THE JBBA

PEER Reviewed RESEARCH

OPEN ACCESS
ISSN Online: 2516-3957
ISSN Print: 2516-3949
https://doi.org/10.31585/xxxxxxxxx

Interchangeable digital and paper shares using blockchain and Centralised Ledger Technology: A use case analysis.

Name.
Accreditation.

Correspondence: JohnSmith@xyz.edu
Received: date month xxxx **Accepted**: date month xxxx **Published**: date month xxxx

Abstract
The ability to issue shares digitally enables companies to easily trace and maintain shareholder registers. Without the need for the stock exchange as a trusted intermediary, transactions can occur directly, and the required shareholder information can be recorded and reported automatically. Furthermore, shareholder legislation is progressively shifting to allow for the protection of assets acquired using blockchain technology, encouraging ever more companies to digitise. As they move towards a digital recording system for shareholder information, their capacity for trading can increase. Despite this, regulatory bodies are reluctant to accept blockchain as a reporting means, due to the distributed ledger absolving any single organisation of responsibility. The use of blockchain technology to record shareholder information is often presented as a way to revolutionise the finance industry, however, it does not address companies' obligation to protect shareholder's personal information or be accountable for reporting to regulators. Additionally, some individual shareholders desire a more comprehensive proof of entitlement, in the form of a traditional paper share. There is, therefore, a demand for software allowing for the issuance of digital and paper shares simultaneously. This use case analysis will discuss a new software as a means of addressing said demand from individuals, regulators and issuing companies.

Keywords: *Blockchain, Centralised Ledger, Digital Shares, Paper Shares, Blockchain Legislation, Shareholder Registry, Data Protection, DLT*

1. Introduction

Shareholders constitute part-owners of a company, with voting rights only on matters pertaining to their own shares. For some companies, a stock ledger is the only evidence of this ownership, emphasizing the importance of its accuracy [1]. Companies, therefore, are required to keep a record of their shareholders, including when shares transfer ownership. Recordkeeping has become more prominent in recent years, as KPMG note: "The growing pressure on governments and companies to increase transparency and accountability has resulted in a global shift towards increased disclosure around beneficial ownership". Nevertheless, there are vast disparities between jurisdictions regarding the level of detail required. For instance, companies registered in the Cayman Islands are only required to record individuals owning over 25% of shares [2], whilst the United States Securities and Exchange Commission requires those over 5% to be recorded [3]. In jurisdictions with more rigorous recordkeeping legislation, large businesses are unable to keep up with these regulations using the current recordkeeping systems, which can lead to confusion surrounding ownership and rights. Consequently, companies are seeking to move away from traditional methods of shareholder registry and towards a digitised method that is straightforward yet adheres to the requirements of their jurisdiction.

Blockchain, a form of Distributed Ledger Technology (DLT), is often hailed as a revolutionary solution providing businesses with a fast, low-cost method of shareholder recordkeeping [4, 5]. However, in addition to an obligation to record specific information, companies also have a legal responsibility to protect the privacy of their shareholders, and concerns have been raised that current systems do not directly address these matters [6]. Furthermore, records based on a distributed ledger are not desirable for private companies, as regulators cannot hold one central body responsible for reporting frequency or accuracy [7]. From an individual perspective, due to the lack of consistency in the legislation, some investors are wary of digital shares, particularly when issued in a form that they cannot understand [8]. By pairing blockchain with a centralised ledger, the present invention seeks to provide an immutable, uncomplicated, independently owned registry system that addresses the dichotomy of shareholder recordkeeping obligations and data privacy legislation.

1.1. Share trading in paper and digital format

The environment in which companies issue new shares is referred to as the primary market, and some companies still issue these in either a paper or digital format. Shares issued in a paper format, hereby referred to as *paper shares*, record only the name of the buyer. If the shareholder wishes to later resell said share, this must be done on the secondary market by an intermediary, such as a stockbroker. An example of a secondary market is the New York Stock Exchange (NYSE). In the case of paper shares, any secondary transactions are invisible to the issuing company in jurisdictions where the buyer record is not required to be maintained. Furthermore, secondary marketplaces such as NYSE trade only in digital shares, so, should an individual wish to trade a paper share in such an environment, they would need to transform the paper share into a tradeable, digital format, at their own cost [9]. It is these digital shares that are issued directly by companies using current systems based on blockchain technology.

1.2. DLT: Current use of blockchain in finance

DLT enables companies to verify and record transactional information using systems within their own network, bypassing the need for a third-party intermediary. Current systems using blockchain and DLT allow digital shares to be issued directly and shareholder information to be stored automatically. This is beneficial to businesses and regulators due to the reduced transaction time in comparison with systems using an intermediary [10]. Whilst a centralised ledger operates on a system of mutual trust, DLT gives businesses the ability to validate their own records, diminishing the need for trust between even the trading parties. This direct transaction arrangement also removes the threat of a system failure due to a defective external system [11]. The blockchain allows for the recording of shareholder information to be *complete*, thus adhering to state legislation, and *trustworthy* due to its immutability (once information is recorded, it cannot be altered by any party). The immutability is desirable to businesses, regulators, and shareholders because it provides confidence in the accuracy of the records. The distributed ledger eliminates the opportunity for discrepancies caused by accusations of foul play and the records are less susceptible to fraud, with the permissioned parties being able to influence the record only by completing a transaction. This move towards a lack of ownership by one party or intermediary is often described as a paradigm shift from "trusting people" to "trusting computers" [12].

1.3. Blockchain legislation in finance

Although it is repeatedly posited that blockchain technology is essentially self-regulating, there is still a need for legislation in order to adhere to local laws, such as anti-money laundering and know your customer [13]. There are currently no globally implemented guidelines informing companies exactly what information they must disclose, or how they should record this information. Instead, each jurisdiction is subject to its own rules, and these can differ vastly [14]. There have been significant changes to legislation concerning acceptable methods of maintaining shareholder information in recent years. Notable cases include the United States' states of Delaware and Wyoming, who passed bills acknowledging the use of blockchain and security tokens as recordkeeping systems and legal tender, respectively.

In 2017, Delaware General Corporation Law was altered to specify blockchain technology as an acceptable method of recording stock ownership and transactions [15]. Prior to this, despite not being explicitly prohibited, the lack of legal inclusion sustained a reluctance to adopt said technologies [16]. Problematic outcomes which reportedly occurred in Delaware companies prior to the legislation amendments highlight a need for the reform of legacy registry systems. One such case that gained discernible notoriety was that of Dole Food Company inc. whose recordkeeping errors resulted in a miscalculation of 12,370,657 shares, the source of which remain unresolved [17]. This case highlighted the inability of traditional registry methods to maintain large, variable shareholder registers. Another incident renowned for highlighting the disadvantages of using an intermediary to manage shareholder relations is a case involving Dell inc. [18]. In this prolific case, shareholders' wishes were misrepresented due to a clerical voting error in the third-party system used by the intermediary – who were voting in proxy of the shareholders. Empirical research has suggested improved shareholder value due to Delaware's legislation change in companies where disputes occurred due to intermediaries voting on behalf of shareholders [19]. Both these cases are regularly posed as support for the inclusion of Delaware's blockchain initiative in general law [16].

In 2018, the state of Wyoming reiterated the changing attitude towards blockchain with legislation that acknowledged tokenised assets as shareholder's direct, intangible personal property [20]. Since then, Wyoming law has further clarified its stance on the subject by passing bills in increasing favour of the use of blockchain technology in digital trading. The most recent amendment allowed investment in "*a representation of economic, proprietary or access rights that is stored in a computer readable format, and includes digital consumer assets, digital securities and virtual currency,*" [21].

By setting clear legislation for the use of blockchain technology in finance, governments such as these enable companies within their jurisdiction to develop with new technologies in a move towards digitisation. Furthermore, research supports the notion that a clear blockchain policy can encourage investment and increase return [22]. In jurisdictions such as these, the use of blockchain is preferable and possible for companies, however, there remains some regulatory barriers to complete digitisation using current systems.

1.4. Shortcomings of digitisation with DLT

Whilst blockchain advocates frequently affirm its potential to revolutionise finance, critics voice reservations surrounding its

capability to adhere to data protection laws [23, 24, 25,26]. The immutability of blockchain has been contended as incompatible with laws defending an individual's right to be forgotten [27]. Tokenisation is sometimes regarded as a solution to maintain privacy whilst also allowing for automated recording of transaction data [28]. Andrew Baum, University of Oxford, coined an integrated definition of tokenisation in investment as "*…the process of representing fractional ownership interest in an asset with a blockchain-based token*" [29]. Baum notes that, from the investor's perspective, tokenisation is appealing as it permits investment in a portion of a share, thus enabling procurement of previously unaffordable share. Nonetheless, tokenisation alone does not address all the concerns surrounding blockchain.

A major issue with DLT is that individual investors are often reluctant to receive shares in a digital format. Suggested reasons for this reluctance include distrust of stockbrokers and a lack of confirmation of the purchase [30] as well as an inability to trust or understand the technology [11]. The implication of this is a need for individuals to be able to purchase new shares directly from businesses and then trade these on the secondary market, without the use of a broker or a need to comprehend the token that they are issued. To create this possibility, individuals require one of two solutions. The first would be a more comprehensive form of share that appears similar to a paper share but is tradable on the secondary market. The second would be a digital share and a corresponding paper share that could be used interchangeably. There is no current technology offering a more coherent form of a security token, so the present invention attempts to personify the latter solution.

In blockchain-adoptive jurisdictions such as Delaware and Wyoming, current technologies are not ideal because they are based on a distributed ledger. The use of multiple nodes in separate jurisdictions presents the problem of upholding legislation, where nodes may be untraceable, and local laws may differ [7]. Current systems also raise the legal and ethical issues of allowing third parties to maintain the shareholder registry of a private company [31]. This highlights the requirement of regulators to hold accountable a central authority when needed, which current systems utilising blockchain technology do not allow. Furthermore, for regulators attempting to audit financial services, current systems using blockchain may present some impediment. Principally, most regulators do not have the technical knowledge required to understand the code that is stored on a blockchain, which in itself inhibits their ability to audit efficiently [32]. This problem is unlikely to change in the future, as translating code into English is a time-consuming venture. Additionally, until governing bodies specify a stance on the use of blockchain, regulators remain reluctant to accept systems based on DLT [33].

2. The Present Invention

The present invention seeks to enable paper and digital shares to be used interchangeably whilst maintaining a private yet trustworthy shareholder register, by utilising a hybrid of blockchain and centralised ledger technology. The software allows a digital security token to be issued initially and later surrendered for a temporary paper share. For the period in which the paper share is held by the purchaser, the digital share is held in the issuing companies' smart wallet in the form of a non-fungible token. These are indexed in conjunction with the paper share, in order for the digital token to be easily reissued for trading. At the time that the purchaser desires a digital share, the security token is released in exchange for the paper share.

As seen in Fig. 1, the present invention expands on current share systems by utilising the recording and verification stages of the blockchain but basing the register on a centralised ledger. The unique pairing of blockchain technology with a centralised ledger will enable both confidence in the validity of information and control over the availability of the information. By centralising the ledger, in the case of a "permissioned" embodiment, the present invention allows companies to permit automatic control to authorised persons or parties, such as regulatory bodies.

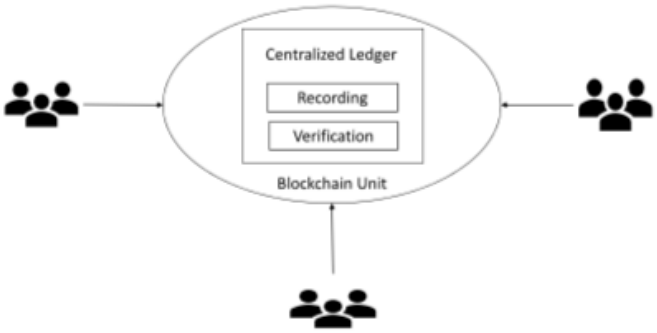

Fig. 1: blockchain share system based on a centralised ledger

This software will also enable people with a diminutive understanding of blockchain technology or tokenisation to utilise the benefits of trading on the secondary market. The present invention can allow companies to satisfy shareholders with the paper share that they desire, whilst still maintaining traceability as per the laws of their jurisdiction and remaining accountable for reporting to regulators. From the shareholder's perspective, they can obtain a paper share and retain the option to trade on the secondary market if they so desire.

2.1. Individual investors

Some individuals lack a technical understanding of the concept of digital tokens, rendering them an undesirable investment. For such people, paper shares are a preferred format. Research suggests familiarity bias as the motivation for individuals to prefer paper shares and has suggested direct links between the phenomenon and an increased return on investment [34]. *Familiarity bias* refers to a tendency to prefer familiar items and display increased confidence in familiar decisions [35]. With the ability to hold paper shares, individual investors may save money on transfer fees and increase their return due to confidence in their ability to understand the physical shares that they are holding.

Currently, should they wish to trade on the secondary market, said individuals would need to deliver the paper share to their broker to transform it into digital form. Conversely, should they desire a physical certificate after purchasing a digital share, this transformation would cost investors up to $500 [9], highlighting the absence of a straightforward method of issuing paper shares.

There is also evidence to suggest that millennial investors are more likely than previous generations to bypass the use of a stockbroker as an intermediary and invest by themselves [36]. In the present invention, the smart wallet that holds the non-fungible token can act as an intermediary, in the place of the broker, isolating the digital share and leaving individuals to deal with their preferred paper form. The present invention, therefore, allows such individuals the opportunity to invest independently, without the need for an in-depth understanding of the security token that they were initially issued.

2.2. Venture Capitalists

Venture Capitalists (VCs), otherwise known as institutional investors, invest early in promising companies in anticipation of a large return, should said company becomes successful. These investments are typically high-risk and in private (or intending to become private) companies [37, 38]. Whilst governing bodies continue to disagree on acceptable legislations, some VCs are dissuaded from investing in digital shares [39]. The present invention will provide VCs with confidence in the permanence of their investments. With the certainty that the transactions will be recorded and verified, VCs can trust in non-fungible tokens without the need for trust in the issuing company. The issuance of paper shares will also provide them with hard evidence of their investment, thus further improving their confidence in it.

Paradoxically to individual investors, VCs are bound by the regulations of the jurisdiction in which they are registered [38]. The present invention allows for simple, cost-effective transaction recordkeeping using blockchain, with the additional option to provide governing bodies with physical copies of records. Whilst DLT does not allow for the upkeep of shareholder privacy, as the register is available on all nodes within the network, the use of a centralised ledger in the present invention allows for a single register to be shared only with permissioned parties. With the help of the present invention, VCs can benefit from the elimination of the expensive and time-consuming recordkeeping methods related to legacy systems. Due to the lack of specified legislation, investment in some tokens using current blockchain systems can put VCs in a legal risk grey area. The use of a centralised ledger can enable investors to bypass these risks whilst still benefitting from the advantages of the blockchain's recordkeeping capabilities.

2.3. Issuing companies

The variance in legislation regarding shareholder registry is particularly evident on the consideration of offshore companies, such as the British Virgin Islands and Seychelles. In such jurisdictions, there is no legal requirement to maintain a shareholder registry. These paper or "bearer" shares subsequently become invisible in the event that they are resold on the secondary market. The loose guidelines in such instances can be beneficial to businesses, as they are not required to complete time-consuming and expensive recordkeeping activities. Conversely, the lack of transactional information does not follow the aforementioned global shift towards transparency. For companies without shareholder registers, the present invention provides the ability to digitise and create records, in more detail even than is required.

For companies that are bound by stricter shareholder recordkeeping legislation, the present invention will provide the aforementioned benefits of blockchain technology, with the added ability to maintain authority over shareholder registries. The centralised ledger will enable the issuing company to provide access to governing bodies at whatever level they desire, allowing them to easily share records whilst preventing any alterations occurring from third parties. For companies with progressive digital acts, such as the aforementioned cases of Delaware and Wyoming, the present invention allows companies to digitise fully, without alienating their investors.

The ability to issue paper and digital shares concurrently will also expand the potential investor base for issuing companies, regardless of jurisdiction. For companies whose investors are reluctant to accept digital shares, the present invention offers the solution of issuing simple paper shares with clear value, without relinquishing the advantages of digitisation. This, paired with the abolishment of an intermediary, would allow companies to maximise their initial offering by expanding their investor base. Research suggests that supposed knowledge of the stock market is related to increased satisfaction and likelihood of reinvesting [40], as well as an increased probability of making risky investments [41]. For businesses issuing new shares, the opportunity to do so in the paper form will improve potential investor's perceived understanding, thus increasing their initial revenue through increased investment from shareholders.

2.4. Regulators

The ability to obtain permissioned access to a centralised ledger will benefit regulators, who will no longer need to collaborate with technicians to understand the information stored on a blockchain. The issuing companies can automatically report to regulators without granting third parties the potential to alter the code. Regulators will simplify processes as they can request copies of paper shares and, unlike existing systems using DLT, still hold one central authority responsible for any inconsistencies in the data.

Regulators' current reluctance to use blockchain in place of traditional compliance testing systems has been suggested to stem from multiple concerns. Namely, whether justice can be maintained if end-users cannot understand the technicalities of the system. Also, the potential for misuse of the accessibility of

data and the difficulties obtaining permission should authoritative bodies require it [33]. The present invention seeks to resolve these issues, firstly by allowing investors and regulators to view shares in the traditional paper sense, which is understood by all involved parties. Secondly, by utilising a centralised ledger which will not be alterable by any except the issuing company. Finally, by ensuring that any governing parties can be granted "permissioned" access and that one central body (the issuing company) is responsible for ensuring that this is completed.

4. Conclusion

Blockchain and DLT are often hailed as the futuristic solution to inefficiencies within the finance industry. Despite this, there are concerns surrounding its ability to comply with data protection laws and the difficulty in which its outputs can be understood by the non-technical majority. Whilst many jurisdictions are moving towards an explicit acceptance of blockchain as a recordkeeping system, there is still a desire for one central ledger in order to maintain privacy and accountability. For investors, it is not desirable to purchase a share without comprehensive evidence of ownership, for which security tokens are not widely accepted.

The present invention seeks to enable companies and investors to issue and trade with digital shares, whilst also holding a physical representation of the share in paper form. The software here discussed also enables companies to easily track the owners of their shares, thus adhering to the legislation of their respective jurisdictions. Furthermore, the ability to enable governing bodies some level of automatic access to the registers can lessen the time and costs associated with compliance. For companies outside of jurisdiction, the ability to easily record shareholder information whilst also issuing bearer shares is considered for the first time. The present invention addresses the dichotomy of recordkeeping obligations and data privacy fulfilment by combining blockchain technology with a centralised ledger to equip companies with a heightened level of control over the recorded information. With the ability to hold a paper share in the place of an existing security token, individuals will be able to access both the primary and secondary markets, whilst retaining a level of understanding around the item that they invest in.

In order to optimise the adoption of the present invention, legislation should be altered to specify the use of blockchain as an acceptable recordkeeping system. In the case of Delaware, it has been noted that "*progress will occur only when all parties - federal, state, and private - coordinate.*" [7]. In the event that all governing bodies, issuing companies and investors became aligned, the present invention could allow for direct reporting, saving them time and money. A move towards globally accepted blockchain legislation is preferred, but seemingly improbable.

Competing Interests:
None declared.

Ethical approval:
Not applicable.

Author's contribution:
JS designed and coordinated this research and prepared the manuscript in entirety.

Funding:
None declared.

Acknowledgements:
JS would like to thank Dr. ABC at University of XYZ

References:

[1] S. Nord, "Blockchain Plumbing: A Potential Solution for Shareholder Voting?", University of Pennsylvania Journal of Business Law, vol. 21, no. 3, 2019. Available: https://scholarship.law.upenn.edu/jbl/vol21/iss3/4. [Accessed 20 May 2020].

[2] D. Gracie, "Global Beneficial Ownership Reporting", KPMG, 2017. [Online]. Available: https://home.kpmg/uk/en/home/insights/2017/08/global-beneficial-ownership-reporting.html. [Accessed: 16- May- 2020].

[3] S.E.C., "SEC.gov | Officers, Directors and 10% Shareholders", Sec.gov, 2020. [Online]. Available: https://www.sec.gov/smallbusiness/goingpublic/officersanddirectors. [Accessed: 15- May- 2020].

[4] A. Tapscott and D. Tapscott, "How Blockchain Is Changing Finance", Harvard Business Review, vol. 1, no. 9, pp. 2-5, 2017. Available: https://hbr.org/2017/03/how-blockchain-is-changing-finance. [Accessed 15 May 2020].

[5] A. Collomb and K. Sok, "Blockchain / Distributed Ledger Technology (DLT): What Impact on the Financial Sector?", Digiworld Economic Journal, vol. 103, 2016. [Accessed 17 May 2020].

[6] J. Lee, "Smart Contracts for Securities Transactions on the DLT Platform (Blockchain): Legal Obstacles and Regulatory Challenges", University of Exeter School of Law Research Paper, vol. 2019-01, 2019. Available: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3523317. [Accessed 17 May 2020].

[7] H. Bumin and Doyduk, Impact of Digital Technology and the Use of Blockchain Technology from the Consumer Perspective, 1st ed. Springer, 2020, pp. 283-290.

[8] A. Walch, "Blockchain's Treacherous Vocabulary: One More Challenge for Regulators", Journal of Internet Law, vol. 21, no. 2, 2017. Available: https://ssrn.com/abstract=3019328

[9] M. Lee, "Stock Certificates Have Gone With the Winds of Change", Investopedia, 2020. [Online]. Available: https://www.investopedia.com/ask/answers/06/stockcertificate.asp. [Accessed: 10- Jul- 2020].

[10] A. Ferreira, "Emerging regulatory approaches to blockchain based token economy", The Journal of The British Blockchain

Association, vol. 3, no. 1, pp. 1-9, 2020. Available: 10.31585/jbba-3-1-(6)2020 [Accessed 15 May 2020].

[11] M. Atzori, "Blockchain Governance and The Role of Trust Service Providers: The TrustedChain® Network", The Journal of the British Blockchain Association, vol. 1, no. 1, pp. 1-17, 2018. Available: https://www.researchgate.net/publication/326188677_Blockchain_Governance_and_The_Role_of_Trust_Service_Providers_The_TrustedChainR_Network. [Accessed 15 May 2020].

[12] T. Aste, P. Tasca and T. Matteo, "Blockchain technologies: The foreseeable impact on society and industry.", Computer, vol. 50, no. 9, pp. 18-28, 2017. Available: https://discovery.ucl.ac.uk/id/eprint/10043048/1/Aste_BlockchainIEEE_600W_v3.3_A.doccceptedVersion.x.pdf. [Accessed 16 May 2020].

[13] J. van Oerle and P. Lemmens, "Distributed ledger technology for the financial industry", Robeco, 2016.

[14] Disclosure of Beneficial Ownership in Selected Countries", Loc.gov, 2017. [Online]. Available: https://www.loc.gov/law/help/beneficial-ownership/disclosure-beneficial-ownership.pdf. [Accessed: 15- May- 2020].

[15] An Act to Amend Title 8 of The Delaware Code Relating to The General Corporation Law., vol. 1-40, no. 69. Delaware: Delaware State Senate, 2017.

[16] Kelly and M. Mescall, "Taking Stock of the Block: Blockchain, Corporate Stock Ledgers, and Delaware General Corporation Law: Part II", The Journal of Robotics, Artificial Intelligence & Law, vol. 1, no. 4, pp. 235-250, 2018. Available: https://heinonline.org/HOL/Page?handle=hein.journals/rail1&div=38&g_sent=1&casa_token=&collection=journals#. [Accessed 15 May 2020].

[17] In Re Dole Food Company inc. Stockholder Litigation, vol. 8703-. 2017, p. 1.

[18] "In re Appraisal of Dell Inc.: The Continuing Relevance of Deal Price in Delaware Appraisal Proceedings", Americanbar.org, 2020. [Online]. Available: https://www.americanbar.org/groups/business_law/publications/blt/2016/07/delaware_insider/. [Accessed: 20- May- 2020].

[19] Z. Fan, "Shareholder Value Implication of Blockchain Recordkeeping of Stock Ownership", Ph.D, The University of Texas at Dallas, 2020.

[20] Wyoming Utility Token Act-property amendments., vol. 1-7, no. 100. Wyoming: The State of Wyoming 2019 General Session, 2018.

[21] D. Rabinowitz, R. Murdock and A. Wanzenberg, "Wyoming to Permit Insurers to Invest in Digital Assets", Kramer Levin, 2020. [Online]. Available: https://www.kramerlevin.com/en/perspectives-search/Wyoming-to-Permit-Insurers-to-Invest-in-Digital-Assets.html. [Accessed: 15- May- 2020].

[22] S. Zhang, D. Zhang, J. Zheng and W. Aerts, "Does policy uncertainty of the blockchain dampen ICO markets?", Accounting & Finance, 2020. Available: 10.1111/acfi.12639 [Accessed 18 May 2020].

[23] L. Laidin, K. Papadopoulou and N. Dane, "Parameters for Building Sustainable Blockchain Application Initiatives", The Journal of the British Blockchain Association, vol. 2, no. 1, pp. 1-6, 2019. Available: 10.31585/jbba-2-1-(6)2019.

[24] R. Priem, "Distributed ledger technology for securities clearing and settlement: benefits, risks, and regulatory implications", Financial Innovation, vol. 6, no. 11, 2020. Available: 10.1186/s40854-019-0169-6 [Accessed 18 May 2020].

[25] D. Masciandaro, "Central Bank Digital Cash and Cryptocurrencies: Insights from a New Baumol-Friedman Demand for Money", Australian Economic Review, vol. 51, no. 4, pp. 540-550, 2018. Available: 10.1111/1467-8462.12304 [Accessed 18 May 2020].

[26] Park. C, "Institutional Investors in Corporate Governance of Korea". Asian Business Lawyer, 5, 53-76, 2010.

[27] S. Dyson, "Blockchain Investigations - Beyond the 'Money'", The Journal of the British Blockchain Association, vol. 2, no. 2, pp. 1-9, 2019. Available: 10.31585/jbba-2-2-(6)2019.

[28] EY, "EY releases zero-knowledge proof blockchain transaction technology to the public domain to advance blockchain privacy standards", 2019.

[29] A, Baum. "Tokenisation–The Future of Real Estate Investment?." Oxford University Research Paper, 2020-01.

[30] J. Trevathan and W. Read, "Privacy and Security Concerns for Online Share Trading", 2020. [Accessed 19 May 2020].

[31] J. Zhao, S. Fan and J. Yan, "Overview of business innovations and research opportunities in blockchain and introduction to the special issue", Financial Innovation, vol. 2, no. 1, 2016. Available: 10.1186/s40854-016-0049-2 [Accessed 10 July 2020].

[32] P. De Filippi and A. Wright, Blockchain and the law, 1st ed. Massachusetts: Harvard University Press, 2018, pp. 64-85.

[33] P. Ozili, "Blockchain Finance: Questions Regulators Ask", SSRN Electronic Journal, pp. 123-129, 2018. Available: 10.2139/ssrn.3243817.

[34] M. Stanley, "The Application of Behavioural Heuristics to Initial Coin Offerings Valuation and Investment", The Journal of the British Blockchain Association, vol. 2, no. 1, pp. 1-7, 2019. Available: 10.31585/jbba-2-1-(7)2019.

[35] H. Baker and J. Nofsinger, Behavioral finance. Hoboken (N.J.): John Wiley & Sons, Inc., 2011, pp. 277-294.

[36] Accenture, "Millennial Investors More Conservative, Less Trusting of Financial Advisors than Baby Boomers and Gen Xers, According to Accenture Survey", 2013.

[37] N. Rosenbusch, J. Brinckmann and V. Müller, "Does acquiring venture capital pay off for the funded firms? A meta-analysis on the relationship between venture capital investment and funded firm financial performance", Journal of Business Venturing, vol. 28, no. 3, pp. 335-353, 2013. Available: 10.1016/j.jbusvent.2012.04.002.

[38] R. Nahata, "Venture capital reputation and investment performance", Journal of Financial Economics, vol. 90, no. 2, pp. 127-151, 2020. Available: 10.1016/j.jfineco.2007.11.008 [Accessed 19 May 2020].

[39] M. Carrier, "SOPA, PIPA, ACTA, TPP: An Alphabet Soup of Innovation-Stifling Copyright Legislation and Agreements", Northwestern Journal of Technology and Intellectual Property, vol. 11, no. 2, 2013. Available: https://scholarlycommons.law.northwestern.edu/cgi/viewcontent.cgi?referer=https://scholar.google.com/&httpsredir=1&article=1179&context=njtip. [Accessed 19 May 2020].

[40] M. Tasci and O. Ozdemir, "Reactions of dissatisfied investors: exit, voice or loyalty", Journal of Financial Services Marketing, vol. 22, no. 3, pp. 109-118, 2017. Available: 10.1057/s41264-017-0027-4 [Accessed 17 May 2020].

[41] S. Lodhi, "Factors Influencing Individual Investor Behavior: An Empirical Study of City Karachi", IOSR Journal of Business and Management, vol. 16, no. 2, pp. 68-76, 2014. Available: 10.9790/487x-16236876.

