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**Commissioned Paper:**  
**Cryptocurrency: Challenges to Conventional  
Governance of Financial Transactions**

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# Cryptocurrency: Challenges to Conventional Governance of Financial Transactions

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*Expert Report to the Public Order Emergency Commission*

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## I. Introduction

This expert report surveys the current state of cryptocurrency regulatory governance in Canada. It summarizes investor and consumer protection, market integrity, financial system stability, criminal enterprise, and other governance concerns in the Canadian and global cryptocurrency ecosystem. Further, it draws comparative insights from the United States (US), United Kingdom (UK), European Union (EU), and other international regulatory frameworks and proposals, and points to potential pathways for legal evolution and regulatory reform in diverse areas of Canadian cryptocurrency governance.

The report proceeds in Section II by first defining “cryptocurrency” and providing a taxonomy for its diverse forms, utility and use cases. Section III then surveys wide-ranging cryptocurrency regulatory governance frameworks that have been enacted to date in Canada, including securities regulation, money transmission laws, anti-money laundering and terrorism finance controls, payments-related regulation, taxation, estate planning, and environmental parameters for cryptocurrency mining operations. Section IV provides a broad overview of current cryptocurrency governance concerns and challenges, including regulatory uncertainties and gaps, the issues these pose, and how such concerns might be addressed. Section V offers concluding thoughts and regulatory considerations for further analysis.

## II. What are Cryptocurrencies?

The terms “crypto,” “crypto coin,” “cryptocurrency,” “virtual currency,” “token” or more commonly “crypto-asset,” generally describe a digital asset that is created using distributed ledger technology (blockchain).<sup>2</sup> The value of a blockchain is where “trust” (or the services of a trusted intermediary) is expensive.<sup>3</sup> Blockchains also operate using an encrypted, secured ledger without a central authority (since trust and transactional certainty is ensured through cryptography), thereby providing transparency, and “user controlled” networks.<sup>4</sup> Transactions are verified and recorded on a blockchain, without a central authority, using a “consensus mechanism” - the nature of which varies depending on the blockchain, ranging from energy-intensive “proof-of-work” (used by the Bitcoin network), to more environmentally-friendly consensus mechanisms such as “proof-of-stake” and other emerging forms.<sup>5</sup>

Throughout this report, the term “cryptocurrency” will be used as a general descriptor for the cumulative forms of crypto-assets that are created using blockchain technology. As this section will highlight, there are significant contextual differences in diverse forms, functions and intended uses of cryptocurrencies, including transferring value, or performing a payment, utility, or governance function. They can also be used in conjunction with digital identifiers of ownership, or rights to diverse assets (both within and outside of a blockchain ecosystem).<sup>6</sup> Distinguishing forms and functions is critical for effective policy formation, and the regulatory overview, and governance concerns sections below will seek precision in cryptocurrency taxonomy in its analysis. Also, distinct cryptocurrency sub-types give rise to unique risks, nuances, and characteristics, including distinctions in fungibility and non-fungibility, that require definitional precision when undertaking policy analysis.

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<sup>2</sup> See Joshua A.T. Fairfield, “Bitproperty,” (2015) 88 *Southern California Law Review* 805; Kevin Werbach and Nicolas Cornell, “Contracts Ex Machina,” (2017) 67 *Duke Law Journal* 313; Jeremy M. Sklaroff, “Smart Contracts and the Cost of Inflexibility,” (2017) 166 *University of Pennsylvania Law Review* 263; Kevin Werbach, “Trust, But Verify: Why the Blockchain Needs the Law,” (2018) 33 *Berkeley Law Journal* 487.

<sup>3</sup> Caroline Crenshaw, “DeFi Risks, Regulations, and Opportunities,” (2021) 1 *The International Journal of Blockchain Law* 4 at 4.

<sup>4</sup> Ryan Clements, ‘Regulating Fintech in Canada and the United States: Comparison, Challenges and Opportunities’ in K. Thomas Liaw (ed), *The Routledge Handbook of Fintech* (Routledge, 2021), at 426.

<sup>5</sup> See Parma Bains, “Blockchain Consensus Mechanisms: A Primer for Supervisors,” *Fintech Notes, International Monetary Fund* (January 2022), online (pdf): <https://www.imf.org/-/media/Files/Publications/FTN063/2022/English/FTNEA2022003.ashx>.

<sup>6</sup> Juliet M. Moringiello and Christopher K. Odinet, “The Property Law of Tokens,” (forthcoming, 2022) *Florida Law Review*, manuscript, at 1, online: [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3928901](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3928901).

*a. Decentralized Payment Tokens and Altcoins*

The first major, and widely-used, implementation of blockchain technology was *Bitcoin* - a decentralized “peer-to-peer version of electronic cash” or “cryptocurrency” - conceived in 2008 by the anonymous “Satoshi Nakamoto” (whose identify still remains unknown).<sup>7</sup> Bitcoin allows for stores of digital value (payments) to be transferred between parties, without “double spending,” or requiring the assistance of a bank, government, or other trusted intermediary, through the use of a decentralized distributed ledger (database), cryptography, and a “proof of work” consensus mechanism.<sup>8</sup>

Despite their purported use value as a payment mechanism, decentralized payment tokens like Bitcoin have not been widely used as a medium of exchange, consumer payment device or money substitute for employment, consumption, trade or debt repayment purposes due to their high volatility, but rather have been purchased and held by investors for speculative trading and the potential for price appreciation.<sup>9</sup> There are many cryptocurrencies that theoretically could perform a similar function to Bitcoin as a medium of exchange, but are also currently being held and traded for investment and speculative purposes. These are commonly called “alternative coins” or “altcoins,”<sup>10</sup> although as noted in the next several subsections, there are sub-taxonomies within alternative coins that capture diverse cryptocurrency forms including utility and governance tokens, security tokens, and stablecoins.

*b. Utility and Governance Tokens*

Despite its novel disintermediating utility when transferring value online, the Bitcoin blockchain has limitations - notably its limited programmability.<sup>11</sup> The development of the *Ethereum* network represented a significant moment in the evolution of the cryptocurrency ecosystem because it was the first major blockchain

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<sup>7</sup> Satoshi Nakamoto, “Bitcoin: A Peer-to-Peer Electronic Cash System,” (2008), online (pdf): <https://bitcoin.org/bitcoin.pdf>.

<sup>8</sup> *Ibid.*

<sup>9</sup> See Christian Catalini and Jai Massari, “Stablecoins and the Future of Money,” (10 August 2021), online: *Harvard Business Review*, <<https://hbr.org/2021/08/stablecoins-and-the-future-of-money>>; Dirk G. Baur and Thomas Dimpfl, “The Volatility of Bitcoin and its Role as a Medium of Exchange and a Store of Value,” (2021) 61 *Empirical Economics* 2663 (2021); Dirk G. Baur et al., “Bitcoin: Medium of Exchange or Speculative Assets?” (2018) 54 *Journal of International Financial Markets, Institutions & Month* 177.

<sup>10</sup> See Eric Rosenberg, “What are Altcoins?” (30 March 2022), online: *The Balance*, <https://www.thebalance.com/altcoins-a-basic-guide-391206>.

<sup>11</sup> See Scott Jeffries, “Ethereum vs. Bitcoin: Which Crypto is Better?” (16 May 2022), online: *Nasdaq*, <https://www.nasdaq.com/articles/ethereum-vs.-bitcoin%3A-which-crypto-is-better>; Ryan Clements, “Assessing the Evolution of Cryptocurrency: Demand Factors, Latent Value, and Regulatory Developments,” (2018) 8 *Michigan Business & Entrepreneurial Law Review* 73.

to allow programmable “smart contracts” - where transactions or transfers could be “made contingent on meeting certain pre-specified conditions.”<sup>12</sup> This spawned a host of new blockchain-based decentralized financial applications (called Dapps) including cryptocurrency trading, borrowing, investing, and lending applications, without requiring a centrally-controlled intermediary, in what is now colloquially known as “DeFi.”<sup>13</sup> Ethereum, and other programmable blockchains, also utilize a platform native cryptocurrency, commonly called a “utility token,” to incentivize the decentralized consensus mechanism on the blockchain, which also can be used as a transactional digital currency to pay for goods or services on the network.<sup>14</sup>

Utility tokens are distributed in an “initial coin offering” (ICO) which, depending on the nature and characteristics of the token may constitute an offering of securities in Canada.<sup>15</sup> The emergence of programmable blockchains such as Ethereum also allow for the creation of “decentralized autonomous organizations” (DAOs) which use a decentralized governance mechanism through the distribution of a certain type of utility token called a “governance token.”<sup>16</sup> Dapps also use governance tokens - for example, the “UNI” token on the popular decentralized cryptocurrency trading protocol *Uniswap*.<sup>17</sup> A DAO or Dapp facilitates a diffuse governance structure through the distribution and holding of governance tokens; although recent research by the *Bank for International Settlements* (BIS) has revealed they also tend to result in centralized control over time.<sup>18</sup>

Governance parameters are highly specific to the decentralized application or organization in question (which vary in design from “single purpose” entities to more complex organizations with pooled assets and ongoing concerns); and as noted below, give rise to numerous legal uncertainties including the nature of fiduciary

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<sup>12</sup> Frederic Boissay, Giulio Cornelli, Sebastian Doerr and Jon Frost, “Blockchain scalability and the fragmentation of crypto,” (7 June 2022), *BIS Bulletin*, No 56, at 3, online (pdf): <https://www.bis.org/publ/bisbull56.pdf>.

<sup>13</sup> *Ibid.*

<sup>14</sup> See Scott W. Maughan, “Utility Token Offerings: Can a Security Transform into a Non-Security?” (2019) *B. Y. U. Law Review* 1113.

<sup>15</sup> See Canadian Securities Administrators, *CSA Staff Notice 46-307, Cryptocurrency Offerings* (24 August 2017) online (pdf): [https://www.securities-administrators.ca/uploadedFiles/Industry\\_Resources/2017aout24-46-307-avis-acvm-en.pdf](https://www.securities-administrators.ca/uploadedFiles/Industry_Resources/2017aout24-46-307-avis-acvm-en.pdf) (“CSA Staff Notice 46-307”); Canadian Securities Administrators, *CSA Staff Notice 46-308, Securities Law Implications for Offerings of Tokens* (11 June 2018), online (pdf): [https://www.securities-administrators.ca/uploadedFiles/Industry\\_Resources/2018juin11-46-308-avis-acvm-en.pdf](https://www.securities-administrators.ca/uploadedFiles/Industry_Resources/2018juin11-46-308-avis-acvm-en.pdf) (“CSA Staff Notice 46-308”).

<sup>16</sup> See Benedict George, “What is a Governance Token?” *CoinDesk*, <https://www.coindesk.com/learn/what-is-a-governance-token/> (last accessed 8 August 2022).

<sup>17</sup> Uniswap Protocol, <https://uniswap.org/> (last accessed 8 August 2022).

<sup>18</sup> Sirio Aramonte, Wenqian Huang and Andreas Schrimpf, “DeFi risks and the decentralization illusion,” (December 2021), *BIS Quarterly Review*, online: [https://www.bis.org/publ/qtrpdf/r\\_qt2112b.htm](https://www.bis.org/publ/qtrpdf/r_qt2112b.htm).

duties, legal and contractual status, voting participation, operational dynamics, design considerations, dispute resolutions mechanisms, and cybersecurity controls.<sup>19</sup>

*c. Security and Asset Tokenization*

Not all cryptocurrencies are decentralized. Traditional assets or securities can also be “tokenized” and represented on a blockchain. These are often described colloquially as “asset tokens” or “security tokens.” Security tokens can take multiple forms including the “digital representation” of a security on a blockchain, or the primary issuance of a security in a tokenized form.<sup>20</sup> A security token provides its holder, via a blockchain-based digital asset, “a bundle of rights to govern the corporation, along with residual claims on its assets proportional to the number of shares they own.”<sup>21</sup>

The *Canadian Securities Administrators* (CSA) have facilitated securities tokenization through regulatory accommodation in the CSA fintech regulatory sandbox.<sup>22</sup> In October 2019, the *Ontario Securities Commission* (OSC) provided time-limited exemptive relief to *TokenGX Inc.* to test a trading platform where private companies could issue blockchain-based tokenized securities, using the offering memorandum prospectus exemption, under contextualized regulatory parameters, to certain qualified investors.<sup>23</sup> In November 2020, several CSA jurisdictions provided time-limited exemptive relief to *Finhaven Capital Inc.* as an exempt market dealer facilitating primary distribution and secondary trading of tokenized securities.<sup>24</sup>

*d. Non-Fungible Tokens*

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<sup>19</sup> See *infra* Section IV(f); Kevin Schwartz and David Adlerstein, “Decentralized Governance and the Lessons of Corporate Governance,” (4 June 2022), online: *Harvard Law School Forum on Corporate Governance*, <https://corpgov.law.harvard.edu/2022/06/04/decentralized-governance-and-the-lessons-of-corporate-governance/>.

<sup>20</sup> See Organisation for Economic Co-operation and Development (OECD), “The Tokenization of Assets and Potential Implications for Financial Markets,” (17 January 2020), online: <https://www.oecd.org/finance/The-Tokenisation-of-Assets-and-Potential-Implications-for-Financial-Markets.htm>.

<sup>21</sup> Shaanan Cohny, David A. Hoffman, Jeremy Sklaroff and David Wishnick. “Coin-Operated Capitalism,” (2019) 119 *Columbia Law Review* 591 at 599.

<sup>22</sup> Canadian Securities Administrators, “CSA Regulatory Sandbox,” <https://www.securities-administrators.ca/resources/regulatory-sandbox/decisions/> (last accessed 26 August 2022).

<sup>23</sup> Ontario Securities Commission, *In the Matter of the Securities Legislation of Ontario and in the Matter of TokenGX Inc.*, *Decision*, (22 October 2019), online (pdf): [https://www.osc.gov.on.ca/documents/en/ord\\_20191023\\_tokengx.pdf](https://www.osc.gov.on.ca/documents/en/ord_20191023_tokengx.pdf).

<sup>24</sup> Re *Finhaven Capital Inc.*, 2020 ABASC 194 (2 November 2020), online: <https://www.asc.ca/-/media/ASC-Documents-part-1/Notices-Decisions-Orders-Rulings/Registrants/2020/12/Finhaven-Capital-Inc-Decdoc.ashx>.



A non-fungible token (NFT) is a blockchain-based crypto-asset that contains a unique identification code and metadata.<sup>25</sup> This makes them non-interchangeable (non-fungible).<sup>26</sup> It is helpful to contrast NFTs with fungible or “interchangeable” cryptocurrencies (like Bitcoin or Ether) which can be substituted without losing their value – thus making them the same in type.<sup>27</sup> NFTs, however, cannot be substituted for another identical NFT, thereby making them unique in type.<sup>28</sup>

An NFT is not a “content file,” but rather is a digital token that contains a “unique cryptographic key” that both establishes a record of ownership for the holder of creative works (allowing it to be transferred without fraud), and “verifies a corresponding content file as genuine.”<sup>29</sup> NFTs have been used by musicians to sell proportional rights to streaming royalties without transferring ownership.<sup>30</sup> They have also been used to convey ownership of digital gaming artifacts, or ownership rights to non-digital assets (like fractional ownership in real estate).<sup>31</sup> They may also have use value in regulatory technology such as “disclosure NFTs” to incentivize interaction by readers and provide an “application layer” for regulatory compliance.<sup>32</sup>

#### e. *Stablecoins*

Stablecoins have emerged as a less volatile form of cryptocurrency.<sup>33</sup> This makes them potentially useful in a variety of payments applications,<sup>34</sup> including global remittance, consumer payments, crypto lending and collateral, and executing crypto-asset trading and income-earning strategies on DeFi applications and protocols.<sup>35</sup>

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<sup>25</sup> Iris H-Y Chiu and Jason G. Allen, “Exploring the Assetization and Financialization of Non-fungible Tokens: Opportunities and Regulatory Implications,” (2022) 37 BFLR 401 at 402 (“NFTs are usually created based on the ERC-721 template that allows for unique identification and metadata coding, producing digital tokens that are distinct and non-interchangeable.”)

<sup>26</sup> Samir Patel, “If NFTs Rules The World: A New Wave of Ownership,” (2022) 2 *The International Journal of Blockchain Law* 19.

<sup>27</sup> *Ibid.* at 19.

<sup>28</sup> *Ibid.*

<sup>29</sup> *Ibid.*

<sup>30</sup> *Ibid.*

<sup>31</sup> Chiu and Allen, *supra* note 25 at 403.

<sup>32</sup> Chris Brummer, “Introducing Disclosure NFTs, Disclosure DAOs, and Disclosure DIDs,” (24 March 2022), online: *Medium*, <https://chrisbrummer.medium.com/introducing-disclosure-nfts-disclosure-daos-and-disclosure-dids-9579e0e739fe>.

<sup>33</sup> This is largely due to the fact that decentralized payment tokens like Bitcoin have proven to be poor money substitutes due to their high volatility and fees, see Catalini and Massari, *supra* note 9.

<sup>34</sup> See MARK CARNEY, *VALUES: BUILDING A BETTER WORLD FOR ALL* (2021, Penguin Random House Canada) at 115-117.

<sup>35</sup> See Ryan Clements, “Built to Fail: The Inherent Fragility of Algorithmic Stablecoins,” (2021) 11 *Wake Forest Law Review Online* 131, online: <http://www.wakeforestlawreview.com/2021/10/built-to-fail-the-inherent-fragility-of-algorithmic-stablecoins/>; Ryan Clements, “Defining the Regulatory Perimeter for Stablecoins in Canada,” (*forthcoming*, 2022) *Canadian Business Law Journal*, online: [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=4134010](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4134010).

Stablecoins play a critical role in the DeFi ecosystem,<sup>36</sup> allowing for trade execution, collateral, leverage, and stable value transfers.<sup>37</sup> They also operate within the technological ecosystem of a blockchain, and thereby convey potential advantages to users such as on-chain transparency, programmable money, cryptographic security, nearly instant settlement, and disintermediation for value stores and transfers.<sup>38</sup> Stablecoins attempt to mitigate volatility by “pegging” their value to a reference asset such as the US dollar.<sup>39</sup>

Stablecoins, take many different forms,<sup>40</sup> including centrally issued, off-chain fully collateralized, and decentralized on-chain “over-collateralized” forms, which operate through smart contracts on a programmable blockchain and are collateralized with other cryptocurrencies.<sup>41</sup> The most popular stablecoins by market capitalization are known as “fiat-backed,” and they peg their value by holding sufficient assets as collateral on reserve such as US dollars, other US denominated short-term, low-risk, liquid assets like treasury bills, commercial paper, or short-term corporate bonds, and then agreeing to create or redeem the stablecoins with select (and authorized) market participants at pre-determined rates (generally one stablecoin for \$1).<sup>42</sup>

Other decentralized “algorithmic” stablecoin forms do not hold collateral at all but use reserve token supply modifications, arbitrage opportunities (usually with a second or “dual” coin structure), automated price feeds, smart contracts and economic incentives to attempt to achieve a stable peg.<sup>43</sup> The algorithmic form of stablecoin is

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<sup>36</sup> Drik G Baur & Lai T Hoang, “How stable are stablecoins?” (08 July 2021) *The European Journal of Finance* at 2.

<sup>37</sup> Paul Vigna, “DeFi is Helping to Fuel the Crypto Market Boom—and Its Recent Volatility” (3 June 2021), online: *The Wall Street Journal*, [https://www.wsj.com/articles/defi-is-helping-to-fuel-the-crypto-market-boom-and-its-recentvolatility-11622712602?mod=hp\\_lead\\_pos5%20%20](https://www.wsj.com/articles/defi-is-helping-to-fuel-the-crypto-market-boom-and-its-recentvolatility-11622712602?mod=hp_lead_pos5%20%20).

<sup>38</sup> Clements, Defining the Regulatory Perimeter for Stablecoins, *supra* note 35; see, “A Round Table Discussion on Stablecoins: Taking the World By Storm or Storming the World?” (2022) 3 *The International Journal of Blockchain Law* 4 at 9.

<sup>39</sup> See David Gogel et al., “DeFi Beyond the Hype: The Emerging World of Decentralized Finance,” *Wharton Blockchain & Digit. Asset Project, The Wharton School, Univ. of Pennsylvania*, (2021), at 9–10, online (pdf): <https://wifpr.wharton.upenn.edu/wp-content/uploads/2021/05/DeFi-Beyond-the-Hype.pdf>.

<sup>40</sup> There is no “universal” definition for a stablecoin, see The Board of the International Organization of Securities Commission, “Global Stablecoin Initiatives,” (March 2020), at 3, online (pdf): [IOSCO https://www.iosco.org/library/pubdocs/pdf/IOSCOPD650.pdf](https://www.iosco.org/library/pubdocs/pdf/IOSCOPD650.pdf).

<sup>41</sup> Clements, Built to Fail, *supra* note 35 at 134-137.

<sup>42</sup> Clements, Defining the Regulatory Perimeter for Stablecoins, *supra* note 35 at 2 (noting that stablecoin issuers may also hold other reserves including precious metals, securities, derivatives, commodities, real assets, or other crypto assets on reserve); see G7 Working Group on Stablecoins, “Investing the impact of global stablecoins,” *Bank for International Settlements, Committee on Payments and Market Infrastructures*, (October 2019), at 1,3, online (pdf): <https://www.bis.org/cpmi/publ/d187.pdf>. (“G7 Working Group Report”).

<sup>43</sup> Clements, Built to Fail, *supra* note 35 at 134-137.

the most volatile and fragile, and several iterations have failed to date,<sup>44</sup> including the catastrophic implosion of the Terra algorithmic stablecoin (UST) in May 2022.<sup>45</sup>

*f. Central Bank Digital Currencies*

Central bank digital currencies (CBDCs), in many ways, represent a governmental response (or pre-emption) to the potential adverse network effects, and de-monetizing impact, of a widely held, privately-issued, stablecoin that is used frequently as a money substitute for consumer purchases.<sup>46</sup> The Bank of Canada (BoC) has begun exploring iterations, core features, foundational principles, and design models for CBDCs,<sup>47</sup> driven by the potential decline of physical fiat acceptance by vendors (accelerated by the COVID-19 pandemic<sup>48</sup>), and in response to the potential widespread take-up of a fiat-backed stablecoin as a dominant private currency.<sup>49</sup> Concerns around CBDCs focus on privacy, design, operational and cyber-security considerations, and the level of surveillance or “control” they provide to the government.<sup>50</sup>

III. Survey of Existing Canadian Cryptocurrency Regulatory Governance

There is not a comprehensive or overarching regulatory framework that applies to cryptocurrencies in Canada. Governance measures have, however, been established by numerous federal and provincial regulators across a wide range of cryptocurrency industry segments, use cases, forms, activities, and intermediaries. Despite their conceptual use as a payment mechanism, cryptocurrencies, including stablecoins, are not considered legal tender in Canada.<sup>51</sup> However, as this Section will show, the distribution of, and numerous business and trading activities in relation to, cryptocurrencies are currently subject to diverse regulatory frameworks in Canada.

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<sup>44</sup> *Ibid.* at 137-141.

<sup>45</sup> Gian M. Volpicelli, “Terra’s Crypto Meltdown Was Inevitable,” (12 May 2022) online: *Wired*, <https://www.wired.co.uk/article/terra-luna-collapse>.

<sup>46</sup> See Bank of Canada, “Contingency Planning for a Central Bank Digital Currency,” (25 February 2020), online: <https://www.bankofcanada.ca/2020/02/contingency-planning-central-bank-digital-currency/>.

<sup>47</sup> See Bank of Canada, “The Positive Case for a CBDC,” (20 July 2021), *Staff Discussion Paper 2021-11*; Bank for International Settlements, “Central bank digital currencies: foundational principles and core features,” (9 October 2020) online: <https://www.bis.org/publ/othp33.htm>.

<sup>48</sup> See Bank of Canada, “Payments Innovation Beyond the Pandemic, Remarks by Timothy Lane, Deputy Governor,” Institute for Data Valorization (10 February 2021), online (pdf): <https://www.bankofcanada.ca/wp-content/uploads/2021/02/remarks-2021-02-10.pdf>.

<sup>49</sup> See Bank of Canada, “Contingency Planning” *supra* note 46; Bank of Canada, “Money and Payments in the Digital Age, Remarks by Timothy Lane, Deputy Governor, CFA Montreal Fintech RDV 2020,” (February 2020), online (pdf): <https://www.bankofcanada.ca/wp-content/uploads/2020/02/remarks-250220.pdf>.

<sup>50</sup> “A Round Table Discussion on Stablecoins: *supra* note 38 at 9.

<sup>51</sup> See *Currency Act*, R.S.C., 1985, c. C-52, at ss. 7-8; Clements, *supra* note 4 at 428.

The most comprehensive requirements are in the domain of securities regulation, which is provincial jurisdiction with statutory authority under provincial securities acts and harmonized rules through the umbrella organization of the CSA.<sup>52</sup>

There are also significant anti-money laundering (AML) and counter-terrorism finance (CTF) safeguards around cryptocurrencies, and the individuals and businesses who deal in cryptocurrencies, as administered by the *Financial Transactions and Reports Analysis Centre of Canada* (FINTRAC).<sup>53</sup> Other provincial or federal statutory rules and regulations, requirements, tax considerations, and regulatory parameters may also be applicable to cryptocurrencies, or businesses dealing in cryptocurrencies, depending on the nature of the business activity. Further, there are emerging regulatory frameworks in Canada around payments activities, particularly the recently enacted *Retail Payments Activities Act* (RPAA),<sup>54</sup> which has significant implications for cryptocurrencies, but governing regulations are still evolving.<sup>55</sup> Nevertheless, regulatory gaps, uncertainties, and governance issues persist across the Canadian cryptocurrency ecosystem as detailed in Section IV.

### a. Securities Regulation

The most comprehensive regulatory and governance standards for cryptocurrencies in Canada is currently found within the securities regulatory perimeter. Securities law in Canada is comprised of the rules and regulations of thirteen different provincial and territorial securities regulatory authorities, who work together through the umbrella organization of the CSA to foster national policy formation, improve, and coordinate rule harmonization, and facilitate national transaction efficiency.<sup>56</sup> Securities regulation looks to protect investors from unfair, improper, or fraudulent practices, foster fair and efficient capital markets, instill market confidence, and ensure financial system stability, by regulating the distribution and trading of securities and derivatives.<sup>57</sup>

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<sup>52</sup> See Canadian Securities Administrators, online: <https://www.securities-administrators.ca/> (last accessed 15 August 2022).

<sup>53</sup> See Financial Transactions and Reports Analysis Centre of Canada, online: <https://www.fintrac-canafe.gc.ca/intro-eng> (last accessed 15 August 2022).

<sup>54</sup> *Retail Payments Activities Act*, S.C. 2021, c. 23, s. 177 (“RPAA”).

<sup>55</sup> See Jack Franklin, Zain Rizvi and Gillian R. Stacey, “Filling the Gap: Scope of Canadian Anti-Money Laundering Laws Expanded,” (7 June 2022) online: *Davies Bulletin*, <https://www.dwpv.com/en/Insights#/article/Publications/2022/Scope-of-Canadian-Anti-Money-Laundering-Laws>.

<sup>56</sup> See Canadian Securities Administrators, *supra* note 52; See Multilateral Instrument 11-102, *Passport System*; National Policy 11-202, *Process for Prospectus Review in Multiple Jurisdictions*; National Policy 11-203, *Process for Exemptive Relief Applications in Multiple Jurisdictions*; National Policy 11-204, *Process for Registration in Multiple Jurisdictions*.

<sup>57</sup> See Securities Act, R.S.O. 1990, c. S.5, s. 1.1 (“OSA”).

Securities regulation accomplishes this goal by utilizing a variety of tools and compliance mechanisms including (among others) marketplace and exchange rules,<sup>58</sup> investment dealer, fund manager and adviser initial registration and ongoing compliance obligations,<sup>59</sup> and initial and ongoing disclosure requirements for issuers of securities.<sup>60</sup>

There are jurisdictional limits, however, to the imposition of securities regulation over cryptocurrencies in Canada - namely there must be a “security” or a “derivative.”<sup>61</sup> If a cryptocurrency is a “security,” and the trade of that security is a “distribution,”<sup>62</sup> then a receipt for a prospectus must be issued by the requisite regulator before this cryptocurrency may be distributed to the public,<sup>63</sup> unless there is an available exemption from the prospectus requirement.<sup>64</sup> Securities that are distributed via prospectus exemptions are generally subject to re-sale restrictions.<sup>65</sup> Determining whether a particular cryptocurrency is a “security” or a “derivative,” or whether a cryptocurrency trading platform, or cryptocurrency business, distributes or otherwise is in the business of trading a cryptocurrency that is a security or a derivative through their activities, is a contextual analysis that can be very difficult.<sup>66</sup>

The CSA has, however, established helpful guidance (as will be discussed below<sup>67</sup>); yet uncertainties remain in certain areas, particularly in emerging DeFi protocols and applications on decentralized, globally distributed, public blockchain networks.<sup>68</sup> Given its decentralized nature, Bitcoin is widely considered to be a commodity, not a security, and this is supported by US regulatory pronouncements,<sup>69</sup>

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<sup>58</sup> See National Instrument 21-101, *Marketplace Operation*; National Instrument 23-101, *Trading Rules*; National Instrument 23-103, *Electronic Trading and Direct Electronic Access to Marketplaces*.

<sup>59</sup> See National Instrument 31-103, *Registration Requirements, Exemptions and Ongoing Registrant Obligations*.

<sup>60</sup> See National Instrument 41-101, *General Prospectus Requirements*; National Instrument 51-102, *Continuous Disclosure Obligations*.

<sup>61</sup> Ryan Clements, “Emerging Canadian Crypto-Asset Jurisdictional Uncertainties and Regulatory Gaps,” (2021) 37(1) *Banking and Finance Law Review* 25 at 27.

<sup>62</sup> OSA, *supra* note 57 at s.1(1)(“distribution”); *Securities Act*, RSA 2000, c S-4 (“ASA”), at s.1(p); *Securities Act*, RSBC 1996 c. 418 (“BCSA”) at Part I (“distribution”).

<sup>63</sup> OSA, *supra* note 57 at s.53; ASA, *supra* note 62 at s.110; BCSA, *supra* note 62 at s.61;

<sup>64</sup> Examples include OSA, *supra* note 57 at Part XVII; National Instrument 45-106, *Prospectus Exemptions*; National Instrument 45-110, *Start-Up Crowdfunding Registration and Prospectus Exemptions*; ASC Rule 45-517, *Prospectus Exemptions for Start-Up Businesses*.

<sup>65</sup> National Instrument 45-102, *Resale Rules*.

<sup>66</sup> See CSA Staff Notice 46-307, *supra* note 15; CSA Staff Notice 46-308, *supra* note 15.

<sup>67</sup> See *infra* Section III(a)(1).

<sup>68</sup> See Clements, *Emerging Canadian*, *supra* note 61; Section IV, *infra*.

<sup>69</sup> See U.S. Commodity Futures Trading Commission, “CFTC Backgrounder on Oversight of and Approach to Virtual Currency Futures Markets,” (4 January 2018), online (pdf):

[https://www.cftc.gov/sites/default/files/idc/groups/public/@newsroom/documents/file/backgrounder\\_virtualcurrency01.pdf](https://www.cftc.gov/sites/default/files/idc/groups/public/@newsroom/documents/file/backgrounder_virtualcurrency01.pdf).

and federal court decisions.<sup>70</sup> However, beyond Bitcoin, the question of whether a particular cryptocurrency is a security or a derivative becomes less clear, especially given the motivations of “hoping for a return” when investors purchase cryptocurrencies, rather than using them as a payment mechanism.<sup>71</sup> *Ether* (the utility token on the *Ethereum* blockchain network) is also widely considered not to be a security,<sup>72</sup> but some skeptics allege that it is still centrally controlled, especially in light of its initial distribution in the context of a capital raise,<sup>73</sup> and the infamous DAO hack and resulting hard fork which created *Ethereum* and *Ethereum Classic*.<sup>74</sup>

## 1. Cryptocurrencies Distributed in Initial Coin Offerings (ICOs)

As noted, the critical *ex ante* jurisdictional determination for the application of securities regulation to cryptocurrencies is whether a particular cryptocurrency is a security or a derivative on its own, or whether the business activities of an intermediary create a security or derivative (a material factor in the regulatory jurisdiction over cryptocurrency trading platforms (CTPs), as noted below<sup>75</sup>). Some cryptocurrencies (securities tokens as described above in Section II<sup>76</sup>) are clearly distributions of securities, and as such, the issuer of a security token must comply with the prospectus rules or qualify for a suitable exemption.<sup>77</sup> Some initial distributions of cryptocurrencies (colloquially known as “initial coin offerings” or “ICOs”) may purport in marketing materials or online white papers to be offerings of non-securities (similar to decentralized tokens like Bitcoin), but may in substance have properties that resemble a traditional securities offering such as an investment contract.<sup>78</sup>

There are several open-ended sub-prongs of the definition of “security” in analogous provincial securities acts which allow for a wide potential application of

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<sup>70</sup> U.S. Commodity Futures Trading Commission, Press Release, “Federal Court Finds that Virtual Currencies Are Commodities,” (3 October 2018), online: <https://www.cftc.gov/PressRoom/PressReleases/7820-18>.

<sup>71</sup> André Beganski, “SEC Chair Gensler Again Says Bitcoin is Not a Security, What About Ethereum,” (27 June 2022), online: *Decrypt*, <https://decrypt.co/103926/sec-chair-gensler-bitcoin-not-security-what-about-ethereum>.

<sup>72</sup> See William Hinman, “Digital Asset Transactions: When Howey Met Gary (Plastic),” (14 June 2018), online: *Remarks at the Yahoo Finance All Markets Summit: Crypto*, <https://www.sec.gov/news/speech/speech-hinman-061418>.

<sup>73</sup> Beganski, *supra* note 71.

<sup>74</sup> See U.S. Securities and Exchange Commission, “Reporting of Investigation Pursuant to 21(a) of the Securities Exchange Act of 1934,” (25 July 2017), online (pdf): <https://www.sec.gov/litigation/investreport/34-81207.pdf>.

<sup>75</sup> *Infra* Section III(a)(2).

<sup>76</sup> *Infra* Section II(c).

<sup>77</sup> See CSA Staff Notice 46-307, *supra* note 15; CSA Staff Notice 46-308, *supra* note 15.

<sup>78</sup> *Ibid.*

securities regulation to collective investment schemes or arrangements where the economic realities of the arrangement suggest investment intent.<sup>79</sup> The leading Canadian Supreme Court decision which interpreted the definitional sub-prong of “investment contract” (often considered a catch-all category) resisted being confined to strict judicially established tests, and instead took a purposive, remedial, substance over form, approach to the interpretation of “investment contract” as a security, where there is investment intent.<sup>80</sup> This is in alignment with the policy objectives and purpose of securities law, which focuses on investor protection and full and fair disclosure.<sup>81</sup>

It is not always clear, however, if securities laws apply to cryptocurrency, as some cryptocurrencies (like Bitcoin) are not controlled by any one issuer, and other cryptocurrencies (like Ether) perform a utility function (like as a payment mechanism to acquire goods and services) on a public blockchain beyond the expectation of profit.<sup>82</sup> To assist in whether securities rules apply to the distribution of a given cryptocurrency in an ICO, the CSA issued successive guidance notices in 2017 and 2018, which provide numerous contextual factors that the securities regulator will consider in their determination.<sup>83</sup> Canadian and U.S. regulators have been active in monitoring illegal distributions of cryptocurrencies, which have the properties of a security, but do not comply with the prospectus and other regulatory parameters.<sup>84</sup>

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<sup>79</sup> See OSA, *supra* note 57 at s.1(a)(“security”); ASA, *supra* note 62 at s.1(“security”)(ggg); BCSA, *supra* note 62 at s.1(1)(“security”); see *In the Matter of Universal Settlements International Inc.* (2006), 29 O.S.C.B. 7880; *Re Shelter Corporation of Canada Ltd.*, 1977 O.S.C.B. 6; *Pia Williamson*, (1993), 16 O.S.C.B. 2689; *Jenson v. Continental Financial Corporation*, 404 F. Supp. 792 (D.C. Minn. 1975); *Re O.S.C. Brigadoon Scotch Distributors (Can.) Ltd.*, [1970] 3 O.R. 714 (Ont. H.C.J.); See *R. v. Stevenson*, 2017 ABCA 420; *Ontario Securities Commission v. Tiffin*, 2020 ONCA 217.

<sup>80</sup> *Pacific Coast Coin Exchange v Ontario Securities Commission* [1978] 2 SCR 112, at 127–129 (“It is clearly legislative policy to replace the harshness of caveat emptor in security related transactions and Courts should seek to attain that goal even if tests carefully formulated in prior cases prove ineffective and must continually be broadened in scope. It is the policy and not the subsequently formulated judicial test that is decisive.”); Such policy objectives would include, among others, investor protection, ensuring full and fair disclosure and fair and efficient capital markets, and maintaining financial system stability.

<sup>81</sup> *Ibid.*

<sup>82</sup> See CSA Staff Notice 46-307, *supra* note 15; CSA Staff Notice 46-308, *supra* note 15.

<sup>83</sup> See CSA Staff Notice 46-307, *supra* note 15; CSA Staff Notice 46-308, *supra* note 15 (The CSA noted that no one consideration is determinative, and they will take a contextual, holistic approach to the circumstances of each case. Factors that are used in the determination by the CSA include, among others, whether the platform that will utilize the utility token has been fully developed or is in a development phase; whether the token will trade on secondary exchanges; whether the token is immediately delivered to the purchaser; whether the purpose of the distribution is a capital raise to support the developers key business; the nature of benefits that the token holder receives including rights to future profits; whether management or early investors retain a significant portion of the tokens; whether the tokens have a fixed supply; and the nature of promotional activity surrounding the tokens).

<sup>84</sup> See U.S. Securities and Exchange Commission. 2017. “Report of Investigation Pursuant to Section 21(a) of the Securities Exchange Act of 1934: The DAO,” Securities Act Release No. 81207, (25 July 2017); Ontario Securities Commission, “OSC Charges Stephan Katmarian with Securities

The CSA has also noted that many utility token offerings in ICOs will require a prospectus, or an allowable exemption from the prospectus rules, despite performing a utility function because they have characteristics analogous to securities such as investment contracts.<sup>85</sup> A person or company who engages in the business of trading, advising or managing an investment fund of cryptocurrency that is a security must also register in an appropriate category (or obtain a suitable exemption) and comply with numerous ongoing obligations.<sup>86</sup> Also, offerings of utility tokens may present unique risks for investors. A US study of the largest ICOs in 2017, identified a computer-coding “disconnect” between the promises in token offering “white papers” and marketing materials (such as token-vesting conditions, token-supply limits, and code-modification rights) and the actual execution of smart-contract code.<sup>87</sup>

## 2. Cryptocurrency Trading Platforms (Crypto Exchanges)

Canadian securities regulators recently enacted a novel, internationally idiosyncratic, but positive (and needed) approach to regulating CTPs.<sup>88</sup> The formation of regulatory parameters in Canada around CTPs was largely catalyzed by the catastrophic failure, and fraudulent activities of its founder Gerald Cotton, on the Ontario-based *QuadrigaCX* platform in late 2018, which resulted in the loss of over \$169 million in customer assets.<sup>89</sup> *QuadrigaCX*'s failure catalyzed a 2019 public consultation by the CSA and the *Investment Industry Regulatory Organization of Canada* (IIROC)<sup>90</sup> into the securities regulatory jurisdiction, and potential rules application, for CTPs.<sup>91</sup>

In January 2020, the CSA and IIROC issued joint guidance (Staff Notice 21-327) on how securities regulatory frameworks would be applied to CTPs that facilitate the

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Act Offences,” (1 April 2021), online: <https://www.osc.ca/en/news-events/news/osc-charges-stephan-katmarian-securities-act-offences>.

<sup>85</sup> See CSA Staff Notice 46-307, *supra* note 15; CSA Staff Notice 46-308, *supra* note 15.

<sup>86</sup> National Instrument 31-103, *supra* note 59.

<sup>87</sup> Cohney, Hoffman, Sklaroff and Wishnick, *supra* note 21.

<sup>88</sup> Clements, *Emerging Canadian*, *supra* note 61 at 27-29 (“this jurisdictional assertion is a positive development in the evolution of crypto asset regulation. It brings certainty, stability and credibility to a historically vulnerable operating segment of an industry surging in investor interest.”)

<sup>89</sup> Ontario Securities Commission, “*QuadrigaCX: A Review by Staff of the Ontario Securities Commission*” (14 April 2020), online: <https://www.osc.ca/quadrigacxreport/>.

<sup>90</sup> The Investment Industry Regulatory Organization of Canada is the pan-Canadian self-regulatory organization that oversees all investment dealers and trading activity on Canadian debt and equity marketplaces, see IIROC, “About IIROC,” online: <https://www.iiroc.ca/about-iiroc> (last accessed 19 August 2022).

<sup>91</sup> Canadian Securities Administrators, *Joint Canadian Securities Administrators/Investment Industry Regulatory Organization of Canada, Consultation Paper 21-402, Proposed Framework For Crypto-Asset Trading Platforms*, (14 March 2019) online (pdf): [https://www.securities-administrators.ca/uploadedFiles/Industry\\_Resources/2019mars14-21-402-doc-cons-en.pdf](https://www.securities-administrators.ca/uploadedFiles/Industry_Resources/2019mars14-21-402-doc-cons-en.pdf).



trading of cryptocurrencies in Canada.<sup>92</sup> The joint guidance noted that the securities regulator would assert jurisdiction over the trading of cryptocurrencies that were securities (on their own), and would also assert regulatory jurisdiction over the trading of cryptocurrencies that were commodities (like Bitcoin), and not securities on their own, if the CTP took custody of the commodity cryptocurrency and then provided the user with a “contractual right” to the delayed, rather than immediate, delivery of the cryptocurrency.<sup>93</sup> The justification for the latter jurisdictional assertion, for non-security cryptocurrencies, was that the contractual right to delayed delivery of a custodied cryptocurrency created a security or a derivative (the former based on one of the open-ended sub-prongs of the definition of security such as “investment contract.”)<sup>94</sup> The Staff Notice, however, carved out an exception for certain cryptocurrency intermediaries and dealers by noting that the regulatory perimeter for the application of securities rules would not extend to businesses who provided “immediate delivery” of a cryptocurrency.<sup>95</sup>

CSA Staff Notice 21-327 was followed by CSA / IIROC Staff Notice 21-329 which established a contextual path to compliance, based on the operations of the CTP, using either a “restricted dealer” category as an interim two-year transitional solution to a full investment dealer registration, the application of marketplace rules, or a hybrid application of investment dealer and marketplace rules for certain CTPs that perform dual functions.<sup>96</sup> Staff Notice 21-329 identified several risks for investors who utilize the services of Canadian CTPs including custody, safeguarding cryptocurrencies (private key management), providing fair and transparent access criteria and operations, ensuring integrity and resiliency in system and security controls, avoiding conflicts of interest, and complying with typical investment dealer and marketplace concerns such as ensuring market integrity, efficient price discovery, know-your-client (KYC), and know-your-product (KYP) standards.<sup>97</sup>

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<sup>92</sup> Canadian Securities Administrators, *CSA Staff Notice 21–327, Guidance on the Application of Securities Legislation to Entities Facilitating the Trading of Crypto Assets*, (16 January 2020), at 1-2, online: <https://www.asc.ca/securities-law-and-policy/regulatory-instruments/21-327> (“CSA Staff Notice 21-327”).

<sup>93</sup> *Ibid.*, at 2.

<sup>94</sup> *Ibid.*, at 1-2.

<sup>95</sup> *Ibid.* at 2-3 (CSA Staff Notice 21-327 notes that the notion of “immediate delivery” is a fact-specific, contextual determination having consideration of the intention of the parties, the “economic realities” and substance of the transaction, and would generally occur if “ownership, possession and control” of the particular cryptocurrency was transferred to a purchaser and the transferor retained no further legal right, security interest or involvement in the cryptocurrency).

<sup>96</sup> Joint Canadian Securities Administrators / Investment Industry Regulatory Organization of Canada, *CSA Staff Notice 21-329, Guidance for Crypto-Asset Trading Platforms: Compliance with Regulatory Requirements*, (29 March 2021), online: <https://www.asc.ca/securities-law-and-policy/regulatory-instruments/21-329> (“CSA Staff Notice 21-329”). Dealer platforms that transact in Quebec may also be required to register as derivatives dealers pursuant to the Quebec *Derivatives Act*, CQLR c 1-14.01.

<sup>97</sup> CSA Staff Notice 21-329, *supra* note 96.

Staff Notice 21-329 did not introduce new rules for CTPs; rather, it provided guidance on how existing requirements of securities legislation might be “tailored” using terms and conditions on the registration or recognition of CTPs, and with discretionary exemptive relief under appropriate conditions.<sup>98</sup> This also allows CTPs to operate with regulatory compliance using tailored standards to accommodate novel business models. Exemptive relief decisions to date have applied dealer member rules; universal market integrity rules (UMIR); standardized terms and conditions, including investor limits, insurance (both third-party and self-insurance), custody rules, KYC, KYP, and account “appropriateness” as a form of suitability, with limits for investors with less risk tolerance.<sup>99</sup>

Also, CTPs must self-certify that none of the cryptocurrencies that are traded on their platform are “securities” on their own,<sup>100</sup> and must adhere to requirements relating to advertising, marketing and social media promotion.<sup>101</sup> The OSC has been active in enforcement actions against non-compliant CTPs,<sup>102</sup> and CTPs who have engaged in market manipulation.<sup>103</sup> In August 2022, the CSA also established a requirement that CTPs must provide a “pre-registration undertaking to their principal provincial regulator” that they will comply with terms and conditions to protect investors, similar to the requirements imposed on registered CTPs, while they are undergoing the IIROC registration process and their applications are under review.<sup>104</sup>

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<sup>98</sup> *Ibid.* at 1 (“The overall goal of the approach outlined in this Notice is to ensure there is a balance between needing to be flexible in order to foster innovation in the Canadian capital markets and meeting our regulatory mandate of promoting investor protection and fair and efficient capital markets.”); see also at 11 (“IIROC recognizes the need to be flexible and foster innovation and has therefore established a path to membership for businesses or entities with novel business models, including Marketplace or Dealer Platforms that do not necessarily fit in the existing IIROC membership structure.”); see Clements, Emerging Canadian, *supra* note 61 at 32-35.

<sup>99</sup> See Ontario Securities Commission, “Registered Crypto Asset Trading Platforms,” <https://www.osc.ca/en/industry/registration-and-compliance/registered-crypto-asset-trading-platforms> (last accessed 3 September 2022).

<sup>100</sup> *Ibid.*

<sup>101</sup> See Joint Canadian Securities Administrators, Investment Industry Regulatory Organization of Canada, Staff Notice 21-330 – *Guidance for Crypto-Trading Platforms: Requirements relating to Advertising, Marketing and Social Media Use*, (23 September 2021), online: <https://www.asc.ca/securities-law-and-policy/regulatory-instruments/21-330>.

<sup>102</sup> See Ontario Securities Commission, “OSC Holds Global Crypto Asset Trading Platforms Accountable,” (22 June 2022), online: <https://www.osc.ca/en/news-events/news/osc-holds-global-crypto-asset-trading-platforms-accountable>; see Ontario Securities Commission, Statement of Allegations, Polo Digital Assets, Ltd (Poloniex), 25 May 2021; Ontario Securities Commission, Statement of Allegations, Mek Global Limited and PhoenixFin Pte Ltd (collectively KuCoin), (2 June 2021); Ontario Securities Commission, Statement of Allegations, Bybit Fintech Limited (Bybit), (21 June 2021).

<sup>103</sup> See Ontario Securities Commission, *In The Matter Of Coinsquare Ltd., Cole Diamond, Virgile Rostand And Felix Mazer, Settlement Agreement* (16 July 2020).

<sup>104</sup> See Canadian Securities Administrators, “Canadian securities regulators expect commitments from crypto trading platforms pursuing registration,” (15 August 2022) online: <https://www.securities->

### 3. Cryptocurrency Investment Funds

Canada has a robust investor market for cryptocurrency managed investment products and pooled investment funds, including cryptocurrency mutual funds, and cryptocurrency exchange traded funds (ETFs) which allow for intraday trading on retail-accessible marketplaces in Canada.<sup>105</sup> The market (and product supply) for cryptocurrency investment funds was largely catalyzed by an October 2019 OSC panel decision overturning a prior OSC staff refusal to issue a receipt for the 3iQ Corp. non-redeemable exchanged traded “Bitcoin Fund.”<sup>106</sup>

Investment funds that sell products to Canadian investors are subject to a wide variety of regulatory parameters, which are contextualized to the type of investment fund, including registration requirements and initial and ongoing fitness, conduct, and reporting obligations, operational safeguards, compliance with prospectus and initial disclosure rules, controls on fund operations, ongoing disclosure and restrictions on marketing and sales.<sup>107</sup> Despite existing in Canada, a “spot” or custodial cryptocurrency ETF has not yet been approved for trading in the US, and many applications having been rejected to date.<sup>108</sup> The SEC has, however, approved Bitcoin futures ETFs.<sup>109</sup>

### 4. Cryptocurrency Derivatives

Regulators in Canada have taken a cautious approach to cryptocurrency derivatives and have identified the “inherent risks associated with cryptocurrency future contracts” as a result of the many unregulated venues that they are accessible

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[administrators.ca/news/canadian-securities-regulators-expect-commitments-from-crypto-trading-platforms-pursuing-registration/](https://www.securities-administrators.ca/news/canadian-securities-regulators-expect-commitments-from-crypto-trading-platforms-pursuing-registration/).

<sup>105</sup> See Canadian Securities Administrators, “Types of Crypto Assets” online: <https://www.securities-administrators.ca/investor-tools/crypto-assets/types-of-crypto-assets/> (last accessed 8 August 2022).

<sup>106</sup> See Ontario Securities Commission, *Reasons and Decision in the Matter of 3iQ Corp. and the Bitcoin Fund, 3iQ Corp (Re)*, 2019 ONSEC 37, (29 October 2019), online (pdf): <https://www.canlii.org/en/on/oncmt/doc/2019/2019onsec37/2019onsec37.pdf>.

<sup>107</sup> See Ontario Securities Commission, “Investment Funds and Structured Products,” online: <https://www.osc.ca/en/industry/investment-funds-and-structured-products>; see (among others), National Instrument 81-102 – *Investment Funds*; National Instrument 81-106 – *Investment Fund Continuous Disclosure*; National Instrument 31-103, *supra* note 59; National Instrument 81-101 – *Mutual Fund Prospectus Disclosure*; National Instrument 41-101 – *General Prospectus Requirements*.

<sup>108</sup> Rosmarie Miller, “Rejected Bitcoin ETF Sponsor Considers Suing SEC,” (13 July 2022), online: *Forbes*, <https://www.forbes.com/sites/rosemariemiller/2022/07/13/rejected-bitcoin-etf-sponsor-considers-suing-sec/?sh=a6ca39445614>.

<sup>109</sup> Mat Di Salvo, “SEC Delays Decision on Cathie Wood’s ARK 21Shares Bitcoin ETF,” (13 July 2022), online: *Decrypt*, <https://decrypt.co/105021/sec-delays-cathie-woods-ark-21shares-bitcoin-etf>.

on.<sup>110</sup> Several rules, guidance measures, and parameters have been established to deal with risk and instability in the cryptocurrency derivatives market. In December 2017, IIROC established standards for “minimum margin requirements for cryptocurrency futures contracts,” which were updated and clarified in October 2021.<sup>111</sup> Also, several CSA member jurisdictions, pursuant to Multilateral Instrument 91–102, have prohibited binary options (which have been created in the US on Bitcoin<sup>112</sup>) with a “term to maturity of less than 30 days with or to an individual, or to a person or company that was created or is used solely to trade a binary option.”<sup>113</sup>

## 5. Cryptocurrency Custodians

Regulatory guidelines are also imposed on businesses who desire to operate solely as a cryptocurrency trust company or dedicated custodian. There are various market segments for cryptocurrency custodial services including registered cryptocurrency investment funds, institutional investors, high net worth individuals, family office direct holdings, and the provision of custodial services to CTPs and other registered financial institutions. Providing custodial services for cryptocurrencies creates many risks including managing and safeguarding private keys, avoiding identify fraud for unauthorized transactions, ensuring timely access for clients, and risk management and prudential oversight to ensure solvency in business operations.<sup>114</sup>

Regulatory controls necessary for cryptocurrency custodians include, among others, ensuring private keys are protected from internal and external attacks, storage solutions, insurance, testing and improvement of external and internal controls (such as hardware security modules or multi-party authorizations), audits, capital and other prudential safeguards.<sup>115</sup> Although the OSC has approved certain affiliated custodial

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<sup>110</sup> Canadian Securities Administrators, “Canadian Securities Administrators Remind Investors of Inherent Risks Associated with Cryptocurrency Futures Contracts” (18 December 2017) online: <https://www.securities-administrators.ca/aboutcsa.aspx?id=1641>.

<sup>111</sup> Investment Industry Regulatory Organization of Canada, “Margin Requirements For Cryptocurrency Futures Contracts,” (14 October 2021), online: <https://www.iiroc.ca/news-and-publications/notices-and-guidance/margin-requirements-cryptocurrency-futures-contracts-0>.

<sup>112</sup> U.S. Commodity Futures Trading Commission, “CFTC Statement on Self-Certification of Bitcoin Products By CME, CFE and Cantor Exchange,” Release Number 7654-17 (1 December 2017) online: <https://www.cftc.gov/PressRoom/PressReleases/pr7654-17>.

<sup>113</sup> See Ontario Securities Commission, “CSA Multilateral Notice of Multilateral Instrument 91–102, Prohibition of Binary Options and Related Companion Policy” (28 September 2017) online: [http://www.osc.gov.on.ca/en/SecuritiesLaw\\_csa\\_20170927\\_91-102\\_binary-options.htm](http://www.osc.gov.on.ca/en/SecuritiesLaw_csa_20170927_91-102_binary-options.htm).

<sup>114</sup> CSA Staff Notice 21-329, *supra* note 96.

<sup>115</sup> *Ibid.*

arrangements for established global investment dealers,<sup>116</sup> the path to regulated cryptocurrency custodian generally involves becoming a “qualified custodian” under securities regulation,<sup>117</sup> or becoming a regulated financial institution like a bank or trust company.<sup>118</sup> Both applications involve significant ex-ante and ongoing costs and requirements including (depending on the nature of registration sought) minimum capital, audited financial reporting, standards of care, ongoing regulatory supervision, segregated asset rules, client asset verification, operational restrictions, conflicts safeguards and systems of controls.<sup>119</sup>

## 6. Reporting Issuer Continual Disclosure of Cryptocurrency Activities

In 2021, the CSA also provided disclosure guidance for reporting issuers who deal in, or transact with, cryptocurrencies.<sup>120</sup> In CSA Staff Notice 51-363 it was recommended that reporting issuers who deal in cryptocurrencies identify: the controls they use for asset segregation; cybersecurity safeguards; custodial, and sub-custodial arrangements, including the treatment of custodied cryptocurrencies in the event of the bankruptcy or insolvency of a custodian, and the due diligence they perform when assessing foreign custodians; their valuation models for cryptocurrencies; their use and reliance on CTPs; any prior security breaches or similar incidents; whether they retain the services of additional third parties in their cryptocurrency operations; and how they will fulfill material change reporting obligations.<sup>121</sup>

## 7. Regulatory Sandboxes for Cryptocurrency Constrained Testing

Regulatory sandboxes allow for a supervised, constrained testing and learning environment, where innovative products can be tested with real consumers, under

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<sup>116</sup> See Ontario Securities Commission, Decision in the Matter of Fidelity Clearing Canada ULC, (16 November 2021), online (PDF): [https://www.osc.ca/sites/default/files/2021-11/oth\\_20211116\\_fidelus\\_0.pdf](https://www.osc.ca/sites/default/files/2021-11/oth_20211116_fidelus_0.pdf).

<sup>117</sup> See National Instrument 31-103, *supra* note 59 (this would entail obtaining status as a “Canadian custodian” or a “foreign custodian”).

<sup>118</sup> Calgary-based Tetra Trust recently obtained regulated status as a trust company for cryptocurrency, see Vanmala Subramaniam, “Calgary fintech startup Tetra Trust becomes Canada’s first regulated custodian of crypto assets,” (8 July 2021) online: *The Globe and Mail*, <https://www.theglobeandmail.com/business/article-calgary-fintech-startup-tetra-trust-becomes-canadas-first-regulated/>.

<sup>119</sup> See NI 31-103, *supra* note 59; consider the process navigated recently by Tetra Trust, see Alberta, “Financial institutions – Information for financial service providers,” <https://www.alberta.ca/financial-institutions-information-financial-service-providers.aspx> (last accessed 15 August 2022).

<sup>120</sup> See Canadian Securities Administrators, Staff Notice 51-363, *Observations on Disclosure by Crypto Assets Reporting Issuers*, (11 March 2021) online: <https://www.asc.ca/securities-law-and-policy/regulatory-instruments/51-363>.

<sup>121</sup> *Ibid.* at 3-7.

contextual regulatory parameters, allowing regulators to learn, compile data, and assess risks and benefits of new financial innovations in real time, leading to more informed rule and policy construction.<sup>122</sup> Also, researchers at the BIS recently identified that venture equity funding in fintech firms increased after the introduction of a regulatory sandbox to a geographic location.<sup>123</sup>

The CSA launched a regulatory sandbox in 2017, as part of its 2016–19 business plan.<sup>124</sup> Since its inception, the CSA regulatory sandbox has provided exemptive relief to numerous cryptocurrency related enterprises, including CTPs, several cryptocurrency investment funds, blockchain-based international money remittance platforms, ICOs, utility token offerings, a primary listing platform for tokenized securities offered through a blockchain, and a secondary market trading venue for accredited investors in exempt market tokenized securities.<sup>125</sup> Alberta also recently passed the *Financial Innovation Act* (FIA), thereby creating a provincial regulatory sandbox (the first province in Canada to do so), which allows financial and fintech companies to develop and test new financial products and services including cryptocurrency and blockchain initiatives.<sup>126</sup>

*b. Money Services Businesses and Anti-Money Laundering Controls*

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<sup>122</sup> See Wolf-George Ringe and Christopher Ruof, “Regulating Fintech in the EU: The Case for a Guided Sandbox,” (2020) 11 *European Journal of Risk Regulation* 604; Ross P. Buckley, Douglas Arner, Robin Veidt and Dirk Zetsche, “Building Fintech Ecosystems: Regulatory Sandboxes, Innovation Hubs and Beyond,” (2020) 61 *Washington University Journal of Law and Policy* 55; Amy Harriman, “Playing in the Sandbox: Lessons U.S. Regulators Can Learn From The Successes of Fintech Sandboxes in the United Kingdom and Australia,” (2020) 37 *Wisconsin International Law Journal* 615.

<sup>123</sup> Giulio Cornelli, Sebastian Doerr, Lavinia Franco and Jon Frost, “Funding for fintechs: patterns and drivers,” (September 2021) online: *BIS Quarterly Review* [https://www.bis.org/publ/qtrpdf/r\\_qt2109c.htm](https://www.bis.org/publ/qtrpdf/r_qt2109c.htm).

<sup>124</sup> See Canadian Securities Administrators, “CSA Regulatory Sandbox,” online: <https://www.securities-administrators.ca/resources/regulatory-sandbox/> (last accessed 28 August 2022).

<sup>125</sup> See Canadian Securities Administrators, “CSA Regulatory Sandbox, Crypto Asset Trading Platform Decisions,” <https://www.securities-administrators.ca/resources/regulatory-sandbox/decisions/> (last accessed 3 September 2022).

<sup>126</sup> *Financial Innovation Act*, SA 2022, c F-13.2; Government of Alberta, “Innovating the finance sector,” online: <https://www.alberta.ca/innovating-the-finance-sector.aspx> (“Companies that participate in the regulatory sandbox may be exempt from some or all of the legal requirements set out in each of the following Acts: *Loan and Trust Corporations Act*, *Credit Union Act*, *ATB Financial Act*, *Consumer Protection Act* (Exemptions to the *Consumer Protection Act* would also require approval from the Minister of Service Alberta); *Personal Information Protection Act* (Exemptions to the *Personal Information Protection Act* would also require approval from the Office of the Information and Privacy Commissioner. This ensures personal information would be protected. Exemptions would also require approval from the Minister of Service Alberta); *Financial Consumers Act*.”); (The FIA also “establishes a regulation-making authority that would allow it to apply to other legislation if needed.”)

There are extensive controls currently in place in Canada to combat money laundering and terrorism finance using cryptocurrencies.<sup>127</sup> These safeguards, however, only apply to businesses or entities that deal in cryptocurrencies, not the cryptocurrencies themselves, or the software or hardware devices that allow for self-custody of cryptocurrency or peer-to-peer (P2P) interactions.<sup>128</sup> In theory, blockchain technology provides regulators with advantages when combatting money laundering and terrorism finance because of the on-chain indelible record of blockchain transactions, which despite complexities in tracing (since criminals use a variety of mechanisms to obscure and wash transactions such as mixers, privacy coins, swaps, and other methods), at least allows for an easier discoverable transaction trail than cash.<sup>129</sup> Business who “deal” in virtual currencies<sup>130</sup> must register as “money services businesses” (MSBs) with FINTRAC, and are subject to similar regulatory requirements as MSBs that deal in fiat currencies pursuant to the *Proceeds of Crime (Money Laundering) and Terrorist Financing Act* (PCMLTFA),<sup>131</sup> and its associated regulations.<sup>132</sup>

MSBs that are virtual currency dealers are subject to a litany of risk-based compliance, registration, KYC, AML, and CTF safeguards, and third party verification procedures, including (among others):<sup>133</sup> screening for politically exposed persons and heads of international organizations; determining beneficial ownership for companies and institutions; record-keeping obligations, ascertaining beneficial

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<sup>127</sup> *Proceeds of Crime (Money Laundering) and Terrorist Financing Act*, S.C. 2000, c. 17. (“PCMLTFA”).

<sup>128</sup> Clements, *Emerging Canadian*, *supra* note 61 at 43-47.

<sup>129</sup> “A Round Table Discussion on Stablecoins: *supra* note 38 at 13

<sup>130</sup> Under the PCMLTFA, “virtual currency” is defined as “a) a digital representation of value that can be used for payment or investment purposes, that is not a fiat currency and that can be readily exchanged for funds or for another virtual currency that can be readily exchanged for funds; or (b) a private key of a cryptographic system that enables a person or entity to have access to a digital representation of value referred to in paragraph (a).” See PCMLTFA, *supra* note 127 at s.1(1).

<sup>131</sup> PCMLTFA, *supra* note 127; see Government of Canada, “Money services businesses,” <https://www.fintrac-canafe.gc.ca/msb-esm/msb-eng#x1> (last accessed 15 August 2022) (The guidance notes that money services businesses (MSBs) who “deal” in virtual currencies include persons or entities that: provide “invoice payment services or payment services for goods and services” using cryptocurrencies; provide virtual currency “exchange” services including “exchanging funds for virtual currency, virtual currency for funds, or virtual currency for another virtual currency”; and virtual currency transfer services including “transferring virtual currency at the request of a client,” or “receiving a transfer of virtual currency for remittance to a beneficiary.”)

<sup>132</sup> Regulations Amending the Proceeds of Crime (Money Laundering) and Terrorist Financing Regulations and the Proceeds of Crime (Money Laundering) and Terrorist Financing Administrative Monetary Penalties Regulations: SOR/2022-76, Canada Gazette, Part II, Volume 156, Number 9. (“PCMLTFA Regulations”).

<sup>133</sup> See PCMLTFA *supra* note 127; PCLTFA Regulations, *supra* note 132; Government of Canada, Money-services businesses, *supra* note 131; Osler, “Anti-money laundering in Canada: A guide to the June 1, 2021 changes,” (2021) online (PDF): <https://www.osler.com/osler/media/Osler/reports/anti-money-laundering/Anti-money-laundering-in-canada-guide.pdf>.

ownership for certain transfers including compliance with the “travel rule”<sup>134</sup>, and large-value and suspicious transaction reporting.<sup>135</sup> Virtual currency dealers who are MSBs face significant penalties for non-compliance of these rules.<sup>136</sup> FINTRAC has also published guidelines on money laundering and terrorism finance indicators in virtual currency transactions.<sup>137</sup>

The rules under the PCMLTFA and associated regulations have also been recently amended to cover crowdfunding platform services which raise virtual currency on their own behalf, or for other people or entities - effectively permanently crystalizing the temporary orders made in early 2022 under the *Emergencies Act*<sup>138</sup> Crowdfunding platform services are now subject to extensive record keeping, KYC, AML, identity verification, reporting and other compliance obligations and oversight by FINTRAC, including record keeping requirements for the “purpose” of the virtual currency fundraising.<sup>139</sup>

### *c. Cryptocurrency Payment Service Providers and Related Regulation*

There are unique risks and financial market stability concerns when cryptocurrencies are utilized as payment mechanisms, many of which are discussed extensively below in the subsection on considerations for stablecoin regulation in Canada.<sup>140</sup> When considering cryptocurrency payment services, it is necessary, at a minimum, to ensure internal controls and full traceability of all transfers within Canada and internationally. There are emerging retail payments supervisory frameworks in Canada, but some uncertainty on how they apply to cryptocurrencies, their intermediaries, and self-custody digital wallets.<sup>141</sup> The federal *Retail Payments*

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<sup>134</sup> See Government of Canada, “Travel rule for electronic funds and virtual currency transfers,” online: <https://www.fintrac-canafe.gc.ca/guidance-directives/transaction-operation/travel-acheminement/1-eng> (last accessed 4 September 2022) (The “travel rule” requires virtual currency dealers, who are also money services businesses, to ensure that “the name, address and the account number or other reference number (if any) of the person or entity who requested the transfer (originator information); and the name, address and the account number or other reference number (if any) of the beneficiary” is included with information sent or received in an electronic funds or virtual currency transfer.)

<sup>135</sup> See Government of Canada, Money services business, *supra* note 131.

<sup>136</sup> See Government of Canada, “Penalties for non-compliance,” online: <https://www.fintrac-canafe.gc.ca/pen/1-eng> (last accessed 4 September 2022).

<sup>137</sup> See Government of Canada, FINTRAC, “Money laundering and terrorist finance indicators – Virtual currency transactions,” online: <https://www.fintrac-canafe.gc.ca/guidance-directives/transaction-operation/indicators-indicateurs/vc/mltf-eng> (last accessed 8 August 2022).

<sup>138</sup> PCMLTFA, *supra* note 127; See Franklin, Rizvi and Stacey, *supra* note 55.

<sup>139</sup> Franklin, Rizvi and Stacey, *supra* note 55.

<sup>140</sup> See *Infra* Section IV(d).

<sup>141</sup> See Bank of Canada, “Retail Payments Supervision,” online: <https://www.bankofcanada.ca/core-functions/retail-payments-supervision/#Key-milestones> (last accessed 15 August 2022).



*Activities Act* (“RPAA”) was enacted in June 2021,<sup>142</sup> endowing the BoC with supervisory responsibility for “payment service providers” (PSPs),<sup>143</sup> and requiring PSPs to register, submit to operational risk mitigation measures and end-user fund safeguards, and comply with reporting requirements.<sup>144</sup> A PSP is an entity that performs electronic payments, and may include “payment processors,” “digital wallets,” and “money transfer services.”<sup>145</sup> However, regulations, or formal guidance on the full scope of the RPAA, particularly its application to user self-custodied digital cryptocurrency wallets or hardware storage devices, has not yet been issued.<sup>146</sup>

Also, the BoC has indicated that it will not engage in fee dispute resolution, offer “broad consumer protection measures,” or respond to fee or privacy complaints.<sup>147</sup> Privacy vulnerabilities have been cited as a significant concern when using cryptocurrencies in payment functions - since consumer financial information could potentially be shared across (and outside) the crypto and DeFi ecosystem.<sup>148</sup> Consumers are also exposed to payments-related risks if cryptocurrency payments don’t settle properly, or hacks or flawed code results in lost payments.<sup>149</sup> Also, unlike a licensing regime, the BoC won’t apply proficiency or financial condition requirements to PSPs.<sup>150</sup> It uncertain whether “payment functions” under the RPAA

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<sup>142</sup> *Retail Payments Activities Act*, S.C. 2021, c.23, s.177 (“RPAA”). The RPAA will come into force in “stages,” with the federal cabinet deciding how, and in what way, each provision comes into force. See Bank of Canada, “Retail Payments Supervision,” online: <https://www.bankofcanada.ca/core-functions/retail-payments-supervision/> (last accessed 4 September 2022).

<sup>143</sup> Bank of Canada, Retail Payments Supervision, *supra* note 142 (PSPs, “may include a variety of entities that perform electronic payment functions, such as payment processors, digital wallets, money transfer services and other payment technology companies that offer any of these services: providing or maintaining a payment account, holding funds, initiating an electronic funds transfer, authorizing, transmitting, receiving or facilitating instructions about an electronic funds transfer clearing or settling.”)

<sup>144</sup> *Ibid.*

<sup>145</sup> *Ibid.*

<sup>146</sup> See McCarthy Tetrault, “Fintech Regulatory Developments: 2021 Year in Review,” (4 January 2022), online: [https://www.mccarthy.ca/en/insights/blogs/techlex/fintech-regulatory-developments-2021-year-review#\\_ftn2](https://www.mccarthy.ca/en/insights/blogs/techlex/fintech-regulatory-developments-2021-year-review#_ftn2).

<sup>147</sup> Bank of Canada, Retail Payments Supervision, *supra* note 142 (the Bank of Canada notes that it does not offer “broader consumer protection, such as dispute resolution between a payment service provider and its end users, concerns about fee charged by payment service providers, privacy complaints.”)

<sup>148</sup> G7 Working Group on Stablecoins, “Investigating the impact of global stablecoins”, (October 2019), at 9, online (pdf): *Bank for International Settlements, Committee on Payments and Market Infrastructure*, <https://www.bis.org/cpmi/publ/d187.pdf>.

<sup>149</sup> President’s Working Group on Financial Markets, the Federal Deposit Insurance Corporation, and the Office of the Comptroller of the Currency, “Report on Stablecoins,” (November 2021), at 13, online (pdf): [https://home.treasury.gov/system/files/136/StableCoinReport\\_Nov1\\_508.pdf](https://home.treasury.gov/system/files/136/StableCoinReport_Nov1_508.pdf) (“PWG Report”).

<sup>150</sup> See Bank of Canada, “Retail Payments Advisory Committee – Brief Overview of Retail Payments Supervision,” (23-24 September 2021), at 4, online (pdf): <https://www.bankofcanada.ca/wp-content/uploads/2021/08/retail-payments-advisory-committee-brief-overview-retail-payments-supervision.pdf>.

applies to certain cryptocurrencies like stablecoins, and the Department of Finance has indicated that it is currently undertaking efforts to establish “criteria” under the RPA, and will determine “whether payments in non-fiat currencies (e.g. stablecoins) are subject to the RPA.”<sup>151</sup>

*d. Taxation and Estate Planning*

The *Canada Revenue Agency* (CRA) has adopted the position that cryptocurrency is not legal tender, and should be treated like a commodity for the purposes of the *Income Tax Act*.<sup>152</sup> In this regard, it is analogized to gold or silver which fluctuates in value based on market factors.<sup>153</sup> Whether the acquisition of a crypto-asset is a taxable event depends on the circumstances of the transaction, and purpose of the acquisition.<sup>154</sup> If the purpose is for asset value speculation (akin to purchasing an investment), then the acquisition price will determine the holder’s “cost” basis for tax purposes, which is relevant in the analysis of tax consequences when the cryptocurrency is later sold.<sup>155</sup> The tax consequences are different if a cryptocurrency is acquired as consideration for the payment of goods or services (considered a “barter” transaction by the CRA), and the receiver of cryptocurrency will generally be required to include the fair value of the cryptocurrency received as business income.<sup>156</sup>

When disposing of a cryptocurrency in a sale transaction there is a material distinction of whether the seller must account for any gains as capital gains, or as income.<sup>157</sup> This assessment requires a contextual determination for each case.<sup>158</sup> Generally buying and selling cryptocurrency will give rise to capital gains (or losses) for an investor, unless the disposition is done in the context of a business of transacting cryptocurrencies, or an “adventure or concern in the nature of trade,” in which case the profits will be business income and not capital gains.<sup>159</sup> Also, there may be circumstances where income taxes are payable by an estate for a deceased

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<sup>151</sup> *Ibid.* at pg. 1.

<sup>152</sup> See Government of Canada, “Guide for cryptocurrency users and tax professionals,” online: <https://www.canada.ca/en/revenue-agency/programs/about-canada-revenue-agency-cra/compliance/digital-currency/cryptocurrency-guide.html> (“CRA Guide”); Canada Revenue Agency, Document No. 2013-051470117 (23 December 2013); Simon Grant, Kwang Lim and Matthew Peters, *BLOCKCHAIN & CRYPTOCURRENCY REGULATION CANADA*, 4<sup>TH</sup> EDITION (2022) at 256-268.

<sup>153</sup> Grant, Lim and Peters, *supra* note 152 at 259-261.

<sup>154</sup> CRA Guide, *supra* note 152.

<sup>155</sup> CRA Guide, *supra* note 152; Grant, Lim and Peters, *supra* note 152 at 259-261.

<sup>156</sup> CRA Guide, *supra* note 152; Grant, Lim and Peters, *supra* note 152 at 259-261.

<sup>157</sup> CRA Guide, *supra* note 152.

<sup>158</sup> *Ibid.*

<sup>159</sup> *Ibid.*

who died holding cryptocurrency, since a deceased is deemed to dispose of property on their death for fair market value.<sup>160</sup>

There is still, however, lingering ambiguity in diverse areas of cryptocurrency taxation, including aspects of valuation, barter, record keeping, and certain sales tax implications.<sup>161</sup> There is also risk that a person who acquires a cryptocurrency for its use as a payment mechanism for goods and services may incur income tax consequences if the cryptocurrency appreciated prior to its use (and thus disposition) as a medium of exchange.<sup>162</sup> If cryptocurrency is acquired as a result of mining (proof of work consensus) or staking (proof of stake consensus) then the CRA's position is that the miner or staker is subject to income tax at the time the cryptocurrency is earned, based on the premise that mining or staking is compensation for services rendered to the blockchain network.<sup>163</sup> Canadians are also required to file with the CRA Form T1135 if the total cost of specified foreign property, including cryptocurrency, exceeds \$100,000CDN during the tax year, although the application of this filing to cryptocurrency has given rise to interpretive ambiguities due to uncertainties on the location of self-custodied cryptocurrencies on globally distributed public blockchain networks.<sup>164</sup>

*e. Environmental Regulation for Cryptocurrency Mining Operations*

A common critique of cryptocurrencies that use a “proof-of-work” (PoW) consensus mechanisms, such as Bitcoin, is that they produce tremendous environmental costs and other externalities (like noise nuisance), that aren't otherwise justified by their social benefits.<sup>165</sup> There is no overarching regulatory framework for PoW cryptocurrency mining operations in Canada,<sup>166</sup> despite significant environmental concerns.<sup>167</sup> There are, however, diverse provincial utilities

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<sup>160</sup> Grant, Lim and Peters, *supra* note 152 at 264.

<sup>161</sup> *Ibid.* at 258-262.

<sup>162</sup> *Ibid.*

<sup>163</sup> CRA Guide, *supra* note 152; Canada Revenue Agency, Document No. 2018-077666117 (8 August 2019); Grant, Lim and Peters, *supra* note 152 at 259-261.

<sup>164</sup> See William Musani and Ashvin Singh, “Foreign Property Reporting: Where is your Crypto?” Tax for the Owner-Manager, Canadian Tax Foundation (October 2021).

<sup>165</sup> See Jon Truby, Rafael Dean Brow, Andrew Dahdal, and Imad Ibrahim, “Blockchain, climate damage, and death: Policy interventions to reduce the carbon emissions, mortality, and net-zero implications of non-fungible tokens and Bitcoin,” (2022) 88 *Energy Research & Social Science*.

<sup>166</sup> Brady Chapman and Ken Tennenhouse, “Cryptocurrency Mining Opportunities for Western Canada's Energy Industry,” (8 April 2022), online: *MLT Aikins*, <https://www.mltaikins.com/energy/cryptocurrency-mining-opportunities-for-western-canadas-energy-industry/>.

<sup>167</sup> Matthew Keen, “Cryptocurrency mining in Canada: Environmental and legal issues,” (5 December 2018), online: *Lawyer's Daily*, <https://www.thelawyersdaily.ca/articles/8845/cryptocurrency-mining-in-canada-environmental-and-legal-issues>.

regulations that apply to cryptocurrency mining operations, including necessary approvals if a mining operation operates a power plant;<sup>168</sup> land-use plan approvals for setting up a mining operation at certain locations, electric load approvals for large electricity usage, technical studies and pre-approvals, and federal requirements for facilities operating proximate to First Nations lands, including requisite consultation with indigenous communities.<sup>169</sup>

In 2019, the Quebec *Régie de l'énergie* approved a “blockchain” consumer category for cryptocurrency mining with allocated energy reserve blocks.<sup>170</sup> In 2021 *Régie de l'énergie* requested limitations on energy consumption for mining operations during the winter.<sup>171</sup> *Hydro-Québec* has also recently announced the launching of a process for allocating capacity for cryptographic operations, starting in mid-September 2022, with restrictions on energy allocation for entities involved in cryptocurrency mining.<sup>172</sup> Of note, the recent provisional agreement on the EU *Markets in Crypto-Assets* (MiCA),<sup>173</sup> will require certain cryptocurrency service providers to declare information on their environmental and climate footprint, as well as adhere to mandatory minimum sustainability standards for blockchain consensus mechanisms, including PoW.<sup>174</sup>

#### IV. Current Governance Concerns, Challenges, and Recommendations

##### a. Cybersecurity and Hacking Risks

Hacking remains an ever present risk on programmable blockchain networks and in the cryptocurrency and DeFi ecosystem due to software vulnerabilities (bugs), and the complicated interaction of human participants and self-executing smart contract

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<sup>168</sup> With respect to “captured gas” from a natural gas-powered cryptocurrency mining operation, a recent enforcement decision of the *Alberta Utilities Commission* provides clarity on statutory exemptions for “own use” power generation. See, Enforcement staff of the Alberta Utilities Commission, AUC Decision 26379-D02-2021 (19 August 2021).

<sup>169</sup> Chapman and Tennenhouse, *supra* note 166.

<sup>170</sup> *Régie de l'énergie* decision D-2019-052 (29 April 2019).

<sup>171</sup> *Régie de l'énergie* decision D-2021-007 (28 January 2021).

<sup>172</sup> See Hydro Québec, “Québec’s blockchain industry,” online: <https://www.hydroquebec.com/blockchain/> (last accessed 10 August 2022).

<sup>173</sup> European Parliament, “Proposal for a Regulation of the European Parliament and of the Council on Markets in Crypto-assets, and amending Directive (EU) 2019/1937,” online: <https://eurlex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020PC0593> (last accessed 4 September 2022).

<sup>174</sup> *Ibid.*

code.<sup>175</sup> The recurrent threat of SIM swaps,<sup>176</sup> routing attacks,<sup>177</sup> oracle attacks,<sup>178</sup> private key security hacks,<sup>179</sup> phishing scams,<sup>180</sup> ransomware,<sup>181</sup> “flash loan” attacks,<sup>182</sup> and malware,<sup>183</sup> combine to make investing in cryptocurrencies, particularly through self-custodied digital wallets, continually risky for individual holders who often lack technological acumen and infrastructure. Investors are also routinely exposed to hacks on DeFi applications. In October 2021, \$16 million was hacked, by a Canadian university student, from the *Indexed Finance* protocol,<sup>184</sup> and \$130 million was stolen from *Cream Finance*’s lending protocol.<sup>185</sup> Investors in the metaverse have also been subject to numerous hacks, including a recent hack on the popular *Axie Infinity* metaverse application.<sup>186</sup>

Blockchain technology makes it very difficult to recover lost or stolen cryptocurrency, even with a successful court-ordered remedy like an injunction, tracing, recovery, or court-mandated asset freeze which, in many cases, can be very difficult to obtain, and may additionally trigger legal interpretive challenges like

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<sup>175</sup> Mike Orcutt, “Once hailed as unhackable, blockchains are now getting hacked” (19 February 2019), online: *MIT Technology Review*, <https://www.technologyreview.com/2019/02/19/239592/once-hailed-as-unhackable-blockchains-are-now-getting-hacked/>.

<sup>176</sup> Paddy Baker, “BlockFi Says Hacker SIM-Swapped Employee’s Phone, No Funds Were Lost” (19 May 2020), online: *CoinDesk*, <https://www.coindesk.com/markets/2020/05/19/blockfisays-hacker-sim-swapped-employees-phone-no-funds-were-lost/>.

<sup>177</sup> Barry Sookman, “Blockchain Vulnerabilities and Civil Remedies to Recover Stolen Assets,” (2022) 2 *The International Journal of Blockchain Law* 25 at 28.

<sup>178</sup> Giulio Caldarelli and Joshua Ellul, “The Blockchain Oracle Problem in Decentralized Finance – A Multivocal Approach” (2021) 11:16 *Applied Sciences*.

<sup>179</sup> Saurabh Singh, A.S.M. Sanwar Hosen, and Byungun Yoon, “Blockchain Security Attacks, Challenges, and Solutions for the Future Distributed IoT Network” (26 January 2021) 9 *IEEE Access* 13938.

<sup>180</sup> Estevao Costa, “The Benefits and Vulnerabilities of Blockchain Security” (19 October 2021), online: *CENGN*, <https://www.cengn.ca/information-centre/innovation/the-benefits-and-vulnerabilities-of-blockchain-security/>.

<sup>181</sup> Sookman, *supra* note 177 at 34.

<sup>182</sup> See Scott Chipolina, “Cream Finance Suffers Third Hack, Loses Over \$130 Million”, (27 October 2021), online: *Decrypt*, <https://decrypt.co/84590/cream-finance-suffers-third-hack-losing-over-130-million>; Martin Young, “PancakeBunny Attacked With Massive \$200M Flash Loan Exploit”, (19 May 2021), online: *Yahoo Finance*, <https://finance.yahoo.com/news/pancakebunny-attacked-massive-200m-flash-050619340.html>.

<sup>183</sup> See *R. v. Vachon-Desjardins*, 2022 ONCJ 43.

<sup>184</sup> Christopher Beam. “The Math Prodigy Whose Hack Upended DeFi Won’t Give Back His Millions,” (18 May 2022), online: *Bloomberg Businessweek*, <https://www.bloomberg.com/news/features/2022-05-19/crypto-platform-hack-rocks-blockchain-community>.

<sup>185</sup> Tim Copeland, *Ethereum DeFi protocol Cream Finance hacked for more than \$130 million*, (27 October 2021), online: *The Block Crypto*, <https://www.theblockcrypto.com/post/122241/ethereum-defi-protocol-cream-finance-hacked-for-115-million>.

<sup>186</sup> Daniel Van Boom, “A Fake Job Offer Reportedly Led to Axie Infinity’s \$600M Hack,” (6 July 2022), online: *CNET*, <https://www.cnet.com/personal-finance/crypto/a-fake-job-offer-reportedly-led-to-axie-infinitys-600m-hack/>.

whether cryptocurrency is property,<sup>187</sup> if so, what type<sup>188</sup>, and where is it situated?<sup>189</sup> Another emerging vulnerability is in “blockchain bridges” that connect diverse programmable blockchains with each other, allowing for the transfer of cryptocurrencies between blockchains and the ability of DeFi participants to avoid high transaction fees (also known as “gas fees”) when using the Ethereum blockchain directly.<sup>190</sup>

Blockchain bridges have been the focal point of numerous recent hacking attacks, with an estimated \$1 billion of cryptocurrency stolen this way in 2022.<sup>191</sup> Ironically, what is often touted as the core value proposition of blockchain technology – its immutable, unalterable record<sup>192</sup> – may in fact serve as a primary friction for the recovery of lost assets in the context of a hack or fraud, since reversing transactions on a blockchain is very difficult without a significant measure such as a “hard fork.”<sup>193</sup>

*b. Criminal Enterprise, Tax and Sanction Evasion*

Cryptocurrencies may also give rise to new criminal enterprises (like “ransomware-as-a-service” where ransomware toolkits are licensed), or otherwise incentivize their use in illicit activities, because of the “distinct” features and advantages of borderless and decentralized operations, “convenient access, storage and transfer,” and pseudo-anonymity.<sup>194</sup> Early uses of Bitcoin included the facilitation of illicit transactions, such as drug trafficking, on the *Silk Road* website.<sup>195</sup> Since then, it has been used to facilitate terrorism finance, human trafficking, child exploitation,

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<sup>187</sup> Sookman, *supra* note 177 at 35.

<sup>188</sup> *Copytrack Pte Ltd. v. Wall*, [2018] BCSC 1709.

<sup>189</sup> Sookman, *supra* note 177 at 35.

<sup>190</sup> Ryan Browne, “Hackers drain nearly \$200 million from crypto startup in ‘free-for-all’ attack,” (2 August 2022), online: *CNBC*, <https://www.cnbc.com/2022/08/02/hackers-drain-nearly-200-million-from-crypto-startup-nomad.html>.

<sup>191</sup> Sidhartha Shukla, “Crypto Firm Nomad Loses Nearly \$200 Million in Bridge Hack,” (2 August 2022) online: *Bloomberg*, <https://www.bloomberg.com/news/articles/2022-08-02/crypto-bridge-nomad-drained-of-nearly-200-million-in-exploit>.

<sup>192</sup> Clements, *Assessing the Evolution*, *supra* note 11 at 75-76.

<sup>193</sup> Bank for International Settlements, Committee on Payments and Market Infrastructures, “Distributed ledger technology in payment clearing and settlement,” (February 2017), online (pdf): <https://www.bis.org/cpmi/publ/d157.pdf>.

<sup>194</sup> Shane T. Stansbury, Written Testimony to United States Senate Committee on Banking, Housing, and Urban Affairs, Hearing on “Understanding the Role of Digital Assets in Illicit Finance,” (17 March 2022), online (pdf): <https://www.banking.senate.gov/imo/media/doc/Stansbury%20Testimony%203-17-22.pdf>.

<sup>195</sup> U.S. Department of Justice, “Manhattan U.S. Attorney Announces The Indictment of Ross Ulbricht, The Creator And Owner Of The ‘Silk Road’ Website,” (4 February 2014), online: <https://www.justice.gov/usao-sdny/pr/manhattan-usattorney-announces-indictment-ross-ulbricht-creator-and-owner-silk-road>.

extortion, and ransomware.<sup>196</sup> Further, while public blockchains allow law enforcement authorities to view transactions, it is not easy to trace ownership of privately controlled digital wallets, or coin transfers given the emergence of “mixing,” “tumbling,” or “chain hopping” services, and “privacy coins” (like *Monero*) which aid in coin tracing obfuscation.<sup>197</sup> Cryptocurrencies (and automated smart-contract platforms like *Tornado Cash*) also help to facilitate money-laundering efforts,<sup>198</sup> and conceal criminal behavior that has been conducted “off-chain.”<sup>199</sup> They can also aid in tax and regulatory sanctions evasion,<sup>200</sup> the latter being a recently cited concern in relation to Iran.<sup>201</sup>

DeFi protocols and applications, the concerns of which are discussed in detail below,<sup>202</sup> disintermediate regulated entities that are subject to extensive KYC, AML and CTF controls.<sup>203</sup> Current regulatory controls are focused on identifiable intermediaries – like CTPs, or other cryptocurrency dealers or custodians – and not smart-contract based DeFi protocols that operate automatically on public blockchains like the Ethereum network.<sup>204</sup> As a result, illicit actors may self-custody cryptocurrencies, using private digital software wallets, or hardware devices, that they control, without the intervention of intermediary service providers, and access DeFi exchanges, lending protocols, mixers, privacy coins, chain-hopping services, yield farming applications, or automated market marking applications as a pseudo-

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<sup>196</sup> Stansbury, *supra* note 194; U.S. Gov’t Accountability Off., GAO22-105462, Virtual Currencies: Additional Information Could Improve Federal Agency Efforts to Counter Human and Drug Trafficking (December 2021), online (pdf): <https://www.gao.gov/assets/gao-22-105462.pdf>; Chainalysis, “The 2022 Crypto Crime Report” (February 2022), p. 3, online: <https://go.chainalysis.com/2022-Crypto-Crime-Report.html>.

<sup>197</sup> Stansbury, *supra* note 194.

<sup>198</sup> See Mengqi Sun, “Tornado Cash’s Sanctions Show Shift in Crypto Regulatory Focus,” (12 August 2022), online: *The Wall Street Journal*, [https://www.wsj.com/articles/tornado-cashs-sanctions-show-shift-in-crypto-regulatory-focus-11660336224?mod=hp\\_minor\\_pos10](https://www.wsj.com/articles/tornado-cashs-sanctions-show-shift-in-crypto-regulatory-focus-11660336224?mod=hp_minor_pos10); MacKenzie Sigalos, “Crypto criminals laundered \$540 million by using a service called RenBridge, new report shows,” (10 August 2022), online: *CNBC*, <https://www.cnbc.com/2022/08/10/crypto-criminals-laundered-540-million-using-renbridge-elliptic-says.html>.

<sup>199</sup> Stansbury, *supra* note 194; There is some contestation, however, on the extent that cryptocurrencies foster money laundering activity and whether there is a “false narrative” of their role in illicit enterprise, see Hailey Lennon, “The False Narrative Of Bitcoin’s Role In Illicit Activity,” (19 January 2021), online: *Forbes*, <https://www.forbes.com/sites/haileylennon/2021/01/19/the-false-narrative-of-bitcoins-role-in-illicit-activity/?sh=74887d603432>.

<sup>200</sup> Greg Iacurci, “Cryptocurrency poses a significant risk of tax evasion,” (31 May 2021), online: *CNBC*, <https://www.cnbc.com/2021/05/31/cryptocurrency-poses-a-significant-risk-of-tax-evasion.html>.

<sup>201</sup> Kyle Barr, “Iran Plans to Use Crypto to Pay for Imports to Help Get Around Sanctions,” (9 August 2022), online: *Gizmodo*, <https://gizmodo.com/iran-crypto-imports-sanctions-1849389297>.

<sup>202</sup> *Infra* Section IV(e).

<sup>203</sup> Clements, *Emerging Canadian*, *supra* note 61 at 32.

<sup>204</sup> *Ibid.*

anonymous means of international money laundering, or other regulatory or tax evasion.<sup>205</sup>

International regulators have recently utilized unprecedented measures to prosecute illicit activity using cryptocurrency, including recent sanctions against *Tornado Cash*, which isn't an individual or a business, but rather is a cryptocurrency "mixer" that exists as software code on a decentralized blockchain.<sup>206</sup> The Canadian federal 2022 budget identified concerns around the use of cryptocurrency to "avoid global sanctions and fund illegal activities," and proposed \$17.7 million over five years, starting in 2022-23, for a financial sector legislative review on the "digitalization of money" with the first phase directed at digital currencies including cryptocurrencies and stablecoins, and a Canadian CBDC.<sup>207</sup>

### *c. Governance Risks in Self-Hosted Cryptocurrency Wallets*

Currently, there are no regulatory restrictions or registration requirements in Canada for digital "wallets" or other self-managed, and self-hosted, software or hardware devices that allow individuals, or organizations, to self-custody cryptocurrencies and control their own private keys.<sup>208</sup> Regulatory frameworks in Canada are focused on centralized intermediaries and businesses who provide dealing, transaction, payments, transfer or custodial services to clients, as a key point of "risk transmission" and "transaction volume," but the regulatory parameters have not extended to self-custodied private digital software wallets or hardware devices that cryptocurrency investors may utilize on their own, without the aid of an intermediary, third party custodian, or CTP.<sup>209</sup>

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<sup>205</sup> *Ibid.* at 43-47.

<sup>206</sup> Tory Newmyer and Jeremy B. Merrill, "Top crypto company defies U.S. sanctions on service that hid stolen assets," (24 August 2022), online: *Washington Post*, <https://www.washingtonpost.com/business/2022/08/24/crypto-sanctions-tether/>.

<sup>207</sup> See, Government of Canada, Budget 2022, Chapter 9, "Tax Fairness and Effective Government," online: <https://budget.gc.ca/2022/report-rapport/chap9-en.html#m171>.

<sup>208</sup> Clements, *Emerging Canadian*, *supra* note 61 at 27-28, 43-47.

<sup>209</sup> *Ibid.*; the focus on custodial services and intermediated dealing is consistent with both the historical approach to financial industry regulation, and evidence of how people normally purchase and use cryptocurrencies. 2020 research from the Rand Corporation estimated that 99 percent of cryptocurrency and privacy coin transactions were executed on centralized cryptocurrency exchanges, see Erik Silfversten et al., "Exploring the use of Zcash cryptocurrency for illicit or criminal purposes" (2020) *RAND Europe* at 6; further, centralized services and exchanges have also been a point of vulnerability, operational instability, fraud, and hacks. See Robert McMillan, "The Inside Story of Mt. Gox, Bitcoin's \$460 Million Disaster" (3 March 2014), online: *Wired* <https://www.wired.com/2014/03/bitcoin-exchange/>; Ontario Securities Commission, "OSC Panel approves settlement with Coinsquare, Cole Diamond, Virgile Rostand and Felix Mazer" (21 July 2020), online: <https://www.osc.ca/en/news-events/news/oscp-panel-approves-settlement-coinsquare-cole-diamond-virgile-rostand-and-felix-mazer>.



Currently the federal Department of Finance, with assistance from the BoC, is investigating the extent that the RPAA, and related regulations, will apply to digital wallets that simply hold cryptocurrencies, and as of the date of this report, formal guidance or regulations have not been issued on this point.<sup>210</sup>

Self-hosted cryptocurrency wallets facilitate a true P2P international, pseudo-anonymous, financial ecosystem that allows for cross-border transactions and interactions. P2P transactions are not usually covered under AML or CTF laws and regulations because these typically only apply to financial intermediaries.<sup>211</sup> Recent non-binding guidance, however, from the international *Financial Action Task Force* (FATF) has recommended global regulators apply AML and CTF controls to people who “control” or “sufficiently influence” the underlying DeFi service, which may include both protocol developers and early stage investors.<sup>212</sup> When a cryptocurrency is self-custodied, users must individually assess wallets on their own without any regulatory guidance or minimum standards, and this creates a knowledge deficit at a minimum, but it can also lead to investor harm, or lost cryptocurrencies, via theft (in the event of a hack) or negligence for lost keys.<sup>213</sup> It can also facilitate illicit activity and “obscure” proceeds of crime.<sup>214</sup>

Self-hosted digital wallets are also not subject, at the moment, to KYC or AML safeguards, or transaction reporting in Canada, and do not trigger FINTRAC registration as an MSB because a digital wallet is not a “virtual currency dealer.”<sup>215</sup> Simply put, self-hosted wallets are tools that allow individuals to take custody and control of their own cryptocurrencies, safeguard private keys, and interact directly with blockchain networks or DeFi applications without the aid of an intermediary or service provider.<sup>216</sup> As highlighted by the *Indexed Finance* hack (which was

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<sup>210</sup> See Bank of Canada, “Retail Payments Supervision,” <https://www.bankofcanada.ca/core-functions/retail-payments-supervision/#holding-funds> (“Holding funds: Work to interpret this function is ongoing and more information will be released when it becomes available.”) (last accessed 9 September 2022).

<sup>211</sup> Financial Action Task Force, “Virtual Assets and Virtual Asset Service Providers,” (October 2021), at 18-19, online (pdf): <https://www.fatf-gafi.org/media/fatf/documents/recommendations/Updated-Guidance-VA-VASP.pdf> (“FATF Guidelines”).

<sup>212</sup> “Targeted Update on Implementation of the FATF Standards on Virtual Assets and Virtual Asset Service Providers” (June 2022) at 19, online (pdf): *Financial Action Task Force*, <https://www.fatf-gafi.org/media/fatf/documents/recommendations/Targeted-Update-Implementation-FATF%20Standards-Virtual%20Assets-VASPs.pdf>.

<sup>213</sup> Clements, *Emerging Canadian*, *supra* note 61 at 43-47.

<sup>214</sup> FATF Guidelines, *supra* note 211 at 8.

<sup>215</sup> See Government of Canada, “Money services businesses,” <https://www.fintrac-canafe.gc.ca/msb-esm/msb-eng#x1> (last accessed 11 August 2022); Alex Davis, “The case for self-hosted wallets in face of global regulations,” (20 June 2022), online: *The Lawyer’s Daily*, <https://www.thelawyersdaily.ca/articles/37392/the-case-for-self-hosted-wallets-in-face-of-global-regulations>.

<sup>216</sup> Davis, *ibid*.

perpetrated by a Canadian, alleging a lawful arbitrage trade, and a “code is law defence<sup>217</sup>), pseudonymous self-custodied digital wallets also make it very hard to detect market manipulation, or recover stolen cryptocurrencies.<sup>218</sup>

Also, court ordered remedies for fraudulently obtained cryptocurrencies, or other cryptocurrency seizures, are most effective when there is a third-party or centralized intermediary that holds custody; thus self-custodied digital wallets, where an individual safeguards private keys, presents tremendous practical challenges for the recovery of cryptocurrency.<sup>219</sup> Also, DeFi transactions are recorded in an immutable record, yet “identifiers” for transactions are limited to blockchain addresses, not the identities behind or beneficial ownership of self-hosted digital wallets.<sup>220</sup>

International regulatory bodies have recently proposed measures to mitigate money laundering, tax and sanctions evasion, criminal enterprise, and terrorist finance risks in self-hosted wallets. Newly proposed EU rules will create an “un-hosted wallet” reporting requirement that if a customer of a cryptocurrency service provider sends more than 1000 Euro to or from an un-hosted wallet then the cryptocurrency service provider must verify whether the wallet is effectively owned or controlled by this customer.<sup>221</sup> However, these rules do not extend to “person to person transfers” conducted without an intermediary.<sup>222</sup>

#### *d. Regulatory Parameters for Stablecoins*

To date, no regulatory body or financial agency in Canada has announced supervisory parameters, or an overarching registration, taxonomy, disclosure or governance framework for stablecoins,<sup>223</sup> despite some varieties resembling securities such as an investment contract or an evidence of a deposit (not otherwise exempted under securities law),<sup>224</sup> or a money market mutual fund, or ETF.<sup>225</sup> The interpretation of a stablecoin as a security relies on the fact that they are predominantly used today for cryptocurrency trading strategies, serving as collateral

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<sup>217</sup> See *Cicada 137 LLC v. Medjedovic*, 2022 ONSC 369 (CanLII).

<sup>218</sup> Beam, *supra* note 184.

<sup>219</sup> A Round Table Discussion on Stablecoins: *supra* note 38 at 9.

<sup>220</sup> Crenshaw, *supra* note 3 at 9.

<sup>221</sup> See European Parliament, “Crypto assets: deal on new rules to stop illicit flows in the EU,” (29 June 2022), online: <https://www.europarl.europa.eu/news/en/press-room/20220627IPR33919/crypto-assets-deal-on-new-rules-to-stop-illicit-flows-in-the-eu>.

<sup>222</sup> *Ibid.*

<sup>223</sup> Clements, Defining the Regulatory Perimeter, *supra* note 35.

<sup>224</sup> *Ibid.* at 5-10.

<sup>225</sup> *Ibid.*, at 10-11; see G7 Working Group on Stablecoins, “Investigating the impact of global stablecoins, (October 2019), at 1,3, *Bank for International Settlements, Committee on Payments and Market Infrastructures*, online (pdf): <https://www.bis.org/cpmi/publ/d187.pdf>.

to create leverage on CTPs, moving stores of value between CTPs and DeFi protocols, and for income earning opportunities on DeFi lending applications, and not for consumer or retail payments activities or global remittance.<sup>226</sup> The jurisdictional claim of securities regulators over stablecoins in Canada weakens if stablecoins become a commonly used medium of exchange in consumer payments applications.<sup>227</sup> Other stablecoins may also resemble derivatives as swaps.<sup>228</sup>

Canada is not idiosyncratic in this regard, as other jurisdictions (particularly the US) have also been slow to enact stablecoin regulatory frameworks.<sup>229</sup> Of note, the recently announced provisional agreement in the EU (MiCA) creates regulatory parameters for stablecoins including claims for stablecoin holders against stablecoin issuer reserves, certain prudential controls for issuers including only holding reserves that meet certain liquidity quality standards, a one-to-one ratio of deposits to issued stablecoins, and adequate minimum liquidity requirements.<sup>230</sup>

There are many risks in stablecoins, and the risks are contextual to the design of the stablecoin and the operation of the stablecoin issuer.<sup>231</sup> For example, uncollateralized algorithmic stablecoins like Terra (UST) which failed catastrophically in May 2022, have unique dependencies on independent market actors, and continual demand in a parallel cryptocurrency (in Terra's case LUNA), to ensure operational stability,<sup>232</sup> Also, Terra's stablecoin relied heavily for demand on an unregulated, associated borrowing platform (*Anchor* protocol) which also had unique risks, and was being propped up for stability by Terra stakeholders.<sup>233</sup> Off-chain "fiat backed"

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<sup>226</sup> Clements, *Defining the Regulatory Perimeter*, *supra* note 35 at 5-10.

<sup>227</sup> *Ibid.* at 5-10.

<sup>228</sup> *Ibid.* at 11-12.

see Diana Qiao, "This Is Not A Game: Blockchain Regulation and Its Application to Video Games," 40 *Northern Illinois University Law Review* 176, at 217-281 (2020).

<sup>229</sup> Many US regulatory proposals or Congressional bills seeking to regulate stablecoins have either stalled, or died on the order paper including, PWG Report, *supra* note 149; *Managed Stablecoins are Securities Act of 2019* (H.R. 5197); *Keep Big Tech Out of Finance Act of 2019* (H.R. 4813); *Stablecoin Classification and Regulation Act of 2020* ("Stable Act") (H.R. 8827); *Digital Asset Market Structure and Investor Protection Act* (2021) (H.R. 4741); *Stablecoin Innovation and Protection Act of 2022* (Discussion Draft); and the *Lummis-Gillibrand Responsible Financial Innovation Act*, (introduced Senate June 2022).

<sup>230</sup> Council of the EU, "Digital finance: agreement reached on European crypto-assets regulation (MiCA)," (30 June 2022), online: <https://www.consilium.europa.eu/en/press/press-releases/2022/06/30/digital-finance-agreement-reached-on-european-crypto-assets-regulation-mica/>.

<sup>231</sup> Clements, *Built to Fail*, *supra* note 35 at 134-137.

<sup>232</sup> *Ibid.* at 139-144.

<sup>233</sup> See Krisztian Sandor, "Investors Flee Terra's Anchor as UST Stablecoin Repeatedly Loses \$1 Peg," (9 May 2022), online: *CoinDesk*, <https://www.coindesk.com/markets/2022/05/09/investors-flee-terras-anchor-as-ust-stablecoin-repeatedly-loses-1-peg/>; Zhiyuan Sun, "Terra injects \$450M UST into Anchor reserve days before protocol depletion," (18 February 2022), online: *CoinTelegraph*, <https://cointelegraph.com/news/terra-injects-450m-ust-into-anchor-reserve-days-before-protocol-depletion>.

stablecoins (those that hold liquid assets on reserve to ensure a pegged value), introduce three categories of risk: consumer and investor protection, micro-prudential (stablecoin issuer firm-level risks); and macro-prudential (financial systemic risks).<sup>234</sup> Consumers and investors of stablecoins face data privacy, cybersecurity, supply modification, fee transparency, operational, governance, reserve composition, custody, quality, and valuation risks.<sup>235</sup>

Stablecoin investors also have legal and restitutionary risks as an unsecured creditor in the event of a stablecoin issuer's insolvency or windup.<sup>236</sup> Stablecoin issues face micro-prudential risks including insolvency, cybersecurity, operational stability, ensuring sufficient internal risk management controls and governance mechanisms.<sup>237</sup> Privately issued stablecoins also present macro-prudential systemic and market integrity risks when used as a widespread payment device including (among others), interconnection risks, fire-sale contagion and confidence effects, shadow banking, payments-related systemic risks, concentration risks and "too big to fail" blockchain settlement infrastructure, deposit and currency substitution, bank like "run risks," and fiat de-monetization.<sup>238</sup>

Securities regulators have many tools to combat these risks, if they were to assert jurisdiction over stablecoins in Canada.<sup>239</sup> However, securities-based regulatory effectiveness in mitigating all stablecoin risks (particularly macro-prudential) is limited, and certain "gaps" remain if stablecoins are exclusively regulated under securities law, including macro-prudential backstops (like lender of last resort, or deposit insurance for stablecoin bank-style mass redemption runs); payments-related systemic risks; settlement and clearing risks; risks relating to the global scaling of an underlying blockchain network that becomes a critical clearing and settlement system (financial market infrastructure); interjurisdictional standardization for cross-border

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<sup>234</sup> Clements, Defining the Regulatory Perimeter, *supra* note 35 at 12.

<sup>235</sup> *Ibid.* at 5-12.

<sup>236</sup> *Ibid.*; G7 Working Group on Stablecoins, "Investing the impact of global stablecoins," *Bank for International Settlements, Committee on Payments and Market Infrastructures*, (October 2019), at 10, online (pdf): <https://www.bis.org/cpmi/publ/d187.pdf> ("G7 Working Group Report").

<sup>237</sup> Clements, Defining the Regulatory Perimeter, *supra* note 35 at 14-15.

<sup>238</sup> *Ibid.* at 14-15.

<sup>239</sup> *Ibid.* at 20-24 (Describing how there are many regulatory measures used under conventional securities law that could be applied to the operations of stablecoin issuers to ensure risk mitigation in the event that securities regulators asserted jurisdiction over stablecoins. Such measures include disclosures on reserve composition, custody, fees, operations and governance; controls on reserve quality, segregation, safekeeping, concentration, liquidity and valuation; re-sale rules; internal controls such as proficiency standards, compliance, conflicts avoidance policies, cybersecurity, wind-up rights; micro-prudential safeguards such as audits, insurance, capital requirements; books and records oversight and reporting; investor protection measures including redemption rights, dispute resolution processes, primary and secondary market information disclosure and liability for misrepresentations; suitability, know your client, know your product; and marketplace and trading standards for secondary market transactions in stablecoins).

and global payments; limited consumer protection standards, and redress avenues, for payments-based stablecoins; and a lack of the full scope of AML, illicit finance, and CTF controls.<sup>240</sup>

As a result, regulating stablecoins in Canada requires inter-agency cooperation, tiered frameworks, and a taxonomy for contextual parameters for diverse forms, across the financial regulatory landscape, to adequately address all stablecoin risks, and must also seek international cooperation and harmony and data-sharing, given the interconnectedness and potential impact of the failure of a global stablecoin issuer.<sup>241</sup>

*e. Decentralized Finance (DeFi) Exchanges, Applications, Protocols*

Many DeFi protocols and applications currently operate in Canada without registration or regulatory oversight, including no KYC screening, AML, or CTF prevention measures.<sup>242</sup> These DeFi applications can be accessed through self-custodied cryptocurrency wallets to facilitate pseudo-anonymous international cryptocurrency transactions and global P2P interactions.<sup>243</sup> These DeFi applications attempt to “replicate functions of our traditional financial system” and provide analogous financial products and services to traditional institutions, including exchanges, collateralized loans, income earning deposits, index funds and other investments, passive income earning and market making opportunities, and derivatives exposure using decentralized blockchain networks and automated, self-executing smart contracts that are composable, interoperable, and open source.<sup>244</sup>

DeFi applications present many challenges for regulators in Canada since they operate without a traditional intermediary, or a custodial service, and are conducted through automated, open-source, smart contracts or software protocols allowing for global P2P interactions on decentralized, programmable blockchains, accessible by users with self-custody wallets.<sup>245</sup> As a result, despite a DeFi lending and borrowing

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<sup>240</sup> Clements, *Defining the Regulatory Perimeter*, *supra* note 35 at 24-28.

<sup>241</sup> *Ibid.* at 14-15.

<sup>242</sup> Clements, *Emerging Canadian*, *supra* note 61 at 36-40, 47-52.

<sup>243</sup> *Ibid.*

<sup>244</sup> Crenshaw, *supra* note 3 at 4; Clements, *Emerging Canadian*, *supra* note 61 at 47-52; World Economic Forum, “Decentralized Finance: DeFi Policy-Maker Toolkit” (8 June 2021), online: <https://www.weforum.org/whitepapers/decentralized-finance-defi-policy-maker-toolkit/>.

<sup>245</sup> See Clements, *Emerging Canadian*, *supra* note 61 at 47-52; Dirk A. Zetzsche, Douglas W. Arner and Ross P. Buckley, “Decentralized Finance (DeFi)” (March 2020) IIEL Issue Brief 02/2020, European Banking Institute Working Paper Series 59/2020; Lewis Cohen, Angela Angelovska-Wilson and Greg Strong, “Decentralized Finance: Have Digital Assets and Open Blockchain Networks Found Their ‘Killer App’?” (2021) *Global Legal Insights, Blockchain & Cryptocurrency Regulation*.

protocol resembling a depository institution, or an investment dealer, it is uncertain whether traditional regulatory frameworks for DeFi protocols even apply,<sup>246</sup> and if so, who is responsible for compliance? Is it the protocol developers? The users? Are the governance token holders responsible for compliance? The software code itself? The miners or stakers performing consensus activities on the underlying blockchain? These questions are currently unsettled. The developers may not even be resident in Canada, and open-source code may also be protected as a form of free speech.<sup>247</sup> The myriad of potential regulated parties creates tremendous enforcement costs and uncertainties.<sup>248</sup>

DeFi also allows for the creation of “synthetic” cryptocurrencies that mirror the performance of real-world securities, such as the synthetic US stocks (called “synths” created through Terra’s *Mirror Protocol*).<sup>249</sup> Synths may also reference the price of other cryptocurrencies, such as “wrapped tokens” referencing the price of Bitcoin and Ether which are used to facilitate token transfers across diverse blockchains.<sup>250</sup> Synths create regulatory enforcement challenges for the international regulatory community to prevent illegal securities distributions or derivatives trading.<sup>251</sup> Further, by “disintermediating” traditional financial market participants and institutions, DeFi investors and consumers lose regulated gatekeeping protections and stability functions such as information disclosures, internal operational controls, asset segregation and custody parameters, risk management and governance standards, market making, AML and CTF controls, and liquidity and capital constraints.<sup>252</sup>

Some DeFi applications, including automated P2P borrowing and lending protocols,<sup>253</sup> and synthetic asset “minting” protocols may create securities or

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<sup>246</sup> See *Bank Act*, SC 1991, c 46; National Instrument 31-103, *supra* note 59; *Loan and Trust Corporations Act*, RSA 2000, c L-20 at ss.1(v) & 1(k).

<sup>247</sup> See Alex Colangelo and Alana Maurushat, “Exploring the Limits of Computer Code as a Protected Form of Expression: A Suggested Approach to Encryption, Computer Viruses, and Technological Protection Measures,” (2006) 51:1 *McGill Law Journal* 47.

<sup>248</sup> Primavera De Filippi and Aaron Wright, *Blockchain and the Law: The Rule of Code*, (Cambridge: Harvard University Press, 2018) at 175-176.

<sup>249</sup> See Mirror Finance (mAssets), online: <https://docs.mirror.finance/protocol/mirrored-assets-massets> (last accessed 2 September 2022).

<sup>250</sup> See “Decentralised Finance (DeFi)”, (25 May 2022) at 30, online (pdf): *EU Blockchain Observatory and Forum*, [https://www.eublockchainforum.eu/sites/default/files/reports/DeFi%20Report%20EUBOF%20-%20Final\\_0.pdf](https://www.eublockchainforum.eu/sites/default/files/reports/DeFi%20Report%20EUBOF%20-%20Final_0.pdf); Cryptopedia Staff, “What Are Wrapped Cryptocurrencies?” (28 June 2022), online: *Gemini* <https://www.gemini.com/cryptopedia/wrapped-bitcoin-vs-bitcoin-wbtc-tbtc-wxmx-hbtc-crypto> (last accessed 2 September 2022).

<sup>251</sup> Clements, *Emerging Canadian*, *supra* note 61 at 36-40, 47-52.

<sup>252</sup> See Tom CW Lin, “Infinite Financial Intermediation” (2015) 50 *Wake Forest Law Review* 643 at 645-646.

<sup>253</sup> Johannes R Jensen, Victor von Wachter & Omri Ross, “An Introduction to Decentralized Finance (DeFi)”, (2021) 26 *Complex Systems Informatic and Modeling Quarterly* 46 at 50-1.

derivatives,<sup>254</sup> while some smart contract-based DeFi prediction markets may resemble binary options which are prohibited in some provinces.<sup>255</sup> Others resemble illegal lotteries, betting pools or prediction markets.<sup>256</sup> Automated DeFi exchanges may also perform a similar marketplace function to CTPs caught by CSA Staff Notice 21-327,<sup>257</sup> despite operating without investor safeguards such as disclosures, platform-level operational, integrity and internal controls, or protocol registration.<sup>258</sup>

Recently published reports by the BIS casts doubt on the extent that DeFi networks, applications, and protocols are in fact “decentralized” or whether instead they represent an “illusion of decentralization,” and emerging “proof-of-stake” consensus mechanisms may give rise to ongoing centralization concerns and concentration risks.<sup>259</sup> Similar assertions of centralization have been recently levied at the popular DeFi exchange *Uniswap*, given the concentrated holdings of its UNI governance token in the hands of developers and early stage investors.<sup>260</sup>

Emerging iterations of DeFi represent a market failure with continuing information and technological capacity asymmetries, and conflicts, which create unfair advantages for developers and early stage or sophisticated investors.<sup>261</sup> These asymmetries, and informational and relationship opacities, create disadvantages and vulnerabilities for unsophisticated investors, and justify the imposition of regulatory controls since DeFi protocol developers lack sufficient incentives to design internal governance measures or provide sufficient risk disclosures.<sup>262</sup> DeFi applications and protocols also give rise to traditional financial market pathologies such as leverage, liquidity mismatch, governance and operational issues and illicit activities.<sup>263</sup> They

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<sup>254</sup> Clements, *Emerging Canadian*, *supra* note 61 at 49-52. (Describing how a DeFi lending platform may create a security, and the protocol perform a similar function to an investment dealer pursuant to National Instrument 31-103, *supra* note 59, but it is not always clear who the issuer of the security is. For example, on a lending protocol is the security issuer an anonymized individual borrower (which creates a nearly impossible enforcement problem), or is it the open-source smart contract code (and if so, how do you assign responsibility)? Also, are the developers responsible for regulatory compliance obligations? What if they don't profit? Are the DAO token holders also responsible?)

<sup>255</sup> Ontario Securities Commission, *CSA Multilateral Notice of Multilateral Instrument 91-102, Prohibition of Binary Options and Related Companion Policy* (28 September 2017), [http://www.osc.gov.on.ca/en/SecuritiesLaw\\_csa\\_20170927\\_91-102\\_binary-options.htm](http://www.osc.gov.on.ca/en/SecuritiesLaw_csa_20170927_91-102_binary-options.htm).

<sup>256</sup> Clements, *Emerging Canadian*, *supra* note 61 at 41-52.

<sup>257</sup> Clements, *Emerging Canadian*, *supra* note 61; CSA Staff Notice 21-327, *supra* note 92.

<sup>258</sup> *Ibid.*

<sup>259</sup> Aramonte, Huang and Schrimpf, *supra* note 18.

<sup>260</sup> Max Dilendorf, “Uniswap – An Illusion of Decentralization,” (2022) 3 *The International Journal of Blockchain Law* 32.

<sup>261</sup> Crenshaw, *supra* note 3.

<sup>262</sup> *Ibid.*

<sup>263</sup> See “IOSCO Decentralized Finance Report” (March 2022), online (pdf): *International Organization of Securities Commissions*, <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD699.pdf>.

also create significant legal uncertainty including (among others): determining the nature of the legal relationship between the protocol and its participants, whether a binding contract is established, and legal formalities are satisfied (and between whom);<sup>264</sup> the nature of the legal claim;<sup>265</sup> the location of the appropriate forum for resolution of disputes, and what remedies are available to protocol participants as contractual counterparties.<sup>266</sup>

Even with the formation of regulatory policy, enforcement in DeFi will be challenging,<sup>267</sup> and may require blocking orders against non-compliant websites, a remedy that has been successfully obtained in Canada in the context of copyright infringement.<sup>268</sup> It has been suggested in academic literature that regulators could incentivize the development and operation of regulated “user interfaces” as “permissioned access points” serving as gatekeepers to DeFi protocols, which would take on KYC and AML responsibilities as a virtual asset service provider and evaluate the underlying DeFi protocol.<sup>269</sup>

*f. Governance of Decentralized Autonomous Organizations (DAOs)*

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<sup>264</sup> Robert Schwinger, Harriet Jones-Fenleigh and Jonathan Hawkins, “Spotting and Managing Litigation Risk in DeFi,” (2022) 2 *The International Journal of Blockchain Law* 14 at 15-16 (the authors note that it is possible that instead of a “contract” between willing counterparts, a “partnership” is instead formed with DeFi protocol participants comprising the partners, thus attracting unlimited liability under certain jurisdictions, with uncertainties on the nature of duties owed to each other as partners. In the event that a contract is established, the nature, and satisfaction of formalities of contractual formation are also jurisdiction specific.)

<sup>265</sup> *Ibid.* at 15-16 (noting the uncertainty of whether the claim is in contract, tort, negligence, conversion, breach of duty in relation to a partnership, or some allegation of fraud, or unfair trade practice).

<sup>266</sup> *Ibid.* at 17-18 (discussing how remedial uncertainties are exacerbated by the “immutable” nature of distributed ledger transactions which makes them very difficult to reverse or rectify and may require an “offsetting transaction” which imposes programming costs).

<sup>267</sup> See Clements, *Emerging Canadian*, *supra* note 61 at 53-55 (noting how enforcement challenges are exacerbated by the fact that it is unclear what regulator has jurisdiction over DeFi, and there may be international distinctions, as to what courts or legal parameters apply to an unincorporated distributed ledger blockchain system, using an automating, self-governed software protocol to execute transactions, that is accessible by users in multiple jurisdictions where the substantive claim to jurisdiction could be based on entirely different concepts including contract, tort, partnership law, joint venture law, antitrust, or blockchain specific legislation); see Gogel et al., *supra* note 39.

<sup>268</sup> *Teksavvy Solutions Inc. v. Bell Media Inc.*, 2021 FCA 100.

<sup>269</sup> Alexander Lipton and Lewis Cohen, “DeFi: A Pathway Forward,” (2021) 1 *The International Journal of Blockchain Law* 12 (The authors suggest that there are complexities, however, to be further assessed for this type of regulatory solution including how such permissioned access and eligibility is determined, how activity layers are established, and cybersecurity and privacy ensured. There are also concerns about what types of protocols these “permissioned access points” would be able to interface with, and the effect that such a regulatory solution will have on innovation given a potentially negative impact on protocol compossibility through a permissioned “user interface” system).



Decentralized autonomous organizations (DAOs) are organizations (including for-profit businesses and not-for-profit entities) that exist and function on a blockchain, without centralized control, using coded smart contracts to define and enforce governance and organizational rules.<sup>270</sup> This organizational form can give rise to many efficiencies and benefits including governance and capital transfer speed, wide stakeholder participation, increased transparency, streamlined voting proxies and delegation, and lower risk of conflicts and self-dealing.<sup>271</sup>

DAOs (as well as certain DeFi applications and protocols) integrate cryptocurrencies called “governance” or platform “native” tokens” (as described above),<sup>272</sup> that serve different contextual functions including interactions and transactions within the DAO, and voting on key operational decisions, governance matters and other functions of the DAO.<sup>273</sup> The DAO may also have an offline governance mechanism, committee, or “curator”<sup>274</sup> with delegated authority from governance token holders, which functions as an external oversight board.<sup>275</sup> The governance parameters, and the operational structure, of DAOs are highly contextual.<sup>276</sup> They often vary significantly around issues such as quorum for consensus, and the nature of rights (including economic or profit participation rights) conferred on governance token holders.<sup>277</sup>

A DAO may also resemble a collective investment scheme between its token holders.<sup>278</sup> The question of whether a governance token is also a “security” is

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<sup>270</sup> David Adlerstein, David Kirk, Sabina Beleuz Neagu, and Kevin Schwartz, “Recent Developments Highlight Fundamental Legal Considerations for DAOs,” (2022) 3 *The International Journal of Blockchain Law* 16 at 16; Andrew McAfee & Jonathan Ruane, “What a DAO Can – and – Can’t - Do” (10 May 2022), online: *Harvard Business Review*, <https://hbr.org/2022/05/what-a-dao-can-and-cant-do>.

<sup>271</sup> Aaron Wright, “The Rise of Decentralized Autonomous Organization: Opportunities and Challenges” (2021) 4:2 *Stanford Journal of Blockchain Law & Policy* 1 at 5-8.

<sup>272</sup> See *supra* Section II(b).

<sup>273</sup> Hannah Meakin, Peter McBurney, and Albert Weatherill, “Decoding DeFi Regulation: Challenges and Opportunities,” (2022) 3 *The International Journal of Blockchain Law* 19 at 19-20.

<sup>274</sup> “Report of Investigation Pursuant to Section 21(a) of the Securities Exchange Act of 1934: The DAO” (25 July 2017), online (pdf): *Securities and Exchange Commission*, <https://www.sec.gov/litigation/investreport/34-81207.pdf>.

<sup>275</sup> Meakin, McBurney, and Weatherill, *supra* note 273 at 21.

<sup>276</sup> Wright, *supra* note 271 at 5.

<sup>277</sup> See Timothy Nielsen, “Cryptocorporations: A Proposal for Legitimizing Decentralized Autonomous Organizations,” (2019) 019:5 *Utah Law Review* 1105 at 1110; Nathan Tse, “Decentralised Autonomous Organisations and the Corporate Form,” (2020) 51:2 *Victoria University Wellington Law Review* 313 at 320.

<sup>278</sup> See U.S. Securities and Exchange Commission, “SEC Issues Investigative Report Concluding DAO Tokens, a Digital Asset, Were Securities,” (17 July 2017), online: <https://www.sec.gov/news/press-release/2017-131> (the “DAO Report”).

unsettled.<sup>279</sup> Prior governance token distributions which conferred profit participation rights to US investors have been found to be securities by the SEC.<sup>280</sup> Canadian regulatory guidance on ICOs would result in a similar determination for a Canadian governance token distribution that resembled a traditional security.<sup>281</sup> Some governance tokens may, however, include unique properties uncharacteristic of a security, such as being distributed as a reward for loyalty and not in a capital raise context, or without the expectation of an appreciation in value.<sup>282</sup>

Certain governance tokens, which trade on secondary markets and decentralized exchanges, such as the LUNA token for the failed Terra network may, however, exhibit characteristics of an “investment contract” or collective investment scheme.<sup>283</sup> Governance tokens have particular risks that would inform regulatory design parameters and disclosures.<sup>284</sup> Diverse governance tokens are listed on global CTPs, and the SEC has recently launched an investigation into whether diverse tokens are in fact securities (and thereby trading without requisite regulatory compliance).<sup>285</sup> DAOs are also likely to integrate stablecoins into their operation to efficiently facilitate

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<sup>279</sup> See Kyle Bersani, “Separating Governance Tokens from Securities: How The Utility Token May Fall Short of the Investment Contract,” (2022) 43(3) *Cardozo Law Review* 1305.

<sup>280</sup> See the DAO Report, *supra* note 278.

<sup>281</sup> See CSA Staff Notice 46-307, *supra* note 15; CSA Staff Notice 46-308, *supra* note 15.

<sup>282</sup> Bersani, *supra* note 279 at 1308, 1326, 1335-1341.

<sup>283</sup> A recent class action lawsuit was filed against decentralized blockchain network *Solana* alleging that its governance token SOL was a security, see Martin Young, “Class Action lawsuit claims Solana’s SOL is an unregistered security,” (8 July 2022), online: *CoinTelegraph*, <https://cointelegraph.com/news/class-action-lawsuit-claims-solana-s-sol-is-an-unregistered-security>. There are several arguments in support of LUNA also being a security including: an early distribution to developers, founders, and early stage investors and concentration and control remaining with original players allowing for effective control of the Terra ecosystem; active efforts by LUNA developers to create secondary market liquidity; ongoing, centrally-driven, actions of the Terra Foundation, Luna Foundation Guard and influential individuals within the ecosystem, to support LUNA and UST, establish liquidity for LUNA on secondary markets, and create payment use cases for UST including ensuring stability in the Anchor protocol by topping up reserves; LUNA price moved in correlation with the general uptake of the Terra ecosystem and demand for UST and the Anchor Protocol. See Clements, Built to Fail, *supra* note 35; Muyao Shen, “How \$60 Billion in Terra Coins Went Up in Algorithmic Smoke,” (20 May 2022) online: *Bloomberg*, <https://www.bloomberg.com/graphics/2022-crypto-luna-terra-stablecoin-explainer/>.

<sup>284</sup> There are contextual nuances to governance tokens, in the event they are determined to be securities, which would inform potential disclosure regimes and regulatory frameworks. For example, holders of governance tokens would benefit from disclosures relating to risks, operational controls, governance mechanisms and associated rights (like voting or profit participation), dependencies on third parties, interconnection to related or affiliated entities or protocols. Regulatory frameworks would also need to consider liability for misrepresentations, conflicts safeguards, controls on promotion and marketing by key developers. See generally, Bersani, *supra* note 279.

<sup>285</sup> See Michelle del Castillo, “Every U.S. Crypto Exchange (And Binance) Is Being Investigated by The SEC, Says Senator Lummis Staffer,” (4 August 2022) online: *Forbes*, <https://www.forbes.com/sites/michaeldelcastillo/2022/08/04/every-us-crypto-exchange-and-binance-is-being-investigated-by-the-sec-says-senator-lummis-staffer/?sh=5196983922c2>

scaled operations and payment consideration for the goods and services offered by the DAO.<sup>286</sup>

There is uncertainty on the legal status of a DAO in Canada, but in many ways it resembles a partnership between governance token holders.<sup>287</sup> As a result, participation in DAO governance, by investing in a governance token, could give rise to potential unlimited liability as a constructive general partner, if a DAO is negligent or contributes to economic loss (for example if the DAO failed to create adequate security measures to withstand a hack).<sup>288</sup> The uncertain location of governance token holders can also complexify remedies and regulatory enforcement, and DAOs don't generally have boards of directors, so the nature and existence of fiduciary obligations is uncertain.<sup>289</sup>

A DAO may also give rise to several voting pathologies including self-interested voting,<sup>290</sup> and voter fatigue, thereby increasing the voting power of centralized (and well-funded) intermediaries like venture capital firms, given the costs of information gathering to make informed governance decisions.<sup>291</sup> Further, commercial entities that contract with DAOs risk adverse consequences in a contractual dispute, given the uncertain legal status of the DAO as an organization, or the pseudonymity of its governance token holders.<sup>292</sup> Resolving this question requires certainty on the legal status of the DAO itself, which may require provincial legislative solutions throughout Canada for clarity – such as that recently enacted in Wyoming.<sup>293</sup>

Also, several “novel issues” emerge in the context of legal disputes involving smart contracts in the operation of a DAO.<sup>294</sup> Despite its colloquial description as a “contract,” the execution of automated software code is not “law” but rather a programmed instruction to a computer.<sup>295</sup> There are many reasons why you wouldn't want auto-execution in a contractual context, especially for technical contracts in

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<sup>286</sup> “A Round Table Discussion on Stablecoins, *supra* note 38 at 9.

<sup>287</sup> See Alex Davis, “Decentralized Autonomous Organizations: A Canadian Legal Perspective,” (19 November 2020) online: *Lawyers Daily*, <https://www.thelawyersdaily.ca/articles/22506/decentralized-autonomous-organizations-a-canadian-legal-perspective>.

<sup>288</sup> Adlerstein, Kirk, Beleuz Neagu, and Schwartz, *supra* note 270 at 16.

<sup>289</sup> Wright, *supra* note 271 at 5.

<sup>290</sup> Vitalik Buterin, “Moving beyond coin voting governance” (16 August 2021), online: *Vitalik* <https://vitalik.ca/general/2021/08/16/voting3.html>.

<sup>291</sup> IOSCO Decentralized Finance Report, *supra* note 263 at 24.

<sup>292</sup> *Ibid.*

<sup>293</sup> WY Stat § 17-31 (2021), *Decentralized Autonomous Organization Supplement*.

<sup>294</sup> Andrew Hinkes, “Legal Disputes Involving DAOs Create Novel Issues for Lawyers,” (2021) 1 *The International Journal of Blockchain Law* 21.

<sup>295</sup> *Ibid.*

financial markets with sophisticated counterparties.<sup>296</sup> There is a possibility that the code will not execute as expected or might be manipulated in a way that produces an unintended result.<sup>297</sup> Yet, lawsuits in the context of DAOs are difficult to initiate given uncertain counterparties,<sup>298</sup> causes of action, pleadings, and jurisdictional forums, and remedial avenues of redress are difficult to obtain as the court cannot control the code, order it rewritten, or easily seize, redirect or otherwise custody misappropriated cryptocurrencies.<sup>299</sup>

*g. Challenges and Concerns with Cryptocurrencies in the “Metaverse”*

There is no universal definition of the metaverse, but colloquially it refers to a technology-driven integration of physical and digital experiences using augmented and virtual reality, distributed ledger technology, artificial intelligence, and cryptocurrencies.<sup>300</sup> There is no one “metaverse” but rather a potential intersection of various digitally immersive and interoperable spaces which facilitate diverse human interactions and commerce.<sup>301</sup> The metaverse conceptually allows for the creation of virtual communities, digital assets, cryptocurrencies, and interactions that both exist parallel to, and potentially even augment, our physical lives.<sup>302</sup> It is part of a broader “Web3” evolution, which is conceptually aimed at shifting control of the internet away from central parties and towards “more equitable” decentralized and democratized ownership, operating processes, and governance.<sup>303</sup>

The metaverse gives rise to many privacy, intellectual property, and data security implications and legal considerations which are beyond the scope of this cryptocurrency-focused report.<sup>304</sup> Many budding metaverse blockchain ecosystems have associated platform cryptocurrencies that perform a utility or governance function, or transfer other rights within the ecosystem of the project, which may be securities subject to existing regulatory parameters.<sup>305</sup> Others allow for the creation

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<sup>296</sup> Ryan Clements, “Evaluating the Costs and Benefits of a Smart Contract Blockchain Framework for Credit Default Swaps,” (2019) 10(2) *William & Mary Business Law Review* 369.

<sup>297</sup> See Beam, *supra* note 184.

<sup>298</sup> Hinkes, *supra* note 294 (The author notes this uncertainty includes whether the DAO can be a party of a lawsuit and what the legal status of the DAO is, as it varies in different jurisdictions, and also has not been defined in all jurisdictions.)

<sup>299</sup> *Ibid.*

<sup>300</sup> Dr. Matthias Artzt and Gary Weingarden, “Metaverse and Privacy,” (2022) 3 *The International Journal of Blockchain Law* 25 at 25.

<sup>301</sup> *Ibid.*

<sup>302</sup> Matthew Ball, “The Metaverse Will Reshape Our Lives. Let’s Make Sure It’s for the Better,” (18 July 2022) online: *Time*, <https://time.com/6197849/metaverse-future-matthew-ball/>

<sup>303</sup> Hannah Meakin, Peter McBurney, and Albert Weatherill, “Decoding DeFi Regulation: Challenges and Opportunities,” (2022) 3 *The International Journal of Blockchain Law* 19 at 19-20.

<sup>304</sup> See Artzt and Weingarden, *supra* note 300 at 25.

<sup>305</sup> See Meakin, McBurney and Weatherill, *supra* note 303 at 19-21.

and transfer of NFTs, or the fractionalization of NFTs, that represent ownership or other rights within a particular metaverse ecosystem, which may also be securities.<sup>306</sup>

*h. Non-Fungible Token Jurisdiction, Fractionalization and Marketplaces*

To date, no Canadian financial regulatory agency, including the CSA, has announced, or enacted regulatory parameters for the sale or trading of NFTs in Canada.<sup>307</sup> The NFT market is unregulated. The EU *Markets in Crypto Asset Regulation* (MiCA) carved out unique single NFTs from the applicable guidelines, while recommending AML laws for NFT trading platforms, and tasking the EU Commission with determining whether NFTs need a bespoke regulatory regime.<sup>308</sup> Building on the guidance provided by the CSA for CTPs, there are two layers of analysis for whether securities regulation applies to an NFT: first, is an NFT a security on its own; and second, does the relationship between the NFT trading platform and the user of the platform create a security or a derivative (similar to the jurisdictional hook for commodity cryptocurrencies pursuant to CSA IIROC Staff Notice 21-327.)<sup>309</sup>

The question of whether an NFT is a “security” (and thus the issuers of NFTs and the platforms that trade them subject to securities regulation) is driven by a contextual analysis that takes into consideration several factors including the intention behind its purchase, how it is held and marketed, whether marketplace intermediaries make offering, placement and timing decisions and promotional efforts, and whether there is a form of “securitization” of otherwise independently held rights to income or royalty streams relating to the underlying digital or real asset.<sup>310</sup>

NFTs may also be “fractionalized,” whereby multiple owners purchase a “slice” of an NFT, and mobilize the “financialization” of this unique crypto-asset.<sup>311</sup> There are many factors which support the notion that fractionalized NFTs are “securities” as investment contracts, or real estate investment trusts (for off-chain fractional ownership), and not intangible property as a digital collectible.<sup>312</sup> For instance, the value of fractionalized NFTs is largely determined by investment demand, platform liquidity, and the promotion of the marketplace, including strategic placement decisions on its website, or targeted social media and other marketing by the platform

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<sup>306</sup> Artzt and Weingarden, *supra* note 300 at 30.

<sup>307</sup> Clements, *Emerging Canadian*, *supra* note 61 at 41-43.

<sup>308</sup> Council of the EU, *supra* note 230.

<sup>309</sup> Clements, *Emerging Canadian*, *supra* note 61 at 41-43.

<sup>310</sup> *Ibid.* at 40-43; see Samir Patel, “If NFTs Rules The World: A New Wave of Ownership,” (2022) 2 *The International Journal of Blockchain Law* 19.

<sup>311</sup> Chiu and Allen, *supra* note 25 at 403.

<sup>312</sup> *Ibid.* at 406.

and third party promoters.<sup>313</sup> Also, by fractionalizing an NFT it allows for enhanced liquidity, opens up a wider investment pool, and eases the exchange listing process – all of which support the notion that these types of NFTs are for investment purposes and not for delivery and custody as a digital asset or collectible.<sup>314</sup> Several US state securities regulators have recently initiated enforcement proceedings against online casino developers for issuing NFTs that are securities.<sup>315</sup>

*i. Fraud and Insider Trading in the Crypto Ecosystem*

The crypto ecosystem has also given rise to a host of consumer fraud, Ponzi-style investment schemes and investor vulnerabilities. Numerous enforcement actions, and criminal indictments, have been initiated recently by the US *Securities and Exchange Commission* (SEC) and the US *Department of Justice* (DOJ) in diverse matters including the largest known NFT fraudulent scheme to date, fraudulent ICO schemes, a global Ponzi-scheme relating to the sale of unregistered crypto securities and a “purported proprietary trading bot,” and a fraudulent crypto investment fund.<sup>316</sup>

The OSC has also initiated successful enforcement actions against several non-compliant CTPs who offer services to Canadian investors without adhering to applicable Canadian registration and regulatory conditions.<sup>317</sup> A former employee of US-based *Coinbase* (the largest publicly traded CTP) was recently charged with insider trading,<sup>318</sup> and recent empirical work suggests that insider trading on *Coinbase* may be a systematic problem.<sup>319</sup> The DOJ also recently brought its first

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<sup>313</sup> *Ibid* at 406; see John Cahill, Jana S. Farmer and William H. Behr, “First DOJ NFT Insider Trading Charges Mark New Enforcement Era,” (29 June 2022) online: *Bloomberg Law*, <https://news.bloomberglaw.com/us-law-week/first-doj-nft-insider-trading-charges-marks-new-enforcement-era-16>.

<sup>314</sup> Chiu and Allen, *supra* note 25 at 403; Cahill, Farmer and Behr, *supra* note 313.

<sup>315</sup> Chris Prentice, “State securities regulators order virtual casino firm to stop selling NFTs,” (17 April 2022), online: *Reuters*, <https://www.reuters.com/technology/state-securities-regulators-order-virtual-casino-firm-stop-selling-nfts-2022-04-13/>.

<sup>316</sup> United States Department of Justice, Office of Public Affairs, “Justice Department Announces Enforcement Action Charging Six Individuals with Cryptocurrency Fraud Offenses in Cases Involving Over \$100 Million in Intended Losses,” (30 June 2022), online: <https://www.justice.gov/opa/pr/justice-department-announces-enforcement-action-charging-six-individuals-cryptocurrency-fraud>; Scott Chipolina and Stefania Palma, “SEC charges 11 in ‘massive’ crypto Ponzi scheme,” (2 August 2022), online: *Financial Times*, <https://www.ft.com/content/c011817f-7f1f-4462-95b5-d4e0fec9004>.

<sup>317</sup> Ontario Securities Commission, “OSC holds global crypto asset trading platforms accountable,” (22 June 2022), online: <https://www.osc.ca/en/news-events/news/osc-holds-global-crypto-asset-trading-platforms-accountable>.

<sup>318</sup> See Allyson Versprille, Silla Brush, Lydia Beyoud, and Greg Farrell, “Ex-Coinbase Manager Arrested in US Crypto Insider-Trading Case,” (12 July 2022), online: *Bloomberg*, <https://www.bloomberg.com/news/articles/2022-07-21/ex-coinbase-manager-arrested-in-us-crypto-insider-trading-case>.

<sup>319</sup> Féllez-Viñas, Ester and Johnson, Luke and Putnins, Talis J., “Insider Trading in Cryptocurrency Markets” (8 August 2022), online: <https://ssrn.com/abstract=4184367>; Justina Lee, “Coinbase Insider

ever indictment against an individual (Nathaniel Chastain) involved in an alleged insider-trading scheme involving NFTs on the *OpenSea* NFT marketplace,<sup>320</sup> the services of which are available to Canadian investors. The Chastain case has significant implications for uncertainties in securities regulatory jurisdiction over NFTs, and what types of NFT transactions fall within the remit of securities regulators, since the accused allegedly invested money in NFTs with a view to selling them for a profit (not for purchase merely as a digital collectible).<sup>321</sup> Even though it is a US case, it could be persuasive in Canada given the similarity in the jurisprudence for open-ended definitional sub-prongs of “security” in provincial statutes such as “investment contract.”<sup>322</sup>

*j. Intermediated Crypto Lending, Liquidity Transformation and Staking*

In May 2022, as cryptocurrency markets corrected to price in monetary policy tightening, a series of high-profile cryptocurrency projects including DeFi ecosystem and stablecoin issuer *Terra*,<sup>323</sup> Caisse de dépôt et placement du Québec funded cryptocurrency lender *Celsius*,<sup>324</sup> cryptocurrency hedge fund *Three Arrows Capital*,<sup>325</sup> and TSX-traded cryptocurrency lender *Voyager*,<sup>326</sup> all catastrophically failed,

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Trading May Be Wider Than US Case: Study,” (17 August 2022) online: *Bloomberg*, <https://www.bloomberg.com/news/articles/2022-08-17/coinbase-insider-trading-may-be-wider-than-us-case-study-says>.

<sup>320</sup> John Cahill, Jana S. Farmer and William H. Behr, “First DOJ NFT Insider Trading Charges Mark New Enforcement Era,” (29 June 2022) online: *Bloomberg Law*, <https://news.bloomberglaw.com/us-law-week/first-doj-nft-insider-trading-charges-marks-new-enforcement-era-16> (the indictment alleges that Nathaniel Chastain, who was responsible for selecting NFTs to be featured on *OpenSea*, purchased select NFTs prior to their listing, using anonymous wallets to hide his identity, and then transferred the NFTs to self-custody hot wallets that he controlled).

<sup>321</sup> *Ibid.*

<sup>322</sup> See OSA, *supra* note 57 at s.1(a)(“security”)(n); ASA, *supra*, note 62 at s.1(“security”)(ggg)(xiv); BCSA, *supra*, note 62 at s.1(1)(“security”)(l); *Pacific Coast Coin Exchange*, *supra* note 80; *In the Matter of Universal Settlements International Inc.*, *supra* note 79; *Re Shelter Corporation of Canada Ltd.*, *supra* note 79; *Pia Williamson*, *supra* note 79; *Jenson*, *supra* note 79; *R. v. Sisto Finance NV*, (1994), 17 OSCB 2467.

<sup>323</sup> Craig Lord, “Shouldn’t stablecoins be stable? What’s behind TerraUSD’s collapse,” (12 May 2022), online: *Global News*, <https://globalnews.ca/news/8830474/stablecoin-terrausd-luna-collapse-cryptocurrency-explained/>; Don Pittis, “Crypto markets tumble and investors get their fingers burned,” (13 May 2022) online: *CBC*, <https://www.cbc.ca/news/business/crpto-tumble-column-don-pittis-1.6450411>.

<sup>324</sup> Rita Trichur, “The Caisse needs to explain why it made such a risky bet on crypto lender Celsius,” (28 July 2022), online: *The Globe and Mail*, <https://www.theglobeandmail.com/business/commentary/article-caisse-depot-celsius-network-cryptocurrency/>.

<sup>325</sup> MacKenzie Sigalos, “From \$10 billion to zero: How a crypto hedge fund collapsed and dragged many investors down with it,” (11 July 2022), online: *CNBC*, <https://www.cnbc.com/2022/07/11/how-the-fall-of-three-arrows-or-3ac-dragged-down-crypto-investors.html>.

<sup>326</sup> Danny Nelson and David Z. Morris, “Behind Voyager’s Fall: Crypto Broker Acted Like a Bank, Went Bankrupt,” (13 July 2022) online: *CoinDesk*,

cascading instability throughout the crypto-ecosystem and accelerating downward selling pressure.<sup>327</sup> These failures also resulted in tremendous retail investor loss, revealing a dangerous segment of the cryptocurrency ecosystem that was operating without regulatory controls or safeguards.<sup>328</sup> As noted above,<sup>329</sup> failed DeFi project Terra and its UST stablecoin was operating without investor safeguards.<sup>330</sup> The May crash also revealed numerous large cryptocurrency “lenders” (such as Celsius) operating a form of cryptocurrency “shadow bank” - taking in retail cryptocurrency deposits and originating new cryptocurrency loans.<sup>331</sup> There are also media reports that dominant fiat-backed stablecoin issuer *Tether* has regularly engaged in unregulated fractional reserve shadow banking by lending out its collateral reserves.<sup>332</sup>

The cryptocurrency market crash of May 2022 has also revealed that, despite new technology (blockchain), cryptocurrency intermediaries like Celsius and Terra still inject conventional pathologies into the financial system, namely liquidity transformation, investor runs, leverage, interconnectedness, fire sales, contagion, evasion, rehypothecation, and spillover effects, and that financial engineering can't turn risky assets into safe assets.<sup>333</sup> Liquidity transformation (also called “maturity

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<https://www.coindesk.com/layer2/2022/07/12/behind-voyagers-fall-crypto-broker-acted-like-a-bank-went-bankrupt/>.

<sup>327</sup> Declan Harty, “Crypto’s no good, very bad week just keeps getting worse,” (12 May 2022), online: *Fortune*, <https://fortune.com/2022/05/12/crypto-slump-bitcoin-ether-terra-stablecoin/>.

<sup>328</sup> See Alexander Osipovich and Caitlin Ostroff, “TerraUSD Crash Led to Vanished Savings, Shattered Dreams,” (27 May 2022) online: *The Wall Street Journal*, <https://www.wsj.com/articles/terrausd-crash-led-to-vanished-savings-shattered-dreams-11653649201>; MacKenzie Sigalos, “Homeless, suicidal, down to last \$1,000: Celsius investors beg bankruptcy judge for help,” (2 August 2022) online: *CNBC*, <https://www.cnb.com/2022/08/02/celsius-investors-owed-4point7-billion-beg-judge-to-recover-life-savings.html>; Oliver Knight and Coindesk, “Over 2,000 Terra investor say false marketing is what caused them to lose their money,” (13 June 2022) online: *Fortune*, <https://fortune.com/2022/06/13/binance-us-over-2000-terra-investors-say-false-marketing-is-what-caused-them-to-lose-their-money/>.

<sup>329</sup> See *supra* Section II(e).

<sup>330</sup> See Clements, *Built to Fail*, *supra* note 35; Clements, *Defining The Regulatory Perimeter*, *supra* note 35.

<sup>331</sup> See Kadhim Shubber and Joshua Oliver, “Inside Celsius: how one of crypto’s biggest lenders ground to a halt,” (12 July 2022), online: *Financial Times*, <https://www.ft.com/content/4fa06516-119b-4722-946b-944e38b02f45>.

<sup>332</sup> Zeke Faux, “Crypto mystery: Where’s the US\$69B banking the stablecoin Tether,” (8 October 2021), online: *BNN Bloomberg*, <https://www.bnbloomberg.ca/crypto-mystery-where-s-the-us-69b-backing-the-stablecoin-tether-1.1663664>.

<sup>333</sup> See James Mackintosh, “The Fire Burning Beneath Crypto’s Meltdown,” (22 June 2022), online: *The Wall Street Journal*, <https://www.wsj.com/articles/the-fire-burning-beneath-cryptos-meltdown-11655884851?st=7qr363w72otlfsb>; Eliot Brown and Caitlin Ostroff, “Behind the Celsius Sales Pitch Was a Crypto Firm Built on Risk,” (30 June 2022), online: *The Wall Street Journal*, [https://www.wsj.com/articles/behind-the-celsius-sales-pitch-was-a-crypto-firm-built-on-risk-11656498142?mod=article\\_inline](https://www.wsj.com/articles/behind-the-celsius-sales-pitch-was-a-crypto-firm-built-on-risk-11656498142?mod=article_inline); Hannah Lang, Carolina Mandl and Elizabeth Howcroft, “How crypto lender Celsius stumbled on risky bank-like investments,” (15 June 2022) online: *Reuters*,



transformation”) occurs when a financial asset, like a deposit, is used to create another financial instrument (like a loan).<sup>334</sup> There is evidence of cryptocurrency liquidity transformation to date, since retail cryptocurrency deposits were taken in by Celsius and then used to generate income by lending them to DeFi protocols (like Anchor), and through the use of “staked Ether,” a cryptocurrency that financializes deposited Ether through a “derivative token.”<sup>335</sup>

The problem with liquidity transformation is that the transformed financial asset is often not as liquid as, and may deviate in value from, the initial financial asset, and this is why banks are subject to extensive regulatory controls like capital reserves, supervision, liquidity parameters, operational and governance controls, orderly resolution, and depositary insurance when they transform deposits into loans.<sup>336</sup> Without such controls, when depositors seek to redeem or withdraw their assets, an intermediary who has performed liquidity transformation could have a liquidity crisis and not be able to satisfy withdrawal demand - such was the case with Celsius.<sup>337</sup> Also, through liquidity transformation, Celsius interfaced retail cryptocurrency deposits into Terra’s unregulated and highly risky DeFi *Anchor* protocol,<sup>338</sup> which had no regulatory controls.<sup>339</sup> Celsius also used an intermediated governance token (CEL) to entice retail participation,<sup>340</sup> and there are reports that its services were widely available to Canadian residents.<sup>341</sup>

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<https://www.reuters.com/business/finance/how-crypto-lender-celsius-stumbled-risky-bank-like-investments-2022-06-15/>.

<sup>334</sup> Bill Nelson, “Liquidity Transformation Always Finds The Path of Least Regulation,” (23 September 2021), online: *Bank Policy Institute*, <https://bpi.com/liquidity-transformation-always-finds-that-path-of-least-regulation/>.

<sup>335</sup> Nansen Research, “On-Chain Forensics: Demystifying stETH’s ‘De-peg,’” (29 June 2022), online: <https://www.nansen.ai/research/on-chain-forensics-demystifying-steth-depeg>.

<sup>336</sup> Nelson, *supra* note 334.

<sup>337</sup> Gene Grant, “The Celsius meltdown is an old-fashioned bank run – except there’s no bank,” (14 June 2022), online: *Fortune*, <https://fortune.com/2022/06/14/celsius-meltdown-bank-run-crypto-crash-regulation-finance-gene-grant/>.

<sup>338</sup> Oliver Knight, “How Crypto Lender Overheated,” (16 June 2022), online: *CoinDesk*, <https://www.coindesk.com/business/2022/06/16/how-crypto-lender-celsius-overheated/>; MacKenzie Sigalos, “From \$25 billion to \$267 million: How a major crypto lender collapsed and dragged many investors down with it,” (July 18, 2022), online: *CNBC*, [https://www.cNBC.com/2022/07/17/how-the-fall-of-celsius-dragged-down-crypto-investors.html?\\_source=sharebar|twitter&par=sharebar](https://www.cNBC.com/2022/07/17/how-the-fall-of-celsius-dragged-down-crypto-investors.html?_source=sharebar|twitter&par=sharebar).

<sup>339</sup> See Clements, *Built to Fail*, *supra* note 35.

<sup>340</sup> See Kadhim Shubber and Joshua Oliver, “Inside Celsius: One of crypto’s biggest lenders having a ‘Lehman Brothers moment,’” (July 13, 2022), online: *Financial Post*, <https://financialpost.com/fp-finance/cryptocurrency/inside-celsius-one-of-cryptos-biggest-lenders-having-a-lehman-brothers-moment>.

<sup>341</sup> See Brigitte Noel and Jeff Yates, “Caisse de dépôt and the Crypto Casino,” (26 May 2022), online: *Radio Canada*, <https://ici.radio-canada.ca/recit-numerique/4095/caisse-depot-cryptomonnaie-celsius-quebec>.

Crypto intermediaries serve as a gateway for retail investors to access the highly risky world of DeFi returns, but evidence from the May 2022 crash suggests that many investors don't understand the risks, and believed their deposits were otherwise safe and analogous to bank deposits based on how intermediaries marketed their services.<sup>342</sup> Joint CSA-IIROC Staff Notice 21-329 does not provide guidelines on intermediated DeFi services such as crypto-staking, cryptocurrency deposits, liquidity transformation, DeFi yield farming, or crypto-lending,<sup>343</sup> which services are widely provided by international CTPs.<sup>344</sup> Intermediated DeFi and lending services may create new securities or derivatives, as an “evidence of indebtedness” based security or “investment contract,” and they may also resemble a conventional deposit.<sup>345</sup> In staking, a cryptocurrency is “staked” for a reward to facilitate a consensus mechanism on a proof-of-stake (PoS) blockchain network and to help the network maintain stable operations.<sup>346</sup> Given a lack of regulatory parameters for these services, there are no safeguards, internal controls, or standardized disclosures for investor protection.<sup>347</sup>

*k. Influencers, Promotion, Advice and Other Investor Protection Concerns*

There are many emerging investor and consumer protection challenges in cryptocurrencies. Developers lack the necessary incentives to provide full

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<sup>342</sup> See Osipovich and Ostroff, *supra* note 328; Allyson Versprille, “FDIC Probing How Bankrupt Crypto Broker Voyager Marketed Itself,” (7 July 2022), online: *Bloomberg*, <https://www.bloomberg.com/news/articles/2022-07-07/fdic-probing-how-bankrupt-crypto-broker-voyager-marketed-itself?sref=pHjsxMFh#xi4y7vzkg>.

<sup>343</sup> Clements, Emerging Canadian, *supra* note 61 at 36-40 (“In both yield farming and staking, an individual's crypto assets are used to support other crypto asset ecosystems in a way that generates a return for the user (often called a “reward” coming in the form of a new crypto asset). In staking, an investor's crypto assets are used to validate transactions in a PoS blockchain network. By “locking in” their crypto the user is helping maintain the stable operations of the PoS system and achieve consensus on transaction validations (similar to crypto-mining in a proof of work system, but more energy efficiently and without high computational costs). In return, the user who “stakes” their crypto receives a reward. Yield farming is distinct and has been described as the “rocket fuel of DeFi.” Here, a user's cryptocurrency is lent in a variety of ways to smart contracts on other Dapps, such as lending protocols and stablecoins, which earn the investor more cryptocurrency on the cryptocurrency they lend.”)

<sup>344</sup> See Binance Earn, “Stop Investment Solution,” online: <https://www.binance.com/en/earn#flex-item> (last accessed 2 September 2022); Kraken, “Earn Rewards by Staking Coins and Fiat,” online: <https://www.kraken.com/features/staking-coins> (last accessed 2 September 2022); Gemini, “Gemini to Support Ethereum 2.0 Trading and Staking” (17 December 2020), <https://www.gemini.com/blog/gemini-to-support-ethereum-2-0-trading-and-staking> (last accessed 2 September 2022); Coinbase, “Earn staking rewards on Coinbase,” <https://www.coinbase.com/staking> (last accessed 2 September 2022).

<sup>345</sup> Clements, Emerging Canadian, *supra* note 61 at 36-40.

<sup>346</sup> See Binance Academy, “What is Staking?” (10 April 2021), <https://academy.binance.com/en/articles/what-is-staking>; see Werner Vermaak, “Crypto Staking Guide 2021,” (19 January 2021) online: *CoinMarketCap*, <https://coinmarketcap.com/alexandria/article/crypto-staking-guide-2021>.

<sup>347</sup> Clements, Emerging Canadian, *supra* note 61 at 36-40.

disclosures, or create internal controls, and this justifies the imposition of mandatory disclosure and business registration obligations for DeFi lending protocols and algorithmic stablecoins.<sup>348</sup> The crypto-ecosystem at large (and particularly DeFi) creates many asymmetries, and an unfair playing field, for building accessible and inclusive financial architectures, since only a small number of individuals have the ability to assess code, and not everyone will have the resources to engage technical experts to assess vulnerabilities such as flawed code.<sup>349</sup>

Unified parameters around cryptocurrency and DeFi promotion, celebrity-led endorsements, and social media influencers have not been clearly established across Canada,<sup>350</sup> although there are emerging US and international regulatory parameters, enforcement, and class action lawsuit activity in this area.<sup>351</sup> There is also uncertainty on what happens to custodied cryptocurrencies when an intermediary goes insolvent (currently a matter of contention in the *Celsius* bankruptcy proceedings<sup>352</sup>), or whether stablecoin holders have claims as unsecured creditors against an issuer's reserve holdings which help maintain a peg.<sup>353</sup> Other investor vulnerabilities include a lack of technology standards for self-custody wallets, and no safeguards for investment advice relating to non-security cryptocurrencies.<sup>354</sup> Further, there are currently no clear regulatory standards for determining, with precision, whether a particular cryptocurrency or DeFi application is "decentralized."<sup>355</sup> Simply describing

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<sup>348</sup> Crenshaw, *supra* note 3.

<sup>349</sup> *Ibid.*

<sup>350</sup> Clements, Emerging Canadian, *supra* note 61 at 47-48.

<sup>351</sup> See David Yaffe-Bellany, "How influencers Hype Crypto, Without Disclosing Their Financial Ties," (27 May 2022), online: *The New York Times*, <https://www.nytimes.com/2022/05/27/technology/crypto-influencers.html>; Eamon Javers, Paige Tortorelli, and Scott Zamost, "Some social media influencers are being paid thousands to endorse cryptocurrency projects," (11 August 2022), online: *CNBC*, <https://www.cnbc.com/2022/08/11/some-influencers-paid-thousands-to-endorse-cryptocurrency-projects.html>; Matt Binder, "Inside the shady world of influencers promoting cryptocurrency," (25 June 2021), online: *Mashable*, <https://mashable.com/article/influencers-altcoin-scams>; Robert Burnson, "Coinbase Customers Sue Over Stablecoin That's 'Anything But'" (12 May 2022), online: *Bloomberg*, <https://www.bloomberg.com/news/articles/2022-05-13/coinbase-customers-sue-over-stablecoin-that-was-anything-but>; Adi Robertson, "Spain will regulate influencers promoting cryptocurrency," (17 January 2022), online: *The Verge*, <https://www.theverge.com/2022/1/17/22887752/spain-cnmv-crypto-asset-advertising-influencer-rules>.

<sup>352</sup> See MacKenzie Sigalos, "Homeless, suicidal, down to last \$1000: Celsius investors beg bankruptcy judge for help," (3 August 2022), online: *CNBC*, <https://www.cnbc.com/2022/08/02/celsius-investors-owed-4point7-billion-beg-judge-to-recover-life-savings.html>.

<sup>353</sup> See Nizan Geslevich Packin, "Bankruptcy and Crypto," (15 July 2022), online: *Forbes*, <https://www.forbes.com/sites/nizangpackin/2022/07/15/bankruptcy-and-crypto/?sh=52cc670a7df5>.

<sup>354</sup> Clements, Emerging Canadian, *supra* note 61 at Sections III(ii), III(iii) & IV(i).

<sup>355</sup> Silicon Valley mega-investor Andreessen Horowitz, one of the earliest participants in the VC funding ecosystem for DeFi development, recently called on the U.S. Senate Banking committee to develop regulated standards for "decentralized" applications and organizations (DAOs) including a standardized definition for "decentralized" and legal entity status for DAOs, see A16Z, "Our Proposals

a cryptocurrency as “decentralized” in a white paper does not negate centralized influence, or other “economic realities” that may suggest control of a cryptocurrency by programmers and early-stage investors.<sup>356</sup> So-called “governance” tokens are routinely offered in tranche offerings to the public that resemble conventional securities capital raises,<sup>357</sup> with subsequent secondary market trading,<sup>358</sup> and may in fact be an act of regulatory arbitrage around securities rules.

### *I. Blockchain Fragmentation Vulnerabilities*

One of the challenges to date in the mass adoption of blockchain technology is that it has shown difficulties scaling and achieving network effects.<sup>359</sup> As recently noted by researchers at the BIS, decentralized blockchain networks operate by using rewards to incentivize validators.<sup>360</sup> Yet, as a particular blockchain network becomes more popular, validation fees increase, and the network becomes more congested, leading to slower validation times.<sup>361</sup> This inability to scale, lack of network effects, higher and more volatile fees for performing network validations (called “gas” fees), and congestion when a network becomes more popular, explains in part why blockchain technology has not widely displaced legacy infrastructure for payments or securities trading, and why there is significant “fragmentation” and competition, across the cryptocurrency landscape, for newer or “alternative” blockchains.<sup>362</sup>

Blockchain fragmentation is evident when one scans the crypto ecosystem to see numerous “Ethereum killers” (like *Cardano*, *Polkadot*, *Tezos*, *Solana*, *Avalanche*, and others) that purport to improve scalability while lowering transaction fees.<sup>363</sup> Newer “alternative” chains to Ethereum come at the cost of reduced security, decentralization, interoperability and an increase in governance and safety risks.<sup>364</sup>

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to the Senate Banking Committee,” online: <https://a16z.com/2021/10/05/our-proposals-to-the-senate-banking-committee/> (last accessed 16 August 2022).

<sup>356</sup> See Chair Gary Gensler, “Prepared Remarks at the Securities Enforcement Forum” (4 November 2021), online: <https://www.sec.gov/news/speech/gensler-securities-enforcement-forum-20211104>.

<sup>357</sup> See Andrey Shevchenko, “DeFi Governance Tokens Tread Carefully as the SECs Invisible Hand Looms,” (30 June 2020), online: *CoinTelegraph*, <https://cointelegraph.com/news/defi-governance-tokens-tread-carefully-as-the-secs-invisible-hand-looms>; Ethan L. Silver and William Brannan, “Could Compound’s Governance Token COMP Be Deemed a Security?” (21 July 2020), online: *Lowenstein Sandler* <https://www.lowenstein.com/news-insights/publications/articles/could-compound-s-governance-token-comp-be-deemed-a-security-silver-brannan>.

<sup>358</sup> See CryptoRank, “Governance Token Watchlist,” <https://cryptorank.io/tag/governance> (last accessed 15 August 2022).

<sup>359</sup> Boissay, Cornelli, Doerr and Frost, *supra* note 12.

<sup>360</sup> *Ibid.* at 1.

<sup>361</sup> *Ibid.* at 3-5

<sup>362</sup> *Ibid.*

<sup>363</sup> See Megan DeMatteo, “The Top ‘Ethereum Killers’ Compared,” (10 February 2022) online: *CoinDesk*, <https://www.coindesk.com/tech/2022/02/10/the-top-ethereum-killers-compared/>

<sup>364</sup> Frederic Boissay, Giulio Cornelli, Sebastian Doerr and Jon Frost, *supra* note 12 at 1.

Technology developments including “bridges,” “cross-chains,” and “layer 2 solutions” have emerged as antidotes to the fragmented blockchain ecosystem,<sup>365</sup> increasing interoperability, but at the expense of cybersecurity, as these bridges have shown significant vulnerability to hacks.<sup>366</sup>

*m. Settlement, Concentration, Interconnection and Systemic Risk*

As noted above on cryptocurrency shadow banking and unregulated lending,<sup>367</sup> cryptocurrency markets have the potential to transmit risk and volatility in a contagion selloff that affects broad market participants. The extent of systemic risk from cryptocurrency is driven by similar factors to those in traditional finance, namely leverage, duration and liquidity mismatch, opacity, and interconnection.<sup>368</sup> The level of systemic risk is also contingent on the interconnectedness between the cryptocurrency market and the larger financial system, including the amount of leverage in the financial system, and the resilience of the system during market corrections and when leverage positions are unwound.<sup>369</sup> Further, systemic risks from cryptocurrency-originated leverage and volatility are dependent on whether volatility and contagion pressures are contained within the crypto-ecosystem, or extend out to the traditional financial system, and the latter becomes more likely if cryptocurrencies are widely held, or used for payments, collateralized lending, and deposits.<sup>370</sup>

To date, it appears that crypto-systemic risk has been contained to the cryptocurrency ecosystem, as bank exposures have been limited.<sup>371</sup> Canadian prudential banking regulator, the *Office of the Superintendent of Financial Institutions* (OSFI), also recently established limitations on bank exposures to cryptocurrencies (building on a prior consultation<sup>372</sup>) identifying regulatory capital and liquidity

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<sup>365</sup> *Ibid.* at 5 (Describing how “Layer 2 solutions” record transactions in bulk “off chain” and then report back to an underlying “Layer 1,” such as Ethereum, Solana or Avalanche, in “bundles.” Layer 2 solutions remedy high transaction fees on Layer 1 validations, but at the cost of adding in an element of centralization).

<sup>366</sup> Jennifer Korn, “Another crypto bridge attack: Nomad loses \$190 million in ‘chaotic’ hack,” (3 2022), online: *CNN*, <https://www.cnn.com/2022/08/03/tech/crypto-bridge-hack-nomad/index.html>.

<sup>367</sup> See *supra* Section IV(j).

<sup>368</sup> *Ibid.*

<sup>369</sup> See Jon Cunliffe, “Is ‘crypto’ a financial stability risk?” – speech by Jon Cunliffe, Bank of England (13 October 2022), <https://www.bankofengland.co.uk/speech/2021/october/jon-cunliffe-swifts-sibos-2021>.

<sup>370</sup> See International Monetary Fund, *The Crypto Ecosystem and Financial Stability Challenges*, (October 2021), pp.44-45, online: <https://www.imf.org/-/media/Files/Publications/GFSR/2021/October/English/ch2.ashx>.

<sup>371</sup> *Financial Times*, “Can crypto contagion infect mainstream finance?” (30 June 2022), online: <https://www.ft.com/content/03bb9296-b645-4311-abb2-14bc3ab66443>.

<sup>372</sup> See Office of the Superintendent of Financial Institutions, “Prudential treatment of crypto asset exposures,” (5 July 2021), online: <https://www.osfi-bsif.gc.ca/Eng/fi-if/in-ai/Pages/prucypt.aspx>.

treatment standards.<sup>373</sup> Cryptocurrencies may have novel systemic dynamics that transcend the “transactional aspects of finance,” given their near infinite ability to “synthesize” financial interests (and allowing for an unlimited supply of new cryptocurrencies that can be used as collateral to borrow against, thereby increasing leverage and interconnectedness) and “scale up” trading speed and volume.<sup>374</sup> The increase of leverage in the financial system adds to its fragility, leading to pro-cyclical pressures during crises and accelerating volatility.<sup>375</sup> The infinite copycat potential in open-source blockchain code, which can allow for continued synthesis of cryptocurrencies has been described as “wrapping complexity,” which can accelerate volatility in a crisis as cascading tokens are sold.<sup>376</sup>

Cryptocurrency markets may also give rise to payment settlement risks in the event that cryptocurrencies or stablecoins are used as dominant consumer payment mechanisms, or if DeFi expands to widespread consumer financial transactions, as the settlement layer for DeFi transaction clearing on public blockchains could become a form of systemically important financial market infrastructure.<sup>377</sup> Further, a dominant stablecoin issuer who experienced network effects, and acquired significant off-chain collateral reserves may also become a globally systemically important financial institution.<sup>378</sup> In the future, the BoC may look to designate a programmable blockchain (like Ethereum) or a widely held stablecoin issuer, as a “clearing and settlement system” that creates either “systemic risk” or “payments systemic risk,” and then becomes subject to extensive regulation under the *Payments Clearing and Settlement Act* (“PCSA”) and related regulations.<sup>379</sup>

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<sup>373</sup> See Office of the Superintendent of Financial Institutions, “Interim arrangements for the regulatory capital and liquidity treatment of crypto asset exposures,” (18 August 2022), online: <https://www.osfi-bsif.gc.ca/Eng/fi-if/rg-ro/gdn-ort/adv-prv/Pages/crypto22.aspx>.

<sup>374</sup> Saule T. Omarova, “New Tech v. New Deal: Fintech As A Systemic Phenomenon,” (2019) 36(2) *Yale Journal on Regulation* 36.

<sup>375</sup> See HILARY J. ALLEN, *DRIVERLESS FINANCE: FINTECH’S IMPACT ON FINANCIAL STABILITY*, (Oxford University Press 1st eds., 2022).

<sup>376</sup> Matthias Nadler & Fabian Schär, “Decentralized Finance, Centralized Ownership? An Iterative Mapping Process to Measure Protocol Token Distribution” (2020), online: <https://doi.org/10.48550/arXiv.2012.09306>.

<sup>377</sup> See Fabian Schär, “Decentralized Finance: On Blockchain- and Smart Contract-Based Financial Markets,” (15 April 2021), 103(2) *Review Second Quarter Economic Research, Federal Reserve Bank of St. Louis*, online: <https://research.stlouisfed.org/publications/review/2021/02/05/decentralized-finance-on-blockchain-and-smart-contract-based-financial-markets>

<sup>378</sup> See Timothy G. Massad, “Facebook’s Libra 2.0: Why you might like it even if we can’t trust Facebook,” (June 2020), online (pdf): *Economic Studies at Brookings*, <https://www.brookings.edu/wp-content/uploads/2020/06/ES-6.22.20-Massad-1.pdf>.

<sup>379</sup> *Payment Clearing and Settlement Act*, SC 1996, c 6, Sch, s.4(1) (“PCSA”) (This would impose a variety of regulatory measures such as enhanced supervision, governance, custody, business, risk management and liquidity safeguards, and collateral eligibility requirements (in the case of stablecoins)).

It is also possible that the Minister of Finance could designate a stablecoin issuer subject to the *Canadian Payments Act* (“CPA”) as a “payment system” that, “(a) is national or substantially national in its scope; or (b) plays a major role in supporting transactions in Canadian financial markets or the Canadian economy.”<sup>380</sup> Under such a designation, the Minister of Finance could impose significant restrictions on the stablecoin issuer as a “payment system.”<sup>381</sup> Widely used, global stablecoins, could require a “supervisory college” approach, similar to how global systemically important financial institutions are supervised.<sup>382</sup> Although any consideration of systemic risk determination requires a point in time assessment of the level of systemic risk having regard to scale, capitalization, interconnectedness, and the existence of network effects.<sup>383</sup> Notably, MiCA in the EU contemplates transaction limits (200 million Euros in transactions per day) to avoid certain stablecoins becoming a dominant payment mechanism that demonetizes the Euro.<sup>384</sup>

Also, there are novel systemic risks in cryptocurrencies and DeFi given the possibility that the automated self-execution of financial instruments using smart contracts, and the indelible record created by the blockchain which is difficult to reverse, turns out to be a technological bug, and not a positive feature.<sup>385</sup> Intermediaries are also needed to resolve unanticipated disputes.<sup>386</sup> In the context of a financial crisis, smart contracts may accelerate instability because there are no mitigating opportunities for margin calls to prevent asset fire sales that can generate contagion pressures.<sup>387</sup> Fire sale and contagion risks are particularly acute in cryptocurrency since the crypto-ecosystem exhibits strong price co-movements, and also largely shares the same investor base.<sup>388</sup>

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<sup>380</sup> *Canadian Payments Act*, RSC 1985, c C-21, at s.37(1).

<sup>381</sup> Alex Vronces, “Is Canada ready for a stablecoin invasion?” (15 November 2021), online: *Medium of Exchange*, <https://themox.substack.com/p/is-canada-ready-for-a-stablecoin-invasion>.

<sup>382</sup> Douglas Arner, Raphael Auer & Jon Frost, “Stablecoin: risks, potential and regulation,” (November 2020), *BIS Working Papers No 905, Bank for International Settlements*, at 15-16 (This could require a “cooperative design approach” like that used for SWIFT or Euroclear, and also may require regulation as a financial market utility.)

<sup>383</sup> *Ibid.*

<sup>384</sup> Ryan Browne, “EU Agrees on landmark regulation to clean up crypto ‘Wild West’” (1 July 2022) online: CNBC, <https://www.cnbc.com/2022/06/30/eu-agrees-to-deal-on-landmark-mica-cryptocurrency-regulation.html>.

<sup>385</sup> See Kelvin F.K. Low and Eliza Mik, “Pause the Blockchain Legal Revolution,” (2020) 69(1) *International & Comparative Law Quarterly* 135; Edmund Schuster, “Cloud Crypto Land,” 84(5) *The Modern Law Review* 974.

<sup>386</sup> Aramonte, Huang and Schimpf, *supra* note 18; Schuster, *supra* note 385.

<sup>387</sup> Allen, *supra* note 375.

<sup>388</sup> Boissay, Cornelli, Doerr and Frost at, *supra* note 12 at 5-6.

Additionally, the cryptocurrency market ecosystem has significant concentration risk. Vast Bitcoin holdings are controlled by miners, early adopters, and exchanges,<sup>389</sup> and 95 percent of the outstanding Bitcoins are linked to 2 percent of wallets.<sup>390</sup> The BIS has recently noted that cryptocurrency miners are able to “extract value” and manipulate transactions in cryptocurrency and DeFi markets.<sup>391</sup> Recent reports note that on the Aave DeFi lending protocol, 18 percent of deposits emanated from a single user, and when this user made a large platform withdrawal, borrowing rates spiked.<sup>392</sup> Many early stage investors, programmers, developers and venture capital firms control vast proportions of governance tokens on DeFi applications and DAOs, which undermines assertions of a “decentralized” financial system.<sup>393</sup> Voting rights on governance tokens can also be delegated, while retaining other economic rights associated with the token.<sup>394</sup> Further, according to a 2021 IMF report, exchange platform *Binance* handles over half of global cryptocurrency trading volumes, and *Tether* controls half the supply of stablecoins.<sup>395</sup>

Related to concentration risk, there are significant interdependencies in the cryptocurrency and DeFi ecosystem, such as reliance on price oracles which can be exploited or malfunction, and copied into the code of new blockchains.<sup>396</sup> The presence of concentration, collusion, exploitation and malfunction risk, and

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<sup>389</sup> See Billy Bambrough, New Research Reveals ‘Systemic Risk’ To Bitcoin As Its Price Crashes Under \$60,000, (27 October 2021), online: *Forbes*, <https://www.forbes.com/sites/billybambrough/2021/10/27/new-research-reveals-systemic-risk-to-bitcoin-as-its-price-crashes-under-60000/?sh=51530373e066>.

<sup>390</sup> See Olga Kharif, “Bitcoin Whales’ Ownership Concentration is Rising During Rally,” (18 November 2020), online: *BNN Bloomberg*, <https://www.bnnbloomberg.ca/bitcoin-whales-ownership-concentration-is-rising-during-rally-1.1524504>.

<sup>391</sup> Raphael Auer, Jon Frost and Jose María Vidal Pastor, “Miners as intermediaries: extractable value and market manipulation in crypto and DeFi,” (16 June 2022), online: *BIS Bulletin No 58*, <https://www.bis.org/publ/bisbull58.htm>.

<sup>392</sup> See Alexis Goldstein, “18% of Aave’s Crypto Deposits Were Likely From A Single User, Markets Weekly” (5 November 2021), online: *Markets Weekly*, <https://marketsweekly.ghost.io/one-quarter-of-aaves-total-deposits-were-a-single-user/>; Macauley Peterson, “\$4.2 Billion Withdrawn from AAVE’s Money Market Protocol,” (29 October 2021), online: *Blockworks*, <https://blockworks.co/4-2-billion-withdrawn-from-aaves-money-market-protocol/>.

<sup>393</sup> See “Are Blockchains Decentralized? Unintended Centralities in Distributed Ledgers” (June 2022), online (pdf): *Trail of Bits* [https://assets-global.website-files.com/5fd11235b3950c2c1a3b6df4/62af6c641a672b3329b9a480\\_Unintended\\_Centralities\\_in\\_Distributed\\_Ledgers.pdf](https://assets-global.website-files.com/5fd11235b3950c2c1a3b6df4/62af6c641a672b3329b9a480_Unintended_Centralities_in_Distributed_Ledgers.pdf); James Angel & Ryosuke Ushida, “Regulatory Considerations on Centralized Aspects of DeFi Managed by DAOs” in FC 2021 International Workshops, in Matthew Bernhard et al, eds, *Financial Cryptography and Data Security FC 2021 International Workshops* (Berlin: Springer 2021) 21 at 33; Andrey Shevechenko. “Report: governance remains highly centralized in many DeFi projects” (30 October 2020) online: *Coin Telegraph* <https://cointelegraph.com/news/report-governance-remains-highly-centralized-on-many-DeFi-projects>; Chainalysis Team “Dissecting the DAO: Web3 Ownership is Surprisingly Concentrated” (27 June 2022), online (blog: Chainalysis <https://blog.chainalysis.com/reports/web3-daos-2022/>).

<sup>394</sup> Angel and Ushida, *ibid*.

<sup>395</sup> See International Monetary Fund, *supra* note 370.

<sup>396</sup> Caldarelli and Ellul, *supra* note 178.



interdependencies poses an ongoing threat for retail investors of cybersecurity risk, exploitation, market manipulation, persistent volatility, impaired liquidity, and large price swings from the actions of a small number of actors.<sup>397</sup>

### V. Conclusion

As this report has highlighted, there is currently a robust and wide-ranging regulatory governance framework in place for cryptocurrency in Canada.<sup>398</sup> The governance of cryptocurrencies, and the intermediaries and trading platforms that interface with retail investors, is aided by the application of conventional financial market regulatory principles, including consumer and investor safeguards to protect against information and power asymmetries and undisclosed conflicts, rules against exploitation, market manipulation and fraud, micro-prudential controls for the stability of key institutions, and market integrity and financial stability (macroprudential) safeguards to protect against systemic risk and ensure efficient risk and capital allocation.

Yet there are still many lingering concerns, challenges, uncertainties and regulatory gaps in cryptocurrency governance in Canada.<sup>399</sup> There are also hurdles to widespread DeFi consumer adoption which would be aided by regulatory clarity.<sup>400</sup> The previous section has provided numerous recommendations for particular governance concerns within the cryptocurrency and DeFi ecosystem.<sup>401</sup> Given the challenges of regulating programmable, globally distributed, decentralized blockchain networks, regulatory experimentation and new regulatory tools may need to be tested in constrained environments like regulatory sandboxes, which may also look to integrate “crypto native tools,” to help “modernize” disclosure systems and means of delivery and make them more accessible and effective for cryptocurrency investors and users in Canada.<sup>402</sup>

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<sup>397</sup> See Ray Fernandez, “Pentagon finds concerning vulnerabilities on blockchain,” (28 June 2022), online: *TechRepublic*, <https://www.techrepublic.com/article/pentagon-finds-concerning-vulnerabilities-on-blockchain/>.

<sup>398</sup> See *supra* Section III.

<sup>399</sup> See *supra* Section IV.

<sup>400</sup> Clements, *Emerging Canadian*, *supra* note 61 at 53 (“DeFi applications and interfaces can be complex and difficult to use with limited fiat on-ramps, and many applications lacking strong governance mechanisms.”)

<sup>401</sup> See *supra* Section IV.

<sup>402</sup> Professor Chris Brummer has recently outlined several mechanisms for how “crypto-native tools,” including “Disclosure NFTs”, and “Disclosure DAOs,” could be integrated with disclosure frameworks based on consumer protection laws to provide more “functionality” and “security” in the cryptocurrency ecosystem than traditional disclosure tools conventionally used in securities regulation. See Christopher J., Brummer, “Disclosure, Dapps and DeFi” (24 March 2022). *forthcoming*, *Stanford Journal of Blockchain Law and Policy*, online: <https://ssrn.com/abstract=4065143>.