

**Payment, clearing and
settlement systems in
Saudi Arabia**

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List of abbreviations

BTD	Banking Technology Department – the SAMA department that is responsible for the development and operation of a number of payment systems in Saudi Arabia.
CMA	Capital Market Authority – the regulator of all capital markets activities in Saudi Arabia.
GCC	Gulf Cooperation Council, which consists of six countries: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates (UAE).
IPSS	Integrated Payment Systems Strategy.
Prepaid card	A card on which value is stored or which is linked to an account into which funds have been paid in advance.
SADAD	The electronic bill presentment and payment system of Saudi Arabia.
SAMA	Saudi Arabian Monetary Agency – the central bank of Saudi Arabia.
SAR	Saudi Arabian riyal – the national currency of Saudi Arabia.
SARIE	Saudi Arabian Riyal Interbank Express – the RTGS payment system of Saudi Arabia.
SIMAH	Saudi credit bureau.
SPAN	Saudi Payments Network is the routing switch for cross-bank ATM transactions and all POS transactions in Saudi Arabia.
Sukuk	The Islamic equivalent of bonds. Sukuk certificates are structured to comply with Islamic law and its investment principles.
TADAWUL	The stock exchange system of Saudi Arabia.

Introduction

With the cooperation and support of the commercial banks, the Saudi Arabian Monetary Agency (SAMA) leads the development and day-to-day management of a modern payments infrastructure to support the country's economic development. The major elements of the Saudi payments infrastructure are the RTGS, ATM, EFTPOS and cheque clearing systems as well as an electronic bill presentment and payment system.

Launched in 1997, the Saudi Arabian Riyal Interbank Express (SARIE) system is the RTGS system that underpins the Saudi payments environment. It eliminates interbank settlement risk for all SARIE payments while supporting a wide range of electronic banking products and services. It also provides settlement functions for all other payment systems operating in Saudi Arabia and for the cash legs of equity and bond transactions traded on the TADAWUL stock exchange.

The Saudi Payments Network (SPAN) system handles all cross-bank ATM transactions and all POS transactions. The volume and value of transactions processed over SPAN has grown substantially since its implementation (for ATMs in 1990 and POS in 1993). The expected growth in the use of POS and prepaid cards means that there will be a heavy reliance on SPAN as a robust and central part of the Saudi payment system.

Cheque clearings play a vital role in Saudi payments. While the total value of transactions processed in the 10 SAMA clearing houses fell markedly after the implementation of SARIE, cheque usage in Saudi Arabia is still significant and is likely to continue to play a major role in the Saudi payments landscape over the medium to long term.

The SADAD electronic bill presentment and payment system, developed in 2004, provides a comprehensive and efficient service for the payment of one-off and recurring bills. The number and value of bills paid through SADAD continue to grow. It provides a very important facility for the collection of a variety of both public and private sector bill payments. It is rapidly becoming a vital component of the Saudi payments environment.

Cash payments continue to play a significant role in retail transactions. However, the role of cash payments is expected to diminish substantially in the short to medium term with the introduction of prepaid cards and other planned initiatives.

A number of projects are currently under way to further enhance the national payment infrastructure. An outline of these projects is provided in Section 3.

1. Institutional aspects

1.1 The general institutional framework

The Saudi Arabian Monetary Agency was established by a Royal Decree issued on 4 October 1952 with the objectives of issuing and strengthening the Saudi currency and stabilising its internal and external value, and conducting the banking business of the government. The Capital Market Authority (CMA) was established in 2003 to regulate capital market activity in Saudi Arabia.

The following laws in Saudi Arabia are relevant to payment and settlement systems.

- Royal Decree (1957)

This extended SAMA's objectives to regulating exchange dealers and managing the country's official foreign exchange reserves.

- Currency Law (1959)

This conferred on SAMA the sole privilege of issuing the currency of Saudi Arabia as determined by the Council of Ministers and made it mandatory for SAMA to maintain full cover in gold and convertible foreign currencies for currency issued.

- Anti-Forgery Law (1960)

This law makes it a criminal offence for anyone to counterfeit currencies, financial papers, financial instruments or banking documents. As transactions related to payment cards, share trading, ATMs, EFTPOS etc give rise to banking documents, they are subject to the provisions of this law. Violations are punishable by financial penalties and prison terms.

- Negotiable Instruments Regulations (1963)

This law covers the legal treatment of various payment instruments such as bills of exchange, cheques and drafts.

- Banking Control Law (1966)

SAMA was given broad powers to regulate and supervise Saudi banks and to safeguard the banking system. This law defines the banking business, confers licensing powers, determines capital adequacy, prescribes reserve requirements, grants authority to formulate credit policy and deals with the usual banking supervisory issues. These include conferment of enabling powers to issue rules and guidelines to banks and to lay down conditions for certain actions and transactions. Consequently, the Agency can issue rules and guidelines for any new type of banking transaction or product, including payment cards, ATMs and EFTPOS.

- Anti-Money Laundering Law (2008)

This law provides a statutory basis for criminalising money laundering and the financing of terrorism.

- Electronic Transactions Law (2007)

This law aims at controlling, regulating and providing a legal framework for electronic transactions and signatures.

- Capital Market Law (2003)

The Capital Market Law provides for the establishment of a depository centre that is solely authorised to execute transactions connected with the deposit, transfer, settlement, clearing and registration of ownership of all securities traded on the stock exchange.

1.2 The role of the central bank

SAMA performs a number of important functions. Among other tasks, the Agency:

- issues the national currency, the Saudi riyal;
- acts as a banker to the government;
- supervises commercial banks;
- manages the Kingdom's foreign exchange reserves;
- conducts monetary policy for promoting price and exchange rate stability; and
- promotes the growth and ensures the soundness of the financial system.

In addition, SAMA actively promotes cooperation among financial market participants and acts as a banking ombudsman. SAMA also provides training facilities to the banking community through its Institute of Banking.

SAMA provides non-cash payment services by permitting the banks to maintain current accounts with it through which interbank settlements take place with finality. Transactions in treasury bills, government bonds and repos, and purchases and sales of foreign exchange by the banks also pass through these accounts.

SAMA's role in payment systems has evolved from its broad mandate to maintain the safety and soundness of the Saudi banking and monetary system and to strengthen its credibility. It is by judicious exercise of its regulatory powers that SAMA has led the development of payment systems in the country with the full participation of the banks.

SAMA's leading role in the payment, clearing and settlement systems has been essential to ensure effective execution of a rational and consistent national strategy for payment systems. This approach is based upon a conviction that significant financial benefits will accrue to all financial market participants from a collaborative rather than a competitive approach to the development of a common payment infrastructure.

To implement this payment strategy, SAMA has established a Banking Technology Department (BTD) under the aegis of the Directorate of Banking Control. BTD is responsible for the development, enhancement and day-to-day operation of the payment, clearing and settlement systems in Saudi Arabia and for enlisting the cooperation and participation of the local banks.

SAMA operates a network of 10 regional branches to meet the government's needs to collect and distribute funds and to meet the requirements of local commercial banks for currency and remittances. The regional cheque clearing houses are also operated at each of these branches.

The banked population, meaning the share of the population with bank accounts, has increased significantly over recent years, primarily due to a SAMA initiative to have the entire government payroll paid into bank accounts using the SARIE system. In promoting efficient and convenient means of payment, SAMA is explicitly encouraging the spread of the banking habit in support of Saudi Arabia's social and economic development.

1.3 The role of other private and public sector bodies

1.3.1 The role of the Capital Market Authority (CMA)

The CMA was established by Royal Decree in 2003 to regulate all capital market activity in Saudi Arabia. The CMA's functions are to regulate and develop the Saudi capital market by issuing required rules and regulations for implementing the provisions of the Capital Market Law. The objectives are to create an appropriate investment environment, boost confidence, reinforce the transparency and disclosure standards of all listed companies, and to protect investors and dealers from illegal acts in the market.

The CMA is mandated to:

- regulate and develop the capital market and promote appropriate standards and techniques for all sections and entities involved in securities trade operations;
- protect investors and the public from unfair and unsound practices involving fraud, deceit, cheating, manipulation and insider trading;
- maintain fairness, efficiency and transparency in securities transactions;
- develop appropriate measures to reduce risks pertaining to securities transactions;
- develop, regulate and monitor the issuance of securities and under-trading transactions;
- regulate and monitor the activities of entities working under the CMA; and
- regulate and monitor full disclosure of information related to securities and issuers.

The Saudi Capital Market Law provides for the establishment of the Saudi Stock Exchange as a joint stock company that operates as the only authorised entity for the trading of securities in Saudi Arabia. The exchange operations are currently conducted through TADAWUL, the stock exchange, which is tasked with continuously developing a fully fledged securities market that provides a comprehensive and diverse range of internationally competitive financial services.

1.3.2 Financial intermediaries allowed to provide payment services

There are currently 23 commercial banks in Saudi Arabia with 1,519 branches. Ten of these banks are Saudi banks, the other 13 being branches or offices of foreign banks located in Saudi Arabia. All banks fully participate in the various payment and settlement systems that are currently operational in Saudi Arabia. All banks in Saudi Arabia are members of SWIFT for the purpose of sending and receiving international payment messages.

1.3.3 Other entities

There are 25 moneychangers in Saudi Arabia. These are special purpose financial institutions that are permitted by law to change foreign currencies into local currency and vice versa and to provide limited funds transfer services. The moneychanger institutions have traditionally provided exchange and other elementary banking services mainly to foreign pilgrims to Saudi Arabia's holy places. The moneychangers perform no primary banking functions and are not permitted to participate directly in the payment and settlement systems. They can, however, access such services through a commercial bank.

Other financial institutions include special purpose government credit agencies, insurance companies, specialised investment companies, leasing companies and finance companies. Certain international credit card companies such as MasterCard, Visa and American Express use Saudi banks to offer their products and services to customers in Saudi Arabia. These institutions use the Saudi payment and clearing systems as customers of the local banks.

2. Payment media used by non-banks

2.1 Cash payments

The currency of Saudi Arabia is the Saudi riyal (SAR). SAMA issues bank notes in denominations of SAR 1, 5, 10, 20, 50, 100, 200 and 500 as well as coins in denominations of 1, 5, 10, 20, 25, 50 halalas and SAR 1. The value of banknotes and coin in circulation at the end of 2009 amounted to SAR 99 billion.

Banknotes and coins are distributed through the 10 SAMA branches to the branches of the commercial banks in their respective districts. Besides meeting the cash requirements of commercial banks, SAMA branches pay out and receive cash on behalf of various government agencies.

2.2 Non-cash payments

2.2.1 Non-cash payment instruments

2.2.1.1 Credit transfers

The SARIE system, which commenced operation in 1997, is a fully integrated RTGS system that permits all Saudi banks to make immediate interbank payments over accounts held at

SAMA. All other clearing systems operating in Saudi Arabia are settled over SARIE. The payments processed by SARIE include:

- same-day and forward value payments;
- bulk and single messages;
- customer and bank-to-bank payments;
- direct debits, both single and bulk; and
- most public and private sector payrolls.

In terms of value, interbank credit transfers amounted to SAR 55,543.9 billion in 2010 (compared with 4,870.8 billion a decade earlier). Customer transfers represented only SAR 2,881.7 billion (SAR 374.7 billion in 2000).

Recent developments on SARIE include:

- updating of customer payment messages to the SWIFT MT103 message formats in 2008. At the same time, the ISO standard for IBAN was implemented;
- same-day settlement of banks' positions from TADAWUL was implemented in 2010;
- updating of the system's security features starting in 2008; and
- amendment of the daily business cycle times in 2006 following discussions with all participants and relevant SAMA departments.

See Section 3.2.1.7 for details of major ongoing and future projects related to SARIE.

2.2.1.2 *Direct debit*

Direct debits were launched in Saudi Arabia in 1997 as part of the SARIE System and, by the end of 2010, their total value had increased by 7.5% to SAR 394 million. SAMA instigated a review of direct debiting in 2004 in order to enhance and standardise the scheme's processes. One of the aims of the review was to improve awareness of the product in Saudi Arabia, and the creation of a comprehensive direct debit scheme manual was a specific goal within that process.

This manual is a complete guide to the operation of the direct debit system and governing banks, payers and originators. It describes all aspects related to membership of the direct debit scheme, direct debit indemnity, direct debit mandate and direct debit scheme rules and regulations.

2.2.1.3 *Cheques*

All cheque clearings are operated by SAMA. The main centres are at Riyadh, Jeddah and Dammam, where 88% by volume and 90% by value of all clearing house items are processed. Automated processing and sorting machines are used at these main centres, while the other seven clearing centres process the clearings manually. In 2010, the total number of cheques processed at the SAMA clearing houses was just over 7 million items with a total value of SAR 724.2 billion.

All banks in Saudi are direct participants in the cheque clearings. While cheque usage has greatly decreased since the introduction of the SARIE, SPAN (ATM and POS) and SADAD electronic payment channels, cheques continue to play an important part in the Saudi payments landscape. Some 75% of the cheques issued in Saudi Arabia are processed in-house, ie they are deposited by the payee at a branch of the paying bank and thus are not involved in the interbank clearings.

A project is currently under way to upgrade the processing and sorting machines at the main clearing centres.

2.2.1.4 *Payment cards*

The Saudi Payments Network (SPAN) operated by SAMA processes all POS transactions in Saudi Arabia and also all cross-bank ATM transactions. The ATM service was introduced in 1990 with the POS service being added in 1993. By the end of 2010, the commercial banks had issued more than 12 million eligible and active cards. SPAN processed ATM transactions to the value of SAR 468 billion in 2010 (about 40% of all ATM transactions – the remainder being in-house transactions at the issuing banks' own ATMs) and POS transactions to the value of SAR 72 billion (all POS transactions are processed through the central switch). The average POS transaction was SAR 475.32.

SPAN cards function as both ATM and POS cards. There are almost 10,900 ATM terminals and more than 80,000 POS terminals in Saudi Arabia. There are 16 direct participants in SPAN which operates around the clock. The maximum value of individual payments through SPAN is SAR 20,000. Settlement is handled on a multilateral net basis with final settlement taking place over the SARIE RTGS system.

Growth in SPAN transactions in the medium term, in particular POS, is expected to be quite substantial with the planned introduction of prepaid cards in the near future. Recent developments include:

- the implementation of EMV. All new cards must be EMV-compliant from January 2010 and all existing (magnetic stripe) cards must be replaced by end-2012; and
- implementation of SPAN II in 2009 with all POS devices being migrated to the EMV standard by end-2011.

See Section 3.3.1.7 for information about planned developments for the SPAN system.

2.2.1.5 *Prepaid debit card*

The SPAN prepaid card suite is an account-based product, offering EFTPOS and ATM access. It is designed to bring currently unbanked sectors of the Saudi Arabian population into the banked community.

The prepaid card suite will streamline the card account opening process and reduce operating costs for issuing banks (as compared with a standard bank account). Prepaid debit cards can be issued in various forms and formats that are expected to be attractive to certain significant consumer sectors such as users of:

- payroll/salary cards;
- student bank cards;
- youth sector (starter) bank cards;
- expenses cards for personal or corporate expense purposes; and
- gift cards.

The prepaid cards suite is expected to launch within Saudi Arabia during the first quarter of 2012.

2.2.1.6 *Electronic bill presentment and payment (EBPP)*

Within Saudi Arabia, electronic bill presentment and payment (EBPP) payments are enabled through SADAD. SADAD's core function is to facilitate and expedite payment operations through all banking channels in Saudi Arabia. The system was established to complement the set of initiatives aimed at developing the financial sector as part of SAMA's efforts in building a fully electronic payment infrastructure that is integrated, safe, cost efficient and expandable.

Working with the 14 banks that currently participate directly in SADAD, the 106th biller has recently been linked to the SADAD system. The network's gross number of transactions has grown exponentially over the six years since the system's establishment and it now processes more than 10 million transactions monthly with a value of more than SAR 8 billion.

The most recent major changes took place in mid-2009 when new services were added to the system. These were:

- a real-time fee inquiry and payment facility for government services (eg those of the Ministry of the Interior, which is responsible for traffic violation fines, driving and motor licenses, passports, and alien control); and
- a refund service where the end customer can request a refund of the money through banking channels.

See Section 3.3.3.7 for details of major ongoing and future projects related to SADAD.

3. Payment systems (funds transfer systems)

3.1 General overview

The SARIE system, a vital component of the payments infrastructure in Saudi Arabia, has met all of the objectives that were set out for it in 1997. The RTGS system now provides a vital component of the Saudi payments environment. It has had the effect of eliminating interbank settlement risk for all SARIE payments while at the same time facilitating the development of a wide range of electronic banking systems. It also provides the other payment systems operating in Saudi Arabia with a settlement function. In addition, the cash legs of equity and bond transactions traded on the TADAWUL stock exchange are settled in the SARIE system.

The SPAN system, which handles all cross-bank ATM transactions and all POS transactions in Saudi Arabia, provides a major element of the country's payment infrastructure. The volume and value of transactions processed over SPAN has grown substantially since its implementation for ATMs in 1990 and for POS in 1993. The expected and planned growth in the use of POS and prepaid cards in the short to medium term means that there will be a heavy reliance on SPAN.

Cheque clearings continue to play a vital role in the Saudi payments landscape. While the total value of transactions processed in the 10 SAMA clearings fell markedly after the implementation of SARIE, cheque usage in Saudi Arabia is still quite significant and is likely to remain so over the medium to long term.

Developed in 2004, the SADAD system provides a comprehensive and efficient service for the payment of one-off and recurring bills. The number and value of bills paid through SADAD continue to grow. It provides a very important facility for the collection of a variety of both public and private sector bill payments. The SADAD system has enabled SAMA to respond very quickly to customer demand. It is rapidly becoming a vital component of the Saudi payments environment.

3.2 Large-value payment system

3.2.1 SARIE system

SARIE is Saudi Arabia's RTGS system. Since going live in May 1997, it has linked all banks in Saudi Arabia and provides the mechanism whereby all Saudi commercial banks make and

settle payments in Saudi riyals. SARIE has provided the basis for improved banking products and services and is the foundation for Saudi Arabia's payments system strategy.

Institutional framework

Owned and operated by SAMA, the SARIE system is located at SAMA's head office in Riyadh. Commercial banks communicate with the central system through proprietary gateways over a private network. Most banks have automated payments processing systems linked to these gateways. The SARIE Operating Rules and Regulations (ORR) govern the use and operation of the system. The ORR governs the following:

- ownership and operation of the system;
- admission and expulsion of participants;
- certification of participants by SAMA;
- definition of each payment type and its usage;
- responsibilities of all parties using the SARIE system;
- use of system functions by participants;
- types of system function that are reserved for SAMA use; and
- direct debit scheme rules governing banks, payers and originators.

3.2.1.2 Participation

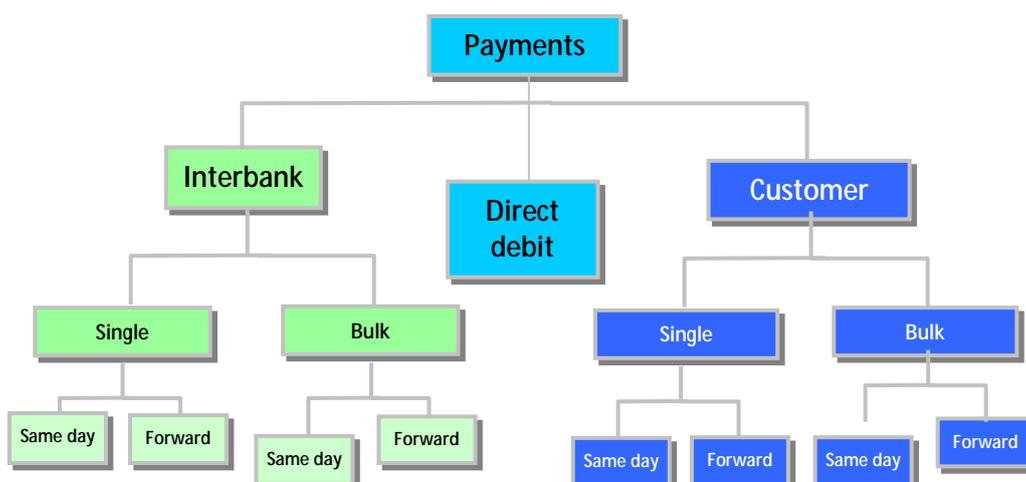
There are now 22 participants in the SARIE System; the 21 commercial banks and SAMA. The SARIE ORR states that all participants must be banks, must have systems, procedures and trained staff that are acceptable to SAMA for participation in SARIE and must be certified by SAMA in accordance with the ORR. There is no requirement in relation to a minimum number of transactions. SAMA must approve all participants. New participants are charged a one-off fee on joining the SARIE system as specified in the SARIE charging policy.

3.2.1.3 Types of transaction

SARIE combines the functionality of both a high-value and a high-volume system and handles both credit transfers and direct debits.

The message types are based on SWIFT standards and were upgraded to MT103 format in 2008. SARIE supports both single and bulk transfers, which may be effected on a same-day value basis or up to 14 days forward value. Banks are provided with a schedule of their position up to 14 days ahead. The system handles interbank and customer payments as well as direct debits and facilitates the execution of domestic transfers arising from the receipt of international funds transfer instructions. The diagram below shows the types of transaction message that are handled by the SARIE system.

Types of transaction



3.2.1.4 Operation of the system and settlement procedures

SARIE is a fully integrated RTGS system that permits all banks within Saudi Arabia to make immediate interbank money transfers through accounts held at SAMA. The system has 24-hour availability and ensures payment finality and irrevocability. SARIE business hours are as follows:

- Saturday to Wednesday 09:00 to 16:00
- Thursday 09:30 to 13:30

Forward value payments and maturing direct debits are settled at the start of the daily business cycle. Same-day value payments are irrevocably settled with finality in real time provided that the sending participant has sufficient liquidity in its account. Payments are queued until sufficient liquidity is available. If sufficient liquidity is not available prior to the close of the operational phase, SAMA may cancel any queued payments. See Section 3.2.1.5 for further information on liquidity.

Participants have real-time, direct access to their accounts with SAMA which enables them to continuously monitor their financial positions. SAMA as central controller has facilities for selective intervention to break payment gridlock situations in exceptional circumstances. The system provides gridlock resolution, or circles processing, tools to allow SAMA to resolve these situations. Payments may also be re-prioritised or cancelled.

The tight linkages to other SAMA head office operating systems permit banks to manage their liquidity for their SARIE accounts via sale and repurchase facilities against their government bond and treasury bill holdings (repos and reverse repos) and purchases and sales of foreign currency through SAMA.

The SARIE system has a number of security features to ensure that it operates smoothly, and in a fully controlled environment. These features include:

- digital signatures;
- encrypted communication lines;
- secure access through use of smart cards;
- physical security at all SARIE sites with access to the system being provided only to authorised personnel; and
- contingency is provided through dual configuration and contingency sites.

SARIE integrates the settlement of all other existing systems, ie ATM, POS, cheque clearings, SADAD and various card payment systems (22 individual clearings). The net positions arising from these individual clearings are further netted and settled in SARIE in a single event. Net interbank positions arising from the TADAWUL stock exchange trading system are settled as a separate event in SARIE.

3.2.1.5 Risk management

The risk management approach designed for SARIE provides a rigorous and comprehensive mechanism for controlling risks. Intraday overdraft limits restrict the system's exposure to any one participant. All limits are fully collateralised. Limit amounts and the nature and value of collateral are decided by SAMA.

SAMA issues a limits and collateral policy to all participants. This sets out the rules governing intraday limits and specifies the types of acceptable collateral. The policy states that participants may negotiate intraday overdraft limits with SAMA and that the intraday overdraft limit must be fully collateralised by Saudi Arabia government-issued instruments that can be readily liquidated and over which SAMA has jurisdiction. The policy then lists the instruments that are acceptable as collateral:

- government development bonds;
- treasury bills;
- special bonds;
- floating rate notes; and
- certain specified Islamic banking instruments.

SAMA holds a letter of undertaking signed by each bank, pledging the specified instruments as collateral.

The balance on a participant's account must never be less than zero plus any intraday debit limit approved by SAMA. All intraday debit balances on a participant's account must be discharged at the end of the day, at which stage the participant's account must be zero or in credit. If any action is required to safeguard the integrity of the banking system, SAMA can adjust these requirements. SARIE also features real-time monitoring of banks' intraday limits by SAMA and the banks, thus improving the system's capability for actively managing institutional and systemic risk.

3.2.1.6 Pricing

SAMA sets fees for the use of the system on a cost recovery basis. Fees are levied on participants under the following headings:

- transaction fees are charged to the sending participant according to the volume of messages and instructions sent by that participant. There are separate fee scales for bulk and single, interbank and customer, same-day and forward value payments and direct debits;
- clearing settlements – fees are charged to the operator of each clearing system based on the number of clearing batches settled;
- service fees are charged to participants who choose to use the optional services provided by the central system; and
- exceptional and penalty fees are intended to encourage best practice to ensure the smooth functioning of the overall system for the benefit of all participants and their customers.

Fee levels are set with the following aims in mind:

- encouraging both participants and their customers to switch from manual to automated procedures;
- responding to and encouraging new developments in various electronic payment systems and methods;
- encouraging participants to provide the fullest possible range of electronic services to their customers, including same-day and forward value payments; and
- encouraging the early transmission of payments so as to mitigate the impact of any contingency situation.

Participants are free to set tariffs for their customers in relation to SARIE transactions on a competitive basis. However, the maximum tariff that may be charged to a customer by a participant in any single SARIE transaction is:

- SAR 15.00 for a forward value transaction; or
- SAR 25.00 for a same-day value transaction.

3.2.1.7 Major ongoing and future projects

Recent changes to the SARIE system include:

- updating of customer payment message formats to the SWIFT MT103 format in 2008;
- implementation of ISO standard for IBAN (ISO 131616) between 2006 and 2008;
- implementation of same-day settlement for TADAWUL stock exchange in 2010;
- upgrading of security features of the system; and
- extension of daily business cycle (operating hours).

Planned projects include the following:

- implementation of intraday batch settlements for positions arising from the TADAWUL stock exchange;
- response to agreed improvements arising from interbank meetings;
- review of and enhancements to the daily business cycle (operating hours) and operating days schedule; and
- upgrades to the system component.

3.3 Retail payment systems

3.3.1 ATM and EFTPOS – SPAN

Payment cards have increased significantly in importance as a retail payment medium in Saudi Arabia. The Saudi Payments Network (SPAN) was introduced in 1990 as an interbank ATM service and enhanced in 1993 to support point of sale (POS) transactions.

At the end of 2009, there were 12.16 million eligible and active cards issued by the commercial banks (one active card per 2.2 head of population) functioning as both ATM and EFTPOS cards.

In the course of 2010, the number of ATM and EFTPOS transactions in Saudi Arabia increased by 14% and 21% respectively. These factors, combined with government and banking initiatives to increase electronic services and transactions, lifted the total value of card transactions to more than SAR 540.2 billion in 2010. This growth is projected to continue over the next five to seven years, with a relative focus on EFTPOS transaction

growth, supplemented by changes to the business model and new payments services on the EFTPOS network.

ATM transactions

Some 10,885 ATM terminals are in online daily operation within the SPAN network. During 2010, more than 1 billion ATM transactions took place for a total value of SAR 468.4 billion. The central SPAN system processes 39% by volume and 47% by value of all ATM cash withdrawals in Saudi Arabia – the remainder being in-house transactions performed at the issuer's own ATMs. On average, SPAN cards are used at ATMs 8.4 times per month for cash withdrawal, account information or supplementary services (bill payment, share-dealing, statement requests etc). The average ATM cash withdrawal value in 2010 was SAR 876 (some 27% less than the 2000 figure of SAR 1,118).

EFTPOS transactions

Some 80,505 point of sale terminals are in operation across Saudi Arabia. There were 151.18 million EFTPOS transactions in 2010 for a total value of SAR 71.86 billion, representing an average purchase of SAR 475.32 per transaction. Transaction volumes have risen steadily since 1996, when 6.8 million transactions took place for a total value of SAR 3.2 billion. The average purchase value in 1996 was SAR 471. Of the 151 million transactions made in 2010, some 85% were SPAN (domestic debit card) transactions, the remainder being international card scheme transactions.

3.3.1.1 Institutional framework

The SPAN Scheme is a SAMA-owned and -operated transaction request authorisation system operated on behalf of its members. The SPAN ATM and POS Operating Rules, Regulations and Procedures issued by SAMA govern the system's use and operation.

3.3.1.2 Participation

SPAN members are issuers and acquirers, duly licensed by SPAN to participate in the scheme. Membership is restricted to appropriately licensed financial institutions, operating within Saudi Arabia and regulated by SAMA (ie banks).

Member banks form part of the overall governance scheme for SPAN and are consulted on the SPAN programme's strategy, structure, service and pricing elements. The SPAN Strategic Program developed through 2010 will restructure the scheme's governance model to provide a clearer contribution methodology for member banks.

SPAN scheme participants include:

- SPAN member banks, which are appropriately licensed banks operating within Saudi Arabia. For either ATM or EFTPOS membership, banks may be either:
 - card issuer banks;
 - card acquirer banks; or
 - both issuers and acquirers.

At the end of 2010, there were 16 card issuer members, 17 ATM acquirer members and 10 POS acquirer members in the SPAN scheme.

- SPAN cardholders participate in the SPAN scheme but are not scheme members. The cardholder relationship is directly with the issuing bank and this relationship is contractually defined in the issuing bank's terms and conditions. At the end of 2010, there were 12.16 million active cards in Saudi Arabia.

- SPAN merchants participate in the SPAN scheme but are not scheme members. The merchant relationship is directly with the acquiring bank and this relationship is contractually defined in the merchant services agreement negotiated between the merchant and its acquiring bank. As at the end of 2010, there were 80,505 registered EFTPOS terminals in operation in Saudi Arabia.
- ATM operators: in Saudi Arabia, all ATM operators are SPAN member banks. ATMs are operated in strict accordance with the SPAN Operating Rules, Regulations and Procedures (the Business Books) and in compliance with the technical standards mandated by SAMA. As at the end of 2010, there were 10,885 registered ATM terminals in operation in Saudi Arabia.

3.3.1.3 *Types of transaction*

SPAN offers interbank ATM reciprocity across Saudi Arabia and with approved international counterparties, specifically within the Gulf Cooperation Council (GCC) countries, so that all customers of GCC-based banks can withdraw cash at any ATM in Saudi Arabia.

This has permitted nationwide ATM service coverage with a relatively modest deployment of ATMs. There are currently 10,885 ATM terminals in online daily operation in SPAN (as at end-2010), processing 89.6 million transactions a month, for a total monthly value of SAR 39.1 billion.

For EFTPOS payments, SPAN operates as a quasi transaction acquirer as all EFTPOS terminals in the Saudi Arabian national network are directly connected to the central SPAN switch. The terminals themselves are installed and maintained by the individual banks, which also maintain the commercial acquiring relationship with the merchants.

SPAN EFTPOS terminals accept SPAN-operated cards within Saudi Arabia and provide a single online connection to the overseas switches of these “other-bank card” associations. SPAN also supports an interchange connection to the central switches in the other GCC countries.

3.3.1.4 *Operation of the system and settlement procedures*

The SPAN scheme is owned and operated by SAMA. The scheme operates a central processing switch which interconnects all ATM and EFTPOS terminals in Saudi Arabia.

For both interbank ATM and all EFTPOS transactions, payments (authorisation) requests are routed through the SPAN central processing switch from the terminal to the card issuing bank. The transaction request is authenticated by the issuing bank and an authorisation response (positive or negative) is returned to the terminal. The transaction is irrevocably and instantaneously completed through the SPAN system.

Interbank settlement for SPAN transactions takes place across the SARIE RTGS system. Interbank settlement occurs in two phases. Initially, a net settlement position is determined by the SPAN scheme for and between member banks on a multilateral basis, for each SPAN and SARIE operating day. The SPAN positions are transmitted to SARIE, where they are consolidated with the positions from other clearings and settled on a net-net basis over the banks' settlement accounts in SARIE.

3.3.1.5 *Risk management*

Risk within the SPAN payments system can be classified into:

- operational risk: as a retail payment system of systemic importance, the SPAN system is subject to a standard business resumption plan (BRP) to ensure round-the-clock availability for payments authorisation. During 2011 and 2012, the SPAN BCP infrastructure will be subject to an end-to-end upgrade, further increasing system resilience and performance levels.

- data security risk: the SPAN operating system incorporates the following security standards:
 - public key encryption (PKI) to support authentication and certification functions with other networks;
 - PIN message authentication code (MAC) used to validate the source and text of a message between sender and receiver;
 - EMV chip standard for end user card technology (mandated for all cards by 2013); and
 - payment card industry (PCI) standards for card and PIN handling.
- settlement risk: net settlement of the respective member bank positions is made with finality on T+1 through the SARIE RTGS system.

3.3.1.6 Pricing

Cardholder transaction fees for both ATM and EFTPOS transactions are set by the issuing bank. Merchant fees for EFTPOS transactions are negotiated between the acquirer and the merchant.

Transaction processing fees for both interbank ATM transactions and EFTPOS transactions are set by SAMA. Issuers are charged a fee for transaction authorisation messages and for settlement. Acquirers pay a fee for settlement only. All fees are discounted by SAMA, based on the volume of transactions undertaken by both the issuer and the acquirer, with the aim of incentivising growth in both the card issuing and merchant acquiring business.

In addition, EFTPOS fees charged by SAMA are offered at a discount to ATM fees, to encourage issuers to incentivise EFTPOS transactions over ATM transactions, supporting the drive to reduce the overall use of cash throughout Saudi Arabia.

Multilateral interchange fees are payable for all interbank card transactions effected within Saudi Arabia. Such interchange fees are payable from the issuer to the acquirer on both interbank ATM transactions and interbank POS transactions, processed through the SPAN payments switch.

All interchange fees are regulated by SAMA through the SPAN scheme management entity. Interchange rates for both ATM and POS transactions are determined by SAMA based on cost assessments undertaken periodically by SAMA. These assessments are based on information sourced by SAMA from a survey of member bank issuing and acquiring costs.

ATM interchange fees, payable by the issuer to the acquirer depend on the nature of the transaction and specifically whether the request is for information or cash withdrawal. POS interchange fees, also payable by the issuer to the acquirer, depend on the transaction value. A higher interchange fee is payable where the transaction value exceeds SAR 100.

SAMA is currently reviewing the cards payments business in Saudi Arabia and, specifically, the interchange model for POS transactions. Any changes will seek to incentivise issuer bank promotion of card activity within Saudi Arabia with a view to reducing reliance on cash transactions.

3.3.1.7 Major ongoing and future projects

The National Payments Strategy (IPSS), developed in 2009, is driven by SAMA's ongoing objectives, which include shrinking the volume of cash employed in Saudi Arabia and supporting new and enhanced electronic banking services for the country's population.

During 2009/10, the SPAN scheme conducted an end-to-end review of the strategic programme for Saudi Arabia's card payments system, directed by the key findings of the

National Payments Strategy (IPSS). Arising from the development of the SPAN Business Strategy, the following key initiatives have been commissioned:

- Infrastructure quality:
 - migration of issued card base from magnetic stripe to EMV standard to be completed by end-2012;
 - migration of the EFTPOS terminal estate to EMV standard by end-2011;
 - systems and technical upgrade of the SPAN central switch. During 2011/12, the SPAN infrastructure will be comprehensively upgraded, further improving system resilience and performance levels; and
 - introduction of revised service and operating level agreements.
- Market expansion/growth:
 - review of the debit card market business model in Saudi Arabia, with a view to supporting growth in cardholder numbers and card usage. Introduction of market regulation to support new payment types (such as prepaid debit cards) within Saudi Arabia. This initiative will encourage growth in the Saudi Arabian banked population (currently 55%) and reduce the extent and use of cash in Saudi Arabia.
 - introduction of market regulation to support new payment types (such as prepaid debit cards) within Saudi Arabia. This initiative will enable growth in the Saudi Arabian banked population (currently 55%) and reduce the extent and use of cash in Saudi Arabia.
- Overall SPAN scheme governance:
 - a revised SPAN scheme governance model has been developed, effective from 2011, to promote cooperation at scheme level with the aim of delivering the scheme objective of becoming “The first payment choice in Saudi Arabia”.

These initiatives are taking place against a background of sustained growth for SPAN.

3.3.2 Cheque clearing

3.3.2.1 Institutional framework

Cheques are cleared at the local clearing houses maintained at each SAMA branch. In 1985–86, SAMA introduced standards for Saudi cheques, including MICR code lines, and reformed procedures for interbank clearing and settlement.

Clearing computers were installed at the three largest SAMA branches, in Riyadh, Jeddah and Dammam, in 1987. The automated clearing service provided by SAMA at these centres is known as the Automated Clearing House (ACH). The ACH accounts for the bulk of cheques cleared in Saudi Arabia in terms of both volume (88%) and value (90%). The remaining cheques are cleared through manual clearings at the other seven SAMA branches.

Settlement of all cheques cleared through the clearing houses, both ACH and manual, is handled through SARIE on a net basis for each separate exchange.

3.3.2.2 Participation

All licensed and SAMA-regulated banks in Saudi Arabia that are members of the SARIE RTGS payments scheme are eligible to issue cheques and participate in the cheque clearings.

3.3.2.3 *Types of transaction*

Two broad categories of cheque are issued within Saudi Arabia:

- Consumer cheques
 - drawn on the account-holder, consumer cheques are subject to settlement finality and can be returned unpaid up to final settlement (typically T+3). Consumer cheques are issued by both personal account-holders and business account-holders.
- Bank cheques/bank drafts
 - drawn on the account of the issuing bank, bank cheques or bank drafts are considered to represent guaranteed funds.

3.3.2.4 *Operation of the system and settlement procedures*

The cheque clearing houses are operated by SAMA at each of its 10 branches throughout Saudi Arabia. There is one clearing cycle per day from Saturday to Thursday with final settlement being done on T+0 in SARIE on a multilateral net basis.

Interbank settlement for cheque clearing transactions takes place across the SARIE RTGS system. Interbank settlement occurs in two phases. Initially, a net settlement position is determined by the each of the 10 clearing houses for and between banks on a multilateral basis. The cheque clearing positions are transmitted to SARIE, where they are consolidated with the positions from other clearings and settled on a net-net basis over the banks' settlement accounts in SARIE.

3.3.2.5 *Risk management*

Although small in volume, accounting for 7 million interbank cheques in 2010, the cheque clearing remains an important retail payment system. Operational resilience and business continuity are backed by ample reserves of processing capacity both within and between the three ACH centres in Jeddah, Riyadh and Dammam. In the case of the manual clearing houses, the clearing can be conducted at one of the other clearing houses.

The cheque payments system incorporates the following security standards:

- cheque printing standards are mandated by SAMA;
- word values and numerical values are checked/reconciled above defined value thresholds; and
- signatures on cheques are validated against the signature mandate held by the issuing bank.

3.3.2.6 *Pricing*

Approximately three out of every four cheques presented in Saudi Arabia are payable to a payee with a bank account at the drawee bank and are therefore not subject to the interbank clearing system.

In 2010, approximately 7 million cheques issued in Saudi Arabia were processed through the interbank cheque clearing system. These cheques were subject to a SAR 1.00 processing fee, levied by SAMA. Typically, issuing banks absorb this cost, without passing it directly to the customer.

3.3.2.7 *Major ongoing and future projects*

An end-to-end business review of the cheque as a payment instrument and its positioning within the Saudi payments system was undertaken through the IPSS in 2008/9. As part of

this review it was decided that the cheque, as a physical, paper payment instrument, would not form part of the future strategic payments growth path in Saudi Arabia.

Nonetheless, a major cheque clearing infrastructure upgrade was undertaken during 2011. The ACH infrastructure was renewed, including upgrades for process resilience in the interbank cheque clearing. A project is under way to upgrade the processing and sorting machines at the main clearing centres.

3.3.3 EBPP – SADAD¹

Electronic bill presentment and payment (EBPP) is the core service provided by SADAD. SADAD was a much-needed system, as a rising volume of new products and services – buoyed by a growing population and a more open economy – meant that payments needed to be conducted faster and more efficiently. Against this background, SADAD's growth strategy is driven by three primary aims:

1. to provide a fundamental payment infrastructure for electronic transactions, bill presentment and collection to support the whole economy (all billers, payers and banks);
2. to adhere to the regulatory role of SAMA by remaining independent from all stakeholders and not prioritising one over the other, as well as by continuing the Agency's efforts to create a less cash-dependent economy; and
3. to maintain a value-added relationship with all stakeholders based on an efficient and viable business model.

SADAD has the ISO 9001 (Quality Management System) and ISO 27001 (Security Management System) certifications. It aims to continuously improve its e-payment solutions and deliver future initiatives that best serve Saudi Arabia's macro economy.

3.3.3.1 Institutional framework

SADAD is owned and operated by SAMA.

3.3.3.2 Participation

Some 14 licensed banks operating in Saudi Arabia are active direct members. There were more than 100 billers as at the end of 2010. Billers are from both the public and private sectors. There are about 6 million active end user customers.

Billers represent a wide variety of industries, including telecoms, insurance, credit cards and loans, utilities, press and media, airlines, and government entities including ministries, municipalities, customs, funds, initiatives and projects. The expansion of SADAD's services will further broaden the range of potential users.

3.3.3.3 Types of transaction

SADAD lets billers present their invoices through the banking channels so that customers can pay electronically in real time. This process begins when the biller presents for payment an e-bill that may be either recurring, such as those for mobile and fixline telephone services, or a one-off pre-defined bill, such as the invoice for an airline ticket. This so-called Postpaid service is the first of SADAD's current range of four services.

¹ SADAD has received many awards for its role in supporting the national economy including the United Nations Public Service Award in 2008, the GCC E-Government Award in 2009 and the Injaz e-Government Achievement Award in 2010.

The second service is Prepaid, which lets billers upload their customers' account numbers to SADAD so that the customers can pay any desired amount, eg for recharging mobile phones. The third service is the eVoucher technology, which works in a similar way to prepaid scratch cards, with the difference being that customers download eVouchers from SADAD's wide range of electronic channels.

The fourth service is fee inquiry and payment for government services. Customers can request a refund of their money up to the point where they use the relevant service.

3.3.3.4 Operation of the system and settlement procedures

SADAD offers its services through all available banking channels, including ATMs, telephone and internet banking, and bank branches. The following processing steps are involved:

1. billers send summary bill information to SADAD on pre-determined schedules;
2. SADAD validates data received and uploads it into its database;
3. SADAD notifies billers of any discrepancies;
4. customer requests bill(s) information through bank channels;
5. the bank forwards the request received to SADAD;
6. SADAD retrieves bill information from its database and forwards it to the customer via the bank;
7. customer selects the bill(s) to be paid and the respective amount(s);
8. the bank debits the customer's account and confirms the transaction;
9. SADAD updates its database based on the bank's confirmation;
10. SADAD notifies relevant biller(s) accordingly;
11. at the end of day, SADAD initiates settlement of interbank positions through SARIE;
12. also at the end of day, billers receive reconciliation reports from SADAD showing a breakdown of all transactions processed by SADAD; and
13. SADAD updates the bill's status to settled.

3.3.3.5 Risk management

Since SADAD does not deal directly with the end customer, consumers are authenticated by their banks using the usual authentication mechanisms via the various banking channels. SADAD, on the other hand, must authenticate banks and billers. This is done via security certificates that are obtained from the biller's Saudi bank. Each certificate has an expiration date that must be renewed by the biller. Only billers with valid certificates can gain access to the secure SADAD portal, and to ensure maximum security, SADAD will only accept questions or complaints from employees of billers or banks whose names are registered on the profile for each biller that is known as the Master Data Capture (MDC), a record of details such as the selected service type and solution. This information is available only to SADAD employees.

3.3.3.6 Pricing

Fees are charged only to billers, who are discouraged from passing them on to their customers. Fees are set on a per biller basis based on the nature of the biller's industry, projected volumes, average value of each bill, and projected penetration.

3.3.3.7 Major ongoing and future projects

SADAD plans to significantly expand its population of billers by establishing new services such as an internet payment gateway where shoppers can pay online at the merchant's web

site. Payment solutions for small or medium enterprises (SMEs) that require little or no system integration are also planned. This will support SADAD's aim of reaching out to all levels of society by developing an advanced B2B system to the same standards as the current B2C and G2C approaches.

The following additional changes are planned:

- enhancements, planned for mid-2011, to bill and payment processing performance, which will help to increase system throughput;
- re-engineering the system with a service-oriented architecture to reduce time to market for new services and initiatives;
- expansion of the biller base to cover a wider market of SMEs;
- introduction of an online payment engine for e-commerce;
- development of B2B e-invoicing platforms with design and implementation scheduled over the next three years; and
- e-invoicing automated and integrated presentment and payment options for detailed invoices between invoicer and payer.

4. Systems for post-trade processing, clearing and securities settlement

4.1 General overview

SAMA manages the clearing and settlement of government securities, including government development bonds (GDBs), floating rate notes (FRNs) and treasury bills (T-bills). The stock exchange company (TADAWUL) operates the stock exchange and the Securities Depository Center (SDC). TADAWUL is the only entity authorised to conduct the trading of private securities, whether equities or bonds.

4.2 Post-trade processing systems – stock exchange trading and settlement system

4.2.1 Electronic confirmation system

The Equator system, provided and supported by NASDAQ OMX, is used to match and confirm trades.

4.2.1.1 Institutional framework

The Capital Market Authority (CMA), Saudi Arabia's securities regulator, is empowered to oversee and regulate securities settlement. In 1984, a Ministerial Committee was formed to regulate and develop the market. SAMA was the government body charged with regulating and monitoring market activities until the CMA was established in July 2003 under the Capital Market Law (CML) by Royal Decree M/30. The CMA is now the sole regulator and supervisor of the capital market, it issues the required rules and regulations to protect investors and ensure fairness and efficiency in the market. The CMA conducts regular inspections of the CSD and engages in constant dialogue with TADAWUL and market players.

TADAWUL is a joint stock company with an independent board of directors appointed by a decree of the Council of Ministers, consisting of representatives of the Ministry of Finance,

Ministry of Commerce and Industry, SAMA and representatives from the members of the stock exchange (brokers) and listed companies.

TADAWUL commenced operations in 2001 and was formally approved in March 2007 in accordance with the Capital Market Law. TADAWUL was established to develop a fully fledged securities market that provides comprehensive and diverse financial services.

TADAWUL also operates a Securities Depository Center (SDC). The Capital Market Law provides for the establishment of the SDC, which is solely authorised to conduct the deposit, transfer, settlement, clearing and ownership registration of securities traded on the exchange.

4.2.1.2 Participation

Commercial banks, broker-dealers and other financial institutions are direct participants in the SDC. In all there are 97 market participants, of which 65 provide services as dealers.

There is no guarantee fund. Brokers provide a letter of guarantee from their bank and are required to obtain cash from the purchaser prior to a trade. However, there are no guarantees in respect of the clearing bank because there is a pre-validation system for both inventory and cash.

4.2.1.3 Types of asset classes

TADAWUL handles the following types of securities:

Type	Listings etc
Equity	146
Listed bonds and sukuk	7
Bonds and sukuk (OTC)	9
Exchange-traded funds (ETFs)	2
Total	164

4.2.1.4 Operation of the system

TADAWUL has four main areas of business, which are integrated to provide listing, trading, market data and the functions of a central securities depository (CSD).

Buyers and sellers submit orders via their respective brokers in the market. Brokers enter prices for their clients into an electronic trading system. The trading system is linked to the CSD, which facilitates the online movement of securities between accounts of the counterparties. The matched deals are transferred electronically to the settlement system in real time. The trading system then checks the availability of the securities being sold in the client's holding. If the holding is sufficient, the order is executed. Clients are required to pre-fund their securities/cash accounts when the order is entered into the trading system. Once orders are matched, trades are generated and reported electronically to the CSD, with the immediate transfer of shares from the seller's account to the buyer's account. This occurs via the depository system, which has the authority to directly and immediately update the share books of the companies.

Clearing banks set the broker's daily settlement cap at no later than 10:00 on each trading day. Once set, the settlement cap cannot be exceeded, although it can be updated by the clearing bank at any time during the day. The settlement cap is known as the Daily Settlement Limit (DSL). Clients are required to fund their cash accounts when their order is entered. The funds are blocked by the corresponding buying broker, and are then transferred

to the broker's omnibus account once the broker receives the trade notification. The net cash positions of brokers are updated in real time upon execution of any buy or sell order.

At the end of the trading day, at 15:30 Saturday to Wednesday, the depository system calculates the net position of each bank in respect of their broker clients and transmits these interbank positions to SARIE for settlement. Final settlement of the interbank positions takes place in SARIE by 15:40 each day. The depository system operates on a DVP2 basis, as equities are settled on a gross basis and cash is settled on a net basis at T+0. Bonds and sukuk are settled and cleared on T+2. Each broker is required to have a commercial clearing bank that will stand as guarantor for them. These banks provide brokers with a trading limit that may not be exceeded. TADAWUL monitors the credit limits given to the banks' clients. The depository system has a program to monitor the brokers' exposure by tracking settled transactions and uncommitted trades against the value of the limits provided by each commercial bank. If the system identifies a transaction that will take a broker over its limit, it is automatically rejected.

More than 90% of negotiable securities in Saudi Arabia are immobilised and dematerialised in the CSD. The CSD handles both equities and bonds, and is used to facilitate transfer of ownership arising from secondary market transactions. Beneficial owners are identified at the individual level in the CSD.

4.2.1.5 Risk management

The requirement that securities and cash are prefunded prior to the trade, together with the blocking of securities by the CSD and the provision of a bank guarantee for the broker, provides some safeguards against default. However, there are no guarantees against a default by the clearing bank extending the guarantee. In case of a broker default, the clearing bank has the obligation to close the broker position. There are no guarantee funds or investor protection funds that address the risk that a clearing bank might default. There is a minimum capital requirement of SAR 50 million for trading participants.

4.2.1.6 Pricing

Commission fees are charged on each trade and are calculated as follows:

1. the maximum commission is 0.12% of the trade value;
2. the minimum commission imposed is SAR 12.00 for any executed order of SAR 10,000 or less; and
3. authorised persons (brokers) may agree with their customers to apply a lower commission. This discount has to be agreed and documented in advance and records must be maintained for all discounts.

4.2.1.7 Major ongoing and future projects

No major projects are currently under way.

4.3 Securities settlement systems – government securities settlement system

SAMA manages the clearing and settlement of government securities (GDBs, FRNs and T-bills).

4.3.1.1 Institutional framework

SAMA is the regulator of the government securities market. SAMA provides the custodian service for all government securities.

4.3.1.2 Participation

All commercial banks participate in the government securities market. The banks act as investors, distribution agents, secondary market-makers and subcustodians.

4.3.1.3 Types of asset class

· See Section 4.3 above.

4.3.1.4 Operation of the system

SAMA operates a registry with securities accounts for banks investing in government securities such as GDBs, T-bills and FRNs. Both primary and secondary market transactions are settled at SAMA against the current accounts of the commercial banks processing the transaction, and the corresponding transfers are recorded in the securities accounts of the relevant investors. T-bill auctions are executed for banks and government agencies (mainly pensions funds) with prices set by SAMA. Auctions of GDBs to banks are based on competitive bidding. Transactions in the primary market are settled in SARIE on a T+2 basis. Secondary market transactions between banks are executed by sending trade confirmations between the buyer and the seller. Copies of the trade confirmations are sent to SAMA by both banks, where they are matched and ownership is transferred. Interbank payments via SARIE are used to transfer the funds between the two banks.

4.3.1.5 Cash-leg settlement process

The cash leg of all government securities trades is settled on a gross basis in the SARIE system.

4.3.1.6 Custody function

The custody function for government securities is provided by SAMA. Commercial banks offer a subcustodian service.

4.3.1.7 Major ongoing and future projects

There are currently no major projects under way.

4.4 Central counterparties and clearing systems

Not applicable.

4.5 Use of securities infrastructure by the central bank

The SARIE Limits & Collateral Policy sets out the rules governing intraday overdraft limits for the SARIE system. The policy states that the intraday overdraft limit must be fully collateralised by Saudi government-issued instruments that can be readily liquidated and over which SAMA has jurisdiction. Banks can also access liquidity via sale and repos and reverse repos offered by SAMA.

From a regulatory perspective, the banks' holdings in government securities are considered eligible for domestic liquidity ratio purposes.