

Using Blockchain To Settle Trades Could Alter Litigation

By Sujay Dave, George Oldfield and Ethan Moore (August 6, 2020)

Crypto startup company Paxos Trust LLC **is piloting** a blockchain-based approach for settling equity trades with the tacit endorsement of the U.S. Securities and Exchange Commission.[1] If successful, Paxos' approach has the potential to unseat the Depository Trust Clearing Corp. and permanently change how trade settlement works.

Not to be outdone, the DTCC announced an initiative at the end of May called Project Ion to explore the same technology.[2] Benefits of a blockchain approach — also called distributed ledger technology, or DLT — compared to the traditional centralized approach may include increased settlement speed, reduced risk, faster access to funds and reduced costs.

Theoretically, the DLT approach could also allow for accurate identification of damaged investors in securities class actions, including Rule 10b-5 and Section 11 litigation. There are risks to implementing a wholesale change to the settling processes, however, and it is not clear at this point if a DLT approach is superior.

How Trade Settlement Works Today

The DTCC is the only central securities depository in the U.S., meaning that broker-dealers and banks deposit and hold securities centrally under the DTCC's custody.[3] This allows trades to be executed through electronic book entry rather than delivery of physical certificates.

The current broker-to-broker order to settlement process works as follows:

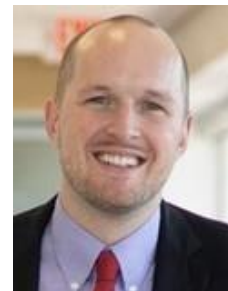
1. An investor sends an order to a broker to buy or sell securities.
2. The broker sends the order for execution to an exchange.
3. The trade is made with another broker on the exchange.
4. Trade information is sent by the exchange to the DTCC's National Securities Clearing Corp. subsidiary for post-trade processing.
5. The NSCC processes and records the trade and issues to the broker counterparties a summary, including information on the net securities positions and net money to be settled.
6. The NSCC sends instructions to the DTCC's Depository Trust Corp. subsidiary with net securities positions to be settled. As deliveries of securities are processed, the net money to be settled is posted to the NSCC's settlement system.
7. The DTC transfers ownership of securities electronically, moving net securities positions from the selling broker's account to the NSCC's account, and then from the NSCC's account to the buying broker's account.



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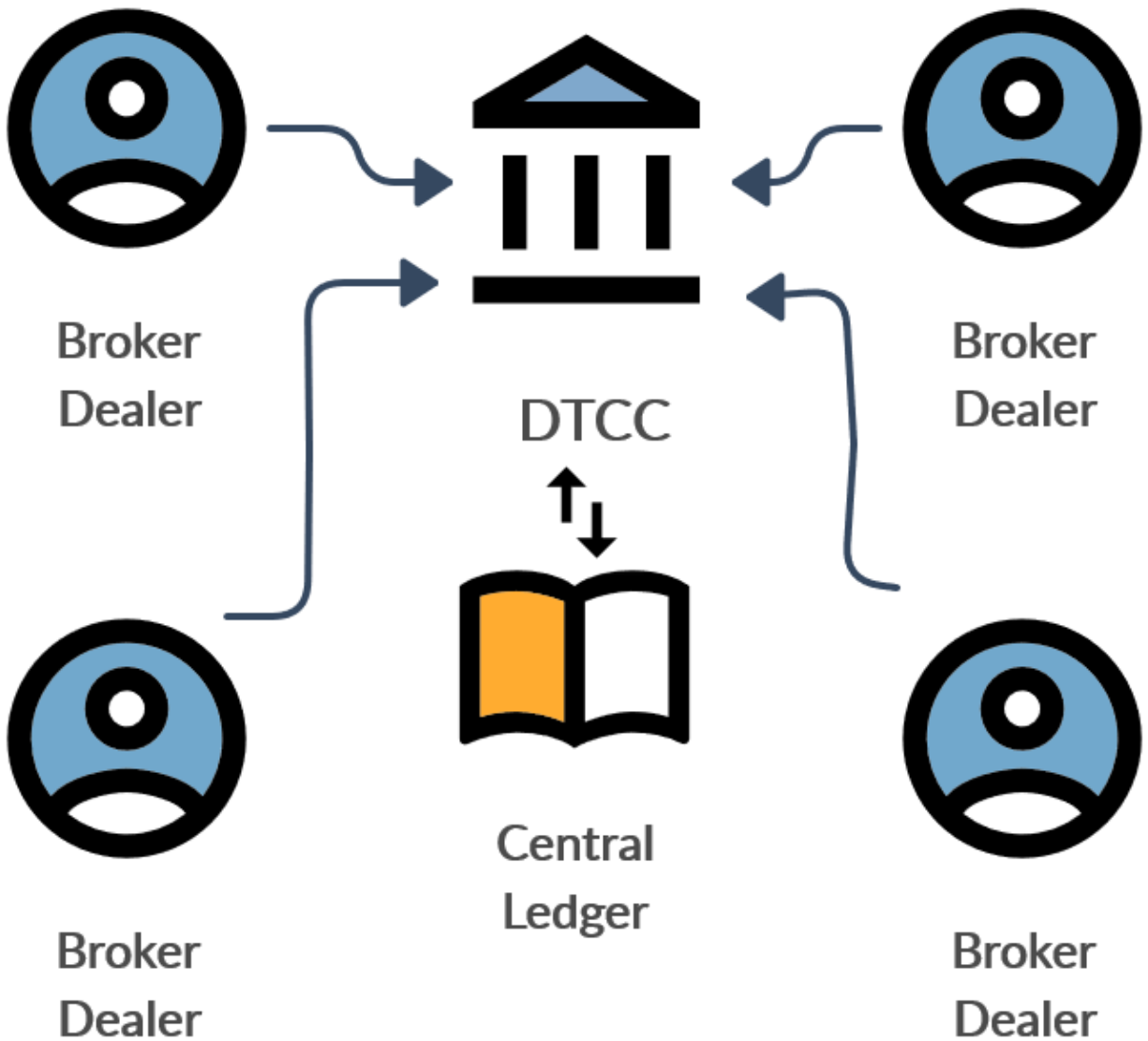
8. The brokers' settling banks send or receive funds to or from the DTC as the NSCC's agent to complete settlement, at which time all securities movements become final.[4]

In the current setup, most investors elect to hold their stock certificates in street name, which permits the stock to be held in the name of their broker at the DTCC.[5] While this allows for efficiency in the settlement process, it also means there is no master registry of the beneficial owners of stock — i.e., the DTCC only tracks the broker-dealer's identity in the settlement, not the beneficial owner of the shares.

The lack of a single master registry of beneficial stock ownership creates at least two problematic issues. First, overvoting can occur in shareholder votes when broker-dealers lend stock they hold in street name, as it may appear that there are two beneficial owners of the same shares.[6]

Second, when short sales take place, both the lender of shares and the owner of the same shares that were sold short may appear qualified to make damage claims in securities class actions, resulting in possible double counting of damaged shares.[7]

Centralized Settlement



In addition to the problems resulting from the lack of a master registry, the costs of the current system are threefold. First, there are the direct dollar costs charged by the DTCC in the form of fees.[8]

Second, there are indirect costs in the form of personnel and processes that broker-dealers maintain to manage the flow of information back and forth with the DTCC.

Third, and perhaps most important, is the cost of time. The DTCC settlement model for equity securities currently operates at a standard settlement time frame of T+2, which is shorthand for two days after the trade date. During this time window, the investor's funds are essentially tied up. Until 2017, a three-day settlement period, or, T+3, was standard.[9]

Trade Settlement on the Blockchain

On Oct. 28, 2019, the SEC issued a no-action letter to Paxos that proposed to pilot a project in which blockchain technology would be used to settle equity trades.[10] In its letter, the SEC limited the pilot to a set of 140 high-volume, low-volatility equity securities and a two-year test window.[11]

On Feb. 20, 2020, Paxos announced that it had gone live with the pilot settlement service and begun settling bilateral U.S. equity trades between Credit Suisse Group AG and Instinet LLC.[12]

Paxos' approach uses a blockchain called the Paxos Ledger to record peer-to-peer trades in cash and securities. Blockchains are distributed ledgers that record transactions between two parties in a verifiable and permanent way. The blocks are records of the transactions and they are virtually stacked together to form a permanent chain of records that are publicly observable.

The Paxos Ledger is a private and permissioned blockchain, which provides an additional level of security over open blockchains like Bitcoin, as they require an access control layer.

How the Paxos Settlement Service Works

Asset Digitization

A customer will deposit an eligible security into their Paxos Settlement Service account by instructing their broker to transfer the security from the broker's DTCC account to Paxos' DTCC account. Upon receipt of a security into Paxos' DTCC account, Paxos will create a digitized security entitlement (i.e., a token-ized version), which is a digital representation of the security. This security entitlement will be credited to the customer on the Paxos Ledger.[13]

Cash Digitization

A customer will also deposit funds in U.S. dollars to a specified Paxos bank account for operating cash or margin cash needs. This can be done by wire transfer. Upon receipt of the cash into a Paxos bank account, Paxos will create a digitized security entitlement (this time, representing U.S. dollars) credited to the customer on the Paxos Ledger.[14]

Trade Submission for Settlement

The pilot project is currently limited to trades that are executed on an Over-the-counter basis or on a trading venue that Paxos authorizes. Once completed, a trade that is ready for settlement is submitted to the Paxos Settlement Service. The trade submission will contain the requisite trade details, including the transacted security, quantity of shares, price per share, net amount of money to be settled, buying trade counterparty, selling trade counterparty, trade date, and settlement date.[15]

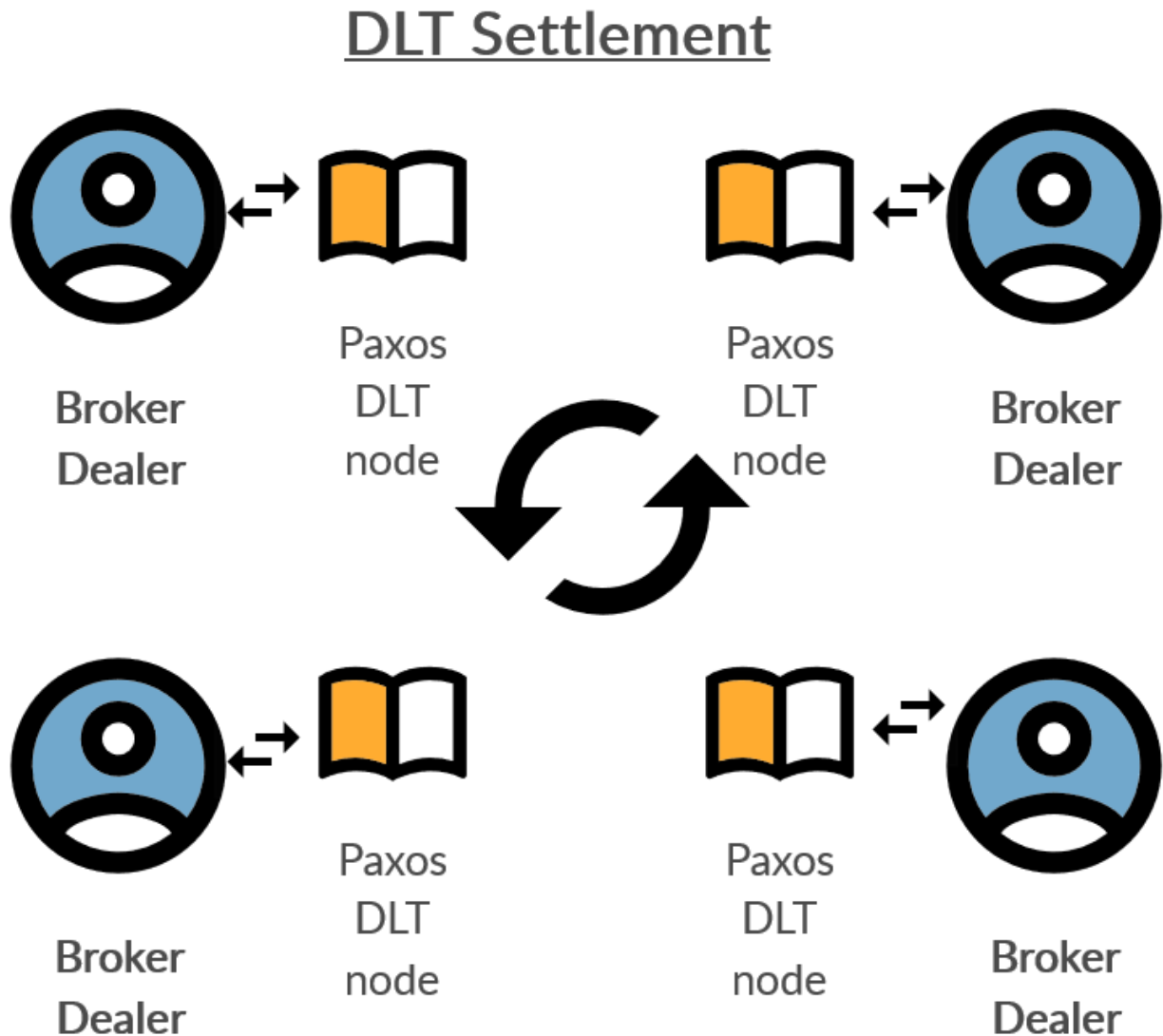
Settlement

Provided that the trade counterparties have sufficient digitized cash and securities in their Paxos Settlement Service accounts, Paxos will automatically settle the obligations between two counterparties by causing the security entitlements to the cash and securities to be simultaneously transferred between the relevant customers' accounts on the Paxos

Ledger.[16]

Paxos describes its service as a "post-trade settlement platform for U.S. securities that enables existing market participants to settle trades between themselves" using a permissioned blockchain network.[17]

The benefits Paxos says it will achieve are (1) access to shorter settlement times, including T+0 and T+1, in addition to the standard T+2; (2) immediate access to settlement proceeds; and (3) accuracy and visibility into time-stamped records of asset ownership on the Paxos Ledger.



Whether Paxos can scale up and handle large transaction volumes is an open question, however. Others have experimented with similar approaches and the results on speed and scalability have been mixed.

For example, a German blockchain-settlement experiment with Bundesbank and Deutsche Boerse found that, although operational in principal, "[t]he blockchain solutions [to settle securities and cash] did not fare better in every way: the process took a bit longer and resulted in relatively high computational costs." [18]

Security is also a concern. Cryptocurrency and blockchain-based businesses have been subject to almost non-stop hacking attempts in recent years, which is an issue Paxos and others will face. The private and permissioned nature of the Paxos ledger provides a substantial layer of security relative to open blockchains, however.

Fragmentation of the settlement infrastructure may also create problems. Broker-dealers and institutional traders all have internal operations tailored to interfacing with the DTCC and its processes.

If Paxos' experiment is successful, the logical outcome is a fragmentation of settlement processes that vary in terms of time, services offered, and information communicated. Adapting to multiples services may prove costly and inefficient for some market participants.

DLT and Securities Class Actions

From a litigation perspective, DLT-based settlement has the potential to solve a thorny problem in Rule 10b-5 and Section 11 securities class actions.[19] Currently, distributing damages to qualified shareholders in these matters is challenging due to the indirect nature of share ownership, particularly when artificial shares are created by short sellers.

Both the lender of shares and the owner of the same shares that were sold short may appear qualified to make damage claims, resulting in possible double counting. As noted above, no master register of the beneficial owners of shares exists to sort out this problem.

As a general matter, the question of who is damaged will arise in any securities class action settlement: is the damaged party the share lender, the buyer of borrowed shares sold by shorts, or both? In the *In re: Dole Food Co. Inc.* settlement, the Delaware Chancery Court ruled that the trader shorting a stock was the party responsible for paying damages to the buyer of the shares.[20] Tracking down individual shorts associated with a buyer's long position and then extracting a payment is difficult to impossible, however.

A transaction record system on a blockchain, like the Paxos Ledger, might solve the recording problems. In a DLT setup, every share of stock has its own tokenized blockchain record history. Every transaction, therefore, would be recorded in a block that contains data, such as seller, buyer, price, action — buy, sell, lend, borrow, payment made and received — along with a time stamp.

Having this record would allow a court to know who was the beneficial owner of shares at any time and so would qualify for damages.

Is the DLT Approach Really any Better?

Setting aside the issue of sorting through artificial shares in securities class actions, a key question remains: Can the benefits that Paxos promises be achieved with a less disruptive upgrade to the current centralized model of trade settlement?

The answer may very well be yes. DLT promises speed, transparency and faster access to funds, but there does not seem to be an impediment to achieving the same benefits under a centralized architecture. Indeed, Paxos' DLT settlement service still relies on the DTCC to act as the central depository for the digitized securities on the Paxos Ledger — it is therefore ultimately still centralized solution.

Mike McClain, managing director at DTC Settlement Services, recently said in an interview that "forcing a wholesale move by the industry would not be easy," and emphasized the promise of the digital accelerated settlement program to "introduce optimized settlement processes and accelerate settlement to T+0, while retaining the core benefits of DTC's centralized netting and risk management."

McClain continued, "[T]his service would not force operational or technical change, nor would it cause fragmentation to the clearance and settlement ecosystem." In other words, we may not need to abandon centralized post-trade settlement to achieve the same benefits promised by DLT.[21]

Conclusion

Like most innovations, the application of blockchain technology to equity settlement comes with a set of risks. First and foremost, ensuring that distributed ledgers are secure and safeguarded against errors and hacking is paramount to the long-term success of the technology.

Next, the technology must prove it can handle transactional volumes required of modern public equity markets — an open question.

Finally, the question of whether the potential speed and transparency benefits outweigh potential fragmentation costs is one that can only be answered as we observe the outcome of pilot projects like the Paxos Ledger or the DTCC's own blockchain initiative.

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[1] "Re: Clearing Agency Registration Under Section 17A(b)(1) of the Securities Exchange Act of 1934," Division of Trading and Markets, Securities and Exchange Commission, October 28, 2019, accessed July 5, 2020, <https://www.sec.gov/divisions/marketreg/mr-noaction/2019/paxos-trust-company-102819-17a.pdf>.

[2] "DTCC Unveils Proposals to Explore Further Digitalization in the Public & Private Markets," DTCC, May 2018, 2020, <https://www.dtcc.com/news/2020/may/18/dtcc-unveils-proposals-to-explore-further-digitalization>. ("Project Ion is about working with the industry to further the value proposition on accelerated settlement leveraging new capabilities such as DLT and tokenized securities, and to learn how DTCC can best deploy these technologies to deliver additional value to clients and the industry.").

[3] The SEC regulates CSD and clearing services under Section 17A of the Exchange Act and Rule 17Ab2-1, which requires registration and approval that the depository meet statutory and regulatory requirements. The DTC is on the only CSD that is registered by the SEC. "Clearing Agencies," U.S. Securities and Exchange Commission, accessed July 16, 2020, <https://www.sec.gov/tm/clearing-agencies>.

[4] "Following the Trade: A Guide to DTCC's Pivotal Roles in How Securities Change Hands," DTCC, accessed July 9, 2020, <https://docplayer.net/11112334-Following-a-trade-a-guide-to-dtcc-s-pivotal-roles-in-how-securities-change-hands.html>.

[5] While an investor can opt instead to hold shares with the DTCC under their own name using the DTCC's Direct Registration System ("DRS"), registering holdings in this way is both more expensive and more cumbersome than holding in street name. See "FAQs: How issuers work with DTC - In What Ways Can Investors Hold Interests in a DTC Eligible Security," DTCC, accessed July 20, 2020, <https://www.dtcc.com/settlement-and-asset-services/issuer-services/how-issuers-work-with-dtc>. ("DRS allows an investor, as the owner of the security, to be the registered holder directly on the issuer's books and records, maintained by its transfer agent... An investor can sell directly from its DRS account but transfer agents cannot provide a current price or limit price, thus the securities must usually be transferred electronically from the investor's account with the issuer or transfer agent to its broker/dealer through DTC.").

[6] The U.S. Securities and Exchange Commission, "Roundtable on Proxy Voting Mechanics" (Washington D.C., May 23, 2007), accessed July 9, 2020, <https://www.sec.gov/spotlight/proxyprocess/proxyvotingbrief.htm>.

[7] See e.g. In re: Dole Food Co., No. 8703-VCL, 2017 Del. Ch. LEXIS 25, at *19 (Del. Ch. Feb. 15, 2017).

[8] The DTCC has recently published its "2020 DTC Fee Schedule," which lists initial direct costs to participants of 760 USD per first five accounts, with a large set of additional fees for various direct registration, securities processing, corporate actions, custody services, deposit services, and others. "Guide to the DTC Fee Schedule," DTCC, Electronic Document Library - Fee Guides, accessed July 5, 2020, <http://www.dtcc.com/settlement-and-asset-services/edl-fees>.

[9] "Explaining T+2 to Clients and End Users," DTCC Connection, March 1, 2017, accessed July 5, 2020, <http://www.dtcc.com/news/2017/march/01/explaining-t2-to-clients-and-end-users>. See also "What Do T+1, T+2, and T+3 Mean?" Investopedia, February 10, 2020, accessed July 5, 2020, <https://www.investopedia.com/ask/answers/what-do-t1-t2-and-t3-mean/>.

[10] "Re: Clearing Agency Registration Under Section 17A(b)(1) of the Securities Exchange Act of 1934," Division of Trading and Markets, Securities and Exchange Commission, October 28, 2019, accessed July 5, 2020, <https://www.sec.gov/divisions/marketreg/mr-noaction/2019/paxos-trust-company-102819-17a.pdf>.

[11] "Re: Clearing Agency Registration Under Section 17A(b)(1) of the Securities Exchange Act of 1934," Division of Trading and Markets, Securities and Exchange Commission, October 28, 2019, accessed July 5, 2020, <https://www.sec.gov/divisions/marketreg/mr-noaction/2019/paxos-trust-company-102819-17a.pdf>.

[12] "Paxos Settlement Service Begins Settling U.S. Securities Trades for Credit Suisse and Instinet," Paxos Press Release, February 20, 2020, accessed July 5, 2020, https://www.prnewswire.com/news-releases/paxos-settlement-service-begins-settling-us-securities-trades-for-credit-suisse-and-instinet-301007785.html?tc=eml_cleartime. See also Ben Jessel, "Credit Suisse and Instinet Go Live with Paxos Settlement Service," Forbes, February 20, 2020, accessed July 5,

2020, <https://www.forbes.com/sites/benjessel/2020/02/20/credit-suisse-and-instinet-go-live-with-paxos-settlement-service/#77decf5764f3>.

[13] "Re: Clearing Agency Registration Under Section 17A(b)(1) of the Securities Exchange Act of 1934," Division of Trading and Markets, Securities and Exchange Commission, October 28, 2019, accessed July 5, 2020, <https://www.sec.gov/divisions/marketreg/mr-noaction/2019/paxos-trust-company-102819-17a.pdf>.

[14] "Re: Clearing Agency Registration Under Section 17A(b)(1) of the Securities Exchange Act of 1934," Division of Trading and Markets, Securities and Exchange Commission, October 28, 2019, accessed July 5, 2020, <https://www.sec.gov/divisions/marketreg/mr-noaction/2019/paxos-trust-company-102819-17a.pdf>.

[15] "Re: Clearing Agency Registration Under Section 17A(b)(1) of the Securities Exchange Act of 1934," Division of Trading and Markets, Securities and Exchange Commission, October 28, 2019, accessed July 5, 2020, <https://www.sec.gov/divisions/marketreg/mr-noaction/2019/paxos-trust-company-102819-17a.pdf>.

[16] "Re: Clearing Agency Registration Under Section 17A(b)(1) of the Securities Exchange Act of 1934," Division of Trading and Markets, Securities and Exchange Commission, October 28, 2019, accessed July 5, 2020, <https://www.sec.gov/divisions/marketreg/mr-noaction/2019/paxos-trust-company-102819-17a.pdf>.

[17] "Frequently Asked Questions: What is Paxos Settlement Service?" <https://www.paxos.com/what-is-paxos-settlement-service/>. See also "Paxos Settlement Service," <https://www.paxos.com/securities/>.

[18] Carolyn Look, "Blockchain Settlement Was Slow, Costly in Trial, Weidmann Says," Bloomberg, May 29, 2019, accessed July 5, 2020, https://www.bloomberg.com/news/articles/2019-05-29/blockchain-settlement-was-slow-costly-in-trial-weidmann-says?utm_source=twitter&utm_content=business&cmpid=socialflow-twitter-business&utm_medium=social&utm_campaign=socialflow-organic. See also Izabella Kaminska, "Blockchain officially confirmed as slower and more expensive," Financial Times, May 29, 2019, accessed July 5, 2020, <https://ftalphaville.ft.com/2019/05/29/1559146404000/Blockchain-officially-confirmed-as-slower-and-more-expensive/>.

[19] George Oldfield, Angela Lam, and Ethan Moore, "How Blockchain Could Rescue 10b-5 Damages," Law360, August 24, 2018, accessed July 5, 2020, <https://www.law360.com/articles/1076695/how-blockchain-could-rescue-10b-5-damages>.

[20] Steven Davidoff Solomon, "Dole Case Illustrates Problems in Shareholder System," The New York Times, March 21, 2017, accessed July 8, 2020, <https://www.nytimes.com/2017/03/21/business/dealbook/dole-case-illustrates-problems-in-shareholder-system.html>.

[21] DTCC Connection, "Advancing Together: Moving Settlement Processes to T+0," Medium, June 17, 2020, https://medium.com/@DTCC_Connection/advancing-together-moving-settlement-processes-to-t-0-a50e617f0ec1.