

Stablecoins

Subjects: Economics

Contributor: John E. Marthinsen, Steven R. Gordon

A stablecoin is a digital currency issued by a private company or financial institution, with its value pegged to a fiat currency, basket of fiat currencies, or commodity, such as gold. Because this paper considers only stablecoins pegged to fiat currencies, such as the U.S. dollar or euro, we use “fsCOIN,” as our abbreviation for a “fiat-currency-denominated stablecoin”.

Keywords: stablecoins ; synthetic central bank digital currencies ; bank runs ; cash equivalents

1. Introduction

An fsCOIN is a type of cryptocurrency meant to reduce price volatility and provide users with a reliable store of value. Like cash, it has no maturity, but unlike cash, it is neither a unit of account nor a widespread medium of exchange. Financial accounting standards are evolving regarding how to report these digital assets. For example, a determination as to whether an fsCOIN qualifies as a “cash equivalent,” such as a certificate of deposit, money market mutual fund (MMF), or 3-month Treasury bill, would be based on its (1) liquidity, (2) transparency, (3) level of reserves, (4) price stability, (5) redemption attributes (e.g., notice requirements, costs, limits, and counterparty, such as the issuer or an exchange), (6) intended use as either an investment or short-term means of meeting cash needs, and (7) users’ trust ([Hampl and Gyöngyörová 2021](#)).¹ Currently, fsCOINs are used mainly to expedite trading, lending, and borrowing other digital assets ([President’s Working Group on Financial Markets et al. 2021](#)). Speculators and investors also use them as collateral to leverage positions and to buy and sell digital assets in a distributed ledger environment without the need for fiat currencies and traditional financial institutions.

fsCOINs are not legal tender, and their issuers are independent of any central bank. Given their diminutive relative size, they are insignificant sources of demand for nations’ goods and services. Therefore, they are not major causes of inflation or deflation. With proper reserves to back them and seamless operations, fsCOINs have the potential to serve as complements of nations’ M2 money supplies.² Furthermore, their issuance and use provide incremental testing grounds for innovative payment platforms and features, such as interoperability with other payment systems, user-friendliness, user-acceptance at the wholesale and retail levels, and an ability to comply with “Know Your Customer” (KYC), “Anti Money Laundering” (AML), and “Combating the Financing of Terrorism” (CFT) regulations.

Critical to an fsCOIN’s value are its issuance and redemption rules. Issuance relates to controlling the number of fsCOINs in circulation to prevent over- or under-supply; redemption concerns the ability to satisfy holders’ demands to convert them to their pegged currencies.³ Because an fsCOIN’s value is determined by the forces of supply and demand, changes in demand (supply) must be met by an equivalent and offsetting change in supply (demand). Therefore, every fsCOIN has a risk-bearer who enjoys gains when demand rises and absorbs losses when it falls.

The main U.S.-dollar-backed fsCOINs are USD Coin (USDC), Binance USD (BUSD), Pax Dollar (USDP), and Geminin Dollar (GUSD). Among the significant non-U.S.-dollar-backed fsCOINs are Tether (USDT) and TrueUSD (TUSD). Multi-collateral Dai (DAI)⁴ and Liquidity USD (LUSD) are backed by cryptocurrencies (e.g., Bitcoin and Ether) and minted and burned by smart contracts. Algorithmic fsCOINs have no asset backing. Instead, smart contracts regulate their supplies and demands to ensure currency pegs are maintained. A popular algorithmic fsCOIN is Frax (FRAX).⁵ Finally, sUSD is an fsCOIN backed by the Synthetix Network Token (SNX), on which users stake SNX tokens as collateral to mint sUSDs. As a result, an sUSD’s value is supported by the staked SNX tokens.

Table 1 shows the top ten fsCOINs’ market capitalization on 16 January 2024. The top two had a combined value greater than \$120 billion, which exceeded by a considerable amount JPMorgan Prime Money Market Fund, which had roughly \$79 billion in assets ([J.P. Morgan Asset Management 2024](#)).

Table 1. Stablecoins by market cap and volume on 16 January 2024.

Stablecoin Name	Symbol	Price	Market Cap	Circulating Supply
Tether	USDT	\$1.000195	\$95.14 billion	\$95.12 billion
USD Coin	USDC	\$1.000300	\$25.44 billion	\$25.44 billion
Multi-Collateral Dai	DAI	\$0.999186	\$5.34 billion	\$5.35 billion
First Digital USD	FDUSD	\$1.001795	\$2.10 billion	\$2.09 billion
TrueUSD	TUSD	\$0.989888	\$1.89 billion	\$1.91 billion
Frax	FRAX	\$0.995967	\$646.84 million	\$649.46 million
Binance USD	BUSD	\$0.993907	\$412.23 million	\$414.76 million
Pax Dollar	USDP	\$1.001309	\$363.26 million	\$362.79 million
PayPal USD	PYUSD	\$0.998815	\$293.85 million	\$294.20 million
sUSD	sUSD	\$0.977720	\$220.45 million	\$225.47 million

Source: CoinCodex: Stablecoins by Market Cap and Volume, <https://coincodex.com/cryptocurrencies/sector/stablecoins/> (accessed on 16 January 2023).

2. Liquidity Concerns about fsCOINs

The safety and liquidity of an fsCOIN is a function of the quantity and quality of its collateral backing and the depth of its secondary markets ([Hampl and Gyöngyörová 2021](#)).⁶ The safest fsCOIN is fully collateralized by safe assets denominated in the pegged currency, which are (1) short-term, (2) highly liquid, and (3) readily convertible to known amounts of cash, with minimal risk of their values changing. These reserve assets include deposits at other financial institutions (e.g., commercial banks); Treasury bills; commercial paper; precious metals, such as gold; cryptocurrency deposits; and other “cash equivalents.”¹ Nevertheless, even with 100% reserve backing, fsCOINs can lose value if issuers become insolvent or illiquid owing to⁷:

- Losses on equity-financed or borrowing-financed investments;
- Mismanagement of deposited funds that render fsCOIN holders unable to clear and liquidate them; and
- Theft, fraud, deceit, incompetence, poor curation, and programming mistakes, which are threats amplified by the general lack of fsCOIN regulation.

To ensure that equity-financed or debt-financed losses do not jeopardize an issuer’s solvency, the reserves backing an fsCOIN’s liabilities could be segregated and put into custody accounts, so they are unencumbered by any potential claims ([Adrian and Mancini-Griffoli 2021](#))¹¹.

To moderate liquidity, credit, and counterparty risks, fsCOIN holders may be able to purchase deposit insurance (if available) or credit default swaps (CDS) on fsCOIN issuers, but these solutions only serve to shift these risks from fsCOIN holders to insurance companies and CDS counterparties.¹² In 2021, the U.S. President’s Working Group recommended legislation that would allow only financial institutions with insured deposits to issue, redeem, and maintain fsCOINs ([President’s Working Group on Financial Markets et al. 2021](#)).

Because fsCOINs’ risk–return profiles are comparable to those of regulated bank deposits and other highly liquid money market assets, “regulation equality” implies that fsCOIN issuers should abide by similar (or identical) rules as banks or MMFs ([Anadu et al. 2023](#); [Catalini and Shah 2021](#)) for: (1) liquidity, (2) equity, (3) loan concentration, (4) operational quality,¹⁰ (5) consumer protection, (6) stress testing, and (7) regulations governing transaction monitoring (e.g., KYC and AML rules), reporting suspicious transactions, and combating the financing of terrorism (CFT) ([Bains et al. 2022](#)). Owing to fragmentation and the decentralized nature of fsCOINs, achieving these goals is likely to be difficult, if not impossible, unless broad regulatory powers can be brought to bear on issuers, cryptocurrency exchanges, custodians, governance bodies, wallet providers, network validators, client fund managers, and market makers.

At the macroeconomic level, it is not clear that a monetary system centered around one or more digital currency networks would provide the optimal amount of liquidity to maintain solid real GDP growth with low inflation and an adequate

emergency liquidity-funding facility. These concerns are reinforced by the uncertainty that these networks would be interoperable ([Brunnermeier et al. 2019](#)).

3. Systemic Liquidity Concerns about fsCOINs

Because fsCOINs are uninsured and their convertibility is uncertain, they may not be universally accepted in exchange for goods, services, or other cryptocurrencies. Therefore, issuers may need incentives to induce customers to use them. Inducements could come from anonymity or opportunities for customers to transact payments and receipts outside the traditional financial system. They might also be in the form of better financial services or higher interest rates.

fsCOIN issuers are particularly susceptible to runs, regardless of whether the causes are well-founded in fact. Suspicions that the reserves backing an fsCOIN are insufficient, illiquid, or, in some other way, threatened could cause holders to convert them to safer assets, such as the currencies backing them, financial instruments denominated in safe fiat currencies, or secure cryptocurrency-denominated deposits. To meet fsCOIN holders' demands during a run, issuers would be forced to convert their reserve assets to the pegged currency. Many of these reserves are held as uninsured bank deposits and ¹¹, owing to their size, often exceed insurance limits, which makes them particularly susceptible to runs. Just as fsCOIN issuers would be forced to liquidate assets to meet fsCOIN holders' demands during a run, the banks and other financial institutions in which fsCOIN issuers hold their reserves would be forced to do the same, draining funds from the interbank market and further increasing the supply of financial assets, resulting in lower asset prices ([Klages-Mundt et al. 2020](#); [Morgan 2022](#)) ¹².

Runs on fsCOIN issuers would not directly deplete the financial system's liquidity because funds would be shuffled from one financial institution to another. Nevertheless, compression in asset prices could affect the solvency and liquidity of individual financial institutions, and rising interest rates could further reduce financial intermediaries' profits, resulting in loan contraction.

The run on Terra in May 2022 negatively impacted other algorithmic-backed and asset-backed fsCOINs, such as Tether. On the positive side, the run on Terra resulted in net inflows to safe fsCOINs, such as USDC ([Anadu et al. 2023](#)). Similarly, in March 2023, USDC (i.e., USD Coin) experienced significant outflows when holders learned of its uninsured deposits held at SVB. USDC was considered among the safest reserves of all the fsCOINs, consisting mainly of U.S. Treasury securities, bank deposits, and MMFs. Nevertheless, news that about eight percent of these assets were held as uninsured deposits at bankrupt SVB triggered capital flight from USDC, which ignited outflows from Dai and Frax, ¹³ for which reserves included extensive holdings of USDC.

An interesting commonality between the 2022 run on Terra and the 2023 run on USDC was that capital fled from fsCOINs to other fsCOINs, primarily via centralized exchanges, not from fsCOINs to traditional money market investments, such as MMFs. Investors largely replaced relatively risky Terra and USDC with fsCOINs perceived as safer, such as Tether (USDT) ([Anadu et al. 2023](#)). An equally interesting consequence of the Terra and USDC runs was that fsCOINs considered relatively safe beforehand were perceived as relatively risky afterward, and fsCOINs considered relatively risky beforehand, such as USDT and TUSD, were perceived as relatively safe afterward.

Notes

1. International Accounting Standards Board, 2017, paragraph 7: the definition of "cash equivalents" includes savings deposits, MMFs, and Treasury bills. In general, an asset is a "cash equivalent" if:

- Issuers provide holders with contractual rights to convert their holdings to an established amount of cash;
- Withdrawal notices of intent are not excessive;
- Withdrawal fees and restrictions on withdrawal amounts are reasonable;
- The risk of the fsCOIN's value changing is insignificant; and
- They are held to manage short-term cash commitments rather than investments or other medium-to-long-term commitments.

2. In the United States, M2 includes currency in circulation (i.e., coins and cash outside banks), checkable deposits, small-denomination time deposits, and retail MMFs.

3. Some fsCOINs are not redeemable by their issuers but are still considered to be "cash equivalents" if they have liquid secondary markets, such as exchanges, on which they can be bought and sold.

4. To create DAI, holders lock up cryptocurrency collateral in smart contracts on the Ethereum blockchain. The computer algorithm overcollateralizes the outstanding DAI supply. Depreciation pressure is offset by the system automatically selling a portion of its reserves to maintain the fixed exchange rate. Smart contracts cannot exchange an fsCOIN for fiat currency because a contract cannot hold fiat currency. Instead, the agreement maintains an fsCOIN's peg by allowing holders to exchange the fsCOIN for cryptocurrency of equal worth. Because the values of cryptocurrencies are highly volatile, smart contracts require overcollateralization.
5. FRAX has hybrid backing, using assets and a computer algorithm.
6. Lyons and Viswanath-Natraj (2023) find that stablecoin discounts during the COVID-19 crisis were largely due to liquidity effects and collateral concerns.
7. Under Chapter 11 (reorganization), fsCOIN issuers could continue operations while restructuring and modifying their debts and business operations. IAS, Chapter 7 requires fsCOIN issuers to liquidate their assets.
8. Trusts are a potential answer, but more than the legal protections afforded to trusts may be needed to protect these funds from aggressive creditors. One solution to this potential problem is to segregate sCBDC reserves into one or more legally protected trusts. See Adrian and Mancini-Griffoli (2021).
9. In the United States, fsCOIN issuers that deposit reserves in insured depository institutions need "pass-through" deposit insurance for their customers to be protected, and this protection is limited to \$250,000 per customer. Without pass-through insurance, only the fsCOIN issuer would be covered up to a maximum of \$250,000.
10. Operational quality relates to an issuer's information controls and processes, training, and resilience to external shocks that might affect service quantity and quality. Owing to the multiple levels of operations connected to fsCOINs and outsourced responsibilities, controlling operational risks may take time and effort. If the fsCOIN has open network access and consensus-based clearing and settlement, problems with quality control and accountability could be exacerbated.
11. Usually, the reserves of fsCOIN issuers at commercial banks exceed the insurance deposit limits, which are \$250,000 per customer per account in the United States.
12. Klages-Mundt et al. (2020) find that feedback effects from issuers deleveraging their balance sheets may have resulted in costs significantly higher than \$1 per stablecoin (e.g., Maker on Black Thursday in March 2020).
13. Frax is a partially algorithmic fsCOIN for which the value is set partly by reserves and an algorithm using Frax Shares, a flexible-exchange-rate cryptocurrency.

References

1. J.P. Morgan Asset Management. 2024. JPMorgan Prime Money Market Fund. Available online: <https://am.jpmorgan.com/us/en/asset-management/adv/products/jpmorgan-prime-money-market-fund-capital-4812a0367> (accessed on 17 January 2024).
2. Hampl, Filip, and Lucie Gyönyörová. 2021. Can fiat-backed stablecoins be considered cash or cash equivalents under international financial reporting standards rules? *Australian Accounting Review* 31: 233–55.
3. Adrian, Tobias, and Tommaso Mancini-Griffoli. 2021. The rise of digital money. *Annual Review of Financial Economics* 13: 57–77.
4. President's Working Group on Financial Markets, the Federal Deposit Insurance Corporation, and the Office of the Comptroller of the Currency. 2021. Report on Stablecoins. Available online: https://home.treasury.gov/system/files/136/StableCoinReport_Nov1_508.pdf (accessed on 27 August 2023).
5. Anadu, Kenekwue, Pablo D. Azar, Marco Cipriani, Thomas M. Eisenbach, Catherine Huang, Mattia Landoni, Gabriele La Spada, Marco Macchiavelli, Antoine Malfroy-Camine, and J. Christina Wang. 2023. Runs and Flights to Safety: Are Stablecoins the New Money Market Funds? Federal Reserve Bank of Boston Working Paper No. 23-11. Available online: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4595172 (accessed on 31 January 2024).
6. Catalini, Christian, and Nihar Shah. 2021. Setting Standards for Stablecoin Reserves. Available online: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3970885 (accessed on 31 January 2024).
7. Bains, Parma, Arif Ismail, Fabiana Melo, and Nobuyasu Sugimoto. 2022. Regulating the Crypto Ecosystem: The Case of Stablecoins and Arrangements. International Monetary Fund. Available online:

<https://www.imf.org/-/media/Files/Publications/FTN063/2022/English/FTNEA2022008.ashx> (accessed on 1 February 2024).

8. Brunnermeier, Markus K., Harold James, and Jean-Pierre Landau. 2019. *The Digitalization of Money* (No. w26300). Cambridge: National Bureau of Economic Research.
9. Klages-Mundt, Arian, Dominik Harz, Lewis Gudgeon, Jun-You Liu, and Andreea Minca. 2020. *Stablecoins 2.0: Economic Foundations and Risk-Based Models*. Paper presented at the 2nd ACM Conference on Advances in Financial Technologies, New York, NY, USA, October 21–23; pp. 59–79. Available online: <https://dl.acm.org/doi/abs/10.1145/3419614.3423261> (accessed on 29 January 2024).
10. Morgan, Jamie. 2022. Systemic stablecoin and the defensive case for central bank digital currency: A critique of the Bank of England's framing. *Research in International Business and Finance* 62: 101716.

Retrieved from <https://encyclopedia.pub/entry/history/show/126985>