NOTES

LIECHTENSTEIN'S BLOCKCHAIN ACT AND THE IMPLEMENTATION OF THE PHYSICAL VALIDATOR

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INTRODUCTION

This Note examines Liechtenstein's Token and Trusted Technology ("TT") Service Providers Act ("Blockchain Act") and delves into some of the key issues surrounding the "physical validator," a newly recognized actor within the blockchain system that is tasked with the role of ensuring the contractual enforcement of represented rights to tokenized physical assets.[1] The Blockchain Act came into effect in the Principality of Liechtenstein on January 1, 2020, and is one of the first examples of imposing liability on actors within the blockchain system.[2] Its purpose is to regulate civil law issues concerning investor and asset protection, as well as to put forth a neutral and all-encompassing framework integrating various aspects of

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[1] Gesetz vom 3. Oktober 2019 über Token und VT-Dienstleister (Token- und VT-Dienstleister-Gesetz; TVTG) (Liech.), *translated in* LIECH. LEGAL GAZETTE 950.6, art. 2 § 1(p) (2019), https://www.lcx.com/wp-content/uploads/2020_Liechtenstein_Blockcchain_Laws_Translation_English.pdf [https://perma.cc/Y6P4-Z45A] [hereinafter TVTG].

[2] Teck Ming Tan, *Key Views on 172 Pages Liechtenstein Blockchain Act: Token and Trustworthy Technology Service Providers Act (TVTG)*, MEDIUM (Oct. 11, 2019), https://teckming-tan.medium.com/key-views-on-172-pages-liechtenstein-blockchain-act-token-and-trustworthy-technology-service-18f8e86c4817 [https://perma.cc/69GY-ERWC]; *Liechtenstein's Parliament Approves Blockchain Act Unanimously*, EMBASSY OF THE PRINCIPALITY OF LIECH. IN D.C., http://www.liechtensteinusa.org/article/liechtensteins-parliament-approves-blockchain-act-unanimously [https://perma.cc/D6RZ-HQFB].

tokenization.[3] Specifically, it lays the legal foundation for the rights of ownership, possession, and disposition of tokenized analog assets.[4] Moreover, the Blockchain Act devises a classification system for existing digital assets, including Bitcoin, by defining them as tokens and establishing a framework that presides over token-based transactions and services.[5]

There is little doubt that blockchain technologies in the United States are here to stay. The burgeoning blockchain ecosystem is filled with various actors who interact with each other on a variety of decentralized systems.[6] With an increasing number of business applications utilizing blockchains, the rise of cryptocurrencies, and a rising interest in the tokenization of hard assets and commodities, this legal grey area has presented a number of legal challenges in the United States.[7] These challenges have both limited corporate interest in the space, as well as discouraged financial technology companies from operating domestically.[8] Part of the problem is that transactions on a blockchain often take place between pseudonymous parties, and because the transaction occurs on a decentralized network, free from intermediaries who might be able to identify the parties.[9] One of the key issues the physical validator seeks to remedy arises when these pseudonymous parties are dealing with tokenized physical assets.[10] Handling physical assets on the blockchain calls for a need to maintain a legal link between the physical and digital worlds.

The Blockchain Act recognizes that different stages in the lifecycle of a token have brought forth different actors. These actors include token generators, issuers, and depositaries, as well as exchange service providers, price service providers, identity service providers,

[3] Elisabeth M.S. Frommelt, *Liability Challenges in the Blockchain Ecosystem*, 21 U.C. DAVIS BUS. L.J. 165, 203–04 (2021).

[4] Tan, *supra* note 2.

[5] *See* TVTG, *supra* note 1, art. 2, § 1(c) (noting that tokens can represent various rights, including property rights, and can be assigned to identifiers within a trusted technology system).

[6] *See* Frommelt, *supra* note 3, at 207.

[7] *See* Frommelt, *supra* note 3, at 202–03 (noting the presence of various liability gaps in the decentralized token system).

[8] *See* Kevin Werbach, *Trust, but Verify: Why the Blockchain Needs the Law*, 33 BERKELEY TECH. L.J. 487, 531 (2018) ("One difference between the regulatory debates in the dot-com and distributed ledger eras is that the United States is no longer the dominant source of activity.").

[9] *See* Frommelt, *supra* note 3, at 202–03 (noting it is inherently difficult to attribute liability to parties in a transaction when those parties are pseudonymous).

[10] *See id.* at 211.

and physical validators.[11] The Act also recognizes the need for registering these different service providers and establishing various requirements for doing so.[12] An application of the legal framework surrounding the physical validator in the United States could potentially facilitate institutional and private entry into the space, while safeguarding consumer interests.

I. LIECHTENSTEIN'S POSITION IN THE DIGITAL ECONOMY

Liechtenstein's former Minister of Economic Affairs and current Prime Minister, Daniel Risch, stated in an interview prior to the enactment of the Blockchain Act that "[d]igitalization is not something you either participate in or you don't. . . . For us, digitalization is a driver of innovation, which is key for our economy, education, and administration and we are making a consistent effort to be a leading player."[13] Liechtenstein's approach and simplified regulatory structure toward digital assets have garnered significant international attention in recent years.[14] Part of the reason for Liechtenstein's success is due to its small population and exceptionally high GDP per capita.[15] In 2020, Liechtenstein had a GDP per capita of $157,755, one of the highest in the world.[16] Furthermore, Liechtenstein is also one of the global leaders in internet usage based on percentage of population, with nearly 100% of its population using the internet.[17] In following the principle that

[11] TVTG, *supra* note 1, art. 2; *see also* Thomas Nägele, *Liechtensteins Token and TT Service Providers Law*, MEDIUM (July 15, 2020), https://drtoken.medium.com/liechtensteins-tokens-and-tt-service-providers-law-b23574d595f9 [https://perma.cc/X6S4-68H4].

[12] *See* Nägele, *supra* note 11.

[13] Lukas Hofer, *Liechtenstein's Digital Agenda: The Minister of the Economy Explains*, ICO (Jan. 14, 2020), https://ico.li/liechtensteins-digital-agenda/ [https://perma.cc/MF5X-GXRJ]; *see also New Government Sworn In*, EMBASSY OF THE PRINCIPALITY OF LIECH. IN D.C., https://www.liechtensteinusa.org/article/new-government-sworn-in [https://perma.cc/23B6-6BGJ].

[14] *See* Hofer, *supra* note 13.

[15] *See GDP per capita*, THE WORLD BANK, https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?loca+tions=LI&locations=LI&most_recent _value_des+c=true&most_recent_value_desc=true [https://perma.cc/2HJ6-8EU4]; *Liechtenstein at a Glance*, EMBASSY OF THE PRINCIPALITY OF LIECH. IN D.C., https://www.liechtensteinusa.org/page/liechtenstein-at-a-glance [https://perma.cc/K6HJ-3XY9].

[16] *GDP per capita, supra* note 15. However, it should be noted that GDP per capita statistics can often be artificially inflated for tax havens based on corporate accounting entries. *See generally* James R. Hines, *Do Tax Havens Flourish?*, *in* 19 TAX POLICY & THE ECONOMY 65 (James M. Poterba ed., 2005).

[17] *Individuals Using the Internet*, THE WORLD BANK, https://data.worldbank.org/indicator/IT.NET.USER.ZS?contextual=max&end=2020&locations=LI&most_recent_value_des+c=true&most_recent_value_desc=true&start=1960&view=chart [https://perma.cc/BS3M-87BG].

infrastructure drives innovation, Liechtenstein is positioning itself to be a leader in the development of its fiber-optic network. In 2020, the active usage of fiber-optic connections in Liechtenstein increased from 23% to 58.7%, with regulators intending to "provide fiber-optic connectivity to the entire country by 2023" as part of a €48.3 million network expansion plan.[18]

This high-performance network combined with a strong cellular network is considered the foundation for Liechtenstein's digital economy.[19] Furthermore, Liechtenstein has ample access to a well-educated and technologically adept workforce, as well as a central geographic location nestled between Austria and Switzerland.[20] "With a very small home market, the business models of Liechtenstein financial service providers have a very strong cross-border orientation."[21] Businesses within Liechtenstein benefit from direct market access to many countries in the European Union and European Economic Area.[22] It is no coincidence that there are roughly 4,700 active companies registered within its borders, a statistic that becomes even more impressive when you consider that is approximately one active company for every eight people in Liechtenstein.[23]

These are important facts to recognize as we consider the transferability of Liechtenstein's Blockchain Act to larger economies, like the United States. Liechtenstein is particularly well-suited for providing TT provider services, as it is a jurisdiction where "[a]pproximately 90 percent of [its] financial services business is provided to nonresidents," many of whom are attracted "by the

[18] *LKW defies the pandemic*, LIECH. (Mar. 26, 2021), https://www.liechtenstein.li/en/liechtenstein_news/ liechtensteinische-kraftwerke-trotzen-der-pandemie [https://perma.cc/4SVR-888D]; *5G Country Profile: Principality of Liechtenstein*, ITU OFF. FOR EUR. (Oct. 2020), https://www.itu.int/en/ITU-D/Regional-Presence/Europe/Documents/Events/2020/5G_EUR_CIS/5G_Liechtenstein-final.pdf [https://perma.cc/VPG7-VMGU].

[19] *A Principality on the Move: Liechtenstein Goes Digital,* MAJOREL (Feb. 6, 2018), https://www.majorel.com/future-customer/expert-view/a-principality-on-the-move-liechtenstein-goes-digital/ [https://perma.cc/6EJM-NRTZ].

[20] *See* LIECH. MKTG, PRINCIPALITY OF LIECHTENSTEIN: SIMPLY SUCCESSFUL 2, 8, https://www.liechtenstein-business.li/application/files/3316/2142/1337/Liechtenstein_business_magazine_simply_successful_EN.pdf [https://perma.cc/XG2F-H8S3].

[21] *Regulation*, LIECH. BANKERS ASSOC., https://www.bankenverband.li/en/topics/regulation [https://perma.cc/3KPV-4NMB].

[22] *Id.*

[23] *See* LIECH. MKTG, *supra* note 20, at 2 (calculated based on Liechtenstein's 2021 population of 39,039 people, along with 4,700 active companies). For Liechtenstein's 2021 population, see also THE WORLD BANK, https://data.worldbank.org/country/liechtenstein?view=chart [https://perma.cc/CA69-X7LQ].

availability of discrete and flexible legal structures, strict bank secrecy, and favorable tax arrangements, within a stable and well-regulated environment."[24] Financial services providers that are already serving similar functions in the traditional banking system could be well-equipped to register as physical validators. Thus, if aspects of the Blockchain Act were to be implemented in the United States, it might be advisable to do so at the state level, as opposed to implementing a one-size-fits-all approach at the federal level. State-level legislation allows for a more tailored and flexible approach to regulating technology. It also allows for the experimentation of new and varying use cases, and for the effectiveness of new regulations to be properly evaluated. Additionally, issues involving recording real property and commercial transactions are often enforced at the state level, so having state-level legislation could potentially mitigate any unforeseen externalities.[25]

II. TRUSTED TECHNOLOGY (TT) SERVICE PROVIDERS ACT

It is first important to recognize some of the basic catalysts fueling the growth of decentralized token systems. First, "it allows a relatively easy means for cross-border peer-to-peer transfers."[26] Second, parties do not need to know, nor even trust one another in order to conduct a transaction.[27] Third, decentralized blockchain systems are run by participants on a peer-to-peer network, thus greatly reducing the need for any third-party intermediaries.[28] This lack of intermediaries "results in a lowering of transaction costs and a lessening of insolvency risks."[29]

The objective of Liechtenstein's Blockchain Act is to "ensure trust in digital legal communication, in particular in the financial and economic sector and the protection of users of TT [s]ystems" and to "create excellent, innovation-friendly, and technology-neutral

[24] IMF LEGAL DEP'T, DETAILED ASSESSMENT REPORT ON ANTI-MONEY LAUNDERING AND COMBATING THE FINANCING OF TERRORISM 7 (Sept. 11, 2007), https://www.imf.org/external/pubs/ft/scr/2008/cr0887.pdf [https://perma.cc/K33L-GS5J].

[25] *See* Thomas J. Bourguignon, *Real Property Recording Systems and E-Recording in the Age of Covid-19*, 35 PROB. & PROP. 28, 29 (May/June 2021); 3 TRANSNATIONAL BUSINESS TRANSACTIONS § 24.5 (Ved P. Nanda ed.), Westlaw (databased updated November 2020) ("[T]he UCC must be adopted by state legislation, which has been done in every US state and the District of Columbia.").

[26] Matthias Lehmann, *National Blockchain Laws as a Threat to Capital Markets Integration*, 26 UNIF. L. REV. 148, 173 (2021).

[27] *Id.*

[28] *Id.*

[29] *Id.*; *see also* Vinjay Gupta, *A Brief History of Blockchain*, HARV. BUS. REV. (Feb. 28, 2017), https://hbr.org/2017/02/a-brief-history-of-blockchain [https://perma.cc/QQ9W-FZQV].

framework conditions for rendering services concerning TT Systems."[30] The Blockchain Act does this by regulating the supervision rights and obligations of TT service providers.[31] In other words, the Blockchain Act clarifies the application of pre-existing laws to provide legal certainty within decentralized markets.[32]

> [T]he approach of the regulation is twofold. On one hand, the [Blockchain] [A]ct clarifies pre-existing law – providing a civil law basis for ensuring that the underlying right represented by the token is effectively transferred from party A to party B. On the other hand, the [Blockchain] [A]ct provides regulatory and supervisory rules regarding those interacting with TT Systems – including consumers, TT service providers, and intermediaries.[33]

The Blockchain Act applies to all TT service providers that generate or issue tokens in Liechtenstein.[34] These "[l]egal entities with a registered office and natural persons with residence in Liechtenstein performing a TT Service, are subject to registration under Art[icle] 12 para[graph] 1 TVTG."[35] Companies and entities that are not subject to the Article 12 provisions are not required to register as TT service providers and may still be permitted to operate in Liechtenstein.[36] Likewise, the Blockchain Act's provisions on supervision, registration, and rights and obligations of TT service providers apply only to those providers that are headquartered or currently reside within Liechtenstein's borders.[37] While some entities headquartered in Liechtenstein are required to register as service providers, individual parties to a token transaction must explicitly provide for the use of these service providers.[38] However, parties that neglect to use registered service providers will be unable to seek any sort of legal remedy should an aspect of their transaction

[30] TVTG, *supra* note 1, art. 1, § 2.
[31] *See* Frommelt, *supra* note 3, at 188–89.
[32] *See* NÄGELE ATT'YS AT L. LLC, EXECUTIVE SUMMARY OF THE "TOKENS AND TT SERVICE PROVIDERS LAW" AKA THE "LIECHTENSTEIN BLOCKCHAIN ACT" 7, https://www.naegele.law/downloads/TTTL_Summary.pdf [https://perma.cc/3DEZ-B4YG].
[33] *Id.* at 2.
[34] TVTG, *supra* note 1, art. 3, § 2(a); *see also id.* art. 11, § 2 (providing for the exemption of public entities acting in their official capacity).
[35] Thomas Nägele, *Registration Requirements According to the TVTG (aka the Token Act/Blockchain Act)*, 26 TR. & TRS. 564, 565 (2020).
[36] *See* TVTG, *supra* note 1, art. 11–12.
[37] *Id.* art. 11.
[38] *Id.* art. 3, § 2(b).

fail in some respect.[39] These flexible registration requirements were implemented because the "regulation of the actors within the system does not equate to a regulation of the underlying system as a whole. Regulating the entire system proves to be difficult to enforce."[40] The implementation of these regulations serves to mitigate the possibility of imposing undue burdens upon nascent entities, whilst simultaneously preserving the autonomy of individual investors in terms of how they interact with service providers.

III. AN INTRODUCTION TO TOKENIZATION AND THE TOKEN CONTAINER MODEL

To understand where the physical validator sits within this new legal framework, it is first important to understand the process of tokenization and its function in the token economy. The phrase *token economy* is used to refer to a digital economy in which blockchain technology, or the token, is used in the transfer of rights and assets between individuals.[41] All forms of assets, including both tangible and intangible property, can be digitized and represented by a token on a blockchain network.[42] Tokenization describes the digitization of these assets onto the blockchain.[43] Of course, one cannot digitize a car, but one could digitize a legal right related to the car, such as ownership or a security interest. Under the Blockchain Act, a token is defined as "a piece of information on a TT System which: (1) can represent claims or rights of memberships against a person, rights to property or other absolute or relative rights; and (2) is assigned to one or more TT Identifiers."[44] The role of the physical validator is to provide legal security in the synchronization of these physical objects with the digital world.[45] Under the Token Container Model, a token is viewed as a container, which has the "ability to hold rights of all kinds, whether that be the right to something represented—

[39] *See id.* art. 3, § 2(b) ("[The Act] applies if . . . [p]arties declare its provisions to expressly apply in a legal transaction over Tokens.").

[40] *See* Frommelt, *supra* note 3, at 220 (noting that it may be easier for states to regulate newly created actors, rather than attempt to regulate an entire decentralized system).

[41] Ryan Sheets & Mary Lacity, *The Token Economy and the Future of Individual Empowerment*, UNIV. OF ARK.: WALTON INSIGHTS (Sept. 27, 2022), https://walton.uark.edu/insights/posts/the-token-economy-and-the-future-of-individual-empowerment.php [https://perma.cc/5KBJ-PYQV].

[42] *See* Diego Geroni, *Everything You Need to Know About Tokenization*, 101 BLOCKCHAINS (Aug. 16, 2021), https://101blockchains.com/tokenization-blockchain/ [https://perma.cc/377L-UNQH].

[43] *Id.*

[44] TVTG, *supra* note 1, art. 2, § 1(c).

[45] *Id.* art. 1, § 1(p).

examples including real estate, stocks, bonds, and gold; or nothing—encompassing digital code, the most notable example being Bitcoin."[46]

The Token Container Model serves as the central doctrine of the Blockchain Act. In contrast to the United States, where distinct classifications of tokens—such as virtual currencies, stablecoins, and security tokens—are subject to disparate regulatory regimes,[47] Liechtenstein has adopted a distinct methodology through the implementation of the Blockchain Act. Within Liechtenstein's framework, when a token is considered merely as a "container," its legal classification is not determined by the type of container itself, but rather by the right or asset represented within the container.[48] Therefore, if a financial instrument of some kind were represented in a token, the corresponding laws typically governing that financial instrument would apply. Likewise, if an intellectual property right were represented in a token, the applicable intellectual property laws would apply.

As stated above, the Blockchain Act establishes the existence of new actors under the umbrella term *TT Service Providers*.[49] These new actors include: (1) TT key depositaries, (2) TT token depositaries, and (3) physical validators.[50] The Blockchain Act defines a TT key depositary as "a person who safeguards TT Keys for clients," while TT token depositories are people "who safeguard[] Token[s] in the name and on account of others."[51] These two important actors are responsible for the storing and holding of tokens or keys for and on behalf of third parties.[52] Furthermore, in addition to meeting all the registration requirements set forth in the Act, they are "also subject to the Due Diligence Act and must adhere to all the applicable know-

[46] NÄGELE ATT'YS AT L. LLC, *supra* note 32, at 2.

[47] *See Investor Bulletin: Initial Coin Offerings*, SEC (July 25, 2017), https://www.sec.gov/oiea/investor-alerts-and-bulletins/ib_coinofferings [https://perma.cc/GRM5-8VPQ] (**"**Depending on the facts and circumstances of each individual ICO, the virtual coins or tokens that are offered or sold may be securities. If they are securities, the offer and sale of these virtual coins or tokens in an ICO are subject to the federal securities laws."); CFTC v. McDonnell, 287 F. Supp. 3d 213, 228 (E.D.N.Y. 2018) ("The jurisdictional authority of CFTC to regulate virtual currencies as commodities does not preclude other agencies from exercising their regulatory power when virtual currencies function differently than derivative commodities.").

[48] *See* Frommelt, *supra* note 3, at 209.

[49] TVTG, *supra* note 1, art. 2, § 1(i)–(p).

[50] *Id.* art. 2, § 1(m)–(p).

[51] *Id.* art. 2, § 1(m)–(n).

[52] *See id.*

your-customer (KYC) and anti-money laundering (AML) requirements under these rules."[53]

IV. THE PHYSICAL VALIDATOR

The "physical validator" is a newly recognized actor within the token economy that is tasked with the role of "ensur[ing] the contractual enforcement of represented rights to property in tokens."[54] Article 2 of the Blockchain Act defines the physical validator as "a person who ensures the enforcement of rights in accordance with the agreement, in terms of property law, represented in Tokens on TT systems."[55]

Prior to the enactment of the Blockchain Act, a token holder purporting to possess rights of ownership over a tangible property would likely consider the following questions: Is the token's issuer in fact the proprietor of the underlying asset? Does the physical asset actually exist? Is this token capable of being transferred? Is the token an accurate representation of my ownership rights? Is the token's protocol secure and free from defects?

Essentially, the physical validator is responsible for knowing the identity of token holders and ensuring the contractual enforcement of the rights being transferred within the token.[56] The validator may also physically possess the asset that is being transferred within the token, similar to a third party in escrow:

> While pre-existing law provides a legal basis for what constitutes an effective transfer of property, there is a need for clarity surrounding what constitutes effective transfer of a tokenized property . . . . Therefore, the TVTG provides that transfer of a token on a TT system constitutes a binding transfer of the underlying right, whether that be a right to a physical object or a digital asset.[57]

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[53] Matthias Niedermüller & Selma Talic, *First-Step Analysis: Cryptoasset Trading in Liechtenstein*, LEXOLOGY (Dec. 13, 2021), https://www.lexology.com/library/detail.aspx?g=d5323518-2030-4802-924a-5125a0d74a3c [https://perma.cc/JG2U-HTGC]; *see also* Gesetz vom 11. Dezember 2008 über berufliche Sorgfaltspflichten zur Bekämpfung von Geldwäscherei, organisierter Kriminalität und Terrorismusfinanzierung (Sorgfaltspflichtgesetz; SPG) [Due Diligence Act], *translated in* LIECH. L. GAZETTE 952.1, art. 3 § 1(h) (2009), https://www.fma-li.li/files/fma/due-diligence-act.pdf [https://perma.cc/Q79X-YTXF].

[54] Nägele, *supra* note 35, at 566.

[55] TVTG, *supra* note 1, art. 2, § 1(p).

[56] *See id.* art. 2, § 1(p); art. 33, § 1(f).

[57] NÄGELE ATT'YS AT L. LLC, *supra* note 32, at 2.

As an illustration of the role of physical validators, let us consider a hypothetical scenario in which a token representing legal ownership over a gold brick is recorded on a blockchain. The Blockchain Act acknowledges that the token serves as an indicator of the ownership rights over a tangible asset, even if that asset is not in the physical possession of the token holder. This is achieved through the presence of a physical validator, who maintains custody of the asset—in this case, the gold brick—ensuring that it never leaves their vault. The physical validator simply exists to further ensure the gold brick's safety, authenticity, and value.[58] This might not be practical for the typical retail investor; however, institutional investors, who employ quantitative and algorithmic methods to manage risk in their portfolios, may have the capacity to make numerous fractional investments into gold over a brief period.[59] One can assume that institutions are more likely to use a legally compliant and government-recognized service provider, as opposed to an anonymous party, for such purchases. If an error occurs (e.g., failed performance, breach, error in code, stolen/damaged assets) it is the physical validator's responsibility to remedy the situation.[60] If the physical validator does not, it risks the loss of its license as a service provider, and the right to operate within Liechtenstein.[61]

Article 13 of the Blockchain Act lays out the registration requirements of the physical validator. One of these requirements is that the physical validator must maintain the necessary minimum capital and must "have a suitable organisational structure with defined areas of responsibility and a procedure to deal with conflicts of interest."[62] A person or entity seeking to be registered as a physical validator must have at least "125,000 Francs if the value of the property [subject to their oversight] . . . does not exceed 10 million Francs."[63] If, however, the contractual obligations they oversee exceed 10 million Francs, then the minimum capital increases to

[58] *See id.*

[59] *See* Charles R. Korsmo, *High-Frequency Trading: A Regulatory Strategy*, 48 U. RICH. L. REV. 523, 539–40 (2014) ("[High-Frequency Trades] attempt to profit from small, even transient, price moves compounded over huge numbers of trades, rather than seeking to profit from long-term price moves driven by fundamentals, like more traditional investors.").

[60] *See* Frommelt, *supra* note 3, at 212–13.

[61] *See* TVTG, *supra* note 1, art. 21.

[62] TVTG, *supra* note 1, art. 13, § 1(e)–(f).

[63] *Id.* art. 16, § 1(e)(1).

250,000 Francs, or approximately $265,000 U.S. dollars.[64] Liechtenstein's government "is certain that these higher requirements are important for legal certainty when detailing with TT service providers, protecting customers, effectively combating money laundering and financing terrorism, complying with the law on the enforcement of international sanctions, [International Sanctions Act], and the reputation of the country."[65] With respect to these minimum capital requirements and the supervisory structure it has in place to monitor its financial institutions, Liechtenstein, like Switzerland, implements the "dual supervision model."[66] On one hand, qualified and independent auditors supervise the fulfillment of legal duties by financial service providers.[67] On the other hand, frequent internal audits are mandated by the Liechtenstein Financial Market Authority.[68] "Adequate bank capital protects depositors (or the deposit insurer) from losses,"[69] which also holds true for service providers under the Blockchain Act.

Once a physical validator, either a person or an entity, is registered and has received the proper operating license from the Liechtenstein Financial Market Authority, they serve two main functions. First, the physical validator must ensure that the asset or underlying right actually exists.[70] Second, the physical validator is tasked with the duty of identifying the holders of the tokens and legally enforcing the represented rights or contractual obligations of the token.[71] That is, the physical validator has the obligation, under the risk of losing its operating license and being exposed to potential legal liability, to ensure the coordination between the blockchain and the physical world. According to the government of Liechtenstein, the TVTG exists because the "token economy requires trust":

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[64] *Id.* art. 16, § 1(e)(2); *see 250 Thousand CHF to USD—Swiss Francs to US Dollars*, CURRENCYRATE https://chf.currencyrate.today/convert/amount-250000-to-usd.html [https://perma.cc/TK66-82HS].

[65] GOV'T OF THE PRINCIPALITY OF LIECH., UNOFFICIAL TRANSLATION OF THE REPORT AND APPLICATION OF THE GOVERNMENT TO THE PARLIAMENT OF THE PRINCIPALITY OF LIECHTENSTEIN CONCERNING THE CREATION OF A LAW ON TOKENS AND TT SERVICE PROVIDERS (TOKENS AND TT SERVICE PROVIDER ACT) (BLOCKCHAIN ACT) 85 (2019), https://impuls-liechtenstein.li/wp-content/uploads/2021/02/Report-and-Application-TVTG-extract.pdf [https://perma.cc/6YTJ-UA7Y].

[66] Mario Frick & Christine Reiff-Näscher, *The Banking Regulation Review: Liechtenstein*, THE L. REVS. (May 4, 2021), https://thelawreviews.co.uk/title/the-banking-regulation-review/liechtenstein [https://perma.cc/MT4V-HEMF].

[67] *Id.*

[68] *See id.*

[69] Julie A. Hill, *Bank Capital Regulation by Enforcement: An Empirical Study*, 87 IND. L.J. 644, 647 (2012).

[70] *See* TVTG, *supra* note 1, art. 33, § 1(f)(1).

[71] *See id.* art. 2, § 1(p); art. 33, § 1(f)(2).

> A buyer needs to have confidence that he/she will effectively exercise the digitalised rights to a product or an asset and that he/she will be able to enforce his/her rights, where necessary with the aid of the rule of law. He/she also needs to have confidence in the companies and individuals who provide services on TT systems.[72]

As the physical validator is responsible for confirming the existence and security of an asset represented by a token, it must also ensure the "duties of the warehouse are contractually regulated."[73] In other words, it must ensure that access to the asset is granted only to those with a legitimate token.[74] The physical validator is required to have knowledge of any authorized token holder who seeks to remove the asset from the warehouse and dispose of the token, "provided that all associated tokens over the asset have first been cleared" and validated.[75] This safeguards the rights of other token holders who have also acquired rights to the valued asset in the validator's warehouse.[76] "The associated storage agreement between the physical validator and the warehouse must also stipulate that no further rights to the object may be established without the agreement of the physical validator."[77] Without the physical validator, there is no mechanism to guarantee that multiple tokens to the same asset do not exist. This provision also helps prevent the creation of any additional liens on the asset without the physical validator's knowledge, ensuring the legitimacy of the rights over such assets.

In addition to protecting assets and verifying the identity of parties to a token transaction, the physical validator also influences liens that individuals hold over tangible assets. When a good is produced, such as a bicycle, the bicycle manufacturer can choose to collaborate with a registered service provider to create tokens holding legal rights to title, usage, and warranties on the bicycle.[78] One of the physical validator's roles is to ensure "the serial number and original certificates are correctly recorded and match" the newly manufactured bicycles.[79] When the bicycles are eventually sold to

[72] GOV'T OF THE PRINCIPALITY OF LIECH., *supra* note 65, at 44.
[73] *Id.* at 68.
[74] *Id.*
[75] *Id.*
[76] *Id.*
[77] *Id.*
[78] *Id.*; *see also* TVTG, supra note 1, art. 17 § 1(b).
[79] *Id.* at 68–69.

consumers, the purchaser acquires the bicycle and receives the tokens with all the rights that the manufacturer initially arranged for, which could vary depending on the type of good.[80] This would likely be in the form of private keys on a printed or electronic receipt. "This allows [the purchaser] to prove at any time that [they are] the rightful owner of [the] original [bicycle]."[81] However, demonstrating that a purchaser is indeed the original purchaser is not always an important concern, particularly if the asset is one that can be easily duplicated. The current and contentious non-fungible token ("NFT") craze serves as a salient example of this, as it illustrates how the possession of digital code alone can gain significant market share in the digital economy, despite the absence of any physical asset.[82]

Where the physical validator finds a use, however, lies in the ability of the purchaser to pass on the tokens they received when they purchased the bicycle to individuals of their choosing.[83] One reason why a purchaser might do this is to obtain liquidity. In this case, the bicycle owner may assign a lien token to a liquidity provider, stipulating that the provider has the right to use the bicycle in the event of default. Introducing digital tokens into these everyday transactions adds a new dimension to the formation of liens, potentially simplifying the process and increasing transparency through the use of a public ledger. Moreover, this approach could facilitate quicker enforcement of liens, thereby increasing market efficiency. However, this also raises a new concern, namely, whether the bicycle will be available for the liquidity provider in the event of default. After all, the bicycle could have been stolen or lost, or possibly sold by the purchaser without informing the liquidity provider. In such situations, the physical validator would first conclude the contract with the original owner of the bicycle and determine whether they have any applicable insurance to cover the missing item.[84] If not, and the bicycle remains unidentifiable when the liquidity provider seeks payment, the physical validator is

[80] *See id.* at 69.
[81] *Id.*
[82] *See* Trinity Montoya, *Nonfungible Tokens Could Change the Way We Own Things*, COINTELEGRAPH (June 28, 2020), https://cointelegraph.com/news/nonfungible-tokens-could-change-the-way-we-own-things [https://perma.cc/T72D-A2P9]; *see also* Hannah Murphy & Joshua Oliver, *How NFTs Became a $40bn Market in 2021*, FIN. TIMES (Dec. 31, 2021), https://www.ft.com/content/e95f5ac2-0476-41f4-abd4-8a99faa7737d [https://perma.cc/6L3Z-C6SL] ("[B]y the end of [2021] nearly $41bn had been spent on NFTs, . . . making the market for digital artwork and collectibles almost as valuable as the global art market.").
[83] GOV'T OF THE PRINCIPALITY OF LIECH., *supra* note 65, at 68.
[84] *See id.* at 69.

responsible for ensuring the claims of the liquidity provider are remedied within a reasonable timeframe.[85]

This is one of the key responsibilities of the physical validator, and it is one that is new to Liechtenstein and the blockchain ecosystem on a sovereign scale. Contractual partners in equitable interest agreements may not know each other directly, and thus, can "only draw [on] the full benefits of the token economy if the purchaser can be sufficiently confident as to its workings" and the identity of the other parties involved in the transaction.[86] When agreements break down because of theft, fraud, or even an unintentional coding error, the physical validator can provide the identity of the purchaser to the liquidity provider, and the liquidity provider is permitted to seek any available and applicable remedy under Liechtenstein's civil law.[87]

It is important to reiterate that individuals and corporations are not required to transfer tokens using registered service providers.[88] That is, there is no mandate that requires individual consumers to use registered TT service providers. Instead, consumers may elect to forego the legal and procedural protection afforded by the use of registered service providers.[89]

From a practical standpoint, it is easy to recognize the physical validator's role in identifying and confirming the existence of tokenized physical assets and distributing liability to those in breach of agreements involving those assets. Yet, the language of the Blockchain Act is relatively vague when it comes to the specific roles each of these newly recognized actors will fill.[90] This was a conscious decision made by the government of Liechtenstein.[91] While the rules surrounding TT key depositories and TT token depositories have had over a decade to work out the normal regulatory kinks experienced by the proliferation of multinational cryptocurrency exchanges, trading platforms, and private security firms that hold users' private keys, the full breadth of blockchain applications that will utilize the physical validator has yet to be determined.

The tokenization of rights over physical items is extremely varied and complex, and there is relatively little use in preemptively tightening regulations on something that has yet to fully come into existence. Thus, "Liechtenstein's Blockchain Act is formulated

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[85] *Id.*; *see also* TVTG, *supra* note 1, art. 17, § 1(e).
[86] GOV'T OF THE PRINCIPALITY OF LIECH., *supra* note 65, at 69.
[87] *See id.*
[88] *See* TVTG, *supra* note 1, art. 3, § 2(b).
[89] *See* TVTG, *supra* note 1, art. 3, § 2(b).
[90] *See* TVTG, *supra* note 1, art. 2, § 1(i)–(t).
[91] *Liechtenstein's Parliament Approves Blockchain Act Unanimously*, *supra* note 2.

abstractly enough to ensure that it remains applicable for subsequent technology generations. That is why the law uses the term 'transaction systems based on [TT systems].'"[92] With that said, one can speculate that the role of physical validators will be particularly sought after for high-value assets. Investors might be drawn to the idea of holding a readily transferable interest in property, which can represent either complete or partial ownership of the property. This is because it is still unclear what the exact cost of incorporating physical validators in tokenized agreements will be. But if the value of the physical asset is substantial enough, in theory, the cost of using TT service providers may be outweighed by the potential loss that could result from a party defaulting on their contractual obligations, making it a worthwhile investment even as a form of hedging.

In the United States, the efforts of a few states to implement strict and overly comprehensive regulations, such as New York's "BitLicense" legislation, have been met with a quick and predictable outflow of blockchain and digital asset businesses from their jurisdictions.[93] One of the reasons for this is that many of these regulations attempt to treat virtual currency service providers as identical to their traditional fiat system counterparts.[94] However, while traditional banks are well-equipped to comply with heavy-handed regulations, digital asset entrepreneurs have found it more profitable to simply relocate.[95] "The inadequacies of BitLicense call into question whether this rule adequately regulates the industry to ward off illicit activity, or if the rule merely hinders the expansion of the technology, preventing growth in U.S. financial markets."[96] While financial regulators carry with them a responsibility to regulate new financial products in order to help protect consumer interests, they must also remain wary of their own inflexibilities to ensure that they do not preemptively sabotage promising young technologies from prospering within their borders.

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[92] *Id.*

[93] Samantha J. Syska, Note, E*ight-Years-Young: How the New York BitLicense Stifles Bitcoin Innovation and Expansion with Its Premature Attempt to Regulate the Virtual Currency Industry*, 17 J. HIGH TECH. L. 313, 338 (2017); Kevin Helms, *Strict Regulations Drive Shapeshift and Keepkey out of Washington State*, BITCOIN.COM (Aug. 31, 2017), https://news.bitcoin.com/regulations-shapeshift-keepkey-washington-state/ [https://perma.cc/ZX7Y-QPAU].

[94] *See id.* at 336.

[95] *Cf. id.* at 338.

[96] *Id.* at 315.

V. THE "REGULATORY SANDBOX"

In July 2018, the U.S. Treasury Department released its fourth report pursuant to Executive Order 13,772, entitled, "A Financial System That Creates Economic Opportunities: Nonbank Financials, Fintech, and Innovation."[97] "The report is an enthusiastic endorsement of regulatory sandboxes as a method for reducing barriers to entry for 'fintech' innovation . . . ."[98] The term *fintech* "covers digital innovations and technology-enabled business model innovations in the financial sector."[99] In essence, a "regulatory sandbox[]" provides "an environment in which fintech entrepreneurs can conduct limited tests of their innovations," while simultaneously providing "fewer regulatory constraints, real consumers, less risk of enforcement action, and ongoing guidance from regulators."[100] The regulatory sandbox serves two general functions: (1) it lowers barriers of entry to allow innovative fintech firms to compete against large financial institutions in burgeoning markets; and (2) it serves as a venue for educating lawmakers on new technologies prior to the enactment of stricter statutes.[101]

In the United States, the regulation of financial services is complex and "fragmented across multiple federal financial authorities and various state regulators."[102] So, while federal law pre-empts various state regulations, agencies like the Securities and Exchange Commission, Commodity Futures Trading Commission, and the Office of the Comptroller of the Currency possess exclusive jurisdiction over various aspects of the financial sector.[103] This results in emerging fintech companies often being subject to overlapping jurisdictions with multiple regulatory regimes.[104] Of course, it is also important to recognize that no single U.S. agency

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[97] U.S. DEP'T OF TREASURY, A FINANCIAL SYSTEM THAT CREATES ECONOMIC OPPORTUNITIES: NONBANK FINANCIALS, FINTECH, AND INNOVATION (2018), https://home.treasury.gov/sites/default/files/2018-07/A-Financial-System-that-Creates-Economic-Opportunities---Nonbank-Financi....pdf [https://perma.cc/9GK3-U66A]; Hilary J. Allen, *Regulatory Sandboxes*, 87 GEO. WASH. L. REV. 579, 584 (2019).

[98] Allen, *supra* note 97.

[99] Thomas Philippon, *The FinTech Opportunity* 2 (Nat'l Bureau of Econ. Rsch., Working Paper No. 22476, 2016).

[100] Allen, *supra* note 97, at 580.

[101] *Id.* at 581.

[102] Wendy Cohen, Allison C. Yacker, Henry Bregstein, Daniel J. Davis & Phillip Koh, *Fintech 2022*, MONDAQ, https://www.mondaq.com/unitedstates/fin-tech/1178102/fintech-2022 [https://perma.cc/62QT-UR9H].

[103] *Id.*

[104] *Id.*

can, on its own, create an industry-wide regulatory sandbox.[105] Nevertheless, with North Carolina enacting regulatory sandbox legislation on October 15, 2021, it now joins nine other states that have already crafted similar policies as a way of temporarily relieving businesses of some of the costs associated with bringing new services and products to market.[106]

Despite the advantages and disadvantages of regulatory sandboxes, Liechtenstein has found success by drafting the Blockchain Act with purposeful ambiguity, and by providing an incubator for service providers to continue developing their digital innovations without the weight of excessive regulatory burdens. "The Ministry of Presidential and Finance has created innovation clubs, enabling companies to contribute ideas for improving the framework of conditions in an unbureaucratic manner."[107] Liechtenstein's government believes that this gives service providers, and other private entities seeking to enter Liechtenstein's token economy, the "ability to engage in a transparent process for implementing ideas to improve the conditions of the local framework."[108] Ultimately, the ideas that will eventually be written into Liechtenstein's Civil Code will be those that are tested through trial and error, and formed through information-sharing procedures between service providers, consumers, and the Liechtenstein Financial Market Authority.[109]

It is not unreasonable to speculate that a state's regulatory sandbox would provide the best support for these new financial actors in the United States. A state could potentially tailor the regulations to fit its preexisting financial infrastructure and would be able to monitor these new actors on a manageable scale.

VI. POTENTIAL HINDRANCES TO THE BLOCKCHAIN ACT

Despite the Blockchain Act's relative success and the newfound corporate attention Liechtenstein has received since its enactment, there are those who remain staunchly convinced that inserting

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[105] Allen, *supra* note 97, at 621.

[106] N.C. GEN. STAT. §§ 169-1–169-12 (2023); Patrick Gleason, *Regulatory Sandboxes Give States an Edge in Attracting Innovation and Investment*, FORBES (Dec. 31, 2021), https://www.forbes.com/sites/patrickgleason/2021/12/31/regulatory-sandboxes-give-states-an-edge-attracting-innovation-and-investment/?sh=3150d6837003 [https://perma.cc/RV42-3X54] ("In addition to Arizona and North Carolina, regulatory sandboxes have also been created in Florida, Hawaii, Kentucky, Nevada, Utah, Vermont, West Virginia, and Wyoming.").

[107] THOMAS NÄGELE, THOMAS FELDKIRCHER & MONIKA HAMMERMÜLLER, 1 FINTECH 2022, GETTING THE DEAL THROUGH: FINTECH LIECHTENSTEIN, LexisNexis.

[108] *Id.*

[109] *See id.*

government-approved intermediaries into the token economy is not only unnecessary, but also incompatible with the intended purpose and principles of virtual currencies.[110] The argument put forth by those in support of completely decentralized digital asset markets is that decentralized blockchains were specifically created with the intention of removing intermediaries from economic systems.[111] And while this may be true, Liechtenstein's government holds the following stance:

> A buyer needs to have confidence that he/she will effectively exercise the digitalised rights to a product or an asset and that he/she will be able to enforce his/her rights, where necessary with the aid of the rule of law. He/she also needs to have confidence in the companies and individuals who provide services on TT systems.[112]

Based on the position of the government of Liechtenstein, it is clear lawmakers believe the future of the token economy is one in which consumers are likely to depend on service providers (or similar intermediaries that are operating on the blockchain in a professional capacity), such as TT key depositaries, TT token depositaries, and physical validators. Of course, it is important to recognize that Liechtenstein does not have much at risk by enacting the Blockchain Act. If the Act fails, it will fail because not enough consumers elect to use TT service providers in their peer-to-peer agreements, which is an entirely plausible scenario.

Another argument that could be made against the enactment of the Blockchain Act has to do with corporate "conflicts of interest."[113] The argument is that since there is nothing specific in the Blockchain Act that limits how many TT service provider roles a single entity may fill, it is possible that one entity could fill all the roles at once, thereby circumnavigating some of the counterbalance mechanisms put forth in the Act. For example, a multinational cryptocurrency exchange

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[110] Thomas L. Hogan, Opinion, *Crypto Needs Less Regulation, Not Mor*e, THE HILL (Nov. 21, 2022), https://thehill.com/opinion/finance/3744748-crypto-needs-less-regulation-not-more/ [https://perma.cc/J2Q7-7J8S]; *see* SATOSHI NAKAMOTO, BITCOIN: A PEER-TO-PEER ELECTRONIC CASH SYSTEM 1 (Oct. 31, 2008), https://bitcoin.org/bitcoin.pdf [https://perma.cc/TH2W-PVVE] ("What is needed is an electronic payment system based on cryptographic proof instead of trust, allowing any two willing parties to transact directly with each other without the need for a trusted third party.").

[111] *Id.*

[112] GOV'T OF THE PRINCIPALITY OF LIECH., *supra* note 65, at 44.

[113] *Id.* at 83 ("A TT service provider must prove . . . that it has a procedure to deal with possible conflicts of interest in place.").

could establish a series of subsidiaries in Liechtenstein and receive the proper licensing to begin operation as a registered physical validator. This would allow the company to control the contractually regulated warehouses to ensure the existence of high-value assets. At the same time, the company could also have other subsidiaries fill the roles of the TT key depository, TT token depository, and the TT token generator. This would effectively lead to a centralization of Liechtenstein's token system and could ultimately result in something resembling a vertically integrated monopoly. Then again, perhaps the educated consumer would recognize these conflicts and elect to use another service provider.

As stated previously, Article 13 of the Blockchain Act provides that "[a]n entry in the TT Service Provider Register (article 23) requires the applicant to . . . have a suitable organisational structure with defined areas of responsibility and a procedure to deal with conflicts of interest."[114] Without specifically defining what types of conflicts the government of Liechtenstein is seeking to prevent with this language, the Liechtenstein Financial Authority may need to consider what would happen if a single large corporation wished to dominate Liechtenstein's token economy.

VII. REAL-WORLD EXAMPLES

A. Liechtenstein Cryptoassets Exchange

Liechtenstein Cryptoassets Exchange ("LCX") is an exchange founded in 2018 and based in Vaduz, Liechtenstein, that is registered as a TT Exchange Service Provider, TT Token Depositary, TT Key Depositary, TT Price Service Provider, TT Identity Service Provider, Token Generator, Physical Validator, and a Token Issuer for its own cryptocurrency as well as for that of third parties.[115] LCX's website states the process for registering as a service provider in Liechtenstein "is long, complex and the due diligence requirements for [know-your-customer] KYC and [anti-money laundering] AML are the same as for any financial institution or bank."[116] While the

[114] TVTG, *supra* note 1, art. 13, § 1(f).

[115] *See Imprint*, LCX, https://www.lcx.com/imprint/ [https://perma.cc/4FUM-SHY4]; *LCX Gains Regulatory Approval as a Physical Validator to Enable Tokenization of Assets*, LCX (Dec. 20, 2022), https://www.lcx.com/lcx-gains-regulatory-approval-as-a-physical-validator-to-enable-tokenization-of-assets/ [https://perma.cc/YSM9-2QY6].

[116] *Liechtenstein is the New Powerhouse for Digital Securities*, LCX (Mar. 14, 2021), https://www.lcx.com/liechtenstein-is-the-new-powerhouse-for-digital-securities/ [https://perma.cc/JUQ9-XW5T].

government promoted the Blockchain Act as a "light framework," LCX's website characterizes it as a "large market entry barrier for any new fintech companies," albeit one that creates a "USP" (unique selling proposition) for companies that are able to complete the registration hurdles.[117] That is, meeting all the registration requirements allows LCX to distinguish its business from competitors.

On February 22, 2022, LCX launched Tiamonds, which are tokenized diamonds on the Ethereum blockchain.[118] The token, known as a Tiamond, is marketed as a one-to-one digital representation of an individual diamond.[119] "[E]ach Tiamond . . . include[s] an LCX Physical Validator Certificate and a diamond Certificate from GIA" which refers to the Gemological Institute of America.[120] LCX launched the token with "the goal [of] showcas[ing] the opportunities of tokenized assets, [and] to educate consumers about tokenization."[121] Furthermore, and provided the token holder has a verified account with LCX, Tiamond owners may redeem their tokens and physically receive their diamond(s), which "are insured and stored in Liechtenstein at a high-security vault outside the banking system."[122] These diamonds may either be picked up in person or delivered by mail after contacting LCX.[123] Once a Tiamond token has been redeemed and the holder has received their physical diamond, the token and the rights connected to the token are destroyed.[124]

LCX is one of the first movers in Liechtenstein under the Blockchain Act and provides a unique way for investors to diversify their portfolios into hard assets. That being said, LCX and its newly issued token remain in their infancy. It is possible, and probably likely, that Tiamonds is merely a trial run for LCX to work out the kinks of its business model. Diamonds are an asset with a notoriously complex marketplace entrenched with middlemen.[125]

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[117] *Id.*

[118] *TIAMONDS—LCX Tokenized Diamonds—An Overview*, LCX (Jan. 20, 2022), https://www.lcx.com/tiamonds-lcx-tokenized-diamonds-an-overview/ [https://perma.cc/6BWP-NDQM].

[119] *Id.*

[120] *Id.*; *see* TIAMONDS: TOKENIZED DIAMONDS 6 (2022), https://tiamonds.com/static/media/Tiamonds_White_Paper_3.ad90f77c.pdf [https://perma.cc/YQ2P-RELM].

[121] TIAMONDS, *supra* note 120, at 3.

[122] *Id.* at 9, 11.

[123] *Id.* at 11.

[124] *Id.*

[125] *See* Barak D. Richman, *How Community Institutions Create Economic Advantage: Jewish Diamond Merchants in New York*, 31 L. & SOC. INQUIRY 383, 391 (2006).

One can speculate that LCX will continue to tokenize various hard assets to experiment with their utility. Only time will tell whether its approach will be successful, profitable, or practical. LCX also provides an example of an entity filling several service provider roles simultaneously under the Blockchain Act. It remains to be seen whether the Liechtenstein Financial Market Authority will be able to sufficiently monitor LCX and other young companies as they continue to issue tokens for the physical assets they also possess.

B. Tether Holdings, Ltd.

Tether is a popular cryptocurrency issued by Tether Holdings, Ltd., Tether, Ltd., Tether Operations, Ltd., and Tether International, Ltd. (collectively, "Tether Holdings, Ltd."), a business with a variety of subsidiaries incorporated in Hong Kong and the British Virgin Islands.[126] Tether, the token, is known as a "stablecoin," and was originally designed to always be worth one dollar, maintaining one dollar in reserves for each Tether issued.[127] Unlike Bitcoin and many other cryptocurrencies, Tether Holdings, Ltd. owns, mints, and manages the entire Tether supply.[128] As of February of 2023, Tether's fully diluted market cap totaled a hefty $73 billion, ranked just third behind Bitcoin and Ethereum.[129]

In 2017, online critics first raised questions about Tether Holdings, Ltd.'s ability to seemingly issue new Tethers out of thin air.[130] Tether Holdings, Ltd. has repeatedly claimed that it would present audits showing that the number of Tethers in circulation was backed by dollars in its reserves.[131] However, it has failed to do so in any meaningful or verifiable way. On October 15, 2021, it was announced that Tether Holdings, Ltd. would be paying a $41 million fine to the Commodity Futures Trading Commission ("CFTC") for misleading

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[126] *See In re* Tether Holdings Limited, CFTC No. 22-04, 2021 WL 8322874, at *2–3, 6 n.3 (Oct. 15, 2021).

[127] *Id.* at *2–3.

[128] *See id.* at *2–3; *Frequently Asked Questions*, BITCOIN, https://bitcoin.org/en/faq#what-is-bitcoin [https://perma.cc/P27A-5AMM]; *What is Ethereum?*, ETHEREUM, https://ethereum.org/en/what-is-ethereum/ [https://perma.cc/NS7R-9SHN].

[129] *Tether*, COINMARKETCAP, https://coinmarketcap.com/currencies/tether/ [https://perma.cc/B4QT-XQLC]; COINMARKETCAP, https://coinmarketcap.com/ [https://perma.cc/7P8M-BA4F].

[130] Nathaniel Popper, *Warning Signs About Another Giant Bitcoin Exchange*, N.Y. TIMES (Nov. 21, 2017), https://www.nytimes.com/2017/11/21/technology/bitcoin-bitfinex-tether.html [https://perma.cc/BD7Y-44PE].

[131] *Tether Audit, Promised for 5 Years, Still Months Away, CTO Says*, PYMNTS (Aug. 28, 2022) https://www.pymnts.com/cryptocurrency/2022/tether-audit-promised-for-5-years-still-months-away-cto-says/ [https://perma.cc/HAX9-F9J2].

claims that its token was backed by the U.S. dollar.[132] Dawn Stump, CFTC Commissioner, stated that the CFTC "does not regulate stablecoins, and we do not have daily insight into the businesses" involved with stablecoins.[133] On October 19, 2021, Hindenburg Research, a financial research firm, promised a one million dollar reward for information on Tether Holdings, Ltd.'s backing, deposits, and information on the process by which Tether is able to remain pegged to the dollar.[134]

"[I]n pursuing and settling [with Tether Holdings, Ltd.], do[es the CFTC] provide users of stablecoins with a false sense of comfort that we are overseeing those who issue and sell these coins such that they are protected from wrongdoing?"[135] The answer to this question remains unclear. However, the implementation of the legal framework surrounding physical validators could potentially attract compliant competitors to operate within the United States. Tether is merely an example of a token backed by the U.S. dollar, but a company like Tether Holdings, Ltd. could tokenize any type of asset and misrepresent its actual holdings. Although Tether fills a different role than the physical validator, and even if Tether has never misrepresented any of its U.S. dollar reserves, it has shown regulators some of the issues that can arise when certain counterbalances are not put in place.

Tether also exemplifies what could happen if a single entity in Liechtenstein were to fill multiple service provider roles and were not required to comply with mandatory audits or disclosures from any type of enforcing financial authority. With its new law, Liechtenstein's government intentionally sought to protect users and customers of TT systems from companies that simultaneously lack transparency and deal with vast sums of capital. The implementation of the physical validator framework—however minimal the impact on the overall market—reduces the chance of

[132] *Release Number 8450-21*, CFTC (Oct. 15, 2021), https://www.cftc.gov/PressRoom/PressReleases/8450-21 [https://perma.cc/UC3S-D4CK].

[133] Kim Lyons, *Tether Will Pay $41 Million over 'Misleading' Claims It was Fully Backed by US Dollars*, THE VERGE (Oct. 15, 2021), https://www.theverge.com/2021/10/15/22728253/tether-41-million-misleading-statements-fiat-currency-bitfinex-cftc [https://perma.cc/CA4X-C2GD].

[134] *See Hindenburg Research Announces $1,000,000 Bounty for Details on Tether's Backing*, HINDENBURG RSCH. (Oct. 19, 2021), https://hindenburgresearch.com/tether/ [https://perma.cc/VHW9-XRAU].

[135] *Concurring Statement by Commissioner Dawn D. Stump Regarding Tether and Bitfinex Settlement*, CFTC (Oct. 15, 2021), https://www.cftc.gov/PressRoom/SpeechesTestimony/stumpstatement101521 [https://perma.cc/TCB4-THYY].

potential insolvency in a company in a similar position to Tether Holdings, Ltd., thereby increasing confidence in the market.

CONCLUSION

Implementation of the physical validator framework from the Blockchain Act has the potential to increase market participants and provide a new revenue stream for state governments. However, Liechtenstein's financial sector is highly sophisticated, significantly smaller, and more flexible than that of the U.S.[136] It is possible states are not equipped to monitor the registration of physical validators and prevent potential conflicts of interest, let alone ensure they remain compliant. There is also no guarantee that businesses would elect to use or register as physical validators if they were not required to do so. Conversely, users who do not have the expertise to manage or transfer their own tokens may find it beneficial to use registered service providers for the security they provide, as well as for the assurance that their assets and interests are safeguarded.

Liechtenstein's rules with respect to commercial contracts are fundamentally similar to that of the United States, particularly in terms of contract formation.[137] Liechtenstein's Civil Code, in combination with the Blockchain Act, provides more legal certainty to an otherwise uncertain area, but perhaps, only marginally. "The ability to build new disruptive business models is crucial to the strategic competence of an economy."[138] It is important to note that the enactment of the Blockchain Act was undoubtedly aided by favorable market conditions at the time of its implementation. However, start-ups operating in new and decentralized markets continue to pose great challenges for regulators; so does the question of what constitutes a sufficient level of regulatory support. If a state in the United States wishes to implement the Blockchain Act or something similar, it should ensure it does so through favorable business conditions and the creation of an incubator (i.e., regulatory sandbox), which can give young companies the room to grow and the ability to contribute ideas for improving the legal framework.

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[136] *See supra* Part I.

[137] *See* Thomas Nigg & Johannes Sander, *The Complex Commercial Litigation Law Review: Liechtenstein*, THE L. REVS. (Nov. 29, 2022), https://thelawreviews.co.uk/title/the-complex-commercial-litigation-law-review/liechtenstein [https://perma.cc/5E5L-4U5E] (noting that "contracts can be concluded verbally, in writing or implied by the behavior of parties"); U.C.C. § 2-204 (AM. L. INST. & UNIF. L. COMM'N 2003).

[138] NÄGELE ET AL., *supra* note 107.

The decentralized token economy is one that will continue to adapt in response to state-implemented regulations. While the token economy continues to grow and interlace with the Blockchain Act and its newly created actors, it is only logical that the legal framework surrounding these actors be designed in such a way so that it may continue to evolve as well.