



Is the syndicated loans market ready for distributed ledger technology?

Hüseyin Can Aksoy

To cite this article: Hüseyin Can Aksoy (18 Sep 2023): Is the syndicated loans market ready for distributed ledger technology?, Law and Financial Markets Review, DOI: [10.1080/17521440.2023.2254523](https://doi.org/10.1080/17521440.2023.2254523)

To link to this article: <https://doi.org/10.1080/17521440.2023.2254523>



Published online: 18 Sep 2023.



Submit your article to this journal [↗](#)



Article views: 82



View related articles [↗](#)



View Crossmark data [↗](#)



Is the syndicated loans market ready for distributed ledger technology?

Hüseyin Can Aksoy 

Faculty of Law, Bilkent University, Ankara, Turkey

ABSTRACT

The syndicated loan market has a centralised nature dominated by intermediaries. Such a structure not only requires manual labour and back-office workloads, but it is also prone to human error and fraud. Distributed ledger technology (DLT) and smart contracts are promising tools to overcome the factors which adversely affect the efficiency of the current and classical business model in the primary and secondary market of syndicated loans. DLT eliminates the need for intermediaries; provides transparency, accuracy, and authenticity; lowers transaction costs; makes it easier to comply with Know Your Customer obligations; and provides efficiency in the secondary market for syndicated loans. However, existing legal rules and institutions fail to create a predictable and legally safe environment for the spread of DLT in the syndicated loans market. Therefore, proper regulation is required for the widespread use of DLT technology in the syndicated loan market.

ARTICLE HISTORY

Received 16 August 2023
Accepted 29 August 2023

KEYWORDS

Syndicated loans;
blockchain; distributed
ledger technology; smart
contracts; regulation

A. Introduction

Today, financing of large-scale investments such as dams, power plants and telecommunication services are generally provided by credit consortia, also known as syndications, formed by several lenders. In such method of financing, more than one independent institution establishes a temporary partnership to provide a certain financing transaction, and each of these institutions undertakes to provide a certain percentage of the total loan needed by the borrower.

Syndicated loan market has a centralised nature, which is dominated by intermediaries, who act as a bridge between the lenders and the borrower, keep information on centralised databases, and carry out the clearing and settlement concerning the loan. Loan documents are in PDF format and amendments are usually distributed by email. Such structure not only requires manual labour and back-office workloads but it is also prone to human-error and fraud.

Distributed ledger technology ('DLT') and smart contracts are seen as significant tools to overcome these factors, which adversely affect the efficiency of the current and classical business model in the *primary* and *secondary market* of syndicated loans. Use of DLT

could ease the negotiation, execution, administration and trading of loans in the syndicated loan markets.¹

In 2018, a Spanish bank and its two partner banks completed the first syndicated loan transaction on the blockchain. The underwritten loan amount was 150 million euro and the entire negotiation took place on a private blockchain network.² The network was secured by user codes and information was time-stamped to show the exact time of each event's occurrence.³ The use of blockchain technology also provided full document tracking and transparency.⁴

Despite all the advantages of DLT and smart contracts, existing legal rules and institutions fail to create a predictable and legally safe environment for the spread of DLT in the syndicated loans market. In this paper, I will elaborate on the potential advantages that DLT and smart contracts can offer in the syndicated loans market, and make public policy recommendations for utilising such benefits to the fullest extent.

In this paper, I will firstly explain the features of syndicated loans. Secondly, I will elaborate on the use of DLT in the syndicated loans market. After defining the concepts of distributed ledger, blockchain and smart contracts, I will discuss the advantages of using DLT for the syndicated lending actors. Current literature generally focuses on how DLT would contribute to the syndicated loans market. However, there are many drawbacks that cannot be overcome without proper legal intervention. Therefore, in the last section of the paper, I will elaborate on the drawbacks that need to be addressed and the need for proper regulation.

B. Syndicated loans: an overview

A syndicated loan is a loan supply in which multiple credit institutions are involved on the lender's side, thereby sharing the risk of non-repayment of the loan.⁵ The syndicated loan market was created by banks that have limited financial resources to meet financial needs of their high-profile customers. By coming together, separate banks are able to meet the needs of their customers under the same terms and conditions.⁶

Through joint documentation, participants of the syndicate meet the borrower's large loan demand under the same terms and conditions. In this framework, each lender in the syndication undertakes to provide a certain portion of the total loan and in return has the same right to the repayments made by the borrower.⁷ Participants could trade their loan receivables in the secondary market.

¹D Petrov, 'The Impact of Blockchain and Distributed Ledger Technology' [2019] International Scientific Journal Industry 4.0 88, at 90.

²For detailed information about this transaction, see L Gonzalez-Echenique, 'Blockchain: The Future of Syndicated Lending?' [2019] Butterworths Journal of International Banking and Financial Law 326, 326.

³L Noonan, 'Banks complete first syndicated loan on blockchain' (*Financial Times*, 6 November 2018) <<https://www.ft.com/content/2b12d338-e1d1-11e8-a6e5-792428919cee>> accessed 28 January 2023.

⁴P Martino, *Blockchain and Banking: How Technological Innovations Are Shaping the Banking Industry* (Springer 2021) 41.

⁵K Simons, 'Why Do Banks Syndicate Loans?' [1993] New England Economic Review 45, 45; A Fight, *Syndicated Lending* (Elsevier 2004) 1; J Ho, 'Chapter 2 – Basic Principles of Syndicated Lending: Financing Through the Risk Spectrum' in A Shutter (ed), *A Practitioner's Guide to Syndicated Lending* (Sweet & Maxwell 2017) 9.

⁶Fight (n 5) 2.

⁷W Wild, 'The Economic Basis of Syndicated Lending' (PhD thesis, Queensland University of Technology 2004) 1; CE Aster and MA Attaway, 'Syndicated Construction Loans, Defaulting Lenders, and Equitable Remedies' [2016] Texas Tech Law Review 853, 859.

Syndicated loans are procured under the leadership of a credit institution called 'consortium leader' or 'lead bank'. The first step in procuring a syndicated loan is for the borrower to apply to a bank that will act as the 'lead bank' for a certain fee.⁸ The lead bank may be the bank that will provide the highest amount of credit to the borrower within the syndication, or it may be an institution preferred by the borrower as it has sufficient influence in the market in terms of establishing the syndication.⁹ It is also possible that the lead bank is a bank that has a long established business relationship with the borrower.¹⁰

The main task of the lead bank is to ensure the establishment of syndicate by interviewing potential lenders. The lead bank also negotiates the terms of the loan agreement with the borrower.¹¹ After the syndication is established, the borrower usually only deals with the lead bank.¹² It is common to decide that the loan amount provided by the lenders will be transferred to the borrower through the leading bank.¹³ In accordance with the terms of a consortium agreement to be signed among the lenders, it is also among the duties of the leading bank to re-distribute these payments among the lenders.¹⁴ The lead bank is responsible in keeping all information on centralised databases.¹⁵ Syndicated lending has several advantages both for the lenders and the borrowers. In the international banking sector, non-repayment of loans is one of the main reasons that cause financial difficulties for credit institutions.¹⁶ With the provision of loans through syndication, the risk of non-repayment of the loan is shared among the lenders. Another function of syndicated loan is to diversify the loan portfolios of banks.¹⁷ The lead bank meets the needs of its customers and receives a fee for this service, without supplying the entire loan itself.¹⁸ In fact, one of the reasons that push banks to share loan supply with other banks through syndication is legal restrictions on capital.¹⁹ It is undesirable for a bank to lend by risking a large part of its resources.²⁰ In addition, the possibility of the loan receivables to change hands in the second-hand market eliminates the risk of concentrating the bank's resources on a single borrower.²¹ Syndicated loans also provide significant benefits to the borrowers. This method eliminates the need for the borrower to negotiate a loan with more than one bank and overcomes the problems of obtaining loans from different banks under different

⁸DZ Nirenberg, 'International Loan Syndications: The Next Security' [1984] *Columbia Journal of Transnational Law* 155, 159.

⁹ME Jones, 'Bankers Beware: The Risks of Syndicated Credits' [1999] *North Carolina Banking Institute* 169, 173.

¹⁰*ibid* 173.

¹¹PR Pollock, 'Notes Issued in Syndicated Loans – A New Test to Define Securities' [1977] *The Business Lawyer* 537, 538.

¹²Wild (n 7) 25; GA Goodman, 'Special Problems of Syndicated Loans' (*Dentons*, 14 April 2014) 4 <<https://www.dentons.com/en/insights/articles/2014/april/14/special-problems-of-syndicated-loans>> accessed 28 January 2023.

¹³MHughes, 'Transferability in Syndicated Lending' [2007] *Law and Financial Markets Review* 21, 21.

¹⁴Wild (n 7) at 25.

¹⁵D Petrov, 'A New Digital Age in Finance: Blockchain and Smart Contracts' [2020] *Horizons: International Scientific Journal* 7, 9.

¹⁶Callaghan, 'Chapter 10 – Making the Loan: the Theory and Mechanics of Syndicated Lending' in Shutter (n 5) 189.

¹⁷Simons (n 5) 45; LB Gutcho, 'Syndicated Lending: Lead Banks and Syndicate Members' [1994] *International Business Lawyer* 131, at 131; Jones (n 9) 177; SA Dennis and DJ Mullineaux, 'Syndicated Loans' [2000] *Journal of Financial Intermediation* 404, at 408; V Ivashina and Z Sun, 'Institutional stock trading on loan market information' [2011] *Journal of Financial Economics* 284, 284.

¹⁸Nirenberg (n 8) 161; Goodman (n 12) 2.

¹⁹Simons (n 5) at 45; Dennis and Mullineaux (n 17) at 407; Jones (n 9) 177.

²⁰Aster and Attaway (n 7) at 858.

²¹Simons (n 5) at 46.

conditions.²² In addition, since the borrower meets all his loan needs with a single loan contract, the transaction cost of the borrower is reduced.²³

Despite all the benefits the syndicated loan provides for the actors of the syndicated lending, the syndicated loans market is dominated by intermediaries. This not only increases transactions costs but also causes concerns about the transparency, accuracy and authenticity of the transactions. In this regard, DLT and smart contracts are seen as significant tools to ease the negotiation, execution, administration and trading of loans in the syndicated loan markets. In the next section, I will elaborate on the use of DLT in syndicated loans market.

C. Use of DLT in syndicated loans market

Having explained the main features of syndicated loans, below, I will explain the uses of DLT in the syndicated loans market. According to a survey dated November 2020, 17.7% of the members of the Loan Market Association are using or considering to use blockchain and smart contracts.²⁴ This is not surprising as DLT and smart contracts offer a lot of advantages for the financial services industry.

Before elaborating on the advantages of DLT for the actors of the syndicated loan market, one should explain the difference between a distributed ledger, blockchain and smart contracts.

1. Distributed ledger technology and smart contracts

DLT and smart-contracts would revolutionise the syndicated loans market, which is traditionally centralised and paper-based.

Distributed ledger is an innovative approach of recording, sharing and storing data in multiple registers.²⁵ Identical copies of such ledger is kept in several computers controlled by various users and this allows for simultaneous synchronisation of data.²⁶ Smart contracts, on the other hand, are computer programmes embedded in the blockchain and automatically performed by all nodes in the network. Due to their self-executing nature, smart contracts, automatically take action once the conditions written in the code are met. Combination of blockchain and smart contract technologies eliminates the need for intermediaries and speeds up the execution of transactions as written in the code.²⁷

When used together, DLT and smart contracts offer a lot to the actors of the syndicated lending. Below, I will elaborate on the uses of such technology in the syndicated loans market.

²²Fight (n 5) 8.

²³Nirenberg (n 8) 161.

²⁴Loan Market Association, 'LMA releases results of its members' survey: outlook for the syndicated loan market in 2021' <<https://www.lma.eu.com/news-publications/press-releases?id=185>> accessed 17 June 2023.

²⁵Petrov (n 1) 88.

²⁶Petrov (n 15) 9. Despite their close relationship, blockchain and distributed ledger are different concepts. Actually, blockchain is a type of distributed ledger. It refers to the technological data structure that stores and exchanges data packed in different blocks that are interconnected in a digital chain. It uses encryption and complex mathematical algorithms to provide irreversible and synchronized records. Petrov (n 1) 88.

²⁷Petrov (n 15) 10.

II. What does DLT offer to the syndicated lending actors?

Interest in DLT is closely related to the existing factors that adversely affect the efficiency of the current and classical business model in the *primary* and *secondary market* of syndicated loans. In fact, distributed ledger technology and smart contracts are seen as significant tools to ease the negotiation, execution, administration and trading of loans in the syndicated loan markets. The most significant functions of DLT is that it eliminates the need for intermediaries; provides transparency, accuracy and authenticity; lowers transaction costs; makes it easier to comply with Know Your Customer obligations; and provides efficiency in the secondary market.

1. No need for intermediaries

In the financial services industry, institutional intermediaries play a significant role in the loan cycle starting from loan negotiations to settlement. They act as a bridge between the lenders and the borrower. They are responsible in keeping information on centralised databases with controlled access.²⁸ Intermediaries carry out the clearing and settlement concerning the loan. Settlement is made through the intermediaries and the average settlement times for syndicated loans are around 20 days.²⁹

Smart contracts are self-executing in nature. The contract is automatically executed and such execution does not rely on the willingness or ability of the counterparty to fulfil his/her obligations. Therefore, smart contracts eliminate the risk of non-performance, minimise counterparty risk and eliminate the need to rely on third party intermediaries to follow through on commitments. As a result, using smart contracts to govern loan terms and conditions reduces manual labour and back-office workloads.³⁰

Automation of certain processes makes the management of the syndicated loan process more efficient. In fact, a smart contract can be programmed to manage the whole process from negotiation to closing the deal without the need for human intervention.³¹ For instance, DLT allows the investors to record their risk tolerance.³² If a transparent and fully automated criteria is set, the syndicate can be formed by the smart contract easily, economically and swiftly.³³

Smart contracts could also check parties' compliance with their contractual undertakings. For instance, in an automated way that is transparent to all parties, the smart contract could check whether one party complied with his financial covenants or delivered required documents.³⁴ Similarly, payment of the principal and interest, notice of unsettled debt and

²⁸ibid. 9.

²⁹M Buitenhek, 'Understanding and Applying Blockchain Technology in Banking: Evolution or Revolution?' [2016] Journal of Digital Banking 111, 117; Martino (n 4) 41.

³⁰M Merike and A Steyn, 'Implementing Smart Contracts in the Syndicated Loan Market: An Issue of Adoption' [2019] IEEE Computer Society 39, 40.

³¹Petrov (n 15) 11.

³²World Economic Forum, 'The Future of Financial Infrastructure' (*World Economic Forum*, August 2016) 70 <https://www3.weforum.org/docs/WEF_The_future_of_financial_infrastructure.pdf> accessed 29 January 2023.

³³Deloitte, 'Blockchain in Banking: While the Interest is Huge, Challenges Remain for Large Scale Adoption' (18 April 2017) 24 <<https://www2.deloitte.com/content/dam/Deloitte/in/Documents/strategy/in-strategy-innovation-blockchain-in-banking-noexp.pdf>> accessed 29 January 2023; D Petrov, 'Blockchain Technology – A Bank Lending (R)evolution: The Case of Syndicated Loans', New Challenges of Economic and Business Development – 2018: Productivity and Economic Growth: 10th International Scientific Conference 500, 504 <https://dspace.lu.lv/dspace/bitstream/handle/7/48890/Proceedings_NCEBD_2018.pdf?sequence=1#page=501> accessed 29 January 2023.

³⁴K Fry-Paul, D Hirschfield and M Duric, 'Why are Smart Contracts the Smart Choice for Financial Services?' (22 February 2022) <<https://www.taylorwessing.com/en/insights-and-events/insights/2022/02/why-are-smart-contracts-the-smart>>

even use of collateral could be maintained automatically and without intervention of any intermediaries.³⁵ Since intermediaries are eliminated, settlement times could be shortened to hours or even minutes.³⁶ Shorter settlement times would reduce counterparty risks and increase liquidity in the market.³⁷

2. Transparency, accuracy and authenticity

In the syndicated loan market, distribution of cash flows are tracked and managed manually in databases by a central trustee. Similarly, each lender reports data to a central database kept by a single recordkeeper in a central server.³⁸ As the loan documents are in PDF format and amendments are usually distributed by e-mail, this requires spending high amount of resources to reconcile such siloed information.³⁹

DLT enables transaction records be kept in the computers of all participants as a whole and in real time. This increases the resilience and eliminates the need to rely on a single record keeping counterparty.⁴⁰ All authorised participants simultaneously have always-accurate records updated in real-time.⁴¹ Parties could also access complete transaction chronology at all times. This is critical to prevent manipulation and falsification of data.⁴² Immutable nature of the decentralised blockchain technology would practically decrease the data loss risk to zero.⁴³ Decreasing the amount of manual labour and automatising the transaction also decrease the risk of human-error.

Since all participants are informed about all transactions in real-time, this would ensure transparency.⁴⁴ Such transparency is also beneficial for the regulatory authorities for fulfilling their supervisory duties.⁴⁵

As each participant uses his digital signature, each record on the ledger can be traced back to the concerned participant. As a result, authenticity of each transaction can be maintained.⁴⁶ Moreover, unlike the centralised banking system, which is susceptible to cyberattacks, blockchain is less prone to fraud as blockchain is immutable and every block has a timestamp.⁴⁷ Certainly, one should consider that the smart contracts are

choice-for-financial-services#:~:text=Smart%20contracts%20could%20be%20used,fall%20below%20a%20prescribed%20level> accessed 29 January 2023.

³⁵ Petrov (n 33) 504; Deloitte, 'Over the Horizon: Blockchain and the Future of Financial Infrastructure' 10 <<https://www2.deloitte.com/ch/en/pages/risk/articles/over-the-horizon-blockchain-and-the-future-of-financial-infrastructure.html>> accessed 29 January 2023.

³⁶ SA Rutenberg and RW Wenner, 'Blockchain Technology: A Syndicated Loan Revolution?' [2017] Financial Technology (FinTech) and Regulation, at 4; MH Sazu and S Akter Jahan, 'Impact of Blockchain-enabled Analytics as a Tool to Revolutionize the Banking Industry' [2022] Data Science in Finance and Economics 275, 281.

³⁷ G Padmanabhan and K Komma, 'Reinventing Syndicated Loan Processing with Distributed Ledger Technology' [2016] TCS Whitepaper; Buitenhek (n 29) 117.

³⁸ Genpact, 'Impact of Distributed Ledger Technology on Syndicated Loans' 5 <<https://www.genpact.com/downloadable-content/insight/impact-of-distributed-ledger-technology-on-syndicated-loans.pdf>> accessed 29 January 2023.

³⁹ M Casey and others, 'The Impact of Blockchain Technology on Finance: A Catalyst for Change' at 20 <<https://www.sipotra.it/wp-content/uploads/2018/07/The-Impact-of-Blockchain-Technology-on-Finance-A-Catalyst-for-Change.pdf>> accessed 29 January 2023.

⁴⁰ D Shearer, 'Trade Finance and Distributed Ledger Technologies' [2018] Butterworths Journal of International Banking and Financial Law 99, 99.

⁴¹ Rutenberg and Wenner (n 36) 3.

⁴² Genpact (n 38) 6; Petrov (n 15) 9–10.

⁴³ Petrov (n 15) 10.

⁴⁴ U Ravindran and P Raghu Vamsi, 'A Secure Blockchain based Finance Application' IC3 '21: 2021 Thirteenth International Conference on Contemporary Computing (IC3-2021), August 2021 99, at 105.

⁴⁵ Petrov (n 15) 11.

⁴⁶ Petrov (n 33) 502.

⁴⁷ Ravindran and Vamsi (n 44) 105; Sazu and Akter Jahan (n 36) 282.

only as good as they are drafted. In other words, a smart contract may be highly susceptible to attacks if they are not properly coded.

3. *Lower transaction costs*

The centralised nature and the paper-based operation of the syndicated loan market requires manual labour and back-office workloads throughout the whole cycle. It is estimated that transaction costs concerning syndicated loans would decrease around 70–80% through the application of the blockchain technology.⁴⁸ Certainly, this is an industry estimate and the actual decrease could be a lot less. However, one could expect a substantial decrease in such costs through automation of the syndicated loan process.

Blockchain technology simplifies and speeds up the completion of syndicated lending from about two weeks to one or two days.⁴⁹ Unlike the classical model, where intermediaries carry out the clearing and settlement concerning the loan, DL allows peer-to-peer interaction and smart contracts decrease settlement time and costs.⁵⁰ In fact, smart contracts would automatically check parties' compliance with their contractual undertakings and self-execute, which would reduce manual labour and back-office workloads.

4. *Easier compliance with know your customer (KYC) obligations*

KYC refers to an exchange of documents between the financial institutions and their customers to collect the customer's basic identity information.⁵¹ Financial institutions are required to know the identity of their customers. This is critical to cope with money laundering and terrorism. Prior to opening a bank account, the customers are expected to fill long questionnaires and banks must verify such information. This is costly and time consuming. Moreover, such process is repeated each time a customer applies to a financial institution.⁵²

DLT may be a useful asset in completing KYC activities in a faster and economical way. Selecting members of the syndicate requires a labour-intensive review of information pulled from multiple sources. The same applies for qualifying the borrower.⁵³ To solve this problem, a central KYC database could be created on the blockchain.⁵⁴ For instance, some scholars propose the following system to complete KYC over blockchain: Once a bank completes the KYC check for a new customer, information resulting from the KYC process could be uploaded to the blockchain. Such information could be accessed by other banks and accredited organisations (such as insurers, car rental firms, loan providers etc.). This would eliminate the need for the customer to re-start the KYC process all over again and reduce the administrative burdens and costs of the relevant institutions.⁵⁵ This would result in shorter waiting times and eliminate the need to provide the same information to different financial institutions.⁵⁶

⁴⁸Deloitte (n 33) 25.

⁴⁹Noonan (n 3).

⁵⁰Petrov (n 15) 9.

⁵¹Martino (n 4) 44.

⁵²Sazu and Jahan (n 36) 280.

⁵³Deloitte (n 36) 10.

⁵⁴Rutenberg and Wenner (n 36) 4.

⁵⁵Ravindran and Vamsi (n 44) 105; Martino (n 4) 45.

⁵⁶Martino (n 4) 45.

There are other examples, which demonstrate that the use of technology could simplify KYC processes through their data sharing capabilities. For instance, open banking allows customers to provide their permission to securely share their financial information with approved third-party providers. As a result, financial institutions can instantly get essential information straight from the source and the customers are not required to produce same physical documents over and over again. Data standardisation and interoperability also enables easy information exchange between financial institutions, accelerating and simplifying KYC procedures. Similarly, the ‘travel rule’ also simplifies KYC processes to be conducted by financial institutions. As a set of guidelines by the Financial Action Task Force, the ‘travel rule’ requires financial institutions to communicate client information to each other in certain fund transfers. Although the travel rule primarily aims at preventing money laundering and terrorism financing, it also indirectly simplifies KYC procedures by enabling the effective exchange of KYC information in a standardised format.⁵⁷

5. Efficiency in the secondary market

Smart contracts may provide efficiency in the trade of syndicated loans in the secondary market. For instance, if transfer certificates and assignment agreements are processed electronically, the smart contract could make the necessary checks under the facility agreement, execute the transfer of the loan, update the registry of the lenders and inform the borrower of the new lender.⁵⁸

Tokenising the loans could also be beneficial. A token is a virtual representation of a reality such as an asset, right or duty within the context of a blockchain.⁵⁹ It is possible to issue electronic instruments on a DLT platform and these would represent entitlement to the receivable concerning the repayment of the loan. Such tokens could easily be traded and transferred on the platform. However, this raises the question if tokens would legally be deemed as transferrable securities.⁶⁰ Similarly, voting rights of the lenders may also be tokenised and whenever a decision needs to be taken among the lenders, voting tokens to be generated and distributed by the lead bank may be used.⁶¹

Despite all the advantages DLT offers for the syndicated loans market, there are important drawbacks that need to be addressed. In the next section, I will elaborate on such drawbacks and the need for proper regulation.

D. Drawbacks and the need for regulation

There are major drawbacks that prevent the utilisation of DLT in the syndicated loans market to the fullest extent. Some of these drawbacks can be overcome through technical means. However, there is need for the regulators’ intervention and proper regulation to overcome some of these drawbacks.

⁵⁷For differences between travel rule and KYC, see KYC-Chain, ‘KYC Vs Travel Rule Compliance: What’s the Difference?’, <<https://kyc-chain.com/kyc-vs-travel-rule-compliance-whats-the-difference/#~:text=Put%20simply%2C%20KYC%20involves%20gathering,an%20FI%20or%20VASP%20facilitates>> accessed 17 June 2023.

⁵⁸Clifford Chance, ‘The Digital Future of Syndicated Loans’ (June 2021) 4 <<https://www.cliffordchance.com/content/dam/cliffordchance/briefings/2021/06/the-digital-future-of-syndicated-loans.pdf>> accessed 28 January 2023.

⁵⁹On tokenization of the loan, see Gonzalez-Echenique (n 2) 326ff.

⁶⁰Clifford Chance (n 58) 9.

⁶¹Gonzalez-Echenique (n 2) 327.

Firstly, it is questionable if it is practically possible to decentralise syndicated loans transactions entirely. It is apparent that blockchain to be used in syndicated loans market would be a permissioned or private blockchain rather than a public and permissionless one.⁶² This is critical to maintain that only the authorised and concerned parties could access and make changes on the ledger. However, this would necessitate an element of centralisation as an operator would be needed to decide who will be permitted to the blockchain.⁶³ The more centralisation, on the other hand, means that the susceptibility to fraud and attacks would increase. Certainly, one could argue that such risk would still not be higher than the traditional syndicated loans transactions that are centralised and paper-based.

Secondly, conducting KYC over a shared ledger requires the financial institutions' agreement of a unified rating system⁶⁴ and the development of a common policy on the verification and identification of customers.⁶⁵ An interoperable system to transmit information between different financial institutions is also required.⁶⁶

Thirdly, it is a matter of discussion if loans can be fully coded. Certainly, it would not be easy to automate a contractual clause, which is ambiguous or requires assessment. For instance, a material adverse effect clause that requires a reasonableness test. Although standardisation of loan documents could be helpful, it is not very easy to make as parties could prefer to negotiate the terms of their contract freely.⁶⁷

It could be an option to partially automate syndicated loan process. For instance, many loan agreements have a clause that allows the lender to demand repayment of all outstanding loans in case of event of default by the debtor. Despite such provision, the lender may prefer not to exercise such right and negotiate with the borrower. It is apparent that a smart contract provision that automatically demands immediate repayment of outstanding loans would not be ideal at all times. Partial automation could be helpful in this regard: in an event of default, a smart contract could simply notify the lender that action is required, so that the lender would still have the opportunity to decide on accelerating the facilities or not.⁶⁸

Fourthly, financial constraints would be highly effective in the actor's attitude towards blockchain technology, which is costly. Such cost is mainly associated with the energy consumption and storage space. Each blockchain transaction cost is approximately USD 0.20. Therefore, the technology could only spread if cost savings of the blockchain technology will outweigh the costs of such technology.⁶⁹

Finally, financial services industry is a highly regulated market. Therefore, it might be expected that participation of the players in a distribution-ledger based market will also be subject to strict regulation and supervision. However, regulation is not only expected but also necessary. Because existing legal rules and institutions fail to create a predictable and legally safe environment for the spread of distributed ledger technology in the syndicated loans market. Among the several issues that require regulator intervention, the following are the most significant:

⁶²Petrov (n 33) 508.

⁶³Clifford Chance (n 58) 9.

⁶⁴Petrov (n 1) 90.

⁶⁵Sazu and Jahan, (n 36) 285.

⁶⁶Martino (n 4) 46.

⁶⁷Clifford Chance (n 58) 3–4.

⁶⁸*ibid* 4.

⁶⁹Sazu and Jahan (n 36) 285.

- Considering that blockchain is immutable, the legal system must clarify the status of the transactions on the blockchain if parties to a syndicated loan agreement are in dispute or litigation.⁷⁰ In a blockchain, data is recorded through a consensus mechanism and it is accepted that such mechanism guarantees the accuracy of the record. However, it is still unclear whether a court would consider such record to be legally accurate and admissible in case of a legal dispute.⁷¹
- Legal issues regarding the enforceability of smart contracts is another matter which needs to be addressed.⁷² Especially, under many legal systems, security documents and inter-lender agreements that are usually executed as deeds cannot be created solely in smart contract format and signed by e-signatures.⁷³ Similarly, some legal systems may require some documents to be notarised and/or apostilled.⁷⁴ The same also applies to the transfer of the loans in the secondary market. For an effective use of DLT in syndicated loans market, legal order needs to be revised to grant validity to conducting relevant transactions as smart contracts and by using e-signatures.
- The existing legal framework must be revised to allow for an effective exercise of the supervisory functions of the regulatory authorities. If KYC activities are conducted through the distributed ledger, regulators may access and review all financial details in real-time and facilitate anti-money laundering and know your customer activities.⁷⁵ For instance, if the regulators have their own node on a distributed ledger, they could easily access information on the distributed ledger for regulatory purposes.⁷⁶ Due to the immutable nature of the blockchain, a comprehensible, secure and irreversible audit trail will be available to regulators. As regulators can independently access information on the DL, banks would no longer need to actively provide such data to prove their compliance.⁷⁷
- Tokenising the loans would be functional, especially in trading the loans in the secondary market. However, it is disputed whether tokens could legally be deemed as transferable securities, or not. If the legal order accepts token as a transferable security, in the secondary market, loans could be tokenised and such token could be traded and transferred on the platform.
- Although creating a central database may ease KYC obligations, compliance with data protection laws must be addressed to share the customer's personal data with other financial institutions.⁷⁸ In fact, such depository may also include personal data concerning the employees, e.g. the directors of the borrower.⁷⁹
- Unprecedented legal disputes may arise. For instance, it might be necessary to decide who would be responsible if the code does not run as expected or data inputting is incorrect.⁸⁰ Proper ex-ante regulation could be valuable in eliminating or at least minimising such disputes.

⁷⁰Petrov (n 1) 90.

⁷¹Genpact (n 38) 8.

⁷²Stephen J Obie, 'Blockchain and the Syndicated Loan Market – a Closer Look' [2017] *Butterworths Journal of International Banking and Financial Law* 711, 712.

⁷³Fry-Paul (n 34).

⁷⁴Clifford Chance (n 58) at 6.

⁷⁵World Economic Forum (n 32) 71.

⁷⁶Casey and others (n 39) 22.

⁷⁷Martino (n 4) 44.

⁷⁸Martino (n 4) 45.

⁷⁹Clifford Chance (n 58) at 8.

⁸⁰*ibid.*

E. Conclusion

Syndicated loan market has a centralised nature, which is dominated by intermediaries. Transaction costs are high, manual labour and back-office workloads excessive and clearing and settlement times are long. DLT and smart contracts could be assets in overcoming these factors and ease the negotiation, execution, administration and trading of loans in the syndicated loan markets.⁸¹

Despite all that it offers, the existing legal rules and institutions fail to create a predictable and legally safe environment for the spread of distributed ledger technology in the syndicated loans market. Therefore, the primary requirement for widespread use of DLT technology in the syndicated loan market is proper regulation. However financial constraints would also be highly effective in the actor's attitude towards such technology.

One must keep in mind that DLT is not a technology that one bank can develop to win an advantage over its competitors. In fact, it could succeed if all participants work together.⁸² Because widespread use and profitability of blockchain technology requires that the entire system adopts an interoperable system to transmit information.⁸³ However, one might expect that the existing financial intermediaries would resist such change to maintain their profitable position.⁸⁴

Disclosure statement

No potential conflict of interest was reported by the author(s).

ORCID

Hüseyin Can Aksoy  <http://orcid.org/0000-0002-9243-189X>

⁸¹Petrov (n 1) 90.

⁸²Buitenhek (n 29) 119.

⁸³Martino (n 4) 46.

⁸⁴Petrov (n 1) 90.