

Discussion: SecLending Chain: Blockchain Experimentation in the Banco de Portugal

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Introduction

- The paper is partially an **introduction to concepts** of distributed ledgers and the blockchain, partially a **project report**.
- The specific project on which the paper reports is an **application of distributed ledger technologies** (DLT) to the process of **security lending**.

Introduction

- Papers like this are highly welcome because the policy discussion in the last few years saw lots of hype surrounding these concepts but less of **concrete application cases**.
- Where we have completed experiments, for example in the case of project Jasper at the Bank of Canada, the experience was mixed: Yes it is possible to implement a wholesale interbank payment system with DLT but with no tangible benefits compared to the incumbent technology.
- Here we have a **report on implementation feasibility** of securities lending but not (yet) a systematic comparison with what is in place.

Securities lending

The current technological implementation of security lending has frictions because:

- The necessary information is stored in different systems.
- Updates are difficult to handle.
- Coordination with third parties, e.g. custodians, is necessary.

Would an implementation of the process on a DLT improve things?

Results from the experiment

- An implementation of security lending with a DLT system in a local machine environment is possible.
- The extension to a network is complex and significantly more challenging but feasible and demonstrated with the involvement of three NCBs.
- The DLT implementation allows for automatically triggered processes (smart contracts). But there remain open issues with respect to ledger updates and end-to-end authentication.
- Integration with external environment is no problem.

Some Questions

- Why is the deployment of a permissioned blockchain DLT framework the answer to the frictions in security lending?
- One set of frictions mentioned in the paper - like for instance lack of information integration - seem to be manageable with much more low key technological improvements or with traditional technology.
- The coordination problem with third parties – like custodians – does not obviously seem to have technological roots. This is not very well explained in the paper. So how does DLT do away with the custodian and lending role of third parties?

A suggestion to improve readability and focus

- DLT and blockchain have been extensively discussed within central banks, academic research and in the wider public since about 2015. Many excellent expositions exist and as for now there seems not so much need to include something like section 2 and 3 but rather a reference to existing expository work.
- Security lending, on the other hand, is a field unknown out of narrowly specialized professional circles. It would be helpful to discuss a bit more in detail how the process works, which are its specific problems and why DLT might be a good way to resolve them.

When do we need a distributed system?

There are **technical reasons** why we want distribution in a system (distribution of implementation):

- **Communication**
 - Message transmission between locations
 - Establish shared memory accross multiple sites
- **Performance**
 - Local processing
 - Parallelization of Processes
- **Availability**
 - Load rebalancing
 - Redundancy

To solve the information frictions involved in security lending you need to establish a shared memory accross multiple sites. There are many traditional technologies to do this and we don't need blockchain and DLT for that goal, or do we?

When do we want a distributed system?

There are also **socio-economic reasons** for distribution (distribution of control). A blockchain and a DLT are the technology of choice if we want to have distribution of control.

Reasons for distribution of control:

- Lack of trust in the administrator of the database.
- Censorship-resistance
- Joint decision making

Is any of these issues at the heart of the friction in security lending? Maybe, but it is not obvious to me.

Conclusions

- Very interesting paper and interesting work that has the courage to get concrete about blockchain and DLT applications by engaging in real technology experiments.
- It would be helpful for the non-specialists to make the case for security lending as a priority application of blockchain and DLT a bit stronger and more compelling.
- It seems that the paper just asks: Can we implement a security lending process via DLT and blockchain, and gives a tentatively positive answer. It is a bit silent on why we should do so.
- To ultimately assess the experiment there needs to be a set of parameters with respect to which we can compare the legacy technology with the new one. This step seems to be missing at the moment.