

# Run Away from the Run Risk of Stablecoins

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## ABSTRACT

This paper examines the complexities of stablecoins, a type of cryptocurrency pegged to major fiat currencies for stability, before analyzing their classifications, mechanisms, and the challenges they face, such as the Terra/Luna crash and the USDC’s run following the Silicon Valley Bank collapse. Ultimately, run risk mitigation strategies are necessary, including regulatory guidelines and third-party audits, to bring stability in the stablecoin market.

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## I. INTRODUCTION

Stablecoins, a distinctive category of digital assets within the cryptocurrency landscape that are typically pegged to major fiat currencies such as the United States Dollar (hereinafter “USD”) at a rate of 1:1, have gained prominence for their goal of maintaining a stable value.<sup>1</sup> This paper delves into the multifaceted world of stablecoins, offering a comprehensive exploration of their classifications, notable examples, and the challenges that have recently emerged, culminating in significant run risks.

The stablecoin landscape is diverse, with three primary classifications: financial asset-backed stablecoins, crypto-backed stablecoins, and algorithmic stablecoins.<sup>2</sup> Financial asset-backed stablecoins, like Tether (hereinafter “USDT”), USD Coin (hereinafter “USDC”), and Binance USD (hereinafter “BUSD”), rely on low-risk assets such as cash, Treasury securities, certificates of deposit, and commercial paper for stability.<sup>3</sup> Crypto-backed stablecoins like DAI, issued by MakerDAO, leverage smart contracts and are secured by volatile crypto assets like Bitcoin and Ethereum.<sup>4</sup> Algorithmic stablecoins, like Terra (hereinafter “USTC”), lack asset backing and instead rely on smart contracts to maintain their peg.<sup>5</sup>

Despite the diversity and innovation within the stablecoin ecosystem, recent incidents resulting from crypto innovation and weak regulation and supervision have brought attention to the potential risks associated with these digital assets. The Terra/Luna<sup>6</sup> crash in May 2022 marked a pivotal moment, as the algorithmic stablecoin TerraUSD lost its USD peg, triggering a cascading impact on major entities in the cryptocurrency space.<sup>7</sup> This incident revealed concerns about the reliance on Luna’s valuation, under-collateralization issues, and the breakdown of peg-stabilizing mechanisms during market downturns.

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1. *See infra* Part II.A.

2. *See infra* Part II.B.

3. *See infra* Part II.B.

4. *See infra* Part II.B.

5. *See infra* Part II.B.

6. Terra USD is an algorithmic stablecoin operating on the Terra blockchain. Luna is a cryptocurrency on the Terra blockchain to mitigate price volatility of TerraUSD. *See* Corp. Fin. Inst., *What Happened to Terra?* (2023), <https://perma.cc/8S9T-DY4Y>.

7. *See infra* Part III.A.

Another critical case study involves the USDC and its association with Silicon Valley Bank (SVB).<sup>8</sup> As stablecoin issuers deposit more of their reserves in commercial banks, vulnerabilities emerge among those issuers, especially when a partner bank faces financial distress that triggers runs by investors. The USDC experienced such a run in March 2023 following SVB's bank run, which emphasizes the risks associated with stablecoins tied to traditional banking partnerships.<sup>9</sup>

Tether (USDT), dominating the stablecoin market with approximately 53% of total market capitalization as of August 2023, faces its own set of challenges. Despite the company's claim that each USDT token is backed by one USD in reserves, concerns about the accuracy of these reserves have led to regulatory investigations, including a lawsuit filed by the New York State Attorney General Letitia James.<sup>10</sup> Tether's revelation that only a small percentage of its backing comprised cash raised questions about the stability and transparency of its reserves.

This paper also investigates the run risk of stablecoins, drawing parallels with traditional bank run risks and comparing stablecoins with money market funds and private banknotes from the free banking era.<sup>11</sup> Additionally, it evaluates the potential impact of the Markets in Crypto-Assets Regulation (MiCA) on mitigating run risks.<sup>12</sup>

Drawing lessons from the Luna crash, this paper proposes solutions to mitigate run risks associated with algorithmic stablecoins. These include advocating for full backing by stable collateral and maintaining over-collateralization through smart contracts.<sup>13</sup> This paper further emphasizes the importance of third-party attestations and audits.<sup>14</sup>

Furthermore, the paper explores the legislative and regulatory landscape surrounding stablecoins.<sup>15</sup> It suggests that legislation should limit stablecoin issuance and related activities to insured depository

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8. *See infra* Part III.

9. *See id.*

10. *See infra* Part III.C.

11. A run risk is the risk that numerous customers will simultaneously withdraw all their funds from their deposit accounts within a banking institution due to the fear of its potential insolvency or ongoing insolvency. *See also infra* Part IV. The "free banking era" is the period from 1837 to 1863 when banks were chartered by the states after two failures in establishing a national central bank. Unlike the current chartered bank system, there was no official approval required to start a bank. Each bank issued its banknotes against its deposits of gold and silver. Banknotes from different banks were not inter-tradable, and value of a banknote mostly depended on the size of the issuing bank. *See* Daniel Sanches, *Free Banking Era: A Lesson for Today?*, *ECONOMIC INSIGHTS* at 9 (2016), <https://perma.cc/W8VK-UHLP>; *see also* RANAJAY RAY CHAUDHURI, *THE CHANGING FACE OF AMERICAN BANKING*, (Palgrave Macmillan, New York, 2014).

12. *See infra* Part V.

13. *See infra* Part VI.A.

14. *See infra* Part VI.B.

15. *See infra* Part VI.C.

institutions.<sup>16</sup> Supervisors should be granted authority to implement standards promoting interoperability among stablecoins. This paper will also introduce the current stablecoin-related regulatory and legislative development in the U.S.<sup>17</sup>

Overall, this paper provides a comprehensive examination of stablecoins, their recent challenges, and potential pathways for mitigating the risks associated with their operation and market presence.

## II. BACKGROUND

### A. *Stablecoins Definition*

Stablecoins, within the realm of cryptocurrency, are a distinct category of digital assets aiming to maintain a stable value, typically pegged to the US dollar at a rate of 1:1.<sup>18</sup> The main function of stablecoins is to serve as a stable medium of exchange within the cryptocurrency market to reduce intermediation costs caused by operating on the blockchain.<sup>19</sup> These coins utilize diverse mechanisms, such as collateralization with tangible assets or supply–demand matching algorithms.<sup>20</sup> In recent years, the stablecoin market has witnessed an extraordinary surge in market capitalization,<sup>21</sup> increasing from \$5 billion in 2019 to an impressive \$180 billion at its peak in 2022.<sup>22</sup>

### B. *Stablecoins Classification*

Stablecoins can be broadly categorized into three primary types: (1) financial asset-backed stablecoins, (2) crypto-backed stablecoins, and (3) algorithmic stablecoins.<sup>23</sup>

#### 1. Financial Asset-Backed Stablecoins

Financial asset-backed stablecoins (“asset-backed stablecoins”) are primarily backed by low-risk assets like cash, Treasury securities, certificates of deposit, and commercial paper.<sup>24</sup> The trust within the

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16. *See id.*

17. *See id.*

18. *See* Kenechukwu Anadu et. al, *Runs and Flights to Safety: Are Stablecoins the New Money Market Funds?*, FED. RSRV. BANK OF NEW YORK STAFF REPORTS, No. 1073, 1 (2023), <https://perma.cc/3JPZ-8DRY>; *see also* Coryanne Hicks & Michael Adams, *What Is Tether? How Does It Work?* (Aug. 15, 2023, 10:09 AM), <https://perma.cc/MET3-ZK7C>.

19. *See* Baughman Garth et. al, *FEDS Notes: The Stable in Stablecoins*, WASHINGTON: BOARD OF GOVERNORS OF THE FED. RSRV. SYSTEM (2022), <https://perma.cc/668A-8VCZ>.

20. *See* Anadu et. al, *supra* note 18, at 1.

21. *See id.*

22. *See id.*

23. *See id.* at 5.

24. *See id.*

stablecoin system is underscored by the assurance of redeeming these tokens at a 1:1 ratio with real-world assets, usually the USD.<sup>25</sup> Examples of asset-backed stablecoins include Tether (USDT), USD Coin (USDC), and Binance USD (BUSD),<sup>26</sup> among others.<sup>27</sup> The creation and elimination of these stablecoins from the market are managed by a central entity, which could be a company, a bank, or a government.<sup>28</sup> Users can either deposit dollars with the stablecoin issuers and receive stablecoin tokens assigned to their public blockchain address in return, or they can redeem their tokens by sending them back to the issuer's public blockchain address and receiving a dollar credit within their bank account.<sup>29</sup>

The stabilization mechanism for asset-backed stablecoins operates through arbitrage.<sup>30</sup> Market participants, motivated by confidence in the stablecoin's long-term peg, engage in arbitrage to prevent significant deviations from the peg.<sup>31</sup> Discrepancies between the market price and the issuer's 1:1 redemption guarantee present profit opportunities to potential stablecoin holders.<sup>32</sup> If the market price of stablecoins exceeds one USD, individuals can profit by converting USD to stablecoins with the issuer, subsequently selling the stablecoins for USD on the secondary market, yielding a surplus of USD.<sup>33</sup> Conversely, if the market price of stablecoins

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25. See Garth et. al, *supra* note 19. Tether is the most liquid and heavily traded of the stablecoins, representing around 53% of the total stablecoin market capitalization as of August, 2023, followed by USDC and BUSD; see also Hicks *supra* note 18; Richard K. Lyons & Ganesh Vishwanath-Natraj, *What Keeps Stablecoins Stable?*, J. INT'L MONEY & FIN. (forthcoming) (manuscript at 3), <https://perma.cc/24YP-CK2B>.

26. Binance is a fiat-backed stablecoin issued by Binance and Paxos. Each BUSD token is backed 1:1 with USD held in reserve. BINANCE, BINANCE USD WHITEPAPER, <https://perma.cc/F7GZ-6TSS>. Binance is the world's largest cryptocurrency exchange by trading volume. Notably, on June 5, 2023, the Securities and Exchange Commission (SEC) alleged 13 charges on Binance, among which includes the unregistered offer and sale of Binance's own crypto assets such as BUSD. The SEC Chair Gary Gensler said: "Through thirteen charges, we allege that Zhao (Changpeng Zhao, founder of Binance) and Binance entities engaged in an extensive web of deception, conflicts of interest, lack of disclosure, and calculated evasion of the law." Press Release, U.S. Sec. and Exch. Comm'n, SEC Files 13 Charges Against Binance Entities and Founder Changpeng Zhao (Jun. 5, 2023), <https://perma.cc/DM3U-5FRK>. Earlier than the SEC's allegation, the U.S. Commodity Futures Trading Commission (CFTC) sued Binance for operating an "illegal" exchange and a "sham" compliance program on March 27, 2023. Tom Wilson & Angus Berwick, *US regulator sues top crypto exchange Binance, CEO for 'willful evasion'*, REUTERS (Mar. 28, 2023, 4:00 AM), <https://perma.cc/G43K-PG8S>.

27. See Garth et. al, *supra* note 19.

28. See *id.*

29. See *id.*; see also Tether, *Tether: Fiat currencies on the Bitcoin blockchain*, at 7-8, <https://perma.cc/3RHX-NARK>.

30. See *id.*; see also Lyons & Vishwanath-Natraj, *supra* note 25, at 9 ("When the USD price of the stablecoin rises above parity, investors have an incentive to deposit dollars to create new stablecoin tokens, and sell them in the secondary market").

31. See Garth et. al, *supra* note 19.

32. See *id.*; see also Tether, *supra* note 29, at 4.

33. See Garth et. al, *supra* note 19.

is lower than one USD, holders can profit by redeeming their current holdings with the issuer, utilizing the proceeds to purchase more stablecoins than they initially possessed.<sup>34</sup> Overall, stablecoin holders' actions to exploit these arbitrage opportunities drive the market price back towards the 1:1 ratio.<sup>35</sup>

## 2. Crypto-Backed Stablecoins

Crypto-backed stablecoins are issued by smart contracts rather than a central entity.<sup>36</sup> They are secured by crypto assets like Bitcoin and Ethereum, despite the inherent volatility of these assets.<sup>37</sup> To mitigate this volatility, crypto-backed stablecoins are often overcollateralized, and their stability mechanisms rely on a continuous assessment of the collateral's value.<sup>38</sup> A main difference between the financial asset-backed stablecoins and crypto-backed stablecoins is that the financial asset-backed stablecoins have two-sided price deviations, i.e., the stablecoins can be traded either at premium or at discount as compared to the peg.<sup>39</sup>

One of the most popular examples of a crypto-backed stablecoin is DAI.<sup>40</sup> The DAI stablecoin is a decentralized and crypto-backed cryptocurrency soft-pegged to the USD.<sup>41</sup> DAI is governed by the rules of the MakerDAO,<sup>42</sup> which is an open-source project on the Ethereum

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34. *See id.*

35. For example, Tether supply depends on investor demands. Supply increases when investors opt to deposit USD with Tether, and decreases when investors redeem their dollar deposits, effectively withdrawing Tether from circulation. *See* Lyons & Vishwanath-Natraj, *supra* note 25 at 4. Ideally, the Tether/USD peg is 1. When the Tether/USD price peg exceeds the peg at 1, investors can convert 1 USD into 1 Tether, and then sell those Tethers on the secondary market with a price higher than 1 USD. Conversely, when the Tether/USD price peg falls the peg at 1, investors can buy Tether at a price lower than 1 USD in market and redeem those Tether to the Tether Treasury at the rate of 1 Tether per USD. *See id.*

36. A central entity can be a company, a bank, or a government. *See* Anadu et. al, *supra* note 18, at 6.

37. *See id.*

38. *See id.*; George Georgiev, *What Are Stablecoins? The Complete Guide (Updated 2020)* (Dec. 19, 2021, 12:36 PM), <https://perma.cc/9MCU-2ZL8>; Garth et. al, *supra* note 19.

39. *See* Lyons & Vishwanath-Natraj, *supra* note 25 at 3. For example, even though Tether has 1:1 peg with USD, historical data indicates that Tether/USD has been traded both at premium and at discount. *Id.*

40. *See* Anadu et. al, *supra* note 18, at 6.

41. *See* MAKERDAO, THE MAKER PROTOCOL: MAKERDAO'S MULTI-COLLATERAL DAI (MCD) SYSTEM, <https://perma.cc/6F26-2VAF>.

42. MakerDAO is a cryptocurrency protocol that establishes "a set of rules and actions that determines how a specific type of cryptocurrency works. "It issues a governance token, called MKR, which allows the holder of the token to participate in the governance and policy making of the DAO, as well as the DAI stablecoin." Andrew Loo, *What is the MakerDAO and DAI?*, CORP. FIN. INST., <https://perma.cc/65H3-YLBP>.

blockchain and a Decentralized Autonomous Organization (DAO).<sup>43</sup> The price stability mechanism is maintained as a user who generates DAI must open a Maker Vault<sup>44</sup> and deposit Ethereum-based assets as collateral.<sup>45</sup> Interestingly, MakerDAO acquired \$700 million worth of US Treasuries in June 2023 as part of the strategy to deliver a higher annualized yield.<sup>46</sup> Currently, the short-term ETFs represent a large portion of Maker's current collateral.<sup>47</sup>

### 3. Algorithmic Stablecoins

Different from other stablecoins, algorithmic stablecoins lack asset backing, relying instead on an algorithmic mechanism to maintain their peg. A prime illustration of this type is TerraUSD (USTC).<sup>48</sup> The stability of algorithmic stablecoins is governed by smart contract-based mechanisms for unit issuance, redemption, and maintaining parity with the designated reference entity.<sup>49</sup> For instance, if the target peg is 1:1 with the USD, akin to how central banks manage money supply, the algorithm triggers actions to counter deviations from this peg.<sup>50</sup> Should the coin price surpass \$1, new coins are generated to devalue each existing token; conversely, if the coin price falls below \$1, coins are removed from circulation to bolster the value of each token.<sup>51</sup>

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43. See MAKERDAO, *supra* note 41. Decentralized Autonomous Organizations (DAOs) are “entities that leverage blockchains, digital assets and related technologies to deploy resources, coordinate activities and make decisions”. DAVID GOGEL ET AL., DECENTRALIZED AUTONOMOUS ORGANIZATIONS: BEYOND THE HYPE WHITE PAPER 4 (World Economic Forum, June 2022), <https://perma.cc/9XLM-A89V>.

44. Maker Vault is a smart contract that facilitates the generation of DAI against lock-up collateral. MAKERDAO, *supra* note 41.

45. See MAKERDAO, *supra* note 41. However, in October 2023, a series of withdrawals compelled MakerDAO to utilize half of its \$500 million USDC reserves held in a Coinbase Custody account to safeguard the peg of its DAI stablecoin. Jack Kubinec, *MakerDAO moves \$250M from Coinbase to rebuild DAI collateral*, BLOCKWORKS (Oct. 31, 2023, 03:04 PM), <https://perma.cc/Q8DD-E5HA>.

46. Allan Pedersen, CEO of Monetalis Group, highlighted that Maker's move to acquire additional US Treasury shares signifies its commitment to pushing the boundaries within the decentralized finance (DeFi) space. This strategic decision reflects a “diversified portfolio approach,” reinforcing the resilience of Maker's platform and stablecoin. Furthermore, Pedersen emphasized that such initiatives not only enhance the stability of Maker but also create new revenue streams, contributing to the ongoing attraction of participants to both Maker and the broader DeFi ecosystem. Bessie Liu, *MakerDAO snaps up more US Treasury bonds*, BLOCKWORKS (Jun. 21, 2023, 02:29 PM), <https://perma.cc/PY6U-7BX7>.

47. Despite the large portion of bond ETFs collateral, Ethereum is still the primary collateral assets of DAI. See Liu, *supra* note 46.

48. See Anadu et. al, *supra* note 18, at 6.

49. See Garth et. al, *supra* note 19.

50. See *id.*

51. See *id.*

### III. WHY DID SOME STABLECOINS GO WRONG?

#### A. *Terra/Luna Crash*

On May 10, 2022, TerraUSD, an algorithmic stablecoin operating on the Terra blockchain, experienced a significant price decline, losing its peg to one USD.<sup>52</sup> Prior to the crash, Terra possessed a collective market capitalization of \$50 billion and a daily trade volume averaging \$1 billion, making it the third most significant ecosystem following Bitcoin and Ethereum.<sup>53</sup> Yet, in just three days following the crash, TerraUSD's valuation dropped to zero—a pivotal occurrence that set off a domino effect, leading to the downfall of major players like Celsius Network,<sup>54</sup> Three Arrows, and ultimately playing a part in FTX's decline.<sup>55</sup>

Within the Terra stablecoin mechanism, two tokens played important roles: TerraUSD, to maintain stability, and Luna, a cryptocurrency, like Bitcoin, that experiences price fluctuations but can be minted in an unrestricted quantity.<sup>56</sup> Luna serves the functions of paying fees for transactions on the Terra blockchain, validating blockchain governance votes, earning yields on decentralized finance lending protocols, and mitigating the price volatility of TerraUSD.<sup>57</sup> Users in the Terra blockchain can utilize a smart contract to create or redeem one unit of TerraUSD with \$1 worth of Luna by burning \$1 of Luna and minting one TerraUSD.<sup>58</sup> For example, when the TerraUSD price is \$1.005, which is above parity, an investor can use \$1 worth of Luna to buy one TerraUSD, and then sell the TerraUSD in the secondary market at \$1.005, earning the difference of \$0.005.<sup>59</sup> Conversely, when the TerraUSD price is \$0.995,

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52. See Ganesh Viswanath-Natraj & Amit Chaudhary, *Algorithmic Stablecoins And Devaluation Risk*, VOX EU, CENTER FOR ECONOMIC RESEARCH (May 13, 2022), <https://perma.cc/Q28T-KV5G>.

53. See Jiageng Liu et. al, *Anatomy of a Run: The Terra Luna Crash 1* (Nat'l Bureau of Econ. Rsch., Working Paper No. 31160, 2023), <https://perma.cc/A8T5-67L7>.

54. Steven Buchko, *What is Celsius Network | Exploring Crypto Lender's Collapse*, COINCENTRAL (Sep 30, 2023), <https://perma.cc/ZL89-AJJ9>. Celsius Network is cryptocurrency lending platform and a crypto interest account provider. Until May 2022, Celsius' total lending to clients was \$8 million and asset under management was \$12 billion. However, since Celsius's "endlessly re-hypothecating assets" by lending the same assets multiple times to different parties, it was vulnerable to market movements, such as the Terra/Luna crash. As such, on June 13, 2022, Celsius suspended all withdrawals, transfers and swaps on its platform, and filed for Chapter 11 bankruptcy on the same day. See *id.*

55. See *id.*; Jiageng Liu et. al, *supra* note 53, at 1.

56. See Anadu et. al, *supra* note 18, at 39; see also Q.ai, *What Really Happened To LUNA Crypto?*, FORBES (Sep. 21, 2022, 3:38 PM), <https://perma.cc/5339-KKKZ>.

57. See Q.ai, *supra* note 56.

58. For example, if the price of Luna is \$10, the smart contract will exchange one Terra for 0.1 unit of Luna. See Viswanath-Natraj & Chaudhary, *supra* note 52; see also Anadu et. al, *supra* note 18, at 39.

59. See Q.ai, *supra* note 56.



which is below parity, an investor can purchase Terra USD from the secondary market at \$0.995, and exchange Terra USD for \$1 worth of Luna, earning a profit of \$0.005.<sup>60</sup> This transaction will result in burning one TerraUSD and minting \$1 worth of Luna. So long as the price of Luna remains more than \$0, the arbitrage mechanism can keep the value of TerraUSD stable at \$1.<sup>61</sup> Once TerraUSD lost its peg to the dollar, both Luna and TerraUSD crashed and no longer qualified as stablecoins.<sup>62</sup>

However, the arbitrage mechanism poses concerns, primarily due to its reliance on expectations of the governance token's valuation, making it not entirely risk-free.<sup>63</sup> The governance token of TerraUSD is Luna, whose valuation is determined by market demand and supply.<sup>64</sup> The value of Luna decreases as supply increases, and vice versa. Another issue is the under-collateralization of the system. In order to mitigate peg discounts, the TerraUSD treasury strategically holds a reserve in Bitcoin.<sup>65</sup> This reserve serves as a backup to support the TerraUSD peg in case there is an insufficient amount of Luna available to fulfill redemptions.<sup>66</sup>

In different equilibria, the TerraUSD peg's stability is influenced by user growth on the blockchain.<sup>67</sup> An increase in users leads to an increase in demand for the governance token Luna, which increases the value of Luna and results in the price of TerraUSD falling below the 1:1 parity.<sup>68</sup> This creates an arbitrage opportunity where investors can purchase TerraUSD in the secondary market and exchange \$1 value of TerraUSD for \$1 value of Terra on the Terra blockchain system, increasing the demand for TerraUSD.<sup>69</sup> Conversely, a significant drop in Luna's value can render the TerraUSD peg unstable.<sup>70</sup> Weak fundamentals and a shortage of Luna to back TerraUSD at a par value could lead to repeated attacks on the system. As a result, investors may lose confidence in the mechanism designed to keep TerraUSD stable.<sup>71</sup>

In early 2022, the instability was exacerbated when asset prices declined, including major cryptocurrencies like Bitcoin, Ethereum, and

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60. *See id.*

61. *See* Viswanath-Natraj & Chaudhary, *supra* note 52; *see also* Tether, *supra* note 29, at 5.

62. Q.ai, *supra* note 56.

63. *See* Viswanath-Natraj & Chaudhary, *supra* note 52.

64. *See* Terra Price, BYBIT, <https://perma.cc/58WA-EMC4> (last visited Dec. 14, 2023).

65. *See* Viswanath-Natraj & Chaudhary, *supra* note 52.

66. *See id.*

67. *See id.*

68. *See id.*

69. *See id.*

70. *See id.*

71. *See id.*

Luna.<sup>72</sup> Simultaneously, there were increasing concerns regarding the Anchor<sup>73</sup> protocol's inability to maintain the promised 20% interest rate to TerraUSD investors.<sup>74</sup> On May 7, 2022, more than \$2 billion worth of TerraUSD was taken out from the Anchor protocol, and millions of TerraUSD were liquidated quickly, resulting in large peg discounts to 1 TerraUSD for \$0.91, from \$1.<sup>75</sup> Observing the arbitrage opportunity, traders started to exchange \$0.91 worth of TerraUSD for \$1 Luna.<sup>76</sup> With a huge amount of TerraUSD being offloaded, the stablecoin began to depeg, leading to panic among investors.<sup>77</sup> More people thus sold off TerraUSDs in exchange for Luna, which resulted in the minting of more Luna and an increased supply of Luna.<sup>78</sup> The increased supply of Luna decreased the value of Luna, crashing Luna to a price below \$0.01.<sup>79</sup> The uncertainty of the Anchor protocols and the decreasing value of Luna, led to investors' loss of confidence in TerraUSD's value, triggering the run on TerraUSD.<sup>80</sup>

The impact of Luna's crash spread to the entire cryptocurrency market. The price of Bitcoin tanked as a result, causing an estimated loss of \$300 billion in value in the market.<sup>81</sup> Crypto leaders Voyager<sup>82</sup> and

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72. See Anadu et. al, *supra* note 18, at 17-19.

73. Anchor is a protocol offered by the developers of Terra, and it is a decentralized money market established on the Terra Blockchain. See Anadu et. al, *supra* note 18, at 17. The platform pledges a 20% yield for holders of TerraUSD who choose to deposit their tokens on Anchor, allowing them to loan their deposits to other investors. See also Q.ai, *supra* note 56.

74. See Q.ai, *supra* note 56.

75. See *id.*

76. See *id.*

77. See *id.*

78. See *id.*

79. See *id.*

80. See Anadu et. al, *supra* note 18, at 17.

81. See Q.ai, *supra* note 56.

82. Voyager Digital Holdings, Inc. (Voyager) provides interest-bearing crypto accounts to its customers. However, on July 1, 2022, Voyager announced the temporary suspension of all trading activities, deposits, withdrawals, and loyalty awards. Subsequently, on July 6, 2022, Voyager declared that it had initiated voluntary Chapter 11 bankruptcy proceedings. Chapter 11 bankruptcy is a form of bankruptcy specifically designed to facilitate the restructuring of financial obligations for insolvent companies, allowing for reorganization, sale, or other measures to address their financial challenges. STATE OF VERMONT, DEPT. OF FIN. REG., VOYAGER DIGITAL FILES CHAPTER 11 BANKRUPTCY (Jul. 12, 2022), <https://perma.cc/XP5Q-A82N>. In September 2022, FTX won auction to buy the assets of bankrupt crypto lender Voyager. Dave Sebastian & Vicky Ge Huang, *FTX Wins Auction for Bankrupt Crypto Broker Voyager Digital's Assets*, WALL ST. J. (Sep. 27, 2022, 1:16 PM), <https://perma.cc/M97Q-2XC4>. After FTX filed for bankruptcy itself in November 2022, Binance agreed to buy Voyager's assets. Vicky Ge Huang & Caitlin Ostroff, *Binance.US to Buy Assets of Bankrupt Crypto Lender Voyager, Eyes More Acquisitions*, WALL ST. J. (Dec. 19, 2022, 2:32 PM), <https://perma.cc/V946-AWYA>. However, The SEC raised concerns about the legality of selling or transferring certain assets, contending that crypto tokens should be considered securities. According to

Celsius<sup>83</sup> filed for bankruptcy and Three Arrows Capital<sup>84</sup> was forced into liquidation.<sup>85</sup>

### B. USDC & Silicon Valley Bank

Commercial banks have expanded their business to clients in the crypto industry since 2020, particularly from early 2020 through 2022, when stablecoins witnessed a rapid growth.<sup>86</sup> The stablecoin issuers increased their deposits in some commercial banks as stablecoins flourished.<sup>87</sup> However, a significant concern arose regarding the potential vulnerability of stablecoins in the event of a commercial bank facing financial distress. If such a bank encountered problems, a stablecoin with deposits surpassing the limit of Deposit Insurance offered by Federal Deposit Insurance Corporation (FDIC)<sup>88</sup> would face difficulties accessing these funds, thereby failing to fulfill its financial obligations.<sup>89</sup> This situation would likely trigger a run by the stablecoin's investors.<sup>90</sup>

A tangible example of this precarious scenario was USDC when Silicon Valley Bank (hereinafter "SVB") experienced a run on March 9, 2023.<sup>91</sup> USDC was introduced by Circle<sup>92</sup> in 2018.<sup>93</sup> USDC is a financial

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the SEC's argument, issuers are expected to adhere to investor protection laws before selling these tokens. The regulatory body emphasized that if an asset was initially offered in violation of SEC rules, subsequent transfers of ownership might be deemed unlawful, creating a potential legal conundrum for purchasers. Dave Michaels, *SEC Questions Binance.US's Deal for Assets of Bankrupt Crypto Lender Voyager*, WALL ST. J. (Feb. 23, 2023, 1:23 PM), <https://perma.cc/M6GN-BBMQ>.

83. Celsius filed for Chapter 11 bankruptcy in July 2022. On November 9, 2023, the bankruptcy court approved a restructuring plan that Celsius will return cryptocurrency to customers and create a new company owned by Celsius creditors. Dietrich Knauth, *Crypto lender Celsius Network cleared to exit bankruptcy* (Nov. 9, 2023), REUTERS, <https://perma.cc/7BRF-W37Y>; see also Soma Biswas, *Celsius Network, One of Crypto's Biggest Collapses, Ends Bankruptcy Case*, WALL ST. J. (Nov. 9, 2023, 2:47 PM), <https://perma.cc/QQR9-RM5Y>.

84. Three Arrows Capital (3AC) was a cryptocurrency hedge fund based in Singapore. Serena Ng et. al, *Crypto Hedge Fund Three Arrows Ordered by Court to Liquidate*, WALL ST. J. (Jun. 29, 2022, 9:14 PM), <https://perma.cc/ZQG4-2EDZ>.

85. See Q.ai, *supra* note 56.

86. See Anadu et. al, *supra* note 18, at 21.

87. *Id.*

88. The FDIC offers deposit insurance to safeguard depositors' funds in the event of a bank failure. Deposits held by individuals are automatically insured up to at least \$250,000 at each FDIC-insured bank, providing a level of financial protection for depositors. See *Deposit Insurance*, FEDERAL DEPOSIT INSURANCE CORPORATION, <https://perma.cc/C4BR-TJHM> (last visited Oct. 16, 2023).

89. See *id.*

90. See *id.*

91. See *id.*

92. Circle is a Boston-based financial technology firm that began from peer-to-peer payment business and now is the issuer of stablecoin USDC. See CIRCLE, *About*, <https://perma.cc/TJU3-ADV4> (last visited Sept. 5, 2024).

93. See *id.*

asset backed coin which maintains its peg with USD by collateralizing its coin with financial assets, predominantly investing in safe government assets, such as cash and short-term U.S. government bonds.<sup>94</sup> A surge in USDC withdrawals began on March 10, 2023 after investors became concerned regarding USDC's capability to utilize the funds deposited with SVB.<sup>95</sup> USDC had disclosed its cash deposits at SVB between July 2022 and March 2023 through public records.<sup>96</sup> On March 11, 2023, Circle revealed that it had allocated \$3.3 billion of its total cash reserves of \$9.7 billion to SVB, representing around 8% of USDC's collateral assets.<sup>97</sup> The remaining \$32.4 billion of collateralization comprised short-dated US Treasury Bills with a maturity of less than three months, with Bank of New York Mellon serving as custodian.<sup>98</sup>

Subsequently, when SVB faced collapse, investors holding USDC quickly initiated a run by redeeming more than \$2 billion within 24 hours, knocking the value of USDC below 87 cents "with most of the USDC burned in . . . 8 hours."<sup>99</sup> Further, as investors withdraw their investments, stablecoin issuers have to sell their traditional asset collaterals within a short period to give money back to their investors, potentially adding more pressure on banks that serve the crypto industry.<sup>100</sup> Impacted by the spike in redemptions, crypto exchange Coinbase suspended conversions between USDC and USD during the weekend after March 10, 2023.<sup>101</sup> Binance, the world's largest crypto exchange, also temporarily closed the auto conversion from USDC to Binance USD.<sup>102</sup>

To avoid the negative impact by SVB's failure, some key crypto companies, such as Binance, Coinbase and Tether, announced that they had no relationship with SVB.<sup>103</sup> Consequently, a surge in demand for Tether emerged as traders swapped other stablecoins for the currency, leading to Tether trading above its \$1 peg on cryptocurrency exchanges.<sup>104</sup>

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94. *See id.*; *see also* Hicks *supra* note 18.

95. *See* Anadu et. al, *supra* note 18, at 21.

96. *Id.*

97. *See* Fitch Ratings, *US Bank Failures Highlight Stablecoin Counterparty Risks* (Mar. 16, 2023, 11:38 AM), <https://perma.cc/9FYL-79QM>; *see also* Vicky Ge Huang et. al, *Circle's USDC Stablecoin Breaks Peg With \$3.3 Billion Stuck at Silicon Valley Bank*, WALL ST. J (Mar. 11, 2023, 7:21 PM), <https://perma.cc/G5XK-9CW6>.

98. *See* Fitch, *supra* note 99.

99. *Id.*; *see also* Anadu et. al, *supra* note 18, at 21. The depeg of USDC also led to a depeg of Dai, which was traded as low as 90 cents on March 11, 2023, because Dai is partially backed by USDC. *See* Huang, *supra* note 99.

100. *See id.*

101. *See id.*

102. *See id.*

103. *See id.*

104. *See id.*

### C. *Tether-Asset-Backed Stablecoin*

USDT stands as the dominant stablecoin in terms of market capitalization, constituting approximately 53% of the overall stablecoin market capitalization as of August 2023.<sup>105</sup> The company asserts that for each USDT token in circulation, it holds one USD in reserves, including either cash or cash equivalents like short-term bonds or deposits.<sup>106</sup>

Tether publishes the number of reserves it possesses relative to the total amount of USDT tokens in circulation through daily reports on its website.<sup>107</sup> However, concerns and controversies have emerged regarding USDT's reserves, prompting investigations by regulatory bodies.<sup>108</sup> For example, New York State Attorney General (NYAG) Letitia James filed a lawsuit against Tether.<sup>109</sup> The lawsuit argued that Tether's claim of being constantly backed by U.S. dollars was inaccurate.<sup>110</sup>

Tether's claims that its virtual currency was fully backed by U.S. dollars at all times was a lie. These companies obscured the true risk investors faced and were operated by unlicensed and unregulated individuals and entities dealing in the darkest corners of the financial system.<sup>111</sup>

The NYAG's investigation found that Tether had no access to banking after mid-2017, which was contrary to its representations to the public.<sup>112</sup> The NYAG thus questioned whether Tether had sufficient funds.<sup>113</sup> In response, Tether published a "self-proclaimed verification" of its cash reserves in 2017 to show that "it characterized as 'a good faith effort on our behalf to provide an interim analysis of our cash position.'"<sup>114</sup> Yet, as revealed by the investigation conducted by the NYAG, the cash supporting USDT was deposited into Tether's account on the very morning of the verification process.<sup>115</sup> On November 1, 2018, Tether announced another "self-proclaimed verification" of its cash reserve to indicate that USDTs were fully backed by cash, one USD per USDT.<sup>116</sup>

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105. See Coryanne Hicks & Michael Adams, *What Is Tether? How Does It Work?* (Aug. 15, 2023, 10:09 AM), <https://perma.cc/W2BH-ASV6>.

106. *See id.*

107. *See id.*

108. *See id.*; *see also* Hicks *supra* note 18.

109. *See* Press Release, Office of the New York State Attorney General, Attorney General James Ends Virtual Currency Trading Platform Bitfinex's Illegal Activities in New York (Feb. 23, 2021), <https://perma.cc/B3KL-LP2P>.

110. *See id.*

111. *Id.*

112. *See id.*

113. *See id.*

114. *Id.*

115. *See id.*

116. *Id.*

However, Tether transferred funds out of its account on the very next day.<sup>117</sup> In February 2021, after a long-running legal dispute, Tether reached an agreement with NYAG to discontinue trading activity with New Yorkers, submit mandatory reporting on key transfers, offer public disclosures of collateral assets, and pay \$18.5 million in penalties.<sup>118</sup> Following the settlement, Tether released a report indicating that only 3.87% of its backing comprised cash and 2.94% was in Treasury bills, while a substantial portion, approximately two-thirds, was backed by commercial paper.<sup>119</sup>

In October 2021, The Commodity Futures Trading Commission (CFTC) also filed an order against Tether for misleading statements and omissions of material facts about USTD.<sup>120</sup> According to CFTC's investigation, USTDs were not fully backed by reserves for the most of the time (573 of 791 days) since USTD was launched in 2014.<sup>121</sup> The order further stated that "Tether failed to disclose that it included unsecured receivables and non-fiat assets in its reserves, and that Tether falsely represented that it would undergo routine, professional audits to demonstrate that it maintained '100% reserves at all times' even though Tether reserves were not audited."<sup>122</sup> The order levied a monetary penalty of \$41 million on Tether.<sup>123</sup>

#### IV. THE RUN RISK OF STABLECOINS

##### A. *Traditional Bank Run Risk*

A traditional bank run occurs when numerous customers simultaneously withdraw all their funds from their deposit accounts within a banking institution due to the fear of its potential insolvency or ongoing insolvency.<sup>124</sup> To avoid bank runs, deposit insurance schemes are

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117. *See id.*

118. *See id.*

119. Commercial paper is a form of unsecured, short-term debt instrument that is usually issued by corporations to finance their payrolls, payables, inventories and other short-term liabilities. The term of commercial paper ranges from one to 270 days, with an average of 30 days. Since commercial papers are not backed by any collateral and issued by corporations, rather than governments, they are riskier than cash and treasury bonds. *See Adam Hayes, Commercial Paper: Definition, Advantages, and Example, INVESTOPEDIA* (June 16, 2024), <https://perma.cc/7CN2-NJHQ>; Reserves Breakdown on March 31, 2021, TETHER, <https://perma.cc/4E2L-CVV5>.

120. *See CFTC Orders Tether and Bitfinex to Pay Fines Totaling \$42.5 Million, CFTC News Release 8450-21, 2021 WL 4810726* (Oct. 15, 2021).

121. *See id.*; *see also In the Matter of: Tether Holdings Limited, CFTC No.22-04, 2021 WL 8322874 at \*5* (Oct. 15, 2021).

122. CFTC, *supra* note 124

123. *See id.*

124. *See Renee Haltom & Bruno Sultanum, Preventing Bank Runs, ECONOMIC BRIEF, FEDERAL RESERVE BANK OF RICHMOND, No. 18-03* (2018), <https://perma.cc/6FE7-RWTY>.

provided by various jurisdictions, most notably the FDIC in the United States.<sup>125</sup> However, because the current coverage is capped at \$250,000, the inability to access funds or the possibility of a loss beyond the insured amount can still erode the trust customers have in their respective institutions.<sup>126</sup> Trust is a pivotal quality for any bank, and a sudden erosion or loss of customer trust can incite panic, irrespective of its rationality.<sup>127</sup>

Global banking regulations has significantly reduced the occurrence of bank failures as the primary cause of bank runs.<sup>128</sup> More commonly, a bank run is instigated by public fear, which pushes a bank into a state of inadequate liquidity rather than genuine insolvency.<sup>129</sup> If a bank fails to maintain the necessary regulatory equity requirement, a bank run can escalate and potentially drive the institution into bankruptcy.<sup>130</sup> The repercussions of a bank run can be detrimental to the economy, disrupting the relationships between borrowers and lenders.<sup>131</sup> Moreover, uninsured depositors face the risk of losing their funds, which could amplify the adverse impact on the financial landscape.<sup>132</sup>

### *B. Stablecoins and Other Instruments with Run Risks*

Comparison of Stablecoins with traditional financial instruments, such as Money Market Funds and private banknotes in the Free Banking Era, can provide greater context to the run risks associated with stablecoins.

#### 1. Stablecoins vs. Money Market Funds

Money Market Funds (hereinafter an “MMF(s)”) are a type of open-end mutual fund registered with the Securities and Exchange Commission (hereinafter the “SEC”) that, akin to stablecoins, aim to uphold a stable price with minimal price fluctuations.<sup>133</sup> The value of MMF shares remains steady, not fluctuating with changes in the net asset value (hereinafter the “NAV”) of the underlying investment portfolio.<sup>134</sup> Investors are promised the ability to redeem their shares at any time for

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125. See *Deposit Insurance*, *supra* note 92.

126. See *id.*; Haltom, *supra* note 128.

127. See Gabriel Lip, *Bank Run*, CORP. FIN. INST., <https://perma.cc/AN3U-SZA8> (last visited Oct. 16, 2023).

128. See *id.*

129. See *id.*

130. See *id.*

131. See Christopher J. Neely & Michelle Clark Neely, *Interest Rate Risk, Bank Runs And Silicon Valley Bank*, FEDERAL RESERVE BANK OF ST. LOUIS (2023), <https://perma.cc/F6KF-8H6C>.

132. See *id.*

133. See Anadu et. al, *supra* note 18, at 8.

134. See Dan Awrey, *Bad Money*, 106 CORNELL L. REV. 1, 34 (2020).

the same price at which they were purchased, typically a fixed NAV of one dollar per share.<sup>135</sup> This stability is maintained through strict portfolio restrictions that limit the types of financial instruments in which MMFs can invest.<sup>136</sup>

There are notable distinctions between stablecoins and MMFs.<sup>137</sup> MMFs are regulated by the SEC, whereas stablecoins are not, despite the SEC making efforts to impose impact in the crypto world.<sup>138</sup> Moreover, MMFs are typically supported by prominent banks or established fund entities, whereas stablecoins are endorsed by creators of digital assets.<sup>139</sup> The client base varies significantly, with MMF investors typically comprising substantial conventional institutional investors, encompassing both financial and non-financial corporations.<sup>140</sup> In contrast, stablecoin investors are predominantly retail investors or companies affiliated with cryptocurrencies.<sup>141</sup> Other differences between MMF's and stablecoins include differences in trading venues, redemption rights, and backing assets (traditional or digital) for MMFs and stablecoins.<sup>142</sup>

Despite the multiple differences, stablecoins also share striking similarities with certain traditional financial instruments, particularly MMFs.<sup>143</sup> Both issue money-like liabilities that are susceptible to runs, with investors valuing money-like assets and willing to pay a premium for

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135. *See id.*

136. *See id.* at 35.

137. *See Anadu et. al, supra* note 18, at 8.

138. *See id.* The SEC has for a long time taken the position that most tokens in the crypto industry are investment contract securities. For example, in *SEC v. Ripple*, the SEC alleged that Ripple, a blockchain developer and the creator of the XRP cryptocurrency token, “raised more than \$1.3 billion in 2013 by selling XRP in an unregistered security offering to investors”. U.S. Securities and Exchange Commission, *SEC Charges Ripple and Two Executives with Conducting \$1.3 Billion Unregistered Securities Offering*, SEC No. 2020-338, 2020 WL 7586165 (Dec. 22, 2020). The central issue in the lawsuit revolves around whether Ripple offered to sell or actually sold XRP as a security, specifically categorized as an investment contract. An investment contract is a type of security defined by the Securities Act, and the lawsuit seeks to determine the nature of XRP’s classification in this context. *SEC v. Ripple Labs Inc.*, 682 F. Supp. 3d 308, 323 (S.D.N.Y. July 13, 2023). The court applied the *Howey* test from *SEC v. W.J. Howey Co.*, 328 U.S. 293 (1946), which held that an investment contract is “a contract, transaction, or scheme whereby a person (1) invests his money, (2) in a common enterprise and (3) is led to expect profits solely from the efforts of the promoter or a third party.” *Id.* at 321. Judge Analisa Torres found that XRP “is not in and of itself a ‘contract, transaction [,] or scheme’ that embodies the *Howey* requirements of an investment contract.” *Id.* The court found that XRP was not a security when sold to the public buyer on an exchange, but it is when sold to institutional investors. *Id.* at 333. This finding is important to the digital assets industry because this decision indicate a significant setback of SEC’s enforcement effort against players in the industry.

139. *See id.* Anadu et. al, *supra* note 18, at 8.

140. *See id.*

141. *See id.*

142. *See id.*

143. *See id.* at 8-9.



them.<sup>144</sup> This money-like nature poses run risks, as witnessed in the case of MMFs during the financial crises of 2008 and 2020.<sup>145</sup> Similarly, stablecoins exhibit a tradeoff between run risk and price stability, influenced by factors such as the number of authorized participants and the resulting coordination problem, which heightens run risk.<sup>146</sup> Additionally, akin to MMFs, different stablecoins carry varying levels of risk.<sup>147</sup>

## 2. Stablecoins vs. Private Banknotes in Free Banking Era

Gorton & Zhang argue that modern technology has brought forth a resurgence of circulating private money reminiscent of the private banknotes prevalent in numerous countries during the nineteenth century.<sup>148</sup> This perspective positions stablecoin issuers as unregulated banks.<sup>149</sup> The core issues underlying circulating private money remain unchanged today, including the private money's inferiority as a medium of exchange and the susceptibility of its issuers to destabilizing bank runs.<sup>150</sup>

Commencing in 1837, some states, such as Michigan and New York, initiated the practice of free banking laws that allowed anyone to establish a bank.<sup>151</sup> These banks were obligated to fully support their note issuance by depositing state bonds with state treasurers, maintaining a one-to-one backing ratio.<sup>152</sup> Consequently, private banknotes gained circulation status as money because they provided an alternative to the various coins from all over the world.<sup>153</sup> Nevertheless, these private banknotes, whether issued by chartered banks or free banks, did not retain a fixed value when traded outside of the issuing bank,<sup>154</sup> resulting in “note[s] issued by a bank in Tennessee . . . circulating at a 20% discount in Philadelphia.”<sup>155</sup>

Historically, there was a prevailing notion of “wildcat” banks during this period.<sup>156</sup> These banks either failed to fulfill the mandatory bond

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144. *See id.*

145. *See* Chester S. Spatt, *A Tale of Two Crises: The 2008 Mortgage Meltdown and the 2020 COVID-19 Crisis*, 10 REV. OF ASSET PRICING STUD. 759 (Oct. 2020).

146. *See id.* Anadu et. al, *supra* note 18, at 8.

147. *See id.* at 1.

148. *See* Gary B. Gorton & Jeffery Y. Zhang, *Taming Wildcat Stablecoins*, 90 U. CHI. L. REV. 909, 911 (2021).

149. *See id.*

150. *See id.*

151. *See id.* at 941.

152. *See id.*

153. *See id.* at 943.

154. *See id.*

155. *See id.*

156. *See id.* at 943-44. “Wildcat banking” was the issuance of paper currency in U.S. by poorly capitalized state-chartered banks. Gerald P. Dwyer Jr., *Wildcat Banking*, *Banking*

deposits or, in certain states where bonds were valued at par instead of market value, employed deceptive practices by issuing notes they had no intention of redeeming in specie (gold or silver).<sup>157</sup>

Contrary to the belief that bank failures primarily stemmed from wildcat banking, the real issue lay in economic inefficiency.<sup>158</sup> The economic inefficiency was brought by the constant disputes over the value of notes during transactions that made the private banknotes hard to use and violated the No Questions Asked principle (hereinafter the “NQA”).<sup>159</sup> The absence of adherence to NQA left the community without a stable medium of exchange.<sup>160</sup> Stablecoins failing to uphold this principle would also struggle to function effectively as money in transactions.<sup>161</sup>

In 1863, the United States enacted the National Bank Act, establishing national banks that could issue national banknotes.<sup>162</sup> These banknotes were mandated to be backed by U.S. Treasury bonds deposited with the U.S. Treasury.<sup>163</sup> Despite this development, banking panics persisted because of the Treasury’s convenience yield and limited availability.<sup>164</sup> To preserve their Treasuries, banks were not willing to fully utilize them to back their notes.<sup>165</sup> Consequently, national banknotes were underissued and demand deposits, another form of private money that emerged during the National Banking Era, eventually becoming the target of runs, supplanting the focus from banknotes.<sup>166</sup>

## V. MiCA’S POTENTIAL IMPACT ON THE RUN RISK

### A. Introduction of MiCA

The European Union (hereinafter the “EU”) Markets in Cryptoassets Regulation (hereinafter “MiCA”) was officially published in the EU’s journal on June 9, 2023.<sup>167</sup> MiCA lays down the regulatory framework for cryptoassets within the EU, to align the expected standards for digital asset

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*Panics, and Free Banking in the United States*, Federal Reserve Bank of Atlanta (Dec. 1996), <https://perma.cc/N4EA-XW92>.

157. *See id.*

158. *See* Gorton & Zhang, *supra* note 151, at 944-45.

159. *See id.* The No Questions Asked principle requires money to be accepted at par without due diligence on its value. *See id.* at 912.

160. *See id.*

161. *See id.*

162. *See id.* at 946.

163. *See id.*

164. *See id.*

165. *See id.*

166. *See id.*

167. *See Markets in Crypto-Assets Regulation (MiCA)*, EUR. SEC. AND MKT.’S AUTH, <https://perma.cc/GN9S-K3TJ>.

companies with those already in place for traditional financial institutions.<sup>168</sup> The scope of MiCA includes utility tokens,<sup>169</sup> stablecoins,<sup>170</sup> and significant asset-referenced tokens or significant e-money tokens, excluding algorithmic stablecoins.<sup>171</sup> However, certain digital assets like central bank digital currencies (hereinafter “CBDC(s)”) and unique, non-fungible cryptoassets (hereinafter “NFT(s)”) currently fall outside MiCA’s purview.<sup>172</sup> MiCA came into effect in June 2023.<sup>173</sup> Following this, the provisions related to stablecoins, including asset-referenced tokens and e-money tokens, are enforceable from June 30, 2024.<sup>174</sup> On the other hand, the remaining provisions of MiCA will be applicable from December 30, 2024.<sup>175</sup>

The regulation imposes obligations on issuers of cryptoassets falling within its scope, specifically targeting those who offer cryptoassets to third parties.<sup>176</sup> Furthermore, it places obligations on firms that offer specific cryptoasset services to third parties in a professional capacity, referred to as cryptoasset service providers (CASPs).<sup>177</sup>

MiCA also places significant emphasis on various aspects concerning cryptoasset firms. Key areas of focus include the offering and marketing of cryptoassets, obligations and additional requirements for stablecoin issuers, and the introduction of a market abuse regime for cryptoassets.<sup>178</sup> Companies intending to offer crypto services in the EU must obtain

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168. See Gibson Dunn, *MiCA – Crossing The Rubicon For Cryptoasset Regulation In The EU 1* (June 27, 2023), <https://perma.cc/Y3FH-PU5R>.

169. Utility Token is defined as: “A type of cryptoasset that is intended to provide digital access to a good or service, available on DLT, and is only accepted by the issuer of that token.” *MiCA*, *supra* note 170. It is perceived as having lower risk compared to stablecoins, thus subjecting it to a less stringent regulatory framework. While the issuers of such tokens are not required to obtain authorization, they are obligated to adhere to the requirements outlined in Title II of the MiCA. *See id.*

170. In MiCA, stablecoins include asset-referenced tokens and e-money tokens. Asset-referenced tokens are defined as: “A type of cryptoasset that purports to maintain a stable value by referring to the value of several fiat currencies that are legal tender, one or several commodities or one or several cryptoassets, or a combination of such assets.” E-Money tokens are defined as “A type of cryptoasset the main purpose of which is to be used as a means of exchange and that purports to maintain a stable value by referring to the value of a single fiat currency that is legal tender.” Credit institutions (banks) or authorized electronic money entities are exclusively permitted to issue e-money tokens. Entities issuing e-money tokens are obligated to adhere to both the Second Electronic Money Directive and MiCA. *Id.*

171. See Gibson Dunn, *supra* note 172.

172. *See id.*

173. *See id.*

174. *See id.*

175. *See id.*

176. See *MiCA*, *supra* note 171; see also Gibson Dunn, *supra* note 172, at 3.

177. See *MiCA*, *supra* note 171; see also Gibson Dunn, *supra* note 172, at 3.

178. See *MiCA*, *supra* note 171.

authorization from one of the EU's national financial regulators.<sup>179</sup> Additionally, companies looking to offer crypto assets to the public are required to publish fair and clear white papers, explicitly outlining the risks for potential buyers.<sup>180</sup>

MiCA levies heavier constraints on stablecoins as the tokens are getting more widely used. Stablecoins not tied to an EU currency will face a complete prohibition if their daily transactions exceed 1 million, as legislators aim to prevent the displacement of the euro.<sup>181</sup> These regulations extend to algorithmic stablecoins like Terra that employ automated programming to uphold their value.<sup>182</sup>

Incentives for MiCA implementation include the high noncompliance costs, which could be as high as 12.5% of annual turnover.<sup>183</sup> Cryptocurrency providers who are in compliance receive a "passport" to operate in the EU.<sup>184</sup> MiCA also provides cryptocurrency providers with clarity regarding the regulatory framework, a crucial factor in encouraging the traditionally cautious traditional finance sector to explore opportunities in the cryptocurrency market.<sup>185</sup>

Despite the many advantages of MiCA, there are some concerns that deserve attention. The standards set by MiCA are difficult to meet and MiCA hasn't provided sufficient guidance to the legal implementors and the crypto companies on how to comply with the standards.<sup>186</sup> There are worries that restrictions on dollar-denominated stablecoins could halt the progress of certain decentralized finance applications.<sup>187</sup> Also, the question remains whether the EU will be able to effectively implement its regulations on cryptocurrency firms overseas.<sup>188</sup>

### *B. MiCA's Potential Impact on the Run Risk*

Under MiCA, issuers of crypto assets such as stablecoins, asset-referenced tokens, and e-money tokens, are mandated to furnish comprehensive and transparent information about the crypto assets they issue.<sup>189</sup> This entails compliance with disclosure and transparency regulations, appropriate registration, and the implementation of security

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179. *See id.*

180. *See* Jack Schickler, *MiCA, EU's Comprehensive New Crypto Regulation, Explained*, COINDESK (Sept. 7, 2023, 3:04 AM), <https://perma.cc/N9KD-EP8F>.

181. *See id.*

182. *See id.*

183. *See id.*

184. *See id.*

185. *See id.*

186. *See id.*

187. *See id.*

188. *See id.*

189. *See* Bill Lumley, *MiCA: what does it mean for banks?*, THE BANKER (May 10, 2023), <https://perma.cc/V58K-NVCN>.

measures and anti-money laundering protocols.<sup>190</sup> In the case of banks issuing stablecoins or aforementioned tokens, they are obligated to provide a whitepaper detailing the specifics of the crypto asset.<sup>191</sup> This whitepaper is modeled on the EU Prospectus Regulation and essentially functions as a condensed prospectus.<sup>192</sup> In summary, MiCA establishes a comprehensive regulatory framework for cryptoassets, emphasizing disclosure and consumer protection measures.

However, research on the relationship between public disclosure and bank runs indicates that disclosure is not always effective in avoiding bank runs and the regulator ought to find the optimal disclosure.<sup>193</sup> When banks have control over the riskiness of their loan portfolio, disclosing information decreases incentives for risky behavior, lowering the likelihood of bank failures.<sup>194</sup> Conversely, when the risk is inherent and chosen by external factors, revealing a bank's portfolio information increases the probability of bank failure.<sup>195</sup> Dai, Luo, and Yang's findings indicate that disclosing a bank's exposure to systemic risk can alleviate systemic bank runs, but revealing idiosyncratic shortfalls of funds for banks does not provide significant help.<sup>196</sup> Due to the similarity between stablecoins and MMFs, MiCA should identify the optimal disclosure requirements to reduce stablecoins' run risks.

### C. MiCA's Potential Impact Beyond EU Border

MiCA is anticipated to have far-reaching effects beyond the European Union's borders, potentially setting a precedent for other jurisdictions shaping their regulatory frameworks amid the dynamic crypto landscape. Alternatively, the United States faces regulatory complexities, grappling with a fragmented landscape and competing entities vying for authority, resulting in conflicting perspectives and guidelines.<sup>197</sup> Unlike the EU's comprehensive governance approach, the

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190. *See id.*

191. *See id.*

192. *See id.*

193. *See* Tito Cordella & Eduardo Levy Yeyati, *Public Disclosure and Bank Failures*, 45 IMF STAFF PAPERS, 110, 111-12 (March 1998), <https://perma.cc/3DMB-VNXM>.

194. *See id.*

195. *See id.*

196. *See* Liang Dai et al, *Disclosure of Bank-Specific Information and the Stability of Financial Systems*, 37 REV. OF FIN. STUD. 1315 (2024).

197. There was a war between the Commodity Futures Trading Commission (CFTC) and the Securities and Exchange Commission (SEC) over which agency should regulate cryptocurrencies. Both agencies have imposed enforcement actions over cryptocurrencies they believe to be within their jurisdiction. The key in determining who has the power to regulate is "which cryptocurrencies are commodities, and which cryptocurrencies are securities?" *See* Taylor Anne Moffett, *CFTC & SEC: The Wild West of Cryptocurrency Regulation*, 57 U. RICH. L. REV. 713 (2023); *see also* Gary Weinstein, *European Union*

United States and certain other jurisdictions predominantly adopt a “regulation by enforcement” strategy.<sup>198</sup> This approach introduces challenges for market participants, as unclear rules make compliance difficult and heighten operational risks for companies.<sup>199</sup>

The divergent regulatory strategies of the EU and the United States highlight the challenges in reaching a consensus on effectively governing rapidly advancing technologies. However, the EU’s well-balanced and adaptable approach to regulating cryptoassets serves as a potential model for the United States, and could encourage the United States to address its current regulatory challenges and create a more coherent and effective framework for the rapidly evolving crypto sector.

## VI. SUGGESTIONS/ REMEDIES TO AVOID FUTURE STABLECOINS FAILURE

### A. *Lesson from the Luna Crash*

Algorithmic stablecoins face inherent risks, particularly the potential for devaluation and vulnerability to speculative attacks, especially when they are under-collateralized.<sup>200</sup> Notably, algorithmic stablecoins are banned by MiCA,<sup>201</sup> so at least within the EU border, algorithmic stablecoin issuers would be forced to adjust their stablecoins into asset-based. To mitigate the risks of algorithmic stablecoins, several solutions have been proposed: (1) full backing by stable collateral, and (2) maintaining over-collateralization through smart contracts.<sup>202</sup> By employing these strategies, algorithmic stablecoin issuers can enhance the stability and sustainability of their stablecoins, providing a more reliable and secure experience for users within the crypto ecosystem.

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*Outpaces Unfocused United States In Crypto Regulation, But MiCA Article 68 Raises Concerns*, FORBES (Apr. 25, 2023, 03:45pm), <https://perma.cc/U5D3-VNWD>; *see also infra* Part VI.C.

198. Karen Ubell & Mitzi Chang, “*Regulation by Enforcement*” in *The Digital Asset Industry: A Lagging Response to Stale Facts*, GOODWIN PROCTER LLP (May 31, 2023), <https://perma.cc/G95W-C2RZ>. The “regulation by enforcement” approach denotes the SEC’s reliance on enforcement actions to apply existing rules through retroactive sanctions for behavior it considers contrary to current regulations. A key drawback of this method is its inherently backward-looking nature. This is particularly evident in prolonged litigation cases, where the pertinent facts may have transpired years earlier, reflecting outdated market trends or practices no longer prevalent in the industry. Utilizing enforcement to communicate regulatory expectations to other market participants based on antiquated facts that were never part of prospective rulemaking invites legitimate criticism as a form of regulation by enforcement. *See id.*; *see also supra* Note 199; Meagan Johnson, *The EU Vs. The US: A Tale Of Two Crypto Regulatory Approaches*, FORBES (Apr. 4, 2023, 10:27am), <https://perma.cc/7QDM-RE8E>.

199. *See id.*

200. *See infra* Part III.A.

201. *See* Legal Nodes, *The EU Markets in Crypto-Assets (MiCA) Regulation Explained* (Jul. 27, 2023), <https://perma.cc/NQ7E-A9TD>.

202. *See* Gorton & Zhang, *supra* note 152, at 951.

### B. *Third-Party Attestation and Audit*

Attestation involves a third-party verifying and validating the assets supporting tokens, a process essential for establishing trust and credibility.<sup>203</sup> The transparency provided by attestation is critical, as stablecoins without this verification run the risk of resembling digital fiat money issued by unregulated entities. This situation could introduce substantial systemic risks. The absence of attestation means there is no guarantee that the issuer of the stablecoin possesses sufficient assets to cover the tokens in circulation. Without such assurances, users may doubt the coin's stability, potentially triggering a swift devaluation and eroding trust in both the coin and its broader ecosystem.

Another crucial remedy is auditing, which involves regular and independent examinations of the stablecoin issuer's financial statements and reserves.<sup>204</sup> The initial step in a stablecoin audit is to clearly define the scope of the audit. This is vital because each crypto asset operates differently, with various types of stablecoins offering distinct value propositions to the market. For instance, an audit for an asset-based stablecoin may concentrate on verifying and confirming the underlying assets and reserve balances. On the other hand, an audit for algorithmic stablecoins may place emphasis on assessing the interoperability<sup>205</sup> and security of interconnected blockchains. This process is essential to ensure that the issuer possesses the necessary funds to redeem tokens at the promised value. Auditing serves as a safeguard against fraud, mismanagement, and any disparities between the declared and actual reserves.

A major hindrance to broader adoption of cryptoassets by enterprises has been the absence of uniform and authoritative accounting standards. Although the Financial Accounting Standards Board (FASB) has initiated some preliminary efforts in researching cryptoasset reporting, the implementation of a unified standard is expected to be a lengthy process, potentially spanning several years.<sup>206</sup> Moreover, any established standards

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203. See Parma Bains et al., *Regulating the Crypto Ecosystem: The Case of Stablecoins and Arrangements*, FINTECH NOTES at 20 (Sept. 26, 2022), <https://perma.cc/ZER5-XTAG>; The Network Firm, *Nuance Matters: Understanding Proof of Reserves within the Spectrum of Audit and Attestation Standards* (May 25, 2023), <https://perma.cc/6FUG-AN8P>.

204. See *id.*

205. Interoperability involves the seamless interaction and transaction capability among various stablecoins. Yet, the absence of standardized protocols and frameworks complicates and extends the process of achieving interoperability. See Morgan Davis, *Stablecoins Auditing: Challenges And Solutions*, DOUBLOIN (Nov. 1, 2023) <https://perma.cc/2G7F-CL4D>.

206. See FINANCIAL ACCOUNTING STANDARD BOARD, ACCOUNTING FOR AND DISCLOSURE OF CRYPTO ASSETS (Sep. 14, 2023), <https://perma.cc/3YKH-9S4Y>; see also FINANCIAL ACCOUNTING STANDARD BOARD, FASB ISSUES STANDARD TO IMPROVE THE

must maintain the flexibility needed to navigate the rapidly evolving landscape of the industry.

Stablecoin issuers are obligated to follow industry standards for auditing, which entails engaging reputable accounting firms. The outcomes of these audits should be publicly disclosed to uphold transparency, enabling users to evaluate the coin's health and reliability. Auditing could play a pivotal role as a safeguard, preventing potential financial crises that may arise from unstable or untrustworthy stablecoins.<sup>207</sup>

### C. Legislation/Regulation

Legislation should be proposed in the United States to limit the issuance of stablecoins, along with redemption and maintenance reserve assets, to entities classified as insured depository institutions.<sup>208</sup> This legal framework aims to restrict non-depository entities from engaging in stablecoins issuance.<sup>209</sup> The insured depository institutions are subject to comprehensive supervision and regulation, both at the level of the depository institution itself and at the holding company level.<sup>210</sup> Moreover, the legislation should empower supervisors to establish standards facilitating seamless interoperability among stablecoins.<sup>211</sup>

The SEC has become a key regulatory authority for cryptoassets in the United States. The SEC introduced the Howey test in 2019 as a framework for analyzing “investment contracts” related to digital assets.<sup>212</sup> This test helps determine which digital assets should be classified as securities. According to the Howey test, a scheme is deemed an “investment contract” under the Securities Act – and therefore falls under SEC jurisdiction – if it involves “(1) an investment of money, (2) in a common enterprise, (3) with profits, (4) to come solely from the efforts of others.”<sup>213</sup> If a cryptoasset does not meet the criteria outlined by the

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ACCOUNTING FOR AND DISCLOSURE OF CERTAIN CRYPTO ASSETS (Dec. 13, 2023), <https://perma.cc/X8ZC-2FX6>.

207. Readers who are interested in stablecoin auditing can find more discussion in *Auditing Tokenomics: A Case Study and Lessons from Auditing a Stablecoin Project*. In this paper, the authors introduce several tools for stablecoin auditing, including benchmarking, agent-based modelling, game theory, balance-of-forces analysis, marginal cases, and probability theory. The authors apply those tools in the audit of the stablecoin BankX. Stylianos Kampakis, *See Auditing Tokenomics: A Case Study and Lessons from Auditing a Stablecoin Project*, J. BRIT. BLOCKCHAIN ASS'N, Apr. 2022, at 5-6.

208. *See Report on Stablecoins*, PRESIDENT'S WORKING GRP. ON FIN. MARKETS, THE FED. DEPOSIT INS. CORP., AND THE OFF. OF THE COMPTROLLER OF THE CURRENCY 1, 16 (2021), <https://perma.cc/8UGD-PT3X>.

209. *See id.*

210. *See id.*

211. *See id.*

212. *See supra* note 142.

213. *Id.*



Howey test, it may be considered a commodity, subject to the oversight of the Commodity Futures Trading Commission (hereinafter the “CFTC”).<sup>214</sup> However, the ongoing debate in the U.S. revolves around the classification of cryptoassets as securities.

Further, there was a surge of legislative activity in Congress as lawmakers focused on developing pioneering stand-alone cryptocurrency bills, between July 26 and July 28, 2023.<sup>215</sup> Stablecoin legislation has emerged as a contentious issue in Washington due to apprehensions that a well-established token could pose a challenge to the U.S. government’s capacity to regulate monetary policy.<sup>216</sup> Additionally, concerns have been raised about the safety of major issuers like Tether and Circle in an industry that currently exceeds \$120 billion.<sup>217</sup> Legislative initiatives are concentrated on establishing criteria for stablecoin issuance, as well as defining rules governing redeemability and collateral.<sup>218</sup> The House Financial Services Committee has persisted in marking up two additional bills, one of which is the Clarity for Payment Stablecoins Act of 2023.<sup>219</sup> This stablecoin legislation is considered a crucial cornerstone for the other bills in the regulatory framework.<sup>220</sup> The Clarity for Payment Stablecoins Act of 2023 addresses certain key issues about stablecoin regulations: (1) effective oversight and risk management for stablecoin issuers, (2) stringent criteria for assets collateralizing digital dollars, (3) redemption and custody protocols ensuring consumer protection, (4) comprehensive transparency, audit, and reporting standards, (5) equitable regulations for both banks and non-banks, (6) defined roles for federal and state regulators in chartering and supervising issuers, and (7) a prohibition on the issuance

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214. The CFTC is responsible for derivative instruments involving the delivery of assets in the future at a predetermined price. See Issam Hallak & Rasmus Salén, *Non-EU countries’ regulations on crypto-assets and their potential implications for the EU*, EUR. PARLIAMENTARY RSCH. SERV. at 3 (Sep. 2023), <https://perma.cc/8L34-BWDV>.

215. See Jason Brett, *Congress Creates A Storm Of Crypto Legislation* (Aug. 3, 2023, 10:25 AM), Forbes, <https://perma.cc/2RCE-3K8Z>.

216. See *id.* Stablecoins, if widely adopted as a means of payment, have the potential to significantly diminish the control central banks have over the money supply, thereby compromising the effectiveness of monetary policy. See Luca Beltrametti & Giovanni Battista Pittaluga, *Monetary Policy Implications of Stablecoins and CBDCs*, 76 INT’L ECON. 453, 453-78 (2023), <https://perma.cc/N2KX-KCLT>. The widespread use of stablecoins for payments can exert pressure for currency substitution, potentially limiting the portion of domestic liquidity directly under the influence of local authorities. This, in turn, may diminish central banks’ capacity to conduct effective monetary policy and could increase risks to monetary sovereignty. See Pietro Cova et al., *Do stablecoins alter the monetary policy transmission Mechanism?*, SUERF POLICY BRIEF No. 475, THE EUR. MONEY AND FIN. F. at 2 (Nov. 2022), <https://perma.cc/2QM6-QMPU>.

217. See *id.*

218. See *id.*

219. See *id.*

220. See Heath Tarbert, *The Stablecoin Bill Is a Vital Upgrade for US Financial Plumbing*, COINDESK (Oct. 16, 2023, 12:17 AM), <https://perma.cc/54WP-PQG6>.

of “counterfeit” digital dollars by entities operating outside the jurisdiction of U.S. laws.<sup>221</sup> There is bipartisan support in the House of Representatives to establish rules rather than merely following the lead of other nations,<sup>222</sup> making it imperative for the Senate and the White House to align with the House in advancing this legislation on a comprehensive, bipartisan basis.<sup>223</sup>

To address the potential risks on domestic payment systems imposed by stablecoins, more than 67% of countries, representing 98% of global GDP, are exploring central bank digital currency (hereinafter “CBDC(s)”).<sup>224</sup> The Federal Reserve has also explored potential benefits and risks of CBDCs, with a focus on “whether and how a CBDC could improve on an already safe and efficient U.S. domestic payment system.”<sup>225</sup> In May 2024, the U.S. House of Representatives passed CBDC Anti-Surveillance State Act, a bill meant to prevent the Fed to create and use CBDC in the United States.<sup>226</sup>

In September 2023, the House Financial Services Committee approved a bill meant to prevent the creation of a CBDC in the United States. However, there is a lack of support for a CBDC in Congress, citing concerns that a CBDC could be used for citizen surveillance,<sup>227</sup> increase competition with bank deposits, and result in more frequent bank runs.<sup>228</sup>

## VII. CONCLUSION

Recent incidents, such as the Terra/Luna crash and the USDC run tied to Silicon Valley Bank, spotlight significant run risks. With that, increased regulatory scrutiny and transparency concerns further add complexity to the run-risk issue.

Learning from the lessons of recent incidents and cases, this paper proposes multiple solutions. First, algorithmic stablecoins should advocate

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221. See Clarity for Payment Stablecoins Act of 2023, H.R. 4766, 118th Cong. (2023).

222. See Tarbert, *supra* note 222.

223. See *id.*

224. See Alisha Chhangani, *Central bank digital currency evolution in 2023: From investigation to preparation*, ATL. COUNCIL (Nov. 6, 2023), <https://perma.cc/P8Q4-C7J5>. Although MiCA does not cover CBDC, the European Central Bank has declared the initiation of a preparatory phase aimed at establishing the groundwork for a digital euro. See *id.*

225. BD. OF GOVERNORS OF THE FED. RSRV. SYS., CENTRAL BANK DIGITAL CURRENCY (last update Aug. 2, 2024), <https://perma.cc/W4M8-XWCT>.

226. See Press Release, House Financial Services Committee, House Passes CBDC Anti-Surveillance State Act, (May 23, 2024), <https://perma.cc/82FV-3SGP>; see also CBDC Anti-Surveillance State Act, H.R.5403, 118<sup>th</sup> Congress (2023).

227. See Jesse Hamilton, *U.S. CBDC Efforts Opposed in Legislation Advanced by House Republicans*, COINDESK (Sep. 22, 2023, 11:24pm), <https://perma.cc/A7A9-5R9N>.

228. See Will Canny, *U.S. CBDC Is Unlikely in the Near Term: Bank of America*, COINDESK (Nov. 15, 2023, 4:51 pm) <https://perma.cc/3RZJ-3UQK>.

full or over-collateralization. Although there are challenges in auditing the fast-developed instrument, stablecoin issuers should utilize third-party attestations and audits to maintain stability. Additionally, legislative changes should include restricting stablecoin issuance to insured depository institutions and empowering supervisors for interoperability. Though it lacks support in the United States, a CBDC could be used as an alternative way to mitigate stablecoins risks.

These proposals, if enacted, could drastically decrease the run-risk of stablecoins. However, as the regulatory landscape evolves and paradigms shift, ongoing research is crucial for understanding and addressing the dynamic nature of stablecoin risks.