

# Stablecoins

## Private-sector quest for cryptostability

### SUMMARY

In just over a decade, the payment industry has seen the launch of cryptocurrencies and their explosive growth, driven by progress in digital technology applications. However, owing to a range of factors, not least their significant volatility, cryptocurrencies have not been adopted on a massive scale, but instead are used largely for speculative purposes. Both national authorities and the private sector have attempted to tackle volatility. The private sector's answer was stablecoins, that is, cryptocurrencies that aim to keep a stable value relative to a specified asset, or a pool of assets. There are currently three means by which stablecoins achieve this: legal assets, crypto-assets and algorithms.

The use of stablecoins may enhance financial inclusion, both in developed and developing markets, and might boost overseas payments in general and remittances in particular. Stablecoins may also have a positive impact on international trade, and may contribute to the development of global payment arrangements. There are potential economic risks, however, stemming either from stablecoins' legal characterisation or from governance matters or the coins' operational resilience. Further concerns are that stablecoins may be used for money laundering or terrorist financing activities, that consumers may not be adequately protected, and that stablecoins may impede monetary policy or propagate financial shocks and generate financial contagion.

To tackle these issues, national authorities in major economies are taking two complementary approaches: having central banks establish central bank digital currencies ('public stablecoins') and regulating stablecoin use. In the EU, the centrepiece is the European Commission proposal for a regulation on markets in crypto-assets, adopted in September 2020 and currently under review by the co-legislators – the European Parliament and the Council.



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## Introduction

In little more than a decade, the payment industry has seen the introduction of cryptocurrencies and their explosive growth, helped by progress in digital technology applications. In the [course](#) of their growth, 'traditional' cryptocurrencies such as Bitcoin – which were '[non-backed](#)', i.e. did not represent any underlying asset, claim or liability – exhibited significant volatility. This volatility made it difficult for them to perform the role of a currency,<sup>1</sup> encouraging their speculative use instead. Their issuance, bookkeeping, payment and settlement are still fraught with much uncertainty, and some cryptocurrencies have generated risks related to fraud, user losses and illegal activities. These risks could be further amplified if cryptocurrencies were more widely accepted. Moreover, laws regulating cryptocurrencies are still in their infancy, and the protection of cryptocurrency holders' rights remains under-explored. These factors have so far prevented the massive adoption of cryptocurrencies by the public.

Two possible avenues to increase adoption of cryptocurrencies are being pursued. The main difference between them lies in whether they are endorsed by state actors or private-sector participants. On the one hand, central banks are discussing the launch of digital currencies backed by national governments; these are the 'central bank digital currencies' (CBDC).<sup>2</sup> On the other, the private sector has attempted to pilot cryptocurrencies that do not exhibit such volatility; these are referred to as 'stablecoins'.

## What are stablecoins?

Stablecoins can be [defined](#) as cryptocurrencies that aim to maintain a stable value relative to a specified asset, or a pool or basket of assets. As such, the idea behind the term stablecoin could be seen as being similar to (or having originated in) a certain type of money market fund (MMF),<sup>3</sup> or 'constant net asset value'. Money market funds aim to preserve a stable value per share (e.g. €1) at which investors either subscribe or redeem. However, contrary to an MMF, the term stablecoin [does not affirm](#) that a particular coin actually achieves a stable value. Some consider terms such as 'private asset-linked tokens' as better descriptors of these instruments.<sup>4</sup>

There are three main mechanisms by which stablecoins aim to maintain their values stable (although, in practice, an issuer might use these mechanisms in combination).

One mechanism consists of supporting stablecoins with legal assets (the '[depository receipt](#)'). For example, a third party collects United States (US) dollar deposits and issues stablecoins linked to each dollar deposit. Under this approach, the value of the stablecoin is guaranteed by the issuer, who fully collateralises the claim and commits to redeem coins at par value in the same currency in which they were purchased. The most common stablecoin mortgaged in US dollars is Tether (USDT). In addition to legal tender, stablecoins may also be mortgaged with commodities (e.g. gold), government securities, or a combination of these assets.

A second mechanism involves supporting the value of stablecoins with [crypto-assets](#) (either a single cryptocurrency or a cryptocurrency portfolio), so that each stablecoin is supported by the corresponding cryptocurrency. This price stabilisation mechanism does not need to be backed up by legal assets; it does, however, come at the cost of higher market price fluctuation. (A proportion of 2:1 – or even higher – of excess guarantee might be needed to protect stablecoins from the impact of price fluctuations of encrypted assets).

A third mechanism consists of adjusting and controlling the supply of stablecoins by means of an algorithm. In this model, when the stablecoins' price exceeds a certain threshold, the trader will exchange the legal tender for stablecoins from the issuing institution in order to make profits. The supply of new trader-generated stablecoins will bring prices back to their original levels. Similarly, if the price of the stablecoins falls, the trader will buy stablecoins at a lower price than the linked price and then exchange the legal tender with the issuing institution to obtain profits. The decrease in market supply will bring the stablecoins' price back to normal levels.<sup>5</sup>

## Potential benefits

The main [advantage](#) of cryptocurrencies and digital payment systems is their ease of public access. Traditional banks, by contrast, do not always achieve that aim. Many developing countries lack a well-functioning banking system, and '[banking deserts](#)' (areas without bank branches) can also be found in advanced economies,<sup>6</sup> not least following the global financial crisis and the EU economic and sovereign debt crises. Ease of access coupled with stability could therefore potentially [increase](#) financial inclusion.

Another area in which stablecoins could make a difference is overseas payments in general and remittances in particular. Under the current traditional banking system, overseas payments are quite costly, involving high transaction fees and long processing times. Faster processing and lower fees could facilitate these payments, to the benefit of both foreign workers and the payment recipients. Given that many researchers [agree](#) on the positive relationship between remittances and economic growth, the adoption of stablecoins and similar technologies could have a positive growth effect on developing countries.

A further area that could benefit from stablecoins is international trade. Depending on their design, stablecoins could [offer](#) lower fees and faster transaction speeds. This would make them useful for international transactions and everyday payments, and could help increase international trade. A country's residents holding stablecoins could complete cross-border transactions without having to convert them into their own currency and without paying service charges. Stablecoins could thereby contribute to reducing payment activity costs – in particular for the transfer and payment of foreign funds – and lower the risk of exchange rate fluctuations.

Lastly, stablecoins might be more capable of serving as a means of payment and store of value than traditional payment systems, and could potentially contribute to the development of global payment arrangements that are faster, cheaper and more inclusive than existing ones.

## Potential concerns

A 2019 [report](#) by the Group of Seven (G7) countries identified several potential challenges and risks that stablecoins could pose for public policy, oversight and regulation.

A first issue might stem from their legal characterisation. For the moment, there is no harmonised regulation of stablecoins and, as a result, it is unclear whether they are considered as a money equivalent, are categorised as contractual claims or property rights, or entail a right against an issuer or against underlying assets. Depending on their design and claim structure, stablecoin arrangements might have [features](#) of payment systems, bank deposits, foreign currency exchanges, commodities or investment securities. Ambiguous rights and obligations could result in a loss of confidence in stablecoins, with implications for their adoption and financial stability. In the case of the EU, specific issues might also arise in a cross-jurisdictional context (law applied and dispute settlement).

Moreover, the tax treatment of transactions using stablecoins is unclear, and the absence of harmonised comprehensive guidance at international level complicates matters further. The degree of anonymity provided by a stablecoin arrangement might also make it more difficult for authorities to track transactions and identify the stablecoins' beneficial owners, making the detection of tax evasion more complex.

Another cause of concern relates to governance. If, before the launch of a stablecoin, the necessary measures – comparable to those taken by investment funds – are not implemented (i.e. the reserve assets are not segregated from the issuer's equity), there is a risk that the investment policy might be misused to privatise returns from the assets, whereas the assets' losses would be passed on to the coin-holders.

Yet another risk involves operational resilience (not least to cybersecurity risks). Stablecoins are a payment system, and disruptions in stablecoins resulting from flawed design and operation could cause or exacerbate financial shocks.

In terms of monetary policy, global stablecoins may have an impact on the formulation and operation of central banks' monetary policies. This could occur if money supply was affected (either through the use of the stablecoin instead of the local currency, or through an increased use of the currency linked to the stablecoin instead of the local currency), or if the speed of currency circulation or the monetary policy transmission mechanism were affected.

Industry observers and regulators have voiced concerns about stablecoins' potential to trigger financial contagion.<sup>7</sup> For example, credit rating agency Fitch Ratings noted in an [article](#) that Tether's commercial paper holdings may be larger than those of most prime money market funds in the US and the EU.<sup>8</sup> Therefore, a sudden mass redemption of Tether could affect the stability of short-term credit markets, or cause runs in cases of major cyber-attack or doubt about a stablecoin's value.<sup>9</sup> Moreover, in the [event](#) of a run on a global stablecoin, the liquidation of assets to cover redemptions could have negative contagion effects on the financial system. Lastly, the fact that the various components of a stablecoin arrangement may be located in different countries means that an operational risk event occurring in a country with a weak institutional setting could spill over to advanced economies, where most of the pool of assets underlying the stablecoin are invested.

Some cryptocurrency wallets and trading platforms have proven susceptible to fraud, theft or other cyber incidents, thereby affecting consumers.<sup>10</sup> Consumers may also be affected in cases where a stablecoin issuer does not disclose their reserves (see 'Tether's reserve assets').

Furthermore, stablecoin users may not receive clear information about how the participants will process their personal data and how they will share it with third parties. Lastly, the exercise of certain consumer rights, such as the right to remove consumer data or to seek recourse for unauthorised transactions, might be more difficult if regulatory action is not taken.

If not effectively regulated and supervised, stablecoins may pose significant risks to financial integrity and may give rise to new opportunities for money laundering, terrorist financing and other illicit financing activities.

## Further research

Richard Senner and Didier Sornette [examine](#) whether the belief that cryptocurrencies could in the near-term replace [fiat money](#) holds. In their view, there is evidence to the contrary, for three main reasons: cryptocurrencies either have no collateral or are collateralised by assets that are inferior to fiat currencies. Moreover, cryptocurrency allocation is centrally/algorithmically planned. While blockchain might facilitate different kinds of financing (P2P, smart banking, [initial coin offerings](#)), existing stablecoin designs do not enable productive liquidity expansion. Lastly, decentralised ledger technology does not overcome the challenges of formulating adequate policies and designs for monetary economies – so far, the authors note, it appears that cryptocurrencies have not even identified the major monetary challenges.

### Tether's reserve assets

Following a US\$18.5 million settlement paid in 2021, the largest stablecoin, Tether, agreed to provide quarterly disclosures of its [reserve](#) assets. Investors were surprised to find that Tether held only 26.2 % of its reserves in cash, fiduciary deposits, reverse repo notes and government securities, while holding almost 50 % in commercial paper. This percentage in commercial paper raised concerns that it could expose holders to losses in the event of issuer default or substantive collateral downgrade. This, in turn, drew discussions about whether such disclosure should be more broadly mandated for other stablecoins.

Source: [How stable are stablecoins?](#), Congressional Research Service (CRS) report, July 2021.

Lai Hoang and Dirk Baur [note](#) that stablecoins seem to be used primarily for trading cryptocurrencies. Also, until now, stablecoins have neither been stable in absolute (too volatile) nor relative terms (too volatile compared with stable benchmarks, e.g. major fiat currencies such as the euro). However, all stablecoins are relatively stable compared with Bitcoin. The authors' results suggest that the source of this instability is Bitcoin's excess volatility. At the same time, their findings suggest that stablecoin trading contributes to this excess volatility.

Gary Gorton and Jeffery Zhang [observe](#) that currently, it does not appear that stablecoins are used as 'money'. However, they may evolve into something akin to an unregulated version of the [free banking era](#), because their prices can have fluctuating discounts based on varying perceptions of their risks.<sup>11</sup> Looking ahead, based on historical lessons from private money creation, the US government has two options. The first is to transform stablecoins into the equivalent of public money, either by bringing stablecoin issuers within the insured-bank regulatory perimeter<sup>12</sup> or by requiring them to be backed one-for-one with treasuries or reserves at the central bank. The authors are of the view that, for this to happen, the current regulatory infrastructure (including, for example, the [Glass-Steagall Act](#) or the [Dodd-Frank Act](#)) should be updated and/or new legislation passed, requiring stablecoin issuers to become banks insured by the [Federal Deposit Insurance Corporation \(FDIC\)](#) or to run their business out of FDIC-insured banks. The second option is to have Congress require the Federal Reserve to issue a central bank digital currency as a substitute for privately produced digital money such as stablecoins, and to tax private stablecoins 'out of existence'.

## Recent developments

### International

Until recently, major economies have refrained from regulating cryptocurrencies heavily, so as not to hinder innovation. This, however, started to [change](#) in 2019. Indeed, at their meeting in Chantilly in July 2019, G7 finance ministers and central bank governors agreed that stablecoins – particularly projects with global and potentially systemic footprints – raise serious regulatory and systemic concerns. Furthermore, ministers and governors agreed that possible stablecoin initiatives and their operators should meet the highest standards and be subject to prudential supervision and oversight, and that possible regulatory gaps should be assessed and addressed as a matter of priority.

In the US, the Federal Reserve Chair, Jerome Powell, said at a July 2021 Senate banking [hearing](#) that stablecoins were not yet regulated sufficiently, stating: 'They're like money funds, they're like bank deposits and they're growing incredibly fast but without appropriate regulation'. Similarly, at a President's working group on financial markets (PWG) [meeting](#) the same month, Treasury Secretary Janet Yellen underscored the need 'to act quickly to ensure there is an appropriate U.S. regulatory framework in place'. Tighter regulation was also proposed under the Stablecoin Tethering and Bank Licensing Enforcement ([STABLE](#)) Act, introduced to Congress in December 2020 and currently under discussion.

### European Union

In the impact assessment ([IA](#))<sup>13</sup> underpinning its September 2020 [proposal](#) for a regulation on markets in crypto-assets ([MiCA](#)), the European Commission noted that some stablecoins could qualify as 'financial instruments' under the Markets in Financial Instruments Directive (MiFID II),<sup>14</sup> while others could qualify as electronic money under the Electronic Money Directive II (EMD 2). However, further to the IA, while some stablecoin arrangements confer a claim or redemption rights against the issuer or the underlying assets and could therefore fall into existing regulatory categories, a large number of stablecoins do not grant such rights and fall outside existing EU financial services legislation.

The Commission considered three options regarding stablecoins, namely (i) to take bespoke legislative measures, (ii) to bring them under EMD 2, and (iii) to limit their use.<sup>15</sup> Weighing up the pros and cons, it decided to go ahead with the two first options. On the one hand, the Commission intends to take bespoke legislative measures and use secondary legislation to complement requirements on crypto-asset service providers; on the other, it intends to regulate certain specific stablecoins under EMD 2, to avoid regulatory arbitrage between stablecoins that are indistinguishable from e-money and the treatment of e-money issued on a distributed ledger.<sup>16</sup>

More specifically, the MiCA proposal establishes that, in the EU, no stablecoins can be offered to the public<sup>17</sup> or admitted to trading on a trading platform for crypto-assets, unless the issuer is authorised in the EU and publishes a 'white paper' approved by the national competent authority (NCA). The proposal further describes the authorisation process for stablecoin issuers and the approval of their white papers by NCAs, the withdrawal of authorisation, and the procedure for modifying the crypto-asset white paper.

The proposal also establishes conduct obligations for stablecoin issuers. It lays down rules and requirements for potential marketing communication and ongoing information obligations, such as the obligation for issuers to establish a complaint-handling procedure. Further requirements would mean issuers would have to comply with rules on: conflicts of interest; notification of changes in their management body to the competent authority; governance arrangements; own funds; the reserve of assets backing the asset-referenced tokens (i.e. stablecoins); and on the custody of the reserve assets. The proposal establishes the obligation for issuers to invest the reserve assets only in assets that are secure and low risk, and to disclose the rights attached to the asset-referenced tokens. In the event that the issuer does not offer direct redemption rights or claims on the issuer (or the reserve assets) to all stablecoin holders, the proposal provides holders with minimum rights. It further prohibits stablecoin issuers and crypto-asset service providers from granting any interest to holders of asset-referenced tokens.

Moreover, the proposal sets out the criteria for the European Banking Authority (EBA) to use when determining whether a stablecoin is significant. There is also the possibility for issuers to classify as 'significant' on their own initiative at the time of applying.<sup>18</sup> These issuers have to abide by additional obligations, such as additional own fund requirements, liquidity management policy and interoperability. Furthermore, the proposal sets detailed provisions on the EBA's powers and competences related to the supervision of significant stablecoin issuers (including supervisory responsibilities and rules on supervisory colleges for issuers of significant stablecoins). The proposal ends with transitional provisions (the '[grandfather](#)' clause) and final provisions (i.e. other legislative acts amended).

At the time of writing, the MiCA proposal is under discussion in Parliament and Council. To follow the debate, see the European Parliament [legislative train schedule](#) carriage on the file.



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## ENDNOTES

- <sup>1</sup> Money, whatever its form, has three [functions](#): it serves as a store of value as well as a medium of exchange and a unit of account. For more information on money and its evolution in the digital age, see the February 2018 [lecture](#) by Yves Mersch, member of the European Central Bank (ECB) executive board.
- <sup>2</sup> See also Angelos Delivorias, [Central bank digital currencies](#), EPRS, European Parliament (forthcoming).
- <sup>3</sup> A [money market fund](#) is a type of mutual fund that invests in short-term assets (in the US, these include treasury bills, commercial paper and certificates of deposit). Widely used, they played a role in financial instability during the 2007-2009 global financial crisis. In the US, they are currently at the centre of a regulatory reform debate.
- <sup>4</sup> [By contrast](#), Bitcoin and alternative 'altcoins' are generally not pegged to any other currency or asset and are thus more volatile.
- <sup>5</sup> Noopur Trivedi and Jitesh Golani give an illustrative [example](#): consider a situation in which the value of an algorithmic stablecoin is soft-pegged against US\$1, but is currently valued at US\$1.05. The algorithm on the blockchain operates to decrease the price by churning out more stablecoins. The new stablecoins are allotted either to current holders (rebasing) or to shareholders who have locked their holdings. The shareholders then 'dump' the new stablecoins into the market, which leads to a fall in prices back to the pegged value. Shareholders of the stablecoin ecosystem are those who hold a kind of equity token. When the price of an algorithmic stablecoin soft-pegged against the dollar decreases in value, the algorithm reinstates the value by contracting the number of stablecoins in circulation. The contraction takes place for instance by reducing the number of stablecoins in circulation for all holders (debasing), or issuing bonds or coupons at a discounted price against stablecoins, which are destroyed after the bonds or coupons are issued. The holders of the bonds or coupons can redeem them once the stablecoin price rises back to or above the pegged value.
- <sup>6</sup> As [Timothy Massad](#) notes in a recent report on the US, 'it is shocking that with a financial system as sophisticated as ours, 25 % of American households are unbanked or "underbanked", according to the FDIC. The latter term means they have a bank account but use nonbank options like check cashing services or payday lenders, often to avoid even more expensive bank overdraft charges'.
- <sup>7</sup> [Financial contagion](#) can be defined as a situation in which a shock that initially affects only a few financial institutions spreads to the rest of the financial system and the economy.
- <sup>8</sup> Tether's total assets associated with its USDT [reached](#) US\$70 billion in October 2021.

- <sup>9</sup> A [loss](#) of confidence could trigger substantial redemptions of coin holdings, which could be amplified if end users have misinterpreted such holdings as a substitute for bank deposits. Unlike stablecoins, bank deposits are covered by the bank's guarantee of redeemability at par and, should that fail, the appropriate deposit guarantee scheme. Even without the influence of adverse market conditions, certain stablecoins have already displayed [run-like](#) behaviour.
- <sup>10</sup> While distributed ledgers may have availability and integrity features that make them more resilient to certain operational and cybersecurity risks than centrally managed ledger systems, the structure of a distributed ledger system might also be compromised, potentially undermining the system.
- <sup>11</sup> The authors note that during the free banking era, private bank monies circulated at time-varying discounts based on geography and the perceived risk of the issuing bank.
- <sup>12</sup> That is by requiring them to be issued through FDIC-insured banks.
- <sup>13</sup> See also Laura Zandersone, [Updating the Crypto Assets Regulation and establishing a pilot regime for distributed ledger technology](#), EPRS, European Parliament, March 2021.
- <sup>14</sup> In so far as a crypto-asset qualifies as a financial instrument under MIFID II, a full set of EU financial rules – including the Prospectus Regulation, the Transparency Directive, the Market Abuse Regulation, the Short Selling Regulation, the Central Securities Depositories Regulation, and the Settlement Finality Directive – are likely to apply to their issuer and/or firms conducting activities related to them.
- <sup>15</sup> The option to establish a new 'crypto-assets' category in the list of MiFID I financial instruments was discarded at an early stage.
- <sup>16</sup> In the Commission proposal, stablecoins are referred to as 'asset-referenced tokens' and 'e-money tokens'.
- <sup>17</sup> The proposal excludes from this obligation small-scale stablecoins and stablecoins marketed, distributed and held exclusively by qualified investors.
- <sup>18</sup> These criteria are: the size of the stablecoin promoters' customer base; the stablecoin's value or market capitalisation; the number and value of transactions; the size of the reserve of assets; the significance of the issuers' cross-border activities; and their interconnectedness with the financial system.

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