

THE RISE OF STABLECOINS

Bitstamp COINMETRICS



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Stablecoin supply has exploded in 2020 but it's unclear exactly why. After it took 5 years for stablecoin supply to reach 6 billion, it only took another 4 months for it to grow from 6 billion to 12 billion following the March 12th crypto crash.

To understand why this is happening we follow the data, starting from the beginning of stablecoins.

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This report was sponsored by Bitstamp and written by Coin Metrics Research using Coin Metrics data.

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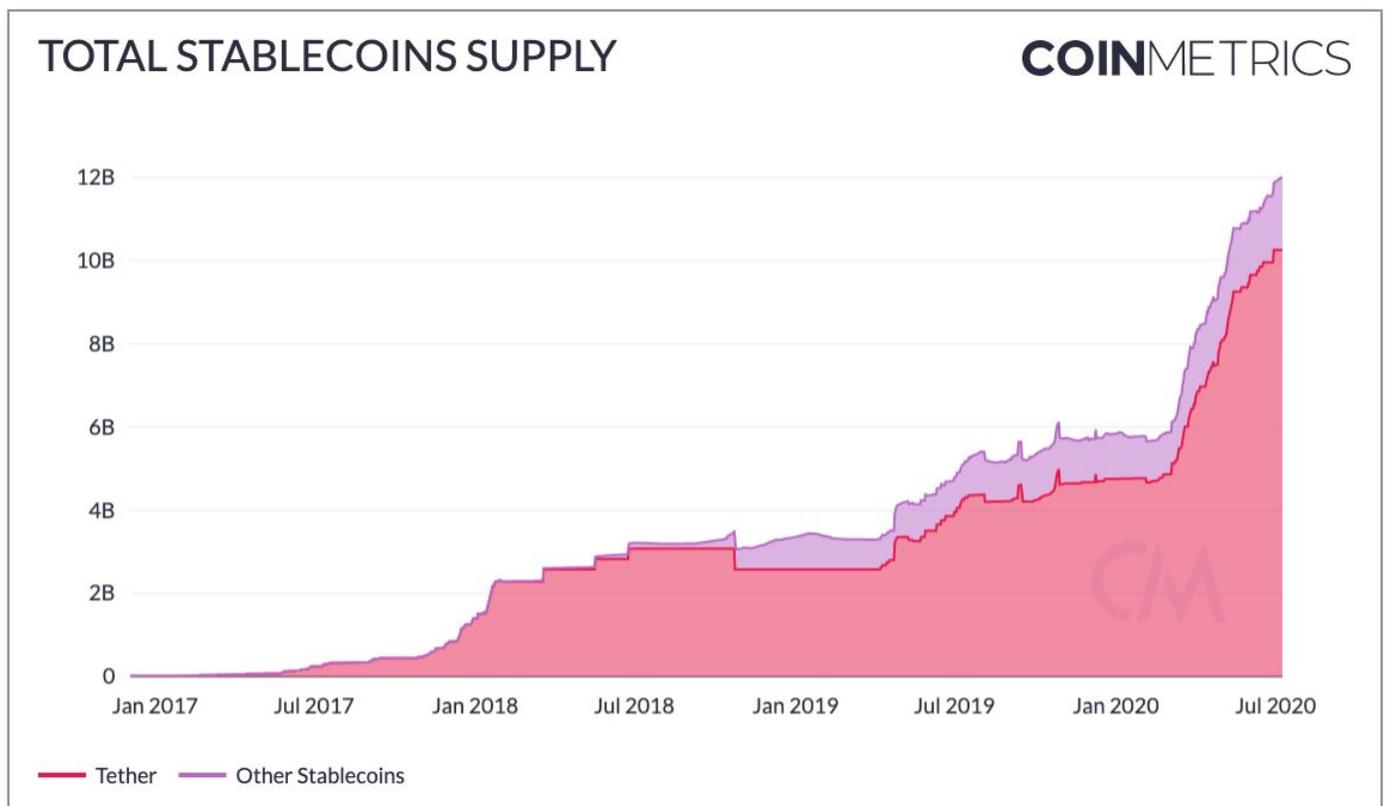
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THE RISE OF TETHER

The idea of having a stable digital currency has existed for a long time, and even [predates Bitcoin](#). But for all intents and purposes, the rise of stablecoins started in early 2015 when cryptocurrency [exchanges began listing Tether for trading](#).

Tether (USDT), the first successful stablecoin and still by far the biggest, was launched in late 2014 by a group called Tether Limited. Tether introduced a relatively simple concept for creating a cryptoasset that maintained a stable price. For every USDT issued, the Tether Foundation kept \$1 USD in reserve (at least in theory). This kept the USDT price stabilized around \$1 since each unit of USDT could be redeemed for one of the US Dollars in the reserve. In this sense, Tether was basically a digital wrapper for a dollar-denominated liability.

Tether started off relatively slowly, with little activity in its first year. But when Bitcoin's price began to rise in 2017 Tether started to take off. Tether supply passed 1M for the first time in January 2016. By January 2017 it was a little under 10M. By January 2018, as Bitcoin's price was peaking at close to \$20K, the Tether supply had grown to over 1.4B.



After Tether started taking off in 2017, other stablecoins soon began to launch. While Tether's reserves were controlled by the relatively opaque Tether Limited group, many of the new stablecoins were backed by larger organizations, including exchanges.

USD Coin (USDC) was [launched in September 2018](#) and managed by a [group called Centre](#), which included Coinbase and Circle. The same month, [Gemini announced the Gemini Dollar \(GUSD\)](#) stablecoin. Paxos Standard Token (PAX) was also [launched in late 2018](#). PAX was created by a company called Paxos which had previously launched Singapore-based itBit exchange.

While USDC and PAX were both also backed by USD reserves, different models began to emerge. In December 2017, MakerDAO [launched a decentralized stablecoin](#) called the Dai token (DAI). DAI was also designed to be pegged to \$1 USD. But unlike USDT, USDC, and PAX, DAI was not backed by a reserve of USD controlled by a single organization. Instead, DAI is collateralized by other cryptoassets like ETH. Furthermore, the DAI reserve is not controlled by any one entity. Anyone can open up a Collateralized Debt Position (CDP) on MakerDAO's platform to mint new DAI, which can later be redeemed to reclaim the original collateral.

Around the same time, some concerns began to emerge about Tether. The Paradise Papers, released in November 2017, [revealed that Bitfinex officials were responsible](#) for setting up Tether Holdings Limited, which owns Tether Limited. Later, in April 2019, the [New York Attorney General would file a suit](#) accusing Bitfinex of using Tether reserves to cover their losses. There have also been persistent questions about how much Tether Limited actually holds in their Tether reserves. In April 2019, Tether Limited's lawyer claimed each unit of USDT [was actually backed by \\$0.74 of fiat equivalents](#) (plus the less-liquid debt obligation that Bitfinex owed to Tether), less than the \$1 per 1 USDT set out in Tether's whitepaper.

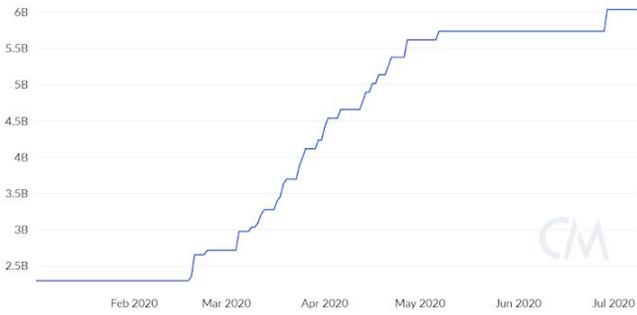
But despite Tether's issues and the introduction of new stablecoins, USDT remained dominant and continued to grow. Originally launched using the Omni protocol on the Bitcoin blockchain, by the beginning of 2018 Tether began to expand to other networks. In addition to the Omni version (USDT), Tether was launched on the Ethereum blockchain in late 2017 (USDT_ETH), and on Tron in 2019 (USDT_TRX). The Ethereum and Tron versions of Tether have since surpassed the original Omni version in terms of total supply.

New stablecoins continued to launch throughout 2019. In September 2019, Binance launched Binance USD (BUSD), which is used heavily on their exchange. Soon after, Huobi launched Huobi USD (HUSD). Gold backed stablecoins also began to rise in 2019. Towards the end of the year, Paxos launched Paxos Gold (PAXG), which is [backed by physical gold](#) instead of US Dollars. PAXG's price is pegged to one troy ounce of gold, about \$1,800 at time of writing.

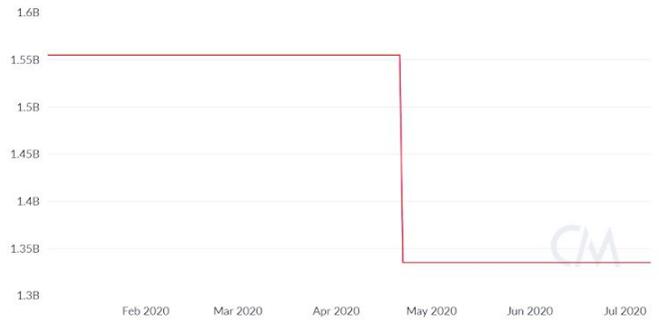
Stablecoin supply exploded again in the second quarter of 2020. However, this time the supply rise did not coincide with a large spike in Bitcoin price. In fact, it occurred after a historic crash.

STABLECOIN SUPPLY GROWTH

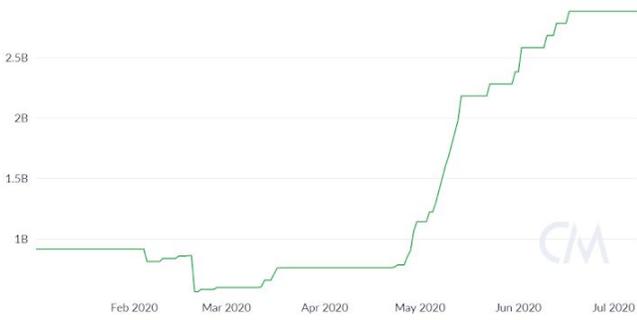
USDT_ETH



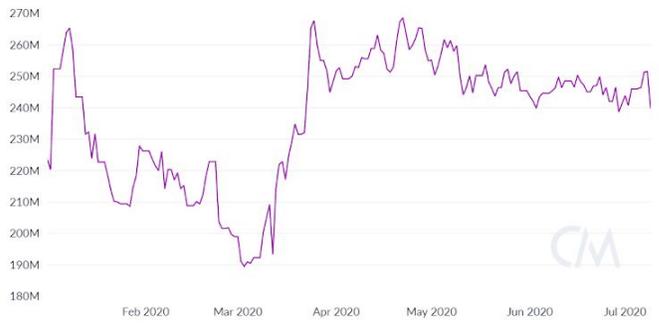
USDT



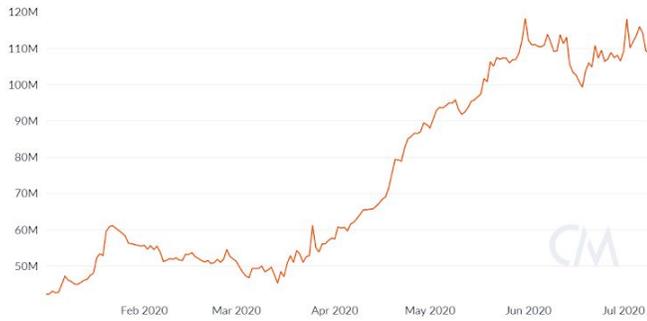
USDT_TRX



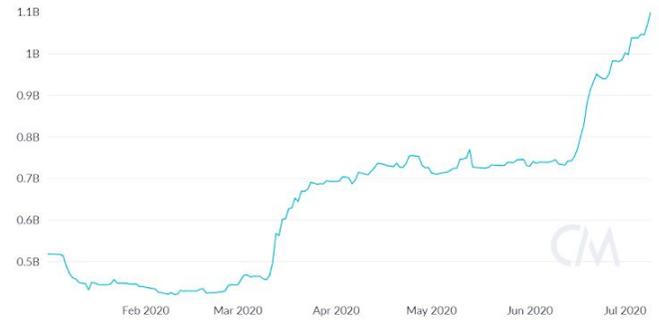
PAX



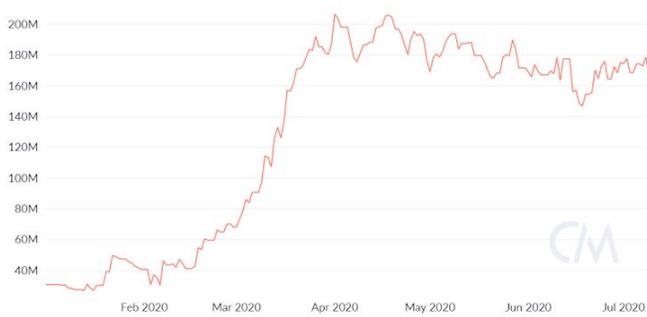
DAI



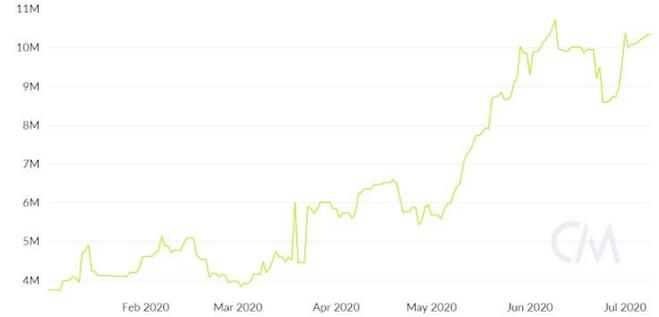
USDC



BUSD



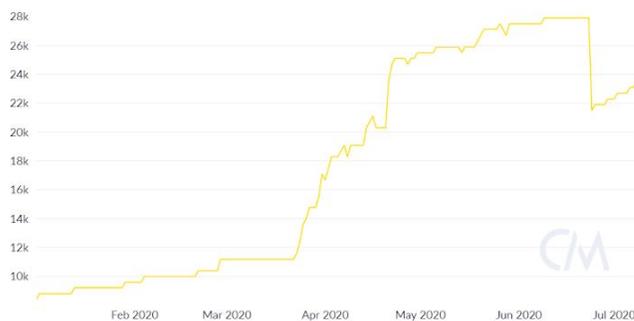
GUSD



HUSD



PAXG



On March 12th 2020, the price of most cryptoassets dropped over 50% after global equity markets crashed due to the rise of COVID-19. Within two weeks of the crash over 800M new USDT_ETH were issued. For context, about 740M USDT_ETH were issued from January 1st through March 11th. Additionally, USDT_TRX supply would increase by over 2B by the end of June.

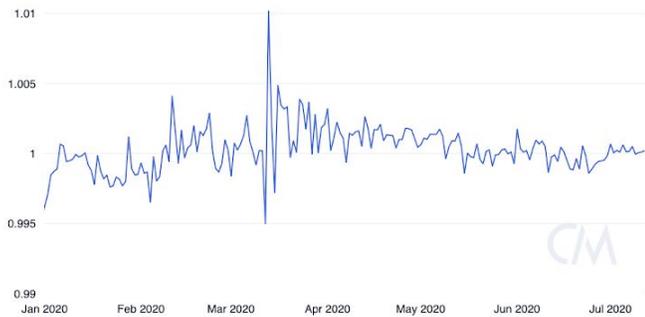
The supply of other stablecoins rose as well, but by no more than a few hundred million. Tether, once again, led the way by a large margin.

UNSTABLE STABLECOINS

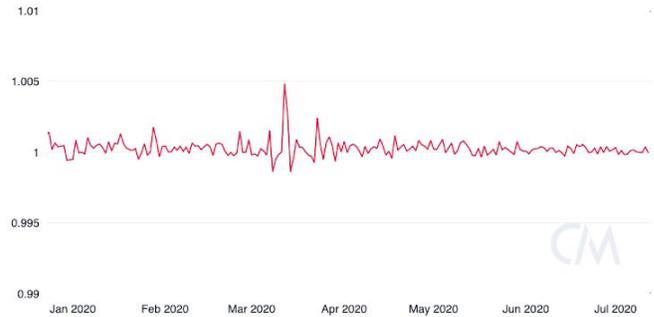
True to their name, stablecoins generally remain relatively stable. A majority of the stablecoins in our sample remained within a range of \$.99 to \$1.01 over the last year. But crucially, even small fluctuations in stablecoin prices can have large consequences.

STABLECOIN PRICES

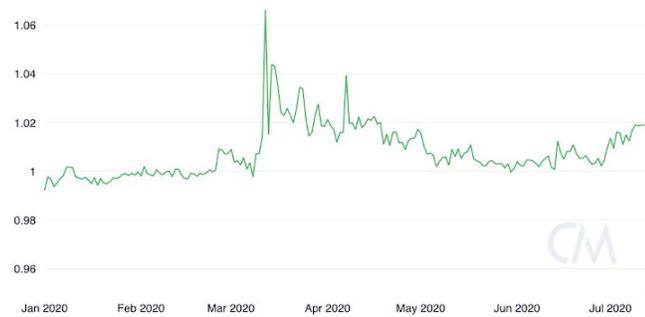
USDT PRICE



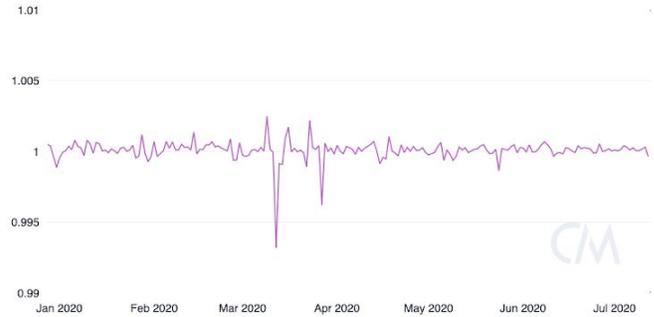
PAX PRICE



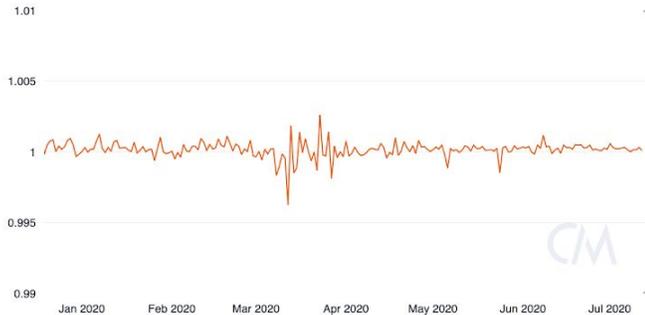
DAI PRICE



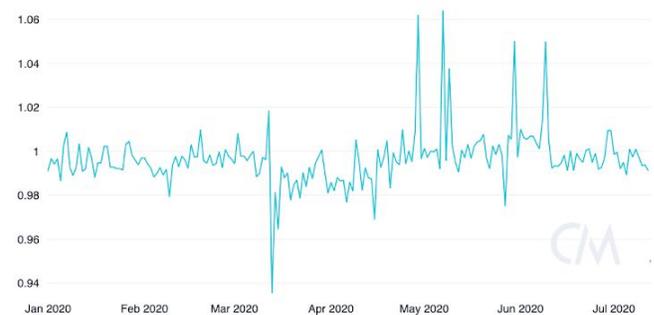
USDC PRICE



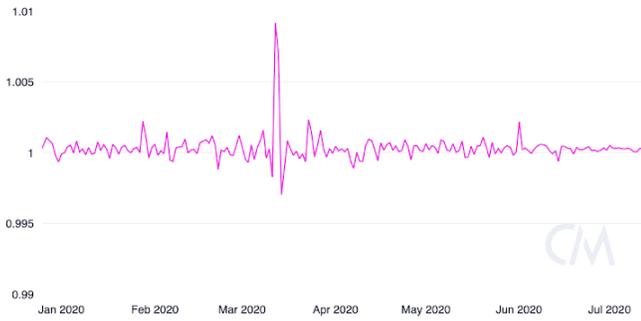
BUSD PRICE



GUSD PRICE

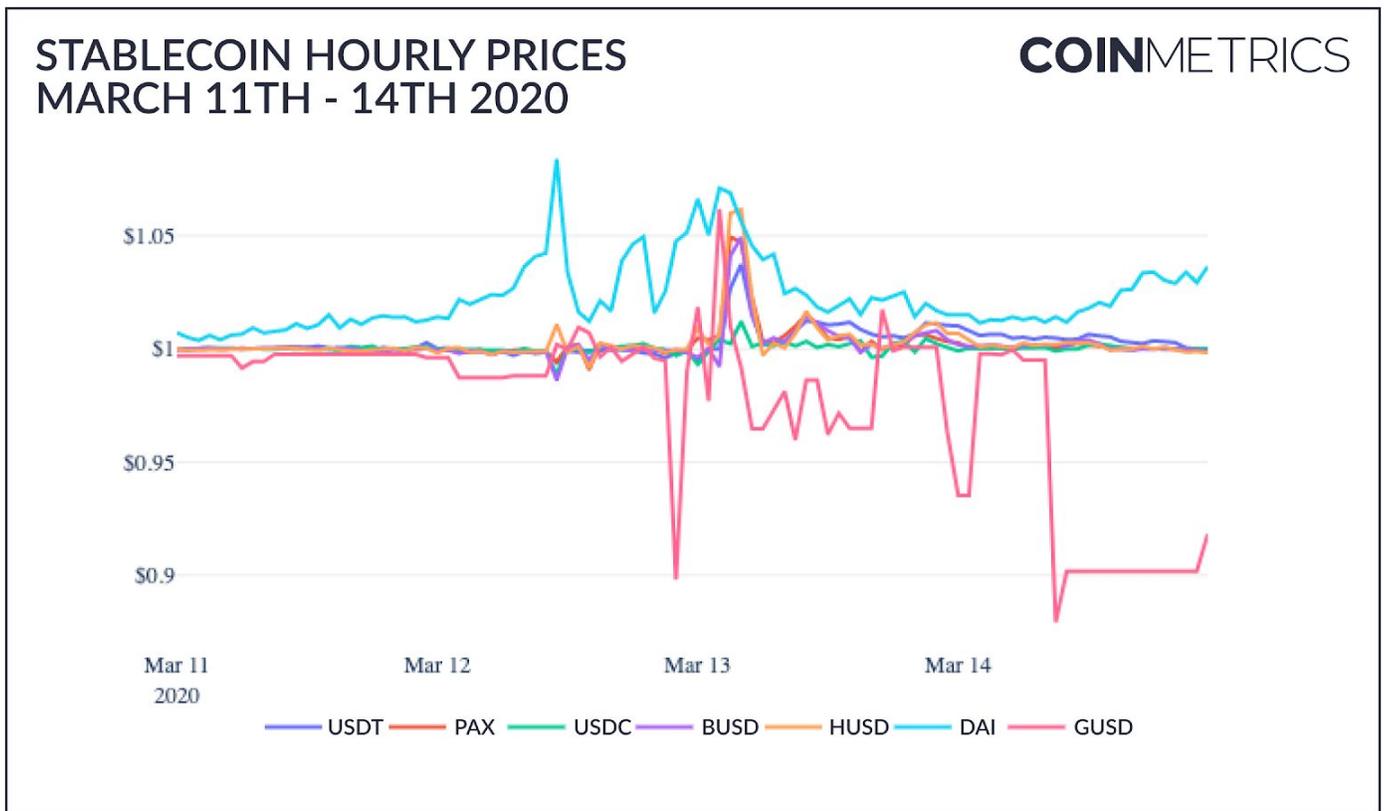


HUSD PRICE



On March 12th 2020, after Bitcoin price dropped over 50%, stablecoin markets were suddenly thrown into disarray. Stablecoin prices can fluctuate during times of market volatility due to sudden changes in supply and demand. For example, when Bitcoin price suddenly plummets, the demand for stablecoins often increases as investors look to move into a safe haven asset. This increased demand can cause the price of a stablecoin to rise above \$1 on select exchanges.

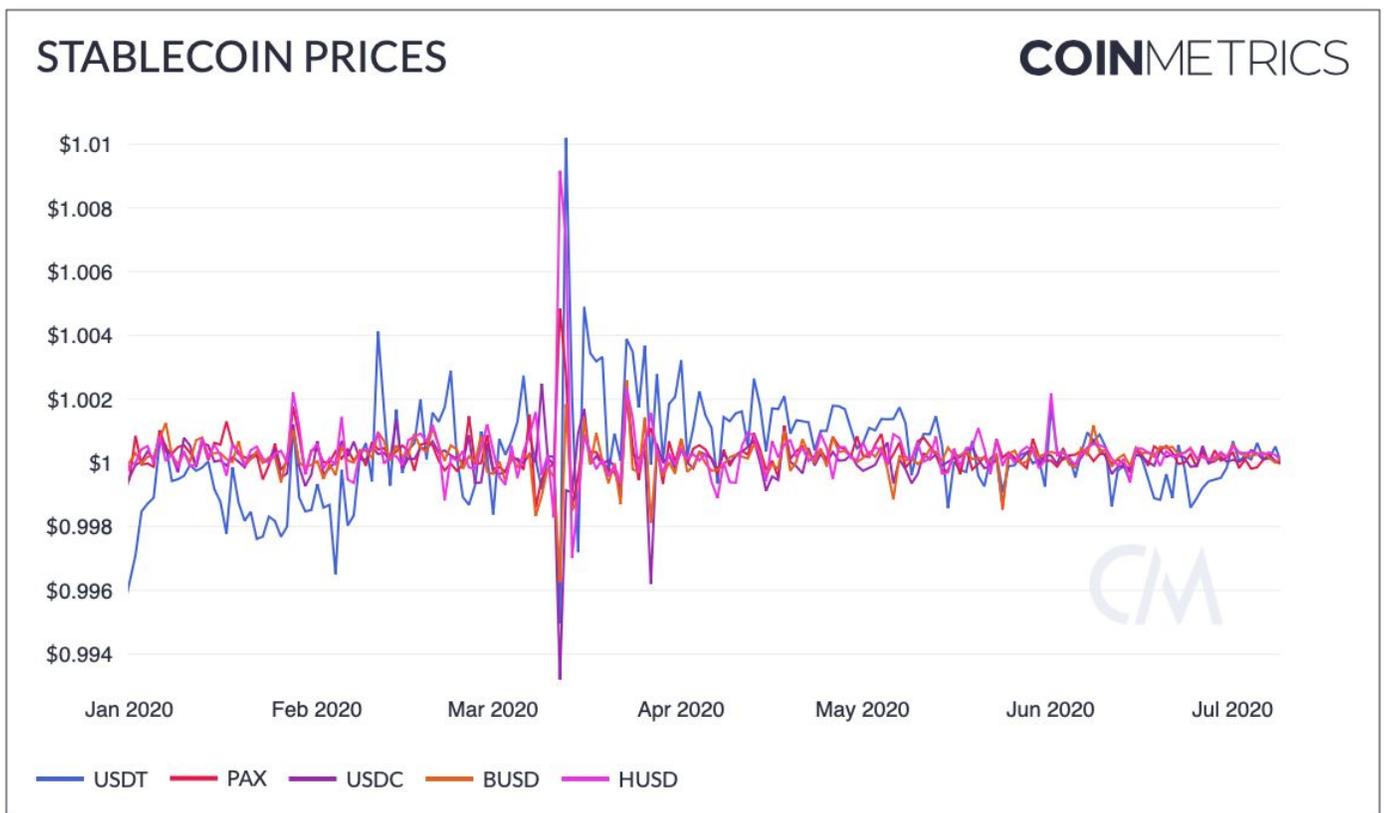
The below chart shows stablecoin prices on an hourly basis (using [Coin Metrics' hourly reference rates](#)) from March 11th through March 14th. The price of most stablecoins jumped up to between \$1.03 and \$1.06 from 2:00 to 6:00 UTC on March 13th. This corresponds with the [timing of the BitMEX liquidation spiral](#), when Bitcoin price dropped to as low as \$3,900.



Two stablecoins in particular fared worse than the rest: GUSD and DAI. GUSD price dropped well below its peg, falling as low as \$.90. Furthermore, it did not recover as well as the other stablecoins. This is likely due to GUSD's relatively small supply and low liquidity. On March 12th, GUSD's total supply was less than 5M, compared to 100M+ for most other stablecoins in our sample.

DAI's divergence from the peg was related to its unique structure as a decentralized stablecoin within the MakerDAO ecosystem. After ETH price plummeted on March 12th there was a cascade of liquidations on the collateralized debt positions backing DAI. This led to an [extreme system-wide shortage of DAI](#), which caused the price to shoot above its peg.

USDT, USDC, PAX, BUSD, and HUSD appear to have recovered much better, returning close to their \$1 pegs within days after the crash. But as seen in the below chart, USDT's price remained above \$1. Notably, USDT's price remained significantly higher than USDC, PAX, BUSD, and HUSD through mid-May (DAI and GUSD are excluded from the following chart due to their extreme divergence).

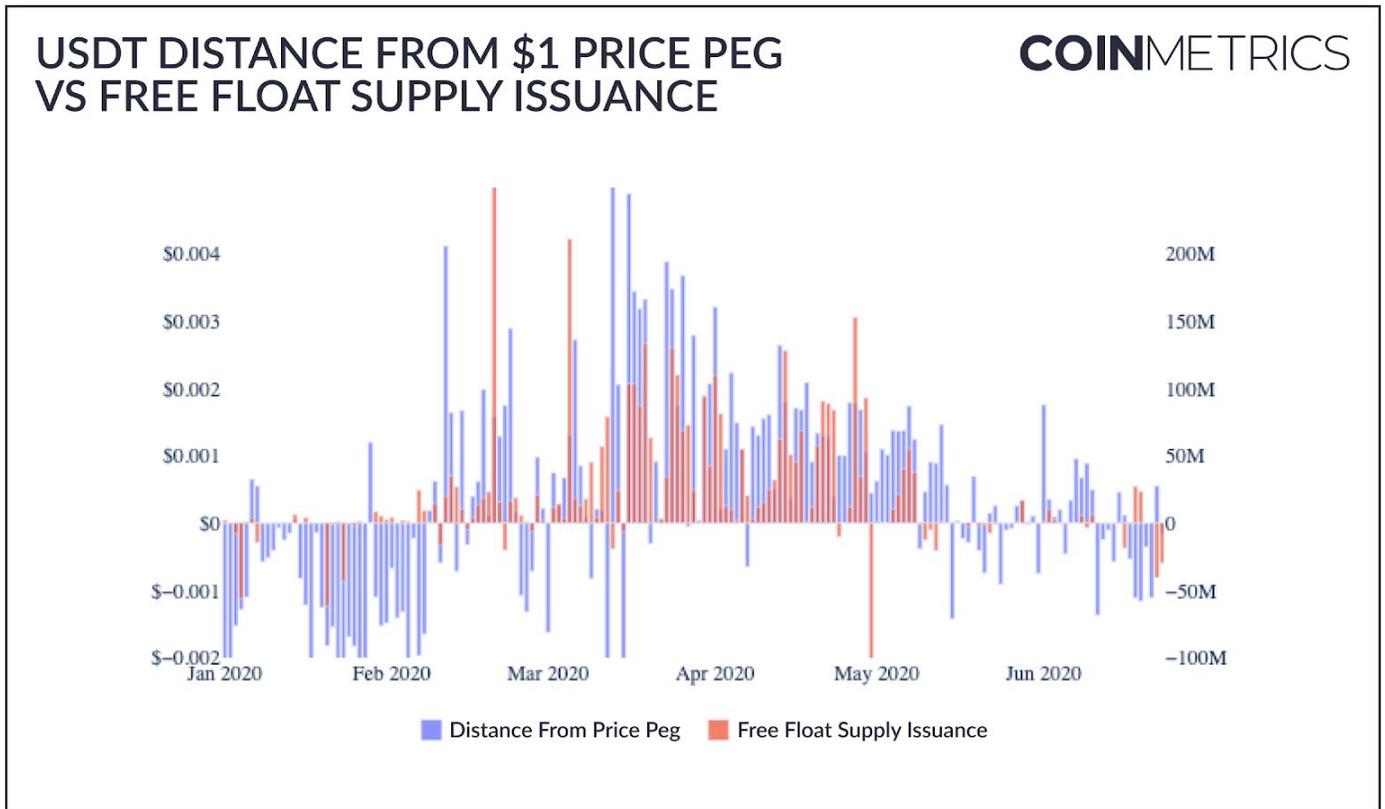


Because of their nature as price-pegged assets, deviations in stablecoin prices create arbitrage opportunities. For example, when a stablecoin's price is above \$1, new supply can be printed at \$1 each, and then sold on an exchange for a profit. Done at a large enough scale, this can lead to significant profit even if the price is only slightly over a dollar.

The below chart shows USDT_ETH's distance from its \$1 price peg (blue bars, left axis) vs daily issuance of free float supply (red bars, right axis). [Free float supply](#) is a metric created by Coin Metrics that measures the amount of supply freely

available to the market, excluding illiquid supply like supply held in escrow by a foundation. In the context of stablecoins, free float supply excludes coins that have been printed but not issued.

This shows that the new USDT_ETH supply was overwhelmingly issued from March to May when its price was greater than \$1. New issuance slowed dramatically towards the end of May, when USDT_ETH price returned towards its peg and even dipped below \$1. This potentially explains why USDT_ETH supply exploded following March 12th: increased demand caused USDT_ETH price to rise above its peg, which created arbitrage opportunities for USDT_ETH bought at \$1.



But an important question remains. Without an increase in demand there would not have been an increase in arbitrage opportunities. So what has been driving the increase in demand that caused the price increase in the first place?

BACK TO STABILITY

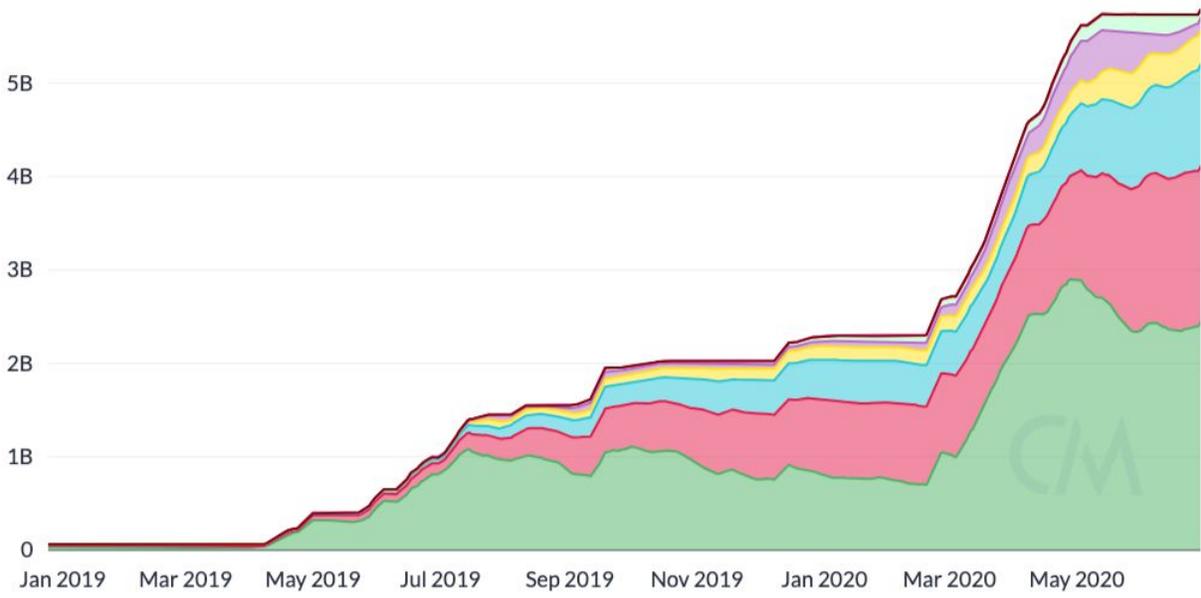
Crypto's March 12th crash was spurred by a massive sell-off in the global equity markets as fear over COVID-19 suddenly set in. This led to a huge rush into cash, and a global [shortage of dollars](#). Moving into stablecoins allows investors to effectively keep money parked on the sideline without having to completely cash out into fiat currency and incurring fees. This rush to safety likely accounted for a significant portion of the increased stablecoin demand following March 12th.

USDT_ETH's on-chain supply distribution appears to support this theory. The below chart shows how much total supply is held by addresses that hold at least X amounts of USDT_ETH, where X ranges from \$1 to \$10M. Reading the chart from the bottom up shows that a vast majority of the supply is held by addresses that hold large amounts of USDT_ETH. Addresses with at least \$1M worth of USDT_ETH hold about 4.35B units of the total supply. Addresses holding \$1K or less only hold a tiny sliver of the overall supply, as seen at the top of the chart.

[Exchanges make up a large portion of the addresses](#) holding \$1M worth of USDT_ETH or greater. The amount of USDT_ETH held by these large addresses increased by a huge amount in late-March and April, which suggests exchanges were suddenly holding larger amounts of stablecoins. This may also be due to exchanges themselves converting fiat into stablecoins like USDT_ETH. Stablecoins make it relatively easy to transfer money between exchanges and offer settlement functionality without needing to rely on traditional wire transfers.

USDT_ETH SUPPLY DISTRIBUTION

COINMETRICS

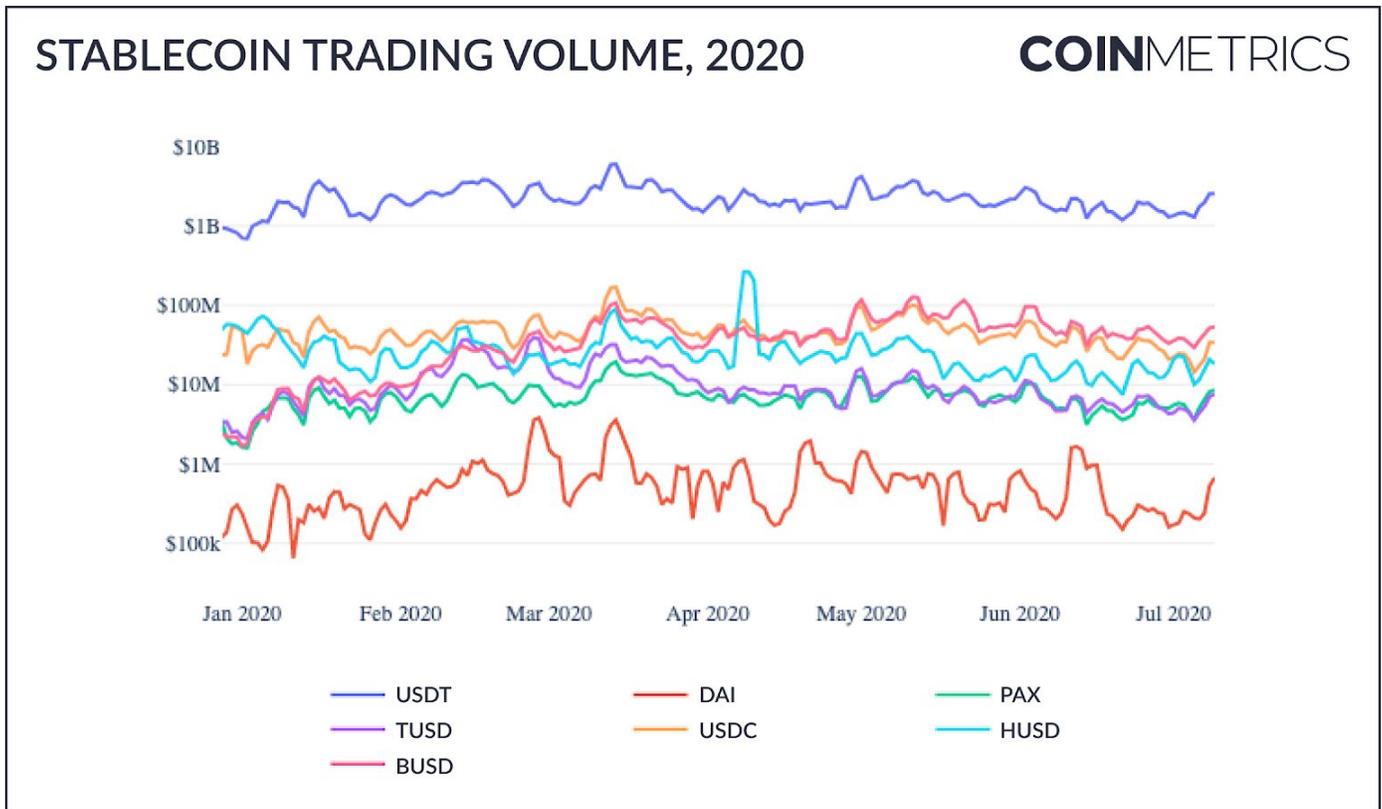


Tether is also used extensively in cryptoasset trading, which likely contributes to its fluctuating price. Stablecoins are used as a quote currency in cryptoasset trading pairs far more than fiat currencies on most exchanges. Unsurprisingly, a large majority of stablecoin trading volume is dominated by Tether. There are more USDT quote pairs in our coverage (out of the exchanges in our sample) than all other stablecoin trading pairs combined.

The below chart shows 3 day average trading volume by stablecoin quote aggregated across exchanges, shown on a logarithmic scale. The first thing to note is the sheer volume of USDT trading compared to all other stablecoins. There are billions of dollars worth of USDT traded daily, while the other stablecoins average less than \$100M. Among the rest of the stablecoins in our sample, USDC and BUSD have had the highest average trading volume throughout 2020.

USDT, USDC, BUSD, and HUSD all saw large spikes in trading volume around March 12th. DAI trading volume also peaked in March, although the maximum daily volume was less than \$5M.

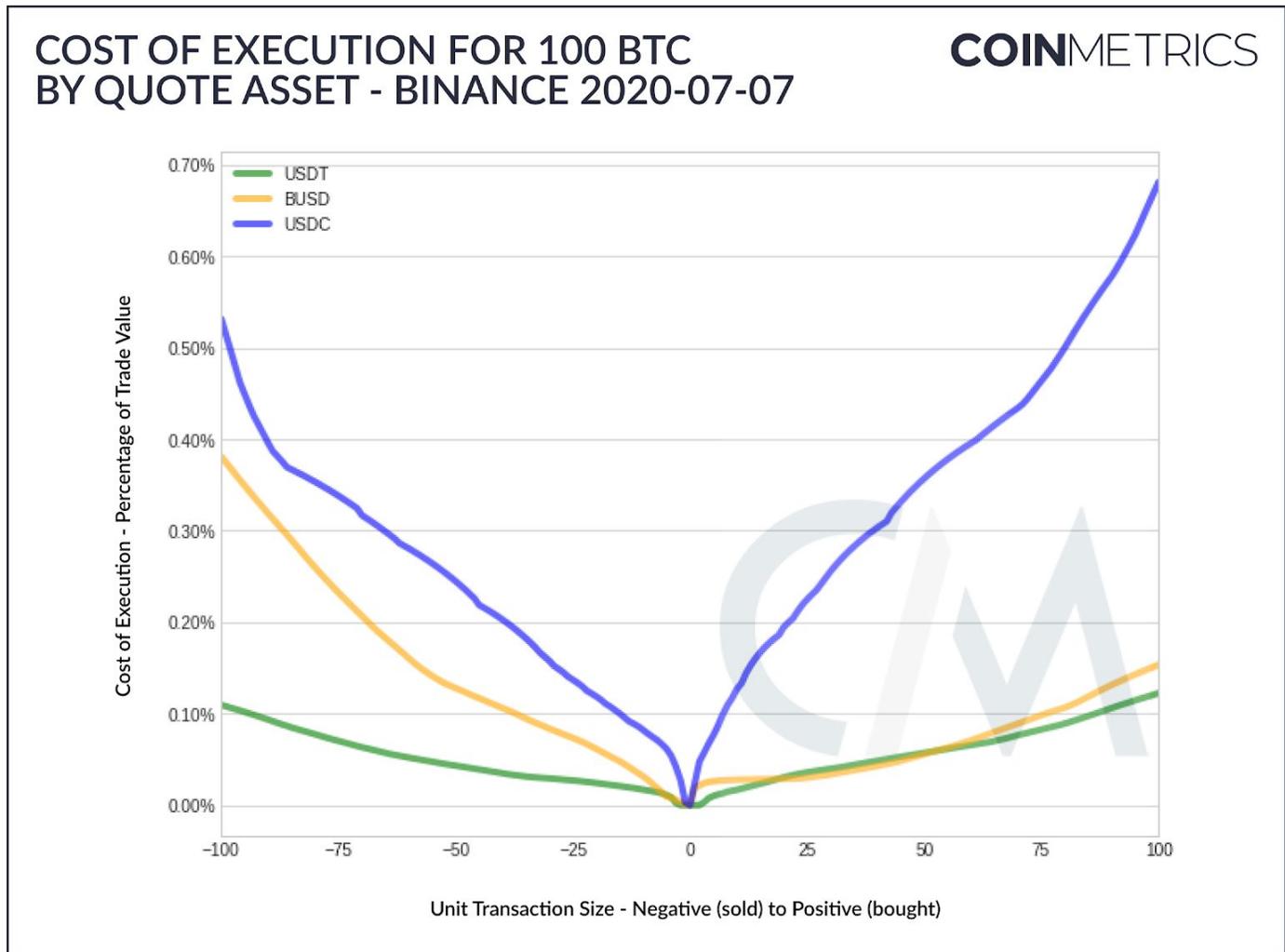
We analyzed trading volume from the following exchanges: Bitstamp, Binance, Binance.us, Coinbase, Kraken, Bitbank, Bithumb, Huobi, Bitfinex, Poloniex, Kucoin, and Bittrex. We selected this group of exchanges because we deemed them to have relatively accurate volume data compared to other crypto exchanges. Our process for analyzing trading volume is based on a combination of both quantitative and qualitative features.¹



Additionally, stablecoins can serve as replacements for fiat onramps and provide liquidity for crypto investors who do not have a direct fiat gateway. This is especially important in countries that have relatively strict restrictions on cryptoasset trading, like [China](#). Past research has shown that USDT_ETH is [predominantly transferred during Asian and European market hours](#).

¹ For example, we analyze trade size distribution and whether the exchange has trading controls.

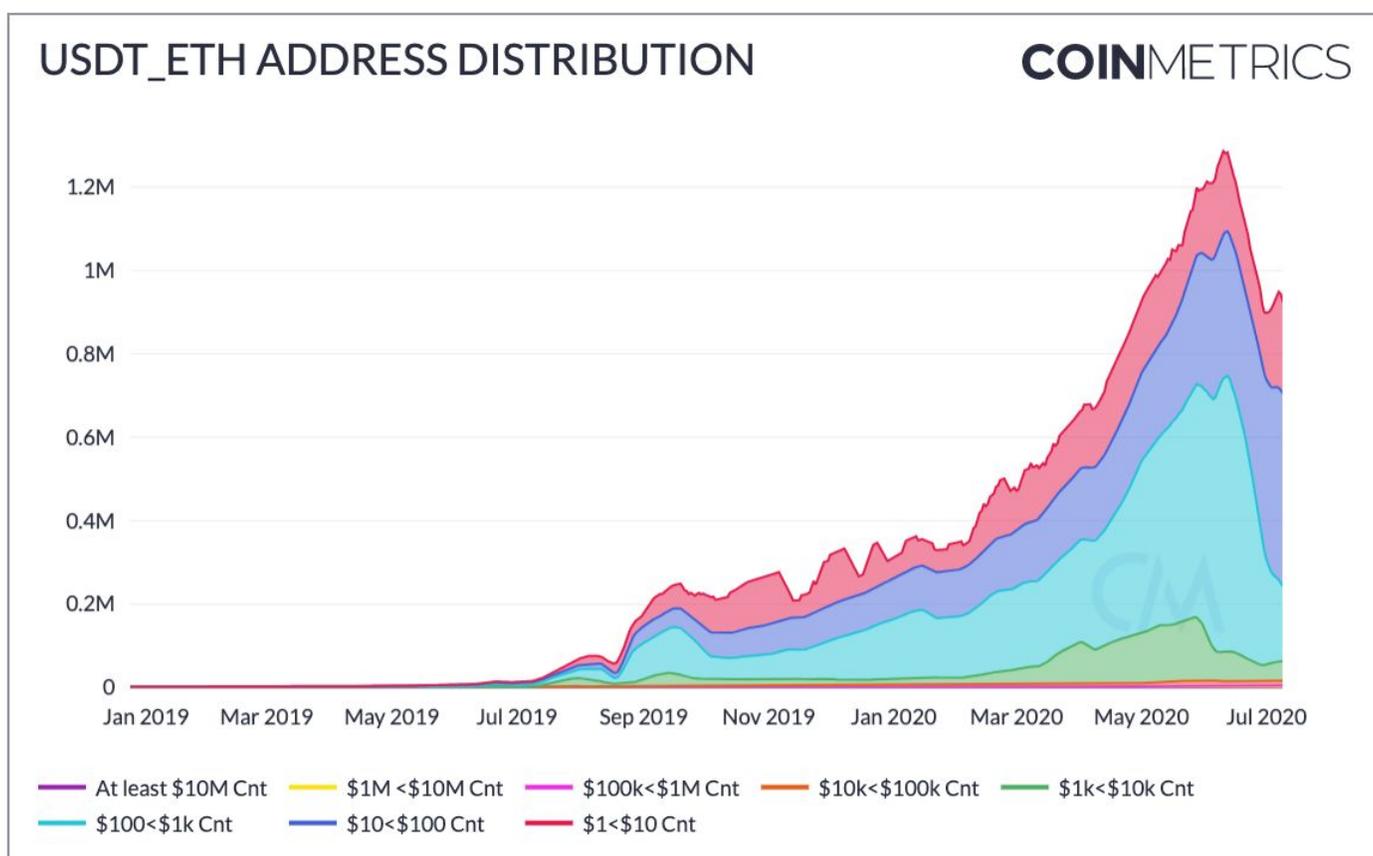
One of the main reasons that Tether has remained so dominant is its superior liquidity compared to other stablecoins. The following chart shows cost of trade execution for 0 to 100 BTC for USDT, BUSD, and USDC on Binance. Even at just 100 BTC, USDT costs about 40 bips less in fees than the other two stablecoins. Liquidity begets liquidity, and Tether has a huge lead.



RISING TIDES

Another possibility is that stablecoins are increasingly being used as a medium of exchange. Global remittances and cross-border payments are a natural use case for stablecoins given their ease of international transfer. Perhaps these types of payments are increasing due to hyperinflation in many fiat currencies following the March 12th crash.

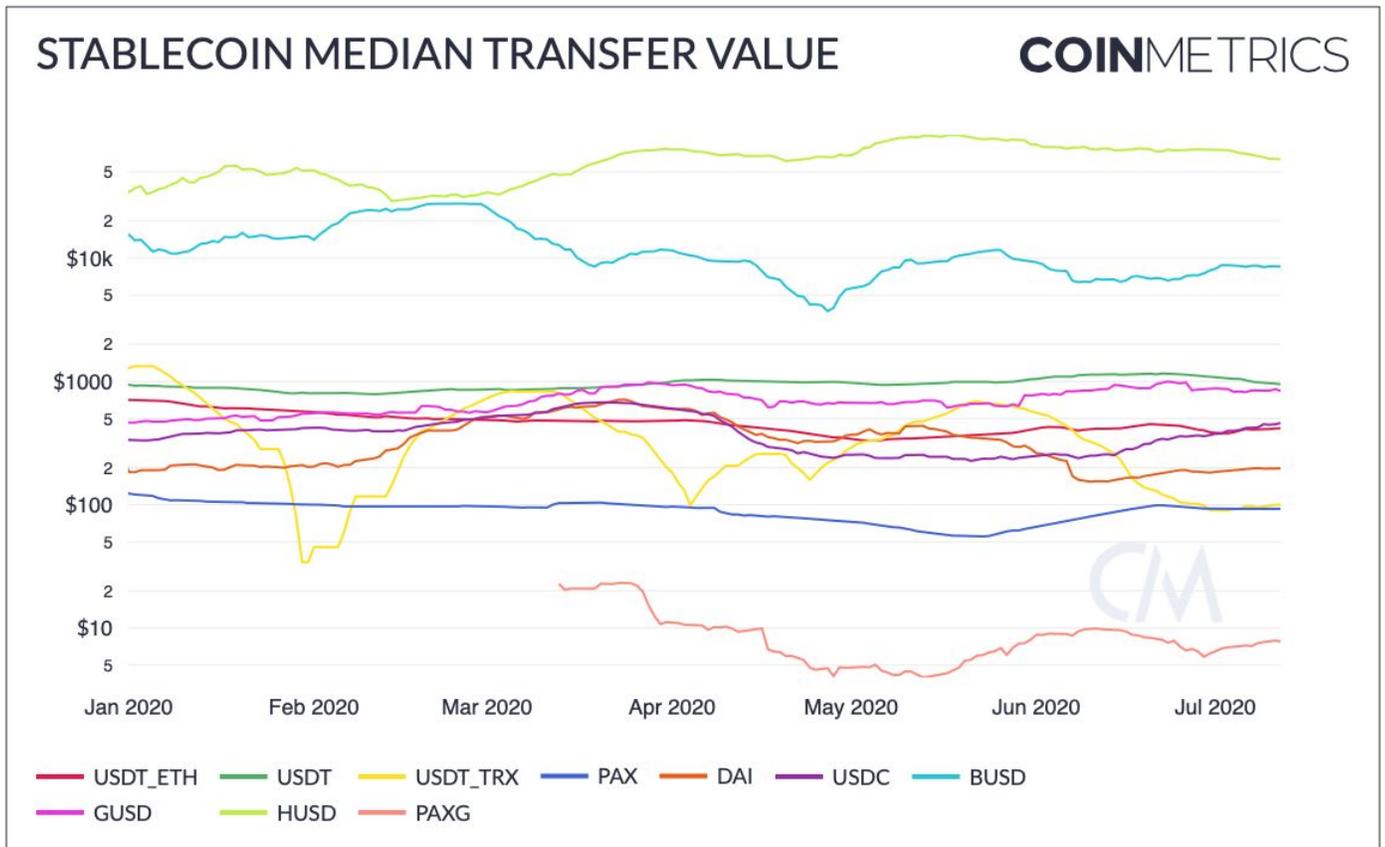
Looking at the number of addresses holding different amounts of a stablecoin sheds more light about its different types of users. The following chart shows the number of addresses holding at least X dollars worth of USDT_ETH, where X ranges from \$1 to \$10M. There are over 750K USDT_ETH addresses that hold at least \$10, and about 325K that hold at least \$100. But there are less than 55K addressees that hold at least \$1K worth of USDT_ETH, which means a large majority of addresses hold relatively small amounts. Interestingly, the amount of addresses holding \$1K or less USDT_ETH grew rapidly following March 12th, but started declining around June 8th.



Median transfer value gives more of a window into how different stablecoins are used. The following chart shows stablecoin median transfer values on a logarithmic scale to depict the different tiers of usage.

While HUSD and BUSD have relatively low total adjusted transfer value, they have the highest median transfer sizes of about \$75.5K and \$8K, respectively. This suggests that they are predominately used for purposes like inter-exchange

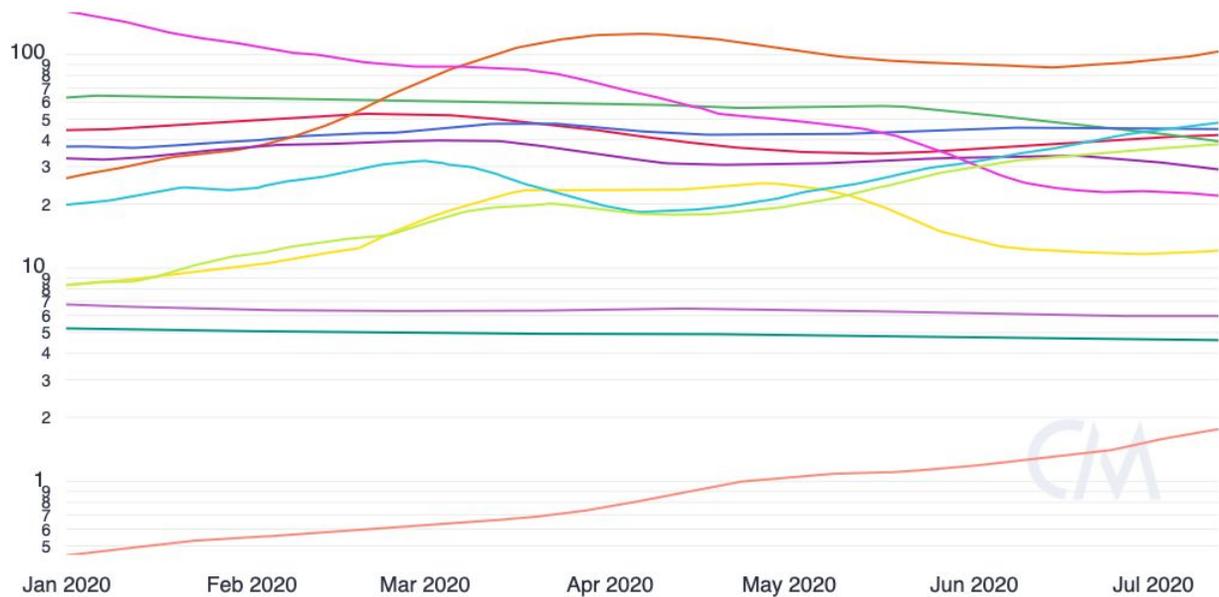
settlement, or large trades. Next are USDT, GUSD, USDT_ETH, and USDC, which range from about \$400 to \$1K. The third tier is composed of DAI, USDT_TRX, and PAX, which all have median transfer values under \$200. And at the bottom of the chart is PAXG, which has a median transfer value of about \$6.



Compared to Bitcoin (BTC) and Ether (ETH), stablecoins are being exchanged relatively frequently. Velocity is a measurement of the number of times that an average unit of supply has been transferred in the past year, and can be thought of as a rate of turnover. The following shows stablecoin velocities, again using a logarithmic scale. BTC and ETH have also been added in for comparison. While BTC and ETH velocities are between 4 and 6, stablecoin velocities mostly range between 25 and 50. DAI has a particularly high velocity of about 95. This shows that stablecoins are being used more like a medium of exchange than BTC and ETH are.

STABLECOIN VELOCITIES VS. BTC & ETH

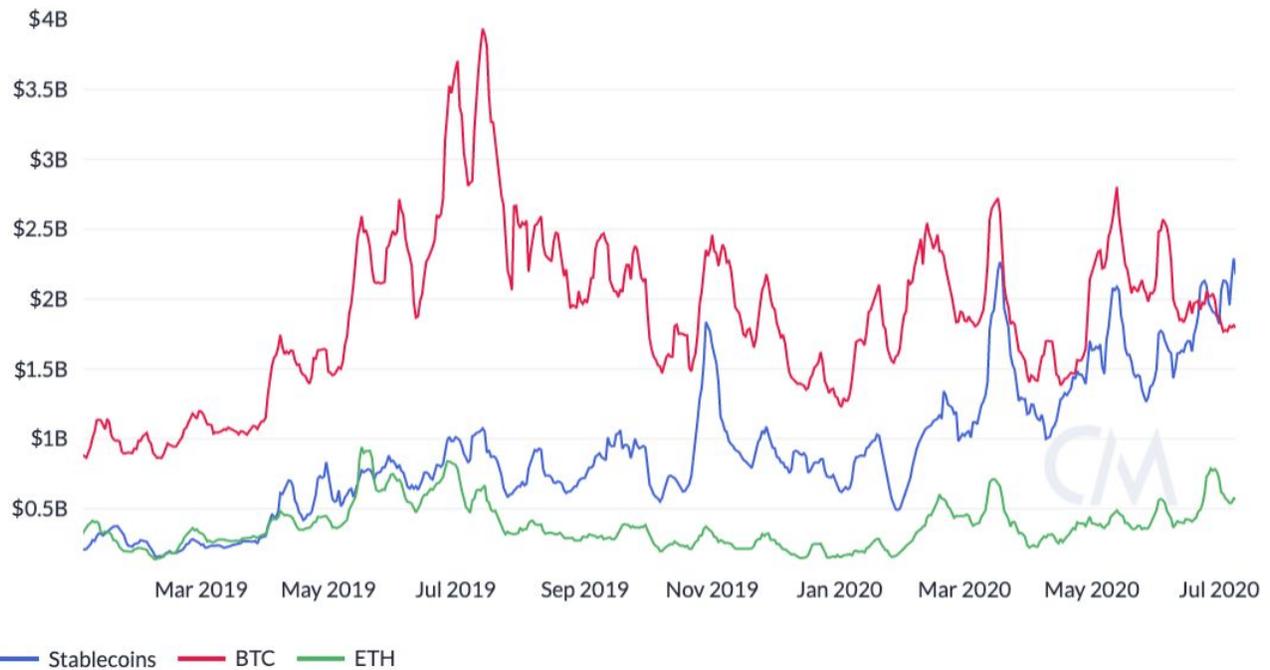
COINMETRICS



In June 2020, the amount of value transferred using stablecoins eclipsed the amount transferred using BTC for the first time. This is an important milestone that signals that stablecoins are well on their way to overtaking BTC as the main crypto medium of exchange.

TOTAL ADJUSTED TRANSFER VALUE

COINMETRICS



The rise of stablecoins could have a significant impact on BTC and ETH, both good and bad. Since most stablecoins are launched on Ethereum, there is active debate about whether they help the platform by increasing overall usage, or hurt it by driving up fees. But overall, as stablecoins continue to rise, they will likely help introduce more new users into the crypto ecosystem. Stablecoins could be the gateway that helps spur crypto's global adoption, and boost usage of BTC and other cryptoassets along the way.

UNCERTAIN FUTURE

Stablecoins have had a rapid rise following the March 12th crypto crash. Although supply grew for many stablecoins, Tether supply grew more than all other stablecoins combined. This is nothing new, as Tether has been the dominant stablecoin throughout its history. But will Tether remain on top forever?

Tether is once again coming under regulatory scrutiny. On July 7th, [Bloomberg reported](#) that The Financial Action Task Force (FATF) stated that stablecoins need to comply with standards to prevent against money laundering and the financing of terrorism. This would mean that exchanges, OTC desks, and the companies behind stablecoins need to create processes to monitor transactions and be KYC compliant. A global focus on KYC compliance could put a damper on the OTC desk and arbitrage activity that has contributed to Tether's supply growth.

The aftermath of the March 12th crash has shown that there are real uses for stablecoins, and that use cases continue to grow. USDC has gained a lot of momentum since March, and is [increasingly being used in decentralized finance \(DeFi\)](#) applications on Ethereum. New stablecoins like Facebook's Libra also loom on the horizon. Tether will likely stay on top for the near future given its superior liquidity and trading volume, but other stablecoins should eventually catch up.

As crypto matures, stablecoins will mature as well. If cryptoassets are eventually used at a large scale for purposes like international payments and global remittances, stablecoins are a natural candidate for a true crypto medium of exchange. Ultimately, stablecoins are a new gateway to crypto user adoption, and a crucial part of the burgeoning ecosystem. However crypto evolves in the upcoming years, stablecoins will undoubtedly be a large part of the picture.

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