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CRYPTOCURRENCIES; WHEN CAVEAT EMPTOR FAILS AND SOME SUGGESTIONS FOR A NEW ZEALAND RESPONSE

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The Author is a partner in a cryptocurrency mining business and personally holds Bitcoin, Ethereum, Dai, Dogecoin, Solano, Cardano and Compound.

Abstract:

This essay examines the challenges of cryptocurrency regulation in New Zealand. It explains what cryptocurrencies are and categorises them into three types. It then identifies three cycles in cryptocurrencies' history. Each cycle includes the development of cryptocurrencies as well as states respective responses to their challenges. These cycles show how cryptocurrencies have been inadequately regulated and the harms they have caused. Additionally, it evidences how caveat emptor has failed to dissuade interaction with them. Within that context, this essay then examines New Zealand's current regulatory response and argues such a response is inadequate. It shows how applying ill-fitted existing regulatory regimes to cryptocurrencies imposes costs without corresponding benefits. Instead, lawmakers ought to enact targeted regulations directed at specific problems. Three regulations that are possible within lawmaker's jurisdictional authority are suggested to further this goal. The paper first argues for information to be provided by domestic cryptocurrency sellers. It then advocates for prescribed cryptocurrency storage security requirements for all domestic intermediaries. Finally, it suggests that Stablecoin reserve assets be audited and contain approved asset compositions. These recommendations provide practically achievable ways to reduce cryptocurrency harms.

Keywords: "Cryptocurrencies", "Regulation", "Blockchain", "Private Money".

Contents

I Introduction

In 2008 the world was in crisis. Years of ineffective regulation and global capital flows meant a US housing market collapsed the global economy.[1] An estimated $15 trillion was lost in the ensuing years.[2] Pseudonymous Satoshi Nakamoto chose that time to unveil the world's first successful cryptocurrency; Bitcoin.[3] Touted as a 'peer-to-peer version of electronic cash' this cryptocurrency was designed to bypass centralised institutions and their regulatory frameworks.[4] Nakamoto seemingly blamed these for the crisis, noting 'The Times 03/Jan/2009 Chancellor on brink of second bailout for banks' in Bitcoin's genesis block.[5]

Cryptocurrencies are not static. Thousands rapidly developed following Bitcoin's lead. The surrounding cryptocurrency market also progressed and by 2010 intermediaries were established[6] with 2014 witnessing the first regulatory responses.[7] These rapid developments caught regulators off guard. While states struggled to decide an appropriate course of action, cryptocurrencies facilitated the loss of hundreds of billions of dollars. Successive cryptocurrency market crashes alone have erased approximately NZD $2b, $582b and $1.25t respectively.[8] Existing regulations have proven inadequate to mitigate these losses. A common response by states and academics alike has been to fall back on the caveat emptor maxim. Yet the law's function is to limit harm when caveat emptor fails, which it has. A shrug of the shoulders and repetition of the maxim is an inadequate regulatory response to the harm being caused by cryptocurrencies.

Therefore, this paper will provide a collated analysis of private cryptocurrency development and regulation before offering some normative suggestions for lawmakers. Part one begins by outlining what cryptocurrencies are and categorising them into three distinct types. Many academic and government papers consider Bitcoin as being representative of all

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[1] John Armour and others "Introduction" in Luca Enrique's (ed) *Principles of Financial regulation* (Oxford University Press, Oxford, 2016) at 1.
[2] At 1.
[3] Satoshi Nakamoto "A Peer-to-Peer Electronic Cash System" (31 October 2008) Bitcoin.org <www.bitcoin.org/bitcoin.pdf> at 1.
[4] At 1.
[5] Aaron Kumar and Christie Smith *Crypto-currencies – An introduction to not-so-funny moneys* (Reserve Bank of New Zealand, Analytical Note AN2017/07, November 2017) at 25.
[6] Gerald Dwyer "The economics of Bitcoin and similar private digital currencies" (2015) 81 J. Financial Stab. 81 at 87.
[7] Julie Cassidy, Man Hung Alvin Cheng and Toan Le "It's a Bird! It's a Plane! No, It's a Cryptocurrency!" (2020) 26(3) JOIT 44 at 51, and China Securities Regulatory Commission *Notice on preventing Bitcoin risks* (22 January 2014).
[8] Coinmarketcap "Global Cryptocurrency Charts, Total Cryptocurrency Market Cap" (26 June 2021) <https://coinmarketcap.com/charts/>.

cryptocurrencies. This misconception ignores the diverse nature and challenges of each category. Explaining how these categories differ sets the scene for the ensuing analysis. Part two then details the evolution of cryptocurrencies and their regulation. It argues there have been three distinct ‘cycles’; 2008-2014, 2014-2019 and 2019-present. This part explains cryptocurrency developments, their problems, and regulatory responses during each cycle. Part two concludes by arguing the current challenges for regulators are asymmetric information amongst purchasers, persistent intermediary failure, and the fraudulent use of cryptocurrencies. Part three then examines New Zealand’s cryptocurrency approach and analyses why this is lacking. It shows how existing regulations either leave cryptocurrencies unaddressed or are easily bypassed. Part four concludes by presenting normative suggestions of mandatory product disclosure, prescribed cryptocurrency storage requirements and regulatory Stablecoin oversight.

II What are Cryptocurrencies?

A Definitions

Articulating a comprehensive definition of cryptocurrencies is complicated given their dynamic nature and uses. Practically, all are digital currencies built on blockchain technology controlled by cryptographic methods.[9] Yet difficulty arises when attempting to attribute legal definitions to the diverse range of cryptocurrencies.

Easiest to define are cryptoassets. These are crypto-representations of existing financial instruments like shares and securities. As Shakespeare famously wrote; a rose by any other name would smell as sweet.[10] Simply converting financial instruments into cryptoasset tokens changes neither their nature nor their legal treatment. Therefore, cryptoassets share both legal definitions and treatments with their traditional counterparts.

Defining private novel cryptocurrencies is more difficult. Ongoing theoretical debates question whether these are property or money.[11] The mere presence of this debate highlights the danger of painting all cryptocurrencies with the same brush. Some cryptocurrencies suit the legal definition of property even though they resist proprietary divides between choses in action and possession.[12] Instead, a preferable definition may consist of the right to exclude others from a resource whatever form the eligibility and content may take, covering both tangible and intangible things.[13] This way novel cryptocurrencies can be choses in action enabling holders to assert their entitlements against third parties while also sharing characteristics of choses in possession.[14] Other property such as quotas, waste management licenses, and carbon trading allowances have been held to be property when they have acquired economic value and an ability to be transferred/traded.[15] However, not all categories of cryptocurrencies suit this definition of property and defining cryptocurrencies remains an area of controversy.

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[9] Imeda Tsindeliani & Maria Egorova "Cryptocurrency as Object of Regulation by Public and Private Law" (2020) 11 J. ADVANCED Res. L. & ECON 1060 at 1064.
[10] William Shakespeare "Romeo and Juliet" in First Avenue Classics *Shakespeare, Romeo and Juliet* (Lerner Publishing Group, Minneapolis, 1982), at 41, Act 2 Scene 2.
[11] Matteo Solinas "Bitcoiners in Wonderland: lessons from the Cheshire Cat" (2019) 3 L.M.C.L.Q. 433 at 434.
[12] At 439.
[13] At 439.
[14] At 439.
[15] At 440.

B Blockchain Technology

Less controversial is the claim that blockchain technology is cryptocurrencies' defining feature. Bitcoin's success is attributable to its invention of blockchain technology.[16] Blockchain's invention is perhaps even more influential than the invention of Bitcoin itself.[17] Blockchains are decentralized databases that store information.[18] These blend a variety of technologies including peer-to-peer networks, public-private key cryptography and trustless consensus mechanisms to create distributed databases with seemingly infinite use-cases.[19] Cryptocurrency transactions are collated into 'blocks' which are then validated and added to the blockchain, hence its name.[20]

Blockchain technology resists regulation in a variety of ways, the most common being through distributed validation.[21] Distributed validation delegates ledger maintenance to global networks of nodes.[22] Those operating nodes are called 'miners'. Honest nodes receive rewards for maintaining the ledger whereas dishonest nodes that maliciously attack the network receive nothing.[23] The network is deemed 'trustless' by ensuring it is more profitable for nodes to maintain rather than attack the network.[24] Users need only to trust the profit-maximising motivations of miners to keep their nodes honest. This ensures interactions are trustless. Additionally, nodes can be run anywhere with an internet connection making them transnational. Harshly regulating them at the state level is ineffective. Unfocused international regulations mean that if one state does so then validators simply relocate to friendlier jurisdictions. China's three bans provide ample evidence of this behaviour.[25] The cryptocurrency survives provided at least one node validates the blockchain.[26]Accordingly, blockchain technology affords cryptocurrencies' transnational reach and regulatory resistance.[27]

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[16] Primavera De Filippi and Aaron Wright "Blockchain, Bitcoin and Decentralised Computing Platforms" in Marcelo Corrales, Mark Fenwick and Helena Haapio *Blockchain and the Law: The Rule of Code* (Harvard University Press, Cambridge (Mass), 2018) at 16
[17] At 44.
[18] At 13.
[19] At 16, 19 and 26
[20] At 22.
[21] At 46.
[22] At 13.
[23] Dwyer, above n 6, at 86.
[24] At 84.
[25] Caitlin Ostroff and Elaine Yu "Cryptocurrency Companies Are Leaving China in 'Great Mining Migration' *The Wall Street Journal* (Online ed, New York, 22 August 2021).
[26] Filippi and Wright, above n 16, at 22.
[27] At 44.

C Issuing of Cryptocurrencies

Cryptocurrencies are issued in many ways. Some are generated through rewards given to honest nodes whereas others are directly issued by the controlling firm.[28] None are issued by state banks. They are distinct from e-money like Apple pay which represents fiat currency transferred by electronic means as e-money retains the status of legal tender.[29] Yet it is not corollary that they are 'valueless'. Fiat currencies themselves are backed not by commodities but by the issuing government.[30] Some states such as the US have federal deposit insurance which insures $250,000 per depositor to FDIC insured banks.[31] This provides some level of state backing but is not present in New Zealand.[32] During the Global Financial Crisis, the Crown Retail Deposit Guarantee Scheme did guarantee deposits or investments up to NZD $1m each.[33] That scheme has since expired meaning New Zealand retail bank deposits are not Crown guaranteed.[34] Additionally, almost two centuries ago *Foley v Hill* established that money in bank accounts are merely private debt claims that are expected to be honoured upon a withdrawal request.[35] These private claims are against the banks themselves not the issuing government. This means Fiat currencies' value is intrinsic as are some cryptocurrencies. The main difference is that instead of being backed by consumer faith in the issuing economy and the holding bank, these coin's value comes from consumer faith in the cryptocurrency itself. Commodities like gold share similar characteristics. Stablecoins will be explained next and are excluded from this analysis as their value is extrinsic and based on whatever they are pegged to.

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[28] Alexandra Sims, Kanchana Kariyawasam and David Mayes *Regulating Cryptocurrencies in New Zealand* (The Law Foundation New Zealand, 2018) at 55.
[29] Rosario Girasa "The Digital Transformation" in Bernardo Nicoletti *Regulation of Cryptocurrencies and Blockchain Technologies National and International perspectives* (Springer international Publishing AG, Switzerland, 2018) at 9.
[30] Cassidy, Cheng and Le, above n 7, at 49.
[31] Federal Deposit Insurance Corporation "Deposit insurance" (17 September 2020) <https://www.fdic.gov/resources/deposit-insurance/>.
[32] Joop Adema, Christa Hainz and Carla Rhode "Deposit Insurance: System Design and Implementation Across Countries" (2019) 17(1) ifo DICE Report 41 at 43.
[33] Controller and Auditor-General *The Treasury: Implementing and managing the Crown Retail Deposit Guarantee Scheme* (Office of the Auditor-General, September 2011) at 25.
[34] The Treasury "Extended Deposit Guarantee Scheme to end" (Press release, 20 December 2011).
[35] *Foley v Hill* [1843-60] All ER Rep 16 at 19 Per Lord Cottenham LC.

D Price Volatility

A final noteworthy factor affecting all cryptocurrencies aside from Stablecoins is price volatility. In the last year, the top 10 cryptocurrencies experienced a peak increase in market value of 4111% before falling back to an average increase of 1650% at the time of writing. Most of these increases have occurred since January 2021. Dogecoin has a particularly volatile market value increasing by 26,578% at its peak before decreasing to a 10,256% increase over the same period.[36] Successful cryptocurrencies are, at most, just over a decade old so price volatility may become less in the future, as it has been in the past. However, at present, price volatility is an inherent trait of most cryptocurrencies.

E Key features of the different types of Cryptocurrencies

There are currently three distinct types of cryptocurrencies. Each utilises blockchain technology to achieve different goals. While they share common traits they are nonetheless conceptually and practically distinct. Therefore, to aid evaluation this paper categorises private cryptocurrencies into Store of Value coins, Global Network Platform coins and Stablecoins.

1 Store of Value coins

Store of Value coin's value comes from distribution, recognition, and acceptance by users. These coins and their blockchains have little utility outside of recording transactions. Bitcoin is the most famous of these. Nakamoto's intended use of Bitcoin as a 'peer-to-peer version of electronic cash'[37] has been superseded by use as a speculative[38] or inflation-immune asset.[39] High transaction fees, slow block validation times and limited scalability make transactions slow and expensive,[40] meaning the use of bitcoins as a currency is impractical. Early 'altcoins', which are cryptocurrencies other than Bitcoin, face similar problems.

A subset of this category are the aptly named 'Memecoins'. Their value is also based on user acceptance with the added complexity that many started as a joke. These predominantly rely

[36] Coin Market Cap "Dogecoin" (21 June 2021) <www.coinmarketcap.com/currencies/dogecoin>.
[37] Nakamoto, above n 3, at 1.
[38] Solinas, above n 11, at 455.
[39] Jens Mattke, Christian Maier and Lea Reis "Is Cryptocurrency Money? Three Empirical Studies Analyzing Medium of Exchange, Store of Value and Unit of Account" (paper presented to ACM SIGMIS conference, Nuernberg, 19-21 June 2020) at 29, 30.
[40] Amber Wadsworth *The pros and cons of issuing a central bank digital currency* (Reserve Bank of New Zealand, Bulletin Vol. 81, No. 7, June 2018) at 11.

on internet culture to derive their value. Examples include Dogecoin, SafeMoon and Shiba inu coin. Dogecoin and Shiba build on the internet's obsession with their mascot Shiba Inu dogs while SafeMoon plays into purchaser beliefs that its value will 'shoot to the moon' and stay there 'safely'. Perhaps shockingly, given most are jokes or borderline scams, Dogecoin, SafeMoon and Shiba inus's market caps are NZD $51.5B,[41] $3.5B[42] and $4.4B[43] respectively.

Store of Value coins are predominantly used not as currency but as an investment, a hedge against inflation or a joke.[44] As speculative assets, they are also particularly susceptible to extreme price fluctuations.

2 Global Network Platform coins

Global Network Platform coins' value comes from both user acceptance and developers building applications on their blockchain technology. Unlike Store of Value coins, their blockchain technology has use outside of recording transactions. Two architectural approaches are designing these coins as sandboxes or with a targeted use.

Ethereum is the most popular sandbox and provides a blockchain with a Turing-complete programming language.[45] Like software, this is designed to facilitate the widest possible range of uses. Developers can build applications, issue smart contracts and run decentralised finance on these blockchains.[46] Smart contracts are particularly popular by facilitating uses including financial applications, self-executing programs, online voting and decentralised governance.[47] Ethereum is also the primary blockchain that non-fungible tokens utilise.[48]

Stellar Lumens provide an example of a targeted Global Network Platform. Unlike Ethereum's sandbox approach, Stellar's blockchain is designed for one task. Stellar claims that global financial infrastructure is a mess of closed systems causing slow and costly transactions.[49] Stellar hopes to unlock those systems and allow the world's financial systems to work together

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[41] Coin Market Cap, above n 36.
[42] Coin Market Cap "SafeMoon" (21 June 2021) <www.coinmarketcap.com/currencies/safemoon>.
[43] Coin Market Cap "Shiba Inu Token" (21 June 2021) <www.coinmarketcap.com/currencies/shiba-inu>.
[44] Arjun Kharpal "Reddit frenzy pumps up Dogecoin, a cryptocurrency started as a joke" *CNBC* (Online ed, Englewood Cliffs, 29 January 2021).
[45] Vitalik Buterin "A Next Generation Smart Contract & Decentralized Application Platform" (13 January 2014) Ethereum.org <Ethereum.org/en/whitepaper/> at 1.
[46] At 19.
[47] At 19.
[48] The Ethereum Foundation "Non-fungible Tokens" (11 June 2021) <Ethereum.org/en/nft>.
[49] David Mazières "The Stellar Consensus Protocol: A federated Model for Internet-level Consensus" Stellar Development Foundation <stellar.org/papers/stellar-consensus-protocol/> at 1.

on a single network, making currencies more useful and accessible.[50]. It achieves this using a specialised blockchain designed for high throughput, network scalability and low transaction costs.[51]

A primary reason Store of Value coins are not widely used as currency are high fees and slow transaction times. While bitcoin transactions are limited to around seven per second costing an average of $0.7 at the time of writing,[52] Stellar can currently process approximately 250 transactions per second[53] at a cost of $0.000003 per operation.[54] Ethereum 2.0 will implement 'sharding' which can conduct up to 10,000 transactions per second.[55] Such speed is approaching the theoretical maximum throughput of the VisaNet payment network at 56,000 per second,[56] although their network only averaged 1585 per second in 2019.[57]

These Global Network Platform coins are being continually developed to improve their performance and versatility.

3 Stablecoins

Stablecoins are financial obligations issued on a blockchain, with many using established Global Network Platforms.[58] Stablecoins peg their value to an external reference point such as the US dollar or commodities like gold/oil. This makes them resistant to price volatility inherent in other cryptocurrencies. Each issued token represents an asset the reserve company holds. Token holders can redeem their tokens for the associated asset at any time. Stablecoins' purpose is to facilitate fiat currency exchanges digitally. Popular examples include Tether, Binance USD and Dai which are pegged to the US dollar. Others, like Tether gold, give full token holders the right to one troy ounce of gold.[59] All are issued by private companies who

[50] At 2.
[51] At 4.
[52] BTC Network "Bitcoin Fee Estimator" (22 July 2021) < https://btc.network/estimate>.
[53] Ajibola Akamo "Six cryptocurrencies that offer the fastest transaction time" (17 June 2021) Nairmaetrics <https://nairametrics.com/2021/06/17/six-cryptocurrencies-that-offer-the-fastest-transaction-time-wef/>.
[54] Stellar Developers "Fees" (20 June 2021) <https://developers.stellar.org/docs/glossary/fees/>.
[55] Anshika Bhalla "Top Cryptocurrencies with their high Transactions Speeds" (16 April 2021) Blockchain Council <https://www.blockchain-council.org/cryptocurrency/top-cryptocurrencies-with-their-high-transaction-speeds/>.
[56] Visa "VisaNet" (20 June 2021) <https://www.visa.co.nz/about-visa/visanet.html>.
[57] Erica Sandberg "The Average Number of Credit Card Transactions per Day & Year" (9 November 2020) at <www.cardrates.com/advice/number-of-credit-card-transactions-per-day-year/>.
[58] Caitlin Long "Ten Stablecoin Predictions and Their Monetary Policy Implications" (2021) 41 CATO j. 307 at 307.
[59] Tether Operations Limited "Tether Gold – A Digital Token Backed by Physical Gold" (12 February 2021) <https://gold.tether.to/Tether%20Gold%20Whitepaper.pdf> at 7.

must hold equivalent assets in reserve to permit the redemption of all Stablecoins issued.[60] Without sufficient reserve assets to guarantee all issued tokens, the Stablecoin will fail.

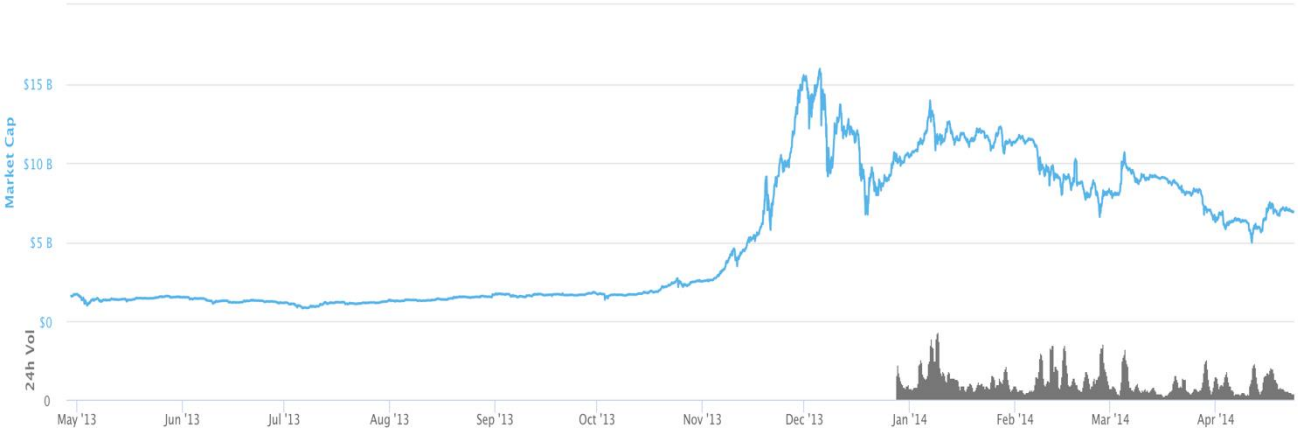
[60] Long, above n 58, at 307.

III Previous cycles

Cryptocurrencies have experienced three distinct cycles. Exploring these provides background context to cryptocurrencies present practical and legal situation. Determining the timing of these cycles considers market popularity, technological advances and regulatory developments. Of particular importance is the cryptocurrency market cap. Increased prices are caused by cryptocurrency developments and elicit regulatory attention. Therefore, framing these cycles around market cycles is logical.

A First Cycle: 2008-2014

Global Cryptocurrency Market Cap; May 2013 to May 2014:[61]



1 Events/developments:

Bitcoin was not the first cryptocurrency. Developers had been attempting to create one for decades,[62] however, they had been unable to overcome technical challenges with creating a trustless distributed system.[63] Bitcoin solved these challenges with its invention of blockchain technology. The publishing of Nakamoto's white paper in 2008 serves as the successful starting point of the first cycle. Notably, during this first cycle, only Store of Value cryptocurrencies had been invented.

One of Bitcoin's primary objectives was to bypass intermediaries in favour of a peer-to-peer model. This sought to make the cryptocurrency resistant to intermediaries and regulations. Nakamoto appeared to view these entities and state-level controls as tainted. However, this model had challenges. Users were individually required to find others to transact with. They

[61] Coin Market Cap, above n 8.
[62] Filippi and Wright, above n 16, at 16.
[63] At 19.

would then have to trust them to uphold whatever bargain was agreed upon. This proved to be cumbersome and dangerous due to the nature of cryptocurrency transactions.

Bitcoin's blockchain introduced the now universal method of cryptocurrency transactions using 'wallets'. Wallets allow users to interact with addresses. Addresses are pseudonymous in that all transactions are publicly available on the blockchain but their user's identity is not. An example bitcoin address is: *3FZbgi29cpjq2GjdwV8eyHuJJnkLzfgZc5*. Addresses contain private keys unlocking access to corresponding public keys stored on the blockchain. These public keys record the amount of cryptocurrency an address is entitled to. Transactions do not transfer the cryptocurrency itself. Instead, they transfer the right to those cryptocurrencies. Users must correctly input the recipient's address and the amount intended for transfer. Validator nodes then examine whether the sender's address has sufficient rights to the cryptocurrency. If sufficient rights are found then a transaction is submitted for validation, included in a block and added to the blockchain. Recipients receive new private keys giving them rights to the transferred cryptocurrency contained in the new public keys.

The danger comes because most blockchain transactions are irreversible by nature.[64] If another party obtains the private key, then they can steal the corresponding cryptocurrency. Transactions require no security measures like two-factor authentication or proof of identity. Additionally, if the address is inputted incorrectly then the cryptocurrency is irrevocably lost. The incorrect address may not exist at all meaning the cryptocurrency is 'burned'. Even if the receiving address exists, there is no way to obtain the user's identity, communicate with them or ensure the cryptocurrency's return. At present, an estimated 20% of all bitcoins have not moved on the blockchain for 5 years and are presumed lost due to being sent to incorrect addresses.[65] This made peer-to-peer transfers risky.

Wallet providing and cryptocurrency exchange intermediaries emerged to ameliorate these risks.[66] Wallet providers handle securing private keys and submitting transactions to the blockchain. Exchanges integrate with wallet providers and providing a convenient place to trade. This does not remove the danger of sending cryptocurrencies to an incorrect address, but it does mean users no longer need to personally secure their private keys. Instead, users must only remember the intermediaries login details. Moreover, even if these are forgotten,

[64] Sims, Kariyawasam and Mayes, above n 28, at 36.
[65] Nicholas Albrecht "Ten's of billions of Bitcoin have been lost by people who forgot the key" *The New York Times* (Online ed, New York, 21 January 2021).
[66] Dennis Chu "Broker-Dealers for Virtual Currency: Regulating Cryptocurrency Wallets and Exchanges (2018) 118 Colum. L. Rev 2323 at 2324.

intermediaries allow for account recovery. Exchanges also facilitate trading by bringing transactors together. Rather than having to find and trust the other party, exchanges offer a controlled environment by providing escrow services. These intermediaries were highly successful and by 2013 the leading exchange, Mt Gox, was handling an estimated 80% of all bitcoin transactions.[67]

2 Problems:

Cryptocurrencies' stumbling block during this time was their legal treatment or, more accurately, their lack of it. Both cryptocurrencies and their intermediaries operated in a legal grey area.[68] Particular problems emerged when several exchanges were accused of money laundering, undisclosed fractional reserve practices and mismanagement causing loss.[69] This was exacerbated by the undetermined legal nature of cryptocurrencies. Regulating something without determining its legal status is impossible. These issues remained largely ignored until two events highlighted them in earnest.

First, cryptocurrencies experienced a market boom in late 2013 resulting in a 1000% increase in value between October and December.[70] Bitcoin's value soared from $76 to $1151.[71] This boom saw cryptocurrencies gain mainstream media attention for the first time. Increased exposure encouraged new users to enter the market. Without technical expertise, these users naturally turned to intermediaries.

This contributed to the second problem; intermediary failure. Many intermediaries were, and are still, small operations run by small teams of passionate cryptocurrency users unsuited to having their system traffic increase exponentially.[72] Mt Gox, the largest exchange at the time, had initially been an online trading card game marketplace.[73] Cryptocurrencies' soaring value meant these exchanges held millions of dollars of cryptocurrencies in unsecure overburdened systems.

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[67] At 2340.
[68] Savva Shanaev and others "Taming the blockchain beast? Regulatory implication for the cryptocurrency Market" (2020) 51 Res. Int. Bus. Finance at 2.
[69] Chu, above n 66, at 2341.
[70] Coin Market Cap, above n 8.
[71] Coin Market Cap "Bitcoin" (26 July 2021) <https://coinmarketcap.com/currencies/bitcoin/>.
[72] Solinas, above n 11, at 449.
[73] Paul Vigna "5 Things About Mt Gox's Crisis" *The Wall Street Journal* (Online ed, New York, 25 February 2014).

Understanding this insecurity requires returning to the concept of wallets. Wallets are either 'hot' or 'cold'. 'Hot' wallets are connected to the internet while 'cold' wallets are not. The advantage of hot wallets is that they provide instant access to cryptocurrencies with the disadvantage that they are vulnerable to hacking. Conversely, cold wallets trade convenience for security by requiring the owner to manually connect to the internet before use. Most cryptocurrency users do not hold coins directly and instead use intermediaries to store their cryptocurrencies.[74] Exchanges are particularly vulnerable as trading requires them to hold large quantities of cryptocurrencies in hot wallets to facilitate user deposits and withdrawals. This makes them ideal targets for hacking of which Mt Gox was the first victim. $480m was lost when the exchange was hacked in late 2012.[75] The hack began a market crash exacerbated by successive regulatory announcements.[76] $10b was erased in the ensuing months ending the first cycle.[77]

3 Regulatory/legal responses:

Literature began grappling with cryptocurrencies during this cycle.[78] Yet before regulation could be enacted the legal nature of cryptocurrencies had to be determined. Legal uncertainty at the time contributed to no or only sporadic regulatory action from state authorities. The US response was to highlight that virtual currencies lack legal tender status in any jurisdiction[79] while China issued successive announcements closing all bitcoin trading between December 2013 and April 2014. The first cycles events highlighted cryptocurrencies' need for specific legal analysis and regulatory action.

[74] Solinas, above n 11, at 447.
[75] Carter Dougherty and Grace Huang "Mt. Gox Seeks Bankruptcy After $480m Bitcoin Loss" *Bloomberg* (Online ed, New York, 1 March 2014).
[76] Lauren Gloudeman "Bitcoin's Uncertain Future in China" (2014) 4 USCC at 6.
[77] Coin Market Cap, above n 8.
[78] Dwyer, above n 6, at 86.
[79] United States Department of the Treasury Financial Crimes Enforcement Network "Application of FinCEN's Regulations to Persons Administering, Exchanging, or Using Virtual Currencies (18 March 2013, FIN-2013-G001) at 1.

B Second Cycle: 2014-2019

Global Cryptocurrency Market Cap; May 2014 to February 2019:[80]

1 Events/developments:

By the closing stages of the first cycle, developers realised that blockchains had utility outside of recording cryptocurrency transactions. Through improving blockchain scalability and throughput developers created both Global Network Platforms and Stablecoins. In 2013 there were 14 Store of Value coins. By 2018 more than 1500 cryptocurrencies of all types existed.[81]

The first major development was using Global Network Platform coins to facilitate Initial Coin Offerings (ICOs). These fundraising initiative's function much like Initial Public Offerings (IPO). An ICO involves issuing blockchain recorded tokens representing rights in exchange for capital. Rights could be to income, a stake in the project or more detailed governance rights. These features made ICOs analogous to already regulated IPOs. Their only difference was their digital nature.

Stablecoins also posed a major innovation. Their blockchains enabled users to transact in a global digital environment benefitting from reserve asset price stability combined with blockchain speed.[82] Users sending international payments no longer had to choose between the price volatility of cryptocurrency or the slow speed of traditional intermediaries. Instead, users could use Stablecoins for fast secure transactions.

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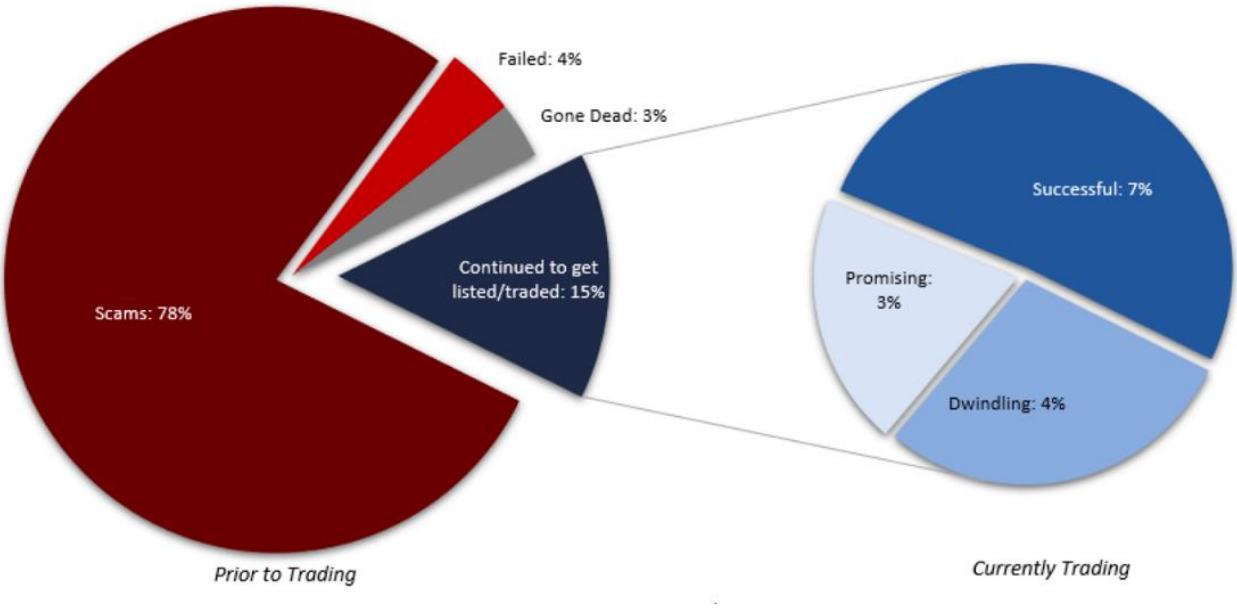
[80] Coin Market Cap, above n 8.
[81] Sherwin Dowlat *Cryptoasset Market Coverage Initiation: Network Creation* (Satis Group, 1 July 2018) at 1.
[82] Long, above n 58, at 309.

These developments contributed to a second cryptocurrency boom in late 2017 when the global market cap increasing from $35b to $831b.[83] Bitcoin briefly hit $19,000 before falling 45% in five days,[84] when media reported rumours of South Korea banning cryptocurrency[85] and the exchange Coincheck was hacked losing $535.6m.[86] Each of these events contributed to the market crashing and erasing $582b.[87] Such events again highlighted cryptocurrencies tumultuous boom-bust pattern. By 2018 cryptocurrencies had stabilised marking the second cycle's end.

2 Problems:

2018 ICO Failure rate:[88]



Global Network Platforms themselves did not generate explicit problems. They could be used for legitimate applications like NFT verification or illegitimate applications like anonymous scams. ICO's presented one problematic use of their technology. Although ICO's were an innovative way to raise capital, they were also marred by fraud. Anyone could create a website,

[83] Coin Market Cap, above n 8.
[84] Coin Market Cap, above n 71.
[85] Saheli Roy Choudhury "South Korea is talking down the idea of a cryptocurrency trading ban is imminent" *CNBC* (Online ed, Englewood Cliffs, 21 January 2018).
[86] Emily Crane "Regulation without Deflation: Cryptocurrency and Its Insider Trading Conundrum" (2018) 51 J Marshall L Rev 797 at 804.
[87] Coin Market Cap, above n 8.
[88] Dowlat, above n 81, at 24.

fill it with unsubstantiated claims and launch an ICO. Their uncertain legal nature enabled them to avoid existing regulations leaving unsuspecting investors unprotected. Many were eager to invest in these new ventures alone worth $35b USD.[89] Similar to the dot-com bubble, people invested vast sums into ICOs with no revenue-producing history simply because they were ICOs.[90] The result of this uncritical buying frenzy enabled 80% of initial coin offerings issued in 2018 to be scams.[91] Even legitimate ICOs failed at a high rate. This highlighted the need to resolve their legal treatment.

Stablecoins presented unique challenges given their private issuance. Each Stablecoin must be backed by sufficient reserves of its pegged target. If not, it has the potential to become devalued. For example, claims of insufficient reserve amounts have led to Tether, the largest Stablecoin, being investigated multiple times.[92] The allegation was that they attempted to cover up approximately $850 million in lost customer funds along with making various misrepresentations about Tether's US dollar backing.[93] The litigation was ultimately settled in early 2021 with Tether Limited being fined $18.5m and having regulatory oversight imposed upon it.[94] This highlights the inherent dangers of trusting private firms to maintain sufficient reserves. Without stringent regulatory oversight, they have the power to issue tokens that they say are backed by reserves. Yet, despite this danger, these claims still had no validation requirement.

The final problem in the second cycle was the continued failure of intermediaries. Intermediaries still held large quantities of cryptocurrencies in vulnerable hot wallets. The rising value of cryptocurrencies again prompted intermediaries to be hacked and fail. Examples include $150m being stolen from start-up THE DAO.[95] Exchanges Coincheck and Youbit also failed after losing 20% of their clients' currency[96] and $500m of cryptocurrencies respectively.[97] Without regulations dictating the secure storage of cryptocurrencies,

[89] Dowlat, above n 81, at 6.
[90] Nathan Sherman "A Behavioural Economics Approach to Regulating Initial Coin Offerings (2018) 107 GEO. J.J. ONLINE 17 at 22.
[91] Dowlat, above n819, at 1.
[92] *In re: James v iFinex, et al.,* Index No. 450545/2019 (April 23, 2019), *Aff'd* 2020 N.Y. Skip OP. 03880 (July 9, 2020) at 26.
[93] At 26.
[94] Scott Kimpel "New York Attorney General Announces Settlement with Bitfinex" 2021 11(176) Nat'l L. Rev. 1 at 1.
[95] Crane, above n 86, at 803.
[96] At 804.
[97] Rani Shulman "Are Centralised Cryptocurrency Regulations the Answer? Three Countries; Three Different Directions" (2020) 45(2) Brook. J. Int'l L. 835 at 849.

intermediaries continued to be victims of hacking. This was problematic for users who still could not trust their cryptocurrencies to be stored safely.

3 Regulatory/legal responses:

Regulations enacted during this time largely targeted problems identified in the first cycle. Approaches varied considerably with China banning intermediaries outright, Russia proposing seven-year prison terms for using cryptocurrencies, Japan introducing exchange regulations, and the UK releasing statements that cryptocurrencies are risky investments.[98] However, the similarity of ICOs to IPOs and their unbridled fraudulent use prompted several states to act positively through normalising their trade.

The USSEC confirmed that ICOs are securities subject to security laws exactly like IPOs.[99] Canadian, Swiss and German regulators followed suit.[100] Other states such as Turkey, France and South Korea also began establishing regulatory frameworks over 2014-2017.[101] Arguably this was because rather than being a novel creation, ICOs were merely a crypto-representation of existing instruments. Their nature made them easy to apply existing regulations to them rather than develop novel solutions. New Zealand also confirmed ICOs were securities under the Financial Markets Conduct Act.[102] However, while determining the legal nature of ICOs is welcome, other cryptocurrencies legal nature remained undetermined.[103]

Anti-Money Laundering and Counterterrorism financing also became a particular focus of regulatory action during the second cycle. Perceptions of cryptocurrencies facilitating illicit conduct were common. Even with two UK reports in 2015 and 2018 assessing cryptocurrencies' money laundering risks as low,[104] states did apply regulations to intermediaries.[105] These often materialised as previously mentioned KYC tests requiring intermediaries to obtain information about their customer's identities. Rather than being a specific response to the vagaries of

[98] Ahmad Chokor and Elisa Alfieri "Long and short-term impacts of regulation in the cryptocurrency market" (2021) 81 QREF 157 at 167.
[99] At 167.
[100] At 167.
[101] At 168.
[102] Financial Markets Authority "FMA commentary on ICOs and cryptocurrencies" (Press release, MR no. 2017-46, 25 October 2017).
[103] Chu, above n 66, at 2338.
[104] Her Majesty's Treasury, Financial Conduct Authority and the Bank of England "Cryptoassets Taskforce: final report at 33; and Her Majesty's Treasury and Home Office "UK national risk assessment of money laundering and terrorist financing" (October 2015).
[105] Chokor and Alfieri, above n 98, at 160, 163.

cryptocurrencies, these merely brought intermediaries up to standard with other financial service providers.

C Third Cycle: 2019-Present

Global Cryptocurrency Market Cap; March 2019 to July 2021:[106]

1 Events/developments:

An unlikely flow-on effect of COVID-19 has been the triggering of a cryptocurrency boom. Unlike fiat currency which states printed as a form of economic stimulation, certain cryptocurrencies are finite. This piqued institutional interest in them as a hedge against inflation. Tesla provides a particularly vivid example by acquiring $1.5b USD of bitcoins for that very purpose.[107] Another form of institutional uptake has been the development and registration of the first Exchange Traded Fund (ETFs) following cryptocurrencies.[108] An ETF is a security that tracks an index, sector, commodity, or other asset and seeks to replicate the performance of a specific index.[109] In this case, cryptocurrencies provide the index. ETFs enable traditional financial services like managed fund providers to invest in cryptocurrency portfolios without purchasing the assets themselves. Doing so makes cryptocurrency investment more accessible.

This caused the global cryptocurrency market cap to increase tenfold from $200b in mid-2020 to a height of $2.5t by May of 2021.[110] The full extent of the increase was short-lived as the market then fell to $1.2t by July 2021 before subsequently rebounding.[111]A clear pattern of

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[106] Coin Market Cap, above n 8.
[107] Kevin Stankiewicz "Major Tesla shareholder Ron Baron not surprised by bitcoin, wants to explore rationale" *CNBC* (Online ed, Englewood Cliffs, 8 February 2021).
[108] United States Securities and Exchange Commission "Staff Statement on Funds Registered Under the Investment Company Act Investing in the bitcoin Futures Market" (Press release, 11 May 2021), and Zack Guzman "World's first bitcoin ETF soars past $500 million in assets under management" *Yahoo Finance* (Online ed, New York, 26 February 2021).
[109] Ananth Madhavan "The Current Landscape" in Scott Parris and Cathryn Vaulman *Exchange-Traded Funds and the New Dynamics of Investing* (Oxford University Press, Oxford, 2016) at 3.
[110] Coin Market Cap, above n 8.
[111] Coin Market Cap, above n 8.

creation followed by loss of wealth is unquestionably occurring during each cycle. The primary difference is that each time the losses grow exponentially.

The primary technological development of the third cycle is the invention of decentralised cryptocurrency finance. Decentralised finance enables market participants to deal directly with each other without intermediaries.[112] A decentralised market example is real estate, where buyers and sellers transact directly. Decentralised markets utilise Global Network Platforms to create smart contracts between users to facilitate more advanced financial transactions like collateralised lending.[113] Smart contracts program escrow services directly through the blockchain removing one of intermediaries key functions. These have the potential to realise Nakamoto's original goal of peer-to-peer transactions devoid of third parties. Without intermediaries to target, states could truly have no way to regulate decentralised finance. Further research ought to explore this topic.

Another important development in the third cycle has been the lowering of barriers of entry to the cryptocurrency market. Even with exchanges, cryptocurrencies are a niche market. Investment services like Robinhood, Plus500 and eToro overcame this somewhat by enabling users to purchase cryptocurrencies through their apps. This is demonstrated by Plus500 experiencing significant growth between Q4 2020-Q1 2021 increasing from 164,991 to 269,743 active users.[114] eToro also registered 3.1 million new users in Q1 2021 up from 1 million in Q1 2020.[115] Attributing the entirety of this growth to cryptocurrency is somewhat hypothetical but not illogical.

2 Problems:

The third cycle's largest problem is also one of its greatest achievements; cryptocurrencies entering the mainstream consumer market. Lower barriers of entry meant more purchasers than ever were able to trade cryptocurrencies. However, this highlighted the problem of asymmetric information. Economic theory claims that purchasers act rationally in accordance with their own interests.[116] However, practical evidence is that purchasers often make irrationally

[112] The Ethereum Foundation "Decentralized finance (DeFi)" (22 July 2021) < https://ethereum.org/en/defi/>.
[113] The Ethereum Foundation, above n 112.
[114] Plus500 Limited "Q1 2021 Trading Update" (13 April 2021) at 2.
[115] eToro "eToro Demonstrates Accelerated Growth With Latest Results" (Press Release, 3 June 2021) at 1.
[116] John Armour and others "Regulating Consumer Finance" in Luca Enrique's (ed) *Principles of Financial regulation* (Oxford University Press, Oxford, 2016) at 207.

harmful financial decisions.[117] Credit cards demonstrate this with only one-third of US credit card holders understanding lending agreement features such as compound interest.[118] Similar losses occur in mortgages, retirements savings and diversification of investments.[119] Logically, 'rational' purchasers realise they have asymmetric information and either do not enter the market or seek additional information. Yet financial products and cryptocurrencies are still purchased. In most markets, this is not an issue either because of existing regulations or established consumer behaviours.

For example, extensive requirements must be met before a company or financial instrument can be listed on a stock exchange.[120] Additionally, New Zealand law requires regulated financial products to provide product prospectuses.[121] The explicit purpose of these disclosures is to provide information that is likely to assist a prudent but non-expert person to decide whether to acquire the financial products.[122] Accordingly, most purchasers can be assumed to have some knowledge of the products or at least have access to it. Moreover, while possible, purchasers do not typically spend their life savings on existing high-risk investments.

Conversely, few purchasers understand what a blockchain is, let alone cryptocurrencies' uses, technology, or inherent risk. Fewer still understand the uncertain legal arena they operate in.[123] Although investment applications make them appear like traditional financial products, cryptocurrencies have unique differentiating traits as explained in Part 1 above. At present, there are no requirements to include verifiable or comprehensible information about the cryptocurrency being sold.

These factors constitute asymmetric information that renders users potentially uninformed and unable to make 'rational' purchase decisions involving cryptocurrencies. This thesis is unfortunately demonstrated by real-world behavioural biases and irrational decision making occurring during the third cycle. Three common strategies have been buying the dip, having diamond hands and spending government stimulant payments on cryptocurrencies. 'Buying the dip' refers to purchasing cryptocurrencies while they are experiencing a sharp downturn. This behaviour is promoted by faith that the coin will have a resurgence in value or because internet personalities say to do so. Having 'diamond hands' refers to holding purchased

[117] At 207.
[118] At 209.
[119] At 207, 208.
[120] New Zealand's Exchange *NZX Listing Rules* (10 December 2020).
[121] Financial Markets Conduct Act 2013, ss 41(1)(a)-(b), 48.
[122] Financial Markets Conduct Act 2013, s 49.
[123] Solinas, above n 11, at 453.

cryptocurrencies until their value increases to levels comparable to diamonds. Purchasers engaging in this practice ignore market conditions or the reality of their original investment being substantially, or completely, eroded. Instead, they hold the cryptocurrency indefinitely. Finally, many purchasers 'Yolo'd their stimmy on crypto', referring to spending their entire Covid-19 stimulus cheque on cryptocurrencies, usually on volatile Memecoins like Dogecoin or SafeMoon, because 'you only live once'. Each of these behaviours is ill-informed and dangerous.

The second problem is persistent intermediary security failures. This is particularly relevant given domestic exchange Cryptopia's failure. Cryptopia was hacked and failed following NZD $30m being stolen in 2019.[124] Cryptopia held an estimated NZD $170m of assets at the time.[125] An ongoing liquidation is still underway in 2021. Further exchange failures include Livecoin in January 2021[126] and Thodex in April 2021.[127] Additionally, PolyGon and Liquid suffered hacks losing $600m[128] and $90m both in August 2021.[129] Whether these intermediaries fail is yet to be seen. This overwhelming evidence confirms the continued problem of intermediaries inadequate security measures and potential for failure.

The final current recurring problem is the dishonest use of cryptocurrencies. This was first observed during the second cycle where 80% of ICOs were scams. The third cycle has experienced even larger problems. The ability for anyone to create a cryptocurrency based on a GNP blockchain has led to an explosion of altcoins. The secondary market for the approximately 7,000 cryptocurrencies generated around $100 trillion in trading volume during 2020.[130] A trend has emerged where developers pay social media influencers to promote these coins. Such coins are often 'Pump-and-dump' schemes.[131] These occur where early access holders of the coins wait for their value to be 'pumped' via marketing, immediately 'dump' it by selling their holdings on launch and collapse the coin's value.[132]

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[124] *Ruscoe v Cryptopia* [2020] NZHC 728 at [13].
[125] At [11].
[126] Tanzeel Akhtar "Livecoin Exchange Announces Closure After December Hack" *Coindesk* (Online ed, New York, 20 January 2021).
[127] Sandali Handagama and Jamie Crawley "Turkish Crypto Exchange Goes Offline, CEO Missing" *Coindesk* (Online ed, New York, 23 April 2021).
[128] Eliza Gkritsi and Muyao Shen "Cross-Chain DeFi Site Poly Network Hacked; Hundreds of Millions Potentially Lost" *Coindesk* (Online ed, New York, 11 August 2021).
[129] Sebastian Sinclair and Eliza Gkritsi "Japan's Liquid Global Exchange Hacked; $90M in Crypto Siphoned Off" *Coindesk* (Online ed, New York, 19 August 2021).
[130] Anirudh Dhawan and Tālis J. Putniņš *A new wolf in town? Pump-and-dump manipulation in cryptocurrency markets* (Australian Research Council, 17 November 2020) at 1.
[131] At 1.
[132] At 3.

Perhaps the most concerning element of these schemes is how they differ from traditional pump-and-dump attempts. Far from hiding their intentions, cryptocurrency developers often openly announce they will pump the coin and encourage others to join in.[133] Once the price is sufficiently elevated, holders dump their coins, crash the coin's value and cause losses to those unable to sell in time. Cryptocurrencies that appear to be pump-and-dump schemes have been promoted by mainstream celebrities[134] and were even advertised at the 25 June 2021 Samoa v Māori All Blacks rugby test match.[135] The widespread targets of these schemes cannot be understated.

3 Regulatory/legal responses:

Global Cryptocurrency responses as of 2020:[136]

EXHIBIT 1
Matrix for Classifying Approaches to Regulating Crypto Assets

Level	Description of Level	No. of Countries at this Level
Level 0: Ignoring	The government does not pay attention to the existence of crypto assets.	150 countries
Level 1: Monitoring	An official body has released a statement recognising the existence of crypto assets, but no approach to dealing with crypto assets has been defined.	3 countries
Level 2: Recommendation	An official body has released a statement proposing an approach to deal with crypto assets.	25 countries
Level 3: Guidance	An official body has issued guidance to govern the use of crypto assets.	5 countries
Level 4: Regulation	Pre-defined conditions exist which, once complied with, could lead to formal authorisation to provide crypto assets-related products and services.	3 countries
Level 5: Ban or integration (definitive legislation)	A complete or partial prohibition or adoption of crypto assets. A ban may be implemented via different forms, including banning banks from supporting activities related to crypto assets and a complete ban on all institutions and individuals.	11 countries

The trend of applying existing regulations to cryptocurrencies has continued during the third cycle. Even in 2021, this has been hampered by the continued difficulty in defining cryptocurrencies.[137] ICOs and ETFs can be regulated under existing legislation given their indistinguishable nature to existing regulated assets. However, the ongoing debate about whether to consider cryptocurrencies property or money rages on.[138] This contributes to

[133] Dhawan Putniņš, above n 130, at 7.
[134] Taylor Locke "Kim Kardashian West and other influencers are being paid to advertise cryptocurrency on social media" *CNBC* (Online ed, Englewood Cliffs, 15 June 2021).
[135] Samantha Dunn "SafeMoon Becomes Rugby Field Sponsor" *CryptoDaily* (Online ed, London, 6 July 2021).
[136] Cassidy, Cheng and Le, above n 7, at 62.
[137] At 48.
[138] Solinas, above n 11, at 450.

confusion which can explain a lack of regulatory action. At present, most states still ignore cryptocurrencies and cryptoasset as shown by the table above.[139]

Putting ongoing debates to one side, some states have acted. Those that have primarily define cryptocurrencies as property while including exclusions for ICO's which remain securities. The US, UK and Australia have all taken this approach.[140] New Zealand has followed suit, with Inland Revenue considering all cryptocurrencies as cryptoassets and all cryptoassets as property.[141] What little treatment cryptocurrencies have received from domestic courts is consistent with this approach. *Ruscoe v Cryptopia* confirmed that cryptocurrencies are property under the Companies Act 1999 with *Beck v Wilson* confirming cryptocurrencies as relationship property.[142] Therefore, in New Zealand at present, all cryptocurrencies are considered property aside from those explicitly defined as securities.

The New Zealand Law Foundation also released an extensive paper outlining regulatory recommendations during the third cycle. Ten recommendations were made ranging from encouraging cryptocurrencies to remain unbanned to recommending greater information and protection be extended to consumers by government departments.[143] Some of the commission's recommendations have been achieved such as establishing the tax status of cryptocurrencies, clarifying the AML-CTF and FMCA requirements and the provision of bank accounts to cryptocurrency firms. However, many remain unimplemented.

[139] Cassidy, Cheng and Le, above n 7, at 62.
[140] Chokor and Alfieri, above n 98, at 162.
[141] Inland Revenue Department "Cryptocurrency investors reminded of their tax obligations" (Press release, 03 April 2018); and Inland Revenue Department "New Inland Revenue guidance on cryptoassets" (Press release, 08 September 2020).
[142] *Ruscoe v Cryptopia* [2020] NZHC 728 at [133]; and *Beck v Wilkerson* [2019] NZFC 9883 at [40].
[143] Sims, Kariyawasam and Mayes, above n 28, at 126-130.

IV Existing New Zealand regulations

Part three explored global events, problems and developments. These events are directly relevant domestically given the transnational nature of cryptocurrencies. However, cryptocurrencies' transnational nature makes comprehensive regulation impossible without international cooperation. Such cooperation is yet to occur, and accordingly, individual states must implement their own targeted domestic regulations. New Zealand has already done this by imposing existing regimes onto cryptocurrencies. These regulations are not targeted. Instead, Parliament has opted for a 'hands-off' or 'wait-and-see' approach as to whether targeted regulations are required.[144] These regulations are inadequate to manage the currently identified problems.

Cryptocurrency regulations are financial regulations. Financial regulations are implemented to correct or avoid market failures. Markets that create economically inefficient outcomes are deemed to have failed.[145] In these circumstances, there is a *prima facie* case for corrective regulation.[146] Importantly, the case is only *prima facie* and not definitive as regulation is contingent on the benefits exceeding the costs of intervention.[147] Any regulatory intervention must be cautious of its potential costs. If regulations are imposed, they must generate benefits for the costs they incur.

Two New Zealand regulations that have been applied are the Financial Markets Conduct Act 2013 (FMCA) and the Anti-Money laundering and Countering of Financing of Terror Act 2009 (AML-CTF). These are inadequate to prevent problems identified thus far. Additionally, New Zealand's conclusion that all cryptocurrencies are property is a questionable response.

A Financial Markets Conduct Act 2013:

The FMCA considers firms trading cryptoassets/cryptocurrencies are dealers by 'offering, financial products for issue or sale and issuing and transferring financial products'.[148] Additionally, exchanges trading cryptocurrencies are classified as 'financial services' by

[144] Sims, Kariyawasam and Mayes, above n 28, at 79.
[145] John Armour and others "The Goals and Strategies of Financial Regulation" in Luca Enrique's (ed) *Principles of Financial regulation* (Oxford University Press, Oxford, 2016) at 51.
[146] At 52.
[147] At 54.
[148] Financial Markets Authority "Cryptocurrency/Cryptoasset services" (15 March 2021) <https://www.fma.govt.nz/compliance/role/cryptocurrencies/>; and Financial Markets Conduct Act 2013, s 6 dealing (a)(ii).

'operating a value transfer service'.[149] Wallet services are covered by the same provision while those administering services concerning cryptoassets provide financial services by 'keeping, investing, administering or managing money, securities, or investment portfolios on behalf of other persons'.[150] Part 2 of the Act requires suppliers of financial services to not engage in misleading or deceptive conduct, make false or misleading representations or make unsubstantiated representations.[151] Heavy focus is also put on ICO regulation.[152] ICO's are confirmed to be financial products if they are a debt or equity security, managed investment products, or derivative.[153]

1 Application:

(a) Definitions/Scope:

Existing regulations can manage ICOs given their similarity to existing instruments. ICOs have been confirmed to be securities under the FMCA bringing the benefits of that Act.[154] However, Stablecoins remain unresolved. Stablecoins do not fit so easily into the definition of security as ICOs making the imposition of the current FMCA difficult. Additionally, even if Stablecoins were covered by the FMCA, most issuers are not New Zealand firms. Therefore, the FMCA would have no jurisdiction over them. The only domestic Stablecoin is NZD Stablecoin.[155] NZDs does not appear on Coinmarketcap at the time of writing, with the inference it is not widely subscribed at present. Finally, the Act's market manipulation provisions appear to only cover registered financial products under the act, of which cryptocurrencies are not. These leave open the possibility that promoting pump-and-dump schemes would not attract legal liability.

(b) Intermediaries:

To avoid being seen to deceptively mislead customers, it appears that most exchanges instead remain silent about the cryptocurrencies they sell. At best some offer a one-page summary of

[149] Financial Markets Conduct Act 2013, s 6 **financial service** (a); and Financial Service Providers (Registration and Dispute Resolution) Act 2008, s 5(1)(f).
[150] Financial Markets Conduct Act 2013, s 6 **financial service** (a), Financial Service Providers (Registration and Dispute Resolution) Act 2008, s 5(1)(d).
[151] Financial Markets Conduct Act 2013, ss 19-23.
[152] Financial Markets Authority, above n 148.
[153] Financial Markets Conduct Act 2013, s 7(1)(a)-(c).
[154] Sims, Kariyawasam and Mayes, above n 28, at 81.
[155] Techemynt "NZD Stablecoin (NZDs) Whitepaper" (February 2021) < https://www.techemynt.com/NZDs-Whitepaper.pdf>.

the history of the cryptocurrency along with its price history.[156] Even if the FMCA was applied, the risks of failure which these exchanges pose would remain unresolved. Importantly, the largest exchanges like Coinbase, Binance and Kraken are international firms. Therefore, given the jurisdictional limited nature of financial regulation, the FMCA would again have no authority over them.

B Anti-Money Laundering and Countering Financing of Terrorism Act 2009:

It appears that businesses dealing with cryptocurrencies are classed as 'money changers' under the AML-CTF Act.[157] This is because the Department of Internal affairs is the supervisory agency these businesses report to under s 130.[158] The Department classes these businesses as 'Virtual Asset Service Providers'.[159] Parliament has deemed 'privacy coins', an anonymous type of Store of Value coin, as being at risk and requiring additional compliance. [160] However, these measures are unlikely to pose any barriers to determined users, as the example below demonstrates.

Say New Zealander X wants to send $5,000 to a terrorist organisation using privacy coin Zcash. Purchasing Zcash from a New Zealand exchange will trigger enhanced customer due diligence requirements. Therefore, X instead purchases $5,000 worth of bitcoins. X then transfers the bitcoins to a foreign exchange, trades them for Zcash, and sends them to the terrorist organisation.

The New Zealand government would only be aware of this if he purchased the bitcoins using a bank account. Even then it would likely be ignored as unsuspicious. UK reports consistently assess cryptocurrencies at low risk of money laundering.[161] Therefore, it appears unclear what problems these regulations hope to solve. While they bring cryptocurrency intermediaries up to standard, they do not solve any problems for the costs they impose.

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[156] BitPrime "Buy Bitcoin" (22 July 2021) < https://www.bitprime.co.nz/product/bitcoin-btc/>.
[157] Anti-Money Laundering and Countering Financing of Terrorism Act 2009, s 130 (1)(d).
[158] AML Online "DIA's AML/CFT Reporting Entities" (26 June 2021) at <https://aml.dia.govt.nz/AMLReportingEntities/>.
[159] AML Online, above n 158.
[160] Anti-Money Laundering and Countering Financing of Terrorism Act 2009, s 22(1)(d).
[161] Her Majesty's Treasury, Financial Conduct Authority and the Bank of England "Cryptoassets Taskforce: final report at 33; and Her Majesty's Treasury and Home Office "UK national risk assessment of money laundering and terrorist financing" (October 2015).

C Legal status:

ICOs are already robustly regulated by the FMCA. However, the one size fits all position that remaining cryptocurrencies are property deserves scrutiny. While Store of Value coins and GNPs suit this definition, Stablecoins do not. Instead, they arguably meet the definition of money. Whilst an in-depth exploration into the legal theory of money is outside the scope of this essay, this section briefly highlights the possibility of Stablecoins meeting this definition.

Money fulfils three functions as a medium of exchange, a store of value and a unit of account.[162] As a medium of exchange by facilitating trading between different economic actors.[163]As a store of value, it enables the maintenance of purchasing power or possible savings.[164] Finally, as a unit of account, money makes it possible to show the real economic value relationships between two goods or services.[165] Past studies have concluded that Store of Value and GNP coins fail these requirements.[166] However, for Stablecoins pegged directly to currencies, this conclusion is less relevant. Functionally, Stablecoins are analogous with Fiat currencies. Their only difference is their private issuance and digital nature. Whether this precludes their characterisation as money deserves additional detailed research. Whatever the theoretical conclusion, at this stage of their evolution Stablecoins should be considered sufficiently distinct from other cryptocurrencies to warrant novel treatment. Some suit the definition of property identified in Part 1, some are best characterised as securities while others may fulfil the requirements of money. Accordingly, characterising all cryptocurrencies as property is a misnomer and applying a unitary regime is a mistake.

[162] Mattke, Maier and Reis, above n 39, at 1.
[163] At 28.
[164] At 28.
[165] At 29.
[166] At 32.

V Potential regulatory measures available to New Zealand lawmakers:

Three regulatory responses to the problems identified above capable of mitigation will be presented. First, domestic cryptocurrency exchanges must issue understandable prospectuses for any cryptocurrencies they sell. Second, domestic intermediaries must hold specified amounts of cryptocurrency in cold storage to protect client assets from hacking. Third, domestic Stablecoins ought to be subject to statutory oversight of their reserve assets with international Stablecoins that fail to meet these standards being prohibited from sale by domestic intermediaries.

A Cryptocurrency Prospectuses

Asymmetric information contributes to irrational decision making and behavioural biases amongst purchasers of financial products.[167] The FMCA recognises this by requiring prospectuses to be available precisely so that non-experts can make informed purchase decisions.[168] Many cryptocurrencies share the same level of complexity and risk as those regulated products. Therefore, they ought to be subject to the same disclosure requirements. Cryptocurrency firms already covered by the FMCA are the logical subject of this regulation. Not only are they already subject to the Act but they profit from selling cryptocurrencies. Directly regulating cryptocurrency developers is impossible without international cooperation. Therefore, subjecting domestic firms to these requirements provides both a logical and practically achievable option thus mitigating some customer harm. What information these disclosures would contain ought to undergo rigorous analysis by market experts. However, drawing from existing product disclosures; cryptocurrency white papers, price history, and an external rating could be included.

White papers are issued by cryptocurrency developers. These include explanations of the cryptocurrency along with arguments of its utility. White papers are summary documents written to be understandable by non-experts. They would provide purchasers with a comprehensible source of information about what they are buying enabling an informed purchase. Information is critical to inform purchases.

Price history also provides important information. Cryptocurrencies that have existed for a limited time or have experienced extreme fluctuations may deter purchasers from heavy

[167] Armour and others, above n 116, at 209.
[168] Financial Markets Conduct Act 2013, s 49.

investment. Finally, WeissCryptoRatings provide both a technology/adaptation grade and market performance grade to all major cryptocurrencies.[169] This metric is determined by a private firm but could be developed further and ratified in New Zealand to provide an understandable reference point for purchasers. Awarding a cryptocurrency an 'E' for technology and market performance signals its high risk to purchasers.

However, providing this information would not eliminate asymmetric information. Ensuring purchasers actually read the information is impossible. Yet at least purchasers would have the option and ability to access the information on a more reliable *caveat emptor* basis. Like any regulation requiring regulated prospectus issuance, this will increase intermediaries' costs. Yet this cost is unlikely to outweigh the benefits of having informed purchasers. The same regulations already apply to sellers of recognised financial products. Therefore, requiring intermediaries to provide cryptocurrency prospectus brings them up to standard and can help reduce purchaser's asymmetric information.

B Intermediary Storage requirements

Dictating asset storage amounts and requirements is not a novel concept. The New Zealand Reserve Bank requires retail banks to hold specified amounts of capital in secure reserves. This is called capital adequacy and is relied on as a buffer when a bank suffers large and unexpected losses.[170] A similar requirement could apply to cryptocurrency wallet providers to protect against hacking. Hackers can only access cryptocurrencies in hot wallets. Therefore, regulations could require only minimum amounts to be held in hot wallets. This would protect intermediaries from hacking induced failure by limiting potential losses. Doing so recognises the true problem that intermediaries present, failure. Depositors ought to have confidence in intermediaries' security practices. Yet time and again adequate measures are not taken. The frequency and danger posed by these failures provide a strong justification for the regulation of security measures.

This regulation would benefit cryptocurrency users and intermediaries alike. Users benefit from the decreased likelihood of their assets being stolen. Intermediaries could benefit from this as they operate in a transnational market with transnational competitors and participants.

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[169] Weiss Crypto "Coins" (27 July 2021) <https://weisscrypto.com/en/coins>.

[170] Reserve Bank of New Zealand "What is Capital Adequacy" (5 August 2021) <https://www.rbnz.govt.nz/research-and-publications/videos/what-is-capital-adequacy>.

Pointing to stringent regulatory security requirements would provide intermediaries with a valuable point of difference from competing firms. Rather than having to take intermediaries security claims at face value, depositors could more fully trust the regulation as proof their assets will be protected.

Imposing storage regulations will likely incur more costs than requirements to provide information. It will interfere with whatever method of storage the intermediary has deemed efficient. However, these costs are again unlikely to outweigh the benefits. The fundamental obligation of an intermediary is their successful protection of client assets. To date, it is evident that the free market has failed to ensure this. Therefore, New Zealand regulators should explore requirements dictating how intermediaries store assets.

C Stablecoin auditing

Stablecoin values are contingent on the issuing companies' reserves. Yet, these reserves are not subject to audit. This poses two dangers for Stablecoin users. First is the possibility of fraud. Stablecoin issuers have consistently been caught lying about maintaining sufficient assets to back all issued tokens. Second, and potentially more dangerous, is the reserve asset composition. In examining the most popular Stablecoin Tether, The Economist found that most of their reserve assets were commercial papers, a type of risky short-term unsecured debt instrument.[171] This meant Tether would be unable to honour all issued tokens after only 0.26% of their assets failing, a worryingly slim margin.[172] Only 5% of Tether's reserves were low-risk cash assets or Treasury bills according to their disclosures.[173] Furthermore, Tether is comparatively open about its asset composition with most Stablecoins instead remaining silent.

Speculating about the asset composition of less-forthcoming firms is worrying if the world's most popular stablecoin is in such a precarious position. Risks of Stablecoin issuers either fraudulently asserting sufficient reserve amounts or using high leverage assets to back their tokens are still unacceptably high. Unlike traditional cryptocurrencies these are marketed as stable risk-free assets, hence their name. Without regulations checking claims of stability and reliability purchasers are at risk of conduct by issuing firms.

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[171] The Economist "Unstablecoins, Why regulators should treat stablecoins like banks" *The Economist* (Online ed, London, 7 August 2021).
[172] The Economist, above n 171.
[173] The Economist, above n 171.

Two options are available to manage both domestic and internationally issued Stablecoins. New Zealand regulators could require auditing of all domestically issued Stablecoins and impose defined reserve asset compositions. This would ensure reserve assets exist and are sufficiently low risk. Regulators could also prevent domestic intermediaries from selling internationally-issued Stablecoins that lack similar audits. If those firms refused to provide details of their reserves or held high-risk portfolios, regulations could prohibit their supply by domestic intermediaries. This would help protect Stablecoin purchasers from their risk. The Economist urges regulators to learn from the lessons of private money-market funds which also promised to maintain share values before collapsing in 2008.[174]

[174] The Economist, above n 171.

VI Conclusion

Cryptocurrencies have experienced many developments since their 2008 release. As would be expected of a radical new market system these developments have introduced their share of problems. This essay has demonstrated that there are three types of cryptocurrencies, provided a collated history of the three cycles and has detailed key remaining challenges presently facing cryptocurrencies. This analysis seeks to dispel misconceptions demonstrated in the published literature that incorrectly treats all cryptocurrencies as sharing the same traits and uses. A one size fits all approach for private cryptocurrency regulation would be an inadequate reaction and would lead to untargeted responses given the unique nature and challenges posed by each category.

Many cryptocurrency problems will require global solutions given the nature of cryptocurrencies. However, individual states can still implement regulations to mitigate some of these challenges. Therefore, New Zealand lawmakers ought to implement targeted regulations to manage the most pressing dangers where possible. Asymmetric information, exchange failure and Stablecoins all present issues that can be effectively managed by domestic regulations. Crypto-sceptics may be wary of the legitimising effect that such regulation would have on cryptocurrencies. However, the trade-off is more than justified given cryptocurrencies are now more than a decade old with no sign of their abatement. The three cycles to date provide comprehensive examples of market failures deserving and capable of regulation.

The function of the law is to protect citizens from harm. Relying purely on caveat emptor has proven inadequate in deterring harmful conduct costing trillions of dollars worldwide. The inevitability of further harm provides a compelling case for targeted regulatory action capable of tangible mitigation. Nakamoto's dream of an unregulated cryptocurrency utopia has proven untenable and must end.

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