Crypto-assets – the global regulatory perspective

Building a better working world

Executive summary

The use of crypto-assets in the financial services industry is increasing at a fast pace, with the COVID-19 pandemic also playing a part in its rise. To better serve their customers, a growing list of incumbents are building out custody solutions and trading capabilities for crypto-assets (we use the term crypto-assets in this paper to cover a wider range of assets, although the term digital assets is sometimes used in some markets). Some banks have been open about their ventures into the digital space, while others have publicly criticized the market and its rise. In addition, we are seeing cryptocurrency exchanges, and other digital firms moving into banking to leverage their user base and digital asset expertise to launch new products.

This paper highlights some of the key regulatory concerns about crypto-assets, the latest crypto-asset regulatory developments by jurisdiction, and specific use cases and their regulatory implications.

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Scope and definitions

This paper will focus on crypto-assets, such as cryptocurrencies, stablecoins, and to some extent central bank digital currencies (CBDCs). In general, existing lexicon tends to distinguish three main categories of crypto-assets:

1. Payment tokens
2. Utility tokens
3. Security tokens

Certain jurisdictions have added "hybrid tokens" as a further category. Our experience of working with crypto-assets has shown us it is key to use a consistent classification and terminology when describing the crypto-ecosystem. Similarly, the public perception of crypto-assets may vary from these definitions.

Definitions [1]

Cryptocurrencies, virtual currencies and payment tokens: These specifically mean crypto-assets as an alternative to a government-issued fiat currency, a general-purpose medium of exchange independent of central banks, and a store value.

Utility token: This type of token can be offered by a holder in exchange for some type of resource, similar to a cash transaction. Initial coin offerings (ICOs) are created with the funds raised; the company will carry out the project it undertook, prior to the ICO. Once the project is complete, investors can exchange the tokens for the resource. The value of the token, therefore, is derived from the use of the token within the miniature economy set up by the organization.

Security token: This type of token is akin to a digitized stock, bonds or money market funds, whereby the investor that purchases the token becomes a shareholder of the entity from which they purchased the token or an owner of the underlying financial instrument. The investor may be entitled to dividends based on the company's profit or have voting rights over the company's strategic direction in the case of equities. The token holder may be entitled to interest based on the events established in the contract. The token is a tradable asset, similar to any other type of security, its value being derived from the issuing company's worth or the value of the underlying financial instrument.

Hybrids: These are security tokens and utility tokens representing two ends of a continuum, rather than a binary choice. Ongoing innovation in the crypto-asset space continues to produce hybrid tokens that are part utility token and part security token. These characteristics may even evolve over time.

Asset-backed token: This is a distributed ledger that can be used as a platform for maintaining a distributed record of any kind of data. Physical or financial assets, such as gold or stocks, can be "tokenized," i.e., recorded as a token on a distributed ledger. The aim of this tokenization is to streamline trading through the immediate settlement of transactions and elimination of reconciliation processes.[2]

Stablecoin: This is a crypto-asset that aims to maintain a stable value relative to a specified asset, or a pool or basket of assets. A global stablecoin has the potential to reach adoption across multiple jurisdictions and achieve substantial transaction volume.[3]

In addition to the above, there are a number of other possible instruments, such as crypto derivatives or asset-mimicking tokens, that follow the behavior of asset-backed tokens without a claim on the underlying asset.

1 Definitions unless specified are from: "Life of a coin: Shaping the future of crypto-asset capital markets," EY website, see here, accessed 2019
2 Thomas Bull, Jiří (George) Daniel, Timothy Daniel, Tom Hill, Faisal Shariff, Angelique Wynants, "Life of a coin: Shaping the future of crypto-asset capital markets," EYGM Limited, 2019.
3 "Regulation, Supervision and Oversight of Global Stablecoin Arrangements," FSB website, see here, accessed October 2020.

What are the regulators' concerns about crypto-assets?

The crypto-asset market is still maturing and finding its place in the regulatory world. It remains challenging for regulators to stay abreast of market developments and effectively apply current regulatory frameworks to this area. This is exacerbated by the number and type of crypto-asset activities that currently fall outside of the scope of current securities frameworks, and the varying political approaches of governments and lawmakers around the world toward the crypto-assets market.

Over the past three years, crypto-assets have become more of a priority for policymakers, regulators and international standard setters. At the international level, discussions around crypto-asset and stablecoin approaches are taking place through the G20, G7, Financial Stability Board (FSB), International Organization of Securities Commissions (IOSCO), Basel Committee on Banking Supervision (BCBS), Financial Action Task Force (FATF) and others. To tackle the various identified issues and harmonize the market infrastructure, international initiatives have been launched to regulate the crypto-asset ecosystem.

Key drivers of the crypto-asset regulatory agenda are summarized below.

Financial crime

Of all the drivers, financial crime seems to have garnered the most attention. Several of the properties that have led to the meteoric rise in the adoption of crypto-assets have also given rise to increased money laundering and terrorist financing risks:

- **Anonymity:** Although public blockchains are transparent and allow customer identification, there is an ever-growing list of obfuscation mechanisms that seek to protect the anonymity of crypto-asset owners. Privacy coins and mixers are examples of such mechanisms that prevent institutions from tying wallet addresses to identifiable people.
- **Decentralization:** Where there is no centralized clearing hub or exchange, there is no institution responsible for collecting and verifying know your client (KYC) data on customers or monitoring transactions for suspicious activity. Although approximately 90% of cryptocurrency transactions take place through centralized exchanges,[4] the growth of decentralized finance (DeFi) poses an increased risk of money laundering.

In 2020-21, a host of financial crime regulations came into force across the globe aiming to close gaps in countries' supervisory and regulatory frameworks, and to counter the money laundering (ML) risks. A few of the notable recent regulatory milestones include:

- **The Fifth Anti-Money Laundering Directive (5AMLD):** On 10 January 2020, the EU's 5AMLD came into force, bringing fiat-to-crypto exchanges and custodian wallet providers within the scope of the Anti-Money Laundering regime for the first time. Some markets, such as the UK, have gone beyond the minimum requirements and brought additional firms into scope, for example, crypto-to-crypto exchanges. Over the past year, crypto-asset firms across the continent have been grappling with the new requirements whereby they now have KYC, transaction monitoring, reporting and record-keeping requirements. Some larger firms, often with a US nexus, report having already been compliant with regulation, whereas other firms have chosen to move locations to avoid or reduce the potential compliance costs.
- **FinCEN proposes measures to regulate unhosted wallets:** In December 2020, the U.S. Financial Crime Enforcement Network (FinCEN) proposed a landmark rule change whereby banks and money services businesses (MSBs) would be required to verify the identity of their customers and submit reports for crypto-asset transactions over US$10,000, and keep records of transactions greater than US$3,000 when a counterparty uses an unhosted or otherwise covered wallet. Although this is yet to come into force, this proposal would have significant impact on the viability of existing business models and compliance costs.
- **South Korea's ban on privacy coins:** Following the footsteps of the regulator in Japan, the South Korean regulator banned all "private-centric dark coins" from March 2021 onward, citing the popularity of dark coins, among cybercrime syndicates and money launderers as the reason for the ban.

4 "The 5 Key Types of Cryptocurrency Exchanges," Insights website, see here, accessed 16 March 2021.

- **The Monetary Authority of Singapore (MAS):** MAS published a paper on the strengthening of AML/CFT controls of token service providers.[5] The paper notes some token providers have not come forward for licensing and that MAS is aligned with FATF AML/CFT standards.
- **BCBS published a paper on supervising crypto-assets for AML in April 2021:** The paper highlighted that the supervision of crypto-asset service providers (CSPs) remains nascent and while anti-money laundering requirements and standards have been in place for some time, most jurisdictions have only just begun to implement and enforce them.[6]

Some countries have introduced AML regulation for the first time and others enacted more stringent controls to bring crypto-assets up to the same level of regulation as fiat currency. The increase in regulatory activity among countries also revealed their variation in risk appetite, thereby presenting bad actors with opportunities for regulatory arbitrage. This could mean that some will gravitate to less formal regimes to allow for greater agility and the ability to innovate at speed. Others may gravitate to stronger regimes to demonstrate safety and soundness and confidence.

Consumer protection

Consumer protection is a regulator focus for crypto-assets largely because of the lack of awareness, knowledge and understanding of the market. At the time of writing, crypto-assets themselves are currently not ordinarily regulated in most jurisdictions and so consumers are not afforded the same protections on crypto-assets as they would have in savings and current accounts with authorized banks, building societies and credit unions. Some crypto exchanges are regulated, although large volumes pass through unregulated venues. Currently as it stands, some markets in crypto-assets lack transparency and are not fully regulated. Disclosures are not mandated and there is a patchwork of varying disclosure standards globally. There is also a question of whether crypto-assets are suitable and appropriate for certain consumers; in the US, the Federal Government has been enacting legislations to protect consumers from Unfair or Deceptive Acts or Practices (UDAP). Consideration regarding how crypto-assets can promote financial inclusion in a fair and equitable way as well as how they can have relevant regulatory and industry safeguards still remains unresolved.

Consumer protection should be a broad value and institutional goal within the crypto-asset market, but currently this is not widely seen. Building better consumer awareness efforts and showing adherence to the applicable regulatory compliance requirements could be a start in improving this area. Legislators and regulators will be watching and are concerned about instances where consumers are defrauded or misled and suffer significant financial harm by using crypto-assets. We can expect that certain elements of suitability and appropriateness will become important. As there is no agreed upon taxonomy for classifying crypto-assets across the various regulatory regimes, it is difficult to offer sound consumer protection.

Investor protection

The issues associated with crypto-assets and investor protection are not necessarily unique, but they are exacerbated by price volatility in certain currencies. Regarding market manipulation and exchange risk management mechanisms, there is varying maturity in the market and additional risks posed via high leverage offered. Pricing variations for the same asset on global exchanges are primarily due to differences in liquidity, jurisdictional onboarding restrictions and bank limits of exchanges on wire transfers and capital controls, which tend to limit arbitrage opportunities to parties actively trading on multiple exchanges.[7]

Other issues raised here also include asset illiquidity and immaturity as a business. It is an area where scam projects are seen and garner media attention.

5 "Strengthening AML/CFT Controls of Digital Payment Token Service Providers," MAS website, see here, accessed March 2021.
6 "Supervising cryptoassets for anti-money laundering," BIS website, see here, accessed April 2021.
7 "ASIFMA Best Practices for Digital Asset Exchanges," ASIFMA website, see here, accessed June 2018.

The European Securities Market Authority (ESMA) raised concerns about the risks crypto-assets pose to investor protection and market integrity in 2019.[8] The liquidity for many crypto-assets is typically shallow and crypto investors may have limited possibilities to liquidate their holdings. There are concerns that some crypto-asset trading platforms may lack adequate rules, surveillance and enforcement mechanisms to deter potential market abuse.

A common theme is the education of investors in relation to crypto-assets. The International Organization of Securities Commissions (IOSCO) stated in 2019 that the immaturity of the ecosystem and the assets themselves may expose those using or investing in them to certain risks that can inhibit this sector from gaining the trust of investors and legitimacy.[9] This IOSCO report identifies measures regulators can use to provide educational material to retail investors on the risks of investing in crypto-assets and describes four areas of guidance on the following activities:

1. Developing educational content about crypto-assets
2. Informing the public about unlicensed or fraudulent firms
3. Using a variety of communication channels to inform investors
4. Forming partnerships to develop and disseminate materials

Although relatively unusual, there are also a number of cases of hacking of wallets and cyber attacks resulting in lost tokens.

Stability of the financial system, sovereignty and monetary policy

The financial system may be subject to risks from crypto-assets to the extent that both are interconnected; spill-over effects may also be transmitted to the real economy. Crypto-assets may have implications for financial stability, and interfere with the functioning of payments and market infrastructures as well as implications for monetary policy. The extent to which the financial system and the economy may be exposed to crypto-asset risks depends on their interconnectedness, in particular. Holdings of crypto-assets, investment vehicles and retail payments represent the main linkages between the crypto-asset market on the one hand and the financial systems and the broader economy on the other hand.

Types of crypto-assets, such as digital money, make it harder for central banks to manage their monetary policy and surveillance, which could have a direct impact on the macro economy and financial system as a whole. Currently, however, the threat to the financial system is not large enough to create any significant systemic risks.[10] It is certainly an area that will have focus as the market grows.

The concept of a global digital currency (or global stablecoin) can have both political and economic implications, as well as being a risk to national sovereignty. There are concerns about virtual dollarization of developing economies as well as the loss of monetary policy tools in developed nations if there was widespread adoption of digital assets as payment tokens. Other considerations include:

- National security, inflation, unemployment, recessions: With the rise of CDBCs, there are concerns that these will be promoted and used as a means of soft power and intelligence gathering.
- Efficiency: Both central banks and environmental groups are concerned about the inefficiency of crypto-assets both as resilient payment systems and in terms of energy use.
- CDBCs and the alteration of money supply: One of the big challenges to the rollout of national CDBCs is the degree to which this could disrupt the process of money creation by private commercial banks.

Taxation

Globally, the tax policy and tax evasion implications have been largely unexplored in relation to crypto-assets, although they form an important aspect of the overall regulatory framework. Jurisdictional differences create a tension where regulatory arbitrage may take place especially in locations without sufficient disclosure mechanisms in place. HMRC in the UK published a new crypto-assets tax manual in March 2021. Their position in broad summary is that crypto-assets are not money or currency, but instead should be treated for tax purposes in much the same way as other assets.[11] The Organisation for Economic Co-operation and Development (OECD) recently drafted a comprehensive report detailing the various tax policy issues raised by crypto-assets and covers over 50 jurisdictions. It highlights the need to develop tax guidance for all emerging technological developments.[12]

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8 "Advice: Initial Coin Offerings and Crypto-Assets," ESMA website, see here, accessed 2019.
9 "Investor Education of Crypto-Assets," IOSCO website, see here, accessed December 2020.
10 "Crypto-assets and Global stablecoins," FSB website, see here, accessed 17 March 2021.
11 "HMRC internal manual: Cryptoassets Manual," Government of UK website, see here, accessed 22 March 2021.
12 "Taxing Virtual Currencies: An Overview Of Tax Treatments And Emerging Tax Policy Issues," OECD Paris website, see here, accessed 2020.

Maps of key crypto-asset regulatory themes per geographic area

Global

- AML, terrorist financing and cyber risks
- Focus on cross-border transactions
- Exploring CBDCs
- Financial stability
- Global stablecoin implications

Americas

- Regulation of wider technological innovation
- Regulation of stablecoin
- Exploring CBDCs
- A focus on service providers

EMEA

- EU's MiCA
- Supervision and financial stability risks
- AML, terrorist financing and cyber risks
- Consumer protection
- Privacy
- Exploring CBDCs

Asia-Pacific

- AML, terrorist financing and cyber risks
- A focus on service providers
- Licensing
- Consumer protection
- CBDC experimentation

Latest regulatory landscape by area and jurisdiction

US

In the US, the regulation of crypto-asset is fragmented, as it occurs at both the federal and state levels. At the state regulatory level, there is an emerging split in the approach taken. Some states are passing favorable laws in order to attract investment, stimulate the economy or move with modern technology, whereas others are much less favorable. New York, for example, has a comprehensive regime that requires firms to obtain "BitLicenses" to operate virtual currency businesses and has published a "greenlist" of approved virtual currencies, although the state's Department of Finance has recently proposed a relaxed framework for obtaining BitLicenses. At the federal level, there is a growing amount of crypto-asset regulation from numerous bodies. US banking regulators have not issued any new rules but instead they are defaulting to existing guidance. The Office of the Controller of the Currency (OCC) recently issued three Interpretive Letters that confirm the permissibility of national banks, including national trust banks and federal savings associations, to conduct certain digital asset activities, including cryptocurrencies.[13] In May 2021, Gary Gensler (SEC Chair) stated that, in order to protect investors, there needs to be authority for a regulator to oversee crypto exchanges, similar to equity and futures markets.[14]

Europe and UK

In Europe, the EU has set out plans for a specific crypto-asset regulation known as Markets in Crypto-assets (MiCA). The proposed regulation is the EU's response to fill the scope gap for crypto-assets regulation and is intended to create an innovation-friendly framework that does not pose obstacles to the application of new technology, while ensuring a common approach across the Single Market. It will also increase the role of key financial supervisors at EU level (such as the European Securities and Markets Authority (ESMA) and European Banking Authority (EBA)), in terms of controls and coordination. This is because, since by design, crypto-assets tend to be cross-border solutions. UK has banned retail distribution of crypto derivatives and a number of other jurisdictions are following suit.

13 "Bitcoin Meets Banking As U.S. Bank Regulator Permits Cryptocurrency Custody," Forbes website, see here, accessed 29 March 2021.
14 "SEC Chairman Gary Gensler says more investor protections are needed for bitcoin and crypto markets," CNBC website, see here, 19 January 2021.

Asia-Pacific

The regulatory environment is maturing. Many jurisdictions, including Japan, Korea, Indonesia, Singapore, Thailand, Hong Kong and Malaysia, have all have issued guidance and imposed crypto currency license requirements, and each jurisdiction is at a different stage. Significantly, mainland China has banned the business activity around cryptocurrency and Hong Kong has recently proposed legislation to ban crypto-asset trading for retail investors. This has led to concerns that Hong Kong could concede its position as a regional fintech hub to its neighbors.[15] Many jurisdictions in APAC, such as Japan, Korea, Thailand, Hong Kong and Australia, are considering CBDCs for wholesale or retail purpose and they are all at different stages of development. Mainland China is at the forefront, having already done the pilots and implemented a CBDC, for an actual use case. HK SFC, MAS and JFSA have launched exchange licensing frameworks (supporting institutional clients) and developed regulatory sandboxes.

MiCA

- In September 2020, as part of the larger EU Digital Finance Package, the European Commission took a first step toward the creation of a unified framework for crypto-assets with its proposal for a regulation on MiCA.
- The proposal was driven by increased retail and institutional market adoption, concerns about consumer protection and financial stability, and market participants' demands for legal clarity.
- MiCA offers a legal framework for crypto-assets that did not exist at EU or global level to date. MiCA proposes to regulate the issuance and operation of crypto-assets for 3 distinct payment token categories: utility tokens, e-money tokens (EMT) and asset referenced tokens (ART).
- Where crypto-assets do not qualify as financial instruments, MiCA establishes a harmonized framework for issuers seeking to offer crypto-assets in the EU and for "crypto-asset service providers" wishing to apply for an authorization to provide related services.
- MiCA would replace applicable existing national frameworks for crypto-assets not already covered by existing EU financial services legislation.
- While MiCA represents an important but needed shift in the treatment of crypto-assets in the EU, market participants should realize that the proposal is only in its early stages and will likely have numerous revisions and interpretations as it advances through the legislative process. The current version of MiCA is likely to be amended.

15 "What do Hong Kong's crypto laws mean for exchanges and investors?" Forkast website, see here, accessed 25 March 2021.

Use cases and regulatory implications

In a world where financial services and products can be customized and finely targeted to fit the specific needs of customers, money too could be facing its unbundling moment with the emergence of crypto-assets, stablecoins and CBDCs. Money serves three key functions: as a medium of exchange (for example, a currency), a store of value in the form of a security or asset, and as a unit of account such as credits and debits. This is equivalent in the definitions section to payment tokens, security tokens and utility tokens respectively. Supporters of crypto-assets and stablecoins argue that they too can fulfill these functions in time, as they become more popular and are more widely used. But a number of economic, usage and regulatory challenges could stand in the way of crypto-assets becoming realistic alternatives or complements to fiat money.

Using the functions of money in turn as a framework, we can consider the ensuing regulatory implications when applied to the crypto-assets ecosystem.

1. **As a medium of exchange or payment token:**
   For crypto-assets or stablecoins to be considered as a viable currency and a method of payment to purchase goods and services, they need to be widely adopted and accepted by firms and retailers around the world. While adoption has been on the rise both from a consumer and a retailer perspective, with the likes of cryptoexchanges, such as Binance and Coinbase introducing retail payment solutions,[16] the number of transactions made with such assets in recent years remains very low in comparison with conventional payments. Furthermore, payment tokens, such as Litecoin, Dash or Bitcoin Cash, have considerably slower payment processing infrastructures when compared with embedded payments providers such as Visa, whose transactions speed is magnitudes greater. Other concerns voiced by many with regards to using crypto-assets, such as Bitcoin, as payment tokens are their volatility, limited supply and accessibility, current high transactions fees, and lack of regulation in most jurisdictions. Solutions to some of these problems have been found by businesses, such as PayPal, which now offer crypto-asset payments products to merchants and retail businesses.

Due to their yet unconfirmed convertibility guarantee and potential mass appeal to both retail and corporate users (because of their backers' large userbase), stablecoins could pose important financial stability risks if not brought into the traditional regulatory perimeter.[17] More importantly, for central banks and governments, these types of stablecoins could cause a loss of monetary sovereignty, should they be used as medium of exchange. Furthermore, these crypto-assets do not currently have to abide by prudential regulatory and deposit insurance requirements.[18]

This in turn leads to consumer protection concerns. Despite not being translated into applicable law in most jurisdictions, with regard to crypto-assets and stablecoins, major regulators favor a general approach in which entity-based regulation no longer relies on the type of entity, but rather on the type of risks that entity poses, essentially arguing that the same risks should come with the same regulation. This in turn would lead to the progressive inclusion of most crypto-assets and related service providers into a jurisdiction's existing regulatory perimeter and licensing regime. This is the case, for example, in the EU under the proposed MiCA;[19] in the US, according to the Office of the Comptroller of the Currency's interpretive letters number 1170 and 1172 on crypto-asset custody services and stablecoin reserves respectively; or even Singapore's guidance on Digital Token Offerings.[20] [21] [22]Some jurisdictions, such as China, have gone further, however, banning or partially restricting all crypto-assets-related activities.[23]

For traditional financial services firms, the emergence of crypto-assets and stablecoins as a medium of exchange could have important implications too. In attempts to evolve with market demand and at the risk of disintermediation, a number of large traditional banks and payment institutions have embraced this trend and sought to provide solutions to their customers by offering and launching products and

16 "Crypto Long & Short: Could Scalable Payments for Bitcoin Undermine Its Value?" Tezos website, see here, accessed 31 March 2021.
17 "Regulatory issues of stablecoins," FSB website, see here, accessed 18 October 2019.
18 "Opinion of the European Central Bank on a proposal for a regulation on Markets in Crypto-assets, and amending Directive (EU) 2019/1937," European Union Law Website, see here, accessed February 2021.
19 "Regulation of the European Parliament and of the Council on Markets in Crypto-assets, and amending Directive (EU) 2019/1937," European Union Law website, see here.
20 Jonathan V. Gould, "Interpretive Letter #1170 on the authority of a national bank to provide cryptocurrency custody services for customers," Office of the Comptroller of the Currency, July 2020.
21 Jonathan V. Gould, "Interpretive Letter #1172 on national banks and federal savings associations' authority to hold stablecoins as reserve," Office of the Comptroller of the Currency, September 2020.
22 "Guide to A Guide to Digital Token Offerings," MAS website, see here, accessed 10 February 2021.
23 "Regulation of Crypto-Assets, Fintech note 19/03," IMF website, see here, accessed 15 March 2021.

services such as their own crypto-assets, instant payments using crypto-assets, custody services and debit or credit card solutions to pay for goods and services using crypto balances.

Finally, central banks too have taken notice of the increased adoption of crypto-assets and stablecoins.[24] A number of central banks around the world have, in recent months and years, transitioned from researching to experimenting with "wholesale" CBDCs, whose target group is financial institutions and is more akin to central bank reserve accounts. Wholesale CBDCs have the advantage of leaving a considerable role for existing market participants, such as banks and payments providers, avoiding the risk of disintermediation, and they also alleviate central banks from operational tasks such as customer due diligence (CDD) procedures. While there are a number of reasons for central banks to issue CBDCs, current live experimentation or active research focuses predominantly on the medium of exchange function and the need to provide a complementary alternative to cash.[25] The motivations for this focus on payments revolve around tackling the declining use of cash, building a backup to cash payments for resilience purposes, tackling financial inclusion, facilitating potential fiscal transfers in periods of crisis such as the one caused by the COVID-19 pandemic, etc.

The effectiveness of CBDCs and their implied risks, however, will depend significantly on local jurisdictional needs and the design choices made.

CBDC experiments to highlight:[26]

People's Bank of China's (PBoC) Digital Currency Electronic Payment (DC EP): DC/EP is arguably the most advanced experimentation of a large-scale CBDC in the world. The DC/EP is a stablecoin-like design backed 1:1 with the renminbi. It uses private sector authorized intermediaries, such as banks, payments service providers and others, to onboard users and process payments. This design choice allows for the PBoC to provide users with an alternative to cash and mobile payments, such as Alipay, while not disintermediating the private sector and not rethinking the entire payments infrastructure. By association, the regulatory framework would remain relatively similar to the current one.

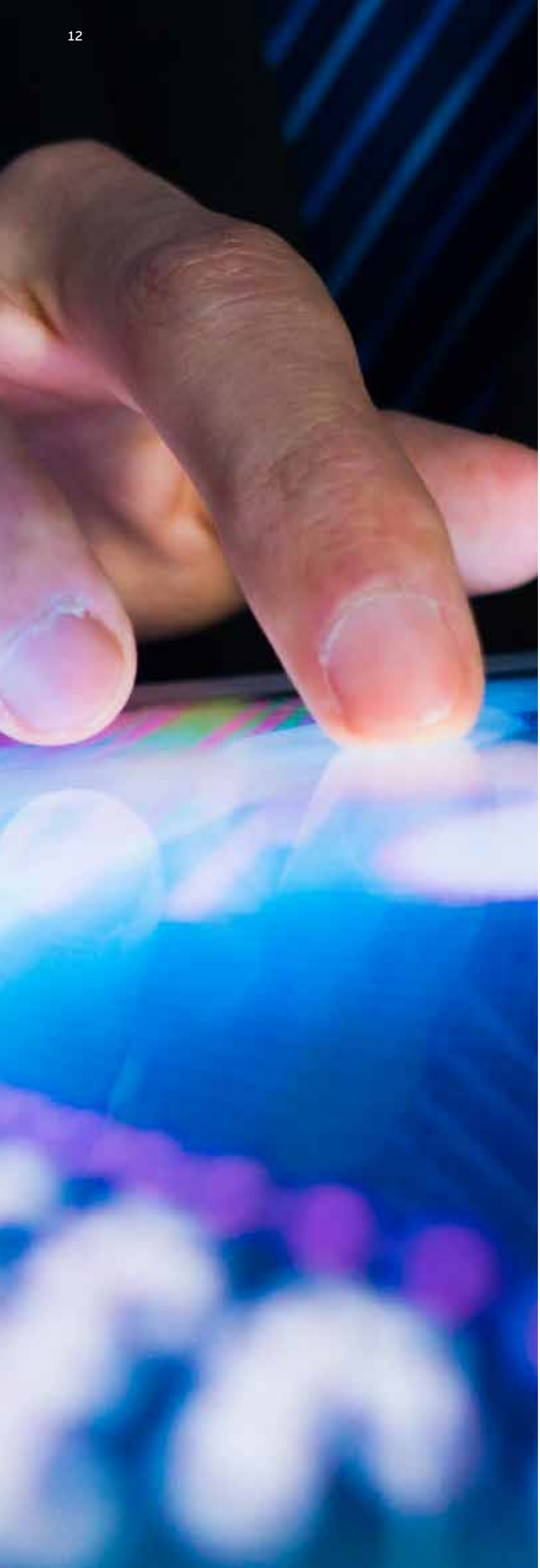
Bank of England and HM Treasury: The bank recently announced plans to create a UK CBDC. The decision whether to actually introduce an official CBDC in the UK has not yet been made by the Government. As part of this initiative, two forums for discussion on engagement and technology have been created.[27]

Sweden's Riksbank "e-krona": The e-krona project is another example of a hybrid CBDC in which intermediaries, such as private payment providers, would play an important servicing role, but the claims would remain with the Riksbank. Where this experiment differs slightly is in its focus on privacy.[28] While intermediaries would remain responsible for due diligence and KYC processes for CBDC users, the Riksbank would receive no information on CBDC account holders, and information only on the transactions and account balances.

Central Bank of Canada's CBDC: While this is not a pilot project or proof-of-concept, such as the DC/EP and e-krona projects, research by the Bank of Canada (BoC) is interesting because it is not certain. Contingency planning for scenarios where the use of cash disappears completely are being considered, along with different CBDC models that could lead the BoC to opt for a "Direct CBDC" model. This is where the BoC would provide the entire payment infrastructure, bypassing and leading to the potential disintermediation of private sector payment service providers.

Central Bank of the Bahamas "Sand Dollar": The Sand Dollar is an example of a CBDC that was introduced in late 2020 to facilitate financial inclusion. After a pilot project in 2019, the Sand Dollar was launched at the end of 2020 and made available to all Bahamas residents.[29] The Sand Dollar is essentially a digital fiat currency developed to allow the Government to increase the digitalization of an economy still very reliant on cash, enhance the efficiency of local payments and facilitate the distribution of aid when needed. Here too, the central bank relies on a network of commercial banks and payments systems to ensure the operability of the CBDC.[30]

24 "Ready, steady, go? — Results of the third BIS survey on central bank digital currency," BIS Papers website, see here.
25 "Central bank digital currencies: foundational principles and core features," BIS website, see here, accessed October 2020.
26 "Rise of the central bank digital currencies: drivers, approaches and technologies," BIS website, see here, accessed August 2020.
27 "Bank of England statement on Central Bank Digital Currency," Bank of England website, see here, accessed 19 March 2021.
28 "Report on a digital euro," European Central Bank website, see here, accessed October 2020.
29 "The Sand Dollar is on Schedule for Gradual National Release to The Bahamas in Mid-October 2020," Central Bank of The Bahamas website, see here, accessed 25 September 2020.
30 "Central Bank Announces Additional Sand Dollar Authorised Financial Institutions," Central Bank of The Bahamas website, see here, accessed 2 March 2021.



2. **As a unit of account or utility token:** The volatility of some of the most widely used crypto-assets, such as Ether, makes it difficult for them to be considered as units of account.[31] Furthermore, challenges, such as constantly changing the prices for goods and services and bearing a significant exchange rate risk, would make crypto-assets too impractical for retailers.

   CBDCs on the other hand could be considered a viable unit of account, considering the public's trust in central banks and their experience managing physical cash and digital central bank deposits. Stablecoins too could be considered as operable for this use case as their fiat backing provides price stability.

3. **As a store of value or security token:** Here too, short-term volatility would be problematic for crypto-assets to be considered as good stores of value. While volatility should always be an important concern, most market participants would agree volatility is more tolerable when prices are rising such as Bitcoin's recent surges and plunges. Stability of value remains, nevertheless, important over the long term. Not all crypto-assets are the same, however, and some, such as Bitcoin, have been adopted by the market in general as a good store of value over the last couple of years. Furthermore, just like in other assets or securities, volatility concerns could diminish over time and thereby make some crypto-assets or security tokens more suitable as stores of value. Other factors to consider include past security issues of cryptoexchanges such as the large-scale thefts of Japan-headquartered Mt Gox in 2014 or Hong Kong-headquartered Bitfinex in 2016. While security risk is inherent to digital assets, repeated large-scale breaches could further hurt the appeal of crypto-assets. These breaches will also lead supervisors and regulators to impose stricter security and customer protection requirements on cryptoexchanges and other service providers.

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31 "In search for stability in crypto-assets: are stablecoins the solution?" European Central Bank website, see here, accessed August 2019.

The implications for traditional and incumbent financial services firms

- As of now, crypto-assets have yet to fulfill the key functions of money. This is largely due to their volatility and still relatively low use. This does not mean they should be discarded outright. Their market relevance and associated risks remains topical.
- Regarding regulatory arbitrage and need for harmonization, the explosive nature of the crypto-assets market means that jurisdictions are moving fast to address the regulatory and supervisory concerns. This could result in regulatory arbitrage and could potentially cause implications for firms with a cross-border footprint. We expect most local regulators and supervisors to embrace a risk-based approach to continue to encourage innovation. This could mean requiring, in first instance, larger crypto-assets and stablecoins to enter the existing regulatory perimeter and assessing, later, the risks posed by smaller ones to decide whether they too need further supervision. International organizations, such as the BIS, FSB and IOSCO, could also issue guidance and standards to that effect. As cryptocurrencies will be used across local and national boundaries, it is important for policymakers to unite on a common set of standards.
- Some private crypto-assets and stablecoins could pose potential financial stability risks due to their inherent systemic nature. The same risks, rules and supervision should be the default approach until a change of course is necessary.
- Regarding CBDCs, approaches will be different from country to country; central banks will continue to be concerned about private sector stablecoin alternatives and their inherent risks; and finally more international cooperation should be incentivized to share knowledge, understanding, issues, lessons learned and best practices. Each feature or technological detail can come with implicit policy trade-offs. The debate as to whether certain crypto-assets classify as payment tokens or security tokens is unlikely to be settled soon. This ongoing debate remains critical both for firms' strategies as they plan crypto-assets-related go-to-market offerings and for regulators or supervisors as they attempt to adjust regulation in relation to the material characteristics of crypto-assets of various forms and uses. There's a big debate between whether crypto-assets are payment systems or securities and, therefore, what the appropriate regulatory protections are. There are big decisions for any firm considering taking an offering to market.
- Regarding clarity on custody, there are currently varying jurisdictional treatments from a custody perspective. The EU and UK do not include crypto-assets in their custody rules; MiCA proposes the same rules as MiFID II, which will support harmonization. In the absence of clear rules, we understand that some firms have created bare trusts or contractual firewalls to segregate firm assets from client assets. In the US, the OCC and a number of US State Regulators have stated that custody of a client's digital assets is permissible banking products.
- Regarding prudential regulatory treatment of crypto-assets, crypto-assets can have different functions, and this triggers different risk profiles. From a prudential supervisory perspective these should be evaluated and considered. For example, crypto-assets being deployed as technology creates operational risk. In cases where the crypto-asset has not got universal acceptance or intrinsic value, this could result in the asset being considered intangible from an accounting point of view and from a regulatory perspective therefore, represented as a deduction. The Basel Committee for Banking Supervision published a consultation in June 2021 on the prudential treatment of crypto-assets. The proposals split crypto-assets into two broad groups: those eligible for treatment under the existing Basel Framework with some modifications; and others, such as Bitcoin, are subject to a new conservative prudential treatment.[32]

32 "Basel Committee consults on prudential treatment of cryptoasset exposures," BIS website, see here, accessed 10 June 2021.

Conclusion

The rapid growth scale of potential benefits of crypto-assets has driven regulators to consider how best to mitigate the risks and enable meaningful innovation to thrive. Current regulatory frameworks are not equipped to harness the benefits of new technologies, while simultaneously supporting innovation and competition and mitigating risks to consumers, the financial system, and risks to banks from a safety and soundness perspective.

Regulators recognize that crypto-assets are here to stay and that they can support financial inclusion, provide secure payments and improve controls and efficiencies. As BCBS sets out in its recent paper, the need for adequate regulation, for authorities to have the tools, skills and technology to identify the evolution or creation of crypto-assets and to build appropriate regulatory and supervisory frameworks is key.[33]

33 "Stablecoins: risks, potential and regulation," BIS website, see here, accessed November 2020.

Glossary

Asset-backed coins
Asset-backed coins is a distributed ledger that can be used as a platform for maintaining a distributed record of any kind of data. Physical or financial assets, such as gold or stocks, can be "tokenized," i.e., recorded as a token on a distributed ledger. The aim of this tokenization is to streamline trading through immediate settlement of transactions and elimination of reconciliation processes.[34]

Blockchain
Blockchain is 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 computerized process by which transactions are validated.[35]

Central Bank Digital Currency
Central Bank Digital Currency (CBDC) is central bank-issued digital money denominated in the national unit of account, and it represents a liability of the central bank. If the CBDC is intended to be a digital equivalent of cash for use by end users, it is referred to as a "general purpose" or "retail" CBDC. As such, it offers a new option to the general public for holding money. In contrast to retail CBDC, "wholesale" CBDC is designed for restricted access by financial institutions. Accordingly, it is intended for the settlement of large interbank payments or to provide central bank money to settle transactions of digital tokenized financial assets in new infrastructures. [36]

Coin mixer
Coin mixers are software companies who receive cryptocurrencies from different sources and mix them. They then send smaller portions to the addresses each of the contributors provide after mixing. However, the balance anyone, who engages in coin mixing, receives is lesser than what they sent to the coin mixers.[37]

Crypto-asset
Crypto-assets are a type of private asset that depend primarily on cryptography and distributed ledger technology as part of their perceived or inherent value. [38]

Crypto-to-crypto exchanges
Crypto-to-crypto exchanges is a service where one crypto-asset can be exchanged for another type of crypto-asset. [39]

Cybercrime
Cybercrime consists of criminal acts committed online by using electronic communications networks and information systems.[40]

Decentralization
Decentralization of financial services refers to the elimination – or reduction in the role – of intermediaries or centralized processes. This may include the decentralization of risk-taking, decision-making and record-keeping away from traditional intermediaries.[41]

Decentralized finance (DeFi)
Decentralized finance (DeFi) refers to the decentralization in the provision of financial services through a combination of infrastructure, markets, technology, methods and applications.[42]

Digital asset
Digital asset is a digital representation of value that can be used for payment or investment purposes. This does not include digital representations of fiat currencies.[43]

Disintermediation
Disintermediation is the withdrawal of funds from intermediary financial institutions, such as banks and savings and loan associations, to invest them directly.[44]

Distributed ledger technology (DLT)
DLT is a means of saving information through a distributed ledger, i.e., a repeated digital copy of data available at multiple locations.[45]

Fiat currency
Fiat currency is a government-issued currency that is not backed by a physical commodity, such as gold or silver, but rather by the government that issued it.[46]

Immutability
Immutability is the ability for a blockchain ledger to remain a permanent, indelible and unalterable history of transactions.[47]

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34 "Life of a coin: Shaping the future of crypto-asset capital markets," EY website, see here, accessed January 2019.
35 "Crypto-asset markets: Potential channels for future financial stability implications," FSB website, see here, accessed 10 October 2018.
36 "Ready, Steady, Go? – Results of the Third BIS Survey on Central Bank Digital Currency," BIS website, see here, accessed January 2021.
37 "What is a coin mixer?" World Crypto Index website, see here, accessed 2 April 2021.
38 "Report with advice for the European Commission on crypto-assets," EBA website, see here, accessed January 2019.
39 "Report with advice for the European Commission on crypto-assets," EBA, January 2019, ©2019 European Banking Authority.
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41 "Stablecoins: risks, potential and regulation," BIS website, see here, accessed November 2020.
42 "Supervising Cryptoassets for Anti-Money Laundering," BIS website, see here, accessed April 2021.
43 "Regulation, Supervision and Oversight of Global Stablecoin Arrangements," FSB website, see here, accessed 13 October 2020.
44 "Disintermediation," Investopedia website, see here, accessed 18 March 2021.
45 "Crypto-asset markets: Potential channels for future financial stability implications," FSB website, see here, accessed 10 October 2018.
46 "Fiat Money," Investopedia website, see here, accessed 18 January 2021.
47 "Why Blockchain Immutability Matters," The Hacker Noon Newsletter website, see here, accessed 19 March 2021.

Know your client (KYC)
KYC is a standard in the investment industry that ensures investment advisors know detailed information about their clients' risk tolerance, investment knowledge and financial position. KYC protects both clients and investment advisors.[48]

Money services business
The term "money services business" includes any person doing business, whether or not on a regular basis or as an organized business concern, in one or more of the following capacities: currency dealer or exchanger, check casher, issuer of traveler's checks, money orders or stored value, seller or redeemer of traveler's checks, money orders or stored value, money transmitter or postal service.[49]

Phishing
Phishing is stealing sensitive data or installing malware with fraudulent emails that appear to be from a trustworthy source.[50]

Privacy coin
A privacy coin is a type of cryptocurrency that hides data about its users. Some of the information that privacy coins obscure includes user identities, location and wallet balances.[51]

Proof-of-concept
Proof-of-concept is a demonstration to verify that certain concepts or theories have the potential for real-world application. [52]

Proof-of-stake
The proof-of-stake (PoS) concept states that a person can mine or validate block transactions according to how many coins they hold.[53]

Proof-of-work
Proof-of-work (PoW) describes a system that requires a not insignificant but feasible amount of effort in order to deter frivolous or malicious uses of computing power, such as sending spam emails or launching denial of service attacks.[54]

Public blockchains
In a public blockchain, anyone is free to join and participate in the chain.

Unhosted wallet
Unhosted wallets are software hosted on a person's computer, phone or other device that allow the person to store and conduct transactions in cryptocurrency.

Wholesale CBDC
A "wholesale," "token-based" CBDC is a restricted-access digital token for wholesale settlements (e.g., interbank payments or securities settlement).[55]

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49 "Money Services Business Definition," Financial Crimes Enforcement Network US government website, see here, accessed 5 April 2021.
50 "Covid-19 and cyber risk in the financial sector," BIS website, see here, accessed 14 January 2021.
51 "Privacy Coin: Definition," CryptoDefinitions website, see here, accessed 15 April 2021.
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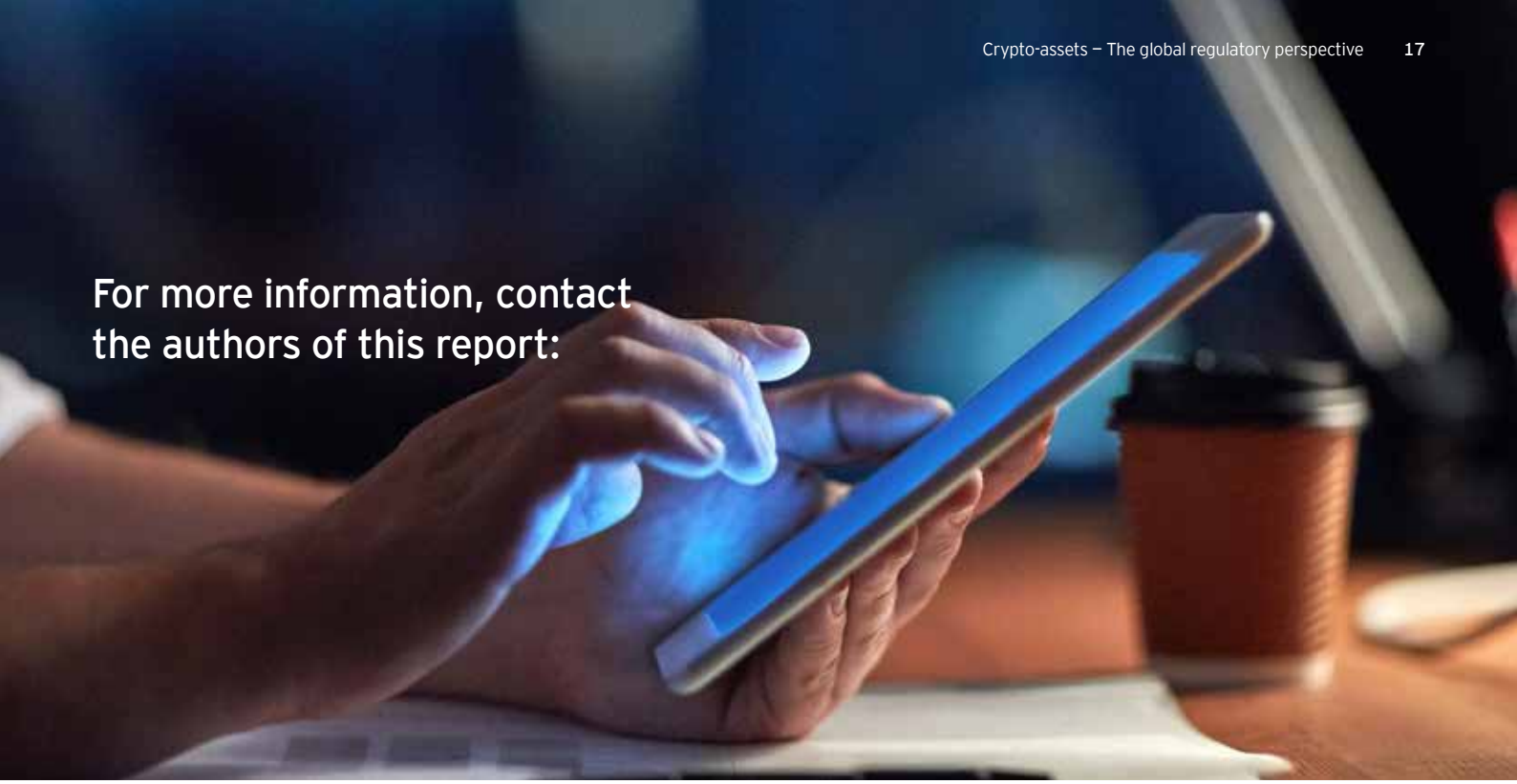

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She has over 35 years' experience in government of which the last 23 were in senior regulatory roles. She was the Executive Director of Enforcement and Anti Money Laundering Supervision at the Hong Kong Monetary Authority (HKMA). Prior to that she was the Executive Director for Banking Conduct and Chief Executive Officer of the Hong Kong Deposit Protection Board. She also served as Deputy General Counsel and before that Senior Counsel. Prior to the HKMA, she was a Senior Government Counsel with the Department of Justice of the Hong Kong Government.

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Alejandro (Alex) has over 20 years' experience at the Federal Reserve Bank of New York in monetary policy, capital markets and financial supervision and regulation. He was a senior supervisor involved in the oversight of large and systemically important FBOs in the US. Prior to his role as a senior supervisor, he was involved in many of the Federal Reserve's financial crisis management efforts.

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He has 20 years' experience in banking, capital markets, asset finance and prudential regulation in a variety of CFO, COO, strategy and planning, and regulatory roles. Following the financial crisis, Shane was Head of Banking Supervision at a Eurozone Central Bank for four years, during which he influenced significant restructuring, recapitalization and change in the banking sector and in credit institutions, and executed numerous stress tests and asset quality reviews.

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He was capital markets lead expert for large banks at the Office of the Comptroller of the Currency (OCC) and Examiner-in-Charge of the OCC's London Office. He coordinated the supervision of trading, treasury and capital markets activities including Dodd-Frank implementation and Basel Committee requirements.

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He has had a 25 year career in public service before joining EY. He joined the Financial Conduct Authority in 2013 and served as Executive Director of Strategy and Competition, a member of the FCA's Board and last as interim Chief Executive in 2020. He founded Project Innovate and the FCA regulatory sandbox.

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ED None

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