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In The Know
Leveraged Finance Newsletter

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A bellwether event - the beginning of the digital bond market

On 27 April 2021, the European Investment Bank (EIB) issued a digital bond through a series of bond tokens on a blockchain platform, where investors purchased and paid for the digital bond using traditional fiat currency, smart contract functionality and deploying blockchain technology for the registration and settlement of digital bonds. The EIB launched the digital bond in collaboration with a syndicate of investment banks as the underwriters.

The EIB bond provided an excellent example of innovation in the bond market using blockchain technology. While the use of blockchain in the bond market is still its infancy, at Baker McKenzie we believe there are significant opportunities for the use of blockchain technology across the bond and wider leverage finance markets, both in the functioning (or plumbing) of that market and the issuance of completely native digital bonds on chain. In this edition of "In the know", we will provide a "primer" in respect of the developments in the digital bond space, using the EIB bond as a potential bellwether event for future development in our markets and then try and address some fundamental questions — what does all this mean for our market? Where are we headed now?

Before we get to these questions, here are the key terms in a nutshell, which we further explain below:

- Digital bonds are decentralised tokens issued on a blockchain platform that aim to be a store of value, or a medium of exchange.

- Digital ledger technology is used to provide a shared record of transactions and/or account balances for a specified set of cash assets and securities and their holders.

- Blockchain is a form of distributed digital ledger technology which uses sophisticated cryptography and the input from a market of participants to jointly validate said transactions through an ordered and absolute sequence of layering blocks (ergo "blockchain"). A blockchain platform can be public or private. Public blockchains are decentralised peer-

to-peer networks that anyone can access (like the blockchain platform that bitcoin runs on), whereas in a private blockchain, access to the ledger is controlled by a centralised authority.

- A smart contract is computer code that, upon the occurrence of a specified condition or conditions, is capable of running automatically according to pre-specified function.

This combination of features — using decentralised tokens, blockchain (public or private) or other digital ledger technology and smart contracts — primarily aims to provide enhanced security and operational efficiency to enable digital bonds to be a viable financial instrument.

In the EIB issuance, the underwriters settled the guaranteeing of the digital bond against the issuer through representational cash in the form of Central Bank Digital Currency (CBDC). CBDC is money that a central bank, such as the EIB or the Bank of England, can produce and use as legal tender. It is called digital (or electronic) because it is not physical money such as notes and coins, but is instead entirely digital and is not tied to commercial fiat currency. Meanwhile, in the EIB issuance, the principal is expected to be repaid in commercial fiat currency at maturity. Commercial

fiat currency is a type of money that, while no longer backed by any commodity such as gold or silver, is instead typically decreed by the government to be legal tender (and can be represented by physical money such as notes and coins). It is used in most financial and other transactions today (and is what most people would think of when they think of "currency").

The EIB issuance used Ethereum, a public blockchain platform with a smart contract functionality, in partnership with the Banque de France, whose CBDCs were used in this transaction, to facilitate the payment of CBDC from the underwriters to the EIB. Ordinarily, it would take up to five days to settle debt issuance for the EIB, but because of the speed of the blockchain and smart contract technology, the parties were able to settle it in one day (and could have settled on the same day had the parties not built in extra time given the novelty of the transaction).

The initial EIB issuance was executed under a smart contract, so the digital currency and cash currency were both able to be represented and linked by using customised digital bond security tokens on Ethereum. Now, the investors can interact with each other on a peer-to-peer basis and notify the registrar to record the change in ownership for post-issuance secondary market movement.

This successful public sector EIB issuance has shown that the digitalisation of capital markets is likely to bring benefits to market participants in the next few years. Digital bonds can reduce the need for intermediaries and therefore lead to lower fixed costs, provide better market transparency by increasing capacity to see trade flows and the identity of asset sellers and buyers and provide a much faster settlement speed. Of course, there are still several development milestones required to make these benefits apparent as the market begins to build around digital bond issuances. However, the private sector has started to take note and has begun discussions about how to enter into this space. While there are notable barriers of entry — not everyone has the technology infrastructure in place yet, which in turn, influences the regulatory considerations discussed below — we expect to see the private sector starting to issue digital bonds in the coming years.

The following paragraphs provide a brief survey of the foundations of this up and coming digital arena.
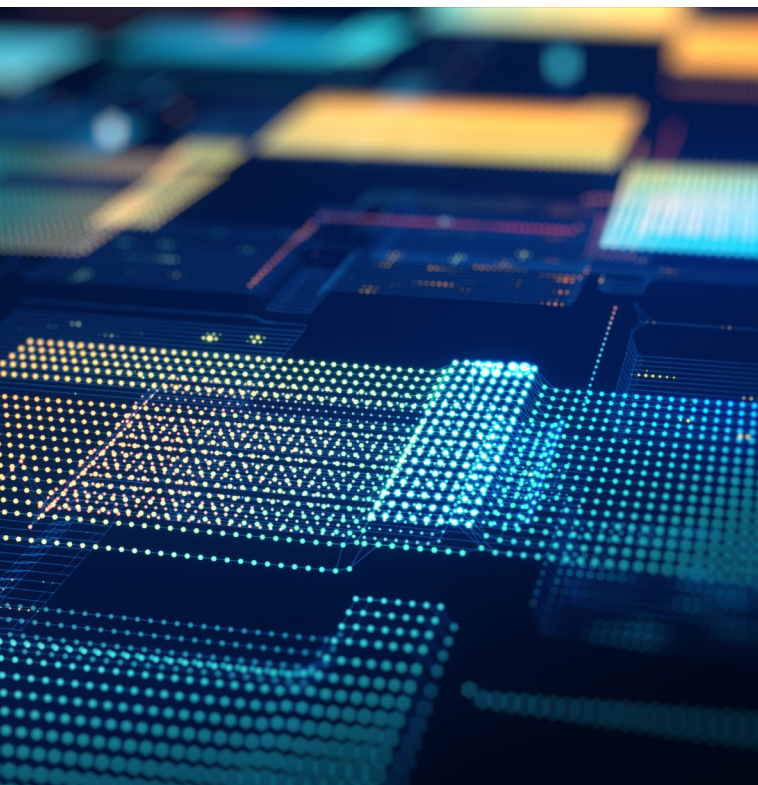
Digital bond

What is a digital bond (or sometimes written as a "digital cash bond token" or a "digital security token")? These are decentralised tokens that are issued on a blockchain platform that aim to be a store of value or a medium of exchange.

Technologically speaking, this presents as a digital bond expressed using a short token formula. Code for larger functions and directions are generated from this token formula. This ensures that everyone, from technologists to business users to compliance teams, work from the same functional specifications.

This kind of digital representation would be the logical next step in the evolution of capital markets and fixed income securities. The market has already evolved from bearer bonds to the registration of most securities. Digitizing bonds brings forth the next round of efficiencies.

Distributed ledger technology

Distributed ledger technology (DLT) can be used to provide a shared record of transactions and/or account balances for a specified set of cash assets and securities and their holders. DLT is secured through cryptography to ensure validation and to minimise the risk of any unauthorised change or update to the ledger, given that once data is recorded on a DLT platform it is difficult to change. The distributed nature of the platform avoids the need for an intermediary to control access rights and so transactions can be carried out without a recognised third-party central governance institution to validate and approve these transactions. Participants can consider the status of the ledger as authoritative.

Because DLT provides a vehicle to avoid the management and reconciliation costs of a recognised third-party central governance system validating transactions, financial intermediaries are interested in using DLT to reduce back-office costs.

DLT platforms can provide for what has been called "atomic settlement", or an instant, simultaneous transfer of legal ownership of securities and cash. This helps eliminate counterparty and settlement risks.

Reducing the settlement time to a T+0 scenario also reducesthe operational and liquidity risks concerning existing issuances.

Further still, and perhaps most importantly, the promise of DLT is that it can enable participants and account holders to modify their records of securities or cash balances on their own and see the updates reflected instantaneously and validly in the shared distributed ledger.

Blockchain

Blockchain is a type of distributed digital ledger technology that uses sophisticated cryptography and input from a group of participants to jointly validate transactions through an ordered and absolute sequence of layering blocks.

By using blockchain, issuers are able to have greater transparency over trading. The use of blockchain technology to record transactions allows for a single source of information that the participants share. It can minimise intricate and laborious back office reconciliation between parties.

In the long run, issuing debt on a blockchain platform has the potential to increase access to a broader investor base and democratise the market participants, by using simple inputs via digital ledger technology to trade in smaller denominations of the digital debt instruments (which can be broken down more easily, or "fractionalised") than traditional bonds. However, it is still important to note that this is still some way off from the mainstream method of execution, as the market (and regulators) builds out regulatory oversight and build in cost efficiencies.

Smart contract

A smart contract is computer code that, upon the occurrence of a specified condition or conditions, is capable of running automatically according to pre-specified function. Smart contracts can be used to define and perform the obligations of a legally binding contract — some or all of the contractual obligations can be defined in and/or performed automatically by code.

Accordingly, when referring to smart contracts in connection with digital bond issuance, we are referring to an agreement whose execution is both automatable and

enforceable using computer technology. These contracts are automatable through computing coded formulas, yet some parts may require human input and control.

For these purposes, a smart contract is essentially an intricate legal construct composed of a "stack" of legal and technological "layers" acting together.

As the automation by computer of a smart contract requires the legal rights and obligations to be translated into code, the code must be verified and validated to ensure it has been designed to meet the necessary contractual requirements.

While the legal documentation relating to the bond issuance will remain important, given the focus of smart contracts on the conversion from the legal documentation to the code (and the subsequent verification and validation thereof), the legal documentation is not necessarily the only source of the terms of the agreement. The code itself is a key part of the contract.

However, the creation of code for a smart contract is not fool-proof. While presently the smart contract usually does not require the semantics of all aspects of an agreement to be converted to code, in some cases, the contract may require an understanding of the terms that are not in the written contract. These could include future events; the semantics would need to be coded in for advance future events contemplated by the parties.

Regulatory considerations/ common infrastructure

In the world of digital bonds, for issuance and settlement, trading, custody, and post trade operations and processes, regulation is critical. Bonds cannot be effectively issued and traded on a digital market at scale until the common automated operations can be governed and standardised. Until the market is stabilised and agreed, costs will increase for institutions currently creating their own infrastructure to define and track bonds. A common infrastructure will be key and regulation will enable this to take root.

At present, the European Union is also beginning to establish this regulatory groundwork through the European Commission's ("**Commission**") proposed Markets in Crypto-Assets (MiCA) Regulation. Several proposals in consideration intend to create a structured market that lines up to those of more traditional

financial instruments of debt. This means producing a set of standardised principles for digital assets that reflect what has already been applicable and affective for current financial markets. These include transparency and disclosure, defined terms, approvals and supervision, operating systems, governance measures, participant protections and prohibitions for market abuse. The Commission's is discussing its proposals, first made in 2020, with the European Union Council and the European Union Parliament as of publication. In the meantime, the European Union Parliament has approved one proposed legislation put forth by the Commission in consultation with MiCA to test bond issuances, trading and settlement via blockchain under a five-year pilot program. This gives the EU an opportunity to test new digital technologies in the digital market that would otherwise be blocked by existing regulations over the European financial markets. This should also assist MiCA in formulating further parameters to its proposals to appropriately enable and regulate these issuances to be safer and more efficient.

MiCA also aims to follow the same method as the second Markets in Financial Instruments Directive (MiFID II) to establish a liquid primary market and in turn establish a robust secondary market for both public and private issuances.

Where are we heading now?

Ultimately, digital bonds represent an exciting new stage in the evolution of securities issuance and trading, and public understanding of the concepts underpinning it (as well as a suitable regulatory framework supporting common infrastructure) will be crucial for its growth in the coming years.

While regulatory uncertainty exists as regulatory bodies work to develop and harmonise standards for these digital bond issuances, we still expect to see blockchain technology move into more deals in the market — particularly the use of private blockchain ecosystems for private offerings as issuers and investment banks test the benefits of blockchain technology before it is adopted more widely in the syndicated markets. What is clear, is that market participants and their advisors should keep an eye on this space and continue to develop their understanding of the role that digitisation can have for efficient operation of our markets.

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