



FINANCE NEWSLETTER

A Testing Ground for Blockchain-Based Equities and Bonds in the European Union

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On 24 September 2020, the European Commission proposed the creation of a regulatory sandbox that would allow certain institutions to trade and settle securities using distributed ledger technology [1]. On 24 March 2022, Members of the European Parliament voted in favor of the proposed pilot regime [2] indicating that tokenized equities, bonds and units of collective investment undertakings will soon become a reality throughout the European Union.

This article forms the first part of a newsletter series that will discuss the legislation proposed by the European Union's Digital Finance Package. Specifically, the series will focus on the proposal to regulate crypto-assets and crypto service providers (known as the "Regulation on Markets in Crypto-Assets" or "MiCA"), as well as the proposal to test traditional financial markets on blockchain (known as the "Pilot Regime for Market Infrastructures based on Distributed Ledger Technology" or the "Pilot Regime"). Part I of the series is a primer on blockchain and distributed ledger technology, as well as an analysis of the Pilot Regime and its implications for market participants in the European Union.

Tech-Driven Disruption in Financial Markets

Technology has historically had a profound effect on the evolution of financial markets. In the late 19th century, the introduction of the telephone enabled investors to remotely issue buy and sell orders for the first time. Later, in the 1980s, the adoption of computer-based quotation systems revolutionized access to real-time market prices. More recently, the internet and web-based investment platforms lowered the barriers to entry for retail investors, allowing them to directly participate in the market rather than rely on third-party brokers.

Global financial markets now sit at the precipice of the next paradigm shift in how we exchange value with the advent of blockchain technology. Blockchain's potential improvements to current market infrastructure include better security and privacy, reduced transaction costs, enhanced trust and visibility between participants and vastly quicker speeds. Therefore, if history is any indication of tech-driven disruption in financial markets, wide-spread use of blockchain and a distributed ledger to record and settle transactions is due to occur in the not-too-distant future.

Still, the question remains, how will policymakers regulate this potentially ground-breaking technology? In this article, we discuss the key features of the European Commission's proposed pilot regime for market infrastructures based on distributed ledger technology ("DLT"), including recent developments since its original proposal in September 2020. We also explore whether the proposal will likely enhance or hinder the use of blockchain technology in European financial markets.

Paradigm Shift: Tokenized Securities and DLT

Blockchain technology was first conceptualized in 1991 by Stuart Haber and W. Scott Stornetta,^[3] but it later became popularized in a 2008 whitepaper published by Satoshi Nakamoto, the pseudonymous creator of Bitcoin. Nakamoto envisioned “a purely peer-to-peer version of electronic cash [that] would allow online payments to be sent directly from one party to another, without going through a financial institution.”^[4]

To achieve this, the relevant data for a given transaction (e.g., the sender, the receiver and the amount) is stored in a record called a “**block**”. Each block has a unique fingerprint called a “**hash**” which cryptographically affirms the contents of the block and links it to the next block in the chain. The blocks are recorded on a distributed digital ledger which is validated by a number of unaffiliated parties to create consensus about its accuracy. The result is that data and value can be exchanged in a quick, trustless and transparent way, without having to rely on a centralized third-party.

Due to its numerous benefits, the blockchain technology first popularized by Bitcoin has now been adapted for purposes other than an alternative form of currency. Ethereum, for instance, has expanded the application of blockchain such that any tangible or intangible asset can be represented by a unique ownership right on a distributed ledger – a process known as “**tokenization**”. Many financial institutions have already taken advantage of this recent development by experimenting with the tokenization of stocks and bonds. For example, In April of last year, the European Investment Bank sold USD 121 million in two-year notes that were tokenized on the Ethereum blockchain^[5], and in October of last year, Alaïa SA, a Swiss adventure sports company, successfully tokenized and deposited its shares with Credit Suisse for a public listing on the Taurus Digital Exchange.^[6]

As additional use cases for blockchain and DLT arise within the context of traditional finance, however, governments around the world are faced with the challenge of creating a legal framework that can regulate the application of blockchain in an effective manner.

Europe’s Answer: The Digital Finance Package

Based on broad consultation with Member States, the European Central Bank and the financial industry, the European Commission adopted a series of legislative proposals and strategies known as the “**Digital Finance Package**” on 24 September 2020.^[7] The EU’s stated goal with the Digital Finance Package is to “embrace the digital transition” and “help modernize the European economy across sectors.” However, it appears from the text of the proposals that the EU is attempting to create the first comprehensive regulatory framework for blockchain technology and crypto-assets.

In addition to proposed regulation of markets in crypto-assets (to be discussed in a forthcoming article), the Digital Finance Package includes a proposal for a pilot regime for market infrastructure based on DLT (the “**Pilot Regime**”).^[8] The Pilot Regime essentially creates a temporary environment for certain eligible institutions to implement DLT under the scrutiny of EU regulators, with carve-outs from existing financial laws such as the Markets in Financial Instruments Directive^[9] (“**MiFID II**”). In

the full-text publication of the Pilot Regime, the European Commission outlines four general objectives of the proposal: (1) create legal certainty around new financial instruments based on DLT that do not fit under existing legislation; (2) support innovation of DLT in the financial sector in a responsible manner; (3) instill investor protection and market integrity within DLT-based market infrastructure; and (4) ensure financial stability.

Below, we discuss the key features of the Pilot Regime as it was originally proposed by the European Commission, recent developments and amendments to the text made by the European Parliament, as well as its current status.

Terms of the Pilot Regime

DLT Multilateral Trading Facilities and DLT Settlement Systems

The Pilot Regime is conceptualized as a testing ground for eligible institutions to operate existing market infrastructures on a distributed ledger. Namely, DLT-based multilateral trading facilities (“**DLT MTF**”) and DLT-based settlement systems (“**DLT SS**”). A DLT MTF is a multilateral trading facility, as defined under MiFID II, that only admits specific types of securities known as “**DLT Financial Instruments**”. A DLT SS is a settlement system that settles transactions in DLT Financial Instruments, against payment or against delivery, and allows at least the initial recording of DLT Financial Instruments or the provision of safekeeping services in relation to DLT Financial Instruments.^[10] In the initial draft of the Pilot Regime, only market operators authorized under MiFID II, and central securities depositories (“**CSD**”) authorized under the Central Securities Depository Regulation^[11] (“**CSDR**”), were eligible to operate a DLT MTF or DLT SS, respectively.

Following the European Parliament’s first reading of the Pilot Regime in August 2021 and the publication of the revised version in December 2021, the proposed text was amended to include a definition for DLT trading *and* settlement systems (“**DLT TSS**”).^[12] A DLT TSS means DLT market infrastructure that receives specific permission under the Pilot Regime to combine the services performed by both a DLT MTF and a DLT SS. Due to the technological advantages of DLT that allow for near-instant settlement times, the European Parliament has accounted for a blurring of the distinction between multilateral trading facilities and securities settlement systems. Our expectation is that as financial markets continue to integrate DLT capabilities, the separation between exchange and settlement infrastructure will fade.

DLT Financial Instruments

DLT Financial Instruments are the tokenized version of traditional securities that trade and settle on DLT market infrastructure. The Pilot Regime defines them as financial instruments within the meaning of Article 4(1)(15) of MiFID II that are issued, recorded, transferred and stored using DLT.^[13] For example, if a publicly traded company were to issue equity in an offering, the shares of the company would qualify as a financial instrument under MiFID II. If that same company were to issue its equity in tokenized form on a DLT MTF (e.g., each share is represented by one ERC-20^[14] token on the Ethereum blockchain), the shares of the company would qualify as a DLT Financial Instrument under the Pilot Regime.

However, not all financial instruments are eligible for trading on DLT market infrastructure under the Pilot Regime. In the initial version of the Pilot Regime, DLT Financial Instruments were limited to: (1) shares of an issuer with a market capitalization or tentative market capitalization of less than EUR 200 million; and (2) convertible bonds, covered bonds, corporate bonds and other bonds with an issuance size of less than EUR 500 million.^[15]

Following the publication of the revised version of the Pilot Regime in December 2021, the definition of DLT Financial Instruments was expanded as follows: (1) shares of an issuer with a market capitalization or tentative market capitalization of less than EUR 500 million; (2) bonds, other forms of securitized debt, including depositary receipt in respect of such securities, and money market instruments with an issuance size of less than EUR 1 billion (excluding those that embed a derivative or incorporate a structure which makes it difficult for the client to understand the risk involved); and (3) units of collective investment undertakings (“UCITS”) which are covered by Article 25(4)(a) of Directive 2014/65/EU and with a market value of assets under management of less than EUR 500 million.^[16] In addition, the amended version of the Pilot Regime clarified that corporate bonds sold by issuers whose market capitalization does not exceed EUR 200 million at the time of their issuance shall be excluded from the threshold in (2) above.^[17] It is unclear from the text of the Pilot Regime and the adjoining publications whether this means that such issuers may offer bonds as DLT Financial Instruments with an uncapped issuance size, however the European Parliament should clarify this point prior to the Pilot Regime’s entry into force.

Maximum Total Market Value of DLT Financial Instruments and Transition Strategy

The Pilot Regime is a temporary regulation that envisages limited testing of DLT market infrastructure rather than full adoption of blockchain-based trading and settlement of securities. As a result, it places a cap on the total market value of DLT Financial Instruments traded and recorded in a DLT market infrastructure. In the original draft of the Pilot Regime, operators of a DLT market infrastructure were limited to admitting new financial instruments until the total market value of DLT Financial Instruments traded or recorded in such DLT market infrastructure had reached EUR 2.5 billion.^[18] Following the publication of the revised version of the Pilot Regime in December 2021, the cap for admitting new DLT Financial Instruments was raised to EUR 6 billion.^[19] In addition, the revised version of the Pilot Regime clarified that once the total market value of the DLT Financial Instruments already recorded or traded in a DLT market infrastructure reaches EUR 9 billion, such DLT market infrastructure must activate its pre-determined transition strategy.^[20] The transition strategy involves the DLT market infrastructure moving its DLT operations to traditional market infrastructures, such as an MTF authorized under MiFID II or a CSD authorized under CSDR, in order to “ensure business continuity in the best interests of members, participants, issuers and clients.”^[21]

Whereas it is understandable that limitations are placed on the growth of DLT market infrastructure tested under the Pilot Regime, the requirement that well-functioning DLT-based trading and settlement systems must be transferred to their traditional counterparts makes little sense. The transaction costs associated with having to re-record DLT Financial Instruments in a CSDR-regulated CSD could be burdensome for issuers and might deter them from testing DLT infrastructure. Furthermore, investors in DLT Financial Instruments attracted to the prospect of testing DLT infrastructure may

decide to liquidate their holdings upon the activation of a transition strategy. Instead, the text of the Pilot Regime should in our opinion be amended to allow for the transition of DLT Financial Instruments to another DLT market infrastructure with sufficient room for additional market capitalization. Only in a circumstance where it would not be possible to do so (i.e., there exists no other DLT market infrastructure with sufficient room for additional market capitalization at the time of transition) should a capped DLT market infrastructure transition its operations to traditional market infrastructure. Doing so would ensure business continuity for the financial instrument in question and would provide EU policymakers with better historical data for testing DLT Financial Instruments.

Exemptions From Existing EU Regulations

In order for the Pilot Regime to function effectively alongside existing legislation, such as MiFID II and CSDR, the proposed text includes a number of exemptions for DLT MTF and DLT SS.

As noted above, a DLT MTF may request permission to record and settle DLT Financial Instruments on a distributed ledger, rather than rely on a traditional CSD or a DLT SS. In addition, a DLT SS may request permission to offer trading in DLT Financial Instruments, rather than rely on a traditional MTF or a DLT MTF. However, in the case of a DLT MTF (referred to as a DLT TSS once granted permission), it shall be subject to all of the requirements applicable to an MTF under MiFID II and the Markets in Financial Instruments Regulation (“**MiFIR**”), as well as to all of the requirements applicable to a CSD under CSDR with the exception of Articles 9, 16-18, 20, 26-28, 31, 42-44, 46 and 47 (subject to certain additional exceptions).[22] Further, in the case of a DLT SS (referred to as a DLT TSS once granted permission), it shall be subject all of the requirements applicable to a CSD under CSDR, as well as to all of the requirements applicable to an MTF under MiFIR and MiFID II with the exception of Articles 5 to 13 (subject to certain additional exceptions).[23]

Both DLT MTF and DLT SS are respectively exempted from the intermediation requirements for retail investors under MiFID II and CSDR (i.e., a trading venue or a central securities depository must rely on a financial intermediary to give access to retail investors), provided that adequate safeguards in terms of investor protection are in place and that such retail investors satisfy certain conditions.[24] The European Commission and Parliament recognize that cryptocurrency exchanges normally give issuers and market-makers direct access to retail investors, so they have agreed that the intermediation requirements under MiFID II and CSDR would inhibit the function of DLT infrastructure under the Pilot Regime. Despite their understanding that the intermediation rule could pose a regulatory hurdle to the development of DLT market infrastructure, this exemption represents a surprising acceptance by EU policymakers of DLT’s tenant of disintermediation. After all, the main intermediary that Bitcoin proposed removing through the use of DLT was that of centralized government in their capacity as both currency issuer and manager of monetary policy.

Finally, DLT SS are exempted from a number of CSDR rules normally applicable to CSDs, including the application of Article 2(4) on dematerialized form, Article 2(9) on transfer orders, Article 2(28) on securities accounts, Article 3 on the recording of securities, Article 37 on the integrity of issue, and Article 38 on segregation of assets.[25] Most notably, DLT SS are exempted from Article 40 of CSDR, which

requires a CSD to settle securities in cash with the central bank of issue.[26] What is interesting about this exemption is that the text accounts for settlement through central bank or commercial bank money “including in tokenized form” or through “e-money[27] tokens,” which indicates that EU policymakers are conceptually tolerant of competition from private stable coins.[28] Normally, we would expect EU policymakers to limit token-based settlement to central bank money only (i.e., central bank digital currencies), but it is possible that they recognize government-issued e-money will not be in circulation until well after the Pilot Regime is entered into force.

All exemptions under the Pilot Regime are granted on temporary basis for a period of up to 6 years or for the duration of the Pilot Regime, whichever is sooner.[29] As noted below, the Pilot Regime is effective for a temporary period of time, unless extended based on an assessment produced by ESMA.

Time Limit

Given that the Pilot Regime is a temporary means for testing market infrastructure on blockchain, the regulation is only applicable for a limited amount of time. ESMA is tasked with presenting a report to the European Commission on the progress of the Pilot Regime within 3 years after its entry into force.[30] Within 3 months after receipt of ESMA’s report, the European Commission shall present a report to the European Parliament and the Council on whether to: (1) extend the Pilot Regime in its unchanged form for an additional 3 years; (2) extend and amend the text of the Pilot Regime; (3) make the Pilot Regime permanent by modifying existing EU financial legislation; or (4) terminate the regulation based on ESMA’s recommendation.[31] We expect that the European Commission will recommend to either extend the Pilot Regime as is for an additional 3 years or amend and extend it, rather than terminate the regulation altogether, given that it will take the European Commission and Parliament some time to change existing financial rules to integrate with the underlying concepts of the Pilot Regime.

Does the Pilot Regime Bolster or Block DLT?

Blockchain technology and distributed ledgers are well-suited for the modern age of global finance. As markets become more interconnected through the mass digitalization of infrastructure, the need for technology that solves issues of security, speed and scale will increase. What is more, the European Union is well-suited to take the lead on the adoption and regulation of this technology. The capital markets of the United States and China currently account for over half of all global equity and fixed income trading,[32] whereas the European Union accounts for significantly less. At the same time, the United States and China have indicated resistance to blockchain technology, most likely because it threatens their hegemony in the financial sector. Although the Biden Administration issued an executive order on 9 March 2022 calling on federal agencies to investigate cryptocurrencies in an effort to begin forming policy,[33] the Securities and Exchange Commission and the Treasury have both signaled a need for strict regulation. In a stronger stance, the People’s Bank of China said services offering trading, order matching, token issuance and derivatives for virtual currencies are prohibited.[34] Therefore, Europe has an opportunity to capitalize on the shortsighted outlook of American and Chinese policymakers by fostering blockchain technology and catalyzing the growth of its capital markets union.

To do so, however, the European Union must strike a balance between regulating blockchain technology and nurturing its development. Thankfully, the Pilot Regime in its current form seems to strike that balance well. The preamble of the Pilot Regime highlights the goal of harnessing potential opportunities that blockchain, distributed ledgers and crypto-assets offer. Adjoining publications from the European Commission also evidence their awareness not to overregulate blockchain to the extent that it stifles innovation or promotes regulatory arbitrage to other jurisdictions.[35]

Where the Pilot Regime has succeeded is in its comprehension of the benefits of blockchain. The European Parliament's amendments demonstrate that EU policymakers understand the vast improvements blockchain would have on existing market infrastructure. For instance, the Pilot Regime allows for the vertical integration of trading venues and settlement systems into a single entity, which will streamline trade and instantaneous settlement into a single transaction – something that would not be possible under existing regulations and market infrastructure. Moreover, the Pilot Regime contemplates direct retail access to the purchase and sale of DLT Financial Instruments. This will likely result in a simplification of the “plumbing” behind the world's financial markets and a reduction in transaction costs for buyers and sellers.

The main concern that exists in the current draft of the Pilot Regime is the lack of clarity surrounding the use of public versus private blockchains. Public blockchains (e.g., Bitcoin and Ethereum) are more transparent, anti-fragile and resistant to fraud than private blockchains because no single entity controls the chain. Private blockchains, on the other hand, allow the owner to exclude participants and unilaterally regulate the validity of transactions. These attributes run completely contrary to the decentralized nature of blockchain technology, and they invite the possibility that the controlling interest of a private blockchain might maliciously exploit transactions. Of course, private blockchains might be necessary in certain circumstances. Central banks around the world, including Norges Bank,[36] are exploring the creation of central bank digital currencies (CBDCs) to further digitize their respective economies and more effectively influence monetary policy. In such contexts where a blockchain is managed by a government entity for the public's interest, it is understandable to do so on a private blockchain. However, for purposes of blockchains used by private enterprises to record financial transactions, publicly accessible and decentralized blockchains should be preferred.

The issue with the current draft of the Pilot Regime is that it suggests that DLT subject to the regulation can only be private or proprietary.[37] In addition, the Pilot Regime imposes penalties for DLT MTF and DLT SS, such as a loss of permissions and exemptions, where an issue is discovered in the underlying technology used by such DLT MTF or DLT SS. This potentially disincentivizes DLT MTF and DLT SS from using public blockchains as they would have no control over the underlying technology, meaning they would likely elect to use a private blockchain instead to protect themselves from liability. A revised version of the Pilot Regime should include clarification about public blockchains and encourage its use through exemptions from certain restrictions that should be limited to private blockchains.

Outlook for the Pilot Regime

Following formal adoption of the Pilot Regime by the European Parliament on 24 March 2022, the regulation will next be voted on by the Council. The Pilot Regime will then be published in the Official Journal of the European Union and will apply 9 months after its entry into force.^[38] The current expectation is that the Pilot Regime will go into effect throughout the European Union in the first or second quarter of 2023.

Pursuant to the terms of the European Economic Area Agreement (the “**EEA Agreement**”), the Pilot Regime will be incorporated as an annex or protocol into the EEA Agreement and thereafter transposed into the national legislation of Norway. It is difficult to estimate when the Pilot Regime will apply in Norway, but given the extensive preparations that local CSDs, MTFs, banks and investment firms will need to make in order to take advantage of DLT under the Pilot Regime, we expect these market participants will start gaining familiarity with the terms of the adopted regulation this year. In the meantime, we will continue to monitor the development of the Pilot Regime and its application within Norway and broader Europe.

[1] Digital Finance Package. European Commission. 24 September 2020. (https://ec.europa.eu/info/publications/200924-digital-finance-proposals_en).

[2] The Pilot Regime is Formally Adopted by the European Parliament (527 For, 28 Against, 31 Abstain). European Parliament. 24 March 2022. (<https://www.europarl.europa.eu/plenary/en/votes.html?tab=votes>).

[3] How to Time-Stamp a Digital Document. Stuart Haber and W. Scott Stornetta, *Journal of Cryptology*. January 1991. (<https://link.springer.com/article/10.1007/BF00196791>).

[4] Bitcoin: A Peer-to-Peer Electronic Cash System. Satoshi Nakamoto. 31 October 2008. (<https://bitcoin.org/bitcoin.pdf>).

[5] European Investment Bank Issues \$121M Digital Notes Using Ethereum. CoinDesk. 28 April 2021. (<https://www.coindesk.com/markets/2021/04/28/european-investment-bank-issues-121m-digital-notes-using-ethereum/>).

[6] Alaiā tokenizes its shares with Credit Suisse. Powered by Taurus. Taurus Press Release. 5 October 2021. (<https://blog.taurushq.com/alaiia-tokenises-its-shares-with-credit-suisse-powered-by-taurus/>).

[7] Digital Finance Package. European Commission. 24 September 2020. (https://ec.europa.eu/info/publications/200924-digital-finance-proposals_en).

[8] Proposal for a Regulation of the European Parliament and of the Council on a Pilot Regime for Market Infrastructures Based on Distributed Ledger Technology (COM/2020/594 final). European Commission. 24 September 2020 (amended 16 December 2021). (<https://www.consilium.europa.eu/media/53681/st14993-en21.pdf>).

[9] Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments and amending Directive 2002/92/EC and Directive 2011/61/EU. European Parliament. 15 May 2014. (<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32014L0065>).

[10] Article 2(4) of the Pilot Regime, as amended.

[11] Regulation (EU) No 909/2014 of the European Parliament and of the Council of 23 July 2014 on improving securities settlement in the European Union and on central securities depositories and amending Directives 98/26/EC and 2014/65/EU and Regulation (EU) No 236/2012. European Parliament. 23 July 2014. (<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32014R0909>).

[12] Article 2(4a) of the Pilot Regime, as amended.

[13] Article 2(5) of the Pilot Regime, as amended.

[14] Ethereum Request for Comments 20 (ERC 20) is the standard for fungible tokens on the Ethereum blockchain. (<https://ethereum.org/en/developers/docs/standards/tokens/erc-20/>).

[15] Article 3(1) of the Pilot Regime.

[16] Articles 3(1)(a), 3(1)(b) and 3(1)(ba) of the Pilot Regime, as amended.

[17] Article 3(1) of the Pilot Regime, as amended.

[18] Article 3(3) of the Pilot Regime.

[19] Article 3(3) of the Pilot Regime, as amended.

[20] Article 3(5) of the Pilot Regime, as amended.

[21] Article 6(6) of the Pilot Regime, as amended.

[22] Article 5a(1) of the Pilot Regime, as amended.

[23] Article 5a(2) of the Pilot Regime, as amended.

[24] Articles 4(1a) and 5(4) of the Pilot Regime, as amended.

[25] Article 5(2) of the Pilot Regime, as amended.

[26] Article 5(5) of the Pilot Regime, as amended.

[27] E-money is a type of crypto-asset the main purpose of which is to be used as a means of exchange and that purports to maintain a stable value by referring to the value of a fiat currency that is legal tender.

[28] The industry term for non-government issued cryptocurrencies pegged to fiat money.

[29] Articles 7(5) and 8(5) of the Pilot Regime, as amended.

[30] Article 10(1) of the Pilot Regime, as amended.

[31] Article 10(2) of the Pilot Regime, as amended.

[32] Securities Industry and Financial Markets Association. New Financial Global Capital Markets Growth Index 2019.

[33] Executive Order on Ensuring Responsible Development of Digital Assets. The Office of the President of the United States. 9 March 2022.

[34] China's central bank says all cryptocurrency-related activities are illegal, vows harsh crackdown. CNBC. 24 September 2021.

[35] Digital Finance Package. European Commission. 24 September 2020.

[36] Norges Bank will test technical solutions for central bank digital currency. Norges Bank. 22 April 2021.

[37] Pilot Regime for DLT Market Infrastructures – Shortcomings & Improvement Proposals. L'Association Pour Le Development Des Actifs Numeriques (ADAN). 11 January 2021.

[38] Article 11 of the Pilot Regime, as amended.