

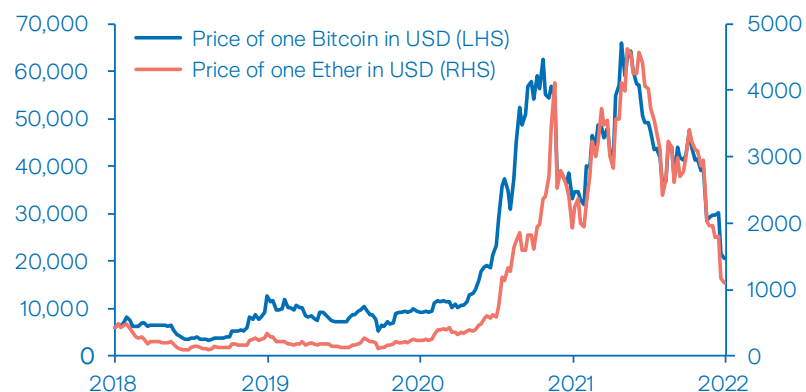
Stablecoins – separating the wheat from the chaff



The massive correction in the cryptocurrency market has wiped out trillions of dollars in value and is a strong reminder of the inherent risks of investing in new technologies. While most cryptocurrencies are still far too volatile to act as a store of value, some stablecoins have weathered the recent setback remarkably well. By providing a more solid backbone for the cryptocurrency market these stablecoins could form a basis for the future development of decentralised financial applications and are likely to bring us one step closer to a viable alternative to traditional fiat currencies.

As part of a broader wave of risk-off sentiment in financial markets, the slump in cryptocurrencies has been particularly brutal. Bitcoin, still the largest cryptocurrency by market capitalisation, has lost more than 70% from its peak so far, tumbling from almost USD 70'000 per unit in November to roughly USD 20'000 this month. Most other cryptocurrencies, like Ether shared the same fate.

The cryptocurrency sell-off has wiped out trillions of dollars in value



Source: Bloomberg

Most cryptocurrencies are far too volatile to fulfil the traditional roles of money

While this is a massive correction, Bitcoin has suffered worse setbacks in percentage terms in the past, losing more than 80% of its value between December 2017 and December 2018, for example. Nevertheless, given the rapidly increasing relevance of cryptocurrencies over the past few years the current value destruction is much more severe. Total market capitalisation of all cryptocurrencies dipped below USD 1tn in June for the first time since January 2021, down from almost USD 3tn in November 2021. The stellar rise and subsequent fall of some of the biggest cryptocurrencies underline the speculative nature of crypto coins without necessarily negating their potential to spread the use of decentralised finance or other ground-breaking blockchain applications as we alluded to in our earlier paper (<https://bit.ly/3Np9IHO>).

The latest setback is a strong reminder that while cryptocurrencies like Bitcoin and Ether can serve as a medium of exchange and a unit of account, two of the main functions of money, they are still far too volatile to be a reliable store of value, which is the third key role of money. Interestingly, while many cryptocurrencies collapsed in recent weeks some of the most important stablecoins like Tether, USDC, Binance USD (BUSD) or Dai have kept their value despite some wobbles. As we have argued earlier, stablecoins are a crucial link between the world of cryptocurrencies and traditional financial markets as they are designed to provide the crypto version of traditional money. It is the rise of stablecoins in particular that is increasingly driving global central banks to explore the creation of central bank digital currencies (CBDC) as they have the potential to become viable competitors to the government-sponsored currency systems we rely on today.

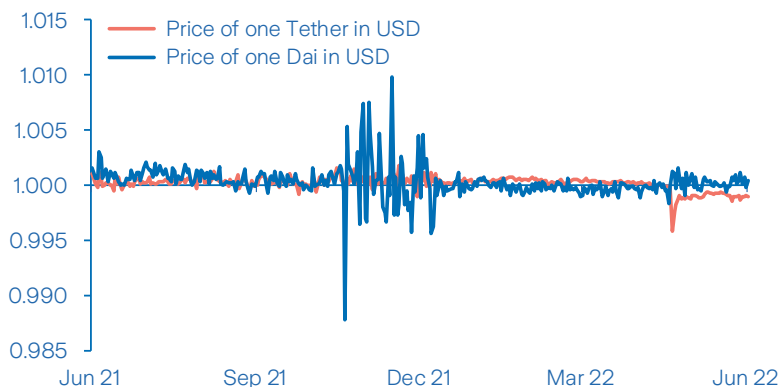
Not all stablecoins have been able to maintain their peg

The significant meltdown in cryptocurrency markets since last November created a challenging environment in which to test whether stablecoins could live up to their name – a test that not all of them have passed.

There are several approaches to creating a stablecoin, but a crucial factor is whether the coin is collateralised or not. Another important aspect is the nature of the collateral, which could be either traditional assets like Treasury bills or commercial paper, or other cryptocurrencies. In the latter case, the stablecoin will usually be over-collateralised given the price volatility of the underlying cryptocurrency.

Generally, stablecoins that are fully backed by fiat currencies have fared much better during the recent setback. However, as we argued in our earlier paper, stablecoins that are linked to a traditional currency are not fully decentralised as their fate is bound to a fiat currency and the central bank that manages the supply of that underlying currency. This dependence can be a major disadvantage for a cryptocurrency that is striving to be a fully decentralised alternative to traditional currencies.

Tether and Dai have kept their value despite some wobbles



Source: Yahoo Finance



Collateralised stablecoins can still suffer from liquidity mismatch and investor mistrust

While centralised stablecoins collateralised with fiat assets have been more stable during the recent sell-off compared to their decentralised counterparts, some of them are still suffering from liquidity shocks and investor runs. A good example of this is Tether, the most popular stablecoin by market capitalisation (and the third largest overall after Bitcoin and Ether). Tether is a centralised stablecoin fully collateralised by a variety of fiat assets including Treasury bills and commercial paper. Other popular stablecoins like USDC and BUSD are collateralised with Treasury bills and bank deposits.

Tether has been relatively stable through most of the turbulent moves that shook the cryptocurrency market, though it created a lot of headlines when its value briefly dipped below USD 1 in May. While this doesn't put into question the whole concept of a stablecoin, it sheds some light on the inherent risks that even a fully collateralised coin can face. Similar to a money market fund or a bank in a fractional reserve system, Tether can face an imbalance between the liquidity of its assets and the liquidity demand of coin holders. It should therefore not come as a surprise that the price of Tether or other stablecoins could fall below their inherent value in a time of stress as could happen to an otherwise solid bank during a bank run or money market funds during the financial crisis.

Crucially, Tether's peg to the dollar hinges on the fact that one unit of Tether can always be redeemed for one US dollar. In theory, if the value of one Tether falls below USD 1, investors would buy Tether, redeem it for USD 1 and pocket the arbitrage profit. However, this arbitrage process is not without friction as Tether sets a minimum redemption amount and asks for a fee. In times of stress when investors urgently need liquidity the fastest way to do so is to sell Tether in the secondary market, potentially at a discount, which is what happened in May. In Tether's case, the lack of full transparency regarding collateral further exacerbated the dip below par as investors who doubted the ability to redeem at par chose to pre-emptively sell their holdings in the secondary market.

In summary, the value of a stablecoin collateralised by fiat currency is based on investors' ability to exchange the coin at par into the underlying currency even if most investors never actually use this mechanism but trade their coins on the secondary market. Although Tether briefly dipped below par it can still be argued that stablecoins collateralised by fiat currency have generally weathered the recent storm reasonably well. However, as elaborated earlier, the inherent stability of these coins is based on their link to traditional assets and currencies managed by a central party or custodian, which limits their potential role as an independent alternative to traditional currencies.

Some platforms mimic central bank mechanisms to support a stablecoin's value

As discussed in our earlier paper, a crucial motivation to create cryptocurrencies in the first place was to provide an independent alternative to the traditional financial system based on decentralised networks. In order to remain fully independent a decentralised, collateralised coin will use another cryptocurrency as a collateral rather than fiat assets. Given that the underlying cryptocurrency is likely to be more volatile than traditional currencies these stablecoins will have to be overcollateralised in order to keep the price of supported coin stable.

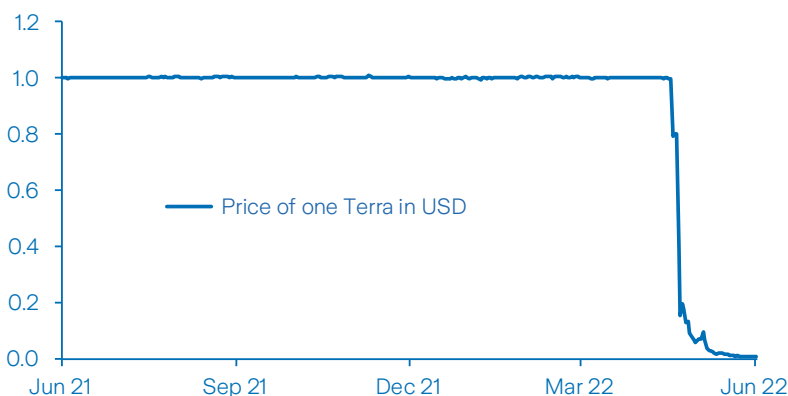
In some cases, the stabilisation mechanism is designed to work like a central bank where reserves accumulated from transaction fees are used to buy the coin in the market to support its value.

A well-known example for this is Dai. In principle, Dai is created based on an overcollateralised loan with a different haircut or discount applied depending on which cryptocurrency is used as a collateral. To achieve a stable value and protect Dai from the underlying cryptocurrency's volatility the mechanism uses relatively high collateralisation ratios. For Ether, for example, the minimum collateralisation ratio is currently set at 150%. With varying stability fees and savings rates supply and demand of Dai are managed to maintain the coin's value similar to how traditional central banks are managing the supply of money. Accrued fees act as an additional buffer to support Dai's value, comparable to central banks' foreign currency reserves. Though Dai experienced increased volatility during the recent cryptocurrency turbulences its value has remained remarkably stable.

Some stabilisation mechanisms collapsed during the recent market turmoil

Many decentralised stablecoins use complex algorithms to provide stability but very often rely on some form of supply management and arbitrage to keep the price of the coin stable. While increasing supply should always help to lower prices in cases of rising demand, the opposite is not always true, particularly in times of crises when investors lose trust in a particular coin or even the broader market for cryptocurrencies as happened recently. Scarcity alone simply does not create value. In addition, some of the algorithms used to stabilise the value of decentralised stablecoins are intransparent and difficult to understand, keeping investors on the sidelines in volatile periods and potentially triggering a collapse of the stabilisation mechanism. One example where the stabilisation mechanism has not worked is Terra. In principle, owners of Terra could always redeem one dollar's worth of Terra for one dollar's worth of Luna, another cryptocurrency. However, once the value of Luna began to slide there was a rush to redeem Terra, which boosted the supply of Luna. Both the value of Luna and Terra collapsed as the numbers of Luna tokens exploded from a few hundred million to more than 6 trillion.

Stablecoin Terra collapses as the supporting mechanism fails

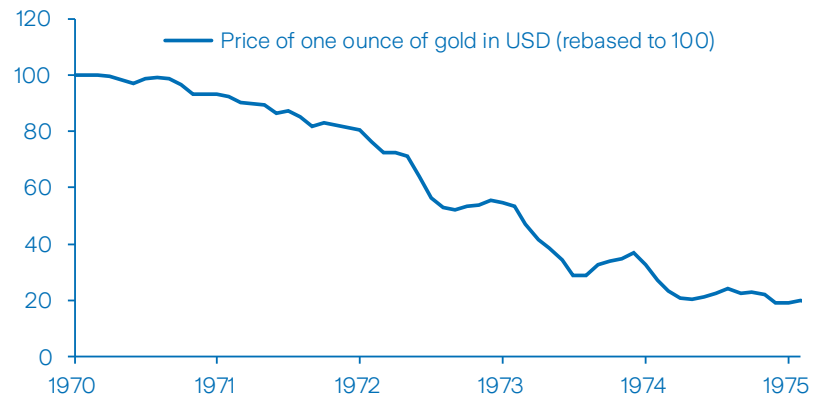


Source: Yahoo Finance

Financial history is littered with broken currency pegs

As discussed above, the mechanism to stabilise a decentralised stablecoin is usually based on some sort of supply and demand management, often similar to how a traditional central bank tries to keep a currency's value in a fixed exchange rate regime. As historical experience with fixed exchange rate pegs shows these mechanisms do not always work as intended. In the 1970s the increasing supply of US dollars led to a series of devaluations of the dollar relative to the gold price ending the dollar peg and initiating the transition to the system of flexible exchange rate that we use today. However, despite the significant loss in value the US dollar remains the world's most important currency to date.

A series of devaluations led to an end of the dollar peg



Source: Bloomberg

A failed stablecoin shows similarities with a broken currency peg

An inherent weakness of decentralised stablecoins is the fact that the reserves to support a stablecoin's value are usually held in a cryptocurrency rather than in the asset that the peg is designed to hold which is usually the US dollar. The stabilisation mechanism becomes even more fragile if there is a strong correlation between the collateral and the supported stablecoin which is exactly what happened during the recent collapse of cryptocurrency prices. This shows some similarities to the US subprime crisis where investors underestimated the correlations between different assets (regional house prices) in times of crisis. In this regard, the latest collapse of a number of stablecoins are simply old lessons learned anew.

Some of the stabilisation mechanisms have worked reasonably well in calmer times but the collapse of several algorithmic stablecoins like Terra reveals the flaws in the process. Once the price of the underlying collateral starts to collapse a flood of redemptions by investors in need of liquidity or their lack of trust in the stabilisation mechanism causes the peg to break. In this regard, as indicated above, the end game for some of the failed stablecoins is not too dissimilar from traditional fixed currency pegs being broken despite desperate measures by a central bank to keep up the value of its currency.

The current crypto sell-off separates the wheat from the chaff

The recent events are a strong reminder of the inherent risks involved in investing in new technologies. Naturally, while some approaches will fail others are likely to succeed and will emerge stronger from the crisis. Some stablecoins managed to maintain their pegs during the current market convulsions which should help to strengthen investors' trust in their longer-term stability and increase their willingness to hold the coin even in turbulent times. The current cryptocurrency slump reflects an overdue correction in a market that was showing some severe excesses. However, once the dust has settled, we will have a clearer picture of the winners and losers of the current purge. Separating the wheat from the chaff in the market for cryptocurrencies will help to build a more solid basis for the future development of decentralised financial applications and is likely to bring us one step closer to a viable alternative to traditional fiat currencies.

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