



Study on the Impact of SIRESS on Transaction Costs and Practices

Inception Report

15 July 2016

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1. INTRODUCTION

Payment systems are the foundation of the financial system and the cost and efficiency of payment systems plays a key role in economic development and regional integration. The Southern African Development Community (SADC) has achieved a key milestone with the introduction of an integrated and electronic payment system for the region. Genesis Analytics is pleased to contribute to this system's development through a *Study on the Impact of the SADC Integrated Regional Electronic Settlement System on Transaction Costs and Practices*.

This inception report presents our understanding of the context, purpose, and methodology of this study and a revised workplan detailing the phasing of the project. This report also sets out the inputs that the project will require and which stakeholders the project team will require assistance from in obtaining them.

2. SIRESS OVERVIEW

The SADC Integrated Regional Electronic Settlement System (SIRESS) is an **electronic payment system developed to settle regional transaction among banks in SADC countries** on a real time gross settlement (RTGS) basis. The system uses a single settlement currency, South African rand (ZAR), and the South African Reserve Bank (SARB) has been appointed as the SIRESS system operator by participating SADC central banks. The system only settles cross-border transactions, and domestic transactions are settled on each member state's national payment system. The following sections provide an overview of why SIRESS was established, what progress has been achieved to date, and how the system operates.

2.1. RATIONALE

SIRESS is the result of the SADC Payments Project, mandated by the SADC Committee of Central Bank Governors (CCBG), which **aims to create an integrated regional payment environment** in line with the objectives of the SADC Finance and Investment Protocol (FIP). The integration and creation of regional financial infrastructure is intended to **replace paper-based payment instruments** - such as bank drafts and cheques - which are inefficient and prone to high risk, and **accrue a range of direct and indirect benefits**¹:

The **direct benefits** that are expected to accrue to individual financial institutions, their clients, and participant member states are:

- A **reduction of end-to-end transaction costs**,
- **Lower cost for end-users**,
- Improved **accessibility and reach to all market participants** to cross-border transactions,
- **Resource and skill/capacity building** for member states with less development financial markets and infrastructure, and

¹ World Bank, 2014. Guidelines for the successful regional integration of financial infrastructures. *Financial Infrastructure Series: Payment Systems Policy and Research 96464*. The World Bank.

- **Reduced systemic risk.**

These facilitate the **indirect benefits** that accrue to the region which relate to the impact that efficient and low-cost regional financial infrastructure has on **trade and investment flows in the region**, and the knock-on effect this has on economic development.

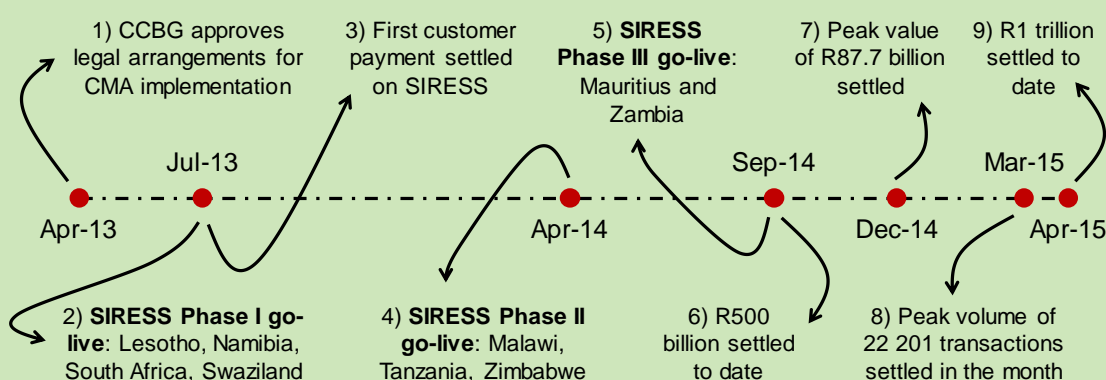
Along with the modernisation of member states' national payment systems undertaken by central banks, under the auspices of the SADC CCBG, and the standardisation of payment instrument, business rules, and messaging standards undertaken by the SADC Banking Association (SADCBA), **SIRESS is intended to facilitate the accrual of these benefits through the provision of the regional financial infrastructure required for efficient cross-border payments.**

2.2. STATUS

The CCBG approved the proposal of a SADC regional settlement system in May 2009 and for the system to be initialised in the Common Monetary Area (CMA) as a proof of concept in October 2010. The proof of concept was established for the high-value payment stream and settlement was in rand, facilitated by the use of rand among CMA countries. After the CMA Governors signed the legal agreements in April 2013, **this first phase of SIRESS went live in July 2013 among the CMA countries: Lesotho, Namibia, South Africa, and Swaziland.**

Member state participation in SIRESS has been expanded in two additional phases: **in April 2014 the second phase included Malawi, Tanzania, and Zimbabwe; and in September 2014 the third phase included Mauritius and Zambia.** As of January 2016, SIRESS was live in 9 SADC countries with participation from 6 central banks and 73 commercial banks.² A summary of this timeline and the project's key milestones to date is shown in Figure 1 below. Subsequently, the Seychelles has been on-boarded since May 2016 and Angola, Botswana, the DRC, and Mozambique are in the process of being on-boarded, with the process expected to be complete by the end of 2016³ Madagascar will then remain as the last SADC member state to join the system.

Figure 1: SIRESS timeline and milestones



Source: SADC Banking Association, Genesis Analytics

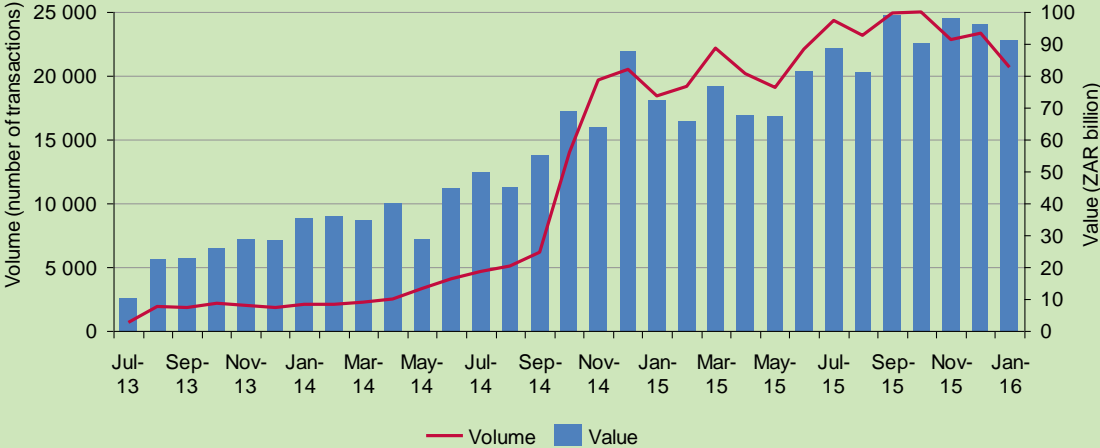
Since the expansion of member state participation in 2014, **the volume and value of transactions settled on SIRESS has increased significantly**, as shown in Figure 2 below.

² Based on consultation with the SADC Payments Project Team, South African Reserve Bank, July 2016.

³ *Ibid.*

This increase is partly due to the directive issues by CMA central banks requiring all cross-border payments conducted in the CMA in rand (i.e. eligible SIRESS transactions) to be settled using SIRESS⁴, but is representative of the system’s growing usage. Participation and use of the system is anticipated to continue increasing as additional member states and institutions join, and with the planned introduction of a retail payment stream.

Figure 2: Volume and value of transactions settled on SIRESS



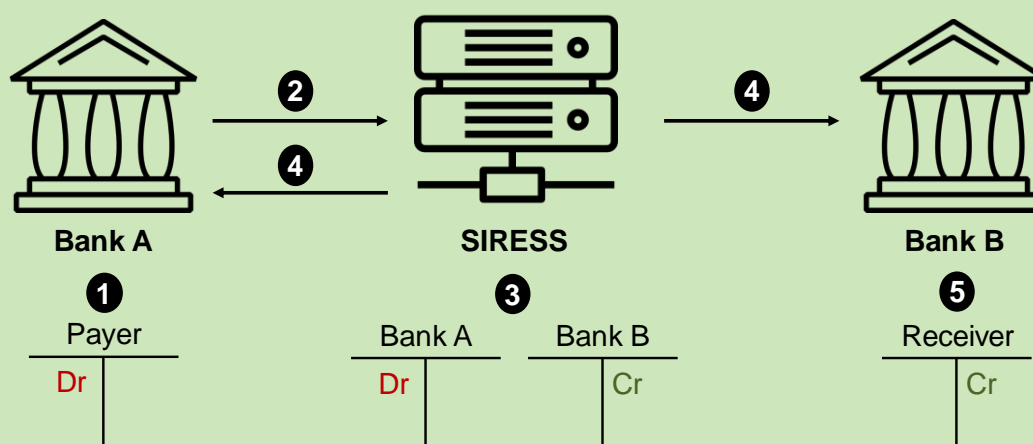
Source: SADC, July 2015. SADC Payment System Integration Project SIRESS Settlement Statistics and Indicators

2.3. TECHNICAL OPERATION

All SIRESS participating banks, including central banks, have at least two settlement accounts with SIRESS: a continuous processing line (CPL) and real time line (RTL) account. Participating banks can submit transactions on either line depending on whether the payments need to be settled immediately or not. Payment instructions from the issuing bank are submitted to SIRESS using SWIFT’s FINCopy messaging service. If the transaction is accepted, the issuing bank’s SIRESS account will be debited and the receiving bank’s SIRESS account credited with the appropriate amount. The system then sends a payment confirmation message to the issuing bank and an instruction for the receiving bank to credit the account of the end-recipient. A simple diagrammatic representation of this process is shown in Figure 3 below

⁴ Ibid.

Figure 3: Diagrammatic representation of payment through SIRESS



1. Bank A debits the payer's bank account with the payment amount.
2. Bank A send a payment instruction to SIRESS to transfer the payment amount from its SIRESS account to the SIRESS account of Bank B.
3. SIRESS verifies that Bank A's SIRESS account is adequately funded and transfers the payment amount from the SIRESS account of Bank A to Bank B.
4. SIRESS sends a payment confirmation message to Bank A and a payment instruction message to Bank B to credit the account of the receiver with the payment amount.
5. Bank B credits the receiver's account with the payment amount.

Source: Genesis Analytics

Transactions submitted on the RTL must be pre-funded; transfers submitted to SIRESS on the RTL without prefunding or sufficient funds in the account are rejected immediately and the bank who submitted the transfer has to submit it again when the account is funded. **Transactions submitted on the CPL go into a processing queue which checks if there are sufficient funds in the account and then, if so, processes the payment.** If there are insufficient funds, the bank could use the lending facilities made available by its central bank, or secure a temporary loan in the inter-bank market against suitable collateral. The payment remains unprocessed until the bank can fund the account, or until the account receives inward funds, but will be discarded at the end of a settlement window.

3. PURPOSE OF THE STUDY

While the SIRESS project has managed to attract interest among a number of SADC member states and participating institutions, **much remains unknown regarding its impact and benefits in the region.**

Transactions in the high-value stream appear to be growing, but **the costs and time taken to use SIRESS for banks and their customers has not been established.** For non-CMA countries in particular, **it is unclear what the value of 'rand business' in SADC is** as trade deals with South Africa are often conducted in dollars. Understanding the benefit of SIRESS' rand-based settlement model therefore requires an indication of the proportion of financial flows within SADC that are in rand, and the proportion of these flows that are between SIRESS-participating countries. This question emphasizes the **potential for multi-currency settlement within SIRESS, but the impact this would have on the system's risk, operation, and appeal needs to be assessed.** There is therefore a need to determine the costs and benefits of the existing rand-based proposition and for a movement to a multi-currency solution.

The low-value, high-volume retail stream has yet to go live and will be phased with the introduction of EFTs first, followed by card payments.⁵ The retail stream faces some regulatory uncertainty, for example differing KYC requirements among participating central banks creating barriers for the acceptance of remittance payments. While this **provides some impetus for the harmonization of KYC and national payment, clearing, and settlement standards, it is unclear whether South Africa's payment clearing house agreements should be used as a model, or whether regional rules will need to be set.**

SIRESS' value proposition for participant banks and their clients also needs to be assessed and better understood. While it is hoped that an integrated settlement system will decrease the cost and improve the efficiency of cross-border payments, **there may be capacity, security, and process factors which make traditional correspondent banking a more appealing option.** The use of SIRESS may also have a knock-on effect on the cost of correspondent banking agreements as transaction volumes through correspondent banking decrease. There is therefore **a need to understand how the economics of cross-border payments have changed, from banks' perspective, with the introduction of SIRESS.**

This study aims to fill these information gaps by producing three main outputs:

1. **Establish cost and efficiency gains** using SIRESS compared to correspondent banking:
 - Has SIRESS reduced the cost of cross-border payments for banks?
 - Have these costs been passed down onto consumers?
 - Has SIRESS reduced end-to-end transaction turnaround times?
 - Are there other capacity, security, or process factors that mitigate the efficiency of SIRESS from banks' perspective?
2. **Assess the value of SIRESS** to banks, their clients, and the region:
 - Is SIRESS meeting the needs of commercial banks and their clients in facilitating cross-border payments?
 - What do the patterns and composition of regional trade and payment flows indicate for the requirements of a regional payment system?
3. **Investigate the buy-in of banks** to SIRESS:
 - What are the internal and external drivers of bank participation in SIRESS?
 - How does SIRESS' value proposition need to change in order to encourage further bank participation?

Filling these information gaps will **provide guidance on how SIRESS' value proposition can be refined** and will highlight any changes to the system required to maximize its impact. This information will also **provide evidence of the benefits of using the system** which can assist in creating buy-in among remaining member states and non-participating banks.

⁵ SADC Payments System Integration Project – from Inception to SIRESS Implementation. *Presentation to SADC 4th Learning Platform Workshop, Gaborone, Botswana.* October 2013.

4. METHODOLOGY

The project team will generate these outputs through a **mixed methodology consisting of desktop research and primary fieldwork. The outputs will be documented in a report and converted to a PowerPoint presentation.** The details of each component are elaborated on below and the phasing is shown in the updated work plan in Section 5.

4.1. DESKTOP RESEARCH

This component will involve a **review of available literature and data as well as engagement with the SADC Payments System Project team** (housed at the SARB) to achieve a comprehensive understanding of the SIRESS model, its achievements and challenges to date, and drivers of efficiency within regional payments systems. This will take place during the first month of the project.

The literature review will establish:

- The key SIRESS project milestones and developments,
- Hypotheses regarding challenges and barriers to participation that can be tested during the fieldwork phase, and
- The drivers of efficiency within regional payment arrangements from other successful projects.

The data review will uncover:

- The pattern and composition of intra-SADC trade, payment, and remittance flows,
- The proportion of flows that are rand-based,
- The costs to participating banks of using SIRESS, and
- An early indication of bank charges using correspondent banking vs. SIRESS.

The Genesis project team has already held an early consultation with the SADC Payments Project Team which indicated that data on the costs of using SIRESS and an early indication of bank charges using correspondent banking vs. SIRESS will be made available (see Box 1).

Engagement with the SADC Payment Systems Project Team as the SIRESS operator will:

- Confirm key technical aspects of settlement within SIRESS,
- Facilitate the drafting of payment process maps for the before and after SIRESS process which illustrate how typical payments through correspondent banking and through SIRESS occur.

Box 1: Desktop research required inputs and outputs

Component inputs required:

- Updated payment flow data from the SADC CCBG Sub-Committee on Payments.
- Data from the SARB on the currency composition of payment flows between South Africa and other SADC countries.
- Data from the SADC Payment Project Team on the user-costs for SIRESS participants.
- Data from the SADC Payment Project Team on early indications of bank charges using correspondent banking vs. SIRESS.

Component outputs:

- Preliminary report on findings from desktop research
- Payment process maps

4.2. PRIMARY FIELDWORK

As per the project's scope and objectives in the terms of reference, **the project fieldwork will be conducted in four target countries: South Africa, Swaziland, Zambia, and Zimbabwe.** Interviews will be conducted with payment and correspondent banking official at selected banks, central banks, and payment facilitators in each country. This will take place during the second month of the project, August 2016.

4.2.1. Interviews with commercial banks

Interviews with payment and correspondent banking officials at selected commercial banks currently participating in SIRESS will constitute the primary input to the study and will seek to:

- **Compare the costing and pricing of the banking charges** before and after the implementation of SIRESS,
- Determine **whether SIRESS has resulted in a change in transaction and settlements' costs,**
- Determine **the impact of changes in transaction volume through correspondent banking on its pricing,**
- If there has been a reduction in transaction costs, **whether the benefit has been passed on to companies and individuals performing the transfer,**
- Determine whether there has been a **change in the time taken to perform the transfers,** and document any other indirect benefits,
- **Uncover any other impacts the system has had on participating banks** including capacity required to manage the system internally, and
- **How the introduction of multi-currency settlement will impact SIRESS' operation and appeal** among banks.

The determination of transaction cost and pricing cannot be quantitatively assessed because banks do not maintain historical pricing data and transaction and settlement cost data is not recorded or made public. As such, **this study will rely on qualitative inputs from interviewed banks** to assess whether changes in cost and efficiency have occurred, and what the drivers of these changes are.

In addition to collecting the information outlined above, **interviews will also be conducted with selected commercial banks currently not participating in SIRESS** to determine:

- What types of banks are currently participating in SIRESS,
- What the main internal and external drivers of participation are,
- Any barriers to participation, and
- How anticipated benefits may be impacted by additional bank and country participation in SIRESS at a high level (modelling will not be performed).

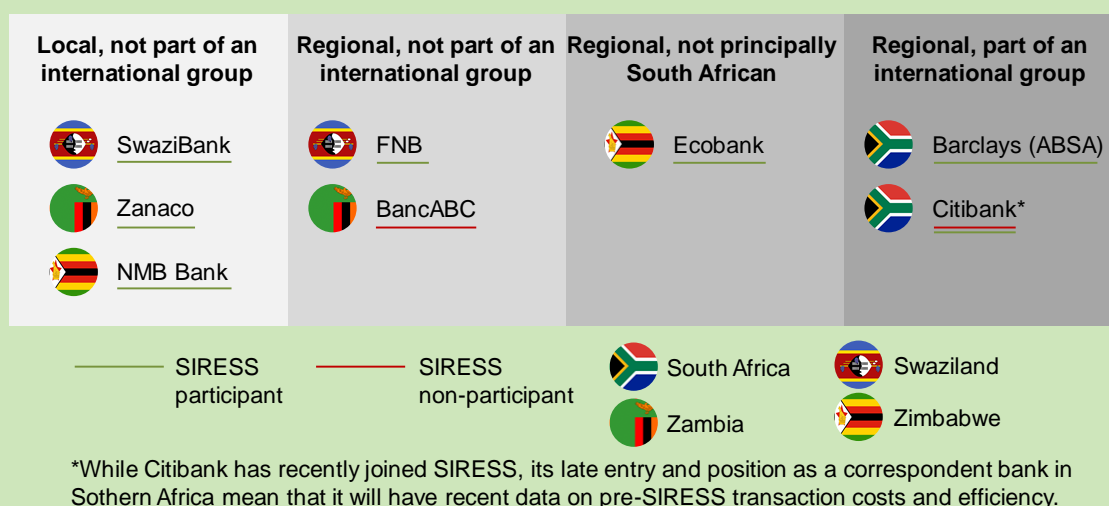
The selection of which commercial banks to interview is outlined in Figure 4 below and has been **guided by the need to select banks that fall into the following segments:**

- A number of local banks which are not part of an international group (e.g. SwaziBank, FMB Malawi, Zanaco (Zambia), NMB (Zimbabwe),
- A regional bank that is not part of an international group (e.g. Stanbic or FNB),
- A regional bank that is not principally a South African Bank (e.g. Ecobank),
- A regional bank that is part of an international group (e.g. Barclays).

This segmentation will ensure that the range of correspondent relationships that existed before SIRESS can be compared, as can the costs and turn-around times of different banks, depending on their regional linkages. This will also ensure the study considers the extent to which only local banks are disadvantaged in regional trade.

Following the project scope and objectives as set out in the terms of reference, **two commercial banks have been selected in each target country for participation**. The limit of only interviewing eight banks and having a selection of participant and non-participant banks means that the project will not be able to interview a representative sample in each segment. The non-participant banks were selected on the basis that they provide correspondent banking services in the region.

Figure 4: Proposed selection of commercial banks to interview



After consultation with the SADC Payments Project Team, Genesis proposes that contact with the selected commercial banks be made through the respective central bank in each country. The SADC Payments Project Team has agreed to provide the Genesis project team with the relevant contacts at each central bank and provide them with a brief of this project (see Box 2).

4.2.2. Interviews with central banks

In addition to the commercial banks outlined above, the project team will interview payment regulators and SIRESS representatives at the central bank of each country visited in order to:

- **Collect any missing data** on payment and trade flows, SIRESS transactions, and participating institutions,
- **Determine whether differing KYC regulation acts as a barrier** to the receiving of remittance payments,
- Understand the appetite towards and **any challenges anticipated with multi-currency settlement**, and
- Collection opinions on the **drivers of participation in SIRESS**,

4.2.3. Interviews with payment facilitators

In addition to commercial and central banks in each target country, the project team will conduct interviews with two payment facilitators central to SIRESS' operation: Bankserv Africa and SWIFT in order to:

- **Confirm the technical aspects of clearing and information services** within SIRESS, and the retail payment stream when it goes live, and
- **Determine the time of transaction clearing** through SIRESS compared to correspondent banking and other arrangements.

Box 2: Primary fieldwork required inputs and outputs

Component inputs required:

- Assistance from the SADC Payments Project Team to make contact with the relevant stakeholders at each central bank and to request that they provide introductions to the relevant stakeholders at the selected commercial banks in each country. .

Component outputs:

- Primary data collection

4.3. REPORT AND POWERPOINT PRESENTATION

Findings from the desktop research and primary fieldwork will be consolidated in a draft report in the third month of the project, September 2016. The report will be prepared for comments from FinMark Trust and the SADC CCBG Payment Sub-committee. Once feedback emanating from these reviews is received by mid-October 2016, the comments will be incorporated into the final research report for submission. **A PowerPoint presentation of the findings will also be prepared and presented to the key stakeholders** by the end of October 2016. We commit to draw on the findings and recommendations from the study in capacity building initiatives as we continue to engage with financial services providers in the region.

Box 3: Report and PowerPoint presentation required inputs and outputs

Component inputs required:

- Feedback on draft report

Component outputs:

- Final report
- PowerPoint presentation to key stakeholders

4.4. SUMMARY OF METHODOLOGY

A summary of the project objectives and the inputs that will be used to achieve each objective is shown in Figure 5 below.

Figure 5: Summary of project objectives and related inputs

Project objectives →	Establish cost and efficiency gains		Assess the value of SIRESS		Investigate the buy-in of banks	
	Technical understanding	Direct and indirect impacts	Requirements of banks and their clients	Requirements of the region	Drivers of bank participation	Barriers to participation
Project inputs ↓						
Literature review	X	X				X
Data review				X		
Engagement with SADC Payments Project Team	X					
Commercial bank interviews		X	X		X	X
Central bank interviews	X	X		X	X	X
Payment facilitator interviews	X	X			X	X

5. UPDATED WORKPLAN

As the project only kicked-off on 11 July 2016, the deliverables as per the workplan in the project proposal have been shifted one week forward. The revised workplan, deliverable dates, and planned field work dates are provided below.

5.2. DELIVERABLES

The following deliverables will be submitted to FinMark Trust:

1. Inception report (15 July 2016)
2. Preliminary report of finding from desktop research, including payment process maps (5 August 2016)
3. Draft report (30 September 2016)
4. Presentation of findings (week of 10 October 2016)
5. Submission of final report (4 November 2016)

5.3. FIELDWORK PLANS

The project's fieldwork will be jointly conducted by two Genesis consultants: a Senior Associate and an Associate. Once relevant contact details have been collected, the project team will finalise the interview participants and aim to conduct the fieldwork over the following dates:

South Africa: 8-12 August 2016

Swaziland: 15-16 August 2016

Zambia: 17-19 August 2016

Zimbabwe: 22-24 August 2016