

Mr. Stals discusses the transformation of the national payment and interbank settlement systems Address by the Governor of the South African Reserve Bank, Dr. Chris Stals, at the Fifteenth Payment Systems International Conference, Sun City, 1/4/98.

1. Background

The political reforms in South Africa over the past five years opened up the way for major changes in the South African financial sector. With the removal of sanctions, boycotts, disinvestment campaigns and the withdrawal of foreign loan funds from South Africa, the challenge was extended to reintroduce the South African financial markets in the world environment. This reintegration took place at a time when the international markets also changed drastically, and when the trend towards financial globalisation gained momentum.

During the past four years, many international financial institutions established themselves in South Africa to participate in the expansion of the South African markets. Today, there are about 25 foreign banks with established branches or subsidiaries, and about 60 with representative offices operating in South Africa, competing with and supplementing the activities of about 40 local banks. Many other international fund managers and financial brokers also entered the South African market. Many South African banks and other financial institutions, on the other hand, established themselves in other African countries and in the rest of the world.

Explosive increases occurred in the volume of transactions in the South African financial markets. Total turnover in the secondary bond market increased from R2,300 billion in 1995 to R4,600 billion in 1997. The total value of shares traded on the Johannesburg Stock Exchange increased from R63 billion in 1995 to R207 billion last year. The average daily turnover in the South African market for foreign exchange last year exceeded US \$10 billion. During the first three months of 1998, non-residents increased their holdings of South African securities (shares and bonds) by about R17 billion.

These greater volumes brought with them greater risk exposures, and therefore a need for more sophisticated and modern risk management procedures. Financial regulation and supervision in South Africa had to introduce internationally recognised principles and procedures, e.g. the Basle Committee directives for bank regulation. Modern electronic data processing and communication systems had to be introduced. It also became necessary to review the national payment, settlement and clearing system.

Against this background, the South African Reserve Bank took the initiative in April 1994, together with the banking industry, to reform the South African National Payment System. The problem was approached on an all-inclusive national level and a strategy was formulated to upgrade the existing South African payment system to comply with world-best standards.

In May 1994, a strategy-formulation team, consisting of representatives of the Reserve Bank and the banking community, was established. A collaborative consensus building approach was adopted. The Reserve Bank acted as facilitator, and it took the task force approximately 14 months to produce a first draft of a proposed strategy for the upgrading of the NPS. This document was intensely discussed amongst the many stakeholders before it was finally presented to the South African Council of Banks (COSAB), for approval. The document, entitled the South African National Payment System: Framework and Strategy, which has become known as the blue book, is widely recognised as a product of the South African banking

industry and its recommendations are accepted as the basis for the official strategy for the reform of the payment system.

The National Payment System Framework and Strategy identified the lack of a sophisticated electronic settlement process as a major shortcoming in the South African payment system. To this end a strategy was formulated to introduce an online central bank settlement system that would enable banks to effect interbank fund transfers electronically and in real time, when required.

2. Development of a new electronic interbank settlement system

The project to implement a new electronic interbank settlement system was identified as the cornerstone for the introduction of a new national payment-processing infrastructure. The South African Multiple Option Settlement (SAMOS) system, introduced on 9 March 1998, was developed over a period of two years as a collaborative venture between the Reserve Bank, private banking institutions, and the technology suppliers. The system ushered in a new era in electronic payment and settlement in South Africa and will have a major impact on the future development of the national payment system. Furthermore, the new system has already enabled the Reserve Bank to introduce new operational procedures for the execution of monetary policy. Under these new arrangements, banks now participate in a daily tendering system, based on repurchase agreements (repos), to obtain funds from or repay funds to the Reserve Bank. To this end, the settlement system became a convenient vehicle to establish market liquidity needs and to facilitate payment flows, resulting from repo transactions, between the Reserve Bank and the banks.

2.1 Features of the new settlement system

The introduction of the new interbank settlement system represents a major re-engineering of the way in which banks exchange value amongst themselves. It provides participating banks with a range of additional functions and business opportunities, including:

- Online real-time link between participating banks

All banks participating in the new system are linked to an online real-time network provided by the Reserve Bank. These banks are able to link to the Reserve Bank service either directly or via Swift, the highly secure international funds transfer mechanism. The system enables banks to exchange payment messages with the Reserve Bank and, through the Reserve Bank, between themselves.

- Secure high value fund transfers between participating banks

The SAMOS system processes all fund transfer messages received by the Reserve Bank. SAMOS will eventually enable banks to effect their payments in real time through a fully auditable and robust system. The system will provide a highly secure vehicle for interbank payment flows and ensure the authenticity and non-repudiation of all transactions. All fund transfers will be final and irrevocable and processed successfully by the system. This will be accomplished by effecting payment transactions directly on the settlement accounts of banks held in the Reserve Bank.

- Settlement risk reduced by prefunding

The risk of settlement failure by any individual participating bank is avoided through application of the principle of prefunding. A request to the system to transfer funds will therefore be carried out only if the bank issuing the fund transfer instruction has sufficient funds in its settlement account; otherwise, the instruction will be rejected. This implies that banks cannot build up exposures to one another within the system. All funds transferred are irrevocable, and the underlying transactions can thus be finalised during the course of the business day, as and when the bank and the customer require.

- Collateral managed dynamically

The system operates on the principle of full collateralisation of all intraday loans. Banks can reserve financial instruments to be used as collateral should they require additional funding during the day. These instruments have to be in electronic form, that is immobilised at either the Central Depository (CD) or in the Financial Instrument Register (FIR) of the Reserve Bank. Should a bank not have sufficient funds in its settlement account to carry out a fund-transfer request, the system will automatically determine whether the bank has any financial instruments available to be pledged as collateral for a Reserve Bank loan. If this is the case, the system will automatically raise a loan of the required amount against this collateral and transfer the funds necessary to process the fund-transfer instruction from the bank's loan account (or marginal lending facility) into its settlement account. The SAMOS system will now be able to effect the transfer of funds to the receiving bank's settlement account. This process will be completed without any manual intervention. The borrowing bank can revert to the next repo tender opportunity to redeem the out-standing amount on its marginal lending facility.

The introduction of the new system will have a significant impact on payment, clearing and settlement transactions in South Africa. Numerous changes have already been made to existing practices, processes, arrangements and agreements and many will be made during the further implementation phases of the system. Banks, clearing houses, other payment system intermediaries and corporate customers of banks will need to modify and enhance their systems if they wish to obtain maximum benefits from the new payment processing architecture.

2.2 The implementation schedule

The system will be implemented in a number of phases. The following dates have been set for the implementation of major milestones:

<u>Date</u>	<u>Phase</u>
9/3/98	Introduction of electronic end-of-day settlement through SAMOS

The SAMOS system and the interbank settlement network SARBLINK to facilitate the end-of-day settlement process were activated as from 9 March 1998. Although the system is now fully functional and the banks are able to transfer funds during the day, settlement finality as at this stage is only achieved at the end

of each day. For the time being, end-of-day positions will still be settled in the morning of the next day.

9/3/98 to
3/10/98

Determining the liquidity impact of real time gross settlement

The banks will use the system during this interim period to monitor their liquidity requirements for a trial period prior to the introduction of intraday finality. Banks will also be able to bring their back-office systems in line with SAMOS in order to enable them to capitalise on the opportunities provided by the new settlement options.

5/10/98

Introduction of immediate intraday finality

The switch to intraday finality will mean that all settlement instructions received by the SAMOS system will become final and irrevocable as and when they are received, if processed successfully. The main implication of this step will be that banks would need to monitor their positions in the SAMOS system carefully and ensure at all times that they have sufficient funds or financial instruments available to process their settlement instructions.

To be decided

Move of the end-of-day settlement process to same day To bring the South African settlement practices in line with international best practice the final end-of-day settlement process needs to be effected on a same day basis. The date of this change will be negotiated with the banks taking due consideration of the impact this would have on their customers and operations.

2.3 Impact on the financial system

The new settlement arrangements and the SAMOS system have placed the South African settlement practices on par with international best practice and presented many new challenges and opportunities to the banking and non-banking sector. Major changes include:

- Increased participation

In line with the philosophy of the new NPS, the interbank settlement system has been opened to enable more participation. All registered South African banks are eligible to participate in SAMOS. The number of participating banks in the settlement process has already increased from 11 banks in the old system to 21 banks in the new system. The number of participants will most probably increase significantly over the next few months.

- Exposures monitored in real time

A participating bank can monitor its balances in the SAMOS system in real time. In other words, the effect of any payments made or received by a participant will immediately be reflected on the banks' position monitor. The bank will thus be fully informed at all times of the position in its settlement account, intraday-loan account and the utilisation of collateral provided. The

Reserve Bank will be able to monitor the positions of all participating banks and the system as a whole.

- Early warning signals of potential systemic crisis

Various system indicators will enable the Reserve Bank to ascertain whether any particular bank is experiencing difficulty in meeting its payments commitments. This will enable the Reserve Bank to take pro-active steps to address a potential systemic crisis before it destabilises the payment system.

- Synchronisation of payment and delivery

The fact that the SAMOS system will eventually provide intraday finality of settlement between banks will enable the financial markets to introduce the practice of delivery against payment. The finality of payment achieved through SAMOS can be synchronised with the delivery of immobilised scrip, thereby providing safe and secure financial market transactions.

- Customer-to-customer funds transfers in real time

Finally, the implementation of the SAMOS system and the interbank settlement network provides a key building block in the enhancement of the payment services and products available to business and the general public. The new technological architecture introduced provides a vital link which could enable the interlinking of payment networks and services on a national basis in future, thereby creating endless permutations of payment services and products. The opportunity for banks and non-banks to co-operate and collaborate in order to exploit the potential of SAMOS introduces a new era in the provision of payment products and services in South Africa.

3. Payment system of the future

The key to establishing the envisaged architecture was to create a highly secure and efficient settlement network between the Reserve Bank and banks. The settlement network as introduced enables banks to transfer funds to one another, through their accounts at the Reserve Bank, in real time. It can also be used to expand the national payments infrastructure by interlinking the payment networks of banking institutions to the settlement network. This could enable corporate customers of banks, for example, retailers, to link their networks to the national payment infrastructure. Other institutions such as the Post Office or any other entity wishing to provide payment services to the public could, through the intermediation of a bank, link their technological infrastructure to the national network. This could theoretically allow a member of the public frequenting a point-of-sale device of a payment-service provider to transfer funds and make payments to any other authorised participant who has access to the infrastructure.

The introduction at a later stage of such an integrated payments network would represent a major step towards safe and secure payments for the broad public and would enable the further modernisation of the financial system in South Africa.