



USING BLOCKCHAIN TO FOSTER TRUST IN SECURITIES LENDING

Abstract

The practice of securities lending evolved to help lenders enhance returns on long-term investments while assisting borrowers with monetary resources. The transaction chain between lenders and borrowers is peppered with intermediaries that act as the custodians of trust and transparency. This paper examines how blockchain and its features can be leveraged as a technology to foster implicit trust, accountability, and transparency in the securities lending market. It also provides a reference view of actual blockchain-based transactions for different types of securities lending.

Securities Lending – How it Began

Securities that are owned over a long investment horizon are typically illiquid and dormant. This gave rise to ‘securities lending’ as a way for investors to make additional revenues on their securities investments without having to indulge in trading. Becoming a ‘securities lender’ helps investors enhance returns on idle,

dormant, and long-term securities. For ‘securities borrowers’, the objective is to cover any short positions and temporarily transfer the securities ownership (similar to scheduled voting, for example).

Securities lending is a global business practice that involves lending securities

such as equities, treasury, or government bonds for a rental fee. Lenders of securities are typically pension funds, hedge funds, mutual funds, and insurance companies that utilize their surplus and idle assets by lending these to money markets or central banks for an attractive price.

How it Works

An archetypal lending arrangement needs trustworthy intermediaries to assure payment of the cash and securely hold the security asset in the interim. In a bilateral arrangement, intermediaries are usually custodians of lenders and borrowers. In a tri-party arrangement, a custodian bank would provide services like verifying and managing collaterals, making collateral substitutions and mark to market, sending reports to the lender and borrower, making margin calls, etc. The tri-party agent will be in charge of receiving the eligible collaterals from the borrower, holding these till the transaction is closed, and finally transferring the collateral back to the borrower or, in case of default,

returning it to the lender. Borrowers pay for the services of tri-party agents.

A typical lending arrangement between a lender and a borrower may be viewed as an offering stipulated by a lender to a borrower covering details of securities that are available for lending and the type of collateral a borrower needs to offer to mitigate the counterparty risk. A ‘lending tenor’ is defined between parties, which may be open or closed. In a closed tenor, the borrower has to return the ownership of the securities back to the lender at the end of the agreed period whereas in an open tenor, the securities should be

transferred back to the lender on the lender’s demand.

To secure themselves from counterparty risk, lenders specify their requirements of collateral (cash/non-cash) in a lending agreement. Generally, a “haircut” is applied on the current valuation of the collateral to mitigate any volatility of the collateral value in the future. In case of a default where the borrower fails to meet their obligation to return the securities as per the agreement, the lender has the right to liquidate the collateral and use these proceeds to purchase the securities from the open market.

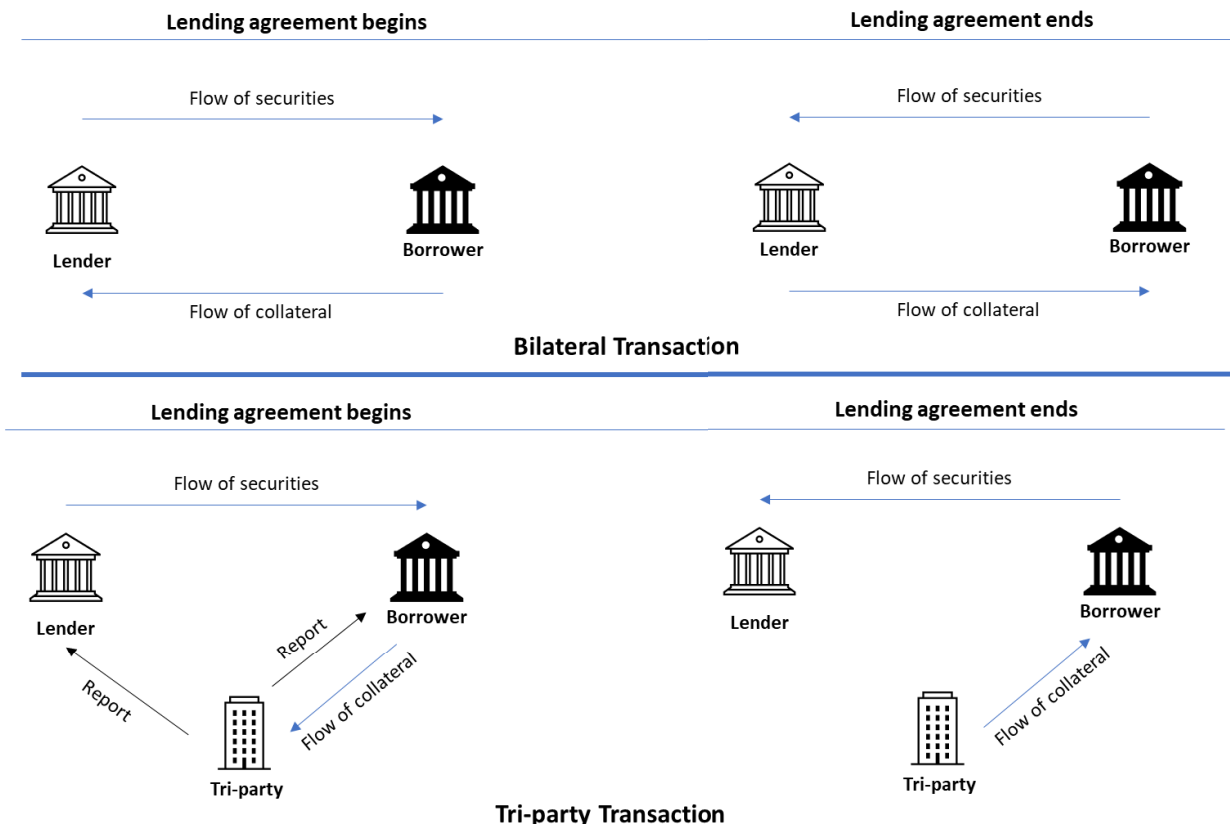


Figure 1 - Bilateral and tri-party arrangements of securities lending

Securities Lending – A Use Case for Blockchain

Blockchain is a technology proven to reduce overheads, eliminate the need for intermediaries, and facilitate real-time information dissemination by executing real-time seamless transactions directly between transacting parties. In the context of securities lending, it improves collateral movement, thereby providing capital savings for all stakeholders. Moreover, the seamless exchange of securities with disparate collaterals, as enabled by blockchain, will reduce credit risk, operational risk, and intraday liquidity requirements.

Blockchain solutions offer modern features such as smart contracts, delivery versus delivery (DvD) models, and delivery versus payment (DvP) models that can transform the securities lending landscape. These features are further explained below:

1. DvD-based settlements between securities and non-cash collaterals

For non-cash collaterals, the delivery versus delivery (DvD) model of atomic transactions in blockchain enables real-time settlement of securities versus collaterals and vice versa. It provides trust through cryptographic functions, thereby eliminating the need for intermediaries like tri-party agents or custodians to settle these transactions.

2. DvP-based settlements between securities and cash collaterals

For cash collaterals, the delivery versus payment (DvP) model can be implemented with tokenized fungible tokens such as stable coins and cryptocurrency. A stable coin is pegged to a 'stable' reserve asset like the US dollar or a cryptocurrency like Bitcoin and can

be used to settle the trade in real-time between borrowers and lenders. Here too, blockchain provides a robust mechanism to eliminate intermediaries without creating any liquidity or counterparty risk to lenders or borrowers.

As a common practice, the lending revenues are shared proportionately between a securities owner and a lending agent. According to market sources, lending agents typically retain 30% of the net revenue while 70% is allocated to the beneficial owners of the securities. Thus, the use of blockchain ensures a 30% increase in revenues to securities owners by eliminating the need for a lending agent in securities transactions¹.

3. Smart contracts for mark-to-market, margin calls, and reporting

Smart contracts are programs that reside on the blockchain and execute themselves under predefined conditions. These could be coded to automate the daily mark-to-market process for

the collaterals and initiate margin calls to borrowers if the collateral margin drops below the set limit. Smart contracts can also automate collateral reporting so that data is published in real time for all participants.

The figure below illustrates how these three features operate in sync to execute seamless securities lending transactions on blockchain.

It is important to recognize that tri-party agents can still operate within the blockchain ecosystem. They could continue to provide the services they currently offer with an improved sense of security and confidence to their clients by maintaining the private keys of the digital assets of their clients.

Tri-party agents, borrowers, and lenders may also host large-scale securities lending marketplaces that act as a bridge between lenders and borrowers. They could offer blockchain features such as 'fractionalization of the tokenized assets' to their clients, allowing a wider market reach and better accessibility to multiple borrowers through a syndicated securities lending program.

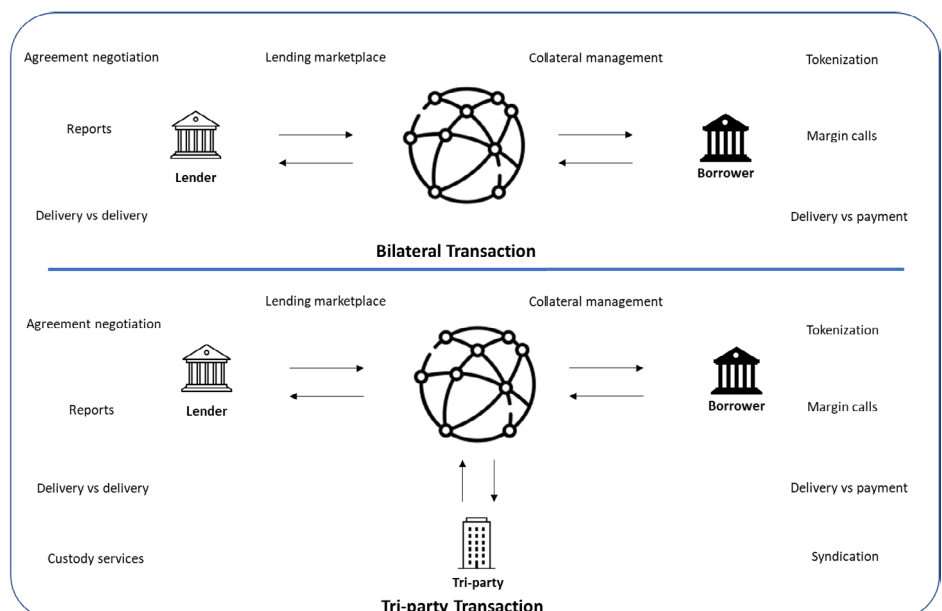


Figure 2 – A reference view of a blockchain-enabled transaction for securities lending

Conclusion

Blockchain has witnessed wide adoption in the financial services sector due to its ability to deliver security, transparency, and trust, which otherwise call for multiple intermediaries in transaction chains involving numerous financial instruments. In the securities lending marketplace, where trust is a key transaction driver, blockchain and its features hold the promise of streamlining validation, ensuring compliance, facilitating real-time information, and protecting all parties, at lower cost. Any financial institute can leverage blockchain to optimize how it handles securities lending, making it a trusted avenue for borrowers and lenders.

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Rohini is a seasoned technology leader with rich experience in technical consulting and delivery across technology and industry domains. She has extensive experience in managing large accounts, incubating and developing new practices, and sustaining delivery excellence. Her passion for technology coupled with all-round delivery experience are key to the rigor she brings in driving innovation in her portfolio. As Practice Head for Infosys Blockchain Services, Rohini is responsible for thought leadership, designing disruptive solutions, and consulting for blockchain-led business transformations across industry verticals.

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Anubhav has rich industry experience in consulting, product management, and software development in banking and financial services sectors. He provides strategic guidance and consulting services on how to apply blockchain for specific business units. His expertise lies in helping clients identify contextualized use cases with their ecosystem partners to derive shared business value. Anubhav also supports his customers in their innovation journey towards blockchain-powered digital transformation.

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