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### FinTech regulatory developments

#### ***IMF: quantum computing and the financial system: spooky action at a distance?***

On 21 March 2021, the IMF published a working paper on [Quantum Computing and the Financial System: Spooky Action at a Distance?](#) The era of quantum computing is about to begin, with profound implications for the global economy and the financial system. Rapid development of quantum computing brings both benefits and risks. Quantum computers can revolutionise industries and fields that require significant computing power (...). But they would also crack many of the current encryption algorithms and threaten financial stability by compromising the security of mobile banking, e-commerce, FinTech, digital currencies, and Internet information exchange. While the work on quantum-safe encryption is still in progress, financial institutions should take steps now to prepare for the cryptographic transition, by assessing future and retroactive risks from quantum computers, taking an inventory of their cryptographic algorithms (especially public keys), and building cryptographic agility to improve the overall cybersecurity resilience.

#### ***BIS: paper on multi-CBDC arrangements and the future of cross-border payments***

On 19 March 2021, the BIS Monetary and Economic Department published its paper on [Multi-CBDC Arrangements and the Future of Cross-Border Payments](#). Cross-border payments are inefficient, and technology could play a role in making them better. One means could be through interoperating central bank digital currencies (CBDCs), forming multi-CBDC (mCBDC) arrangements. This paper explores dimensions of payment system interoperability, how they could feature in mCBDC arrangements and where potential benefits lie. These benefits are especially relevant for emerging market economies poorly served by the existing correspondent banking arrangements. Yet competing priorities and history show that these benefits will be difficult to achieve unless central banks incorporate cross-border considerations in their CBDC development from the start and coordinate internationally to avoid the mistakes of the past.

#### ***European Parliament: draft reports on proposed legislation from digital finance package***

On 18 March 2021, the EU Parliament Economic and Monetary Affairs (ECON) Committee [published](#) its draft report on the EU Commission's proposed Directive on Digital Operational Resilience (DORA Directive). On 17 March 2021, the ECON Committee published its [draft report](#) on digital operational resilience for the financial sector and amending Regulations (EC) No 1060/2009, (EU) No 648/2012, (EU) No 600/2014 and (EU) No 909/2014. On 9 March 2021, the ECON

Committee published its [draft report](#) on the proposal for a regulation on a pilot regime for market infrastructures based on DLT. On 25 February 2021, the ECON Committee published its [draft report](#) on the proposal for a Regulation on Markets in Crypto-Assets and amending Directive (MICA).

#### ***BIS FSI: big techs in finance: regulatory approaches and policy options***

On 16 March 2021, the BIS Financial Stability Institute published its report on [Big Techs in Finance: Regulatory Approaches and Policy Options](#). At present, financial services represent a relatively small part of big techs' overall activities, though this can change rapidly due to the unique features of their business models and they could quickly become systemically important – or “too big to fail”. An effective oversight of big tech activities in finance calls for going beyond a piecemeal policy framework and considering recalibrating the mix of entity-based and activity-based rules, in favour of the former in certain policy areas. A step further would be to assess the possibility of introducing a bespoke approach for big techs encompassing a comprehensive public policy framework. In any case, there is a need for enhancing cross-sectoral and cross-border cooperative arrangements.

#### ***BIS: paper on big data and machine learning in central banking***

On 4 March 2021, the BIS published its working paper on [Big Data and Machine Learning in Central Banking](#). The survey contains responses from 52 central banks from all regions of the world and examines how they define and use big data, as well as which opportunities and challenges they see. The analysis highlights four main insights. First, central banks define big data in an encompassing way that includes unstructured non-traditional as well as structured data sets. Second, central banks' interest in big data and machine learning has markedly increased over recent years: around 80% of central banks discuss the topic of big data formally within their institution, up from 30% in 2015. Third, the vast majority of central banks are now conducting projects that involve big data. Institutions use big data and machine learning for economic research, in the areas of financial stability and monetary policy, as well as for supotech and regtech applications. And fourth, the advent of big data poses new challenges, among them data quality, legal aspects around privacy, algorithmic fairness and confidentiality, as well as budget constraints. See also: BIS Irving Fisher Committee report (February 2021) on [Use of Big Data Sources and Applications at Central Banks](#).

#### ***ESMA: response to the European Commission targeted consultation on the ESAP***

On 2 March 2021, ESMA submitted its [response](#) and an accompanying [letter](#) to the EC's targeted [consultation](#) on the establishment of a European single access point (ESAP) for financial and non-financial information publicly disclosed

by companies. ESMA recommends a phased approach, which should prioritise financial and non-financial information of public companies. ESMA also believes that full benefit of the ESAP can be reaped only if information included in the single database is comparable in terms of content and rendered in a structured, machine readable format. Therefore, ESMA supports an increased use of structured data formats whenever appropriate. However, in light of the complexity of the project, ESMA encourages the EC to carefully weight the scope of the ESAP versus feasibility and operability considerations. ESMA's position is aligned with the final recommendations of the High-Level Forum on the Capital Markets Union on the ESAP and by the European Parliament Resolution on the CMU.

### ***ECB: opinion on a proposal for a Regulation on Markets in Crypto-Assets, and amending Directive (EU) 2019/1937***

On 22 February 2021, the ECB [published](#) its opinion on the Commission's proposal for a Regulation on Markets in Crypto-assets, and amending Directive (EU) 2019/1937. The ECB welcomes the initiative of the European Commission to establish a harmonised framework at European Union level for crypto-assets and related activities and services, which forms part of the digital finance package adopted by the Commission on 24 September 2020. The ECB also welcomes the aim of the proposed regulation of addressing the different levels of risk posed by each type of crypto-asset, balanced with the need to support innovation. Furthermore, the ECB believes that a Union harmonised framework is critical to prevent fragmentation within the Single Market. Having said that, there are some aspects of the proposed regulation relating to the responsibilities of the ECB, the Eurosystem and the European System of Central Banks (ESCB) concerning the conduct of monetary policy, the smooth operation of payment systems, the prudential supervision of credit institutions and financial stability where further adjustments are warranted.

### ***BIS IFC: use of big data sources and applications at central banks***

On 18 February 2021, The BIS Irving Fisher Committee published its report on [Use of Big Data Sources and Applications at Central Banks](#). In 2020, the IFC organised a dedicated survey on central banks' use of and interest in big data, updating a previous one conducted five years earlier. The survey's main conclusions are the following: central banks have a comprehensive view of big data, which can comprise very different types of data sets. Central banks are increasingly using big data. The range of big data sources exploited by central banks is diverse. Big data is effectively used to support central bank policies. The survey also underscored the need for adequate IT infrastructure and human capital. Apart from IT aspects, there are many other challenges that central banks face. Moreover, a key issue is to ensure that predictions based on big data are not only accurate but also "interpretable" and representative.

### ***ESMA, ECB and EIOPA: joint response to proposed Digital Operational Resilience Act (DORA)***

On 9 February 2021, ESMA, ECB, and EIOPA [published](#) a joint response to the European Commission proposal on proposed Digital Operational Resilience Act (DORA). Since the publication of the proposal on 24 September 2020, which builds on the 2019 ESA Joint Advice, the staff of the ESAs have been working together to analyse the proposed provisions and to constructively assess their implementation and impact. The joint response states firm agreement with the main principles of DORA and fully support the aim of establishing a comprehensive framework on digital operational resilience for EU financial entities. The ESA's note potential challenges relating to governance and operation of oversight, a need for coherence between oversight recommendations and follow-up, a need for adequate resources, and need for a more proportionate DORA.

### ***BIS FSI: paper on FinTech regulation: how to achieve a level playing field***

On 2 February 2021, the BIS Financial Stability Institute published its paper on [FinTech Regulation: How to Achieve a Level Playing Field](#). How regulation should evolve to encourage fair competition between traditional banks and new FinTech and big tech players is now being debated. Some advocate moving from an entity-based to an activity-based regulatory approach under the principle "same activity, same regulation". However, there is only limited scope for further harmonising the requirements for different players in specific market segments without jeopardising higher-priority policy goals. In fact, there seems to be a strong case for relying more, and not less, on entity-based rules. The regulatory framework should incorporate entity-based requirements for big techs in areas such as competition and operational resilience that would address the risks stemming from the different activities they perform. This strategy would not only help regulation to achieve its primary objectives but would also serve to mitigate competitive distortions.

### ***BIS: results of third survey on central bank digital currency***

On 27 January 2021, the BIS [published](#) the results of its third survey on central bank digital currency. Most central banks are exploring central bank digital currencies (CBDCs), and their work continues apace amid the COVID-19 pandemic. As a whole, central banks are moving into more advanced stages of CBDC engagement, progressing from conceptual research to practical experimentation. Around the globe, interest in CBDCs continues to be shaped by local circumstances. In emerging market and developing economies, where central banks report relatively stronger motivations, financial inclusion and payments efficiency objectives drive general purpose CBDC work. A testament to these motives is the launch of a first

“live” CBDC in the Bahamas. This front-runner is likely to be joined by others: central banks collectively representing a fifth of the world’s population are likely to issue a general purpose CBDC in the next three years. However, the majority of central banks remains unlikely to issue CBDC in the foreseeable future.

### ***BIS: working paper on permissioned distributed ledgers and the governance of money***

On 27 January 2021, the BIS published its working paper on [Permissioned Distributed Ledgers and the Governance of Money](#). The paper examines the economic opportunities and challenges of DLT, focusing on the strategic elements underlying its optimal design and its efficiency compared with a centrally managed payment system. The paper finds that under specific circumstances, DLT may have economic potential in financial markets and payments due to enhanced robustness and the potentially lower cost of achieving good governance in a decentralised network of validators compared with a central intermediary. However, such improvements do not come for free; ie market design and ensuring incentives of the validators matter. In particular, maintaining a robust monetary equilibrium requires overcoming the possibility that validators exploit their powerful positions, which requires high rents and the absence of unanimity. The paper theoretically examines these forces and derive the optimal number of validators, their compensation and the optimal voting rule. The results suggest that a centralised ledger is likely to be superior, unless weaknesses in the rule of law and contract enforcement necessitate a decentralised ledger.

### ***OECD: report on regulatory approaches to the tokenisation of assets***

On 26 January 2021, the OECD published its report on [Regulatory Approaches to the Tokenisation of Assets](#). Blockchain and other DLTs are set to become a fixture in financial markets in the years ahead, and may eventually lead to structural changes to market processes or even the market itself. The report is the OECD’s latest contribution to help market participants and regulators understand how these technologies are used in financial markets; it aids in the assessment of implications and issues these emerging technologies present; and it puts forward a policy toolkit for asset tokenisation to inform regulatory responses. This is part of the OECD’s ongoing commitment to promote international cooperation and collaboration, ensuring this technology develops in a way that supports fair and efficient financial markets and, by extension, better lives.

### ***European Commission and ECB: joint statement on cooperation on a digital euro***

On 19 January 2021, the European Commission and ECB [released](#) their joint statement on their cooperation on a digital euro. Following the conclusion of the public consultation on 12 January 2021 and a period of preparatory work, the ECB will consider whether to start a digital euro project towards mid-2021. Such a project would answer key design and technical questions and provide the ECB with the necessary tools to stand ready to issue a digital euro if such a decision is taken. The ECB and the European Commission services are jointly reviewing at technical level a broad range of policy, legal and technical questions emerging from a possible introduction of a digital euro, taking into account their respective mandates and independence provided for in the Treaties.

### ***ECB: conclusion of consultation on a digital euro***

On 13 January 2021, the ECB [concluded](#) its consultation on a digital euro, with record level of public feedback. The public consultation was launched on 12 October 2020, following the publication of the Eurosystem report on a digital euro. The ECB will publish a comprehensive analysis of the public consultation in the spring, which will serve as an important input for the ECB’s Governing Council when deciding whether to launch a digital euro project. An initial analysis of raw data shows that privacy of payments ranked highest among the requested features of a potential digital euro (41% of replies), followed by security (17%) and pan-European reach (10%). A digital euro would be an electronic form of central bank money accessible to all citizens and firms – like banknotes, but in a digital form – to make their daily payments in a fast, easy and secure way.

### ***BIS: working paper on firm-level R&D after periods of intense technological innovation***

On 8 January 2021, the BIS published its working paper on [Firm-Level R&D After Periods of Intense Technological Innovation: The Role of Investor Sentiment](#). The paper studies whether investor sentiment, often defined as the propensity to speculate in financial markets, can lead firms to increase R&D after a new technology becomes available. In particular, the paper is interested in whether the effect of investor sentiment is stronger for companies that are more likely to face constraints that reduce investment in test projects. The study finds that investor sentiment reinforces the effect of lagged technological innovation on company R&D. Overall, investor sentiment appears to offset, at least in part, constraints that can diminish a company’s incentives to learn about a new technology.



**Contact: Rowan Varrall**  
[rowan.varrall@icmagroup.org](mailto:rowan.varrall@icmagroup.org)

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