FINANCIAL STABILITY BOARD

Crypto-assets

Work underway, regulatory approaches and potential gaps

31 May 2019

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Executive summary

This report is intended to update G20 Finance Ministers and Central Bank Governors, ahead of their June 2019 meeting, on global work underway on regulatory and supervisory approaches to crypto-assets and potential gaps.

Standard-setting bodies (SSBs) and other international organisations are working on a number of fronts, directly addressing issues arising from crypto-assets. They are mainly focused on investor protection, market integrity, anti-money laundering, bank exposures and financial stability monitoring.

Work underway at the Basel Committee on Banking Supervision (BCBS), Committee for Payments and Market Infrastructures (CPMI), International Organization of Securities Commissions (IOSCO), Financial Action Task Force (FATF), the Organisation for Economic Co-operation and Development (OECD) and the FSB covers important aspects of crypto-asset risks within their respective mandates.

At the national level, authorities have chosen different approaches and taken various types of actions to address relevant issues. In some cases, differences in regulation between jurisdictions reflect different national market developments and differences in underlying legal and regulatory frameworks for the respective financial systems.

Gaps may arise in cases where such assets are outside the perimeter of market regulators and payment system oversight. To some extent, this may reflect the nature of crypto-assets, which may have been designed to function outside established regulatory frameworks. Gaps may also arise from the absence of international standards or recommendations.

Assessing the significance of potential gaps is challenging, given the rapidly evolving nature of the crypto-asset ecosystem and related risks. A forward-looking approach in monitoring crypto-assets can help provide a basis for identifying potential gaps and areas that should be prioritised or focused on.[1]

[1] For instance, the FSB Standing Committee on Assessment of Vulnerabilities (SCAV) is monitoring market developments, including issues around stablecoins and other asset-backed tokens, building on its earlier work in this area.

1. Introduction

In July 2018, the FSB reported to the G20 its assessment of risks related to crypto-assets, and provided an update on work underway at international standard-setting bodies on crypto-assets.[2] Following up on this stocktake, and the proposal of the Japanese G20 Presidency, the FSB Plenary agreed in October 2018 to discuss regulatory and supervisory approaches towards crypto-assets, with a view to identifying potential gaps.

This note provides an overview of this discussion and the work that informed it. Section 2 provides an update of work related to crypto-assets underway at the international organisations. Section 3 summarises the main elements of the discussion of potential regulatory gaps at the FSB Plenary meeting held in New York on 26 April 2019.

2. Updates on the work of the international organisations[3]

2.1 BCBS

The BCBS is pursuing a number of policy and supervisory initiatives related to crypto-assets. The Committee's work is focused on aspects related to its mandate to strengthen the regulation, supervision and practices of banks worldwide, with the purpose of enhancing financial stability.

The BCBS's initiatives can be grouped into three broad categories: (i) developing high-level supervisory expectations for banks engaging in crypto-asset activities; (ii) monitoring developments related to crypto-assets, including by quantifying banks' direct and indirect exposures to such assets; and (iii) clarifying the prudential treatment of banks' exposures to crypto-assets.

2.1.1 High-level supervisory expectations on crypto-assets

As foreseen in the press statement summarising its 27-28 February meeting,[4] the BCBS published in March 2019 a statement setting out high-level supervisory expectations for banks that engage in crypto-asset activities (where jurisdictions permit banks to have such exposures).[5] The statement emphasises the high degree of risk of such exposures.

2.1.2 Monitoring crypto-asset developments and quantifying banks' crypto-asset exposures

One challenge encountered in the existing analyses related to crypto-assets is the scarcity of reliable data on banks' holdings of crypto-assets.[6] Accordingly, the BCBS is currently collecting data on banks' direct and indirect exposures to crypto-assets as part of its end-2018 Basel III monitoring exercise. The results of this data collection exercise will be discussed by

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2 See FSB (2018a), *Crypto-assets: Report to the G20 on work by the FSB and standard-setting bodies*, July.

3 This section updates the July 2018 report to the G20 on crypto-asset related work; see FSB (2018a).

4 Available at www.bis.org/press/p190228.htm.

5 BCBS (2019), *Statement on crypto-assets*, 13 March.

6 In 2018, the BCBS undertook a stocktaking exercise of bank exposures to crypto-assets. Preliminary results (reported publicly in October 2018) suggested that exposures remained limited. See FSB (2018b), *Crypto-asset markets: Potential channels for future financial stability implications*, October, footnote 32.

the BCBS at its meeting in October 2019 and will inform the FSB's monitoring work, described further in section 2.3 below.

2.1.3 Prudential treatment of crypto-assets

While the current Basel framework does not set out an explicit treatment of banks' exposures to crypto-assets, it does set out minimum requirements for the capital and liquidity treatment of "other assets". In the first instance, the BCBS conducted a stocktake of how its members currently treat such exposures as part of their domestic prudential rules. The Committee is now considering whether to formally clarify the prudential treatment of crypto-assets across the set of risk categories (credit risk, counterparty credit risk, market risk, liquidity risk, etc.).

2.2 CPMI

2.2.1 Work to date

The CPMI, in pursuit of its mandate, has paid particular attention to innovations in payments, clearing and settlement.[7] Over the past several years, the CPMI has been closely monitoring implications of digital innovations, including digital currencies, tokenisation and distributed ledgers. To that end, the CPMI has been developing analytical reports and frameworks to aid central banks in their assessments, frequently partnering with other SSBs and central bank committees. Published reports include *Digital currencies* (2015),[8] *Distributed ledger technology in payment clearing and settlement – An analytical framework* (2017)[9] and, together with the Bank for International Settlements (BIS) Markets Committee, *Central bank digital currencies* (2018),[10] together with a number of staff working papers on these topics.[11] The CPMI Secretariat also provides input into the FSB's crypto-asset monitoring work streams.

The CPMI chairs the Economic Consultative Committee (ECC) Ad Hoc Group on Digital Innovations. In this group the chairs of innovation working groups from the BCBS, Committee on the Global Financial System (CGFS), CPMI, FSB, International Association of Insurance Supervisors (IAIS) and IOSCO update one another on ongoing work to avoid overlaps. Additionally, through a joint working group with IOSCO, the CPMI monitors innovations in clearing and settlement and their impact on the current standards for financial market infrastructures (FMIs).

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7 The CPMI has a mandate to promote "the safety and efficiency of payment, clearing, settlement and related arrangements, thereby supporting financial stability and the wider economy."

8 CPMI (2015), *Digital currencies*, November.

9 CPMI (2015), *Distributed ledger technology in payment, clearing and settlement – an analytical framework*, February.

10 CPMI and Markets Committee (2017), *Central bank digital currencies*, March. Central bank digital currencies (CBDC) are not crypto-assets, which are a type of private digital tokens.

11 Supplementing the work of CPMI in this area, the CPMI Secretariat have also recently produced three analytical articles in the BIS Quarterly Reviews. See M Bech, Y Shimizu and P Wong (2017), "The quest for speed in payments," *BIS Quarterly Review*, March; M Bech and Garratt (2017), "Central bank cryptocurrencies," *BIS Quarterly Review*, September; M Bech, U Faruqui, F Ougaard and C Picillo (2018), "Payments are a-changin' but cash still rules," *BIS Quarterly Review*, March.

2.2.2 Present challenges

Some innovations may present challenges to current standards. The CPMI and IOSCO joint working group examined the *Principles for financial market infrastructures* in April 2018, with a particular focus on whether current initiatives using distributed ledger technology (DLT) in clearing and settlement pose challenges for application of the PFMI. At the time, the report did not identify critical issues or gaps for DLT-based FMIs, provided the technology is permissioned and relying on some form of centralised governance, but noted that continued monitoring of developments was warranted.

Consumers are demanding more efficient and cheaper ways to effect payments. The declining use of cash in certain jurisdictions constitutes a specific challenge.[12] However, 'first generation' digital tokens (which include so-called 'cryptocurrencies' and crypto-assets) that are decentralised, are not denominated in a sovereign currency and do not represent a claim on an issuer or underlying asset make for unsafe means of payment.[13]

Central banks are looking into ways to foster innovation in payments while not compromising safety. A recent CPMI study shows that while a majority of central banks globally are looking into the implementation of central bank digital currencies (CBDCs), the work is still primarily conceptual, and only a few intend to issue a CBDC in the short to medium term. It also notes that most central banks appear to have identified the challenges of launching a CBDC, but are not yet convinced that the benefits (mainly of enhanced payments safety and efficiency) will outweigh the costs.[14]

2.2.3 Future work

The CPMI's workplan is flexibly designed to accommodate significant issues as they arise and includes the following themes:

- Outreach: advising central banks to proceed with caution on CBDCs, including an outreach workshop to be organised for Q4 2019.
- Continued monitoring of CBDCs and private digital tokens used for payments, including the development of decentralised tokens with improved technology and/or underlying assets (so-called 'second generation cryptocurrencies').
- Information exchange and analysis, focussing on the safety and efficiency considerations for wholesale digital currencies (both public and privately issued variants). The CPMI is currently reviewing innovation in wholesale settlement and the new variants of money created by using digital tokens.
- Exploration of potential legal issues relating to digital currencies, including issues that may need to be clarified or resolved prior to the creation of a given digital currency or establishing an infrastructure that uses such a currency. A workshop on legal aspects

12 Bech et al. (2018).

13 CPMI (2018), *Central bank digital currencies*, March.

14 C Barontini and H Holden (2019), "Proceeding with caution – a survey on central bank digital currency," *BIS Papers*, No 101, January.

of digital currencies took place in April 2019 and the working group is currently considering follow-up work.

2.3 FSB

The FSB's work on crypto-assets has focused on two areas: monitoring of risks to financial stability; and preparing a directory of regulators on crypto-assets. More generally, the FSB is exploring the financial stability, regulatory and governance implications of decentralised financial technologies, such as DLT and peer-to-peer platforms, as described in a separate, upcoming report to the G20.[15]

2.3.1 Monitoring of risks to financial stability

In March 2018,[16] the FSB reported to the G20 its initial assessment that crypto-assets did not pose risks to global financial stability at that time. This assessment in part reflected the small size of crypto-asset markets relative to the broader financial system. The FSB also noted that this assessment could change if crypto-assets were to become significantly more widely used or interconnected with the core of the financial system. It called for ongoing monitoring, as the market continues to evolve rapidly.

In October 2018, the FSB published its monitoring framework for crypto-assets, setting out in detail the primary risks and transmission channels to financial stability that monitoring would focus on. The report also contained a glossary of terms (see **Annex 1**).[17] That framework has informed the monitoring reports that were submitted to the FSB Standing Committee on Assessment of Vulnerabilities (SCAV) for its meetings in September 2018 and February 2019.

To date, the FSB continues to assess that crypto-assets do not pose material risks to global financial stability at present, but that they do raise a number of further policy issues beyond financial stability. Moreover, the FSB assesses that vigilant monitoring remains warranted particularly as a variety of new products and services seem to be under development. A further monitoring note will be submitted to SCAV in September 2019, including developments in stablecoins and tokenisation.

2.3.2 Directory of regulators of crypto-assets

The FSB prepared a directory of regulators of crypto-assets and delivered it to G20 Finance Ministers and Central Bank Governors in April 2019.[18] The purpose of the directory is to provide information on the relevant regulators and other authorities in FSB jurisdictions and SSBs who are dealing with crypto-assets issues, and the aspects covered by them. Contact information has been shared among the authorities mentioned in the directory.

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15 FSB (2019a), Decentralised financial technologies: Report on financial stability, regulatory and governance implications, June.

16 FSB (2018c), *Chair's Letter to G20 Finance Ministers and Central Bank Governors,* 13 March.

17 FSB (2018b); FSB (2018a).

18 FSB (2019b), *Crypto-assets regulators directory*, April.

2.4 IOSCO

IOSCO members and others have raised concerns about crypto-assets in areas ranging from trading, custody, clearing and settlement, accounting, valuation and intermediation, to the exposure of investment funds to crypto-assets. To address these concerns IOSCO has undertaken or plans to undertake a number of projects.

2.4.1 Work to date

IOSCO issued a statement in November 2017 to its members on the risks of initial coin offerings (ICOs), including referencing various approaches to ICOs taken by members and other regulatory bodies. Thereafter, in January 2018, IOSCO issued a communication to the general public setting out its concerns in this area.[19]

IOSCO has also established an ICO Consultation Network through which members discuss their experiences and bring their concerns, including any cross-border issues, to the attention of fellow regulators.

IOSCO's policy committee addressing enforcement issues has also created a portal through which its members can access and share information on enforcement and other issues relevant to crypto-assets and other digital threats.

2.4.2 Ongoing work

In May 2018, IOSCO agreed to develop an ICO Support Framework as an educational resource for members to assist them in dealing with the regulatory risks arising from the offering of ICOs in their own jurisdictions and more generally in considering the domestic and cross-border issues relating to ICOs. The Support Framework will be kept up to date to ensure it remains current.

IOSCO has developed a Consultation Report looking at the issues and risks associated with the trading of crypto-assets on crypto-asset trading platforms. This report sets out a number of key considerations to assist regulatory authorities in evaluating crypto-asset trading platforms within the context of their regulatory frameworks. The main focus is on the implications for investor protection and market integrity. IOSCO has published this consultation report in May 2019 and aims to publish a Final Report by the end of 2019.[20]

IOSCO´s policy committee on accounting is engaging with the International Financial Reporting Interpretations Committee and International Accounting Standards Board and has encouraged the development of an appropriate accounting standard for crypto-assets.

2.4.3 Future work

In 2019, IOSCO will also study issues concerning investment funds with exposures to crypto-assets, and will consider ways to provide investor education and material for retail investors who may wish to invest in crypto-assets.

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[19] IOSCO (2018), *IOSCO Board communication on concerns related to initial coin offerings (ICOs)*, 18 January.

[20] IOSCO (2019), *Issues, Risks and Regulatory Considerations Relating to Crypto-Asset Trading Platforms*, 28 May.

2.5 FATF

In October 2018, the FATF adopted changes to its Recommendations and Glossary to explicitly clarify that the Recommendations apply in the case of financial activities involving virtual assets. The FATF uses the term "virtual assets" to refer to digital representations of value that can be digitally traded or transferred and can be used for payment or investment purposes, encompassing both convertible and non-convertible, and centralised and decentralised forms, as well as ICOs. These are not limited to only those assets that rely on cryptography. The amended Recommendation 15 requires that virtual asset service providers be regulated for anti-money laundering and combating the financing of terrorism (AML/CFT) purposes, licenced or registered, and subject to effective systems for monitoring or supervision.

A new Interpretative Note to Recommendation 15, setting out more detailed implementation requirements for effective regulation and supervision/monitoring of virtual asset services providers, will be formally adopted as part of the FATF Standards in June 2019, alongside a new Guidance on Virtual Currencies. Further information on both of these is set out in the FATF President's letter to the G20 Finance Ministers and Central Bank Governors, and the forthcoming FATF Report to the G20 Leaders' Summit.[21]

2.6 OECD

The OECD and its Committee on Financial Markets are undertaking work on crypto-assets and applications of DLT in the financial markets. As a first step, the Committee examined ICOs as one of the most prominent applications of blockchain for financing in October 2018. A report reflecting the Committee's analysis was published on January 2019,[22] looking at the potential benefits from the use of regulated ICOs for small business capital formation, issuing and trading of tokens, tokenomics, limitations in the structuring of ICOs, as well as risks to which investors subscribing to ICO offerings and small and medium-sized enterprises (SMEs) issuing tokens are exposed to. Analysis was also performed to understand the potential of ICOs as "mainstream" financing instruments for SMEs, irrespective of the type of project or business model employed by the firm. The report examined policy implications of such activity related to regulation and supervision of token issuances on a national and cross-border basis, financial consumer protection and financial education, and called for clarity and proportionality in the regulatory and supervisory framework applied to ICOs.

The Committee is also currently undertaking analytical work on tokenisation of assets and the impact a possible proliferation of such a mechanism would have on the financial markets, as well as around the benefits and risks of stablecoins.

The second annual OECD Blockchain Policy Forum will be held on 12-13 September 2019 and will include high-level discussion of these and other FinTech topics.

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21 Available (when published) at https://www.fatf-gafi.org/.

22 OECD (2019), *Initial Coin Offerings (ICOs) for SME Financing*, January.

3. Regulatory approaches and potential sources of gaps

As set out above, international organisations are actively working on a variety of issues relating to crypto-assets, with a particular focus on investor and consumer protection, market integrity, bank exposures, payment systems, financial stability monitoring and AML/CFT.

Regulatory approaches towards crypto-assets vary across jurisdictions. For example, the regulation of the ICO issuance process, trading platforms and secondary trading of tokens differs across jurisdictions.[23] Several authorities have made announcements concerning crypto-assets or taken specific policy actions, while others have banned crypto-assets outright.[24] These differences reflect a number of factors, including national market developments or underlying legal and regulatory frameworks for the respective financial systems. The lack of a uniform taxonomy across jurisdictions may also contribute to differences.

Bearing in mind these different approaches there may be instances where crypto-assets may not neatly fit into the regulatory perimeter. To some extent, this may reflect the nature of some crypto-assets, which may have been designed to function outside established regulatory frameworks. Certain crypto-assets may not perform the economic functions of traditional securities and may be used primarily as a means of payment or exchange. In some jurisdictions, these assets may not legally qualify as securities or derivatives or be covered by market regulation. Issues such as market transparency, client asset custody or segregation, and fundraising documents (among others) may therefore not always be subject to detailed regulation. The result may lead to asymmetries which could be significant across jurisdictions if national regulatory responses differ substantively and gaps, overlaps and conflicts occur. Ultimately, there could be policy inconsistencies if economically equivalent assets are treated differently for regulatory or supervisory purposes.

The rapid technological evolution of crypto-asset markets may also influence regulatory approaches and give rise to regulatory gaps or areas that require more regulatory focus. For example there may be issues around crypto-asset wallets as specific vehicles for storing crypto-assets. More generally, rapid change implies that the risks associated with crypto-asset markets and the level of significance of potential regulatory gaps will keep evolving and national authorities and SSBs may need to adjust the areas they focus on accordingly.

Against this backdrop, FSB members agreed on the need to be forward-looking in risk assessments in a rapidly evolving ecosystem. Such forward-looking assessments may include information – based on public sources to the extent possible – on crypto-asset exposures, including of both bank and non-bank financial institutions. More generally, forward-looking assessments require an ability to identify trends that may give rise to financial stability and other risks and assess their potential significance early on. The response by authorities will need to balance the case for multilateral action to facilitate a coherent response on the one hand, with an acknowledgement of differences among jurisdictions' legal frameworks and the fast-moving state of this technology on the other.

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[23] For example, Cambridge Centre for Alternative Finance (2019), *Global Cryptoasset Regulatory Landscape Study*, April.

[24] See R Auer and S Claessens (2018), "Regulating cryptocurrencies: assessing market reactions," *BIS Quarterly Review, September* for a survey of relevant regulatory actions and their impact.

As this report has described, international organisations are working to address emerging issues in this rapidly evolving area. Views differ among FSB members on whether an appropriate multilateral response requires more coordination among international organisations and, if so, the priority that should be given to it at the present time. On the one hand, some members note that the policy implications of crypto-assets do not always fit neatly into existing remits, which could result in significant regulatory asymmetries, potentially including with respect to investor and consumer protection issues. On the other, crypto-assets are at a nascent stage and the FSB's assessment is that they do not present material risks to global financial stability at present. Some members consider that the majority of issues can be addressed with existing policy tools. The FSB recommends that the G20 keep the topic of regulatory approaches and potential gaps, including the question of whether more coordination is needed, under review.

Annex 1: Glossary

This glossary sets out a (non-exhaustive) list of terms, which is intended to guide discussions in the context of this paper. It is based on usage in other FSB reports, as well as in the work of the CPMI, BIS Markets Committee, BCBS and IOSCO.

Asset-backed token: a digital representation of an actual asset or revenue stream.

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 type of private asset that depends primarily on cryptography and distributed ledger or similar technology as part of their perceived or inherent value.

Crypto-asset trading platform: any trading platform where crypto-assets can be bought and sold, regardless of legal status.

Cryptography: the conversion of data into private code using encryption algorithms, typically for transmission over a public network.

Digital token: any digital representation of an interest, which may be of value, a right to receive a benefit or perform specified functions or may not have a specified purpose or use.

Distributed ledger technology (DLT): a means of recording information through a distributed ledger. These technologies enable nodes in a network to propose, validate and record state changes (or updates) consistently across the network's nodes.

FinTech: technology-enabled innovation in financial services that could result in new business models, applications, processes or products with an associated material effect on the provision of financial services.

Initial coin offering (ICO): an operation through which companies, entrepreneurs, developers or other promoters raise capital for their projects in exchange for digital tokens (or ‘coins’), that they create.

Stablecoin: a crypto-asset designed to maintain a stable value relative to another asset (typically a unit of currency).

Tokenisation: the practice of issuing digital tokens.

Annex 2: Metrics to be initially monitored by the FSB[25]

Channel	Metric	Collection/Source
Primary risks/ basic market statistics	Market capitalisation (size and rate of growth), price levels and volatility of major crypto-assets Developments in non-FSB jurisdictions (qualitative)	Bank for International Settlements (BIS), based on public sources International Monetary Fund
Confidence effects	Qualitative market intelligence gathering	Periodically by the FSB, from members and through regular calls and meetings
Wealth effects/ market capitalisation	Market capitalisation metrics Size and rate of growth ICO issuance Inflows/outflows from fiat currencies	BIS, based on public sources
	Price metrics Price levels Price volatility Rate of growth	BIS, based on public sources
Institutional exposures	Derivatives metrics Trading volumes Price levels and open interest Number and type of clearing members Margining	FSB and member authorities, based on publicly available central counterparty (CCP) disclosures and/or publicly available market data
	Market capitalisation metrics	As above
	Banks' exposures to crypto-assets	BCBS, based on supervisory data-collection exercise
Payments and settlement	Wider use in payments and settlements	CPMI, based on member and collective intelligence gathering
Comparators	Comparisons of volatility and correlations between major crypto-currencies with other asset classes such as gold, currencies, equities	BIS, based on public sources

25 As technology evolves and market conditions develop, other metrics may be appropriate for monitoring if the FSB deems it necessary. Any analysis of the metrics, as well as the interpretation of the results, should appropriately take into account the information outlined in the disclaimer on data quality and reliability that is set out on p. 2 of FSB (2018b), p. 2.