19 September 2025).

⁹⁰⁰ Tokyo District Court, Case No. 2014 (wa) 33320, 5 August 2015 (Mt. Gox). For an account of the civil rehabilitation proceedings, see Tanvi Jain and Sanjeesha Agarwal, 'Critically Analysing Insolvency of Virtual Digital Assets vis-à-vis a Cross-Jurisdictional Comparison' (2024) 1(2) Solventia 87

value, but will diverge significantly from market prices during periods of hype and speculative fever.

Underlying all these approaches to valuation lies the question of distribution form. In-species distributions—the direct distribution of digital assets rather than their liquidation into cash—are argued on the ground that original creditors should be able to maintain their exposure to the potential appreciation of the digital assets that they held. This was the basis for Babel Finance’s plan to issue ‘Babel Recovery Coins’ – essentially tokens representing creditors’ claims against Babel—that was intended to avoid the loss of value through fire-sale. The counter-argument to in-species distribution reflects traditional insolvency principle that practitioners should not continue to subject the estate to market risk. Celsius Network’s insolvency—where by contract, depositors’ cryptocurrency funds were transferred from Celsius on trust to Celsius as bailee—ultimately resulted in a compromise between a combination of distributed crypto cash and equity in the restructured entity; this is likely the blueprint for more complex digital asset insolvency.⁹⁰¹

IV. TRACING AND RECOVERY OF DIGITAL ASSETS

A. Blockchain Forensics and Legal Tools

Challenges in tracing digital assets in insolvency proceedings, for the most part, are unique in comparison to traditional asset recovery actions. The unalterable and public nature of most blockchain ledgers offers insolvency practitioners an unmatched forensic mechanism: every single transaction on both the Bitcoin and Ethereum blockchains is permanently retained and time-stamped and traceable to a specific wallet address. Blockchain analysis companies like Chainalysis, Elliptic and CipherTrace, have created advanced software capable of clusterisation of wallet addresses, assigning known identities to

pseudo-anonymous addresses and tracking digital asset flow through complex chains of transactions used to obfuscate sources. These types of software were extensively utilized in the FTX bankruptcy proceedings where insolvency practitioners traced customer funds to entities tied to the exchange’s founders, building cases for numerous adverse proceedings for fraudulent conveyance and breach of fiduciary duty.

Courts within common law jurisdictions have displayed extensive creativity in their application of existing tools to digital assets. Norwich Pharmacal orders have been obtained against centralised exchanges in order to obtain know your customer information related to specific wallet addresses, thereby identifying identifiable parties corresponding to pseudo-anonymous blockchain accounts. Proprietary injunctions and worldwide freezing orders have been extended to crypto-asset wallets where courts acknowledge the urgent need for interim relief due to the velocity with which digital assets can be transferred across borders⁹⁰². Most innovatively, service has been permitted through the means of NFT “airdrop” to blockchain addresses—this demonstrates judicial flexibility in the application of established procedural rules to decentralised finance.

The private key issue remains the single greatest structural problem in recovering digital assets. Ownership of digital assets are controlled solely by physical possession of a corresponding private cryptographic key, without which a court order for transfer of cryptocurrency can only be practically unenforced against non-cooperative parties. This can force insolvency practitioners in estate administration to locate the private keys to obtain ownership of digital assets that are held in self-custodied wallets; this could potentially lead to further court orders requesting that defendants produce said keys, although a

⁹⁰¹ In re Celsius Network LLC, Case No. 22-10964 (MG) (Bankr. S.D.N.Y. filed Jul. 13, 2022). The restructuring plan was confirmed by the court in November 2023.

⁹⁰² Fetch.ai Ltd v Persons Unknown [2021] EWHC 2254 (Comm). See also Mooij v Persons Unknown [2024] EWHC 814 (Comm) (permitting service via NFT airdrop).

defendant can decline based on attorney-client privilege, or, in some cases of centralised platforms that have some technical control, digital asset recovery may include direct technical assistance to access and transfer the crypto-asset.⁹⁰³

B. Cross-Border Recovery and the UNCITRAL Framework

Challenges with digital assets often take on a cross-border nature, that domestic asset tracing tools are not structured to address. While digitally held assets can be transmitted across international boundaries in seconds, making traditional cross-border freezing orders largely ineffective against an opposing party in a foreign jurisdiction, no real framework exists for a transnational context beyond a territorial legal system. While UNCITRAL Model Law on Cross-border Insolvency (MLCBI)⁹⁰⁴ was implemented over 60 times worldwide since 1997, and is the governing legal document dealing with issues arising from insolvencies where the debtor's assets are in more than one jurisdiction. However, MLCBI does not apply to issues peculiar to the tracing and recovery of digitally held assets such as situs of the digital asset or the necessity of an order requiring enforcement of disclosure of a private key or treatment of assets in a decentralized finance protocol.

Sarra, Madaus and Mevorach argued in a recent paper that it is essential to amend MLCBI to meet the needs of cross-border recovery of digitally held assets due to structural weaknesses in its existing framework of the international recognition of disclosure orders, freezing orders and recovery judgments.⁹⁰⁵ This framework forms the basis for the reform recommendations in Part VI below.

⁹⁰³ Andrew W Balthazor, 'The Challenges of Cryptocurrency Asset Recovery' (2019) 13 FIU Law Review 1207

⁹⁰⁴ UNCITRAL Model Law on Cross-Border Insolvency (1997), as adopted in Singapore via the Insolvency, Restructuring and Dissolution Act 2018, Third Schedule, and in the United Kingdom via the Cross-Border Insolvency Regulations 2006, SI 2006/1030

⁹⁰⁵ Janis Sarra, Stephan Madaus and Irit Mevorach, 'Chasing Assets Abroad: Ideas for More Effective Asset Tracing and Recovery in Cross-Border Insolvency' (2023) 32(2) International Insolvency Review 197.

V. COMPARATIVE ANALYSIS: SINGAPORE AND INDIA

A. Singapore's Governance Framework

Singapore has achieved status as the most advanced common law jurisdiction with respect to digital assets, through a combination of legislative action, pragmatic judicial interpretation, and developed international cooperation. The Payment Services Act 2019 (PSA)⁹⁰⁶, subsequently modified in 2021 and 2022, imposed on digital payment token service providers a licensing regime, based on a risk-based approach and including requirements regarding capital adequacy, AML/CFT standards, segregation of customer assets and business conduct requirements. Crucially for insolvency proceedings, a MAS Notice PSN08⁹⁰⁷ provided a basis on which licensed firms are required to hold customer assets on trust and maintain an up-to-date record of the individual entitlements of each customer, creating a basis for the trust claim against an insolvent exchange that is required in order to rank customers as beneficiaries and not general creditors.

Singapore's insolvency law is embodied in the Insolvency, Restructuring and Dissolution Act 2018 (IRDA)⁹⁰⁸, incorporating the MLCBI via its Third Schedule and offering a complete suite of restructuring and insolvency tools, which have been applied flexibly to digital asset businesses. Through *Re Babel Holding Ltd*, Singapore High Court⁹⁰⁹ extended its restructuring framework to foreign crypto businesses on the basis of a 'substantial connection' test applied practically, and in *Ascentra Holdings Inc v SPGK Pte Ltd*⁹¹⁰, Singapore Court of Appeal broadened the scope of foreign proceedings recognised under the MLCBI. It affirmed that the Model Law's framework applies not only to the liquidation of

⁹⁰⁶ Payment Services Act 2019 (Singapore), as amended by the Payment Services (Amendment) Act 2021 and subsequent regulations.

⁹⁰⁷ MAS Notice PSN08 on Prevention of Money Laundering and Countering the Financing of Terrorism – Digital Payment Token Service (2021).

⁹⁰⁸ Insolvency, Restructuring and Dissolution Act 2018 (Singapore), Third Schedule (incorporating the UNCITRAL Model Law on Cross-Border Insolvency).

⁹⁰⁹ *Re Babel Holding Ltd* and other matters [2023] SGHC 190.

⁹¹⁰ [2023] SGCA 32; [2023] 2 SLR 421.

insolvent entities, but to solvent restructurings under an insolvency or debt arrangement law. This approach has allowed Singapore to function as a cross-border centre for the resolution of digital asset businesses.

Progressive development of property law in relation to digital assets by the Singapore courts (through Quoine, Janesh, ByBit, and NFT recognition as property that may be subject to proprietary injunctions) has built an authoritative and internationally relied upon body of law. The Algorand Foundation case⁹¹¹ was pivotal in stating that cryptocurrency did not qualify as 'money' for the purpose of statutory demands and illustrated the need for specific provisions regulating the initiation of insolvency proceedings in this class of assets.

B. India's Governance Framework: Strengths and Deficiencies

In India, progress on digital asset integration into its legal and regulatory sphere has been significant but limited. The Finance Act of 2022 established a definition for 'virtual digital asset' under the Income Tax Act and imposed a flat tax rate of 30 percent on gains generated from digital asset transfers.⁹¹² A notification of March 2023 brought Virtual Asset Service Providers under the ambit of the Prevention of Money Laundering Act, 2002⁹¹³. Whilst this legislation indicates positive steps toward bringing India's digital asset regulatory framework into a formalized system, its provisions remain focused on revenue generation and anti-money laundering, and do not address the concerns unique to digital asset insolvency in regard to protection of customer assets, custodianship, and the orderly liquidation/resolution of such assets.

The IBC 2016 – the principal insolvency law in India – is devoid of any reference to digital assets. The Code was enacted prior to the

significant emergence of digital assets in the Indian economic landscape, and neither the operative sections of the Act nor any subsequent regulatory or statutory amendments address the issues surrounding their identification, valuation, custodianship and distribution in an insolvency proceeding. India's cross border insolvency law is even more seriously inadequate; sections 234 and 235 of the IBC offer only bilateral treaties and requests of letters to foreign courts as mechanism for recognition and relief in foreign proceedings, which is discretionary, depends on bilateral treaty establishment not yet attained, and entirely insufficient for the nature and swiftness of digital asset cross border insolvency proceedings.

The recommendation from India's Cross-Border Insolvency Rules/Regulations Committee of 2018 that India adopt the UNCITRAL Model Law remains on paper only⁹¹⁴. While the Insolvency and Bankruptcy Code (Amendment) Bill 2025 has inserted provisions permitting cross border insolvency and group insolvency and empowering the Central Government to frame rules consistent with UNCITRAL Model Law principles⁹¹⁵, scholars have pointed out that the Bill does not actually incorporate the text of the Model Law into Indian law and the implementation aspects – including the rules on recognition, reciprocity and coordination – are expected to be established through rules which may come after years. Contrast this to Singapore which enacted a parallel legislation alongside adopting the Model Law in 2017, and created judicial capacity and framework for it.⁹¹⁶

C. Key Structural Differences

⁹¹⁴ Cross-Border Insolvency Rules/Regulations Committee, Report on Cross-Border Insolvency (2018), Ministry of Corporate Affairs, Government of India. The committee recommended adoption of the UNCITRAL Model Law with India-specific modifications, but these recommendations had not been translated into legislation as at the date of this paper.

⁹¹⁵ Insolvency and Bankruptcy Code (Amendment) Bill 2025 (India). The Bill empowers the Central Government to frame rules for cross-border insolvency proceedings, aligning with UNCITRAL Model Law principles; however, commentators have observed that it does not directly embed the Model Law's text and leaves critical details to subordinate legislation. See 'A Comparative Critique of the 2025 IBC Amendment' (LiveLaw, April 2026).

⁹¹⁶ Global Restructuring Review, 'Evolving Jurisprudence and Regulatory Reforms: A Review of India's Insolvency Landscape (2024–2025)' (15 August 2025).

⁹¹¹ Algorand Foundation Ltd v Three Arrows Capital Pte Ltd, HC/CWU 246/2022 (Singapore High Court)

⁹¹² Finance Act 2022 (India), inserting s 115BBH, s 194S and s 2(47A) into the Income Tax Act 1961.

⁹¹³ Ministry of Finance, Notification S.O. 1726(E) (7 March 2023), extending the Prevention of Money Laundering Act 2002 to virtual digital asset service providers.

The analysis above demonstrates there are 4 fundamental structural differences between Singapore and India. First, Singapore has developed a systematic and robust body of judicial precedent on the question of property classification for digital assets, whereas India's judicial development in this area has remained largely confined to the context of regulation and tax. Second, Singapore's PSA licensing system requires the segregation of customer assets and has provided a foundation for trust relations in the event of exchange insolvency, but such a requirement is absent from the Indian regulatory regime. This creates ambiguity as to the custodial classification of customer assets held by domestic exchanges. Third, Singapore's IRDA already contains a provision that reflects the MLCBI, and that has been flexibly interpreted to cover digital asset insolvencies, but the cross-border Indian insolvency framework, at present, is limited to the unexplored route under Section 234 and 235. Fourth, the MAS has consistently provided active and considered responses to issues emerging in the digital asset space, whereas India's approach has been marked by hesitation, legislative inaction, and an absence of relevant insolvency guidelines.⁹¹⁷

VI. RECOMMENDATIONS FOR REFORM

A. Legislative Amendment of the IBC

The first and the most critical legal reform required, therefore, is amending the IBC in the context of digital assets. At minimum, the amendments should stipulate: statutory definition of 'digital asset' for insolvency purposes—the same as 'virtual digital asset' definition in IT Act but modified for insolvency scenario; a clear confirmation that digital asset is part of the definition of 'property' in s 3(27); guidelines on classification of digital asset claims—whether these be financial debt, operational debt, or a new separate category; conditions regarding the obligation of a

corporate debtor and its director/officer to disclose digital asset ownership; resolution professional's powers in this regard (access to private keys and wallets); rules regarding the valuation of digital assets (at all critical junctures of resolution process including regarding date-of-valuation problem). For structuring of these rules, the UK Law Commission's 2023 Final Report on Digital Assets⁹¹⁸ and the reform proposal of Barker in the context of the US Bill (if enacted) might provide guidance.⁹¹⁹

B. Adoption of the UNCITRAL Model Law

The immediate legislative priority should be for India to adopt the UNCITRAL Model Law on Cross-Border Insolvency and to give effect to the proposed inclusions by the Cross-Border Insolvency Rules/Regulations Committee. These provisions will be supplemented by additional digitally asset-related provisions in this respect: concerning the locus of digital assets, the recognition of foreign freezing and disclosure orders with respect to digital wallets, and how cryptocurrency-denominated debt will be considered when initiating an insolvency process. By adopting the MLCBI, Indian insolvency proceedings would receive recognition abroad, and Indian courts and foreign representatives would be able to work together to manage transnational digital asset insolvencies involving India.⁹²⁰

C. Regulatory Framework for Digital Asset Service Providers

Digital asset exchanges and custodians should be regulated by India by requiring minimum capital adequacy and by enforcing customer asset segregation, the accurate recording of customer individual balances, compliance with AML/CFT procedures, and resolution planning,

⁹¹⁷ Nehal Nehru Remolina, Aurelio Gurrea-Martinez and Daniel Liu, 'The Treatment of Digital Assets in Insolvency' SMU Yong Pung How School of Law Working Paper 35/2024.

⁹¹⁸ UK Law Commission, 'Digital Assets: Final Report' (Law Com No 412, 2023)

⁹¹⁹ Katelyn E Barker, 'Crypto in the Courtroom: A Legislative Framework for Managing Crypto Assets in Bankruptcy' (2025) 80(1) University of Miami Law Review.

⁹²⁰ Etinosa Igbinenikaro and Adefolake Olachi Adewusi, 'Developing International Policy Guidelines for Managing Cross-Border Insolvencies in the Digital Economy' (2024) 6(4) International Journal of Management & Entrepreneurship Research 1034.

similar to Singapore's PSA framework. This requirement for the segregation of customer assets is in the opinion of the author the single most significant insolvency specific regulatory reform there is, as it provides the statutory foundation of the trust analysis that is needed to differentiate between a beneficial owner and an unsecured creditor, and, in future exchanges' bankruptcies, might save the proprietary interests of millions of individual consumers. As evidenced by the regulation of digital assets as a category of virtual digital asset under the Indian Income Tax Act, India possesses the statutory framework for its extension to cover the regulation of digital assets exchanges and custodians; all that is lacking is the political will to implement that framework in the form of an overall regime designed for the protection of consumers and financial stability, not the sole aim of generating tax revenue.

D. Judicial Capacity and International Engagement

Capacity-building within the judiciary in the context of digital asset insolvency should be a key complement to legislative reform. NCLT and NCLAT should build expert benches and the relevant judicial officials must be trained in technology relating to blockchain and the digital asset markets, along with a comparative study of digital asset law across jurisdictions. Procedural rules should be developed on the process of serving process in a digital asset dispute, the circumstances in which service through a blockchain platform should be permitted and the admissibility of digital wallet addresses as evidence of ownership. Finally, India must actively participate in discussions taking place in UNCITRAL Working Group V on insolvency law, FSB and IOSCO regarding the development of harmonised standards on digital asset governance and international cross-border insolvency. By actively participating in the ongoing debate, India will be able to ensure that the framework being developed on digital asset governance and international cross-border insolvency meets the

needs of major emerging market economies and aligns with global best practices.⁹²¹

VII. CONCLUSION

The digital asset boom is not just a short-term phenomenon; its legal implications for insolvency law are irreversible. The spectacular collapse of FTX, Celsius, Voyager, and a string of smaller digital asset entities has underscored that existing flaws in insolvency law regarding classification of assets, valuation, cross-border enforcement of security interests, and regulation are not abstract hypotheticals, but concrete problems that inflict substantial harm on creditors, consumers, and markets. This paper has attempted to illustrate that while these issues may appear novel, they can be approached analytically with the established tools of the common law and that a carefully tailored approach incorporating international best practices will offer viable solutions.

There is now a substantial and growing gulf between Singapore's and India's legal approaches to governing digital assets in insolvency. Singapore is a pioneer in the common law world of digital asset restructurings and insolvencies due to its advanced and ongoing legislative programme, sophisticated judicial application of legal principles, and established frameworks for international cross-border insolvency. The world's second largest digital asset market remains under-equipped in terms of legislation, regulation, and judicial practice to effectively respond to the complex and new challenges of digital asset insolvency. The recommendations made in this paper – legislative reform of the IBC in specific reference to digital assets, adoption of the UNCITRAL Model Law, implementation of a regulated regime of digital asset service providers and mandatory segregation of customer assets, building of judicial expertise, and proactive engagement with international standard-setting bodies –

⁹²¹ Yurii Riabchenko and others, 'Digital Assets and Property Rights: Regulation and Legal Implications within the EU and Globally' (2025) 46(3) Statute Law Review

present an integrated and feasible agenda to mitigate the emerging disparity.

This is not a matter solely of individual rights and wrongs between creditors and debtors. Given that digital assets play an increasingly vital role in the world financial system – providing collateral, investment opportunities, a means of exchange, and facilitating international capital flows – robust legal frameworks for the insolvency of digital assets are crucial to global financial stability and the development of digital markets. India's advanced and vast digital economy, along with its common law traditions and increasingly integrated relationship with global financial regulation, provide it with a firm base to develop a coherent and internationally compatible regime. The missing piece is the urgent legislative and institutional action needed to establish this clear, practical, and predictability based legal framework which investors and courts demand.





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