

# **NPS 01/2000: Position Paper on Risk Reduction Measures for Payment Clearing Houses in the NPS**

**South African Reserve Bank, National Payment System Department**

**As at: 2000-09-01**

## **1. Objective**

This document outlines the South African Reserve Bank's (Reserve Bank) position on risk reduction measures it will regard as acceptable for Payment Clearing Houses (PCHs) and the settlement of inter-bank obligations arising from the clearing within these PCH's in the National Payment System (NPS) and also outlines the intention of the Reserve Bank to discontinue the practice of back-dating settlement of PCH batches.

## **2. Introduction**

**2.1 The National Payment System Department supports the mission of the Bank by :**

### ***ENSURING THE OVERALL EFFECTIVENESS AND INTEGRITY OF THE NATIONAL PAYMENT SYSTEM***

In the execution of its duties, the Department has a responsibility to, inter alia, :

- to provide a secure and efficient settlement service;
- to provide for finality and irrevocability of interbank-fund transfers;
- to address risks that could jeopardise the soundness of the payment system;
- to reduce and contain the systemic risks inherent in the national payment system.

**2.2** The Reserve Bank acts as overseer of the payment system and thereby performs a vital role in managing systemic risk <sup>(1)</sup>.

**2.3** As the recognised Payment System Management Body in terms of the NPS Act, the Payments Association of South Africa (PASA) has a responsibility to assist the Reserve Bank in the implementation of suitable risk reduction measures, specifically where these relate to activities involving inter-bank clearing. Risk reduction measures which are contemplated for implementation by PASA, normally after consultation with the Reserve Bank and banks, must be acceptable to the Reserve Bank.

**2.4** The PCH batches, at this stage, are still considered as systemically important because they still represent a significant proportion of the daily settlement. A significant reduction in the value of the inter-bank obligations arising from these batches would have to occur before the Reserve Bank could consider them as systemically unimportant.

## **3. Principles**

The South African National Payment System Framework and Strategy document (the "Blue Book") states as one of the fundamental principles (paragraph 2.5.5):

**"Participants are liable for the risk that they introduce into the NPS"**

- NPS participants, individually and, where applicable, jointly, are responsible for managing the risks that they introduce into the NPS.
- Participants, in either multilateral or bilateral clearing and netting arrangements, carry the risk of potential default of one or more of the participants concerned.
- Suitable risk-reduction measures will be applied to all clearing and netting arrangements.

Strategy 5 of the same document states the following :

### **Introduction of same-day settlement**

Current settlement cut-off times, accommodation arrangements, practices and procedures will be adapted to achieve true <sup>(2)</sup> same-day settlement for and across all payment streams.

The BIS Committee on Payment and Settlement Systems document "Core principles for systemically important payment systems" principles I, III, IV, V and VI, have relevance to this paper :

**I** The system should have a well-founded legal basis under all relevant jurisdictions.

**III** The system should have clearly defined procedures for the management of credit risks and liquidity risks, which specify the respective responsibilities of the system operator and the participants and which provide appropriate incentives to manage and contain those risks.

**IV** The system should provide prompt final settlement on the day of value, preferably during the day and at a minimum at the end of the day.

**V** A system in which multilateral netting takes place should, at a minimum, be capable of ensuring the timely completion of daily settlements in the event of an inability to settle by the participant with the largest single settlement obligation.

**VI** Assets used for settlement should preferably be a claim on the central bank; where other assets are used, they should carry little or no credit risk.

## **4. Risk Reduction Measures**

In terms of its duties to implement the principles and strategies contained in the NPS Framework and Strategy document, the "Blue Book", and according to the "Core principles for systemically important payment systems" published by the BIS, the NPS Department has embarked on a phased approach of implementing risk reduction measures.

### **4.1 Measures requested for implementation in 1999/2000**

In this regard, a letter was sent to CEO's of participating banks in June 1999 to inform them that the phased approach for the year ending 2000-03-31 would include, inter alia, the following:

- **Extension of the immediate finality window in SAMOS until 17:00 daily, by 21 June 1999.**

The process to extend the immediate finality window had commenced in April 1999 in terms of a directive which had been given to participating banks by the previous

management of the NPS Department. The window was extended from 14:00 to 15:00 in April 1999, and from 15:00 to 16:00 in May 1999. The extension of the immediate finality window to 17:00 was the final extension to achieve the objective of providing immediate finality facilities in the SAMOS system during the course of a normal business day.

The implementation of this phase included the removal of the use of "dummy collateral" which is now only available after the immediate finality window, i.e. from 17:00 until 10:00 the next business day. As a result of the implementation of this phase, approximately 78% of all the values settled in the SAMOS System are now settled on a same-day value basis. The remaining 22% represents the settlement of the PCH batches. A table, indicating the monthly values that are currently settled in SAMOS, per payment stream, is attached as Appendix A.

**• The drafting and signing of PCH agreements between PCH participants by 31 March 2000.**

This phase was aimed at formalising agreements between PCH participants in the various payment streams. It has been of particular concern to the National Payment System Department that, although participants in the various PCH's operate according to certain technical rules, no formal agreement is in place between them relating to bi-lateral arrangements regarding clearing and settling, the responsibility to take losses for fraudulent payments that enter clearing, item limits on payments cleared for batch settlement or settlement arrangements in the case of failure of one or more of the participants to meet their obligations stemming from clearing in the subsequent settlement. There remains an incorrect perception that the Reserve Bank will automatically assure settlement should one, or more, participant fail to meet its obligation in a PCH batch settlement.

The Reserve Bank accepts that for certain technical reasons PASA and the banks were unable to finalise and formalise the PCH agreements by 2000-03-31 but still considers this matter to be a priority item as regards the removal of risk in the NPS.

**The Reserve Bank, therefore, requires that the six PCH agreements which are currently being drafted and which must be acceptable to the Reserve Bank, be finalised by 2000-09-30. These agreements are :**

- Electronic Code Line Clearing (CLC) - Debit Payment Instructions
- Electronic Funds Transfer (EFT) - Debit Payment Instructions
- Electronic Funds Transfer (EFT) - Paper Credits Payment Clearing House
- Electronic Funds Transfer (EFT) - Electronic Credit Payment Instruction
- SASWITCH Electronic Debit Payment Instructions
- Electronic Credit Payment Instructions (ZAPs)

**All the remaining PCH agreements must be finalised by 2001-03-31.**

The Reserve Bank is also aware that the drafting of these agreements has raised several issues between the participants, Payments Association of South Africa (PASA) and the Reserve Bank which the NPS Department would like to make more transparent. These issues revolve mostly around the fact that certain banks are still using inappropriate payment streams for high-value payments. A further problem in this regard is that certain banks receive payments via the SAMOS system's Real Time Line (RTL) facility but pay away, for example, via the ZAPS stream. While the SAMOS-RTL provides immediate finality, the ZAPS stream only settles on the next business day with settlement back-dated to the previous value date. Banks using this practice, therefore, receive immediate funding but have several hours to fund the batch settlement. This drains much needed

liquidity from the SAMOS system and is an issue which needs to be resolved as soon as possible.

In this regard the banks and the Reserve Bank, via its Financial Services Department, should take steps to increase the use of the SAMOS-RTL for making inter-bank government department payments. Banks should also promote the use of the SAMOS-RTL for high value corporate payments.

#### **4.2 Current SAMOS funding requirements for PCH batch settlements**

It is appropriate, in the context of this paper, to confirm current SAMOS funding requirements for settlement of PCH batches.

Participants are required to ensure that, at the time of PCH batch settlements, they have sufficient funding available in their settlement account and loan account facilities to fund their exposures. Available funding (settlement capacity) is calculated utilising the following:

- Cash available in SAMOS settlement account, plus
- the unpledged portion of collateral reserved on the SAMOS collateral list that can be used to secure a loan in SAMOS.

A participant may reserve collateral for SAMOS purposes as follows:

- Any excess collateral, held over and above the assets required by a participant to meet the statutory Liquid Asset Requirement, in terms of the Banks Act; plus
- in terms of a concession granted by the Registrar of Banks, a maximum of 50 % of the assets held to meet statutory Liquid Asset Requirements, in terms of the Banks Act.

Only the following types of collateral may be reserved for SAMOS purposes:

- Treasury Bills of the Republic of South Africa;
- Stocks issued under Section 19 of the Exchequer Act, 1975;
- Securities of the South African Reserve Bank; and
- Short-term bills issued by the Land Bank.

A participant's settlement capacity should meet or exceed its greatest possible exposure in batch settlement. Banks should consider the fact that the PCH batches are settled on a FIFO basis and that the order of receipt and settlement of the different batches is not readily determinable on a daily basis. A penalty of R 10 000-00 is currently imposed on participants that cause a batch to discard due to "insufficient funds".

Since the launch of the SAMOS system a concession has been granted to participants in terms of a provision for "dummy collateral". This type of collateral is currently available in Window 3 and 4 with the specific aim of assisting the banks with settlement of the PCH batches. "Dummy Collateral" must be registered in the Financial Instruments Register (FIR) and is limited to an amount equal to 50% of the average daily amount of liquid assets held over the previous month. Originally "dummy collateral" was introduced to assist treasurers to adapt to management of intra-day exposures.

#### **4.3 Further Risk Reduction Measures which the Reserve Bank intends implementing**

#### **4.3.1 Removal of "Dummy Collateral" facilities**

The use of "dummy collateral" has decreased significantly since the extension of the Immediate Finality Window during 1999. In the period April to May 2000 there were 19 occurrences of the use of "dummy collateral" in the SAMOS system of which 11 were for PCH batch settlements and 8 for single settlement instructions during Window 3. As mentioned previously, "dummy collateral" is not intended to be used during Window 3 but is available overnight in order to assist participants in settling their batch obligations the following morning. The use of this concession in Window 3 is considered by the Reserve Bank to be an unacceptable practice.

The Reserve Bank is of the opinion that the purpose for which "dummy collateral" was introduced has been served, and that with the removal of high-values from the PCH batches the requirement for "Dummy collateral" will no longer be required.

**"Dummy Collateral" facilities in the SAMOS system will, therefore, be phased out as follows:**

- **with effect from 2000-10-02, a reduction in the facility available to participants to an amount equal to 37.5% of the average daily amount of liquid assets held over the previous month ;**
- **with effect from 2000-12-01, a reduction in the facility available to participants to an amount equal to 25% of the average daily amount of liquid assets held over the previous month ; and**
- **with effect from 2001-03-05, the termination of the facility.**

#### **4.3.2 Moving to settlement on day of value in the SAMOS system and discontinuing the practice of back-dating settlement of the PCH batches.**

The motivation to move to settlement on the day of value in the SAMOS system can best be summarised by the comment 3.4.1 in the BIS document "Core principles for systemically important payment systems" which states the following, "Between the time when payments are accepted for settlement by the payment system (including satisfaction of any relevant risk management tests, such as the application of limits on exposures or availability of liquidity) and the time when final settlement actually occurs, participants may still face credit and liquidity risks. These risks are exacerbated if they extend overnight, in part because likely time for the relevant authorities to close insolvent institutions is between business days. Prompt final settlement helps to reduce these risks. As a minimum standard, final settlement should occur at the end of the day of value."

The BIS Task Force responsible for drafting the core principles also documented, *inter alia*, ( in their discussion documentation), the following, "In systems that conduct a net settlement at a designated time, the time between a) the completion of the processing cycle during which payments are accepted and b) the extinguishing of net claims through the settlement process should be kept to a minimum."

As a result of this implementation, there would be a lesser risk in the South African system in terms of overnight exposure. Currently the PCH batch settlement figures are received in the SAMOS system from the operator between 17:00 and + 23:00 but are only settled at 07:00 on the next business day. This

means that there is currently an overnight exposure of 8+ hours in the settlement system. However, the value of this exposure could be significantly reduced should the high-values be removed from the PCH batches. The values remaining would represent only +/- 10% of the total value of the SAMOS settlement.

It is, therefore, the intention of the Reserve Bank to commence with the practice of settling the PCH batches as soon as possible after receipt of settlement data from the operator. This would imply, in practical terms, that settlement of payment obligations for a particular batch received at, say 20:00 will be settled by 20:10. Treasurers should note the requirement for funding of PCH batch obligations in this regard based on the settlement funding obligations spelt out previously in this paper.

Furthermore, it is the intention of the Reserve Bank that settlement of payments, including the PCH batches, will occur on the intended day of value. The current "position window" in SAMOS would occur at 16:00 and "square-off" or end-of-day would occur by 17:00 each day. It remains the prerogative of the banks to make arrangements with the operator as to what the appropriate "cut-off" times will be for the various payment streams. The Reserve Bank would be able to accommodate intra-day PCH batch settlements. However, PCH batch settlement data received after 17:00 on a business day will be settled for value the following business day.

Two further advantages that would accrue from the implementation of this phase are :

- Additional time available to the equities market for processing of trades in order to finalise daily settlements and achieve delivery versus payment; and
- Immediate settlement of payments for bulk cash withdrawals made by the banks at a Reserve Bank branch. Currently a bank withdrawing cash from the Reserve Bank schedules a SAMOS payment in the Settlement Cycle Date equal to the calendar date of the delivery. This implies that a bank withdrawing cash at 06:00 on a particular day may only finally settle its obligation to SARB between 10:00 and 12:00 of that day.

**It is the Reserve Bank's intention to implement same-day settlement in SAMOS with effect from 2001-05-07. In this regard, the requirement for Saturdays to be considered as a Settlement Cycle Date (SCD) will be discussed with participating banks prior to this implementation.**

#### **4.4 Implementation of item limits by PCH participants**

Participants in the retail PCH batches have agreed in principle to remove high-values from these payment streams in order to reduce the settlement risk. Participants have agreed to limit the item values for batch settlement in the Paper, EFT Credit and ZAPS payment streams to R 5 million Rand and the EFT Debit stream to R 500 000-00. The Reserve Bank supports these measures and according to data available to the NPS Department these measures could increase the value of payments settled on an immediate finality basis in the SAMOS system to 90 %. The retail PCH batch settlement (excluding BESA and STRATE) will then represent 10 % or less of the total settlement. A table indicating the impact of item values in the PCH payment streams is attached as Appendix B.

The Reserve Bank accepts that the implementation of item limits may have to be phased in over a period of time.

#### **4.5 Further Risk Reduction measures which will be considered for implementation by the Reserve Bank**

The Reserve Bank will monitor the extent to which high values are removed from the retail PCH batches as a result of the risk reduction measures implemented in terms of this paper. Should the desired effect of reducing the settlement risk in these PCH batches not be achieved the Reserve Bank will consider implementing further measures, including:

##### **4.5.1 Increased penalties for causing a batch discard**

The penalty for causing a batch to discard due to "insufficient funds" will be increased to R 20 000-00 per occurrence.

##### **4.5.2 Settlement Assurance guarantees**

This implementation would require participants in a PCH to provide assurance, in the form of a guarantee, backed by the lodging of acceptable collateral with a trusted third party, to fund the shortage in a PCH batch settlement in the case of a participant default. In such a situation the "survivor banks" would be called upon by the Reserve Bank, to assure coverage of the highest net debit position (calculated by the Reserve Bank over a measured period) or the actual shortfall required to ensure settlement, in the PCH. Should a participant, therefore, fail to meet its obligation in the batch settlement on a particular day, the Reserve Bank will have the option to fund the defaulter bank's settlement account with the shortfall, against the guarantees provided by the "survivor" banks, and thereby ensure settlement. The Reserve Bank will attach the collateral provided for settlement assurance by the defaulting bank and survivor banks until the Reserve Bank is reimbursed. The proportion of funding that would be required from each "survivor" bank, to be paid to the Reserve Bank in terms of the guarantee, would be calculated in proportion to each bank's gross limit in relation to the total of the gross limits of all the "surviving" participants in the PCH.

**The activation of this process will have to be managed and co-ordinated in terms of other options that the Bank may wish to exercise in its role as Lender of Last Resort in a liquidity shortage situation.**

The provision of guarantee assurance funding as described above, in terms of current practices, would pose a major problem to participants in terms of providing sufficient collateral to back the guarantee. This is clearly visible from the table depicting the highest net debit positions recorded in the relative payment streams over a period 2000-04-01 to 2000-06-24 attached as Appendix C.

It is unlikely that the Reserve Bank would consider implementing settlement assurance guarantees should the total value of the retail PCH batch settlements reduce to 10% or less of the total daily settlement in SAMOS.

#### **5. Operator ability to remove participants from PCH clearing and settlement**

It is the intention of the Reserve Bank to, via the correct channels, ensure that a PCH system operator is capable of removing a defaulting participant from a clearing or settlement cycle at short notice. Ideally notification should be provided prior to the start of the clearing cycle for a particular day. However, if notification is given intra-day a mechanism should be put in place to either exclude all the transactions of the defaulting bank from the settlement for that clearing cycle or to exclude all the transactions of the defaulting bank from that point onwards from the settlement for that clearing cycle. The specific choice of exclusion to be decided upon by the Reserve Bank depending on the prevailing circumstances. This option would be required in a situation where the Reserve Bank becomes aware that a participant will no longer be capable of meeting its funding obligations in the settlement process, in the longer term. There are various scenarios in which this situation could develop but would normally arise where a participant is already under curatorship or judicial management. Any notification, including the choice of exclusion, to the operator in terms of this option would include notification to all participants in the relative PCH.



## Appendix A

## Monthly Values Per Payment Stream

<b>Stream</b>	<b>March-00</b>	<b>April-00</b>	<b>May-00</b>
Real Time Line (RTL)	2,116,376,707,711.08	1,714,568,218,866.90	2,206,289,557,031.88
Code Line Clearing (CLC)	404,462,847,991.67	305,132,940,742.64	340,226,726,725.82
Electronic Funds Transfer (EFT)	227,222,982,757.37	187,827,593,114.84	219,603,252,914.72
Bond Exchange (BE)	651,905,350,387.75	512,117,729,824.84	585,034,531,118.98
South African Payments (ZAPS)	74,228,824,829.05	58,814,252,463.08	66,517,518,257.65
<b>Total</b>	<b>3,474,196,713,676.92</b>	<b>2,778,460,735,012.30</b>	<b>3,417,671,586,049.05</b>

Appendix B

**The Breakdown of Volumes and Values Settled Per Payment Stream Per Day \***

<b>CLC Threshold</b>	<b>Volume above Threshold</b>	<b>Value above Threshold (Billion)</b>	<b>Percentage of All CLC</b>	<b>Value below Threshold (Billion)</b>	<b>Percentage of all SAMOS</b>
>R1M	1450	13.047	86.8%	1.981	1.4%
>R5M	456	11.105	73.9%	3.923	2.8%
>R10M	281	9.909	65.9%	5.119	3.6%
>R50M	69	5.434	36.2%	9.594	6.8%
>R100M	7	0.889	5.9%	14.139	10.0%
All CLC	0	0	0.0%	15.028	10.7%
<b>EFT Threshold</b>	<b>Volume above Threshold</b>	<b>Value above Threshold (Billion)</b>	<b>Percentage of All EFT</b>	<b>Value below Threshold (Billion)</b>	<b>Percentage of all SAMOS</b>
>R100,000	2986	5.941	88.4%	0.779	0.6%
>R1M	474	5.285	78.6%	1.435	1.0%
>R5M	193	4.716	70.2%	2.004	1.4%
>R10M	121	4.227	62.9%	2.493	1.8%
>R50M	23	2.125	31.6%	4.595	3.3%
>R100M	8	1.162	17.3%	5.558	3.9%
All EFT	0	0	0.0%	6.720	4.8%
<b>ZAPS Threshold</b>	<b>Volume above Threshold</b>	<b>Value above Threshold (Billion)</b>	<b>Percentage of All ZAPS</b>	<b>Value below Threshold (Billion)</b>	<b>Percentage of all SAMOS</b>
>R10M	87	3.337	86.0%	0.545	0.4%
>R50M	22	1.87	48.2%	2.012	1.4%
>R100M	7	0.86	22.2%	3.022	2.1%
All ZAPS	0	0	0.0%	3.882	2.8%

\* Extracted from the KM Partnership investigation into market liquidity in South Africa, commissioned by PASA

Appendix C

**Highest Nett Debits Per Stream**

<b>Stream</b>	<b>Nett Debit</b>
Code Line Clearing (CLC)	-3,424,805,872.79
Electronic Funds Transfer (EFT)	-2,587,486,641.45
South African Payments (ZAPS)	-2,220,187,188.22

1. Systemic risk is the risk that should one or more participant in the payment system fail to settle its obligations, other participants may also be unable to settle their obligations.

2. As opposed to the current practice of settlement being backdated for the previous value date.