FSB FINANCIAL STABILITY BOARD

Review of the FSB High-level Recommendations of the Regulation, Supervision and Oversight of "Global Stablecoin" Arrangements

Consultative report

11 October 2022

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Introduction

In October 2020, the FSB issued a report with a set of 10 high-level recommendations on the regulation, supervision and oversight of so-called "global stablecoin" (GSC) arrangements ("High-level Recommendations"). The G20 endorsed the High-level Recommendations, and in October 2021 the FSB provided a status update on the progress made on their implementation.

In 2022 the FSB, in consultation with relevant international standard-setting bodies (SSBs) and international organisations, reviewed its High-level Recommendations, including how any gaps identified could be addressed by existing frameworks, considering recent market and policy developments. This report describes the findings from this review, covering:

- Recent market developments and the characteristics of existing stablecoins (section 1);
- Recent policy developments, including regulatory initiatives and recent work of the SSBs (section 2); and
- Proposals to revise the High-level Recommendations (section 3).

The High-level Recommendations seek to promote consistent and effective regulation, supervision and oversight of GSCs across jurisdictions to address the potential financial stability risks posed by GSCs, both at the domestic and international level, while supporting responsible innovation and providing sufficient flexibility for jurisdictions to implement domestic approaches. The recommendations are intended to be flexible so that they can be incorporated into the wide variety of regulatory frameworks potentially applicable to GSCs around the world.

There is no universally agreed legal or regulatory definition of stablecoin. The term stablecoin used in this report does not denote a distinct legal or regulatory classification. Importantly, the use of the term "stablecoin" in this report is not intended to affirm or imply that its value is stable. Rather, the term is used because it is commonly employed by market participants and authorities. The FSB's 2020 report, "Regulation, Supervision and Oversight of 'Global Stablecoin' Arrangements" described three characteristics that distinguish a GSC from other crypto-assets and other stablecoins. Those characteristics include: (i) the existence of a stabilisation mechanism, (ii) the usability as a means of payment and/or store of value[1], and (iii) the potential reach and adoption across multiple jurisdictions. The first two characteristics (the existence of a stabilisation mechanism and usability as a means of payment and/or store of value), and the unique risks that these characteristics pose, distinguish stablecoins from other crypto-assets. The third, the potential reach and adoption across multiple jurisdictions, differentiates GSCs from other stablecoins.

The FSB aims to finalize updated high-level recommendations by July 2023 reflecting comments received through public consultation.

[1] To be useable as a means of payment and/or store of value, a stablecoin arrangement typically provides three core functions. These core functions include (i) issuance, redemption and stabilisation of the value of the coins; (ii) transfer of coins; and (iii) interaction with coin users for storing and exchanging coins.

1. Recent market developments

This section describes recent strains in crypto-asset markets and their implications for the review of the High-level Recommendations. It also discusses existing crypto-assets that are marketed as stablecoins, and identifies issues and potential gaps that deserve further emphasis by the revised High-level Recommendations.

1.1. Strains in crypto-asset markets and implications for stablecoins

Strains in crypto-asset markets earlier this year reinforce messages in recent FSB reports on the importance of internationally coordinated regulation in this area and the FSB's role facilitating cross-border and cross-sectoral cooperation among jurisdictional financial authorities and international standard-setting bodies.

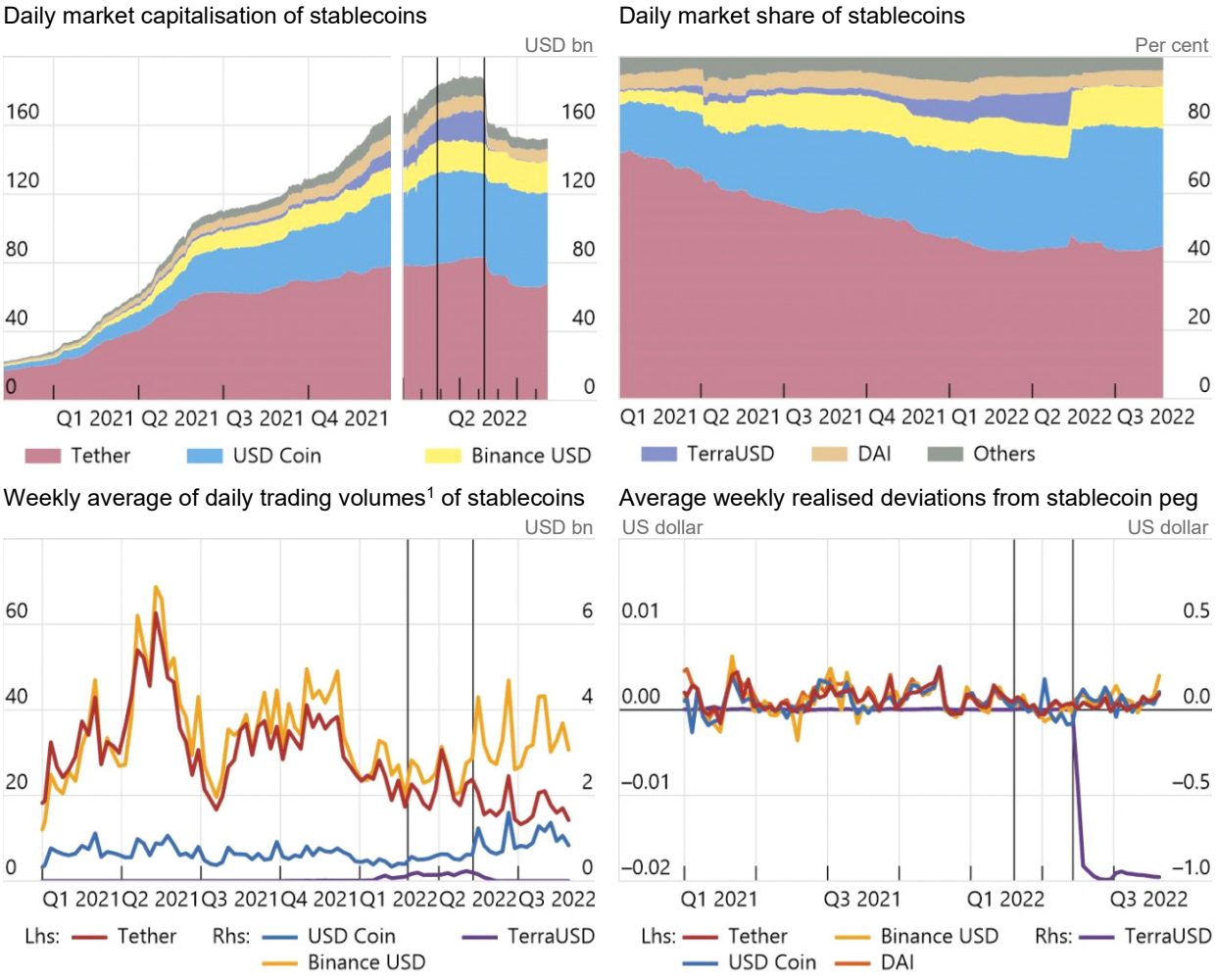
After rising dramatically over the previous 18 months, crypto-asset prices collapsed in May of 2022 due to macroeconomic pressures and financial market conditions as well as crypto-specific events. To date, the collapse in crypto-asset prices has been broadly contained within the crypto-asset markets and has not significantly impacted the traditional financial system. However, this turmoil has confirmed vulnerabilities with certain existing stablecoins, particularly those that rely on other crypto-assets as an alleged stabilisation mechanism. These vulnerabilities include the limited ability of users to redeem directly with the issuer, the low quality and lack of transparency of reserve portfolios, and flawed business models that rely on uninterrupted capital inflows attracted by the promise of unsustainably high returns.

Leading up to the strains in crypto-asset markets, market values ballooned, and a wide range of speculative investment projects received substantial inflows.

In recent years, there has been large growth of ancillary activity focussing on creating investment opportunities to generate yield from crypto-assets themselves, meaning the crypto-asset ecosystem has become more complex. Centralised crypto-asset platforms and decentralized finance (DeFi) protocols offer a range of financial services, including borrowing/lending, trading, insurance, and asset management.

Stablecoin market capitalisation, trading volumes and peg deviations

Graph 1



The vertical lines in panels 1,3, and 4 indicate 23 February 2022, the day before the start of the Russia-Ukraine war, and 9 May 2022, the day TerraUSD started to decouple from its peg.

[1] Prices are averages provided by CryptoCompare's Crypto Coin Comparison Aggregated Index methodology (CCCAGG), which calculates the market price of crypto-asset pairs traded across exchanges using a volume-weighted average for every asset pair.

Sources: CoinGecko; CryptoCompare; Tether; FSB calculations.

The collapse of algorithmic stablecoin Terra (UST) highlights the high risk of loss and potential fragility of stablecoins that lack appropriate and effective stabilisation mechanisms.

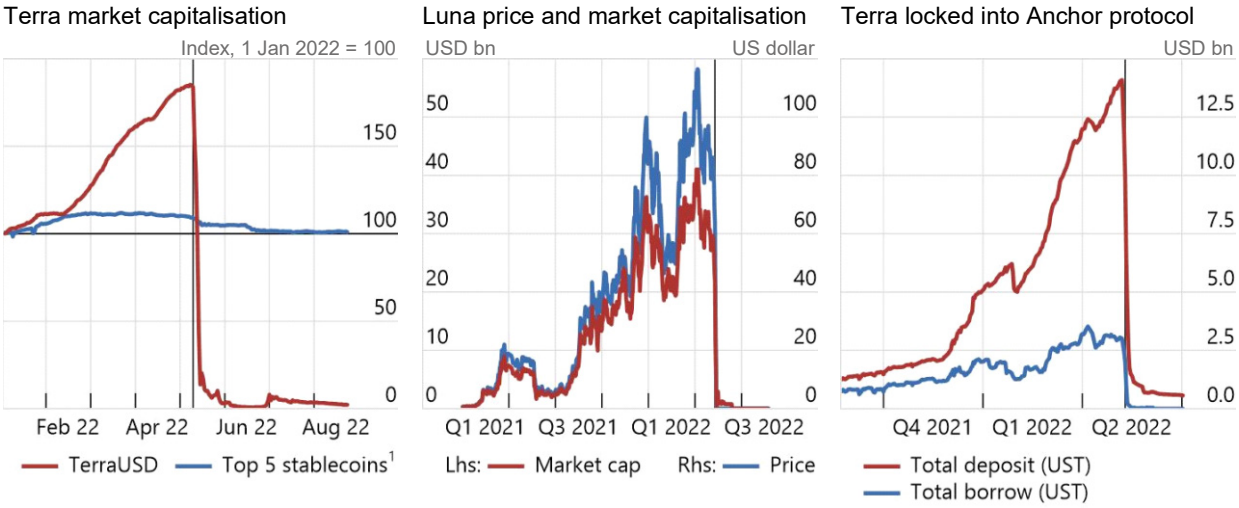
UST claimed to maintain its peg, assuming traders would take advantage of arbitrage opportunities between UST and Luna (the native mining token of the Terra blockchain), by expanding and contracting the circulating supply of both tokens to maintain parity with the dollar. The arbitrage was claimed to work as follows: 1 UST could be exchanged for $1.00 of Luna. $1.00 of Luna could be exchanged for 1 UST. Traders could obtain arbitrage profits if the market price of UST rose above or fell below its $1.00 peg. This mechanism depended on arbitrage activity and an active trading market.

The main purported use case of UST prior to its collapse was its use in DeFi lending protocols, such as Anchor, which advertised annual percentage yields of up to 20% on deposited funds. However, Anchor's deposits were outsized relative to its loans (see graph 2, panel 3), and the lending rates on its loans were lower than the interest rate on its deposits. Therefore, Terra's overall business model was unsustainable.

According to reports, widespread withdrawals of UST deposits on the Anchor DeFi lending protocol over the weekend of 7 May caused panic among UST users, as deposits dropped from $11.1 billion on 5 May to $300 million by 12 May.[2] UST struggled to maintain its $1.00 price target, and, amid continued withdrawals, the price of UST collapsed (see graph 2, panel 2) and investors lost confidence in its "unbacked" token, Luna, which underpinned its stabilisation mechanism. UST's algorithm was designed to match supply and demand through the arbitrage mechanism described above. However, as the price of UST fell, investors rushed to sell more UST and the stabilisation mechanism caused the supply of Luna to increase, putting further price pressure on Luna, which caused even more new supply to be issued. The result was a rapid devaluation of Luna; the price of Luna fell from $87.33 on 5 May to $0.0002 and Luna's supply increased from 352 million at the beginning of May to 6.5 trillion as of 16 May. With the price of Luna essentially falling to zero, traders would have little or no incentive to engage in the arbitrage activity that underpinned UST's stabilisation mechanism.

Terra failed largely because it promised to maintain a $1.00 price but did not support its promise with an appropriate and effective stabilisation mechanism. Indeed, Terra's stabilisation relied on another crypto-asset that had no intrinsic or inherent value, Luna. The collapse of UST points to its flawed arrangement, including its algorithm, and underscores, more generally, the inherent difficulty of designing a robust stabilisation mechanism based on an algorithm and arbitrage strategy involving assets with no inherent value.

Terra/Luna context **Graph 2**



The vertical line indicates 9 May 2022, the day TerraUSD started to significantly decouple from its peg.

[1] Top 5 stablecoins by market capitalisation as of 16 May 2022: Tether, USD Coin, Binance USD, Dai and Magic Internet Money.

Sources: CoinGecko, The Block; FSB calculations.

Tether, the largest fiat-referenced stablecoin, broke its $1.00 peg target and lost substantial market value over the ensuing weeks. Tether limits users' access to direct redemption from the issuer and provides only limited disclosures about its stated reserves. While Tether claims to have disclosed its reserves, those reserves have not been disclosed in detail and have not been audited.

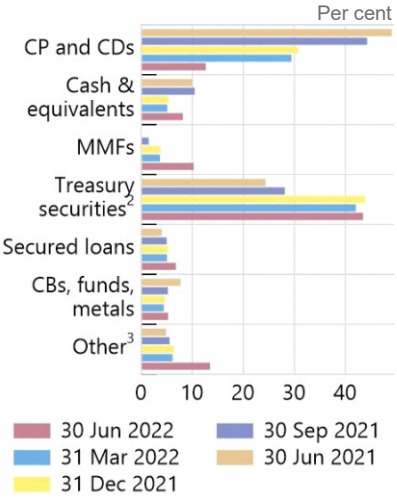
[2] Data sourced from Defi Llama.

In that context, the price of USDT broke its $1.00 price target on 11 May 2022 and briefly fell to as low as $0.95 on 12 May 2022 amid large withdrawals. These outflows may have been caused by a variety of factors, including broader market fears around crypto-assets, liquidations of leveraged positions as crypto-asset prices declined generally, and uncertainty over the stability of stablecoins following Terra's collapse.

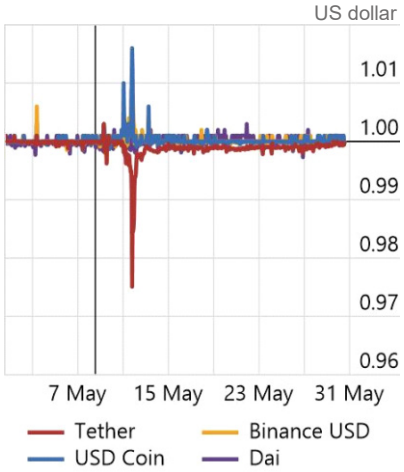
Tether offers $1.00 redemptions only to certain participants through its "official" wallet; however, most retail users cannot access Tether's official redemption wallet. As a result, many users must sell USDT via exchanges where the secondary market prices reflected the supply/demand dynamics.

Tether **Graph 3**

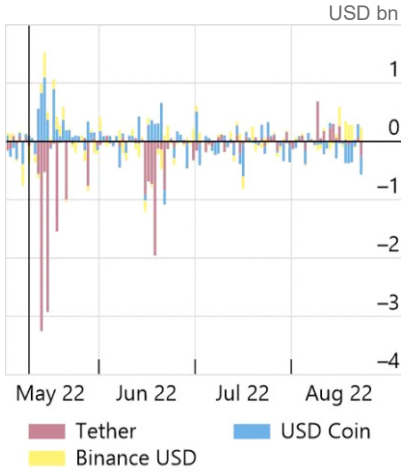
Tether reserves breakdown[1]



Tether and other stablecoin daily prices since May[4]



Daily change of market capitalisation of Tether vs other large stablecoins



CP = Commercial paper; CDs = Certificates of deposit; CBs = Corporate bonds; MMFs = Money market funds.

The vertical line indicates 9 May 2022, the day TerraUSD started to significantly decouple from its peg.

[1] Reserves are unaudited and self-disclosed by Tether. [2] Includes deposits at banks and government money market funds. [3] Includes Treasury bills and Treasury bonds with a maximum maturity of 3 years. [4] Prices are averages as provided by CryptoCompare's Crypto Coin Comparison Aggregated Index methodology (CCCAGG), which calculates the market price of crypto-asset pairs traded across exchanges using a volume-weighted average for every asset pair.

Sources: CryptoCompare; Tether; FSB calculations.

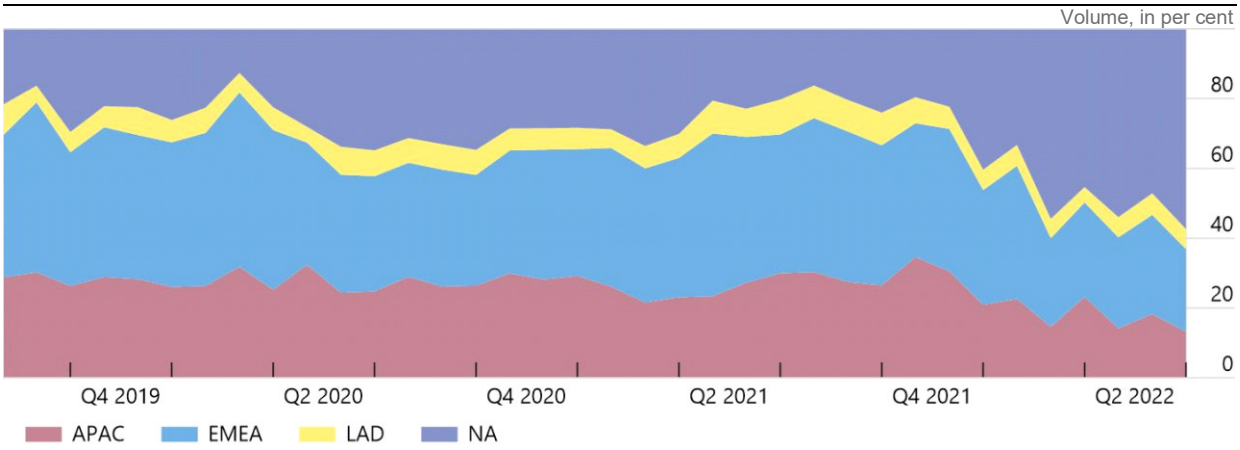
1.2. Analysis of existing stablecoins

The FSB analysed several of the largest existing stablecoins using publicly available information to inform its review of the High-level Recommendations. The stablecoins included in the analysis comprised a sample of the largest existing stablecoins based on reported market values and included different stabilisation methods and issuer models. The analysis found that the existing stablecoin arrangements analysed would not meet the FSB's High-level Recommendations.

Existing stablecoins perform a range of functions and their stated aspiration is to become widely adopted means of payment across borders. At present, however, stablecoins are acting as a substitute for fiat currency in the crypto-ecosystem through their use in purchasing, settling, trading, lending and borrowing other crypto-assets. They also serve as collateral in crypto-asset transactions, notably for facilitating trading, lending, and borrowing of crypto-assets. Use cases of stablecoins are evolving, which will require careful coordination and collaboration between sectoral standard setters and relevant authorities internationally for timely and effective action.

Existing stablecoins also have a global customer base and global operations (see graph 4). Despite their limited size relative to more traditional internationally active financial companies, their operations may raise cross-border issues.

Global reach of existing stablecoins **Graph 4**



APAC = Asia Pacific; EMEA = Europe, the Middle East, and Africa; LAD = Latin America; NA = North America

Stablecoin volumes calculated from raw transaction data from Ethereum, Tron, Binance Smart Chain, Polygon, and Avalanche C-Chain blockchains. Stablecoins included in the analysis: Tether (USDT), USD Coin (USDC), Binance USD (BUSD), TrueUSD (TUSD), Dai (DAI), and TerraUSD (UST).

The analysis used web traffic data to crypto-asset service provider websites to estimate the percentage of stablecoin volume attributed to different regions.

Source: TRM Labs

Most existing stablecoin issuers promise (implicitly or explicitly) to maintain a stable value, typically relative to a single fiat currency. However, many of these existing stablecoins are issued by unregistered and unlicensed entities and do not have credible mechanisms to support their promise of price stability.

Terra's collapse has emphasized the importance of clarifying existing stablecoins' redemption rights and strengthening stabilisation mechanisms. Today, the largest stablecoin issuers constrain users' redemption rights by limiting the types of users that can redeem directly with the issuer. Some issuers offer redemption only weekly, reserve a broad ability to delay or deny redemptions, impose account eligibility requirements, or set high minimum thresholds for redemptions. The result of these limitations is that most users must sell their stablecoins on exchanges at prevailing market prices, where the redemption price is not guaranteed.

Existing stablecoins employ a range of stabilisation methods, with most of them relying to some extent on secondary market trading to maintain stability. Whether purporting to use reserve assets, over-collateralisation, algorithmic protocols, or a combination of these mechanisms, most stablecoins enable arbitrage activities of market participants and to a considerable extent rely on them to maintain the stablecoin's value against the reference asset(s). However, it is unclear how these arbitrage activities would perform under conditions of market stress, raising questions about the effectiveness of the stabilisation mechanisms in supporting a stable price at all times.

Clear and direct lines of responsibility and accountability are not evident in existing stablecoin arrangements. In many cases issuers do not provide transparent information on the ownership, legal structure and management of the relevant operating entities (including members of the senior leadership team), as well as relationships with affiliates or other companies. Disclosures

regarding the governance and operations of the stablecoin arrangements are extremely limited, and marketing is potentially misleading across many stablecoin arrangements.

Some existing stablecoin arrangements claim to be managed through purportedly "decentralised" mechanisms. However, it remains unclear to what extent governance is actually decentralised, or whether certain large players can obscure their influence behind an illusion of decentralization. In some cases, for example, voting power in governance may be concentrated with core developers and initial investors.

Disclosures by the stablecoin arrangements on the investment mandate, the redemption rights and functioning of the stabilisation mechanism, including the composition and quality of reserve assets, are infrequent and often incomplete. Some of the largest stablecoin issuers report only high-level information on the composition and quality of their reserve assets on any regular basis. These disclosures are seldom audited and do not include sufficient detail to determine whether the claimed reserve assets adequately support the stabilisation mechanism on an ongoing basis. In addition, fundamental details of the holdings, especially for lower quality and non-fiat assets, such as the issuer, maturity and in some cases even asset type, are often not disclosed.

This analysis indicates that most existing stablecoin arrangements do not meet the FSB's High-level Recommendations. Specifically, they would need to make significant improvements to their governance, risk management, redemption rights, stabilisation mechanisms and disclosures, in order to meet the High-level Recommendations – and in particular 4, 5, 8 and 9 – if they are GSCs or have the potential to become GSCs.

2. Recent policy developments

Jurisdictions and SSBs have made substantial progress implementing the High-level Recommendations and reviewing their relevant international standards (see Annex 4 for a detailed description of recent policy work by jurisdictions and SSBs). Many jurisdictions have proposed, and some have recently adopted, new rules or legislation, while others have amended or plan to amend existing rules to address the risks of stablecoins and/or to bring non-compliant stablecoin arrangements into compliance with applicable regulations. In addition, SSBs have issued guidance to address the risks of stablecoin arrangements and clarify the application of their existing standards within existing international regulatory frameworks.

However, additional work remains to implement the high-level recommendations fully across jurisdictions and ensure GSCs are subject to comprehensive regulation, supervision and oversight. Some jurisdictions have yet to develop a regulatory approach for stablecoins, while other jurisdictions that have developed new or amended existing regulations will now shift to implementing those regulations and supervising stablecoin arrangements under their authority. Other jurisdictional authorities have existing laws and regulations that apply. Understandably, given the changing and diverse use of stablecoins, jurisdictions have been pursuing different regulatory approaches, treating them as banking activities, securities, payment systems, or none of the above. These different approaches may create challenges to consistent oversight and effective cross border coordination and cooperation (see section 3.3).

The FSB High-level Recommendations provide that authorities should rely on existing sectoral standards and principles, wherever GSC arrangements perform the same economic function

and pose the same risks as existing regulated activities covered by these standards.[3] Standard setting bodies – including BCBS, CPMI, IOSCO, and FATF – have made substantial progress in their review of whether and how existing international standards can apply to stablecoin arrangements, taking into account the novel features of GSCs and the need to promote international cooperation and reduce the risk of regulatory arbitrage or underlaps. Their findings have also informed the FSB's review of its High-level Recommendations.

These combined efforts of the FSB and the SSBs aim at minimising the risk of fragmentation and regulatory arbitrage. FSB members welcomed the CPMI-IOSCO guidance, *Application of the Principles for Financial Market Infrastructures to Stablecoin Arrangements*, which is a major step forward in applying "same activity, same risk, same regulation" to systemically important stablecoins that are used primarily for making payments. FSB members also support BCBS's ongoing work on the prudential treatment of banks' crypto-asset exposures and IOSCO's ongoing work on DeFi and crypto-assets through its FinTech Taskforce, including the published IOSCO *Decentralized Finance Report*. While focusing primarily on investor protection and market integrity, IOSCO's work aims at reducing vulnerabilities and supports the FSB's coordinated efforts to address financial stability risks associated with the crypto-asset ecosystem. International standard setting bodies are also working closely together to develop a shared understanding of the applicability of existing standards to stablecoin arrangements, and how their respective regimes interact with each other to help promote coherence across standards.

3. Review of the High-level Recommendations

The objective of the High-level Recommendations is to promote consistent and effective regulation, supervision and oversight of GSCs across jurisdictions to address the potential financial stability risks posed, both at the domestic and international level, while supporting responsible innovation and providing sufficient flexibility for jurisdictions to implement domestic approaches. This objective remains unchanged and is consistent with the FSB's July 2022 Statement on International Regulation and Supervision of Crypto-asset Activities.[4]

Whereas existing stablecoins are not widely used outside crypto-asset markets, and have not to date posed a significant threat to global financial stability, their rapid growth, use across multiple jurisdictions, and potential to quickly scale in size may mean that they could pose a greater threat in the future if not subject to robust regulatory and supervisory policies. Authorities therefore need to be ready to regulate and supervise stablecoin arrangements even before they evolve into GSC arrangements. Accordingly, the revised High-level Recommendations extend the scope to stablecoins with the potential to become GSCs. The introduction to the revised High-level Recommendations also provides that authorities should, consistent with their respective mandates, choose to apply some High-level Recommendations in a proportionate manner to stablecoin arrangements more widely, taking into account the size, complexity and risk of those stablecoins.

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3 See section 3.2 of the FSB's 2020 report for a detailed discussion of international standards that could apply to stablecoin arrangements.

4 Available here.

The introduction also references the FSB's recommendations for crypto-assets and markets (CA Recommendations) [issued in October 2022], which cover the crypto-asset ecosystem in general. Whereas the CA Recommendations cover all crypto-assets and associated issuers, intermediaries and service providers, crypto-assets that would be considered GSCs and stablecoins with the potential to become GSCs should also be subject to the regulatory and supervisory recommendations set out in the revised GSC Recommendations. The FSB's proposed recommendations taken together seek to achieve consistent and comprehensive regulatory coverage of crypto-assets and markets, including stablecoins. The two sets of recommendations are closely interrelated, as they both cover issuers, intermediaries and service providers. They have been developed as stand-alone documents but are intended to be consistent where they cover the same issues and risks. In particular, issuers, intermediaries and service providers that are part of a GSC arrangement would be covered by the High-level Recommendations for their activities related to GSCs and would also be covered by the recommendations for crypto-assets for their activities more generally.

Moreover, it is suggested that the FSB undertake a review of implementation of the revised High-level Recommendations by end-2025. The review may be carried out as an FSB thematic peer review and may help inform further review or development of recommendations and implementation guidance, as necessary.

In the grey boxes below, underlined text highlights substantive revisions from 2020 High-level Recommendations.

Revised FSB High-level Recommendations: Objectives, scope and follow-up

These High-level Recommendations seek to promote consistent and effective regulation, supervision and oversight of GSCs and stablecoins with the potential to become GSCs across jurisdictions (hereafter, unless otherwise specified, they are collectively referred to as "GSCs") to address the financial stability risks posed, both at the domestic and international level, while supporting responsible innovation and providing sufficient flexibility for jurisdictions to implement domestic approaches.

The recommendations are intended to be flexible so that they can be incorporated into the wide variety of regulatory frameworks potentially applicable to GSCs around the world. They aim to promote a regulatory, supervisory and oversight environment that is technology neutral and focuses on underlying activities and risks.

The recommendations are addressed to financial regulatory, supervisory and oversight authorities at a jurisdictional level. They should be applied by individual authorities to the extent they fall within the authorities' remits.

Grounded in an assessment of a GSC arrangement's economic functions and the principle of "same activity, same risk, same regulation", and focused on regulatory objectives and outcomes, authorities should apply and, if necessary, develop effective regulatory, supervisory and oversight approaches and cross-border cooperation mechanisms within their respective mandate and legal frameworks.

At the same time, the recommendations set out expectations for providers of services and activities within the GSC arrangements and can serve as a basis for authorities' active engagement with stakeholders on GSC-related risks and how these are addressed.

Scope

The recommendations focus on addressing risks to financial stability and therefore do not comprehensively cover important issues such as AML/CFT, data privacy, cyber security consumer and investor protection, market integrity, competition policy, taxation, monetary policy, monetary sovereignty, currency substitution, or other macroeconomic concerns. However, they acknowledge that

a comprehensive supervisory and regulatory framework for GSC arrangements should effectively address those other issues in addition to financial stability risks.

The recommendations apply to any GSC in any jurisdiction and help authorities to address activities and services within GSC arrangements that may fall outside some jurisdictions' traditional regulatory perimeter. Section 4.4 includes potential elements that could be used to determine whether a stablecoin qualifies as a GSC. Consistent application of these recommendations by all relevant authorities in jurisdictions in which GSC arrangements are active may help to ensure comprehensive regulatory coverage and reduce the scope for regulatory arbitrage.

While focusing on GSCs identified based on this report and the criteria set out in Section 4.4, authorities may choose to apply relevant High-level Recommendations as appropriate to stablecoin arrangements more widely, taking into account the size, complexity and risks of those stablecoins.

The High-level Recommendations complement and are intended to inform any potential updates to international sectoral standards and principles. In particular, they complement the FSB's recommendations for crypto-assets and markets that should apply to any crypto-asset activity that poses financial stability risks, including stablecoins. Authorities should rely on sectoral standards and principles for cross-border cooperation where GSC arrangements perform the same economic function as existing regulated activities covered by those standards. These include, for example, the IOSCO Principles regarding Cross-Border Supervisory Cooperation, the CPMI-IOSCO Principles for Financial Market Infrastructures, including the Responsibilities of Authorities and particularly Responsibility E, the FATF standards, in particular Recommendation 15, and the relevant principles applicable to cross-border banking supervision and crisis management of the BCBS and the FSB. Efforts by the SSBs to review, and where appropriate adjust, their standards to take into account the novel features of stablecoins can further promote international consistency and reduce the risk of regulatory arbitrage or regulatory underlaps.

Follow-up and review

The FSB will monitor the implementation of the revised recommendations and, by end-2025, undertake, in cooperation with the SSBs, a review of their implementation and assess the need to update the recommendations and/or relevant international standards.

3.1. Authorities' readiness to regulate and supervise global stablecoin arrangements

In order to ensure that stablecoins that may be used for payments and/or a store of value and that could scale rapidly are subject to appropriate regulation, supervision and oversight, the proposed revision to recommendation 1 emphasizes the need for authorities to be ready to mitigate financial stability risks of GSCs.

FSB High-level recommendation 1

Authorities should have and utilise the necessary or appropriate powers and tools, and adequate resources, to comprehensively regulate, supervise, and oversee a GSC arrangement and its associated functions and activities, and enforce relevant laws and regulations effectively.

Authorities within a jurisdiction, either independently or collectively, should have and utilise the powers and capabilities to, as applicable, regulate, supervise, oversee and, if necessary or appropriate, effectively prohibit stablecoin activities being conducted and stablecoin services being offered to users

in or from their jurisdiction, consistent with jurisdictions' laws and regulations. This may include, for example, activities and services related to the governance and control of the stablecoin arrangement, operating its infrastructure, issuing and redeeming stablecoins, managing stablecoin reserve assets, providing custody or trust services for those assets, trading and exchanging stablecoins, or storing the keys providing access to stablecoins. Application of an authority's powers to regulate, supervise, and oversee GSC arrangements should be commensurate with their existing or potential size, complexity, risk and/or extent of use as a means of payment and/or store of value.

Authorities should ensure that they are ready to use their powers and capabilities to regulate, supervise and oversee GSC arrangements. Authorities should consider the potential for stablecoins to rapidly scale and become a GSC and should ensure appropriate monitoring of GSC activities and any significant changes to the way those activities are conducted. Authorities should have timely access to relevant information sufficient to conduct effective regulation, supervision and oversight.

Authorities' powers should extend to entities and persons that are engaged in activities of GSCs in their jurisdictions and fall within the scope of their authority and mandate. Authorities should evaluate, identify, and clarify which authorities have responsibility for each activity of a GSC arrangement, as appropriate.

Authorities should identify and address any significant gaps in their regulatory, supervisory and oversight frameworks through changes in regulations, or policy, as appropriate. In some jurisdictions, legislative changes may be necessary or appropriate to address those gaps.

Authorities should have the powers and capabilities to enforce applicable regulatory, supervisory and oversight requirements, including the ability to undertake inspections or examinations, and, when necessary or appropriate, require corrective actions and take enforcement measures. To do so, authorities should be provided with or obtain sufficient information regarding the technology and legal obligations underpinning the GSC arrangements.

Authorities should be able to identify the legal entities or persons responsible for the relevant activities and to assess the ability of the GSC arrangement to implement corrective actions.

Authorities should have the ability to mitigate risks associated with, or prohibit the use of certain or specific stablecoins in their jurisdictions, consistent with jurisdictions' laws and regulations, where these do not meet the applicable regulatory, supervisory, and oversight requirements.

3.2. Comprehensive oversight of GSC activities and functions

The revisions to recommendation 2 are intended to identify wallets and trading services more clearly, and clarify that custodial wallet service providers and trading platforms associated with GSC activities should be subject to regulation, supervision and oversight.

Wallets and trading platforms provide critical services or functions for GSCs. The risks and vulnerabilities associated with the provision of wallet services and operation of trading platforms require that the providers should be subject to appropriate regulation, supervision and oversight.

The provision of wallet services to users of a stablecoin could be custodial or non-custodial (also known as "hosted" or "un-hosted"). In a custodial wallet arrangement, a third-party intermediary provides custody of the user's private keys and/or crypto-assets. In this case, users do not need to generate and store private keys themselves, and instead typically identify themselves by logging into the intermediary's platforms and instructing the intermediary on transactions to be made, according to terms agreed.

Non-custodial wallets refer to the methods which allow users to independently interact with a blockchain and its services without the use of an intermediary. Non-custodial wallets can include software or other “hot wallet” services a user would download and use on their own personal devices, or “cold wallet” services such as a provider’s hardware. Non-custodial wallets allow users to self-custody their digital assets and imply that only the users themselves can access or recover their private keys.

Custodial wallet services create significant risks for stablecoin arrangements. These risks include operational risk, as the failure or disruption of a custodial wallet provider could affect stablecoin users’ availability, integrity or confidentiality of private keys, which in turn could lead to malicious transfers, impaired access or economic loss. Sources of such instances of operational risk can include cyber vulnerabilities or attack, fraud, outsourcing, wallet providers' own infrastructure (including hardware and software) as well as related processes, third-party and legal, amongst other potential risks.

Wallet services also generate reputational, financial, market integrity and consumer and investor protection risk when custody is functional to the provision of a broader range of services. Reputational risks can arise from a range of factors and result in the loss of trust in the intermediary or software developer. For custodial intermediaries, reputational risks can rapidly transform into financial risks (e.g. liquidity risk) with significant consequences on the stablecoin arrangement. Financial risk may also stem from other activities which an intermediary performs together with the custody of client’s private keys. Wallet services may also give rise to legal and compliance risks. Because there is not a well-established bankruptcy regime for crypto-assets, financial losses by custodial wallet providers could cause users to have their stablecoins become part of the general bankruptcy estate of the provider rather than being segregated from the bankruptcy estate.

Custodial wallets are often associated with centralised crypto-asset trading platforms, which engage in many different types of activities, including issuing, trading, lending and borrowing of stablecoins. In a number of important existing stablecoin arrangements (SAs), large intermediaries operating on trading platforms play a key role in stabilising the value of the stablecoin through issuance, redemptions and arbitrage trading strategies. Wallet providers that engage in these additional activities could take substantial risks in other activities (e.g. leverage, concentration, proprietary trading, self-dealing) that could jeopardise their critical role of storing user’s private keys.

In addition, wallet providers, trading platforms and other crypto-asset intermediaries could create greater tiering in the financial system, highlighting the need to consider the interdependency between the standards applicable to wallets and intermediaries and those that apply to the rest of the stablecoin arrangement (i.e., the issuer and transfer mechanism) to ensure there is no inconsistency. For example, if wallet providers are undertaking some form of stablecoin issuance themselves and providing “off-chain” transfers without sufficient standards and safeguards in place, this could pose existential risks to the stablecoin arrangement and potentially wider risks to the financial system. Indeed “internal off-chain” transactions of wallets in a single wallet provider could under certain circumstances make the wallet provider itself an important payments provider, closed-loop arrangement or payment system.

FSB High-level recommendation 2

Authorities should apply comprehensive regulatory, supervisory and oversight requirements consistent with international standards to GSC arrangements on a functional basis and proportionate to their risks insofar as such requirements are consistent with their respective mandates.

To promote a technology neutral approach that enables comprehensive oversight of GSC's functions and activities and mitigates regulatory arbitrage, authorities should focus on the functions performed by the GSC arrangement and risks posed and apply the appropriate regulatory framework, consistent with international standards, in the same manner as they would apply it to entities and persons performing the same functions or activities, and posing the same risks ("same activity, same risk, same regulation").

This includes the relevant regulation, standards and rules for e-money issuers, remittance companies, financial market infrastructures including payment systems, collective investment schemes, and deposit-taking and/or securities issuance and trading activities. This also includes market integrity, consumer and investor protection arrangements, appropriate safeguards, such as pre- and post-trade transparency obligations, rules on conflicts of interest (including for different service providers such as, the reserve asset custodian, stablecoin trading, lending and borrowing platforms), disclosure requirements, robust systems and controls for platforms where the GSC is traded, rules that allocate responsibility in the event of unauthorised transactions and fraud, and rules governing the irrevocability of a transfer orders ("settlement finality").

Trading platforms and other intermediaries and service providers

Where a GSC arrangement relies on trading platforms or other intermediaries to perform critical functions, including some or all of its stabilisation function, authorities should require that those intermediaries fall within the regulatory, supervisory and oversight perimeter wherever possible.

Authorities should also seek to regulate and supervise custodial wallet service providers that provide services related to GSCs to address operational, reputational, financial and market protection risks that may arise from the storage of users' private keys and tokens, and from the other activities that these entities could perform. Regulations and oversight should strive to require the adequate safeguarding of customer keys and tokens, including where appropriate segregation requirements. In considering appropriate rules and policies, authorities should also consider the proportionate risks that the custodial wallet service providers pose based on the size of and functions performed by the service providers.

Review of existing regulatory, supervisory and oversight requirements

Authorities should assess whether existing regulatory, supervisory and oversight requirements adequately address the risks of GSC functions and activities and consider the potential effects of requirements not applying to aspects of a GSC arrangement. Authorities should, if necessary or appropriate, clarify or supplement financial regulations if existing regulations may not adequately capture the risks of GSC functions and activities, and develop and implement regulations to address uncaptured risks.

3.3. Cross-border cooperation, coordination and information sharing

Cooperation and coordination among relevant authorities, both domestically and internationally, can help to ensure GSCs are regulated, supervised and overseen in a comprehensive manner rather than in a piecemeal fashion based on individual functions and activities or geographies. Given potentially different jurisdictional approaches to the regulation, supervision and oversight of stablecoin arrangements, it is important for cooperation to support participating authorities in fulfilling their respective regulatory, supervisory and oversight mandates.

No material changes are proposed to High-level recommendation 3. A proposed new Annex "Key design considerations for establishing cooperation arrangements for GSCs" provides more granular guidance for implementing High-level recommendation 3, in particular on the structure and composition of cooperation arrangements.

FSB High-level recommendation 3

Authorities should cooperate and coordinate with each other, both domestically and internationally, to foster efficient and effective communication, information sharing and consultation in order to support each other in fulfilling their respective mandates and to ensure comprehensive regulation, supervision, and oversight of a GSC arrangement across borders and sectors.

Cooperation arrangements should be flexible, effective, efficient, inclusive, and multi-sectoral, and take into account the complexity and the potential evolution of the GSC arrangement and the risks it poses over time. They may take different forms (e.g. supervisory colleges, fora, networks, memoranda of understanding (MoUs), and ad-hoc arrangements). They should also consider the distinctive nature of GSC arrangements as usually consisting of multiple and oftentimes unrelated entities that interact and have varying roles and responsibilities.

Cooperation arrangements may be underpinned by bilateral and/or multilateral MoUs for cooperation and information sharing, and for crisis management and resolution, and complemented with mechanisms with a single focus, e.g. regarding AML/CFT or cyber security. These arrangements should also consider the potential need to seek cooperation from authorities in other jurisdictions to achieve regulatory objectives, e.g. in implementing recovery and resolution plans, or halting activities based in one jurisdiction having an adverse impact in another.

Authorities should consider a requirement that the arrangement takes into account the interests of each of the jurisdictions and sectors in which the GSC arrangements may be operating or seeking to operate, jurisdictions where the governance body, the providers of the GSC functions and activities and the GSC arrangement's users are located, where (spill over) risks reside, and the potentially differing impacts of GSC arrangements across jurisdictions and between advanced economies (AEs) and emerging market and developing economies (EMDEs).

In establishing cooperation arrangements, authorities should consider to take into account the "Key design considerations for establishing cooperation arrangements for GSCs" set out in Section 4.2.

3.4. Governance structures and decentralised operations

Decentralised governance structures may make it difficult to apply relevant policies and standards effectively and to identify entities and persons that can be held accountable for their effective implementation. These challenges affect both decentralised governance structures of a particular SA (e.g. increased complexity and opaqueness based on the use of governance tokens, or consensus decision-making), and distributed business infrastructures where multiple functions are carried out by separate and independent actors (e.g. issuance is separate from operating the infrastructure). SAs that operate on public blockchains also raise unique governance challenges given their limited ability to identify and control users and activity on the blockchain, to monitor and implement required controls, or to prevent undesirable consensus driven changes in the protocols through hard forks.

The proposed revisions to Recommendation 4 are intended to make clear that GSC operating structures must be set up in such a way that they do not impede the effective application of relevant regulations and standards, consistent with the FSB high-level recommendations.

FSB High-level recommendation 4

Authorities should require that GSC arrangements have in place a comprehensive governance framework with clear and direct lines of responsibility and accountability for all functions and activities within the GSC arrangement.

An adequate governance framework consistent with relevant international standards should be required for the entire network of GSC activities, functions and participants, given each part of the network can affect the other parts. GSC arrangements may vary in the degree of decentralisation of their governance design, but authorities should require that the ownership structure, governance and operation do not impede the effective application of relevant regulations and standards, consistent with the FSB High-level Recommendations. In particular, authorities should require that GSC issuance be governed and operated by one or more identifiable and responsible legal entities or individuals ('governance body'). The governance structure should allow for timely human intervention, as and when needed or appropriate. Fully permissionless ledgers or similar mechanisms could pose particular challenges to the accountability, and governance and authorities should ensure that appropriate regulatory, supervisory and oversight requirements be effectively applied to such arrangements.

The governance structures and accountabilities should have a sound legal basis and be clear, transparent, and disclosed to users, investors, and other stakeholders. The governance body of a GSC should disclose how governance and accountability is allocated and how potential conflicts of interest are addressed among different entities within the GSC arrangement and in different jurisdictions, as well as clarify the limits of accountability and legal liability in any one jurisdiction. These disclosures should cover all functions and activities of the GSC arrangement, including but not limited to, setting rules and standards for participants of the arrangement, issuing stablecoins, operating the stabilisation mechanism, in particular the investing of the reserve assets as appropriate, providing the custody or trust services for reserve assets, and providing user-facing services such as exchanges and wallets.

Where a GSC arrangement relies on a third-party, including automated processes and algorithmic protocols (see recommendation 9 regarding the use of algorithmic protocols as a stabilisation mechanism), the GSC governance body should provide a comprehensive assessment and disclosure of how its reliance on the third-party does not impede its ability to meet regulatory requirements and expectations for performance, resilience, security, development and maintenance, and regulatory compliance.

3.5. Risk management

Recommendation 5 focuses on the need for effective risk management frameworks. The revised recommendation highlights the need for liquidity risk management to support an effective stabilisation mechanism, consistent with recommendation 9; and anti-money laundering and combating the financing of terrorism (AML/CFT) procedures for transactions from and to un-hosted wallets given the heightened legal and compliance risks of these transactions and the potential financial stability implications for GSCs that are disrupted or undermined by fraudulent and manipulative activities.

FSB High-level recommendation 5

Authorities should require that GSC arrangements have effective risk management frameworks in place especially with regard to operational resilience, cyber security safeguards and AML/CFT measures, as well as "fit and proper" requirements, if applicable, and consistent with jurisdictions' laws and regulations.

Authorities should require that GSC arrangements have in place policies that set out how all functions and activities within the GSC arrangement are subject to risk management measures that are

appropriate to and commensurate with the specific risks that GSC arrangements may pose. If the risk from the fluctuation in the value of the underlying assets is borne, partially or totally by the GSC operator, the relevant prudential framework (e.g. market risk framework) should be applied to the GSC operator.

Authorities should require that GSC arrangements conduct proper due diligence (for example, by applying 'fit and proper' standards, where applicable) into individuals involved in the management and control of the GSC arrangement, as well as those who exercise significant power or discharge significant responsibilities in relation to GSC activities.

Authorities should require that GSC arrangements have in place policies that address heightened risks for GSC arrangements, such as operational risks (including fraud and cyber risks), compliance risk (including money laundering/terrorist financing risks), and provide for appropriate consumer and investor protection, in line with legal obligations in jurisdictions where a GSC arrangement operates. Risk management measures and technical standards should cover relevant activities performed by providers of activities in the GSC arrangements, paying particular attention to compliance by permissionless or anonymous networks. Accordingly, authorities should ensure that GSC arrangements put appropriate AML/CFT measures in place consistent with FATF Standards, including requirements to comply with the FATF 'travel rule', with specific consideration if the GSC arrangements allow peer-to-peer transactions by unhosted wallets.

Authorities should require that GSC arrangements conduct continuous risk assessments, contingency preparedness, and continuity planning. Authorities should require that GSC arrangements conduct a robust assessment of how their technology model and the rules for transferring stablecoins or relevant assets provide assurance of settlement finality.

In addition to prudential requirements set forth in recommendation 9, authorities should require GSC arrangements to have comprehensive liquidity risk management practices and contingency funding plans that clearly set out the strategies and tools for addressing large number of redemptions i.e., run scenarios, and are regularly tested and operationally robust. The GSC arrangement should also have robust capabilities to measure, monitor and control funding and liquidity risks, including liquidity stress testing.

3.6. Data storage and access to data

Recommendation 6 stresses the need for robust systems for collecting, storing and safeguarding data. The proposed revision stresses the need for authorities to have access to relevant data for supervisory, examination, and regulatory purposes wherever the data is located, including in circumstances where the data is stored in a foreign jurisdiction. In addition, effective cooperation and information sharing arrangements, as provided for in Recommendation 3, can provide for the sharing of such data among or between authorities.

FSB High-level recommendation 6

Authorities should require that GSC arrangements have in place robust systems and processes for collecting, storing and safeguarding data.

GSC arrangements should implement and operate data management systems that record and safeguard in a discoverable format relevant data and information collected and produced in the course of their operations, while conforming to all applicable data privacy requirements. Adequate controls should be in place to safeguard the integrity and security of both on-chain and off-chain data and conform to applicable data protection regulation.

Authorities should be able to obtain timely and complete access to relevant data and information related to the GSC, wherever the data is located, to enable them to implement adequate regulatory,

supervisory, and oversight approaches that capture the functions and activities of the GSC arrangement, in accordance with the level and nature of the risks posed.

3.7. Recovery and resolution of GSC

No changes are proposed to High-level recommendation 7 that provides that GSC arrangements should have in place recovery and resolution plans. However, members consider effective recovery and resolution planning important given that it may not be clear how a failing GSC arrangement and its component parts be wound down or resolved under existing legal frameworks.

FSB High-level recommendation 7

Authorities should require that GSC arrangements have appropriate recovery and resolution plans.

Authorities should require that GSC arrangements have in place appropriate planning to support an orderly wind-down or resolution under the applicable legal (or insolvency) frameworks, including continuity or recovery of any critical functions and activities within the GSC arrangement.

Authorities should consider how such plans are implemented through effective contractual obligations among the entities in the GSC network, and address the potential involvement of authorities in all of the jurisdictions in which the entities operate.

3.8. Disclosures

Public disclosures—regarding, for example, information to assess the credibility and effectiveness of a GSC's stabilisation mechanism—help strengthen market discipline and protect users. The recommendation has been revised to include more specificity on the disclosure of information related to redemption rights and the composition of reserves.

The revised recommendation 8 and the Section 4.3 also seek to promote consistency of disclosures by identifying types of information that should be disclosed by GSC arrangements.

FSB High-level recommendation 8

Authorities should require that GSC issuers provide all users and relevant stakeholders with comprehensive and transparent information to understand the functioning of the GSC arrangement, including with respect to governance framework, redemption rights and its stabilisation mechanism.

Features of GSC arrangements that should be transparent to all users and relevant stakeholders include: the governance structure of the GSC arrangement; the allocation of roles and responsibilities assigned to operators or service providers within the GSC arrangement; the operation of the stabilisation mechanism; the composition of and investment mandate for the reserve assets (see Section 4.3 for common disclosure templates for reserve assets, which may be used by any stablecoin arrangement if there are no specific supervisory disclosure requirements applicable to the GSC); the custody arrangement and applicable segregation of reserve assets; available dispute resolution mechanisms or procedures for seeking redress or lodging complaints, as well as information on risk relevant for users.

Authorities should require that GSC issuers make appropriate disclosures to users and the market regarding the design of the stabilisation mechanism. Disclosures should also include details on the redemption rights of users and the redemption process.

The nature of these disclosures for all of the information (including the disclosure template in Section 4.3) will depend in part on the regulatory framework the issuer is operating under (e.g. whether the issuer is already subject to comprehensive supervision and regulation and disclosure requirements, e.g. as a bank and/or issuer of securities, etc.).

Information to be disclosed to users and relevant stakeholders should include the amount of GSC in circulation and the value and the composition of the assets in the reserve backing the GSC and should be subject to regular independent audits. Other information relevant to the functioning of the GSC arrangement, such as e.g. a list of available exchange platforms or wallet providers, should be made available on a regular basis, as appropriate.

Authorities should require GSC arrangements to have mechanisms to ensure the protection of the interests of users and counterparties, when a potential modification of the arrangement could have a material effect on the value, stability, or risk of the GSC.

3.9. Redemption rights, stabilisation, and prudential requirements

Stablecoins that promise to maintain a stable value relative to one or several fiat currencies (so-called fiat-referenced stablecoins), are of particular sensitivity as the reference to fiat currencies may enhance or facilitate their usability as a means of payment and/or store of value. All users of fiat-referenced GSCs must have the confidence that their GSC holdings are redeemable in a timely manner at the reference value, and for single fiat-currency based GSCs, at par into fiat. Any legal claim that does not guarantee to all users timely redemption at par into fiat for single fiat-currency based GSCs increases the vulnerability of the GSC to a loss of confidence and associated funding and liquidity risks, which could in turn heighten the prospects for systemic risk.

Redemption rights are addressed in the existing Recommendation 9, which states that authorities should ensure that GSC arrangements “provide legal clarity to users on the nature and enforceability of any redemption rights and the process for redemption, where applicable.” It is proposed that this recommendation be strengthened to specify that GSC issuers should guarantee clear redemption rights, effective stabilisation mechanisms and adequate capital buffers to absorb credit and market risks, as well as risks related to legal, operational and cyber risks relevant to the stablecoin arrangement. An issuer’s failure to back up its promise of a stable value and timely redemption could cause GSC users to lose confidence in the stabilisation mechanism, leading to a run on the stablecoin.

The sudden loss of confidence in private sector issued commercial bank deposits, and in other private sector issued financial instruments that promise (implicitly or explicitly) to maintain a stable value with fiat currency, is a longstanding risk in the history of banking and finance. Runs can threaten the safety and soundness of individual banks but also lead to a more generalised loss of confidence in deposits and other liabilities of other banks. Such contagion can generate system-wide stress as evidenced by the 2007-09 financial crisis. Runs on other institutions can pose similar financial stability risks, such as the runs faced by money market funds in 2008 and 2020. Because stablecoins engage in similar maturity transformation, they are similar in their

susceptibility to a sudden loss in confidence and the risk of a run on the issuer or underlying assets.

Uncertainty about, or large fluctuations in, the value of instruments being used as settlement assets in systemic payment or securities settlement systems could give rise to risks to financial stability associated with the operational or financial failure of the payment or settlement system itself. The regulation of financial market infrastructures therefore generally restricts settlement instruments to those issued by central banks or a commercial bank with little or no credit and liquidity risk. Therefore, GSCs should be expected to meet stricter requirements on the issuance, redemption and stabilisation functions to ensure the stablecoin has little or no credit or liquidity risk. This is in line with the CPMI-IOSCO Principles for Financial Market Infrastructures, specifically key consideration 2 of Principle 9 on money settlements, which states that if central bank money is not used, an FMI should conduct its money settlements using a settlement asset with little or no credit or liquidity risk.[5]

There may be potential regulatory gaps if a stablecoin used widely for payments is issued by an entity that is neither a bank nor an FMI, notwithstanding the fact that such stablecoin may also be considered a security and/or derivative. For example, international standards on prudential requirements, including on clear and enforceable redemption rights, and on reserve assets could potentially not apply to these issuers and/or not be effectively enforced. Such a stablecoin could nevertheless over time become systemic. Against this background, the CPMI-IOSCO guidance on the application of the PFMI to stablecoin arrangements (SAs) clarifies that the so-called "transfer function" (i.e., the transfer of coins) of systemic stablecoin arrangements is an FMI function. As such, when a stablecoin arrangement performs a transfer function and is determined by authorities to be a systemically important FMI, the stablecoin arrangement as a whole would be expected to observe all relevant principles in the PFMI. The guidance provides that a systemically important stablecoin arrangement should regularly review the material risks that the FMI function bears from and poses to other functions within the stablecoin arrangement and the entities performing those functions, including the issuance function. The guidance includes ensuring that a systemically important stablecoin arrangement meets Principle 9 on Money Settlements.[6]

For issuers that are subject to prudential regulation (e.g. commercial banks), there may nonetheless be a lack of clarity or completeness in the treatment of financial (i.e., market, credit and liquidity risk) and operational risks (e.g. smart contract risk, choice of blockchain, etc.) that arise from stablecoin arrangements, as well as redemption rights. Nevertheless, stablecoins issued by a bank subject to BCBS standards could, in certain cases, provide a claim and protections equivalent to deposits, including capital and liquidity requirements and a backstop mechanism, which may contribute to addressing the risk of runs. However, banks could also issue stablecoins as non-deposit liabilities, or from an entity or vehicle off-balance-sheet. Just as is the case for non-bank issued stablecoins, there may be a lack of clarity on the regulatory treatment of bank-issued stablecoins (e.g. with respect to redemption rights and safeguarding

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5 See https://www.bis.org/cpmi/publ/d206.htm

6 The CPMI-IOSCO guidance clarifies that the stablecoin arrangement, in assessing the risks of the stablecoin used as the settlement asset, should consider relevant factors such as providing holders with a direct legal claim on, title to or interest in the issuer and/or claim on the underlying reserve assets for timely convertibility at par into other liquid assets, such as claims on a central bank and a clear and robust process for fulfilling holders' claims in both normal and stressed times.

of the reserve assets), and existing prudential requirements may not be sufficient to address the risks of runs.

FSB High-level recommendation 9

Authorities should require that GSC arrangements provide a robust legal claim to all users against the issuer and/or underlying reserve assets and guarantee timely redemption. For GSCs referenced to a single fiat currency, redemption should be at par into fiat. To maintain a stable value at all times and mitigate the risks of runs, authorities should require GSC arrangements to have an effective stabilisation mechanism, clear redemption rights and meet prudential requirements.

Redemption

Authorities should require GSC arrangements to provide a robust legal claim and timely redemption to all users over a time period that is consistent with the treatment for other payment and settlement assets. Redemption requests should be processed without undue costs for the user. In particular, the issuer should ensure that GSC users' redemption should not be unduly compromised by the disruption or failure of an intermediary or other relevant entity and infrastructure (e.g. through contractual or operational processes that allow for prompt redemption with the issuer directly in the event of an intermediary becoming unavailable).

The GSC arrangement should also provide adequate information on the process for redemption and the enforcement of GSC users' claims, and regarding how the GSC arrangement ensures smooth execution of the redemption process, including under stressed circumstances. GSC arrangements should not impose conditions that may unduly restrict the ability of GSC users to exercise their redemption rights (e.g. minimum thresholds). Any fees for redemption should be clearly communicated to users and should be proportionate, and not be high enough to become a de facto deterrent to redemption.

Stabilisation mechanism

Authorities should require GSCs to have an effective method to maintain a stable value at all times (a stabilisation method). An effective stabilisation method should include a reserve of assets that is at least equal to the amount of outstanding stablecoins in circulation at all times, unless the GSC is subject to prudential requirements and safeguards equivalent to those applicable to commercial bank money subject to BCBS standards. A GSC should not rely on arbitrage activities to maintain a stable value at all times and it should not derive its value from algorithms.

For GSCs that use a reserve-based stabilisation method, authorities should ensure that there are robust requirements for the composition of reserve assets consisting only of conservative, high quality and highly liquid assets. Authorities should consider limitations to the reserve that would exclude speculative and volatile assets as well as assets where there is insufficient historical evidence and data of quality and liquidity, as is likely to be the case for crypto-assets. Due to the potential risk of fire sales of reserve assets, there should be particular attention to the nature, sufficiency and degree of risk-taking in terms of duration, credit quality, liquidity and concentration of a GSC's reserve assets. Reserve assets should be unencumbered and easily and immediately convertible into fiat currency at little or no loss of value. The market value of reserve assets should meet or exceed the amount of outstanding claims or stablecoins in circulation at all times. In addition, risks of custodial arrangements for reserve assets should also be adequately managed and addressed. In particular, GSC issuers should consider the credit risk of their custody service providers to minimise the risk of loss, and disruptions to access to the reserve assets.

GSC issuers that back the value of outstanding stablecoins with assets other than conservative, high quality and highly liquid assets must be subject to adequate prudential regulations and oversight

equivalent to BCBS standards and deliver similar protections to commercial bank money to mitigate the risks of runs.

Prudential requirements

In order to have effective stabilisation methods, GSC arrangements should also be subject to appropriate prudential requirements (including capital and liquidity requirements) to provide that losses can be absorbed and there is sufficient liquidity to deal with outflows. Prudential requirements should take into account the risks of the reserve assets and operational risks (amongst other risks). Adequate capital buffers also contribute to maintaining confidence in the GSC and a stable value at all times. Such capital buffers should be consistent with the size of the GSC in circulation and proportionate to the risks of GSC arrangement.

3.10. Conformance with regulatory, supervisory and oversight requirements before commencing operations

As stated in the FSB Statement on International Regulation and Supervision of Crypto-asset Activities, even as jurisdictions are in the process of considering potential changes to their frameworks, neither stablecoins nor other crypto-assets operate in a regulation-free space and must adhere to relevant existing requirements and applicable regulations. Crypto-assets and markets may perform equivalent economic functions to those performed by traditional financial instruments and intermediaries. As such, they are subject to relevant regulations applicable to their underlying economic and financial rationale, in line with the principle of "same activity, same risk, same regulation". It is proposed to revise recommendation 10 to ensure GSC arrangements meet requirements specific to crypto-assets as well as more general requirements before commencing operations.

FSB High-level recommendation 10

Authorities should require that GSC arrangements meet all applicable regulatory, supervisory and oversight requirements of a particular jurisdiction before commencing any operations in that jurisdiction and adapt to new regulatory requirements as necessary and as appropriate.

Authorities should not permit the operation of a GSC arrangement in their jurisdiction unless the GSC arrangement meets all of their jurisdiction's regulatory, supervisory, and oversight requirements, including affirmative approval (e.g. licenses or registrations) where such a mechanism is in place. That includes requirements specific to crypto-assets as well as those general requirements (including consumer and investor protection regulation) that are applicable to the underlying economic and financial nature of crypto-assets, in line with the principle of "same activity, same risk, same regulation."

Where relevant, GSC arrangements should have the ability to adjust their operational features, processes and mechanisms as necessary or appropriate to maintain compliance with applicable regulatory requirements, consistent with international standards, if these evolve or change.

Before launching the arrangement and the provision of services to users in a particular jurisdiction, entities and individuals involved in the management and control of the GSC arrangement should understand applicable regulatory requirements. Where regulations of more than one jurisdiction may apply, understand which jurisdictions' rules are applicable to different aspects of the functions and activities performed and engage proactively with authorities.

Annex 1: Key design considerations for cooperation and information sharing arrangements

There are different possible structures for cross-sectoral and cross-jurisdictional cooperation arrangements. The choice of structure should be tailored to the specific features of the stablecoin arrangement (e.g. risk profile, systemic footprint, level of interest of the relevant authorities). Those features may evolve or change over time, which may lead relevant authorities to consider whether and how the cooperation arrangement should be adapted. The following considerations are intended to inform a suitable structure for an effective cooperation arrangement while allowing for flexibility to accommodate the specificities of GSC.

Objective

The authorities that participate in the cooperation arrangement should have a common understanding of the objective of the arrangement.

The cooperation arrangement could be for information-sharing only or to facilitate coordinated decision-making or supervision on important matters such as authorisation or approval of material design changes, or to support the effective monitoring and enforcement of all applicable regulatory, supervisory and oversight requirements in each authority's jurisdiction, as contemplated in Recommendation 10.

Information-sharing arrangements could be beneficial if the objective of cooperation is to ensure all relevant authorities, on a cross-border and cross-sectoral basis have a common understanding of the functions, structure, operations, and risks of the GSC arrangement. These types of arrangements could be relevant for stablecoins which are not yet systemic but have the potential to become so at some stage in the future. Such structures would enable early involvement of authorities and facilitate decisions later that anticipate systemic potential.

Coordinating decision making could be explored through such cooperation arrangements for larger or more systemic GSCs where cooperation with respect to regulatory and supervisory decisions would be appropriate, and regulatory arbitrage is a key risk. For example, these arrangements could follow the spirit of PFMI Responsibility E which describes how authorities should cooperate with each other, both domestically and internationally, as appropriate and in a flexible manner, in promoting the safety and efficiency of FMIs.[7]

Structure and participation

Authorities should identify the structure and participation to achieve the stated objective of the cooperation.

The authorities involved in a cooperation arrangement should be the competent authorities that bear the responsibility for the regulation, supervision and/or oversight of the stablecoin

[7] Cooperation arrangements between authorities in no way prejudice the statutory or legal or other powers of each participating authority, nor do these arrangements constrain in any way an authority's powers to fulfil its statutory or legislative mandate or its discretion to act in accordance with those powers.

arrangement, as well as the central banks of issue for fiat-referenced GSCs. Other relevant bodies (such as non-financial authorities) could also be involved, for information and consultation purposes. The competent authorities could be the ones responsible for one or more key functions of the GSC arrangements, such as governance, issuance, redemption, stabilisation, and the transfer functions. A cooperation arrangement should provide some flexibility to deal with scenarios where authorities face challenges in identifying competent and relevant authorities. Depending on the jurisdiction and/or type of licensing regime, the competent authorities could be a banking supervisor, securities or market regulator, or FMI/payment supervisor. Competent authorities can involve a combination of such authorities, as is the case already for traditional FMIs such as CCPs for example.

The cooperation arrangements could include different categories of membership considering: (i) the role and mandate of relevant authorities, including non-financial regulatory authorities; (ii) criteria to choose members of each category; (iii) considerations for inviting non-financial sector authorities; and (iv) ways to identify competent authorities in case no responsible entity is identified for one or more core function(s) of the GSC arrangement.

The footprint or materiality of the GSC across different jurisdictions, including when a GSC is under development or at an early stage, could impact the relevant authorities of the cooperation arrangement. There may also be differences in the level of activity for each jurisdiction the GSC arrangement operates in, including the possibility that the SC is not systemic in some of the jurisdictions with responsibility for the oversight and supervision of the GSC, while it could be systemically important in other jurisdictions. The membership should also consider the unique foreign exchange and capital account requirements facing emerging market jurisdictions if the GSC were to be widely used as a means of payment.

The possibility that the GSC will evolve or change, including by relocating core functions from one jurisdiction to another, may require a changing of the authorities with oversight and supervisory responsibilities. Given the ease with which GSC arrangements may change location of key functions, a cooperation arrangement should account for such a process in order to avoid any gaps in this respect.

Confidentiality and legal constraints

It is important that cross-jurisdictional cooperation is underpinned by effective information-sharing gateways and confidentiality and other safeguards to facilitate the exchange of information across borders and collective or combined risk assessment among the relevant supervisory and regulatory authorities. Information-sharing gateways and confidentiality and other safeguards could be established through the development and use of a multilateral information-sharing arrangement among authorities. Such arrangement could be informed by existing international standards and guidance, including the PFMI Responsibility E and the 2010 IOSCO Principles Regarding Cross-Border Supervisory Cooperation. Alternatively, members of the cooperation arrangement may rely on bilateral information-sharing arrangements between authorities. To the extent that the stablecoin activities fall within the existing regulatory perimeter authorities may be able to rely on existing information-sharing arrangements, which may not extend to other sectoral authorities or non-financial authorities, but could be adapted to their needs.

Annex 2: Template for common disclosure of reserve assets

This template is designed as a common disclosure template for reserve-backed GSCs. This template is meant as a model for authorities seeking to supplement existing disclosure requirements or adopt new disclosure requirements. A common disclosure framework on the composition of and investment mandate for the reserve assets would help market participants consistently assess and compare the quality of the reserve portfolio and the GSC arrangement's ability to maintain redemption at par at all times. The template should not be interpreted as endorsing the inclusion of particular asset classes in the reserve portfolio, but only as illustrating the level of detail in which assets should be disclosed to investors.

In addition to the categories listed below, the following should apply to all eligible assets included in the disclosure of reserve assets:

- Eligible assets must be unencumbered, meaning the assets are free of legal, regulatory, contractual, or other restrictions on the ability of the GSC arrangements to liquidate, sell, transfer, or assign the asset.
- Eligible assets should exclude unencumbered assets which the GSC arrangements does not have the operational capability to monetise to meet redemptions, including during periods of stress.
- Eligible assets should be under the control of the function charged with managing the reserve assets, meaning the function has the continuous authority, and legal and operational capability, to monetise any asset in the reserve.

GSC arrangements should report both the market value as of the reporting period as well as the daily average over the most recent quarter. The daily average should be presented as the simple average of daily observations.

	Illustrative asset categories[8]	Market value at month end	Weighted average maturity	Market Value (daily average over month-end)
1	Demand deposits at commercial banks			
2	Term deposits at commercial banks			
3	Money market fund shares			
4	Reverse repo (collateralized by government bills, bonds, or notes)			
5	Government bills			
6	Government bonds and notes			
…	[…]			

[8] These asset categories are for illustrative purposes only. Relevant asset categories should be consistent with the requirements for reserve assets in each jurisdiction.

	Illustrative asset categories[8]	Market value at month end	Weighted average maturity	Market Value (daily average over month-end)
7	Other assets[9]			
8	Of which, loans or extensions of credit to entities affiliated with the GSC			
9	Total assets of reserve portfolio			
10	Total stablecoins in circulation			

9 Other assets should include information that is relevant for assessing and evaluating the quality of those assets, including for example the asset class, issuer, credit rating and maturity of each instrument.

Annex 3: Potential elements that could be used to determine whether a stablecoin qualifies as a GSC

A stablecoin's global systemic importance could be measured in terms of the impact that a stablecoin arrangement's financial or operational disruptions, or failure, can have on crypto-asset markets, the global financial system and the wider economy.

Given that a stablecoin may be used as a means of payment or store of value, and could be used in multiple jurisdictions, the criteria to be considered in determining whether a stablecoin qualifies as a GSC should take into account the potential uses in multiple jurisdictions.

The potential elements set out below that could be used to determine whether a stablecoin qualifies as a GSC build on the criteria that are often considered in determining the need for or degree of regulation, supervision, and oversight of FMIs (PFMI, 2012, also supplemented by guidance on the Application of the PFMI to stablecoin arrangements, issued in 2022), and global systemically important banks (BCBS, 2013). They include factors and considerations for authorities to determine whether a stablecoin has the potential to expand reach and adoption across multiple jurisdictions and has the potential to achieve substantial volume. Such potential elements are:

- Number and type of stablecoin users
- Number and value of transactions
- Size of reserve assets
- Value of stablecoins in circulation
- Market share in cross-border use in payments and remittances
- Number of jurisdictions with stablecoin users
- Market share in payments in each jurisdiction
- Redemption linked to a foreign currency or multiple currencies
- Interconnectedness with financial institutions and the broader economy,
- Interconnectedness with the wider crypto-assets ecosystem, other crypto-asset services and decentralised finance
- Integration with digital services or platforms (e.g. social networks, messaging applications)
- Available alternatives to using the GSC as a means of payment at short notice
- Business, structural and operational complexity

Annex 4: Recent policy developments

Jurisdictions

The European Union

The European Union has recently reached political agreement on legislation establishing a framework for Markets in Crypto Assets[10], which among other objectives strengthens the regulatory framework for so-called stablecoins which are classified either as E-Money tokens (single currency tokens) or as Asset Referenced tokens (multiple currency and other asset referenced tokens). The legislation is intended to implement the FSB High-level Recommendations, and is expected to apply as of 2024, subject to formal finalisation of the adoption procedure. Until that time, existing rules, including in particular national legislation implementing the E-Money Directive, apply.

Hong Kong SAR

In January 2022, the Hong Kong Monetary Authority (HKMA) issued a discussion paper[11] on crypto-assets and stablecoins, setting out the HKMA's thinking on the regulatory approach for payment-related stablecoins and inviting views from the industry and public. Among other things, the discussion paper sought feedback via a list of Q&As on issues such as the appropriate regulatory approach, the types of activities that should fall under the regulatory ambit, the relevant authorisation and regulatory requirements, the scope of persons to be regulated, and areas of possible regulatory overlap.

The proposed regulatory approach has taken into account the fast-evolving nature of crypto-assets globally and locally, the possible risks that they may pose to financial stability, monetary stability, anti-money laundering/combating financing of terrorism ("AML/CFT"), users protection and other areas, the international recommendations and the need for continued support of financial innovation.

The consultation period ended in March 2022. The HKMA is analysing the feedback received and will announce the next steps in due course. The HKMA will closely monitor the evolving landscape, stay open-minded and remain agile in drawing up the details of the regulatory framework for payment-related stablecoins.

In addition, in July 2022, the Anti-Money Laundering and Counter-Terrorist Financing (Amendment) Bill was introduced into the Legislative Council for the implementation of a virtual asset service provider (VASP) licensing regime for crypto-asset activities conducted on exchanges. The amendment bill provides that any person seeking to operate a virtual asset exchange as a business is required to obtain a VASP licence from the Securities and Futures Commission (SFC). According to the version of the Bill that was introduced to the Legislative

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10 Available here.

11 Available here.

Council, the definition of "virtual asset" applies equally to virtual coins that are stable (i.e., stablecoins) or not.

The HKMA will continue to collaborate with other relevant regulators as well as other stakeholders of the HKSAR Government on formulating appropriate regulatory responses to address evolving risks posed by stablecoins.

Japan

In June 2022, Japan passed legislation that defines the legal status of stablecoins and introduces a regulatory framework for them by amending the Payment Services Act and other relevant laws to promote financial innovation and to ensure user protection and AML/CFT compliance. This new regulatory framework will come into force by June 2023.

The new regulatory framework defines "digital-money type stablecoins," which are linked to one or more fiat currencies and whose issuers promise redemption at par. These stablecoins are required to meet higher standards of regulatory requirements so that user protection is ensured and risks to financial stability are fully addressed.

To this end, issuers of digital-money type stablecoins are restricted to banks, fund transfer service providers, and trust companies as these institutions are under stringent regulations. Each of these institutions is subject to requirements to ensure redemption, as follows:

(i) Banks issue stablecoins as deposits. They are already subject to prudential regulations and stablecoin holders are protected by deposit insurance in the same manner as conventional bank deposits;

(ii) Fund transfer service providers issue stablecoins as claims on outstanding obligations. They are required to secure the obligation through either money deposits with official depositaries, bank guarantees, or entrusted safe assets (such as bank deposits and government bonds);

(iii) Trust companies issue stablecoins as trust beneficiary rights. They are required to hold all the trusted assets in the form of bank deposits.

On the other hand, stablecoins other than digital-money type stablecoins are regulated in the same manner as unbacked crypto-assets or security tokens under the existing regulatory frameworks in accordance with their product structures. However, the Financial Services Agency of Japan (the "JFSA") may designate this type of stablecoins as digital-money type stablecoins in case they are widely used as a means of payment.

For intermediaries of digital-money type stablecoins ("Intermediaries") such as those involved in trading and exchanging stablecoins, they do not have to meet regulatory requirements for issuers. However, registration with the government is required and AML/CFT compliance is necessary as they play a critical role in stablecoin arrangements. Registered Intermediaries are required to ensure appropriate user protection including protecting users' assets and providing sufficient information to users. In particular, they are required not to provide services related to stablecoins that lack sufficient levels of user protection and to enter into contractual agreements

with issuers for sharing of liability for users' losses to ensure proper coordination between the issuers and the Intermediaries in case of accidents.

Toward enforcement of the amended laws by June 2023, the JFSA will draft relevant regulations and guidelines, including issues of peer-to-peer transactions and risks associated with network system failures or accidents, taking into consideration international discussions.

United States

The President's Working Group on Financial Markets, Federal Deposit Insurance Corporation, and Office of the Comptroller of the Currency published a report on stablecoins on November 1, 2021, to identify regulatory gaps related to stablecoins with the potential to be used as a means of payment and to present recommendations for addressing those gaps. The report outlines the risks that stablecoins pose and a legislative recommendation for Congress.

Risks. Failure of stablecoins to maintain a stable value could expose stablecoin users to unexpected losses and lead to stablecoin runs that damage financial stability. Disruptions to the payment chain that allow stablecoins to be transferred among users could lead to a loss of payments efficiency and, depending on the extent to which stablecoins are used, undermine functioning in the broader economy. The potential for stablecoin arrangements to rapidly scale raises additional issues related to systemic risk and concentration of economic power. Stablecoins also pose illicit finance concerns and risks to financial integrity. Further, digital asset trading activities present risks related to market integrity and investor protection.

Recommendations. There are key gaps in prudential authority over stablecoins used for payments purposes. To address these risks, the agencies recommend that Congress act promptly to enact legislation to ensure that payment stablecoins are subject to a federal prudential framework on a consistent and comprehensive basis.

To address risks to stablecoin users and guard against stablecoin runs, legislation should require stablecoin issuers to be insured depository institutions subject to appropriate supervision and regulation, at the depository institution and the holding company level.

- **To address concerns about payment system risk**, in addition to the requirements for stablecoin issuers, legislation should require custodial wallet providers to be subject to appropriate federal oversight, and should provide the federal supervisor of a stablecoin issuer with the authority to require any entity that performs activities that are critical to the functioning of the stablecoin arrangement to meet appropriate risk-management standards.

- **To address additional concerns about systemic risk and economic concentration of power**, legislation should require stablecoin issuers to comply with activities restrictions that limit affiliation with commercial entities. Supervisors should have authority to implement standards to promote interoperability among stablecoins. In addition, Congress may wish to consider other standards for custodial wallet providers, such as limits on affiliation with commercial entities or on use of users' transaction data.

Given the significant and growing risks posed by stablecoins, the federal financial agencies are committed to taking action to address risks falling within each agency's jurisdiction, and to

continued coordination and collaboration on issues of common interest. This also includes promotion of investor and market protection measures, such as requiring clear and useful disclosures, protecting against fraud, manipulation, and other risks, and continuing engagement in international fora – such as the FATF, FSB, and CPMI-IOSCO – to promote comprehensive and consistent oversight.

In the absence of urgently needed Congressional action to address the prudential risks posed by payment stablecoin arrangements, the agencies recommend that the Financial Stability Oversight Council consider steps available to it to address the risks outlined in the report, while the agencies continue to use their existing authorities to address these prudential risks to the extent possible. Such steps may include designation of certain activities conducted within a stablecoin arrangement as, or as likely to become, systemically important payment, clearing, and settlement activities.

As of October 2022, Congress is considering various legislative proposals that encompass stablecoins.

United Kingdom

In July 2022, the UK introduced legislation into Parliament to bring stablecoins, where used as a means of payment, within the regulatory perimeter given their potential for widespread use and potential financial stability implications. It will ensure that stablecoins which reference their value from fiat currency are subject to the same regulatory oversight as similar payment methods, such as e-money. This means that issuers of, and payment service providers using, stablecoins will need to be authorised by the FCA, and meet FCA conduct and prudential requirements. The Bank of England will also be able to regulate and supervise systemically important stablecoin payment systems and related service providers, subject to HM Treasury recognition. Similarly, the Payment Systems Regulator will be able to regulate and supervise stablecoin payment systems and participants to promote effective competition and innovation, subject to HM Treasury designation. Secondary legislation will create an FCA authorisation and supervision regime, and set out the mechanism for managing co-responsibility for regulation for systemic stablecoin providers.

The UK is also currently considering responses to a consultation on its proposal to apply the Financial Markets Infrastructure Special Administration Regime, a bespoke insolvency framework for systemic payment and settlement systems, in amended form to systemic stablecoin firms with the ambition of ensuring appropriate tools are in place to mitigate the risks to financial stability associated with a systemic stablecoin firm’s failure.

Standard-setting bodies

BCBS

In June 2022, the BCBS published its second consultative document on the prudential treatment of banks' exposures to crypto-assets.[12] The basic structure of the proposal in the first consultation is maintained, with crypto-assets divided into two broad groups to determine minimum risk-based capital requirements for credit and market risk:

- **Group 1 crypto-assets** are those crypto-assets that meet a set of classification conditions. Group 1 crypto-assets will generally be subject to risk-based capital requirements based on the risk weights of underlying exposures as set out in the existing Basel capital framework, with some modifications.

- **Group 2 crypto-assets** are those crypto-assets that fail to meet any of the classification conditions, including unbacked crypto-assets and stablecoins with ineffective stabilisation mechanisms. As a result, they pose additional and higher risks compared with Group 1 crypto-assets and consequently will be subject to a newly prescribed conservative capital treatment.

The classification conditions relate to the nature of the crypto-asset, issues of legal certainty, the reliability of the design of the crypto-asset arrangement and the regulation and supervision of entities performing significant functions. Group 1 crypto-assets include tokenised traditional assets (Group 1a), and crypto-assets with effective stabilisation mechanisms (Group 1b). Stablecoins can only been included in Group 1b if they are redeemable for underlying traditional asset(s) (e.g. cash, bonds, commodities, equities) and the stabilisation mechanism is assessed to be effective. Algorithm-based stablecoins or those stablecoins that use protocols to maintain their value are not eligible for Group 1.

The updated proposals in the second consultation provide more detail on the proposed crypto-asset standard and include new elements such as an infrastructure risk add-on to cover the new and evolving risks of distributed ledger technologies; limited recognition of hedging for qualifying Group 2 crypto-assets (i.e., Group 2a); and an overall gross limit on Group 2 crypto-asset exposures.

In addition to the capital requirements for credit and market risk, the consultation provides guidance on the application of other aspects of the Basel Framework to crypto-assets, such as liquidity requirements, operational risk, the leverage ratio and large exposures. The liquidity requirements have been expanded to more fully address the risks posed by crypto-liabilities that may arise in the context of banks issuing stablecoins or other tokenised claims. The consultation also includes an expanded section on how the supervisory review process should be applied in the case of banks' crypto-asset activities and requires banks to disclose information regarding their crypto-asset exposures and activities on a regular basis.

[12] Available here.

Given the rapid evolution and volatile nature of the crypto-asset market, the BCBS will continue to monitor developments closely during the consultation period. The BCBS aims to finalise its crypto-asset standard around year-end and has indicated that they may be tightened if shortcomings in the consultation proposals are identified or new elements of risks emerge.

CPMI-IOSCO

In July 2022, the Bank for International Settlements' Committee on Payments and Market Infrastructures (CPMI) and the International Organization of Securities Commissions (IOSCO) published guidance on the Application of the Principles for Financial Market Infrastructures (PFMI) to stablecoin arrangements. This is a result of the continued contribution of CPMI-IOSCO to the overall FSB work on stablecoins as well as a major step forward in applying "same risk, same regulation" to systemically important stablecoin arrangements (SAs) that are used for payments.

The guidance, which follows the consultative report of October 2021, reconfirms the preliminary results from the analysis conducted by CPMI-IOSCO as part of the FSB's 2020 report on Regulation, Supervision and Oversight of 'Global Stablecoin' Arrangements: if a SA performs a transfer function and is determined by authorities to be systemically important, the SA as a whole is expected to observe all relevant principles of the PFMI.

While the guidance *per se* does not create additional standards for SAs beyond those set out in the PFMI, it provides clarity and granularity on how systemically important SAs should approach to observing certain aspects of the PFMI. Specifically, the report proposes guidance on aspects related to: (i) governance (PFMI Principle 2), (ii) framework for the comprehensive management of risks (Principle 3), (iii) settlement finality (Principle 8) and (iv) money settlements (Principle 9). The report also provides considerations to assist relevant authorities in determining whether an SA is systemically important in their jurisdictions.

Notable feature is that the guidance provides expectations for a stablecoin used by a systemically important SA as a settlement asset, stating that it should have little or no credit or liquidity risk. SAs could be used to settle payments, discharging obligations arising from a range of financial transactions with the use of stablecoins as settlement assets, including not only use cases involving retail payments (i.e., remittances) but also wholesale payments.

The CPMI and IOSCO continue to examine regulatory, supervisory and oversight issues associated with SAs and coordinate with other SSBs.

IOSCO

Crypto-assets, including stablecoins, have been a priority for IOSCO since 2017 and related work has been undertaken by IOSCO's former Fintech Network and its policy committees.

Previous IOSCO work includes a report[13] published in March 2020 that identified the possible implications of global stablecoin initiatives for securities markets regulators, including how

[13] Available here.

stablecoins interact with their regulatory remit. Insights from the report contributed to the high-level recommendations for the *Regulation, Supervision and Oversight of Global Stablecoin Arrangements* developed by the RIS, published in October 2020.[14]

Most recently, in March 2022, IOSCO published its "Decentralized Finance Report"[15] which offers a comprehensive review of the fast-evolving DeFi market, including its products, services and principal participants. Stablecoins are a key feature of the Decentralised Finance (DeFi) ecosystem and have contributed to its exponential and continuing growth. They are used in multiple ways in DeFi applications, including as a stable leg in a trade against a more volatile crypto-asset or as "collateral" to finance activities such as liquidity mining, yield-farming, lending and borrowing. The report highlights the numerous risks to participants, investors and markets arising from the DeFi including, for example, the failure of a stablecoin issuer or crypto-asset trading platform involved in a particular stablecoin arrangement. Such a failure could give rise to significant volatility in these assets and thereby impair, among other things, the collateral and liquidity of DeFi protocols and lead to knock-on effects in the broader crypto-asset market ecosystem.

With the rapid advancements in the Fintech space and the explosive growth of the crypto-asset market, IOSCO saw the need to establish a Board-level Fintech Task Force (FTF), which will prioritise policy work. The FTF is tasked with developing, overseeing, delivering, and implementing IOSCO's regulatory agenda with respect to Fintech and crypto-assets. It is also charged with coordinating IOSCO's engagement with the FSB and other SSBs on Fintech and crypto-related matters.

In its initial 12 to 24 months, the FTF will prioritize policy work on crypto-asset markets and activities, while continuing to monitor trends associated with broader Fintech developments. The FTF published its roadmap on 7 July,[16] which includes two workstreams in its program of work, both focusing on market integrity and investor protection concerns in the crypto-asset space.

Recent turmoil in the crypto-asset market has underscored the link between investor protection, market integrity, and the stability of the broader crypto-asset market ecosystem. The first workstream will delve into Crypto and Digital Assets (CDA). Its work is broadly categorised into (i) the fair, orderly trading, transparent markets, suitability and market manipulation in relation to, and (ii) safekeeping, custody and soundness. The second workstream will look more specifically into Decentralised Finance (DeFi) and the role of Stablecoins within DeFi. This builds on the work that culminated in the March 2022 Decentralized Finance report, and will further explore the links between DeFi, stablecoins, and crypto-assets trading platforms, as well as the interactions of DeFi with broader financial markets. Both workstreams will also discuss stablecoins in the context of their respective mandates.

The FTF aims to publish a report with policy recommendations by end-2023.

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14 Available here.

15 Available here.

16 Available here.

FATF

In June 2019, FATF extended its anti-money laundering and counter-terrorist financing (AML/CFT) measures to virtual assets (VAs) and virtual asset service providers (VASPs) to prevent criminal and terrorist misuse of the sector[17]. In July 2020, the FATF published key findings on the application of FATF Standards to stablecoins in its Report to G20 on So-called Stablecoins[18]. This report clarifies that the revised FATF Standards apply to stablecoins, which will either be considered a virtual asset or a financial asset depending on its exact nature and the regulatory regime in a country. As such, a range of the entities involved in any stablecoin arrangement will have AML/CFT obligations. Certain stablecoins, i.e., ''global stablecoins'', could have greater potential for mass adoption than other virtual assets, which could increase the money laundering and terrorism financing (ML/TF) risks if it substantively increased the number and value of payments not subject to AML/CFT controls. Accordingly, it is important that the ML/TF risks of stablecoins are analysed in an ongoing and forward-looking manner and are mitigated before launch. FATF will keep monitoring the development of market including stablecoins to ensure the current AML/CFT measures remain fit-for-purpose.

Since the adoption of the revised FATF Standards in 2019, FATF has conducted two reviews on implementation of the revised FATF Standards[19,20] and published Updated Guidance for a Risk-Based Approach to VAs and VASPs, which provide further clarifications on how the FATF Standards apply to stablecoins[21]. Building on the two reviews, in June 2022, FATF produced a targeted update on implementation of its Standards on VAs and VASPs[22], which outlines country implementation of FATF's Recommendation 15 and its Interpretative Note (R.15/INR.15)[23] with a focus on FATF's Travel Rule. The Travel Rule (Recommendation 16) is a key AML/CFT compliance measure, which mandates that VASPs obtain, hold and exchange information about the originators and beneficiaries of VA transfers.

The report finds a continued need for many countries to strengthen their understanding of ML/TF risks of the VA and VASP sector and to rapidly implement FATF's R.15/INR.15, including the Travel Rule, to mitigate such risks. In particular, the report finds that jurisdictions have made only limited progress over the last year in implementing the Travel Rule despite available technological solutions. Of the 98 jurisdictions that responded to FATF's March 2022 survey, only 29 jurisdictions have passed relevant Travel Rule laws. A smaller subset, just 11 of these jurisdictions, have started enforcement related to the Travel Rule. This demonstrates an urgent need for jurisdictions to accelerate implementation and enforcement of R.15/INR.15 to mitigate criminal and terrorist misuse of VAs.

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17 FATF (2019), *The FATF Standards: FATF Recommendations* (Amended in 2019).

18 FATF (2020a), *FATF Report to G20 on So-called Stablecoins*.

19 FATF (2020b), *12-Month Review of Revised FATF Standards on Virtual Assets and VASPs*.

20 FATF (2021a), *Second 12-Month Review of the Revised FATF Standards on Virtual Assets and VASPs*.

21 FATF (2021b), *FATF Guidance for a Risk-Based Approach to Virtual Assets and Virtual Asset Service Providers*, (Initially published in 2019 and updated in 2021).

22 FATF (2022), *Targeted Update on Implementation of FATF's Standards on VAs and VASPs*.

23 FATF's R.15/INR.15 sets the global AML/CFT Standards for VAs and VASPs by clarifying how the FATF requirements apply in relation to VAs and VASPs.

On stablecoins, the targeted update finds that the usage and liquidity of stablecoins are increasing in parallel with the growth of DeFi markets[24], as stablecoins are often used to facilitate trading or serve as collateral in DeFi protocols. FATF will continue to monitor market trends related to stablecoins and associated ML/TF risks and will work to facilitate discussion between jurisdictions and other SSBs.

More broadly, given the remaining challenges in implementation, FATF will continue to promote implementation of FATF's R.15/INR.15, including the Travel Rule. FATF will also monitor additional market trends for material changes, such as in relation to DeFi and NFTs, by engaging with member countries, multilateral fora including G7 and G20, and the private sector. FATF will conduct an updated review on implementation progress by June 2023 with the intention of publishing the main findings. To mitigate ML/TF risks associated with VAs, FATF calls on all FSB member countries and G20 member countries to accelerate compliance with FATF's R.15/INR.15, as well as the Travel Rule, as a matter of priority.

[24] IMF (2022) *Global Financial Stability Report* April.

Glossary[25]

Algorithm-based stablecoin

A stablecoin that purports to maintain a stable value via protocols that provide for the increase or decrease of the supply of the stablecoins in response to changes in demand.

Asset-linked stablecoin

A stablecoin that purports to maintain a stable value by referencing physical or financial assets or other crypto-assets.

Blockchain

A form of distributed ledger in which details of transactions are held in the ledger in the form of blocks of information. A block of new information is attached into the chain of pre-existing blocks via a computerised process by which transactions are validated.

Crypto-asset

A digital asset (issued by the private sector) that depends primarily on cryptography and distributed ledger or similar technology.-.

Crypto-asset ecosystem

The entire ecosystem that encompasses all crypto-asset activities, market and participants.

Crypto-asset issuer

An entity, person, or other structure that creates new crypto-assets.

Crypto-asset market

Any place or system that provides buyers and sellers the means to trade crypto-assets and the associated instruments, including lending, structured investment products, and derivatives. Crypto-asset markets facilitate the interaction between those who wish to offer and sell and those who wish to invest.

Crypto-asset services

Services relating to crypto-assets that may include, but are not limited to, distribution, placement, facilitating exchange between crypto-assets or against fiat currencies, custody, provisioning of non-custodial wallets, facilitating crypto-asset trading, borrowing or lending, and acting as a broker-dealer or investment adviser.

Crypto-asset service providers

[25] The glossary is for the purposes of this document and does not replace other existing taxonomies

Individuals and entities that conduct the provision of crypto-asset services, including crypto-asset intermediaries such as crypto-asset trading/lending platforms and wallet providers, among others.

Crypto-asset activities

Activities serviced by a crypto-asset issuer or crypto-asset service provider.

Crypto-asset trading platform:

Any platform where crypto-assets can be bought and sold, regardless of the platform's legal status.

Decentralised Finance (DeFi)

A set of alternative financial markets, products and systems that operate using crypto-assets and 'smart contracts' (software) built using distributed ledger or similar technology.

DeFi protocols

A specialized autonomous system of rules that creates a program designed to perform financial functions.

Digital asset

A digital representation of value or contractual rights which can be used for payment or investment purposes.

Fiat-referenced stablecoin

A stablecoin that purports to maintain a stable value with reference to one or several fiat currencies and has the potential to be used as a means of payment and/or store of value.

Global stablecoin (GSC)

A stablecoin with a potential reach and use across multiple jurisdictions and which could become systemically important in and across one or many jurisdictions, including as a means of making payments and/or store of value.

Multi-currency stablecoin

A stablecoin denominated in or pegged to a basket of fiat currencies.

Project developers

Individuals/entities that develop protocols or other essential building blocks of the technological infrastructure to issue a crypto-asset, launch a distributed ledger or distributed-ledger-based application, or function as a crypto-asset service provider.

Smart contract

Code deployed in a distributed ledger technology environment that is self-executing and can be used to automate the performance of agreement between entities. The execution of a smart contract is triggered when that smart contract is "called" by a transaction on the blockchain. If triggered, the smart contract will be executed through the blockchain's network of computers and will produce a change in the blockchain's "state" (for example, ownership of a crypto-asset will transfer between market participants).[26]

Stablecoin

A crypto-asset that aims to maintain a stable value relative to a specified asset, or a pool or basket of assets.

Stablecoin arrangement

An arrangement that combines a range of functions (and related activities) that aims to maintain a stable value relative to a specified asset, or a pool or basket of assets. When discussing a stablecoin arrangement, reference is made to:

- Activity

Typical activities in a stablecoin arrangement are: (i) establishing rules governing the stablecoin arrangement; (ii) issuing, creating and destroying stablecoins; (iii) managing reserve assets; (iv) providing custody/trust services for reserve assets; (v) operating the infrastructure; (vi) validating transactions; (vii) storing the private keys providing access to stablecoins (e.g. using a wallet); and (viii) exchanging, trading, reselling, and market making of stablecoins.

- Function

Functions in a stablecoin arrangement are: (i) governing the arrangement; (ii) issuance, redemption and stabilisation of the value of coins; (iii) transfer of coins; and (iv) interaction with users for storing and exchanging coins.

- Governance body

A body responsible for establishing and monitoring the rules governing the stablecoin arrangement which would cover, among other issues, the types of entities that could be involved in the arrangement, the protocol for validating transactions, and the manner in which the stablecoin is "stabilised".

- Provider of function/activity

An entity that provides a particular function or activity associated with that function in a stablecoin arrangement.

- User

[26] There are unresolved questions regarding the legal status and enforceability of smart contracts.

A person or entity that uses a stablecoin, e.g. for speculative trading, lending, borrowing, or as a means of payment or store of value.

- Validator node

An entity that participates in the consensus mechanism in a distributed ledger or similar network. In the context of distributed ledger technology, a validator node will commit transaction blocks to the ledger once they are validated.

Wallet

An application or device for storing the cryptographic keys providing access to crypto-assets. A hot wallet is connected to the internet and usually takes the form of software for the user, while a cold wallet is a hardware that is not connected to the internet and stores the cryptographic keys.

Custodial wallet

A crypto-asset service where a user's crypto-assets are kept under custody by a service provider on behalf of the user. The user interacts with the service provider, rather than the blockchain, to manage its crypto-assets. A custodial wallet is also known as a "hosted wallet".

Non-custodial wallet

Software or hardware that stores cryptographic keys for a user, making the user's crypto-assets accessible only to the user, and allowing the user to interact directly with the blockchain and the blockchain-based finance applications. A non-custodial wallet is also known as an "unhosted wallet".