

CASH SETTLEMENT USING CENTRAL BANK MONEY

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1.0 Background

Trading in securities results in an obligation for the seller to deliver the securities (securities leg) and a corresponding obligation for the buyer to deliver the cash funds (cash leg). Payment and settlement systems are needed to enable the transfer of money and financial instruments for such transactions to take place.¹ When the systems are safe and efficient, they smoothen the functioning of the financial markets and are fundamental to money being an effective means of payment. Furthermore, well designed and managed systems help to maintain financial stability by preventing or containing financial crises and help to reduce the cost and uncertainty of settlement. Malfunctioning of payment and settlement systems can expose participants to credit and liquidity risk among other things. It is therefore essential that payment and settlement systems function safely and efficiently.²

In the financial markets, payments can be made using central³ or commercial bank money⁴. Using central bank money means that the cash settlement takes place through the central bank, using the credit and liquidity assurances provided by the central bank. Commercial bank money means that the cash settlement is done by a commercial bank, which increases the settlement risk as commercial banks have credit and liquidity risk. Since central banks can create money, they provide a higher level of assurance of continuity in the provision of payment services and liquidity compared to commercial banks. However, in as much as central banks tend to be risk-averse institutions, they are not entirely immune to operational disruptions and counter-party risk⁵.

The principles for Financial Market Infrastructure (FMI) jointly prepared by the Bank for International Settlements (BIS) and the International Organization of Securities Commissions (IOSCO) recommend that a FMI should conduct cash settlements using central bank money, where practical and available, to avoid credit and liquidity risks.⁶

¹ Comotto, R. (2011). The European Repo Council. *The interconnectivity of central and commercial bank money in the clearing and settlement of the European repo market.*

² Bank for International Settlements and International Organization of Securities Commissions. (April 2012). *Principles for financial market infrastructures.*

³ Central bank money is liabilities of a central bank, in the form of either banknotes or bank deposits held at a central bank, which can be used for settlement purposes.

⁴ Commercial bank money is commercial bank liabilities that take the form of deposits held at a commercial bank which can be used for settlement purposes.

⁵ Counterparty risk is the risk to each party of a contract that the counterparty will not live up to its contractual obligations. Counterparty risk is a risk to both parties and should be considered when evaluating a contract.

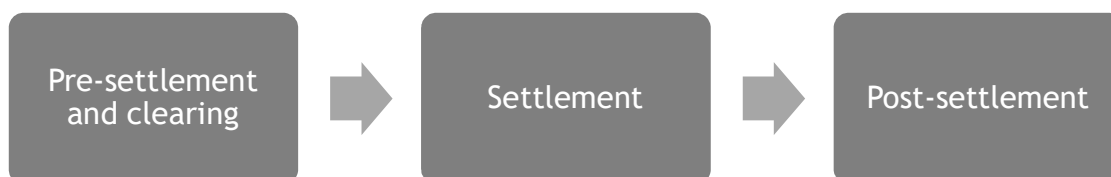
⁶ Bank for International Settlements and International Organization of Securities Commissions. (April 2012). *Principles for financial market infrastructures.*

The Securities Central Depository (SCD) at the Uganda Securities Exchange, which is a FMI, currently conducts its cash settlements using commercial bank money (Stanbic Bank). To improve the efficiency of settlement of equities and corporate bonds and align the process to international best practice, the cash leg of the settlement process for transactions concluded on the Uganda Securities Exchange (USE) should be conducted through the Bank of Uganda (BOU). This paper attempts to crystallize why central bank money should be used for settlement of securities and the options available for Uganda.

2.0 Securities Settlement

Settlement occurs after a deal has been executed. It is the transfer of ownership from the seller of the security to the buyer, combined with the transfer of the cash from the buyer to the seller. The process consists of several key stages, collectively described as clearing and settlement:⁷

Figure 1: Key Stages of the settlement process.



Source: Chartered Institute for Securities and Investment. (2019). Global Securities (Africa)

i) Pre-settlement and clearing

As soon as a trade has been executed, a number of procedures and checks must be conducted before settlement can be completed. These include matching the trade instructions supplied by each counterparty to ensure that the details they have supplied for the trade correspond. It also involves conducting checks to ensure that the seller has sufficient securities to deliver and that the buyer has sufficient funds to cover the purchase cost.

⁷ Chartered Institute for Securities and Investment. (2019). *Global Securities (Africa)*

ii) Settlement

The process through which the legal title of ownership of the securities is transferred from the seller to the buyer in exchange for the equivalent value in cash.

iii) Post-settlement

This entails the management of failed transactions and the subsequent accounting of the trades.

When a trade has been executed, a key step in the management of risk in the post-execution, pre-settlement stage is for the two sides to the trade to compare trade details, and to eliminate any mismatches, prior to the exchange of cash and securities.

Clearing is the process through which the obligations held by the buyer and seller to a trade are defined and legally formalized. This procedure establishes what each of the counterparties expects to receive when the trade is settled. It also defines the obligations each must fulfil, in terms of delivering securities or funds, for the trade to settle successfully. Specifically, the clearing process includes:⁸ Recording key trade information so that counterparties can agree on its terms; formalizing the legal obligation between counterparties; matching and confirming trade details; agreeing procedures for settling the transaction; and calculating settlement obligations and sending out settlement instructions to the brokers, custodians and the SCD.

3.0 Cash Settlement Models

The Bank for International Settlements (BIS) has identified cash settlement models for linking delivery and payment in a securities settlement system. The delivery-versus-payment (DVP) can be defined as a link between a securities transfer system and a funds transfer systems that ensures that a delivery of securities occurs if, and only if, payment is made.⁹ It is noteworthy that this paper focuses on the cash leg of the settlement process. The following are some of the cash settlement models:

3.1 Commercial Bank Money Model

The commercial bank model is currently used at the USE. In this model, the cash leg of the settlement process uses commercial bank money, meaning that the cash

⁸ Chartered Institute for Securities and Investment. (2019). *Global Securities (Africa)*

⁹ European Central Bank. (2004). *The use of central bank money for settling securities transactions: Current models and practices*. Frankfurt, Germany

settlement takes place at Stanbic Bank in Uganda's case.

The USE, different from other jurisdictions, introduced a manual step in the cash settlement process, where the net settlement¹⁰ funds are first transferred to a control account, that is managed by the Securities Central Depository. From that account net sellers of securities are then paid on the settlement date.¹¹ The intermediate step of the control account has been introduced to ensure that the settlement of the securities leg, which the USE has control over, only takes place when the cash payment has been done. Therefore, settlement only takes place if, and only if both the cash and the securities are delivered. However, because of the manual step of the control account, the settlement process does not technically meet the full delivery versus payment¹² criterion. This means that some investors, especially foreign investors are reluctant to trade on the USE.

3.2 Interfaced Model

In the interfaced model, the cash leg of the settlement process utilizes the central bank's Real Time Gross Settlement (RTGS) system. Settlement is achieved through an interface between the securities settlement system¹³ (SSS) and the central bank's RTGS system. The link between the SSS and the funds transfer system at the central bank ensures simultaneous settlement of both funds and securities¹⁴ and with that delivery versus payment.

3.3 Integrated Model

In the integrated model, the central bank outsources all the related cash settlement processing activities to the SSS, which operates directly on behalf of the central bank. The SSS operates the entries directly in dedicated accounts on the books of the central bank. The settlement participants have accounts that are held at the SSS. This model ensures the simultaneous settlement of both funds and securities¹⁵ and with that delivery versus payment.

¹⁰ Net settlement is where all transactions are offset against one another and only a single payment takes place

¹¹ Operational Procedures of the Use Securities Central Depository, 2015

¹² The delivery-versus-payment can be defined as a link between a securities transfer system and a funds transfer systems that ensures that a delivery occurs if, and only if, another delivery occurs and vice versa.

¹³ A system which permits the holding and transfer of securities, either free of payment or against payment (delivery versus payment) or against another asset (delivery versus delivery).

¹⁴ European Central Bank. (2004). *The use of central bank money for settling securities transactions: Current models and practices*. Frankfurt, Germany.

¹⁵ European Central Bank. (2004). *The use of central bank money for settling securities transactions: Current models and practices*. Frankfurt, Germany.

4.0 Current Cash Settlement Process at the USE

The SCD operates as a subsidiary company of the USE. Its core mandate is to provide centralized depository, clearing and settlement services for the Ugandan equity and corporate debt markets. The SCD provides an automated clearing and settlement service to investors and market players. All settlement participants or Securities Central Depository Agents (SCDAs) are required to open a settlement account with the settlement bank¹⁶, which is Stanbic Bank.¹⁷

The cash settlement process at the USE involves a manual process where the net settlement funds have to be first transferred from each participant that is buying securities on a net basis¹⁸ to a control account at Stanbic bank that is managed by the SCD. Then the cash is transferred to the net sellers¹⁹ from the control account.²⁰

Although the settlement system is capable of effecting settlement T+0, trades are settled within a rolling T+3 settlement cycle, to accommodate international investors from different time zones.

4.1 Problems with the current cash settlement process

The current clearing and settlement process poses the following problems, creating a hindrance to further market development:

- i) Custodian banks which are direct competitors to Stanbic Bank feel they are reliant on the services of a competitor and are hesitant to provide it with sensitive business information. Although there should be a Chinese Wall in place, other commercial banks are concerned that their transaction data from the clearing and settlement of securities may be used to gain a competitive advantage over them.
- ii) There is increased central counterparty risk, as commercial bank money rather than central bank money is used which increases settlement risk.²¹ If Stanbic runs into liquidity or credit problems, the settlement process might fail. This risk causes some investors, especially foreign investors not to participate in the

¹⁶ This refers to the commercial bank(s) appointed by the Uganda Securities Exchange to provide settlement services.

¹⁷ Operational Procedures of the Use Securities Central Depository, 2015

¹⁸ Buying more securities than he is selling

¹⁹ Someone who sells more securities than he buys

²⁰ Operational Procedures of the Use Securities Central Depository, 2015

²¹ Comotto, R. (2011). The European Repo Council. *The interconnectivity of central and commercial bank money in the clearing and settlement of the European repo market.*

market, as they often have rules that require them to only trade through central bank money.

5.0 The Use of Central Bank Money for the Cash Settlement of Securities

The core objectives of central banks include the maintenance of stability of the financial system, and the promotion of its efficiency and effectiveness. Central banks can act as settlement institutions and offer central bank money as a settlement asset in their own currencies. Thus, central bank money settlement facilities can enable settlement of the cash leg of securities trades in the books of the central bank.²² Settlement risk caused by liquidity and credit risks of the central counterparty is significantly reduced using central bank money as a central bank has the ability to print money. There is always the risk that a commercial bank could become insolvent or run into liquidity problems which might have adverse consequences for its role as a settlement institution. However, using central bank money does not eliminate operational risk, such as the risk that information technology systems fail. Nevertheless, overall settlement risk is greatly reduced.

5.1 Why use Central Bank Money in Cash Settlement

It is argued that central bank money can be regarded as safe in the jurisdiction of the central bank. In contrast to commercial institutions and assets, central banks and central bank money has a number of advantages:²³

- i) Central banks have the ability to print money and tend to be risk-averse institutions by not engaging in risky commercial activities. The failure of a central bank is inconceivable, as central banks have explicit or implicit state support and can therefore absorb the failure of a direct participant in a central bank payment system. On the other hand, Stanbic Bank Uganda is directly involved in risky commercial activities which might have adverse consequences for its role as a settlement institution and cannot provide such guarantees.
- ii) Central banks are competitively neutral since they are not competitors to participants in the payment system. The current system requires custodian banks to open accounts with Stanbic Bank which is their direct competitor, making them reliant on the services of a competitor and also providing a

²² Comotto, R. (2011). The European Repo Council. *The interconnectivity of central and commercial bank money in the clearing and settlement of the European repo market.*

²³ Comotto, R. (2011). The European Repo Council. *The interconnectivity of central and commercial bank money in the clearing and settlement of the European repo market.*

competitor with sensitive business information. There should be a Chinese Wall to ensure this information is kept confidential, but other custodian banks do not fully trust that their transaction data is not being used to gain a competitive advantage over them.

6.0 Settlement Processes in other Jurisdictions

6.1 Kenya

The cash leg of the settlement process for transactions concluded on the Nairobi Securities Exchange (NSE) is done through the Central Bank of Kenya's RTGS system. The securities leg of the settlement process, which entails the transfer of securities between the buyers and sellers, is carried out at the Central Depository and Settlement Corporation (CDSC).

Kenya employs a delivery versus payment model with central bank money. Upon settlement of a transaction, the seller's securities account is debited with securities and their cash settlement account is credited with the corresponding payment. Simultaneously, the buyer's securities account is credited with the securities, while their cash settlement account is debited with the corresponding payment.²⁴

6.2 Ghana

The Central Securities Depository (CSD) offers clearing and settlement services for primary and secondary markets transactions involving debt and equity securities. Settlement is done using delivery versus payment (DVP) with central bank money for cash settlement.

The settlement is achieved through the straight-through-processing²⁵ concept. This was achieved through an interface between the CSD system and the Bank of Ghana's RTGS system, utilizing SWIFT messaging.²⁶

6.3 South Africa

All South Africa markets operate on the principle of delivery versus payment (DVP), with settlement taking place using central bank money via a direct interface with the South African Reserve Bank's RTGS system.

²⁴ Kenya Central Depository Operational Procedures, 2012

²⁵ Straight through processing is the automated end-to-end processing of trades and/or payment transfers, including the automated completion of confirmation, matching, generation, clearing and settlement of instructions, without the need for re-keying or reformatting data.

²⁶ Operational Procedures of the Central Securities Depository (Ghana) Ltd.

The securities leg is settled by the Central Securities Depository in South Africa, Strate²⁷. Finality, by law, of both cash and securities is achieved upon settlement in the respective systems of Strate and the central bank. Once confirmation of cash settlement is received from the central bank, Strate initiates the movement of securities (transfer of ownership).²⁸

6.4 France

Euroclear France, the French Central Securities Depository offers delivery versus payment (DVP), which ensures Real Time Gross Settlement of securities (through mirror securities account) and cash (through central bank cash accounts), thus ensuring immediate settlement and finality.

There is a real-time link with the Target-2 payment system²⁹, which allows the participants to transfer liquidity between Euroclear France and Target-2 depending on their needs in each platform. The system offers an auto-collateralization functionality, which implies the automatic setting-up of intraday credit at the central bank money. In other words, if, at some point, a participant does not have sufficient funds to settle a securities purchase, but has on its securities account assets eligible as collateral with the central bank, the Euroclear platform can automatically deliver these eligible assets to the central bank in exchange for intraday credit. This credit will then enable the finalization of the securities purchase.

The Euroclear platform ensures the settlement of the securities transactions' cash legs in central bank money, according to the integrated model whereby the cash flows relating to securities transactions are settled on the same platform as the securities. These cash flows are registered, under a central bank mandate, on accounts opened directly on the settlement platform.³⁰

6.5 Lessons for Uganda from other Jurisdictions

Kenya uses a robust cash settlement model that utilizes the central bank's RTGS system, where the central bank's payment system interfaces with CDSC system. The securities leg of the settlement process, which entails the transfer of securities between the buyers and sellers, is carried out at CDSC.

²⁷ Strate is South Africa's Central Securities Depository.

²⁸ Payment, Clearing and Settlement Systems in South Africa. (2012). Retrieved from https://www.bis.org/cpmi/publ/d105_za.pdf

²⁹ Target-2 is a payment system owned and operated by the Euro system. It is a European platform for processing large-value payments and is used by both central banks and commercial banks to process payments in euro in real time.

³⁰ Payment, Clearing and Settlement Systems in France. (2012). Retrieved from https://www.bis.org/cpmi/publ/d105_fr.pdf

Ghana and South Africa have adopted the same model as Kenya where the depositories are linked the central bank's payment system.

This model could work well for Uganda as it would allow the cash settlement to take place using central bank money, while the securities settlement would remain at the SCD. The model would require an interface between the SCD and Bank of Uganda's RTGS system in order for the cash side of the settlement process for transactions concluded on the USE to be done through the Bank of Uganda. The USE Securities Central Depository would still carry out the securities leg of the settlement process.

France uses the integrated model where the participants' settlement accounts are held at the Securities Settlement System (SSS). The SSS operates the entries directly in dedicated accounts on the books of the central bank. In this model, the central bank outsources all the related processing activities to the SSS, which operates directly on behalf of the central bank. This model would not work for Uganda because the current SCD system does not have the capability to carry out both the securities and cash settlement functions. The current system would require an upgrade to increase its capabilities in turn making this process very costly.

Uganda should consider adopting a similar model to the one in Kenya which will require the automated trading system and SCD at the USE to interface with the central bank's RTGS system.

The transition to central bank money is necessary because of:

- i) The requirement for some institutional investors to settle their trades using central bank money;
- ii) The reluctance of other custodian banks to have an account at a competitor;
- iii) The reduction of central counterparty risk; and
- iv) The necessity of central bank money for government securities to trade on the USE.

However, there are some problems that will arise from the transition to central bank money, especially for commercial banks. Under the current system, the funds are first transferred to the control account which ensures that the settlement only takes place if there are sufficient funds on the account. Since this step would be removed, the commercial bank would need to check that there are sufficient funds on the accounts of the buyers before the settlement is processed on T+3. If they fail to do so, then the settlement would take place whether or not there are funds on the account, meaning that commercial banks would need to allow overdraft facilities on all the accounts.

This would clearly increase the risk for commercial banks, however, it is believed that this can be managed and is lower than the risks under the current system.

The set-up costs for allowing settlement through central bank money as well as creating the linkage between the central depositories at the USE and the BoU to allow the trading of government securities on the USE, are estimated to be USD 300,000. Considering the estimated benefits, especially towards market development the cost is not excessively high or prohibitive.

7.0 Conclusion

In a bid to improve the efficiency of the settlement and clearing process of equities and corporate bonds and align the process to international best practice as per the principles for FMI, the cash settlement for securities transactions conducted on the USE should be done through the Bank of Uganda's RTGS system.

The transition from commercial bank money to central bank money will improve the efficiency of settlement of equities and corporate bonds by achieving full DVP, boost foreign and domestic investor confidence in the Ugandan market, promote greater liquidity at the USE and allow government securities to be traded on the USE.

The next steps should include:

- i) Consulting the USE and the BoU to establish the progress of implementation of the proposed interface between their depositories, in order to start up the discussion of including the use of central bank money for the cash leg of the securities settlement process;
- ii) Exploring the option of sourcing for development funding to support the Uganda Securities Exchange in implementing the linkage between the two depository systems; and
- iii) Consulting the current providers of the IT systems for the clearing and settlement process as well as the depositories at the USE and the BoU on the necessary steps to link the systems.