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Top Stablecoins by Market Cap

A Comprehensive Analysis

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Research and Insights

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Executive Summary

Stablecoins, as the name implies, are **a class of cryptocurrencies whose ultimate goal is to be price stable with different mechanisms to maintain stability.** Stablecoins can be classified into four categories, including **fiat-backed, commodity-backed, crypto-backed, and algorithmic stablecoins**. In this report, the common criticisms for major stablecoins and their improvement efforts are discussed:

- **Fiat-backed stablecoins** are one of the most widely used stablecoins. However, Tether faced questions about what its USDT coin is backed by, with criticisms of too much short-term corporate debt in its reserves. To resolve the ongoing concerns, Tether recently claimed to reduce corporate debt from 44% (Q3 2021) to 17% by April 2022 and increase holdings of U.S. Treasurys to 13%.

- **Commodity-backed stablecoin** PAX Gold (PAXG) was found to have an inconsistency between the amount of gold backing PAXG and the number of PAXG issued in April 2020. To improve, PAXG implemented an online lookup tool and partnered with Chainlink in January 2021, ensuring the verification that every PAXG is fully backed by allocated gold.

- **Crypto-backed stablecoin** DAI, previously known as SAI (single-collateral), launched in December 2017. Shortly after its release, it depegged below US$0.72 on 12 January 2018. DAI made enhancements starting in November 2019 by updating single-collateral DAI (ETH only) to multiple-collateral DAI to reduce the risks of volatility of single-crypto assets. Moreover, DAI is trying to maintain stability through over-collateralised assets in its positions.

- **Algorithmic stablecoins** suffer from loss of confidence and peg breaks as they are usually non-asset backed. A detailed analysis of depegging in Terra's UST and Neutrino USD (USDN) is introduced by a **Crypto.com report titled *Depegging Events in Fiat and Crypto***. FRAX presented a novel solution (i.e., fractional-algorithmic) — **partially backed by collateral** and **partially stabilised algorithmically.** It currently maintains a peg to US$1 by being partially collateralised by USDC (stable assets) alongside periodically buying and selling FXS (Frax shares, governance token).

As of 20 May 2022, nearly 100 stablecoins have been launched into the market, with a total market capitalisation of US$157 billion. In this report, we focus on the on-chain data analysis of the major stablecoins along different metrics, such as **market capitalisation and market share, NVT ratio, volatility, and social media followers, etc.,** demonstrating the trend in the history and the period of UST's collapse in May.

1. Introduction

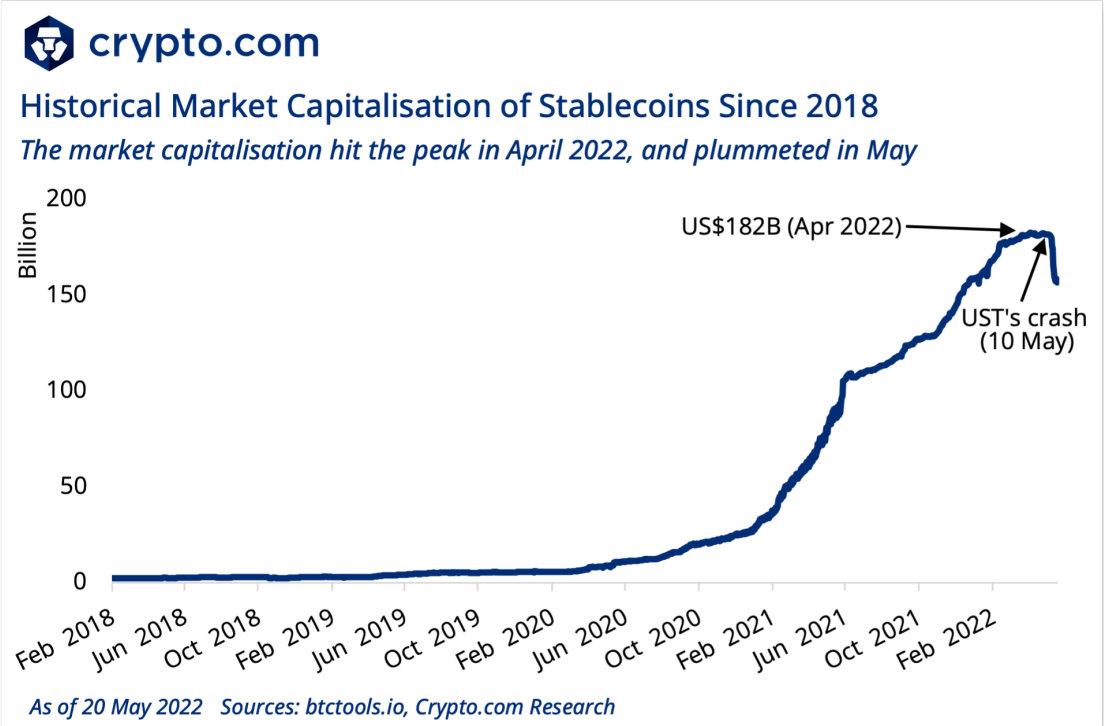
After the first theoretical concept of blockchains was proposed in 2008, thousands of cryptocurrencies have been issued and traded by worldwide users. **Though many crypto assets aspire to a wider adoption in order to become world currencies, some cryptocurrencies are frequently criticised due to their high volatility in prices.**

Stablecoins, as the name implies, are a class of cryptocurrencies whose ultimate goal is to be price stable with different mechanisms to maintain stability. **In a report published by Crypto.com, stablecoins can be categorised into four types: fiat-backed, commodity-backed, crypto-backed, and algorithmic stablecoins.** The main difference between the first three categories lies in the asset-backed types. In contrast, algorithmic stablecoins are actually new variants of stablecoins, and their price stability is derived from a dedicated mechanism that controls the supply of tokens based on market conditions.

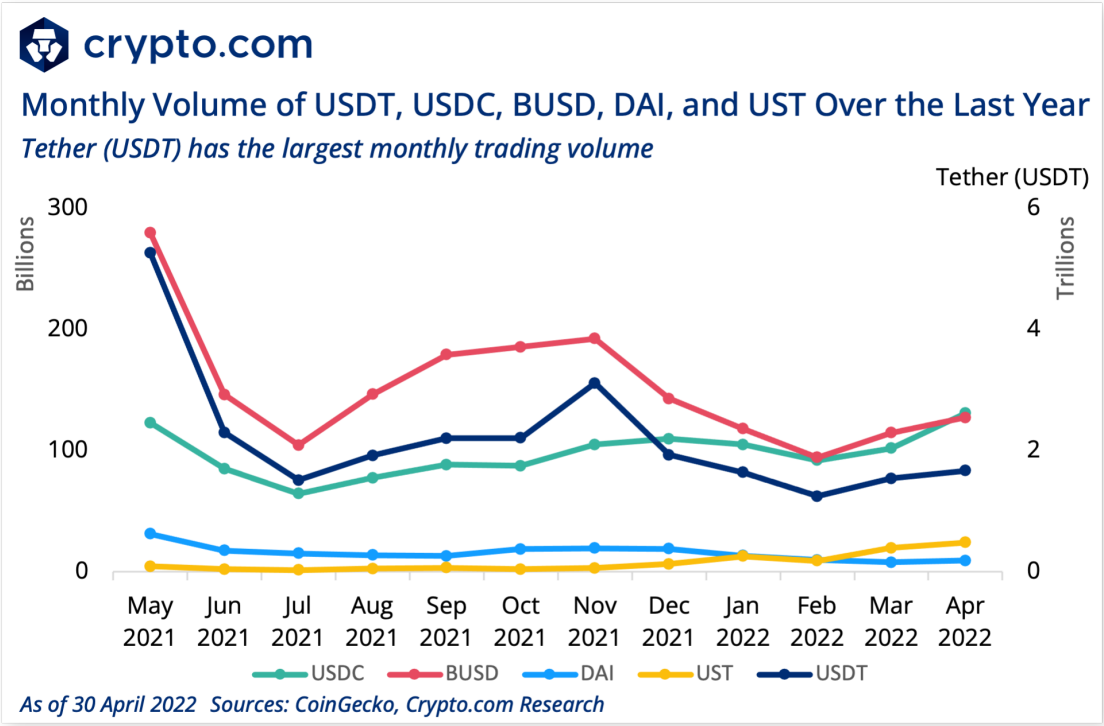
Stablecoin Types

Types	Pros	Cons	Examples
Fiat-backed	Relatively stable price	Centralised, low transparency	Tether (USDT), USD Coin (USDC), etc.
Commodity-backed	Safe against crypto volatility	Centralised, need to trust metal reserves	PAX Gold (PAXG)
Crypto-backed	Transparency, no external custody	Less stable, need to monitor collateral	DAI, MIM, etc.
Algorithmic	No collateral, transparent algorithm	Loss of confidence in peg mechanism	Terra's UST, Neutrino USD (USDN), etc.

As of 20 May 2022, nearly one hundred stablecoins have been launched into the market. **The overall stablecoin market capitalisation hit the highest point (US$182B) in April 2022, yet drastically plummeted in May due to the 'black swan' event in Terra.**



Daily trading volume is seen as another metric to measure the usage of stablecoins. The chart below depicts the monthly volume of the major stablecoins over the past 12 months.



As indicated, the monthly trading volume of Tether's USDT is significantly larger than the other four stablecoins (i.e., USD Coin (USDC), Binance USD (BUSD), TerraUSD (UST), and DAI).

In the following sections of this report, we present more on-chain data analysis and comparison on some leading stablecoins, talk about the potential risks of stablecoins, and give insights on the real-world adoptions.

2. Analysis of Popular Stablecoins

Now, we pick up several prominent players in the stablecoin space. Apart from a high-level introduction for each coin, we further present a comprehensive comparison of market capitalisation and dominance, NVT ratio, volatility, and the number of followers on social media.

2.1 Overview of Representatives

We focus on several representatives in this analysis report, including Tether (USDT), USD Coin (USDC), TerraUSD (UST), Binance USD (BUSD), DAI, Frax (FRAX), TrueUSD (TUSD), Neutrino USD (USDN), and Paxos (USDP, PAX previously). **The selection criteria is that the market capitalisation** is over US$1B (the source is from Crypto.com's price feed) by 20 May 2022. Note that the market cap of USDP and USDN is US$0.95B and US$0.84B, respectively. Thus, we also include them in our measurement. **Meanwhile, even though UST's market capitalisation declined below US$1B as of 20 May 2022, we consider it as a main player in this report and depict its historical data.**

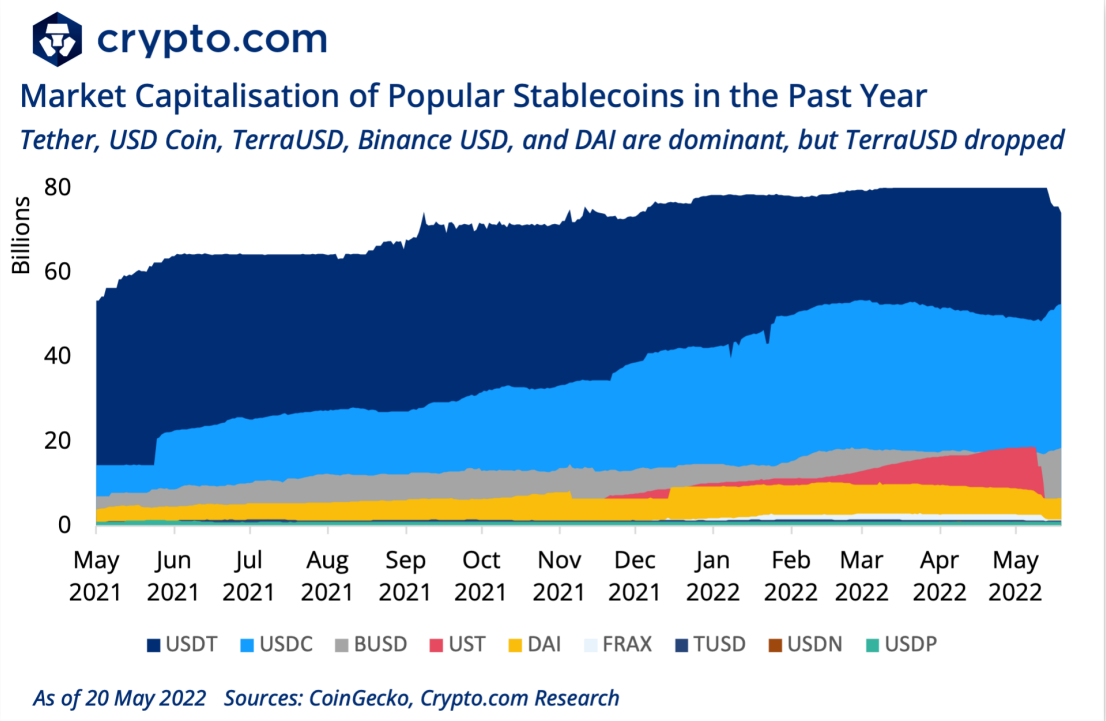
As the name suggests, USDT, USDC, BUSD, TUSD, and USDP are designed to be fiat-backed stablecoins, pegged against the U.S. dollar. Unlike these stablecoins, which are collateralised against fiat currency, DAI has different cryptocurrencies as collateral (e.g., ETH, BAT, USDC, and COMP) to maintain its US$1 peg through an over-collateralised position.

In contrast, Terra's UST is a prominent algorithmic stablecoin. Similarly, launched on the Waves blockchain ecosystem, USDN is another algorithmic stablecoin whose supply can expand and contract by burning or minting WAVES. Meanwhile, FRAX is the first fractional-algorithmic stablecoin that introduced the concept of a cryptocurrency being partially backed by collateral and partially stabilised algorithmically.

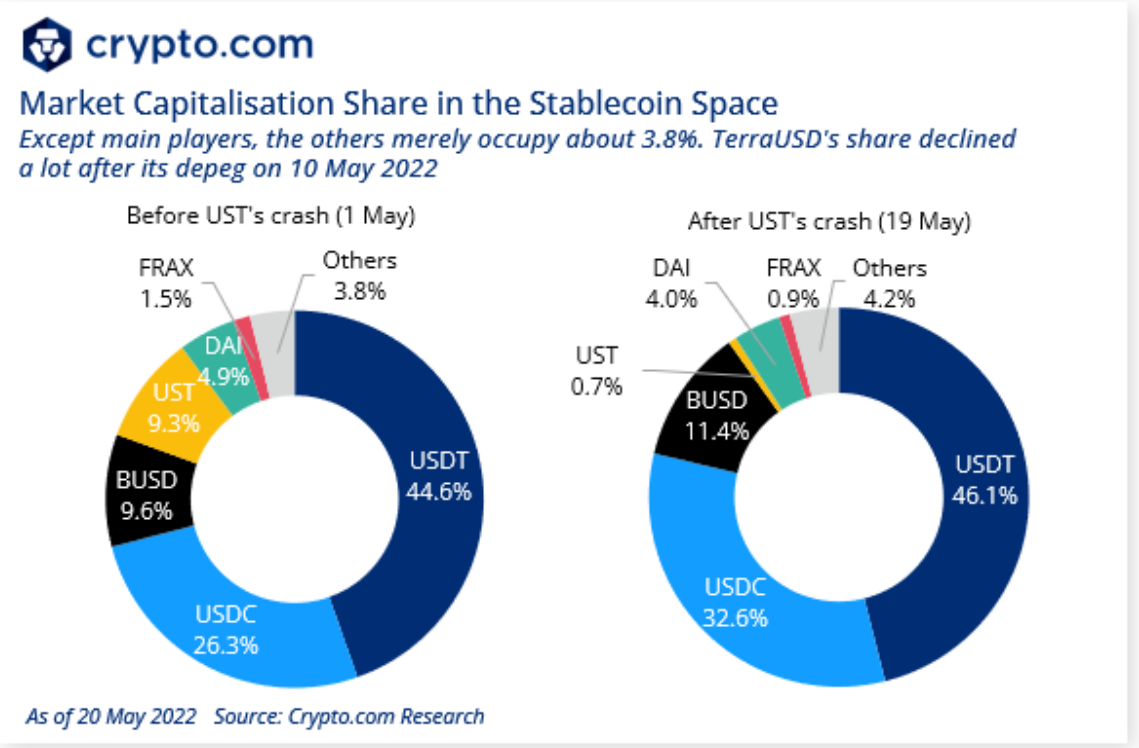
2.2 Market Capitalisation

The circulating market capitalisation describes the price of the asset multiplied by the circulating supply. The chart below indicates the comparison of market capitalisation for selected popular stablecoins. As indicated, **Tether (USDT), USD Coin (USDC), Binance USD (BUSD), TerraUSD (UST), and DAI have a relatively larger market capitalisation compared to the others,** standing at US$82.7B, US$49.3B, US$16.9B, US$10.2B, and US$6.6B, respectively (by 12 May 2022). **Although UST experienced a price crash on 10 May 2022, its market**

capitalisation was still ranked 4th by 12 May, yet continued to decline to merely US$1B on 20 May.



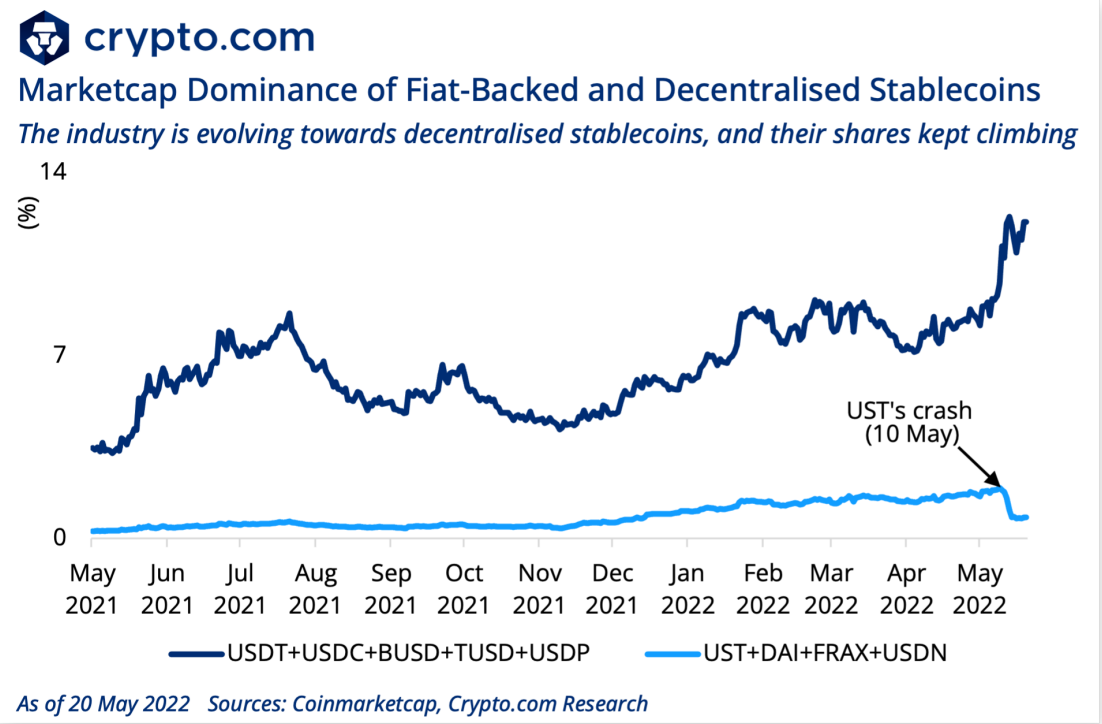
We further provide the specific market share in the stablecoin space for each coin. As the chart above implies, Tether (USDT) dominates almost 50% of the overall stablecoin market capitalisation. Meanwhile, Tether and USD Coin constitute more than 70% of the stablecoin market share. **Compared to the main players in the stablecoin space, the others (as shown in the chart below) just occupy 3.8% of total stablecoin capitalisation.** Interestingly, TerraUSD's share was 9.3% before its devastating decline, **yet occupied approximately 0.7% in the stablecoin space until 20 May.**



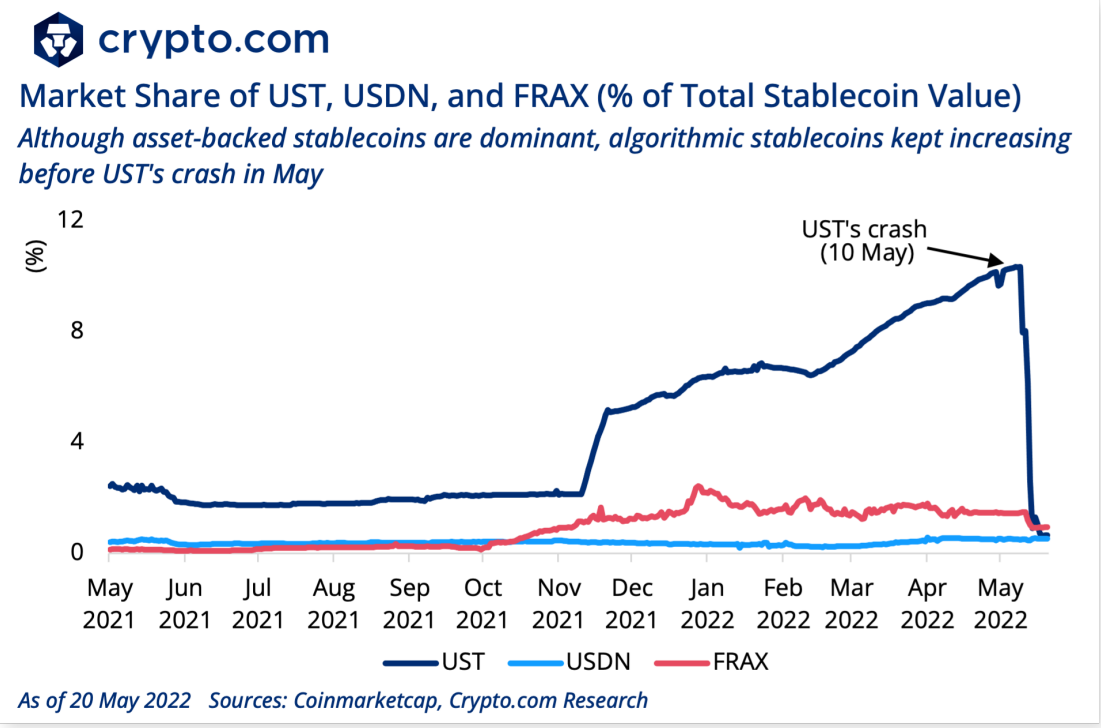
2.3 Market Dominance

The market dominance (or, market share) demonstrates an asset's percentage share of total circulating crypto market capitalisation. Usually, the stablecoin market has around 10%-12% share of the entire crypto industry. In terms of particular coins, Tether occupied at most 5.14% market share on 20 July 2021. From then on, the market share of most stablecoins declined when Bitcoin dropped back below US$30,000 until its bounce-back in January 2022. Interestingly, TerraUSD (UST) has experienced steady and consistent growth in the past six months, **and its market share surpassed Binance USD (BUSD) in April, standing in third place. However, it has significantly plummeted and fallen behind BUSD again after its price crash in May 2022.**

We further depict a chart showing the market dominance of fiat-backed stablecoins and decentralised stablecoins such as DAI, UST, USDN, and FRAX. Since November 2021, the market shares of selected decentralised stablecoins continually increased before the collapse of UST, indicating the industry leans towards decentralised stablecoins.



Despite the main dominance of asset-backed stablecoins like USDT, USDC, and BUSD, the share of algorithmic stablecoins like UST, USDN, and FRAX kept increasing **before Terra UST's price crash** on 10 May 2022. See our observations in the chart below.

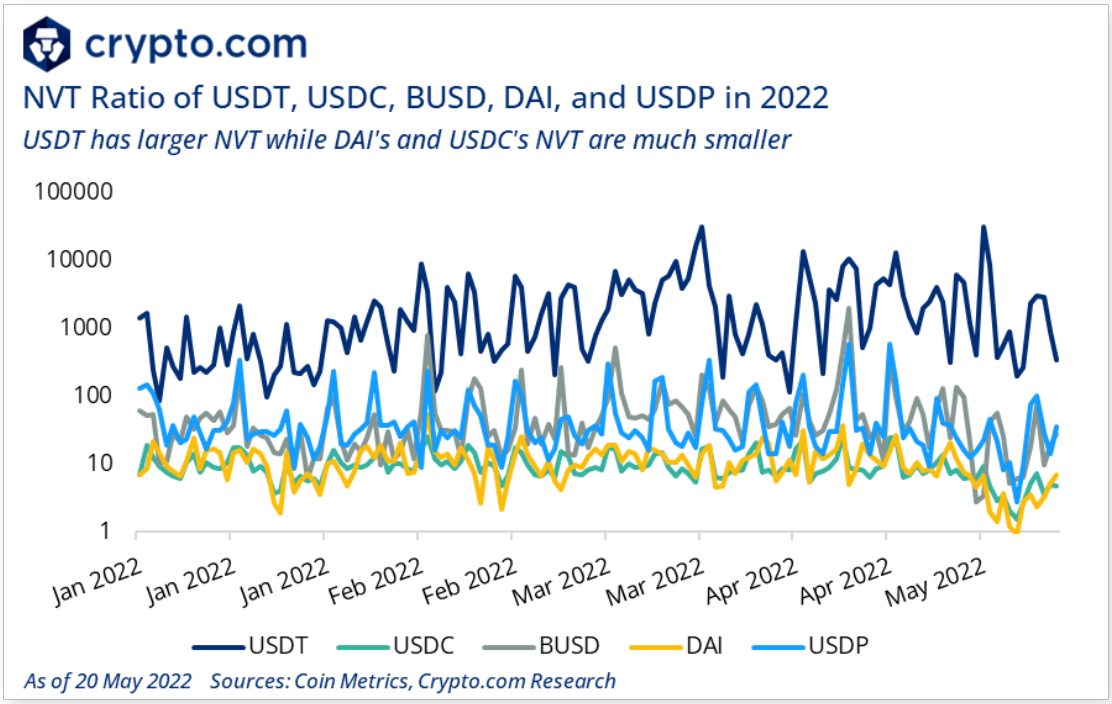


2.4 NVT Ratio

NVT refers to the ratio of the network value (or current supply of market capitalisation) divided by transacted volume, which measures whether an asset is **overvalued or not.**

$$NVT\ Ratio\ = \frac{Market\ Capitalisation}{Transaction\ Volume}$$

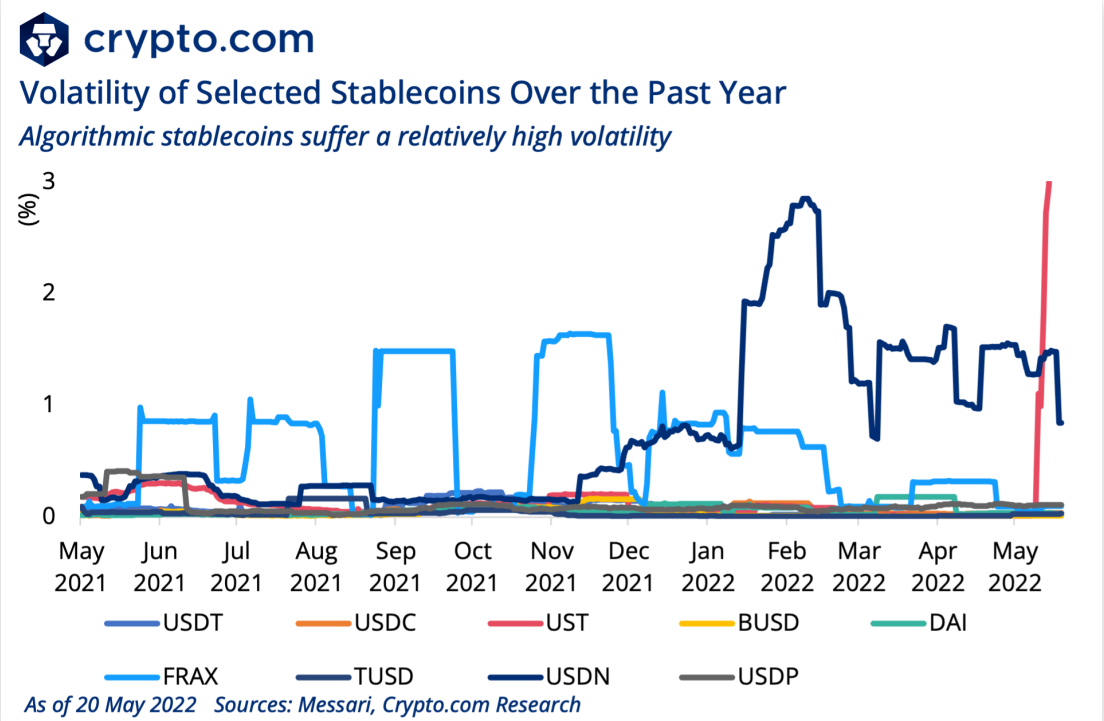
A high NVT value denotes that the platform valuation outpaces transaction volume in practice, demonstrating a possible price bubble. In contrast, a relatively low NVT value represents that such a platform enjoys higher transaction volume (e.g., high interest from the community), but the platform valuation is lagging behind.



As the chart above indicates, Tether (USDT) has the largest NVT ratio compared to other main players. **Despite the high NVT ratio for USDT, there is an inability to make confident conclusions from a particular NVT ratio in practice.** For instance, a high/low value may not be indicative of an asset's worthiness from the investment point of view. Furthermore, the NVT ratios sometimes suffer high volatility, as the value of transaction volume refers to the 24-hour data, which might vary drastically day to day.

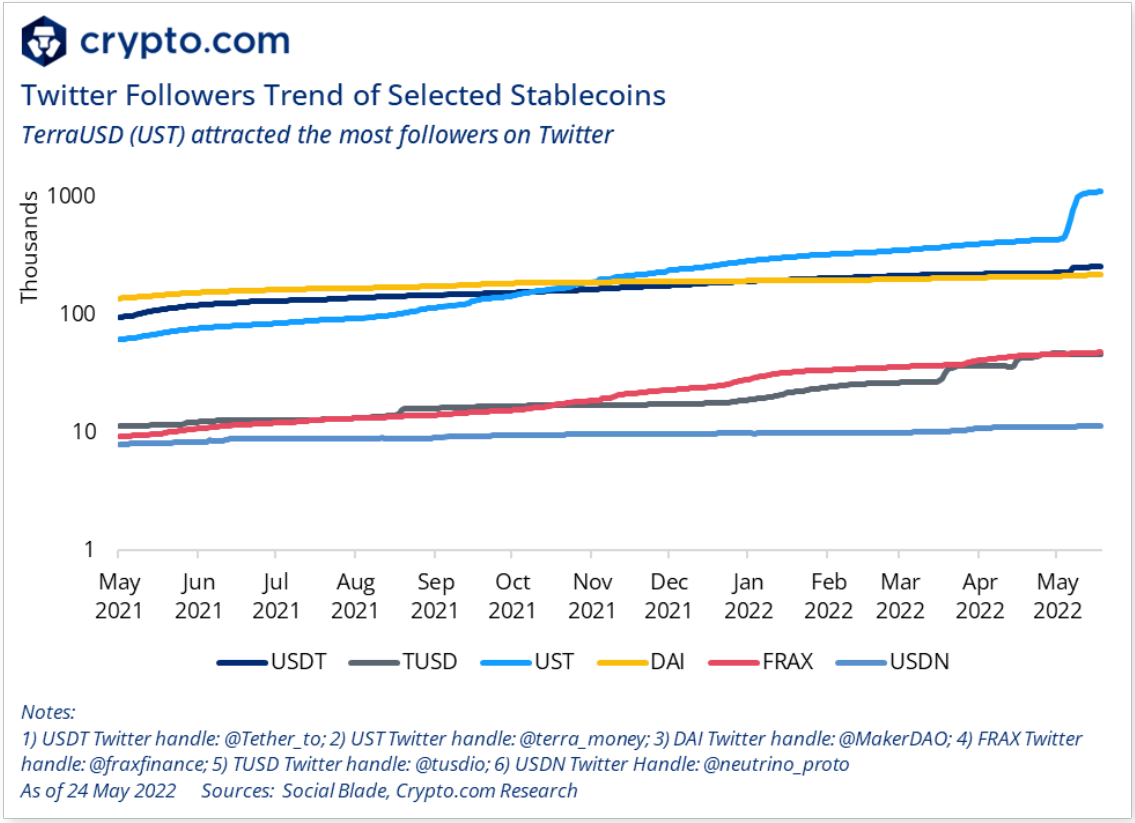
2.5 Volatility

Volatility of stablecoins refers to the annualised standard deviation of daily returns. We describe the volatility of selected stablecoins over the past year in the table below. As demonstrated, asset-backed stablecoins have a relatively smaller volatility value compared to algorithmic stablecoins. Obviously, UST suffered from a large volatility value in May's crash.



2.6 Social Media Followers

Apart from evaluating the market capitalisation and trading volume, the number of followers of officially launched social media accounts (e.g., Discord and Twitter as a proxy) can reflect the popularity and visibility of these stablecoins. In this section, we present the trend of follower growth for selected stablecoins in 2022. Meanwhile, we assess the active-discord users for those assets in the following section.



As of this writing, UST has the most followers on Twitter. The diagram above reflects that the stablecoins with a relatively larger market share can intuitively attract more followers from the community.

2.7 Miscellaneous Features

We present more general features of the representatives discussed in this report and illustrate them in the table below.

Coins	Alias	Icon	Debut	Price	Chain	Mechanism	Market Cap	Share	Discord/ Telegram Users
Tether	USDT		2014	$1.01	Ethereum	Fiat-backed	$74.78B	6.09%	6,806
USD Coin	USDC		2018	$1.00	Ethereum	Fiat-backed	$52.08B	4.32%	6,887
Binance USD	BUSD		2019	$1.01	BSC	Fiat-backed	$18.41B	1.51%	–
DAI	DAI		2017	$1.01	Ethereum	Crypto-backed	$6.57B	0.54%	5,672
Frax	FRAX		2020	$1.00	Ethereum	Algorithmic	$1.41B	0.12%	12,470
TrueUSD	TUSD		2018	$1.01	Ethereum	Fiat-backed	$1.21B	0.10%	5,481
PAX Dollar	USDP		2018	$1.00	Ethereum	Fiat-backed	$0.95B	0.08%	–
TerraUSD	UST		2020	$0.07	Terra	Algorithmic	$0.87B	0.08%	41,632
Neutrino USD	USDN		2019	$0.97	Waves	Algorithmic	$0.82B	0.07%	3,945

As of 20 May 2022 Sources: CoinGecko, Crypto.com Research

3. Analysis of Risks in Stablecoins

Stablecoins have limitations. Below, we discuss some potential risks and common criticisms for the major stablecoins, together with the industry's efforts to improve. Generally, the main players have made great enhancements to improve their platforms.

3.1 Common Criticisms and Improvement Efforts

Fiat-backed Stablecoins

In general, fiat-backed stablecoins are somewhat centralised. Their users need to trust that the platforms are fully backing up their stablecoins with fiat money. The Tether controversy was seen as an event that illustrated the lack of transparency in stablecoins, as the company faced questions about what USDT is backed by.

Additionally, Tether's reserves consist of too much commercial paper (i.e., short-term corporate debt). For example, corporate debt made up more than 44% and 30%, respectively, of USDT's total reserves in the third and fourth quarters of 2021. Moreover, Tether didn't disclose exactly which companies it holds commercial paper from, and where those entities are based. **Fortunately, in its latest update, Tether** claimed to further reduce holdings of corporate debt in its reserves. Instead, Tether reported that its holdings of U.S. Treasurys rose 13% to US$39B in the first quarter of 2022, while corporate debt fell 17% to US$20B in that period, declining a further 20% since 1 April 2022.

USDC is another major fiat-backed stablecoin, gaining market capitalisation in May 2022 and becoming the market's most preferred stablecoin over USDT. During UST's crash, investors started pulling out of the stablecoin in fear of a similar event taking place with Tether, which resulted in massive redemption of USDT. Unlike USDT, the reserves of USDC are fully backed by cash and short-dated U.S. government bonds. Meanwhile, USDC is issued and controlled by the Centre consortium (an entity founded by Circle and Coinbase). Compared to USDT, which suffered from a concern of lack of transparency, USDC is backed by Circle, who published monthly attestation reports on its reserve balances.

Commodity-backed Stablecoins

Similar to the mechanism of fiat-backed stablecoins, commodity-backed stablecoins use precious metals like gold in their reserves to issue the tokens. PAX Gold (PAXG) is a typical coin in this space. However, in April 2020, an inconsistency

was observed between the number of tokens issued in the PAXG platform and the amount of gold backing the PAXG token. Users questioned the total value of precious metals in its reserves at the time the inconsistency occurred.

In terms of enhancement, PAX Gold implemented an online tool for users to look up the serial number and information about individuals' gold reserves, helping to better ensure that every PAX Gold token is backed by an ounce of allocated gold. For better adoption into the DeFi space, in January 2021 PAX Gold partnered with Chainlink, which develops on-chain proof of reserve data feeds for its assets. This allows DeFi applications to quickly verify on-chain that PAX Gold tokens are fully backed by gold bars.

Crypto-backed Stablecoins

DAI is one of the major crypto-backed stablecoins launched by MakerDAO. It has multiple collateral types (e.g., ETH, BAT, USDC, and COMP) to maintain its US$1 peg through over-collateralised positions (known as CDPs). DAI was previously known as SAI (launched in December 2017), a single-collateral stablecoin that only accepted ETH as its collateral. Shortly after its release, on 12 January 2018, DAI depegged to below US$0.72 due to uncertainty from the community. Since using one single asset type as a collateral may suffer from volatility, the MakerDAO team made improvements in November 2019 by updating single-collateral DAI (i.e., SAI) to multiple-collateral DAI.

The concerns over the risk of the underlying asset value collapse implies that crypto-backed stablecoins come with their own set of issues. Being backed by other cryptocurrencies makes them more vulnerable to price instability in comparison to fiat- or commodity-backed stablecoins (e.g., the ETH market's collapse impacted DAI in March 2020). Nevertheless, when the backed coins plummeted, stablecoins took a dip as well. DAI is trying to reverse this concern by backing over-collateralised assets in its positions.

Algorithmic Stablecoins

As a promising category, algorithmic stablecoins are usually non-asset backed, aiming to achieve stability by leveraging crafted and transparent algorithms. The industry has made much effort trying to crack this "holy grail" problem, and some prominent projects, such as UST, USDN, and FRAX, have been launched with good visibility.

Peg breaks are regarded as a concern for any type of algorithmic stablecoin. This type of stablecoin depends considerably on market confidence, as it is non-collateralised. Without market confidence, a token would encounter prominent difficulties in recovering effectively. We recommend our readers review **our report titled *Depegging Events in Fiat and Crypto***, which includes detailed analysis of the depeg events of UST and USDN.

Loss of confidence may have an impact on algorithmic stablecoins, as their peg mechanism is based on mathematical algorithms instead of collateralisation. FRAX is categorised in this space, but it presented a novel solution (so-called fractional-algorithmic) of being **partially backed by collateral** and partially stabilised algorithmically. Briefly speaking, the ratio of collateralised to algorithmic depends on the price of FRAX. If FRAX is trading at above US$1, the protocol decreases the collateral ratio. Otherwise, the protocol increases the collateral ratio.

Currently, FRAX maintains a peg to the U.S. dollar by being partially collateralised by USDC, alongside periodically buying and selling FXS (Frax shares, its governance token) to maintain its market capitalisation.

3.2 Security Exploits

Like many hack events in the DeFi space, stablecoins have the potential to be exploited. On 8 February 2022, Polygon's native stablecoin protocol, QiDao, suffered an exploit on its Superfluid contract, **which led to a 65% drop** (from US$1.24 to US$0.18) in the price of its governance token QI.

Below, we further discuss two hack events on algorithmic stablecoins — IRON and SDO tokens. As the name suggests, algorithmic stablecoins achieve price stability by crafted algorithms. One direct approach is when it trades above US$1, more stablecoins are minted and distributed. Otherwise, more stablecoins are burnt (when it trades below US$1) to keep the equilibrium.

On 29 June 2021, another Polygon-based DeFi protocol, SafeDollar stablecoin (SDO), fell to US$0 after attackers exploited an infinite mint vulnerability. Similarly, IRON, a fork of FRAX Finance, suffered a severe exploit on 16 June 2021, which caused the IRON price off-peg as well. We direct readers who wish to learn more about the postmortem of these past hacks here.

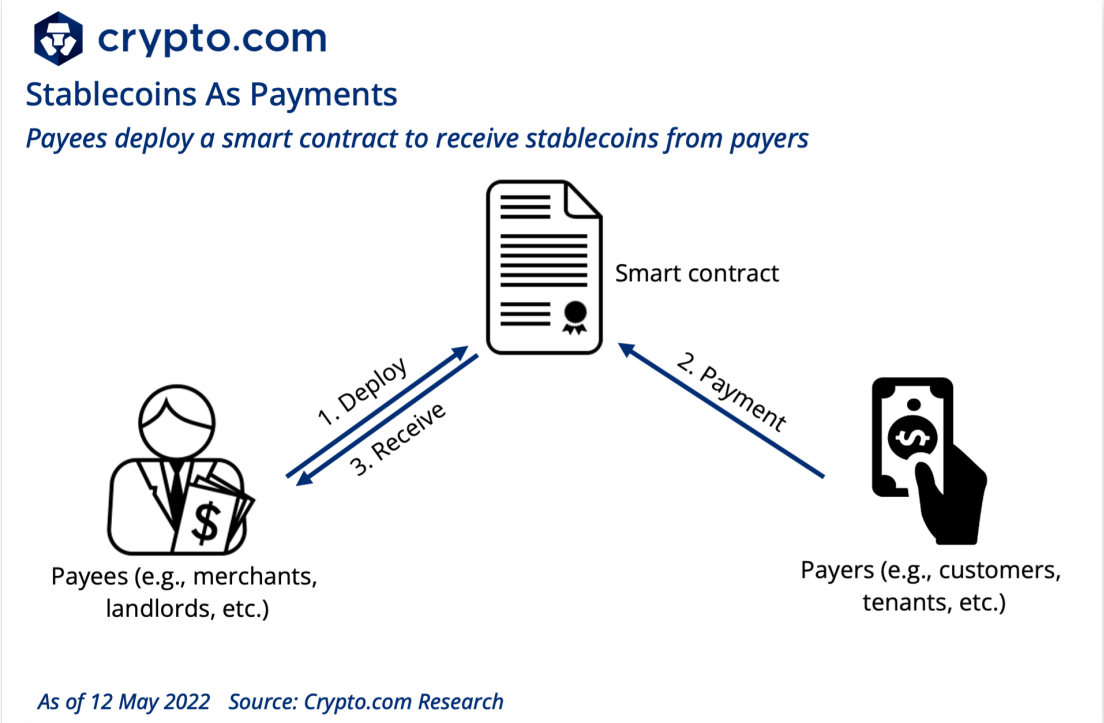
4. Real-World Scenarios

So far, we have talked about the data-oriented comparisons and risk analysis for stablecoins. In this section, some use cases indicating the versatility of stablecoins are discussed.

4.1 Trading and Payment

Due to onramp and offramp cost fees (e.g., charged by banks) in fiat, stablecoins became a solution for worldwide investors like institutional traders, who want the ability to reduce crypto exposure without fully cashing out.

By leveraging the deployment of smart contracts, stablecoins also allow automatic transactions for loan payments, rent payments, or monthly subscriptions like Netflix memberships. Since these transactions have traceable, transparent, and irreversible natures, they are well-suited and beneficial for our daily life.



The chart above presents a possible solution for using stablecoins as payment. The payment recipients (e.g., giant companies, landlords, etc.) could deploy a smart contract that accepts stablecoins from the payers (e.g., customers, tenants, etc.). For instance, Walmart proposed its stablecoin in 2019, which was issued as a private currency usable only within Walmart's retail stores and online. It would

maintain the value by being backed by Walmart's promise to sell goods for it at a 1:1 exchange rate with the U.S. dollar. Walmart's suppliers could benefit from accepting stablecoins as payment because, in doing so, they will reduce the 2%–3% intermediary transaction fees.

4.2 DeFi

Stablecoin lending is usually with a high yield percentage. A possible fact might be that the demand for stablecoin loans is fueled by massive institutions, which ties back to stablecoins' use in trading. As a result, high-interest rates might attract more lenders to provide their stablecoin assets.

Compared to the term deposits offered by banks, which max out at 1% APY, stablecoin returns on crypto lending platforms can be more attractive (e.g., USDC lending on Crypto.com guarantees 6% for a 3-month term, as of 12 May 2022).

4.3 Cross-Border Remittance

Cross-border remittances are transactions where the payee and recipient are located in separate countries. The transactions can be between individuals, companies, or banking institutions who are looking to transfer funds across territories. A typical scenario is worldwide migrant workers sending money earned back to their home countries every month. The existing service might suffer from multiple issues, however, such as processing period and incurred fees. Usually, the payees cannot receive full funds due to charged transaction fees.

These issues can be mitigated by the adoption of stablecoins, which allows migrant workers and their families across the globe to use digital wallets to receive stablecoins from anywhere in the world with low fees and without high price volatility.

For instance, on 19 October 2021, Facebook launched a "small pilot" of its Novi digital wallet in the U.S. and Guatemala. It allows for two-way transfers "instantly, securely, and with no fees" with Paxos stablecoin.

Traditional banks are also considering the adoption of stablecoins for this purpose. South Korea's Shinhan Bank (on 29 November 2021) and Standard Bank in South Africa (on 24 February 2021) tested a proof-of-concept for using stablecoins for cross-border remittances. Both of these projects were deployed on the Hedera network.

4.4 Payroll

Bitwage started its crypto-related payroll business in 2014. In addition to Bitcoin (BTC), it started offering payments in ETH in June 2019 and now allows its employees to customise a proportion of their salary in either cryptocurrencies or fiat money. On 10 June 2020, some of Bitwage's clients began signing up to the platform in order to pay their workers using the USD Coin (USDC) stablecoin.

Apart from this pioneer, many other platforms have initialised the solutions for enabling stablecoins as payroll. For example, Nippon Yusen Kaisha has been able to pay its crews by using the U.S.-dollar-pegged stablecoins since November 2018. This initiative reduced the international transaction fees, as the crews usually come from different countries and make cross-country transfers frequently. On 27 January 2022, Australian blockchain startup Chrono.tech, which positioned itself as offering blockchain HR solutions, raised a US$30M funding round, providing PaymentX for payroll. Additionally, it has an Australian Dollar stablecoin for local payments. In April 2021, Gilded Finance introduced its Mass Pay for payroll solutions, which primarily supported the Bitcoin and Ethereum networks, including stablecoins such as USDT, USDC, TUSD, and DAI.

These state-of-the-art solutions, still in their infancy stage, so far have limited integration with traditional payroll or accounting systems. But adopting stablecoins for payroll is expected to see more use cases.

4.5 Humanitarian Aid (Donations)

When a crisis (e.g., war, earthquake, tsunami, etc.) occurs, stablecoins can be an efficient and prompt method for sending humanitarian aid. As they are traceable, stablecoins can also improve transparency in donations. For instance, in November 2020, Circle collaborated with the U.S. government to provide humanitarian aid in Venezuela by using USDC.

Although supporting aid by stablecoins is promising, according to a report by the World Economic Forum (WEF), some weaknesses exist as well. One major factor lies in the digital literacy level of the people who receive the donations. Moreover, other limitations include the inaccessibility of digital devices (e.g., requiring smartphones or wallets setup), the need to trust third parties (e.g., between large organisations with vast resources and small local counterparts), poor Internet connections, and excessive KYC requirements.

5. Conclusions

This report provides insights on the key features of main stablecoins. By analysing the historical data of market capitalisation, market share, NVT ratio, volatility factors, and social media followers, we demonstrated the trend for nine popular stablecoins, deducing that USDT and USDC occupy over 70% of the total stablecoin market value. The market share of Terra's UST dropped from 9.3% to only 0.7% after its collapse in May 2022.

Furthermore, we discussed common criticisms with corresponding historical events and improvement considerations for major stablecoins, observing that current mainstream stablecoins have made great efforts to enhance their designs.

Lastly, we looked into promising adoption cases for stablecoins in the future.

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