BIS

BIS Bulletin

No 66

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12 January 2023

BIS Bulletins are written by staff members of the Bank for International Settlements, and from time to time by other economists, and are published by the Bank. The papers are on subjects of topical interest and are technical in character. The views expressed in them are those of their authors and not necessarily the views of the BIS. The authors are grateful to Anamaria Illes and Jose Maria Vidal Pastor for excellent research assistance, and to Louisa Wagner for administrative support.

The editor of the BIS Bulletin series is Hyun Song Shin.

This publication is available on the BIS website (www.bis.org).

ISSN: 2708-0420 (online)
ISBN: 978-92-9259-628-6 (online)

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Addressing the risks in crypto: laying out the options

Key takeaways

- *The recent high-profile failures of FTX and other crypto firms have re-ignited the debate on the appropriate policy response to address the risks in crypto, including through regulation.*
- *The "shadow financial" functions enabled by crypto markets share many of the vulnerabilities of traditional finance. These risks are exacerbated by specific features of crypto.*
- *Authorities may consider different – not mutually exclusive – lines of action to tackle the risks in crypto. These include containment or regulation of the crypto sector or an outright ban.*
- *Central banks and public authorities could also work to make TradFi more attractive. A key option is to encourage sound innovation with central bank digital currencies (CBDCs).*

After the failure of several major crypto firms, addressing the risks from crypto markets has become a more pressing policy issue. Cryptoasset markets have gone through booms and busts before, and so far, the busts have not led to wider contagion threatening financial stability. Yet the scale and prominence of recent failures heighten the urgency of addressing these risks before crypto markets become systemic.

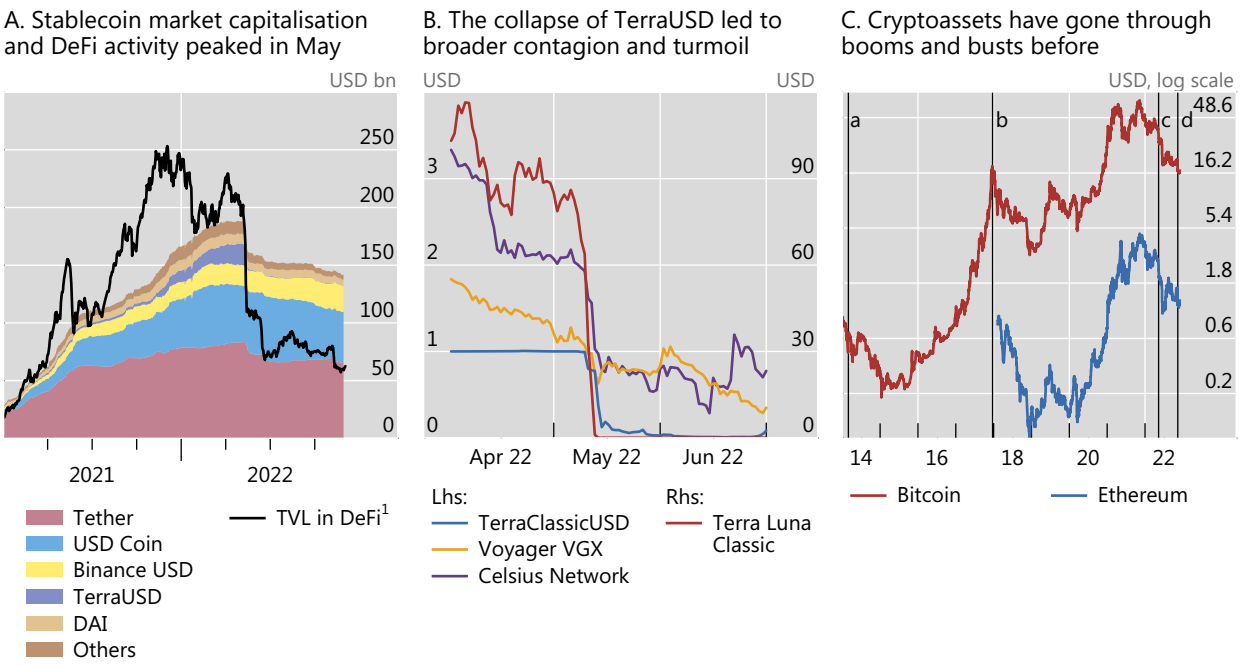
The crypto ecosystem and the "shadow financial" functions it engages in, through centralised financial entities (CeFi) and decentralised finance (DeFi) protocols, share many of the vulnerabilities that are familiar from traditional finance (TradFi). But several factors exacerbate the standard risks. These relate to high leverage, liquidity and maturity mismatches and substantial information asymmetries. Policy responses should consider how to address these sources of risk appropriately, given the borderless nature of crypto. This bulletin briefly summarises the lessons of the 2022 turmoil. It then outlines three – non-mutually exclusive – lines of action to address the risks in crypto: a ban, containment and regulation, as well as their pros and cons. It also outlines complementary lines of policy action to address inefficiencies in TradFi and curb the demand for crypto. One key option would be to encourage sound innovation with CBDCs. An online appendix gives a selective overview of ongoing initiatives in crypto regulation.

The recent crypto turmoil: features and lessons

After peaking in late 2021, when cryptoasset prices, stablecoin volumes and DeFi activity reached all-time highs (Graph 1, left-hand panel), the crypto ecosystem faced turmoil in 2022. The decline started early in the year, but problems became acute in May. It was then that a large stablecoin, TerraUSD (UST) – which relied on an algorithm to maintain its peg to the US dollar – collapsed, causing contagion in crypto markets (Graph 1, centre panel). A period of relative calm followed, but crypto markets again saw serious stress in November 2022, when the FTX crypto trading platform declared bankruptcy. In the past, despite repeated turmoil, the crypto ecosystem has survived and prices have often recovered (Graph 1, right-hand panel). There are thus reasons to doubt that crypto will fade away on its own. In particular, a substantial part of the crypto community firmly believes in the ideological pursuit of a decentralised system as an alternative

to TradFi. And in response to recent events, many proponents of crypto claim that decentralisation and the underlying crypto technology are the solution rather than the problem. They argue that while CeFi entities like FTX were at the epicentre of the stress, DeFi protocols and underlying blockchains continued to function, concluding that only "true" DeFi can be resilient.[1]

Prices and market capitalisation of crypto assets and the 2022 turmoil — Graph 1



[a] Bankruptcy of Mt Gox on 28 February 2014. [b] Bursting of ICO bubble on 22 December 2017. [c] TerraUSD implosion on 9 May 2022. [d] Bankruptcy of FTX on 11 November 2022.

[1] TVL (total value locked) refers to the total dollar amount of assets that is staked across all DeFi protocols. It does not refer to transaction volumes or the market capitalisation of cryptocurrencies, but rather to the value of reserves that are "locked" into smart contracts. The TVL may vary depending upon the source and is subject to overestimation.

Sources: Bloomberg; CoinGecko; DefiLlama.

Recent developments underscore that the decentralisation in crypto and DeFi markets is illusory (Aramonte et al (2021); BIS (2022)). The vision of crypto proponents is to do away with financial intermediaries, yet to function and achieve a meaningful scale, crypto markets rely heavily on centralised entities for several reasons. The governance of DeFi protocols is often concentrated. For one, the founding team of a new DeFi product often amasses a large amount of so-called governance tokens. And as these tokens are also tradable, any party can in theory acquire a controlling stake in a protocol. In addition, centralised exchanges and stablecoins play a crucial role in crypto. If market participants want to invest in crypto, they initially convert funds into a stablecoin deposited on a centralised platform. The stablecoin then serves to grease the wheels of the crypto system. Without such gateways, crypto would have to rely on users taking self-custody of their funds in digital wallets using private keys. Given the risks involved, mainstream adoption would be inconceivable.

Moreover, these forms of CeFi and DeFi protocols are subject to many of the vulnerabilities familiar in TradFi, but often to a larger extent. They rely extensively on leverage and take on liquidity and maturity mismatches. In addition, crypto intermediaries face severe deficiencies in risk management, ring-fencing of business lines and handling of customer funds. Several business models in crypto turned out to be

[1] See eg Cassatt (2022), Harvey (2022) and Schär (2022).

outright Ponzi schemes. These characteristics, coupled with the huge information deficit customers face, strongly undermine investor protection and market integrity (FSB (2018, 2022); BIS (2022)).

Despite these deficiencies, the recent turmoil has shown that the sector has not grown large enough or sufficiently interconnected with TradFi to threaten financial stability. That said, this could change if retail or institutional investor interest does not abate. Interconnections with the real economy and TradFi could also increase should crypto become less self-referential, in particular if asset tokenisation makes inroads. Discussions on the appropriate policy response to crypto are therefore timely.

Options for addressing the risks in crypto

Addressing the risks posed by crypto should have the same objectives that have underpinned the approach to TradFi for decades. Typically, these are to: (i) appropriately protect consumers and investors; (ii) preserve market integrity against fraud, manipulation, money laundering and the financing of terrorism; and (iii) safeguard financial stability.[2] For central banks, an important additional consideration is to preserve the integrity of the monetary system.[3] For many emerging market economies (EMEs), the issue of monetary sovereignty has also become pressing. In particular, in countries subject to high inflation risks and macroeconomic instability, residents have incentives to shift assets into claims denominated in more stable currencies. Stablecoins linked to major currencies are a convenient vehicle. This phenomenon, dubbed "cryptoisation" (IMF (2021)) and akin to currency substitution, could not only impinge on monetary sovereignty but may also divert resources away from the real economy.

At a high level, **three potential lines of action** could be pursued. These are not mutually exclusive and could be selectively combined to mitigate the risks emanating from crypto activities. As summarised in Graph 2, these are to:

1. Ban specific crypto activities (**"ban"**);
2. Isolate crypto from TradFi and the real economy (**"contain"**); and
3. Regulate the sector in a manner akin to TradFi (**"regulate"**).

A crucial element to be considered when selecting which options to pursue is the ability to enforce any rule that is introduced, including ensuring that the resources needed to do so are on hand.

Ban

The extreme option is banning crypto activities, either in their entirety or in a targeted manner. The pros and cons of the banning option are easy to assess at an abstract level. In terms of pros, and assuming that a ban is effective, any potential harm to the financial system would be eliminated and investors would not incur any losses due to misconduct on the part of crypto service providers. The main downside is that any useful innovation from crypto would be lost or delayed.

Implementing this option would face the challenge of enforcement. For decentralised crypto activities, their borderless nature makes enforcement difficult. The ban would be more effective for the activities of centralised intermediaries, but the activity could move to jurisdictions that do not impose the ban and investors may find ways to evade it.[4] In addition, evasion may lead to "waterbed effects", whereby

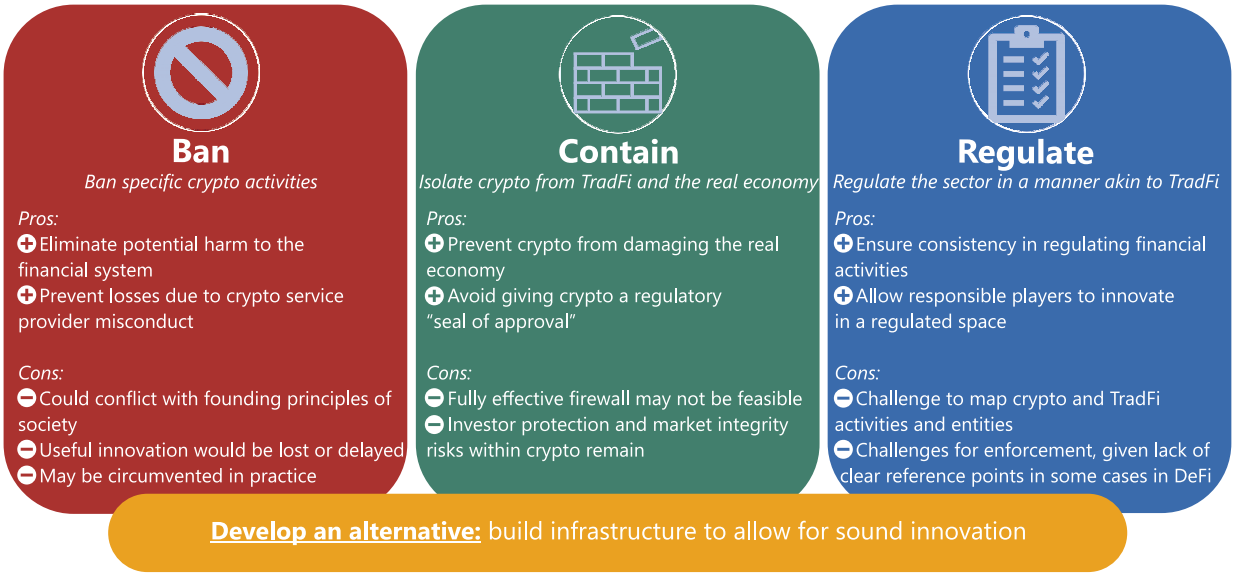
[2] Investor protection relates to rules that seek to ensure that firms treat consumers fairly and sell them only products and services that are appropriate (eg matched to investors' risk-bearing capacity). Market integrity is achieved through the use of rules that specify how these markets should function, eg to avoid manipulative practices as well as by applying know-your-customer (KYC) and anti-money laundering (AML) regulations.

[3] This means the preservation of the public good nature of central bank money from the encroachment of private initiatives that could undermine it (BIS (2022)).

[4] Indeed, a recent report by Chainalysis (2022) shows that crypto usage in China rose in 2022, notwithstanding the ban on crypto activity that was imposed in late 2021.

investors seek out similar activities not explicitly covered by existing rules or subject to less oversight. Finally, many societies tend to protect the right of individuals to choose as long as they do not harm others, and tend to use outright bans sparingly.

Options for addressing the risks in crypto: pros and cons Graph 2



Source: Authors' elaborations.

Contain

The second option is to isolate and contain crypto so that it remains more of a niche activity. This could be done first and foremost by limiting the flow of funds into and out of it and by limiting other connections with TradFi. At the same time, containment would seek to curb any linkages with the real economy (eg as means of payment for goods and services, or in response to the tokenisation of real-world assets).[5]

There are several possible justifications for this approach. As with bans, it is a reasonable response if crypto is seen as not solving any practical real-world problem (Allen (2022)). It would also make sense if it is believed that crypto would fade away with containment (Cecchetti and Schoenholtz (2022)). If this option is successfully pursued, problems stemming from and propagating within the crypto markets would not damage TradFi. Importantly, this option would avoid giving crypto a "seal of approval", which might encourage its growth.

That said, the containment approach also has two main drawbacks. First, a firewall may not be fully effective in practice. For example, containment may introduce complexity. It may be feasible to prevent banks becoming a conduit for crypto activity (in line with the approach pursued by the Basel Committee on Banking Supervision (BCBS (2022)), as well as some asset managers (in line with the decision of the US SEC not to approve any exchange-traded funds based on spot Bitcoin markets). However, entities with less constrained investment mandates could still be lured by high promised returns, take outsized bets and indirectly threaten their prime broker financiers. Second, if flows of new investor money were to be channelled into the system such that crypto growth resumes, then – even if financial stability risks for TradFi remained contained – concerns with investor protection and market integrity would still need to be addressed. Without doing so, the reputation of supervisory agencies could be tarnished by shocks.

[5] To be sure, the dividing line between this option and a ban is not always clear. For instance, banning certain narrow aspects (eg advertising or exchange-traded futures contracts based on a cryptocurrency) would also limit the linkages to TradFi. That said, the underlying philosophy behind the two options is quite different.

Moreover, as history suggests, investors may still demand compensation ex post. Tricky political economy issues would then come to the fore.

Regulate

This approach would treat crypto in a similar way to TradFi, applying the same principles and tools. To pursue this approach, authorities could start from a "functional" approach and identify the key economic functions[6] performed by crypto activities and then assess how regulation could impact these. In practice, this would require mapping activities performed in crypto markets to TradFi and then using similar guiding principles to regulate crypto, combining activity and entity-based approaches.[7] This approach would ensure consistency in regulating financial activities – whether performed by crypto players or TradFi – and help to promote the policy goals at the core of existing regulatory frameworks. Moreover, it would allow responsible actors to innovate with regulatory compliance and oversight.

One familiar challenge of this approach is to establish an appropriate mapping between activities and entities in crypto and their TradFi counterparts together with the corresponding legal underpinnings. Various regulators are considering, for example, whether stablecoins could be licensed and regulated as banks, payment systems or non-banks (eg non-bank payment service providers). Another challenge is enforcement. For the approach to work, it is necessary to identify the entities suited as entry points for regulation. This is more difficult in crypto, as in some cases they lack clear reference points, whether these be firms or individuals. Indeed, some crypto proponents argue that the task is impossible. That said, a useful starting point could be the entities (and persons) exerting de facto control of a DeFi protocol. In CeFi, of course, the problem is easier, given the more traditional nature of entities such as stablecoins and platforms. Yet even when entities can be identified, they may be less amenable to standard regulatory and supervisory tools, at least initially. As recent events have shown, some entities lack the basic accounting, corporate governance, compliance and control functions that are a prerequisite to participating in TradFi.[8]

Depending on the targeted features of the crypto world and the relative efficacy of each measure, either as stand-alone measures or in combination, authorities could combine specific bans, containment and regulation. By way of illustration , individual jurisdictions could ban energy-intensive proof-of-work or the distribution of algorithmic stablecoins. Some intermediaries that bridge TradFi and crypto could be brought under regulation. Other parts of crypto could be isolated as part of a containment strategy.

Develop an alternative

Given their public policy mandates, central banks may want to do more. By encouraging sound innovation in TradFi, they could contribute to a more efficient monetary system. Central banks are uniquely placed to do this, as they sit at the core of the monetary and financial system. Their task is to provide the trust that underpins it.

One important component of such a strategy could be improving the quality and reducing the costs of payments. One option is to introduce retail fast payment systems, such as the Unified Payment Interface (UPI) in India, Pix in Brazil, the upcoming FedNow system in the United States or initiatives such as the Single Euro Payments Area (SEPA). Another option is to issue central bank digital currencies (CBDCs) that meet real needs. If properly designed and implemented, such initiatives could support sound private sector innovation. They could help reduce the cost of payments, enhance financial inclusion, bolster the integrity

[6] Merton (1995) identifies six functions of the financial system: (1) clearing and settlement of payments; (2) pooling of funds to undertake large scale enterprises; (3) transfer of resources through time and space; (4) manage uncertainty and control risks; (5) provide price information to coordinate decentralised decision-making; and (6) deal with incentive problems.

[7] Aquilina et al (2023) propose a way forward along these lines specifically for DeFi. Given the characteristics of crypto markets, some of the aspects of regulation and supervision can even be embedded in the code that underpins crypto applications (Auer (2022)). Borio et al (2022) provide a framework for activity vs entity-based approaches.

[8] Of course, if regulation is introduced in the crypto sector, then some of these functions will be a prerequisite for operating legally.

of the system and promote user control over data and privacy. The innovation that is present in certain areas of crypto could be harnessed to improve the way in which services are provided in TradFi. In the process, these initiatives could support and leverage new technical capabilities, notably programmability, composability and tokenisation, thereby increasing the efficiency of TradFi (BIS (2022)).

Conclusion

Cryptoasset markets have experienced a remarkable series of booms and busts, often resulting in large losses for investors. While these failures have so far not spilled over to the traditional financial system or the real economy, there is no assurance that they will not do so in the future, as DeFi and TradFi become more intertwined. Authorities can now consider a variety of policy approaches and at the same time work to improve the existing monetary system in the public interest.

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