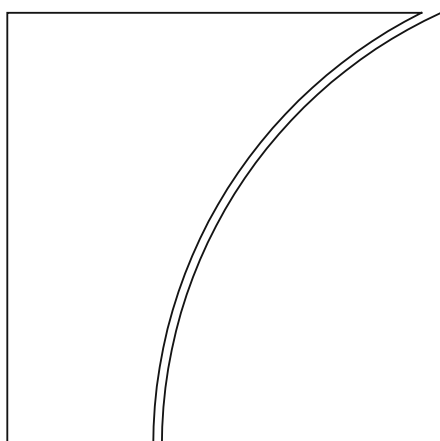


Committee on Payments and Market Infrastructures



Payment, clearing and settlement systems in the Kingdom of Bahrain

January 2017



BANK FOR INTERNATIONAL SETTLEMENTS

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Foreword

The Committee on Payments and Market Infrastructures (CPMI) publishes – under the aegis of the Bank for International Settlements (BIS) – reference works on payment systems and other financial market infrastructures in both CPMI member and non-member countries. These publications are widely known as Red Books.

The present volume, the first edition of the Red Book for the Kingdom of Bahrain, is another step towards increasing our understanding of the way payment, clearing and settlement systems work in different countries. Financial market infrastructures that are resilient and effective enhance the stability of the financial system. They also reduce transaction costs in the economy, promote the efficient use of financial resources, improve financial market liquidity and facilitate the conduct of monetary policy.

Central banks have a strong interest in promoting safety and improving efficiency in financial market infrastructures. They play a key role in domestic payment system development and, in many cases, operate large-value payment systems. Central banks in many countries have been influential in improving public understanding of financial market infrastructures in their countries and public awareness of the various policy issues they raise.

We hope that this volume will contribute to the general understanding and awareness of financial market infrastructures and associated arrangements in the Kingdom of Bahrain, both domestically and internationally.

Benoît Cœuré
Chairman
Committee on Payments and
Market Infrastructures

Rasheed Mohammed Al Maraj
Governor
Central Bank of Bahrain

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List of abbreviations

AAOIFI	Accounting and Auditing Organization for Islamic Financial Institutions
AFE	Arab Federation of Exchanges
AMEDA	Africa and Middle East Depositories Association
ANNA	Association of National Numbering Agencies
ATM	Automated Teller Machine
ATS	Automated Trading System
BAB	Bahrain Association of Banks
BCP	Business continuity plan
BCTS	Bahrain Cheque Truncation System
BD	Bahraini dinar
BENEFIT	Bahrain Electronic Network for Financial Transactions
BHB	Bahrain Bourse
BKS	BKS System
BMA	Bahrain Monetary Agency
BOD	Beginning of day
BSE	Bahrain Stock Exchange
CBB	Central Bank of Bahrain
CBT	Computer-based terminal
CCP	Central counterparty
CoB	Continuity of business
CPR	Central Population Registration
CRC	Cyclic Redundancy Check
CSD	Central Securities Depository
CSR	Central Securities Registry
CUS	Customer account in the SSS System
DDI	Direct debit instruction
DR	Disaster recovery
DVP	Delivery versus payment
EBPP	Electronic Bill Presentment and Payment
EFTPOS	Electronic funds transfer at the point of sale
EFTS	Electronic fund transfer system
EOD	End of day
FEAS	Federation of Euro-Asian Stock Exchanges
FIFO	First in, first out

FOP	Free of payment
FMI	Financial market infrastructure
ETF	Exchange-traded fund
GCC	Gulf Cooperation Council
GCCNET	GCC Shared Payments Network
IBAN	International Bank Account Number
IDC	Intraday credit
IFRS	International Financial Reporting Standards
IFSB	Islamic Financial Services Board
IMF	International Monetary Fund
IOSCO	International Organization of Securities Commissions
IPO	Initial Public Offering
ISIN	International Securities Identification Number
ISLI	Islamic Sukuk Liquidity Instrument
MICR	Magnetic ink character recognition
MNSB	Multilateral net settlement batch
NFC	Near-field communication
NIN	National Investor Number
NRD	Non-resident account in the SSS System
OTC	Over the counter
OTIP	Online Trading Incentive Program
PFMI	Principles for Financial Market Infrastructures
PG	Payment Gateway
PKI	Public key infrastructure
POS	Point of sale
RTGS	Real-time gross settlement
REIT	Real estate investment trust
SIPN	Secure IP network
SMS	Short message service
SRO	Self-regulatory organisations
SSB	Shari'a Supervisory Body
SSS	Scripless securities settlement
STP	Straight through processing
SWIFT	Society for Worldwide Interbank Financial Telecommunication
TBC	The BENEFIT Company
TRD	Trade account in the SSS System

Introduction

The financial sector of the Kingdom of Bahrain consists of a wide range of conventional and Islamic financial institutions, which include banks, non-bank financial institutions, investment businesses, insurance companies and ancillary service providers. Most of these financial institutions serve customers across the Middle East. Bahrain has a free market economy with no restrictions on capital movements, foreign exchange, foreign trade and foreign investment. Bahrain pursues a pegged exchange rate regime, under which the Bahraini dinar is pegged to the US dollar.

Bahrain is a regional financial centre for conventional as well as Islamic finance supported by Shari'a-compliant financial instruments, institutions and a regulatory framework. Bahrain is also a member of the Gulf Cooperation Council (GCC).¹

The Central Bank of Bahrain (CBB) is the single regulator of the entire financial sector, with an integrated regulatory framework covering all financial services provided by conventional and Islamic financial institutions.

Over the past two decades, significant reforms have been undertaken to modernise the payment, clearing and settlement infrastructure in line with international standards and best practice. These modernisation efforts were also considered vital to further developing the kingdom's banking services and financial sector.

The implementation of the Real-Time Gross Settlement (RTGS) System and the Scripless Securities Settlement (SSS) System by the CBB in 2007 modernised the systemically important payment and settlement system, enabling banks to carry out their payment and securities-related transactions securely, and on a real time basis.

The CBB has also taken measures to put in place faster and more secure retail payment systems. The CBB implemented a semi-automated cheque clearing system in 1994 and a common ATM switch in 1996. To allow the banking sector to provide payment services more efficiently, the CBB outsourced its retail payment services, the ATM switch (in 1997) and cheque clearing (in 2012) to the BENEFIT Company (TBC). The CBB authorised TBC to implement a near real-time electronic fund transfer system (in 2015) to allow bank customers to transfer funds between accounts in different banks immediately, reliably and conveniently. TBC currently operates the three main retail payment systems, ie the Bahrain Cheque Truncation System (BCTS) the Bahrain Electronic Network for Financial Transactions (BENEFIT) and the Near Real-Time Electronic Fund Transfer System (EFTS).

Moreover, recent measures taken by the CBB in the payment area have enhanced the efficiency, convenience and security of non-cash payments.

The main payment, clearing and settlement systems in Bahrain (see Diagram 1) comprise the following:

- The RTGS System settles interbank and customer payments in real time, on a gross basis. It also provides settlement in central bank money for other payment and securities settlement systems, such as BENEFIT, BCTS and EFTS, at times stipulated by the CBB;

¹ The GCC is a political, economic, social and regional organisation between six countries in the Gulf region, established in 1981. GCC member countries are: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates. The Supreme Council (comprising the GCC heads of state) is the GCC's highest decision-making body. The office of the Secretariat-General administers and monitors policy implementation.

- BCTS clears cheques based on images and electronic information instead of physical cheques. Currently, bank customers who deposit cheques for clearing at banks before 11:30 on a business day receive cheque proceeds no later than 15:00 on the same day;
- BENEFIT provides the following retail payment services, allowing bank customers to:
 - use their ATM cards for cash withdrawals at ATMs of any bank in Bahrain and in other GCC member countries under the GCCNET shared ATM services;
 - use their debit cards at POS terminals in Bahrain and in other GCC member countries participating in the GCCNET shared POS service;
 - make preauthorised direct debits to settle recurring payment obligations; and
 - carry out online e-commerce payments through the Payment Gateway (PG, see Section 2.2.1.4.4) using their debit cards.

Furthermore, BENEFIT allows bank customers of other GCC countries to withdraw cash at ATMs in Bahrain under the GCCNET shared ATM services.

- The EFTS was launched in November 2015 to let bank customers make instant low-value payments known as Fawri+ within 30 seconds between two bank accounts on a round-the-clock basis. A customer can make multiple low-value Fawri+ payments in a day, subject to a maximum daily value limit of BD 1,000. The EFTS also offers two other types of customer payment service. The first is the deferred batch fund transfer service known as Fawri, which supports same-day or future-dated small or large value payments on working days. The second type is the Electronic Bill Presentment and Payment (EBPP) called Fawateer, whereby bank customers can settle bills from both online and offline billers.
- In the retail payment area, several international card schemes facilitate credit, charge and e-money card transactions, which are growing at a steady pace.
- The SSS System, operated by the CBB, acts as a central securities depository (CSD) for government securities issued (in scripless form) by the CBB and settles securities transactions in real time on a DVP 1 basis through its seamless integration with the RTGS System.
- The Central Securities Depository (CSD) of Bahrain Bourse (BHB) provides a centralised depository and a system to clear and settle exchange traded securities transactions on T+2 using DVP model 2. All securities cleared and settled by the CSD are either immobilised or dematerialised and titles are transferred electronically.
- All payment, clearing and settlement systems support conventional as well as Shari'a-compliant payment instruments/securities.

The main payment service providers in Bahrain are conventional retail banks that are eligible to offer all payment services, and Islamic banks that offer payment services complying with Shari'a principles. In addition, financing companies provide credit card, charge card and e-money-related services.

The payment, clearing and settlement systems are undergoing important changes in several areas. The most important projects being implemented are:

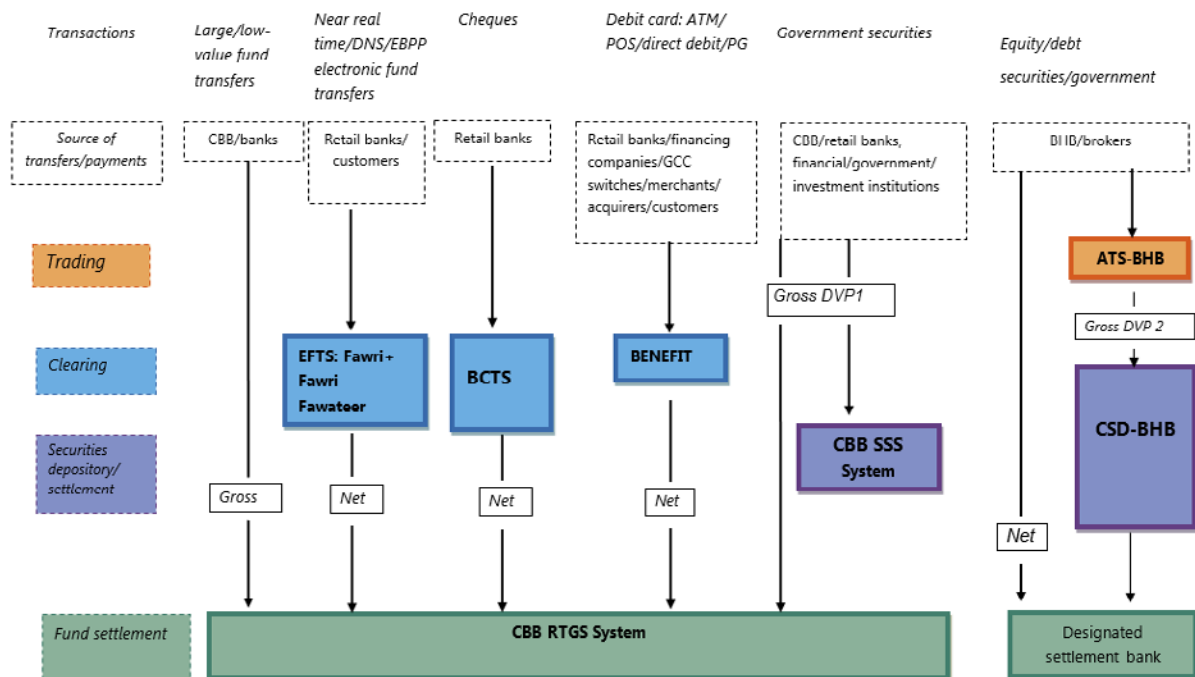
- The Near-Real-Time Electronic Fund Transfer System (EFTS): The EFTS went live with the mandatory requirement for all participating retail banks to allow their customers to receive all types of EFTS inward payments and offer, at a minimum, one out of three access channels (ie internet banking, mobile banking and bank branches) for their customers to make outward EFTS payments. TBC is in the process of full implementation of the EFTS to ensure that participating banks provide the stipulated access channels for their customers to make outward payments;
- Developing the regulatory and technical infrastructure governing the capital market, in accordance with the CBB regulations and international standards to ensure that operations are

conducted in an efficient, fair and transparent manner that protects the rights of investors as well as related parties: In 2014, BHB implemented a multi-asset trading platform and new market rules to further improve BHB's trading operations, supporting new investment instruments such as options, ETFs and REITs in order to increase the competitiveness of BHB in attracting more local and foreign investors. In November 2015, the BHB issued Resolution (5) of 2015 to provide more opportunities for investors; and

- A joint initiative of the CBB and BHB to develop the capital market by offering government securities in the primary market for investors through the BHB and making these securities available for trading in the secondary market via the Automated Trading System (ATS). In January 2015, the CBB started issuing an allotment of government bonds to retail investors through BHB at primary issuances/auctions. This programme was extended to treasury bills in January 2016. BHB became a direct member of the SSS System and the CSD acts as a centralised depository for BHB-listed government securities purchased in the primary market by retail investors through BHB.

Overview of the payment, clearing and settlement systems in Bahrain

Diagram 1



1. Institutional aspects

1.1 The general institutional framework

1.1.1 Regulatory/supervisory/oversight bodies in the field of payment, clearing and settlement

The entire financial system of Bahrain, including financial market infrastructures (FMIs) that support the payment, clearing and settlement systems, is regulated, supervised and overseen by the CBB.

The CBB (formerly the Bahrain Monetary Agency) is a public corporate entity established in September 2006 under the Central Bank of Bahrain and Financial Institutions Law 2006 (the CBB Law).² The CBB Law consolidated the overall legal framework relating to the regulation and supervision of all financial institutions in Bahrain. Prior to the CBB's establishment, the Bahrain Monetary Agency (BMA) regulated the banking and other financial service sectors, including insurance and capital markets. In 2002, the legislative, regulatory and supervisory authority of the Bahrain Stock Exchange (BSE) was transferred from the Ministry of Industry and Commerce to the BMA.

In October 2015, the CBB Law was amended,³ adding provisions, particularly to:

- allow credit information centres/bureaus to be established as financial sector support institutions under the CBB license; and
- allow CBB licensees as well as other entities, including government bodies that have credit information, to become members of a credit information centre/bureau.

As per Article 4 of the CBB Law, the CBB has a duty and power to regulate, develop and supervise conventional and Islamic financial institutions licensed to provide regulated financial services (such as banking, insurance, capital market and all other financial services) including those governed by Islamic Shari'a principles.

The CBB Rulebook (see Section 1.1.2.2) issued under the CBB Law, provides the regulatory provisions for licensed conventional, as well as Islamic financial institutions. The regulatory requirements for Islamic financial institutions are broadly in line with international best practices and standards applied to conventional financial institutions. The CBB follows the standards and guidance notes of the Islamic Financial Services Board (IFSB) in setting capital adequacy/risk management rules and regulations for Islamic banks.

The CBB Rulebook requires licensed Islamic financial institutions to follow the principles of Islamic Shari'a and operate under the Shari'a framework given in the relevant volume of the CBB Rulebook. The CBB Rulebook also requires licensed Islamic banks to undertake a number of additional responsibilities with the aim of providing an assurance to their stakeholders that they are following Shari'a principles.

Each licensed Islamic bank is required to establish an independent Shari'a Supervisory Board (SSB), consisting of at least three Shari'a scholars and complying with Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI) Governance Standards for Islamic Financial Institutions Nos 1 and 2. Each licensed Islamic bank is required to have a Shari'a Reviewer, who performs the Shari'a compliance functions independently and reports directly to the SSB of the respective licensed bank. The SSB (appointed by the shareholders at their annual general meeting) has powers to approve or reject any new financial product or transaction.

² The Central Bank of Bahrain and the Financial Institutions Law 2006 (CBB Law) was promulgated on 6 September 2006 with the issuance of Legislative Decree No 64 of 2006, which repealed Legislative Decree No 23 of 1973, establishing the Bahrain Monetary Agency (BMA), and Legislative Decree No 17 of 1987 regarding insurance companies and organisations.

³ Legislative Decree No 34 of 2015 amending some provisions of the Central Bank of Bahrain and Financial Institutions Law No 64 of 2006.

Furthermore, Islamic banks are required to maintain comprehensive books of accounts and other records complying with the Financial Accounting Standards issued by AAOIFI or International Financial Reporting Standards (IFRS), where no relevant AAOIFI standard exists.

1.1.2 Legal basis for payment, clearing and settlement systems

The CBB Law is the main law that forms the legal framework for the payment and securities clearing and settlement systems as well as for trading and securities depositories. Laws and legislative decrees that are most relevant to payment, clearing and settlement systems (including those systems for securities, payment instruments and institutions) are briefly explained below.

1.1.2.1 The CBB Law

The CBB Law mandates the CBB to play multiple roles in the payment, clearing and settlement area, with the aim of meeting its statutory objectives.

Under the CBB Law, it is a duty of the CBB to issue local currency and the CBB is the exclusive authority in Bahrain with the right to print currency notes; mint coins; and issue, withdraw and reissue local currency.

Article 32 of the CBB Law empowers the CBB to own and operate payment, clearing and settlement systems; outsource the management of such systems to a third party; and issue regulations on payment, clearing and settlement systems.

Regulated payment, clearing and settlement services		Table 1.1
Licensed service provider(s)	Regulated service(s)	
Conventional retail banks	<ul style="list-style-type: none"> Issuing payment instruments; and Performing payment and securities-related operations (including Shari'a-compliant). 	
Islamic retail banks	<ul style="list-style-type: none"> Issuing Shari'a-compliant payment instruments; and Performing their payment-related operations consistent with the principles of Shari'a. 	
Financing companies (conventional)	<ul style="list-style-type: none"> Issuing payment instruments relating to credit (such as credit cards); and Performing payment-related operations. 	
Financing companies (Islamic)	<ul style="list-style-type: none"> Issuing Shari'a-compliant payment instruments relating to credit; and Performing their payment-related operations. 	
Specialised financial sector supporting companies/providers of regulated ancillary payment services including technical services.	<ul style="list-style-type: none"> Operating and managing payment, clearing and settlement systems. IT/technical services to process card payment transactions, payment switch etc. 	
Securities/precious metal/commodity exchanges	<ul style="list-style-type: none"> Operating markets or exchanges to facilitate buying, selling and exchanging of securities or futures contracts (including options and other derivatives). Arranging or trading in securities, clearing and settlement of securities transactions and depositing of securities with a licensed depository. 	

In addition, the payment, clearing and settlement services are considered regulated financial services under the broader definition of regulated services in Article 39. These regulated financial services, as well as the institutions that provide such services, are specified in Regulation No (1) of 2007 "Pertaining

to the Central Bank of Bahrain Regulated Services” published by the CBB on 27 December 2007 in the official gazette as well as in Resolution No (9) of 2010 and Resolution No (43) of 2010 amending the aforementioned Regulation No (1) of 2007. These regulated payment, clearing and settlement services are given in Table 1.1.

Under Article 4(4) and (10), the duties and powers of the CBB relating to such regulated services include:

- regulating, developing and licensing the provision of such services;
- supervising and exercising regulatory control over any licensee providing such services; and
- safeguarding the legitimate interests of licensees’ customers against risks associated with the financial services industry.

As per Article 40, any person or entity intending to provide regulated services, including the above-mentioned services relating to payment, clearing and settlement, is required to obtain a licence and/or authorisation from the CBB. The CBB Law prescribes the regulatory requirements that CBB licensees, including their approved persons, are required to comply with.

Article 37 empowers the CBB to issue regulations to implement the CBB Law. The CBB regulations have a general application, where applicable. Accordingly, the CBB is obliged to consult with interested parties and to review and consider their comments before finalising regulations. Such finalised regulations become effective only after they are published in the official Gazette.

Article 38 empowers the governor of the CBB to issue necessary directives to the relevant payment service providers (licensees or categories of licensees), approved persons or registered persons to ensure the:

- implementation of the CBB Law and its regulations; and
- achievement of the CBB’s objectives.

Accordingly, directives are binding on those to whom they are addressed.

Under Articles 24 and 26, the CBB is empowered to have procedures on the following, in consultation with the Minister of Finance:

- issuing and redeeming public debt securities; and
- paying interest/return payments.

Furthermore, the CBB can buy, sell and deal in public debt securities offered for public subscription.

According to Article 81, no person or entity is permitted to issue securities in Bahrain unless permitted by the CBB. Article 83 empowers the CBB to:

- issue a regulation specifying the type of securities that may be issued, the methods of offering and dealing with them and the obligations of the issuing party; and
- issue securities in scripless/electronic form in such circumstances and with such conditions to be determined by the CBB.

Under Article 86, approval of the CBB is required for listing securities on the stock exchange. The CBB Law defines the types of securities that could be listed on exchanges. Article 80 defines companies trading in securities. Trading in securities listed on an exchange has to be conducted only through an intermediary licensed by the CBB and registered as a member of the licensed exchange.

Parts 2 and 4 of the CBB Law empower the CBB to lay down rules for licensees, listed companies and others who undertake capital market and/or securities-related activities in Bahrain.

Article 186 states that BHB is to be treated as it is licensed under the CBB Law. All rules and regulations applicable to exchanges are applicable to BHB.

Under Article 4 (5), it is a duty of the CBB to act as a banker to the government. Article 29 empowers the CBB to open and maintain accounts for financial institutions so that they can carry out transactions. The CBB Law provides for the CBB to act as a financial agent for the government at the International Monetary Fund (IMF); the International Bank for Reconstruction and Development; and other Arab and international monetary institutions/funds.

The CBB is also empowered by Articles 129–132 to levy an administrative fine not exceeding BD 20,000 upon a licensee and/or take other enforcement measures if the licensee violates the provisions of the CBB Law. Furthermore, by the amendment made to the CBB Law in October 2015, the administrative fine (under Article 129) that the CBB could levy increased from BD 20,000 to BD 100,000 and widened the coverage by including licensees as well as non-licensee private entities (in case of a violation of CBB rules on credit information centre/bureau).

1.1.2.2 CBB Rulebook

The CBB Rulebook (publicly available on the CBB website⁴) is issued by the CBB pursuant to the CBB Law and applies to licensees of a particular category (please see below) or area of activity and to individuals (approved persons) undertaking key functions in those licensees.

The CBB Rulebook comprises seven volumes, each addressing regulatory requirements relating to licensing, regulation and supervision of licensees, and covering areas such as licensing requirements, capital adequacy, risk management, business conduct, reporting and disclosure requirements, as well as enforcement actions, as follows:

- Volume 1: Conventional banks
- Volume 2: Islamic banks
- Volume 3: Insurance licensees
- Volume 4: Investment business
- Volume 5: Specialised activities (including money changers; financing companies; representative offices; administrators; trust service providers; microfinance institutions and providers of ancillary services to the financial sector).
- Volume 6: Capital markets [provides regulatory requirements for capital markets that cover offering, listing, issuing and trading of securities and financial instruments; the authorisation and supervision of exchanges, markets, licensed market operators, clearing houses (including central counterparties providing clearing and settlement services) and CSDs; guarantee funds and investor compensation; and capital market behaviour (including insider dealing, market abuse, mergers and acquisitions of listed companies)].
- Volume 7: Collective investment undertakings (CIU)

The contents of the Rulebook have the formal status of either rules or guidance instructions. The rules are basically the contents of regulations, resolutions and directives (as amended from time to time) relating to licensing and other regulatory requirements issued by the CBB. Rules are therefore legally mandatory for licensees and need to be complied with by those persons (legal or natural) to whom the content is addressed. In an event where a licensee breaches a rule to which it is subjected, it is liable to an enforcement action by the CBB and, in certain cases, criminal proceedings by the office of the public prosecutor. Guidance instructions are not binding and help to clarify a particular rule(s) or provide general

⁴ Available at http://cbb.complinet.com/cbb/microsite/cbb_rulebook.html.

information. The CBB Rulebook is updated on a quarterly basis, the only exception being when changes are urgently required.

1.1.2.3 Legislative Decree No 28 of 2002 with respect to Electronic Transactions and its subsequent amendments

Legislative Decree No. 28 of 2002 with respect to Electronic Transactions and its subsequent amendments (particularly the amendment made by Law N. 6 of 2012, which facilitated the implementation of the BCTS) provide the legal framework for, among other things: the acceptance of electronic records, electronic signatures and electronic transactions. It also provides for the legal recognition of electronic records as evidence; usage of electronic signatures; acknowledgement, time and place of dispatch of electronic records; the retention of information as an electronic record; involvement of electronic agents in the formation of contracts; certification and revocation of certification; accreditation of external certification service providers; and the liability of accredited certification service providers as well as network intermediaries.

1.1.2.4 Law of Commerce promulgated by Legislative Decree No (7) of 1987

The provisions of the Law of Commerce apply to traders and commercial activities including issuance, acceptance and payment of cheques and other commercial papers such as bills of exchange and promissory notes etc.

1.2 The role of the CBB

The CBB Law empowers the CBB to perform multiple roles in the payment, clearing and settlement area, in addition to its other tasks which include implementing monetary and exchange rate policies; managing the government's foreign currency reserves; issuing government debt instruments and providing related services; and regulating and supervising the financial sector.

The statutory roles played by the CBB in the payment, clearing and settlement area include:

- developing, regulating, licensing/authorising, overseeing and supervising payment, clearing and settlement systems (including those related to securities);
- issuing local currency;
- owning and operating payment, clearing and settlement systems;
- acting as a banker to the government within the limits set out in the CBB Law;
- opening and maintaining accounts for financial institutions and accepting their deposits on the terms and conditions determined by the governor of the CBB;
- providing government securities issuance and related services; and
- enforcing the provisions of the CBB Law.

All these roles are designed to achieve the following broad objectives of the CBB, as per Article 3 of the CBB Law, namely, to:

- set and implement the monetary, credit and other financial sector policies;
- provide effective central banking services to the government and the financial sector;
- develop the financial sector and enhance confidence therein; and
- protect the interests of depositors and customers of financial institutions and enhance Bahrain's credibility as an international financial centre.

1.2.1 Oversight and supervision

The CBB is mandated to develop, regulate, oversee and supervise the regulated financial services, including the following:

- payment, clearing and settlement systems;
- securities trading, clearing and settlement systems, including central depositories;
- licensed exchanges and licensed market operators; and
- payment instruments.

All payment, clearing and settlement systems, whether operated by the CBB or a CBB licensee, are governed by the CBB Law; regulations, directives and circulars issued by the CBB; other relevant laws; and business rules or operating rules of such systems (prepared with the concurrence of the CBB).

The CBB directives and regulations issued on interbank payment, clearing and settlement systems aim at making such systems safe, sound and efficient, while facilitating conventional as well as Islamic financial institutions in transacting and settling Shari'a-compliant payment and securities transactions. Accordingly, among other things, they provide for the legal and regulatory framework (including the specific requirements of Shari'a-compliant payment and securities transactions) within which the operator and participants (conventional and Islamic) are required to operate. Business rules or operating rules are binding contracts: between the respective operator and participants; and between each participant and every other participant, as stated in such rules. Furthermore, in carrying out its oversight activities, the CBB follows international standards, particularly the Principles for Financial Market Infrastructures (PFMI).

The objectives of payment system oversight are:

- ensuring the smooth, sound and safe operation of regulated payment, clearing and settlement systems to minimise risks, particularly systemic risks to ensure financial system stability;
- increasing efficiency of payment, clearing and settlement systems;
- protecting the interests of customers of licensed payment service providers against risks; and
- facilitating development and encouraging innovation.

The CBB Payments Committee is in charge of developing the payment, clearing and settlement systems in Bahrain. It carries out its responsibilities in the areas of policies, reforms, new initiatives and regulations in a transparent manner by regularly consulting the relevant stakeholders. The Oversight Unit of the CBB's Financial Stability Directorate oversees and supervises the following payment, clearing and settlement systems:

- systemically important RTGS and SSS Systems operated by the CBB;
- system-wide important retail payment, clearing and settlement systems (including the BCTS, BENEFIT and EFTS operated by TBC); and
- payment instruments.

The oversight and supervision of systems relating to private securities such as markets, securities exchanges, trading, clearing, settlement and depository, are carried out by the Capital Markets Supervision Directorate. Payment system oversight activities include:

- ongoing monitoring and follow-up of the compliance with the CBB regulatory requirements and relevant international standards;
- carrying out reviews, consultations, specific assessments, surveys and studies;
- conducting inspections and meetings with operators and participants;
- enforcing CBB directives, regulations and standards; and

- promoting the development of payment, clearing and settlement systems.

The degree of oversight applied to each system varies, depending on:

- whether the system is systematically important (RTGS is the only large-value interbank payment system and any operational failure could have a serious impact on operations of banks);
- whether the systems are outsourced by the CBB (eg BCTS); and
- operational failure of a retail payment system (eg BENEFIT), which could result in widespread inconvenience to customers or adversely affect customer confidence.

Oversight activities involve collecting data and information on all payment, clearing and settlement systems, on a regular basis for monitoring, conducting policy analysis and taking any corrective/enforcement measures. However, the systems which are systemically or system-wide important or outsourced by the CBB, are monitored closely (via online monitoring systems), reviewed frequently (by more frequently collected data/reports and meetings) periodically assessed and inspected on specific issues where necessary.

The Oversight Unit supervises payment service providers and participants from the perspective of their operations in payment, clearing and settlement systems. Under Article 4 of the CBB Law, it is a duty of the CBB to regulate and supervise conventional and Islamic financial institutions licensed to:

- operate payment, clearing and settlement systems;
- operate markets/securities exchanges;
- issue payment instruments and carry out payment-related activities as payment service providers;
- provide technical services to process card payment transactions; and
- undertake services related to:
 - arranging or trading in securities;
 - clearing and settlement of securities transactions; and
 - securities with a licensed depository.

The prudential supervision of licensed payment service providers and participants is carried out by the CBB Directorates in charge of supervising retail banks, Islamic financial institutions, other financial institutions and capital markets.

The CBB Rulebook specifies the requirements relating to licensing, ongoing regulation and supervision of licensees (see Section 1.1.2.2 for the CBB Rulebook).

Licensed securities exchanges, clearing houses and CSDs are permitted to operate as self-regulatory organisations (SROs) subject to the approval and oversight of the CBB. SROs can perform functions as permitted by the CBB Law, CBB's regulations, directives and rules, CBB Rulebook and other relevant laws as well as business rules or operating rules of such systems, as approved by the CBB.

1.2.2 Provision of payment and settlement services

The CBB has a statutory obligation and powers to provide payment and settlement services.

1.2.2.1 Operator and settlement agent

The CBB Law empowers the CBB to own and operate payment, clearing and settlement systems. Currently, the CBB:

- owns, operates and participates in the RTGS System (see Section 3.2.1) and SSS System (see Section 4.4.1);
- provides settlement facilities for retail banks in the RTGS System, BCTS, BENEFIT and EFTS; and

- extends fully collateralised intraday and overnight credit to RTGS members.

1.2.2.2 *Banker and financial agent*

The CBB provides banking services to banks and non-bank entities, including the government. To facilitate this, the CBB requires all these institutions to maintain accounts in the BKS System, the CBB's core banking system.

Maintaining an account in the BKS System is a prerequisite to becoming a direct or indirect member in the RTGS and SSS Systems or a member of a retail payment system (which settles net clearing obligations in the RTGS System). The BKS System has a direct link with the RTGS System. As per the standing instructions of each member bank, at the beginning of each day, funds are automatically transferred (swept in) from the respective clearing account in the BKS System to its settlement account in the RTGS System. In the case of RTGS members who have opted for intraday credit against their outstanding deposits at the BKS System, there will be a transfer from the BD deposit account of the respective member in the BKS System to its intraday deposit account in the RTGS System. At the end of the business day, all funds in the settlement accounts of member banks in the RTGS System are automatically transferred back to their respective clearing accounts in the BKS System (swept out).

The CBB maintains the following types of account in the BKS System:

- clearing accounts for retail banks, TBC, financing companies that participate in BENEFIT and entities operating payment switches of each GCC member country. Retail banks use their clearing accounts in the BKS System to make fund transfers relating to:
 - standing facilities (deposits in Bahraini dinar and borrowing against such deposits);
 - the Bahraini dinar (BD) leg of foreign exchange transactions of banks with the CBB;
 - cheque clearing obligations of non-RTGS member retail banks;
 - statutory reserve requirements during the first week of each month. Reserve holdings of retail banks are maintained in non-interest bearing reserve accounts in the BKS System and are not permitted to be used for payment purposes; and
 - certain fines, charges etc paid to the CBB.
- call accounts for government organisations, agencies and public bodies. Call account transactions include:
 - fund transfers relating to government securities issuances and sale of foreign exchange to the CBB; and
 - fund transfers of indirect members (of the SSS System) with the CBB and between participants of the BKS System.
- current accounts for other non-bank entities (for transactions relating to issuances of government securities and fund transfer); and
- central accounts for central banks, foreign governments/bodies and supranational organisations (for fund transfers and securities-related transactions).

The CBB pays interest only to call accounts of government entities. Currently, there is no minimum balance requirement for accounts in the BKS System. The CBB charges a penalty (10% per annum) for any overdrawn balance of an account in the BKS System. The CBB maintained 45 clearing accounts, nine call accounts, 24 current accounts and 13 central accounts at the end of 2015.

1.2.3 Government securities-related services

The CBB issues short, medium and long-term conventional and Islamic debt instruments on behalf of the Kingdom of Bahrain, in coordination with the Ministry of Finance. The CBB also administers work related to public debt securities including redemption of public debt securities; coupon/return payments; and may buy, sell and deal in public debt securities.

1.2.4 Monetary policy and the payment system

The CBB is responsible for setting and implementing monetary policy in Bahrain.

Bahrain has maintained a fixed exchange rate between the Bahraini dinar and the US dollar since 1980. According to the Royal Decree No 48 issued in December 2001, one Bahraini dinar is equal to 2.659 US dollars. This exchange rate peg acts as an anchor for monetary policy. In accordance with the CBB Law, the CBB maintains foreign exchange reserves of not less than 100% of the value of the currency in circulation.

There are no administrative controls over market interest rates or the distribution of credit. The demand for Bahraini dinar liquidity from the banking sector is accommodated mainly by foreign exchange sales. Retail banks are allowed to buy or sell Bahraini dinars in return for US dollars at the official buy and sell exchange rates.

Other monetary policy instruments include:

- Deposit and lending standing facilities in Bahraini dinars offered by the CBB to all retail banks. The interest rates on the deposit facilities are the CBB policy interest rates. The CBB policy rates guide the short-term interest rates in the local money market. The deposit and lending standing facilities currently offered by the CBB are:
 - Overnight, one-week and one-month deposits in Bahraini dinars at the CBB for retail banks;
 - overnight borrowing from the CBB for retail banks in the RTGS System against eligible conventional government securities in the SSS System through a repurchase (repo) transaction;
 - One-week Islamic “repo”: Islamic Sukuk Liquidity Instrument (ISLI) in the RTGS System against sukuk-al-ijara in the SSS System; and
 - overnight borrowing facility from the CBB against banks’ outstanding Bahraini dinar deposits with the CBB.
- One-week, one-month, three-month and six-month FX-swap facility available for retail banks to offer US dollars to the CBB against Bahraini dinars at the rates stipulated by the CBB, to manage their liquidity.
- Reserve requirements ie an interest-free balance (currently 5% of month-end Bahraini dinar non-bank deposits in conventional retail banks and call or unrestricted investment accounts in Islamic retail banks) to be maintained daily by retail banks at the CBB.

The CBB Monetary Policy Committee is in charge of implementing monetary policy and meets weekly, chaired by the Executive Director of Banking Operations.

1.2.5 Cooperation with other institutions

The CBB formulates policies, regulations and directives in close consultation with the stakeholders of the payment systems (operators such as TBC/BHB and participants) and the Bahrain Association of Banks (BAB) by way of conducting surveys as well as meetings, formulating working committees and circulation of consultation papers. The CBB participates as an observer in the board of directors of TBC.

As part of its objectives to strengthen the coordination, integration and interconnection between member countries, the GCC has a number of committees comprising representatives from member countries working on joint programmes and mechanisms. The joint efforts relating to the payment and settlement area are led by the Governors' Committee of Monetary Agencies and Central Banks, among other joint efforts relating to economic, financial, monetary and banking issues.

The GCC Payments Committee (consisting of officials of monetary agencies and central banks) is in charge of the implementation of joint regional payment initiatives. Technical committees/technical working groups (appointed for special projects) work on technical areas to assist the GCC Payments Committee.

The Governors' Committee of Monetary Agencies and Central Banks that meets twice a year, monitors the progress of regional payment initiatives and takes new or corrective measures.

The CBB, as a member of the GCC Payments Committee and various technical working groups, actively participates in a number of ways, including the following, to promote efficiency and safety of transactions between GCC member countries by:

- developing, maintaining and regularly updating the common set of rules, regulations, charges, standards and interoperability relating to the GCCNET shared ATM and POS services;
- implementing a project for routing and processing all GCC debit card POS transactions within and between GCC member countries through the respective switches; and
- implementing a project to establish a multicurrency RTGS System to facilitate cross-border payments between GCC member countries.

1.3 The role of other private and public sector bodies

1.3.1 Payment and settlement system operators

1.3.1.1 *The BENEFIT Company BSC (TBC)*

TBC operates the BCTS (see Section 3.3.2), BENEFIT (see Section 3.3.1) and EFTS with the approval of the CBB.

TBC is licensed by the CBB as a specialised licensee under the category of providers of ancillary services to the financial sector. TBC was incorporated as a Bahraini shareholding company (closed) in 1997 and is currently owned by 14 banks. The Board of Directors represents shareholder retail banks (10 directors) and one representative (observer) from the CBB. The board members of TBC are appointed for a three-year term and can be re-appointed. TBC's authorised capital was BD 5.4 million (issued capital was BD 3.11 million) at the end of December 2015. TBC's objective is to provide efficient services to its stakeholders, while operating as a profitable organisation.

1.3.1.2 *Bahrain Bourse BSC (BHB)*

BHB is an exchange in Bahrain and is licensed by the CBB. BHB currently facilitates trading, clearing and settlement of transactions relating to equities, mutual funds and debt securities listed on BHB as well as centralised depository and registry services.

BHB was established under Royal Decree No 60 of 2010, replacing the Bahrain Stock Exchange (BSE) which was established in 1987 under Amiri Decree No 4/1987. The BHB was formed as a government-owned Bahraini shareholding company to operate as a market-oriented exchange. BHB is currently managed by a board of directors representing the government and the private sector. The board of directors consists of nine directors appointed for a term of three years.

The members of BHB are licensed brokers (brokerage firms and individual brokers) and custodians. The companies listed on BHB include Bahraini public and closed shareholding companies and non-Bahraini companies. The market capitalisation of Bahraini public shareholding companies listed on BHB was BD 8.43 billion at the end of 2015.

Since its establishment, BHB has joined several regional and international organisations: the Arab Federation of Exchanges (AFE), Federation of Euro-Asian Stock Exchanges (FEAS), World Federation of Exchanges (WFE), Africa and Middle East Depositories Association (AMEDA) Association of National Numbering Agencies (ANNA) and International Organization of Securities Commissions (IOSCO).

1.3.2 Providers of payment services

1.3.2.1 Banks

Banks in Bahrain consist mainly of retail and wholesale banks, catering to two different market segments, conventional and Islamic. Islamic banks operate within the Shari'a framework and offer Islamic banking products and services that comply with Shari'a principles. In addition to Islamic banks, conventional banks may also offer Islamic banking products and services under their Islamic windows, after fulfilling certain requirements related to Shari'a governance. The laws and regulations allow Islamic banks a level playing field with conventional banks. All banks can freely operate in the interbank market.

Retail banks are engaged in typical banking activities (taking customer deposits/Shari'a money placements, providing credit/Shari'a financing instruments) in Bahraini dinars or any other currency, and serve residents and non-residents of Bahrain. Retail banks are eligible to participate in all payment, clearing and settlement systems and provide payment services to customers. The range of payment services offered by retail banks include the following:

- executing fund transfers and government securities-related transactions as direct members of the RTGS and SSS Systems;
- handling payments relating to cheques;
- issuing and acquiring card payments (debit cards, credit cards and e-money);
- taking part in government securities issuances on behalf of their customers;
- acting as a settlement agent (a retail bank acts as a designated settlement bank for transactions effected at BHB);
- providing custodian services (in respect of securities at BHB) to local, regional and international investors; and
- executing cross-border transactions.

At the end of 2015, there were 28 retail banks, of which 22 were conventional banks (including two specialised banks) and six Islamic banks. Fifteen retail banks were branches of foreign banks. The two government-owned specialised retail banks provide limited payment and settlement services.

Wholesale banks basically provide investment and merchant banking services (including bond issuing, underwriting and financial advice) and underpin Bahrain's role as a regional financial centre. They provide banking services principally in foreign currency to non-residents and banks in Bahrain. Their operations in the domestic market are limited to residents of Bahrain with transactions or balances amounting to a minimum of BD 7 million. Wholesale banks do not participate in payment, clearing and settlement systems and do not provide any payment services in Bahrain. At the end of 2015, there were 75 wholesale banks (56 conventional banks and 19 Islamic banks) in Bahrain, of which 42 were branches of foreign banks.

1.3.2.2 Non-bank financial institutions

Financing companies (conventional and Islamic) and ancillary payment service providers play an important role in the retail payment area. They are non-bank financial institutions that provide payment services as specialised licensees of the CBB.

Financing companies offer only credit, Shari'a compliant financing contracts or instruments; and issue, acquire and process payment instruments such as credit cards, charge cards, travellers' cheques and e-money. They are not allowed to take deposits or open Shari'a-compliant investment accounts or offer debit card-related payments. The largest credit card issuing and acquiring company in Bahrain is a financing company subsidiary of one of the largest retail banks in Bahrain. This company pioneered the card payment area in Bahrain by introducing the Kingdom's first credit card and POS terminals.

There are non-bank financial institutions licensed by the CBB to provide regulated ancillary payment services including technical services for processing payment card transactions.

2. Payment media used by non-banks

2.1 Cash payments

The CBB has the exclusive authority to issue cash (bank notes and coins), as per Article 14 of the CBB Law, which stipulates that currency notes and coins issued by the CBB are to be accepted, without any limitations, as the legal tender.

The national currency, the Bahraini dinar (BD), is issued as banknotes in denominations of BD 20, 10, 5, 1 and 0.5. Coins are issued in denominations of 100, 50, 25, 10, and 5 fils. Each BD is equivalent to one thousand fils.

Despite the increased usage of non-cash payment instruments, cash remains a very popular payment instrument for retail transactions in Bahrain.

Although statistics on the usage of cash for payments are not available, the total value of cash withdrawals and advances made at ATMs showed a 40% increase during the period from 2011 to 2015 (see Section 2.2.2.1).

The amount of cash issued by the CBB is driven mainly by its forecast for public demand. The total value of currency in circulation outside banks increased by 31%, from BD 402.2 million at the end of 2011 to BD 525.2 million at the end of 2015. However, the ratio of currency in circulation to nominal gross domestic product (GDP) remained more or less unchanged, at around 4% during the period from 2011 to 2015.

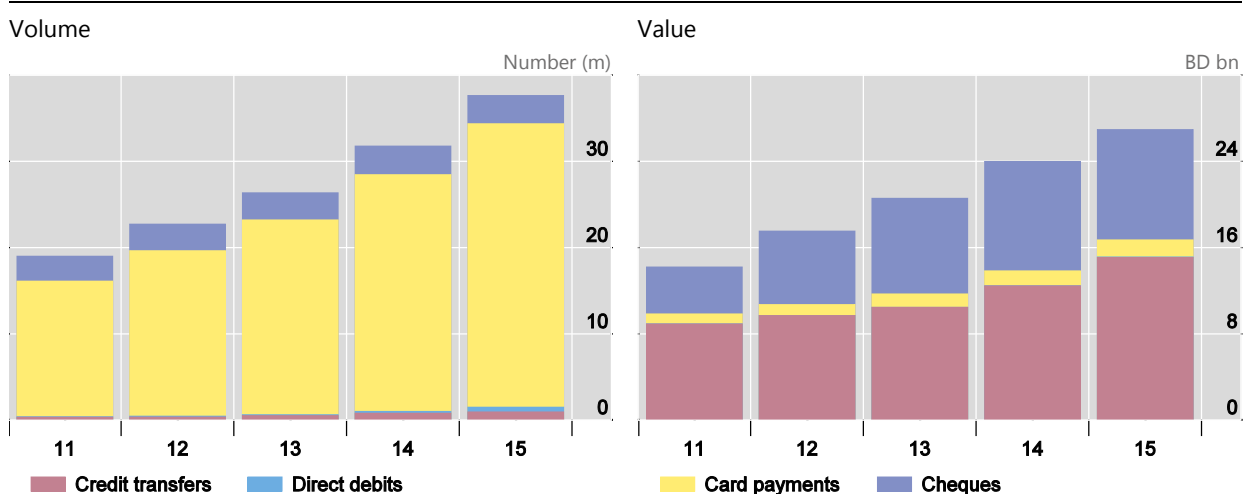
2.2 Non-cash payments

2.2.1 Non-cash payment instruments

Non-cash payments have been on a path of expansion in recent years. The main non-cash payments in Bahrain include credit transfers and payments by cheques, payment cards, direct debits in BENEFIT and fund transfers via the Payment Gateway. Graph 2.1 shows the trend of non-cash payment instruments during the 2011–15 period.

Transactions by non-cash payment instruments

Graph 2.1



Source: Red Book, statistical Table 7 and Table 8, Bahrain.

During this period, the number of bank customer accounts that could be used to make non-cash payments showed a continuous increase, reaching 1.6 million in 2015. The number of accounts per capita was slightly above 1 at the end of 2015.

2.2.1.1 Credit transfers

Credit transfers are widely used for interbank customer payments settled in the RTGS System and intra-bank customer payments (between accounts of the same bank) including credit transfers made at ATMs. The combined share of customer credit transfers effected in the RTGS System and at ATMs accounted for 2% of the total number of non-cash payments during the period from 2011 (0.3 million) to 2015 (0.9 million), representing the third most widely used payment instrument, after payment cards and cheques.

In terms of value, credit transfers represented 56% (BD 15.1 billion) of the total value of non-cash payments in 2015 compared to 63% in 2011 (BD 8.9 billion). The shift of payments relating to large-value cheques from the RTGS System to the BCTS contributed to a decline in credit transfers in 2013. Before 2012, payments relating to large-value cheques were settled in the RTGS System. However, credit transfers recorded a steady increase from 2014 onwards.

In order to promote the efficiency of interbank customer credit transfers, the CBB has made it mandatory for banks to:

- ensure that all customer credit transfer requests made before 12:00 are received in the beneficiary customers' accounts as and when they are settled in the RTGS System or, in any event, no later than 15:00 on the same day; and
- use the International Bank Account Number (IBAN), which keeps to a minimum the rejection of customer payments.

According to a survey conducted by the CBB among retail banks in June 2013, on customer payments, the estimated number of local customer credit transfers in 2013 was much higher (about 5 million transfers) than customer credit transfers made via the RTGS System, as banks:

- have special arrangements for customers to make intra-bank credit transfers (payment of utility bills etc) to service providers that hold accounts with the same bank; and
- make a single RTGS credit transfer for a number of standing orders or bulk payments (mainly salaries submitted by their corporate customers, including government entities) and send the details of the beneficiaries to the recipient bank through other means.

The survey findings revealed that local customer credit transfers (interbank and intra-bank) constituted mainly salary payments (33%), loan repayments (13%), credit card bill settlements (12%) and charity payments (2%). Of the total number of local credit transfers submitted by customers, around 60% were paper-based. The balance represented non-paper based credit transfers, which were submitted by customers via standing orders, internet banking, mobile banking or ATMs.

Another survey carried out by the CBB in June 2014 on electronic payments revealed that 17 retail banks (out of 22 retail banks that provided internet banking) offered a facility for their corporates, government entities and agencies to submit their bulk customer credit transfer instructions online, in the form of an electronic file through their internet banking facility. Fourteen banks allowed their customers to pay utility bills through internet banking to service providers holding an account with the bank.

At the end of 2015, 20 retail banks provided internet banking for retail customers. Fourteen retail banks offered mobile banking for retail customers while 17 banks provided internet banking for corporate customers. Since internet and mobile banking became access channels for the EFTS, banks have moved to enhance these services as well as their core banking systems with the aim of supporting EFTS payments.

Cross-border customer credit transfers are mainly foreign remittances. Correspondent banking arrangements are used by the CBB and retail banks to provide cross-border payment services. Money

changers make cross-border payments relating to their customer remittances and other payments through their retail banks.

2.2.1.2 Direct debits

Direct debit services provided through BENEFIT, are used mainly to make pre-authorised recurring payments related to telephone bills, loan or credit card bills, school fees, insurance premiums etc.

A direct debit is automatically executed according to the terms of a direct debit instruction (DDI) mandate by which the payer authorises:

- the payee or the bill originator to initiate the collection of a recurrent payment; and
- the bank to debit his/her account by the requested amount.

(see Section 3.3.1 for BENEFIT).

A direct debit enables the payee or bill originator to collect multiple pre-authorised bill payments more efficiently in a single payment on the agreed date. Customers enjoy more convenience and flexibility by having the option to directly make regular payments. In addition, a customer is protected in the following ways:

- the customer can place upper limits on payment amounts and cancel the DDI at any time they wish by giving instructions to the bill originator;
- the customer receives from the payee/bill originator an advance notice at least 10 working days of any change to the date, amount or frequency of the direct debit payment; and
- the customer is entitled to an immediate refund from his/her bank if money is erroneously debited from his/her account.

Direct debits have shown significant growth in terms of volume and value during the period from 2011 (68,384 transactions worth BD 6.1 million) to 2015 (552,818 transactions worth BD 40.2 million). A major contribution to this growth came from a move by a number of government entities to allow their customers to settle, particularly, utility bills, via direct debits.

2.2.1.3 Cheques

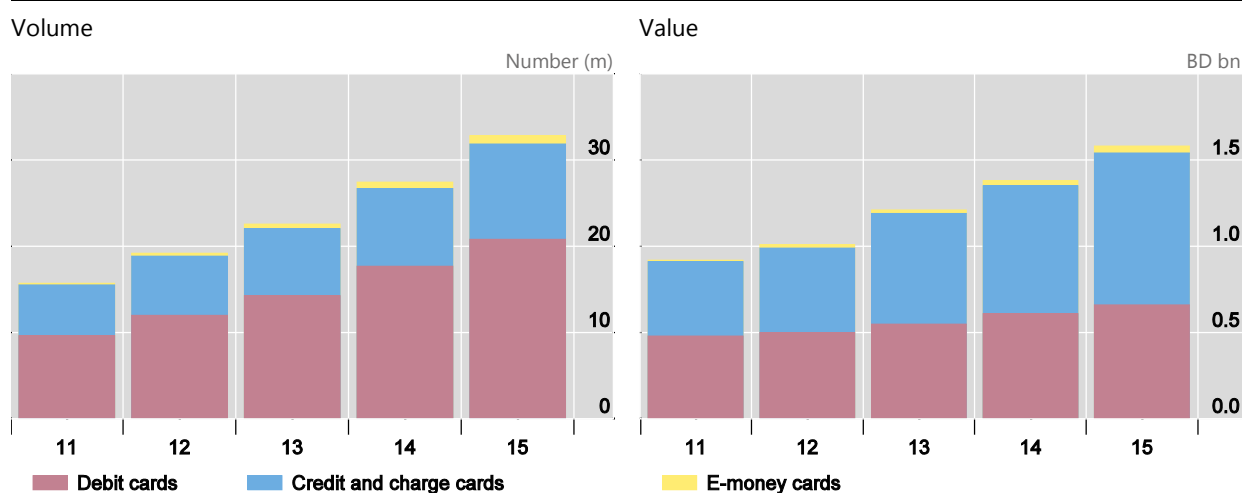
Cheques are widely used in Bahrain due to their ease of use and low cost. They are used mainly to make regular payments such as rent, loan instalments etc. Managers' cheques issued by banks are commonly used for large-value purchases. The share of cheques in the total number of non-cash payments dropped from 15% in 2011 (2.9 million cheques) to 9% (3.3 million cheques) in 2015, amidst a significant increase in card payments. However, the share of cheques in the total value of non-cash payments increased from 31% in 2011 (BD 4.3 billion) to 38% in 2015 (BD 10.2 billion) mainly due to the shift of large-value cheques to the BCTS.

Banks and their customers who print their own cheques are required to print their cheques in compliance with the CBB-issued standards and specifications on the design and printing of cheques.

In order to keep to a minimum cheques in the BCTS that are returned due to insufficient funds in customer accounts or closure of accounts, the CBB charges a penalty for each cheque returned by the paying bank, which can pass the penalty to its customer.

2.2.1.4 Payment cards

Payment cards are the most widely used non-cash payment instrument and their usage continues to increase each year. In 2015, card payments accounted for 85% and 6% of the respective total volume and value of non-cash payments.



Source: Red Book, statistical Table 7 and Table 8, Bahrain.

The payment cards used in Bahrain are issued under the international brands (MasterCard, Visa, American Express, Diners Club and JCB). All debit and credit cards (chip and PIN-protected) are EMV-compliant⁵ as issuers and acquirers. Cardholders receive immediate transaction advices via SMS message, free of charge, for their local and international financial transactions carried out using payment cards.

2.2.1.4.1 Debit cards

Debit cards are the most widely used payment cards in Bahrain (see Graph 2.2). The number of debit cards in use has steadily increased over the past five years, reaching 1.1 million cards by the end of 2015. Debit cards represented around 81% of the total number of payment cards during the 2011–15 period. The share of debit card transactions in the total number of card transactions remained around 64% over the same period. However, their share in the total value of card transactions was around 42% in 2015.

The majority of debit cards in Bahrain have a combined cash and debit function. Accordingly, in addition to making payments at POS terminals, they are used to withdraw cash at ATMs and perform other ATM transactions. Furthermore, debit cards are used to make payments over the internet, through the Payment Gateway (see Section 2.2.1.4.4) and in the GCCNET shared POS payment services. Debit cards issued in Bahrain carry the logos of BENEFIT and GCCNET, in addition to the logo of the respective card scheme.

The total number of debit card transactions more than doubled, from 9.6 million in 2011 to 20.8 million in 2015. The total value of debit card transactions increased by 38% from BD 478.3 million in 2011 to BD 658.4 million in 2015. The average value of a debit card transaction fell from about BD 50 in 2011 to BD 32 in 2015.

In order to protect the interests of depositors and customers of regulated financial institutions, debit card payments are regulated by the CBB as a related service of deposit-taking by retail banks. Only retail banks are permitted to offer debit card services. In 2015, out of 28 retail banks, 23 issued debit cards.

⁵ EMV stands for Europay, MasterCard and Visa International, a global standard for interoperation of integrated circuit (IC) cards and IC card-capable POS and ATMs, for authenticating credit and debit card transactions.

2.2.1.4.2 Credit and charge cards

In terms of usage, credit cards are the second most widely used payment card after debit cards. They are used at POS and ATM terminals as well as on the internet. The buy-now-pay-later feature accounts for much of the observed growth in credit card usage.

The combined share of credit and charge cards in the total number of payment cards slightly increased from 17% (189,566 cards) in 2011 to 19% (253,312 cards) in 2015.

The combined share of credit and charge cards in the total volume of card transactions declined from 38% (5.9 million) in 2011 to 35% (11 million) in 2015, due to increased usage of debit and e-money cards. However, the combined share of credit and charge cards in the total value of card transactions increased, from 47% in 2011 to 57% in 2015.

The total value of credit and charge cards transactions increased substantially from BD 430.9 million in 2011 to BD 879.4 million in 2015.

Statistics show that charge cards⁶ are increasingly used for larger value payments when compared with other payment cards.

2.2.1.4.3 Electronic money

As of end-2015, e-money was issued by two retail banks and one financing company. Currently, e-money is issued in the form of stored-value multipurpose cards under international brands.

There are two types of e-money cards: reloadable and non-reloadable. Chip-based cards can be used at POS and ATM terminals like any regular payment card. Non-chip based cards containing a magnetic strip can be used only at POS terminals. Virtual cards which do not contain a chip or a magnetic strip are used only for internet payments. Accordingly, there are no dedicated e-money card terminals in Bahrain.

Cards are reloaded over the counter at bank branches or through the internet banking services offered by banks. Unloading is done at bank branches and/or ATMs for chip-based cards.

Although e-money cards constitute a very minimal share in the total number of payment cards, they are the fastest growing segment in terms of the number of cards issued, recording a more than threefold increase, from 17,219 cards in 2011 to 59,241 cards in 2015.

Transactions via e-money cards increased more than sevenfold in terms of volume and more than fivefold in terms of value from 2011 (183,571 transactions worth BD 9.2 million) to 2015 (973,701 transactions worth BD 39.8 million). The average value of an e-money transaction fell from BD 50 in 2011 to BD 41 in 2015.

2.2.1.4.4 Payment Gateway (PG)

The PG is a secure online platform that facilitates e-commerce transactions (including credit card and other bill settlement) initiated at channels such as merchants' websites or kiosks for making payments to merchants via debit cards issued in Bahrain. All transactions are validated using debit card PINs and processed in the BENEFIT network (see Section 3.3.1).

Each merchant enters into a contract with an e-acquirer having an agreement with TBC. Acquirers connect merchants' websites/kiosks to the PG platform and settle transactions on their behalf by crediting the merchants' settlement accounts held with the acquirers. As at the end of 2015, there were 10 e-acquirers. On the issuing side, all 23 debit card issuers participate in the PG.

During the 2011–15 period, the total payments through PG increased more than fourfold in both volume and value, from 0.4 million payments (worth BD 21.5 million) to slightly above 1.9 million payments

⁶ Data relating to charge cards are aggregated with credit card data.

(worth BD 128 million). The average value of a PG transaction was BD 68 in 2015. The significant increases observed in the number and value of payments through PG were mainly due to the ability to use debit cards to immediately and conveniently execute payments online.

2.2.2 Non-cash payment terminals

2.2.2.1 ATM terminals

Transactions at ATM terminals comprise mainly cash withdrawals, cash deposits, credit transfers, bill payments and cash advances against credit and charge cards.

In 2015, all debit card issuer banks had their ATMs interconnected through BENEFIT. BENEFIT is linked to the switches of other GCC member countries under the GCCNET shared ATM services (see Section 3.3.1 for BENEFIT and Section 3.4.1 for GCCNET).

The total number of transactions relating to cash withdrawals and advances made at ATMs in Bahrain during 2015 was 29 million (worth BD 3.2 billion), of which 10.9 million transactions (worth BD 1.1 billion) were processed in BENEFIT. In 2011, the total number of ATM cash withdrawals and advances was 21 million with a value of BD 2.3 billion.

The number of ATMs increased from 450 in 2011 to 458 in 2015. The majority of ATMs provided credit transfer services in addition to cash withdrawals. The total number of ATMs that provided credit transfer services was 291 in 2015 compared with 324 in 2011.

The increased number of ATMs, their wide distribution, the ability to make cash withdrawals at ATMs of any bank linked to BENEFIT and the possibility to get cash advances at ATMs using cards with a cash function help to make cash readily available to the public. At the end of 2015, there were 1.4 million cards with a cash function.

2.2.2.2 EFTPOS terminals

The growth in the use of payment cards has increased the importance of EFTPOS terminals.

Currently, two retail banks and one financing company provide EFTPOS terminals and act as acquirers, dealing with merchants and routing payments to:

- BENEFIT, for debit cards issued in Bahrain and two other GCC member countries participating in GCCNET shared POS services; and
- International payment card schemes, for other cards: credit, charge, and e-money cards (irrespective of the issuing country) and debit cards (issued outside Bahrain, except those issued in countries participating in GCCNET shared POS services).

The three-party international card schemes operating in Bahrain do not have their own EFTPOS terminal and instead use those of EFTPOS providers.

A total of 34.2 million POS transactions (worth BD 2 billion) were executed in 2015, compared with 16.6 million transactions (worth BD 0.7 billion) in 2011. Over the same five-year period, the number of EFTPOS terminals increased from 13,197 to 18,133.

2.2.3 Recent developments

2.2.3.1 Near real-time low-value payments

In recent years, the CBB has taken a special interest in the promotion of electronic payments among bank customers, in order to increase convenience, speed, efficiency and security, while reducing cost. The main focus of the CBB is to enable:

- a bank customer to conveniently make online near-real-time (within 30 seconds) low-value payments from his/her bank account to a recipient's account at another bank, using multiple access channels such as the internet and mobile banking, bank counters etc; and
- bank customers who send as well as receive such near-real-time payments receive an SMS confirmation (within 30 seconds), allowing the recipient to withdraw the money from his or her account right away.

This is a significant change when compared with the current system of bank fund transfers, which takes one day or more to effect a customer payment.

Under the direction of the CBB, the near-real-time payment service known as Fawri+ was introduced under the EFTS in November 2015. Customers in any retail bank in Bahrain are able to receive a Fawri+ transfer and the EFTS project is progressing towards full implementation to provide the stipulated access channels for making EFTS payments.

2.2.3.2 Measures to enhance security and efficiency of payments

In recent years, the CBB has implemented the following customer-focused measures in the retail payment area to enhance the security and efficiency of payments:

- in 2010, the CBB directed TBC to implement the BCTS to speed up the cheque clearing process;
- the CBB directed payment card service providers in Bahrain to be fully EMV-compliant by 2010 as issuers and acquirers, to reduce the risk of fraud;
- in January 2012, IBAN was adopted and made a mandatory practice to identify bank customer accounts in order for;
 - electronic fund transfers to reach the correct account of the beneficiary; and
 - electronic fund transfer systems to support straight through processing (STP).
- Since March 2012, all retail banks and financing companies are required to provide immediate transaction advices through SMS, free of charge, to the cardholders for their local and international financial transactions on all payment cards; and
- In order to encourage customers to use the ATM network, the CBB directed banks to stop charging BD 0.100 fee from customers of other banks who effected transactions locally at their ATMs, effective 25 May 2016.

2.2.3.3 Usage of the internet and mobile phones in payments

The increase in internet and mobile banking users has contributed to the growth in electronic payments. At the end of 2015, 468,746 bank customer accounts were internet or PC-linked. The types of service offered under internet and mobile banking vary across banks and include access to the EFTS to make payments, get account information, upload or download files, present bills to customers, make fund transfers between accounts, and settle bills.

The Government of Bahrain encourages the use of the internet e-government portal to pay traffic fines, water and electricity bills, visa fees etc. to government entities. The e-government portal provides mobile applications, which can be installed on smart phones for direct access to e-payment services.

2.2.3.4 Innovative products

Electronic payments are gaining popularity due to their convenience. Developments in innovative products and services include the following:

- Mobicash: a form of cash withdrawal at ATMs that does not require the withdrawer to use a card or have an account with the bank that owns the ATM. The transaction is effectively a money

transfer from a customer maintaining an account with the bank through the e-banking service. A code is sent via SMS to the mobile number of the beneficiary, who receives the cash once he/she enters the code into the ATM.

2.2.3.5 Regional payment initiatives

2.2.3.5.1 GCC Multicurrency System

As per the mandates of the GCC Payments Committee, in 2012, GCC member countries have embarked on a new project to establish a multicurrency RTGS System by linking their RTGS Systems. The proposed multicurrency RTGS System will facilitate processing and settlement of interbank and customer payments between GCC member countries. Based on a study conducted by a consultant company in 2013 on the requirements and the roadmap for the establishment of the proposed system and discussions with member countries, the GCC floated a request for proposal (RFP) to prospective vendors in January 2016.

2.2.3.5.2 GCCNET Shared POS Payment Service

In March 2010, the GCC Governors' Committee of Monetary Agencies and Central Banks approved the proposal of the GCC Payments Committee to locally route and process all GCC debit card POS transactions under GCCNET as a cost-reduction measure. Accordingly, all debit card transactions initiated at POS terminals within and between GCC member countries will be routed through the respective participating switches instead of the international card schemes. This proposal was implemented between three GCC member countries, including Bahrain, on 1 May 2014, and will be implemented across the region in the near future.

3. Payment systems (funds transfer systems)

3.1 General overview

The payment and settlement infrastructure in Bahrain consists of one large-value payment system and three retail payment systems.

The RTGS System, owned and operated by the CBB, is the systemically important large-value payment system that allows member banks to make fund transfers between themselves and on behalf of their customers, in real time, on a gross basis.

BENEFIT, BCTS and the EFTS are the three retail payment systems operated by TBC, subject to directives, regulations, terms and conditions issued by the CBB.

BENEFIT is the network for the switching of shared ATM and POS transactions between participating banks. It is an enhancement of the ATM switch that was outsourced by the CBB to TBC in 1997, enabling bank customer to carry out ATM transactions at any ATM (in Bahrain and GCC member countries), debit card transactions at POS terminals (including those under GCCNET), and direct debits and online transactions via its link with the PG.

BCTS, launched in 2012, is an image-based electronic cheque clearing system with an online central cheque image archive. The CBB outsourced its cheque clearing function to TBC, permitting the implementation of the BCTS. The BCTS has modernised the cheque clearing process and depositors can now receive the proceeds of their cheques in their accounts within a few hours on the same business day.

Near-Real-Time EFTS went live in November 2015 and lets bank customers make account-to-account low-value (BD 1,000 and below) near-real-time payments known as Fawri+ within 30 seconds, round the clock. The system also offers a deferred payment service (same day and future-dated) known as Fawri and Fawateer (electronic bill presentment and payment). The account-to-account EFTS fund transfers are based on the International Bank Account Number (IBAN).

3.2 Large-value payment systems

3.2.1 Real-Time Gross Settlement System

3.2.1.1 Institutional framework

The RTGS System settles local interbank payments and customer payments submitted by banks on behalf of their customers in real time, on a gross basis.

The CBB oversees the operations of the RTGS System. Regulations, directives and circulars issued by the CBB, as well as the RTGS (Membership) Regulations, 2007 and the RTGS (Membership) Business Operating Guidelines, 2007 (publicly available on the CBB website⁷), provide the rules and regulations for the operations of the RTGS System. The Membership Regulations and Business Operating Guidelines are contractual in nature and members are required to sign written undertakings to comply with these regulations and guidelines.

The RTGS regulations describe the functioning and operations of the RTGS System; membership; duties of the CBB; and duties, rights and obligations of members. The RTGS operating guidelines cover areas such as membership types, RTGS services, transaction types, settlement of transactions (including securities-related transactions), funding of settlement accounts, system administration, communication/connectivity with the system, and business day. Furthermore, the guidelines specify the

⁷ Available at www.cbb.gov.bh/page-p-payment_settlement_systems.htm.

terms and conditions for intraday credit (IDC)⁸ and the undertaking to be signed by the RTGS members who wish to utilise IDC.

With the implementation of the RTGS System in 2007, the daily average number and value of interbank fund transfers rose by 28% and 33%, respectively. In 2015, the RTGS System settled an average of 3,944 transactions worth BD 276.5 million per day.

3.2.1.2 Participation

It is mandatory for retail banks to participate as members in the RTGS System. Currently, there are two categories of members: direct and restricted;

- direct members are institutions that:
 - are licensed as retail banks;
 - are members of both SWIFT and the SSS System; and
 - have clearing accounts in the BKS System.
- restricted members are clearing entities that submit multilateral net settlement batches (MNSBs) to the RTGS System.

As of December 2015, there were 28 direct members in the RTGS System, including the CBB.

3.2.1.3 Types of transaction

The RTGS System supports the following transaction types:

- interbank credit transfers;
- customer credit transfers;
- payments relating to securities transactions in the SSS System;
- direct debit and direct credit transactions initiated by the CBB;
- IDC transactions;
- MNSB transactions; and
- billing transactions.

The RTGS System accepts future-dated transactions up to seven business days out and they are settled on their respective value dates.

3.2.1.4 Operation of the system and settlement procedures

3.2.1.4.1 Operations of the system

The RTGS System uses the SWIFT IP Network as the communication backbone. It is based on FIN Y-Copy for RTGS payment transaction messages.

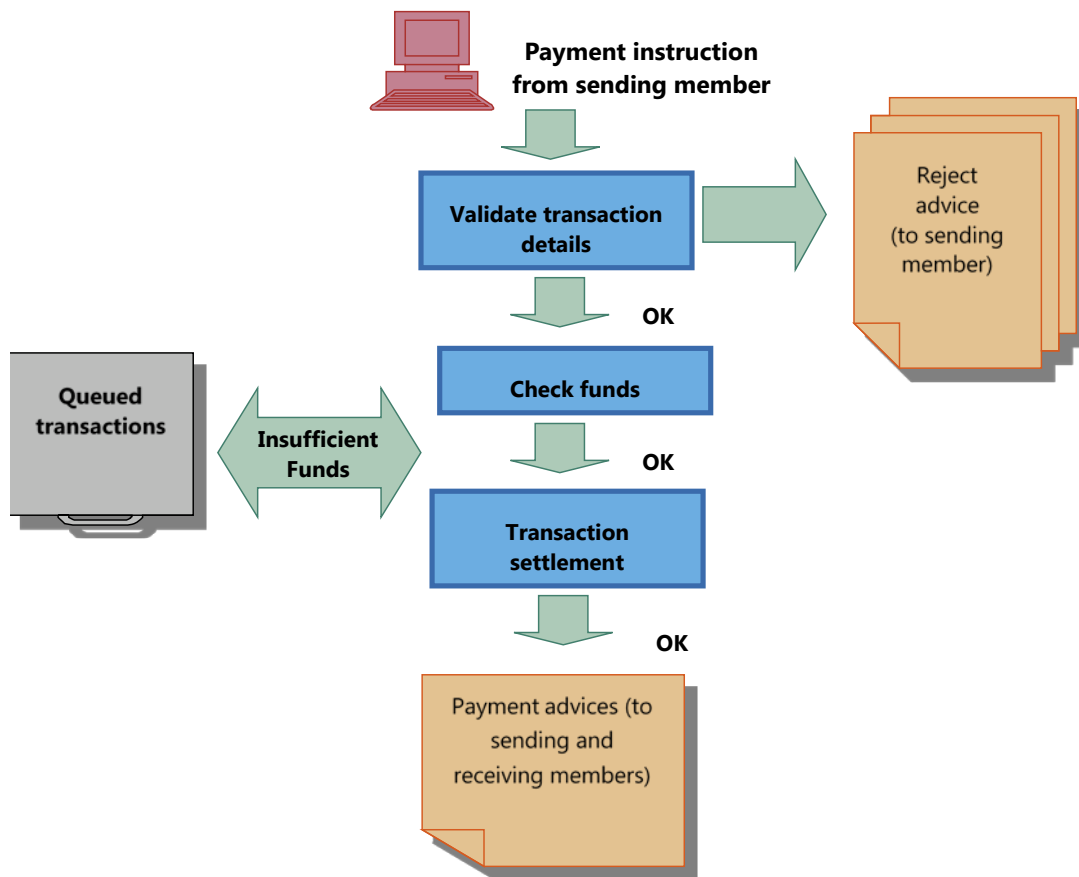
Whenever a member sends a payment message to the RTGS System, a validation check is run before the message is processed. Messages that pass the validation check are accepted for processing. If the validation check fails, the RTGS System rejects the message and notifies the sending member immediately through an MT message with the appropriate rejection code. The RTGS System also verifies whether the sending member's settlement account has sufficient funds. If not, the payment is queued. Queued messages are settled according to their priority (see Section 3.2.1.4.3 for transaction priorities)

⁸ The CBB is empowered to grant an IDC facility under Article 29 of the CBB Law. Each member eligible for IDC is bound by the IDC terms and conditions by signing an undertaking for the grant of IDC and a power of attorney in favour of the CBB.

and subject to the availability of funds. At the stipulated cut-off times, all queued transactions are automatically cancelled by the RTGS System (see Diagram 3.1).

Transaction flow in the RTGS System

Diagram 3.1



3.2.1.4.2 The business day

The system is operational from 08:00 to 14:11 on business days (Sunday to Thursday), which are divided into five phases. Each phase caters to specific types of transaction (see Table 3.1).

Activity	Time
System open	08:00
Settlement of session 1: MNSB files of Fawri+/Fawri/Fawateer	09:00
Settlement of MNSB files of BENEFIT	09:30
Customer cut-off	13:00
Settlement of session 2: MNSB files of Fawri+/Fawri/Fawateer	13:30
Settlement of MNSB files of BCTS	13:55
Interbank cut-off	14:07
Outstanding intraday credit reversal	14:09
System cut-off warning	14:11
System flushing	14:12
System cut-off	14:13

Each direct member has a settlement account for making and receiving payments in the RTGS System.

Before the RTGS System opens for business, the settlement accounts of RTGS member banks are funded with the sweep-in amount from their clearing accounts in the BKS System (see Section 1.2.2.2). This amount may be specified as a fixed sum or as a percentage (up to 100%) of the balance available in the clearing account, as per the member's standing instructions.

The RTGS System first processes transactions generated as part of the previous day's end-of-day (EOD) process, such as billing charges, coupon/return payments, redemption payments, future-dated payments for the same value date, repo closing payments and issue/allotment payments. Other transactions are then processed and direct participants can utilise the IDC facility, when required.

There are two main sessions:

- customer transactions session (from 08:00 to 13:00). The RTGS member banks are required to have a cut-off time of not earlier than 12:00 on a business day for accepting same-day value fund transfer instructions from customers. All such fund transfer instructions are submitted to the RTGS System for settlement on the same business day. RTGS member banks credit customer fund transfers to the respective beneficiary customer accounts as and when they receive the payments in the RTGS System or, in any event, no later than 15:00 on the same business day; and
- interbank transactions session (from 08:00 to 14:07). During this session, CBB-initiated direct debit/credit transactions, MNSBs and the fund legs of SSS transactions also take place.

For each session, there is a cut-off time and a grace period for settlement of queued transactions. Currently, the grace period for customer payments is 60 minutes and one minute for interbank payments. Any transaction submitted after the specified cut-off time is automatically rejected by the system (with the relevant reject reason) and all queued transactions are cancelled at the end of the respective grace period.

The EOD process takes place only if there is no outstanding IDC. Immediately after the EOD process, balances in the RTGS settlement accounts are swept out to the respective clearing accounts in the BKS System, thereby zeroing the balances in the settlement accounts in the RTGS System.

3.2.1.4.3 Settlement procedure

Fund transfers sent through SWIFT messages are settled on a gross basis, subject to availability of funds. If the balance in the direct member's settlement account is insufficient, payments are queued. When the member's settlement account receives sufficient funds via incoming payments or IDC, queued payments are settled on a first in, first out (FIFO) basis, subject to the assigned priority.

There are priority categories for different transaction types. Within each category, transactions are also assigned a priority number. The RTGS System ranks transactions in order of priority and settles them accordingly. Members have the option to re-sequence queued payments by changing their priority numbers. Furthermore, members can cancel a payment, provided the payment has not settled. The following transactions cannot be re-prioritised or cancelled by RTGS members:

- transactions initiated by the CBB;
- IDC reversal transactions; and
- MNSB transactions.

MNSB files sent by retail payment system operators to the RTGS System settle on a multilateral net settlement basis. When an MNSB file includes obligations/claims of non-RTGS members, the said positions are settled in the CBB's settlement account and immediately transferred to the respective non-RTGS member's clearing accounts in the BKS System (see Section 1.2.2.2).

The gridlock resolution algorithm also helps settle queued payments by way of either FIFO bypass settlement or multilateral settlement. At specific intervals, the system automatically checks the pre-defined gridlock parameters and activates the algorithm only when the value of any parameter is reached. Gridlock resolution can also be triggered manually if required.

Transactions which settle in the settlement accounts of RTGS direct members are final and irrevocable.

3.2.1.5 Risk management

3.2.1.5.1 Credit risk

Real-time gross settlement of transactions, with finality, in central bank money and fully collateralised IDC and repos (against government securities and BD deposits at the CBB) eliminate credit risk in the RTGS System.

3.2.1.5.2 Liquidity risk

According to the RTGS (Membership) Business Operating Guidelines, participants are required to maintain sufficient funds in their settlement accounts to cover outgoing payments, including their net clearing obligations that settle in the RTGS System. The RTGS System provides its participants with real-time information, as well as a querying facility through the SWIFTNet browser, to monitor the status of their transactions and balances in their settlement accounts.

In order to manage liquidity efficiently and to keep gridlock situations to a minimum, the CBB provides fully collateralised repo and IDC against government securities in the SSS System and/or Bahraini dinar deposits of members in the BKS System. Each direct member who wishes to obtain an IDC facility submits a one-time form of standing instruction, specifying the type of collateral to be used and the amount. If both securities and Bahraini dinar deposits are selected, the member indicates the sequence in which they are to be utilised for IDC. IDC is granted by way of automated intraday repo. The mechanism for granting IDC differs by the type of collateral:

- eligible government securities in the SSS System offered as collateral: The member must select securities to offer as collateral from its trade account and park the selected securities in its IDC account in the SSS System; and

- Bahraini dinar deposits offered as collateral: The member must specify the amount of deposits to be used as collateral as either a fixed sum or a percentage (up to 100%) of the balance available in its deposit account in the BKS system. At the beginning of day (BOD) of the RTGS System, Bahraini dinar deposits eligible for use as collateral are transferred from the BKS system to the respective member's intraday deposit account in the RTGS System, making them available for use as collateral whenever IDC is needed (see Section 1.2.2.2).

Members who have opted for IDC, receive the required intraday liquidity automatically through the RTGS System whenever the balance in the respective member's settlement account is insufficient to settle transactions. As and when the respective members receive incoming payments, the IDC is repaid automatically. At the end of the day, members who have outstanding IDC are required to repay the balance in full. In such an event, members can borrow from the CBB by entering into a repo via the SSS System or by obtaining a BD secured loan against their Bahraini dinar deposits at the CBB.

The gridlock mechanism also facilitates liquidity management. Furthermore, the criteria for charging RTGS transactions based on the settlement time bands are aimed at encouraging early submission and settlement of payment instructions; avoiding participating banks facing settlement problems with transactions that tend to queue towards the end of the RTGS-SSS business day; and encouraging banks to manage intraday liquidity efficiently.

3.2.1.5.3 Operational risk

3.2.1.5.3.1 *High availability*

The production site is the main environment for RTGS operations. In order to ensure high availability, it has the following features:

- servers, firewalls and storages are configured in pairs. Hence, single component failures will not cause any outage as the second component will take over;
- individual network connections for each server so that network connections are not shared;
- the critical data for the production system are stored at the production site and replicated in real time to the DR site; and
- a data-commit-rollback mechanism to avoid loss of transactions due to server or storage failure.

3.2.1.5.3.2 *Disaster Recovery (DR) site*

The DR site is a "warm" backup of the RTGS System's production environment. It has the same system configuration as the production site.

In the event of a disaster, the remote application will be activated at the DR site. Since critical data are replicated online to the DR site, operations can resume with the data intact up to the point when the system failed.

3.2.1.5.3.3 *Data protection and integrity*

SWIFT maintains all access to the Secure IP Network (SIPN) and provides data security during message transmission using public key infrastructure (PKI). All messages are digitally signed and encrypted.

During the continuous data replication to the DR site, a cyclic redundancy check (CRC) is performed to ensure data integrity.

In addition, databases are stored offsite. This is performed twice a day, before and after EOD jobs are run. Other forms of backup are also performed periodically.

3.2.1.5.3.4 *Input errors by system users*

In order to reduce the possibility for members to send RTGS messages with errors, the RTGS System runs verification checks on every message. The message is checked against specified criteria before it can be accepted. Duplicated messages are detected through the verification check and are rejected accordingly.

3.2.1.6 *Pricing*

RTGS members are charged an annual membership fee. For each payment settled in the RTGS System, the sending member is charged based on the time of settlement, with higher charges imposed on transactions settled at or after 13:01, in order to encourage early submission and settlement of payments. However, RTGS members cannot charge any extra fee to customers in case of delayed submission or settlement of customer transactions in the RTGS System.

A penalty is levied on sending members for any rejected and cancelled payments in order to encourage banks to actively monitor their payments in the RTGS System.

Under exceptional circumstances, members have the option of requesting an extension to the RTGS operating hours beyond the specified cut-off time, resulting in a charge levied on the member requesting the extension.

The RTGS System sends billing messages to respective members and automatically debits their settlement accounts. Details for fees, charges and penalties are provided in Table 3.2.

Category of fee/charge/penalty	Amount	Billing period	Day of billing
Membership fees	BD 4,500	Annually	At the beginning of the first business day of the year
Charges on payments settled at or before 13:00	BD 0.400 per payment/each payment within an MT 102 message	Daily	At the beginning of the next business day
Charges on payments settled at or after 13:01	BD 0.550 per payment	Daily	At the beginning of the next business day
Penalty on payments rejected or cancelled	BD 10 per payment	Monthly	At the beginning of the first business day of the following month
Charges on RTGS operating time extension beyond 14:07 upon the request of a member bank	BD 50 per 15 minutes (maximum of one hour)	Not applicable	At the end of the same business day the extension was granted

3.2.1.7 *Major ongoing and future projects*

The CBB is currently in the process of introducing a private network as an alternative communication network for the RTGS-SSS Systems.

3.3 **Retail payment systems**

3.3.1 **Bahrain Electronic Network for Financial Transactions (BENEFIT)**

3.3.1.1 *Institutional framework*

TBC operates BENEFIT, the network for switching shared ATM and POS transactions between participants of BENEFIT, which facilitates a wide variety of transaction types (see Section 3.3.1.3).

BENEFIT is a member of GCCNET, the regional arrangement for shared card payment services in the GCC region (see Section 3.4.1).

In Bahrain, BENEFIT processed a total of 28.3 million transactions worth BD 1.7 billion during 2015. Debit card payments at EFTPOS terminals accounted for 53% of the volume and 23% of the value of these transactions. ATM transactions accounted for 39% and 67% of the total volume and value, respectively.

3.3.1.2 Participation

Currently, 25 retail banks participate in BENEFIT as debit card issuers as well as acquirers of ATM transactions. Of these, two banks are acquirers of debit card transactions at POS. In addition, one financing company acts as an acquirer of debit card transactions at POS. Another financing company participates in BENEFIT as a card issuer to facilitate cash advances at ATMs against credit/charge cards.

The switches of the six GCC member countries, including BENEFIT, participate in processing and clearing of transactions under the GCCNET shared payment services.

3.3.1.3 Types of transaction

BENEFIT connects all ATM and POS terminals in Bahrain, creating a shared network that can be accessed by customers of any BENEFIT participant.

The following types of transaction are processed in BENEFIT:

- ATM transactions (cash withdrawals);
- Debit card POS transactions;
- Direct debit transactions (see Section 2.2.1.2); and
- Debit card transactions through the PG.

Transactions effected by a bank's own customers at its own ATMs are not routed through BENEFIT but are processed through the bank's own internal system.

3.3.1.4 Operation of the system and settlement procedure

BENEFIT operates as a switch to route payment authorisation requests and responses between respective parties.

- The switch includes three modules for ATM transactions; POS transactions; and direct debit transactions. The PG module is maintained on a separate platform, but is linked directly to the switch. All these components collectively constitute BENEFIT. The routing mechanism for all modules is basically the same, and is explained as follows:
 - POS and ATM transaction requests are initiated at ATM/POS terminals and routed through the switch to the respective issuer bank which, in turn, responds with a confirmation or decline. Once a confirmation response is received, the payment is executed instantaneously.
 - PG transaction requests are initiated at kiosks/websites by customers, who are, in turn, directed to the secure page of the PG to submit their debit card details and enter their PINs. The submitted information is routed to issuer banks for confirmation through the PG's direct link with the switch. Valid transactions are executed instantaneously.
 - In order to process direct debit transactions in the BENEFIT card infrastructure, the system uses a 16-digit number assigned to each bank participating in the direct debit service. Periodic payment requests received from bill originators (or payees) are verified against the customers' information with TBC, along with the terms specified in the DDIs. Valid requests are routed through the switch to paying banks, and the respective customers' accounts are debited online.

All transactions processed by BENEFIT are netted in one (main) MNSB. TBC submits three batches for settlement in the RTGS System the next business day:

- main: contains net clearing obligations and claims of participants relating to transactions processed in BENEFIT;
- fees: contains applicable fees; and
- adjustment: to settle claims submitted by bank customers on failed or duplicated transactions etc.

The batches settle directly in the RTGS System in the:

- settlement accounts of participants of BENEFIT (who are direct RTGS members); or
- CBB settlement account, which automatically transfers to the clearing accounts of the respective participants of BENEFIT (non-RTGS members) in the BKS System for settlement of their clearing obligations and claims (see Section 3.2.1.4.3 for settlement of MNSB).

3.3.1.5 Risk management

3.3.1.5.1 Liquidity and settlement risk

Participants of BENEFIT are responsible for ensuring that sufficient funds are in their RTGS settlement accounts or clearing accounts (of non-RTGS members) by the times stipulated by the CBB, for settlement of their net clearing obligations in each MNSB. The MNSBs are settled early in the morning in the RTGS System, and are given higher priority against other transactions initiated by participant banks. The majority of participants of BENEFIT are members of the RTGS System and are eligible to avail IDC to settle their obligations, including those of MNSB (see Section 3.2.1.5.2 for liquidity risk management measures in RTGS). In the case of non-RTGS members, their MNSB balances are settled by the CBB in the RTGS System against their balances in their clearing accounts in the BKS System. Since the net clearing obligations of these non-RTGS members are small in value and they are also licensees that maintain balances in their accounts in the BKS System, the liquidity and settlement risks are minimal. A penalty is imposed on non-RTGS members who fail to maintain adequate balances in their clearing accounts.

3.3.1.5.2 Operational risk

TBC maintains a real-time data replication of BENEFIT at its DR site. Data are committed on the disaster recovery systems before they are committed on the main system to ensure transaction integrity. BENEFIT's hardware and software are identical at both sites to ensure system availability if and when a switch to the DR site is required. TBC further ensures availability by having two sets of backups, one onsite and another offsite. BENEFIT operations are switched over from main to DR site twice a year for testing DR arrangements.

3.3.1.6 Pricing

3.3.1.6.1 Fees

The pricing structure of BENEFIT varies by the type of transaction as follows:

- ATM transactions: for every transaction routed through BENEFIT, the issuer bank pays a fixed fee, distributed between the acquirer bank and TBC. The fee depends on the type of transaction effected at an ATM (cash withdrawal or balance inquiry), the type of card and the location of the terminal (local or cross-border). Issuer banks are not allowed to pass the cost on to their customers, in case of local transaction specified by the CBB (see Section 2.2.3.2). The fee that may be passed to customers for transactions performed at ATMs located in other GCC member countries has been capped at BD 1 per transaction since 2007;

- POS transactions: a purchase amount of BD 20 is set as the benchmark for determining the applicable fee to be paid by the acquirer bank. If the amount of the transaction at POS terminals exceeds the benchmark, the fee is doubled, and the issuer bank receives the additional amount charged. The acquirer bank passes the cost to the merchant, as per the terms of their bilateral agreement;
- direct debit transactions: fees vary across different bill originators, and are distributed between the issuer bank and TBC; and
- transactions in the PG: acquirer banks pay a fixed monthly fee of BD 600 to TBC.

3.3.1.6.2 Penalties

In order to encourage banks to have high system availability, TBC applies penalties on issuer banks if they fail to respond to a transaction from an ATM or a POS terminal, resulting in failure in effecting the transaction. Details of fees and penalties (as of end-2015) are given in Table 3.3.

Under its five-year corporate strategic plan (2014–18), TBC aims to introduce mobile payments through near-field communication (NFC) technology.

Transaction type		Fee structure (Bahraini dinar)		
Local transactions	1. ATM fees and penalties	Acquirer	TBC	Card issuer
	Cash withdrawal	+0.150	+0.150	-0.300
	Balance enquiry	+0.150	+0.150	-0.300
	Insufficient funds in the customer's account	+0.150	+0.150	-0.300
	Issuer bank not responding	nap	+0.150	-0.150
	2. POS fees	Acquirer	TBC	Card issuer
	Purchase amount < BD 20	-0.100	+0.100	Nap
	Purchase amount >= BD 20	-0.200	+0.100	+0.100
	Issuer bank not responding	nap	+0.100	-0.100
	3. Payment Gateway Fees	Acquirer	TBC	Card issuer
	Monthly fixed fee paid by banks	-600	+600	Nap
	4. Direct debit fees	Bill Originator	TBC	Issuer
Payment (general)	-0.500	+0.250	+0.250	
Intra-GCC transactions	5. Transactions effected in Bahrain by cards issued outside Bahrain (local bank is an acquirer)	Acquirer	TBC²	switch in a GCC member country other than BENEFIT
	ATM cash withdrawal	+0.250	+0.250	-0.500
	ATM balance enquiry	+0.125	+0.125	-0.250
	POS purchase	-1% of transaction value (up to max. 3.750) + 0.100	+0.100	+1% (up to max. 3.750)
	6. Transactions effected outside Bahrain by cards issued in Bahrain (local bank is an issuer)	switch in a GCC member country other than BENEFIT	TBC³	Card issuer
	ATM cash withdrawal	+0.500	+0.250	-0.750
	ATM balance enquiry	+0.250	+0.125	-0.375
POS purchase.	-1% of transaction value (up to max. 3.750)	+0.2% (up to max. 0.750)	+0.8% (up to max. 3.000)	

1 A positive sign indicates a party that receives a fee and a negative sign indicate a party that pays a fee. 2 BENEFIT is the acquirer switch. 3 BENEFIT is the issuer switch.

3.3.2 Bahrain Cheque Truncation System (BCTS)

3.3.2.1 Institutional framework

The introduction of the BCTS in May 2012 has transformed the semi-automated cheque clearing process into electronic clearing, based on cheque images. The objectives of introducing the BCTS were to:

- increase the efficiency and security of cheque clearing by eliminating physical cheque movement;
- expedite cheque clearing and allow depositors to receive proceeds of their cheques in their accounts by 15:00 on the same day the cheque was deposited; and
- reduce costs for banks and cheque users.

In order to allow for the successful implementation of electronic cheque clearing, the CBB issued, in 2009, a uniform set of standards and specifications on the design and printing of cheques, which are image-friendly and have advanced security features.

The BCTS has an online central image archive, which maintains all data and cheque images.

The CBB assigned the responsibility of operating the BCTS to TBC according to its directives, terms and conditions, particularly those in the agreement between the CBB and TBC. TBC operates the BCTS under monitoring and oversight of the CBB. The legal framework for cheque clearing in the BCTS is provided by CBB directives, Law of Commerce and Legislative Decree No 28 of 2002 with respect to Electronic Transactions and its subsequent amendments, particularly the amendment made by Law No 6 of 2012.

The BCTS Rule Book and Operating Rules issued by TBC with the concurrence of CBB provide, among other things, the rules and procedures that govern the operations and administration of the BCTS. The BCTS Rule Book and Operating Rules are binding on TBC and participating banks. The agreements entered into by TBC and participating banks bind each party to the basic obligations and rights specified in the BCTS Rule Book and Operating Rules.

The BCTS cleared a total of 3.3 million cheques worth BD 10.2 billion during 2015 (see Section 2.2.1.3).

3.3.2.2 Participation

Retail banks that issue their own cheques and/or present cheques for clearing are eligible to participate in the BCTS. There are two types of participant:

- a direct participating bank is also a direct RTGS member that directly settles its cheque clearing obligations in the RTGS System; and
- an indirect participating bank is not an RTGS member and settles its cheque clearing obligations through a direct RTGS member acting as its settlement bank.

At the end of 2015, there were 27 direct participants and one indirect participant in the BCTS.

3.3.2.3 Types of transaction

The BCTS facilitates clearing of all cheques (high- and low-value) presented for clearing by participating banks.

3.3.2.4 Operation of the system and settlement procedures

The clearing date (T) in the BCTS is the date on which cheques are cleared and the customer account at the presenting bank is credited. The cheque clearing cycle in the BCTS has the following phases:

- Outward cheques: Submission of outward cheques starts at 12:00 of the previous day (T-1) with the presenting banks and continues until the cut-off time at 12:00 on (T). When customers deposit cheques at the presenting bank for clearing, the bank scans the cheques and sends the captured images and electronic information in the magnetic ink character recognition (MICR) line printed at the bottom of the cheques to the BCTS. The BCTS then immediately transmits those cheque images and information to the paying bank. Any cheque deposited on or before 11:30 on (T) will be cleared on the same day (T) (see Table 3.4).
- Inward cheques: Paying banks receive inward cheques (from 12:00 on T-1) until the cut-off time of 12:00 on (T). They can respond throughout the day until the cut-off time of 13:45 on (T). Paying banks are required to either accept or reject the cheques and, if they reject a cheque, the return

reason must be specified. All cheques not replied within the stipulated time are automatically accepted by the BCTS. If a paying bank faces a contingency situation, it can request additional time (maximum one hour) to respond to its cheques. Before TBC grants an extension to any bank, it must obtain prior approval from the CBB as such an extension may impact RTGS operating hours.

- Final settlement of cheque clearing claims and obligations: Settlement takes place on the same day (T) in the RTGS System on a net basis. Net clearing claims and obligations for all banks are submitted by TBC as one MNSB for settlement in the RTGS System, along with two other batches for cheque clearing fees and penalties between 13:45 and 14:00.
- The RTGS System processes and settles the MNSBs, subject to availability of funds. Once the MNSBs settle in the RTGS System, the settlement is deemed final and irrevocable.

Following the closure of the clearing cycle, participating banks are required to credit the accounts of beneficiary customers by 15:00 or a maximum of 45 minutes after the settlement of the MNSBs in the RTGS System (if settlement takes place after the stipulated cut-off time for the closing of the RTGS System) on the same day (T).

BCTS operating hours

Table 3.4

Time	Business period	Operation
12:00 (T-1)	Clearing session starts.	Presenting banks present cheque images and the BCTS transmits those images and electronic information to the paying banks to reply.
11:30 (T)	Customer cut-off.	Any cheque deposited on or before the customer cut-off will be presented for same day clearing (T).
12:00 (T)	End presentment for the clearing session (T).	End presentment for same day clearing (T). Any cheques received by the BCTS after this time will be scheduled for clearing on the next clearing date.
13:45 (T)	End of reply for the clearing session (T).	End of replying for same-day clearing (T).
14:00 (T)	Cut-off time for TBC to submit MNSB files to the RTGS System for settlement.	

3.3.2.5 Risk management

3.3.2.5.1 Liquidity and settlement risk

Each participating bank is responsible for settling its cheque clearing obligations, and therefore, should ensure that sufficient funds are available in its RTGS settlement account by the time stipulated by the CBB.

Since indirect participating banks are not RTGS members, the respective settlement bank sets a maximum limit on the daily cheque clearing obligations for an indirect participating bank.

TBC monitors the position of the indirect participating bank throughout the day in order to identify instances where a cheque presentment would cause the cheque clearing obligation to exceed the defined daily limit. In this case, TBC stops presentment of such a cheque and notifies the respective settlement bank accordingly. Once confirmation is received from the settlement bank about the availability of funds of the indirect participating bank, all queued cheques are released for clearing. Currently, the CBB acts as a settlement bank for the indirect participating bank.

3.3.2.5.2 Operational risk

Since the BCTS is considered to have system-wide importance, the following measures are in place to ensure system availability of at least 99.9% of operating hours, even in the event that one or more components of the BCTS fail:

- A business continuity plan (BCP), including procedures and information in readiness for use in case of a widespread and prolonged disruption to BENEFIT's infrastructure and critical services, which can result in difficulty in conducting BCTS operations at the primary site; and
- a fully equipped DR site with real-time replication of the BCTS, to resume business operations after a disruption, in order to continue and complete the clearing process on the same day.

Furthermore, there is a continuity of business (CoB) site for the BCTS. Participating banks can process their cheques at the CoB site in a contingency situation as if working from their own premises.

3.3.2.6 Pricing

As of December 2015, the pricing structure for the BCTS comprised the following fees, charges and penalties:

- Fees paid to the operator of the BCTS (TBC):
 - each participating bank is required to pay a one-time implementation and setup fee of BD 1,200 per branch upon joining the BCTS and subsequently for each new branch opened. Participant banks also pay an annual support fee of BD 120 per branch on a monthly basis. A 10% discount is offered for banks with more than five branches; and
 - paying banks pay a transaction fee of BD 0.100 for each cheque processed in the BCTS. Customers are not charged any fee over and above the cost of the cheque book.
- Charges paid to the CBB:
 - in case of a session extension, banks to which the extension has been granted pay a fixed charge of BD 100 for each 15 minutes of additional time (maximum of one hour).
- Penalties paid to the CBB:

Penalties are charged in the BCTS as a deterrent to detrimental practices. The CBB has specified a list of reasons for returning cheques that result in penalties ranging from BD 5 to BD 7 per cheque. The list includes both financial and technical reasons for returning cheques:

 - penalties on cheques returned for specified financial reasons are borne by cheque drawers (to discourage users from issuing cheques without sufficient funds or against closed accounts);
 - penalties on cheques returned for specified technical reasons are levied on the presenting bank (to ensure more diligence and care in handling and presenting cheques); and
 - penalties on cheques returned for incorrect return reasons are imposed on paying banks.

Fees, charges and penalties are generated from the BCTS at the end of each clearing session and are sent in separate MNSBs along with the main MNSB to the RTGS System on or before the stipulated cut-off times on the same day for settlement.

3.4 Foreign currency payment systems

3.4.1 The GCC Shared Payments Network (GCCNET)

GCCNET is an arrangement between GCC member countries to link their switches to provide efficient shared card payment services among GCC member countries. Intra-GCC payments relating to shared payment services are routed through the respective switches, including BENEFIT.

Currently, all participating switches of GCC member countries are linked, enabling bank customers to carry out transactions at ATMs located in any GCC member country. Out of the total number

of ATM transactions processed by BENEFIT within Bahrain during 2015, 11% were processed under GCCNET.

Also, debit card POS transactions within and between GCC member countries will be processed and routed through the respective participating switches instead of the international card scheme. This arrangement has been implemented between Bahrain and two other GCC member countries and will be implemented across the entire region in the near future.

Under the GCCNET shared payment services, two participating switches are involved in processing a payment. The acquirer switch is required to ensure that all acquirers in its country route transactions through its switch gateway to the issuer switch of the respective GCC member country. The issuer switch, in turn, routes the requests to the respective issuer banks. Each issuer bank sends a confirm/decline response to the issuer switch, which routes the response to the acquirer switch and from that to the relevant terminal. Once a confirmation response is received, the payment is executed instantaneously.

All switches, along with participating banks or financial institutions in their countries, are required to adhere to GCC-wide legislation and the regulations of the GCC central banks/monetary authorities and GCC legislative bodies.

Settlement of net clearing obligations and claims for each day takes place between the accounts of participating switches maintained at each central bank/monetary authority of GCC member countries on the next business day. Each participating switch settles clearing obligations (denominated in the local currency of the GCC member country in which the payment was effected) to other switches on a bilateral basis. Each central bank/monetary authority guarantees the settlement obligations relating to the GCCNET participating switch operating within its country.

In Bahrain, intra-GCC payments processed by BENEFIT are included in the MNSB file sent to the RTGS System. All other GCC switches' clearing accounts at the BKS System are debited for intra-GCC transactions effected at terminals in Bahrain. TBC's clearing account is credited for intra-GCC transactions effected at terminals outside Bahrain, effectively recovering from local banks a BD equivalent of the amounts to be debited to TBC's account in other GCC central banks/monetary authorities.

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

The two main providers of post-trade processing, clearing and securities settlement services in Bahrain are the CBB and BHB.

The CBB issues government securities (see Section 1.2.3) in scripless form in the SSS System. Government securities-related transactions in the secondary market take place mainly over the counter (OTC) and settle in the SSS System. The SSS System is seamlessly integrated with the RTGS System to settle government securities transactions in real time on a DVP 1 basis. The SSS System also acts as an electronic depository facilitating the transfer of government securities among members and recording their ownership (title).

BHB currently provides trading, depository, clearing and settlement services for equity, mutual funds, preferred shares, debt securities (corporate and government securities) listed on BHB. The CSD of BHB is not a central counterparty (CCP). The cash legs of securities traded on BHB are settled through accounts held with the designated settlement bank on a DVP 2 basis.

Summary of securities trading, clearing and settlement systems in Bahrain
(end-2015)

Table 4.1

Market segment	Securities	Trading	Clearing	Settlement		
				Securities leg	Funds leg	Type
Govt. securities	Conventional and Islamic securities (outright purchases, repos, IDCs)	Not exchange-traded (OTC market)	N/A	SSS System	RTGS System	DVP 1
Private sector securities	Equities and debt securities	ATS	CSD	CSD	Designated settlement bank	DVP 2

The CBB Law, regulations, directives and rules provide the regulatory and operational requirements of securities depositories, trading, clearing and settlement systems to ensure they operate efficiently, while keeping risks to a minimum (see Section 1.1.2.1). The CBB is the sole regulator that supervises and oversees:

- all exchanges and related activities;
- members or participants of exchanges;
- trading, post-trade processing, clearing and settlement systems; and
- depositories.

The CBB's regulatory framework relating to the operations of the capital market, licensed securities exchanges, clearing houses and central depositories is set out in Volume 6 of the CBB Rulebook. Entities such as BHB are licensed to operate as SROs, subject to the approval and oversight of the CBB (see Section 1.2.1). Member participation at systems operated by BHB is also subjected to the CBB Law, laws relating to BHB, CBB regulations/directives, market rules and membership agreements.

BHB implemented new market rules approved by the CBB, in May 2014, to improve the BHB's operations with a view to attracting more local/foreign investors and protecting the interests of investors/related parties while meeting the CBB's regulatory requirements as well as international standards. These new market rules aim at improving a number of operational areas including allowing non-Bahraini brokers who are licensed by capital market regulatory institutions in their countries to trade

on BHB without having a representative office in Bahrain; facilitating trading of new investment instruments such as options, ETFs and REITS; developing trading mechanisms and framework for market-makers; and reducing the number of exceptional cases from 16 to four. Brokers were given a six-month transitional period from the date of implementation to meet the requirements of the new market rules.

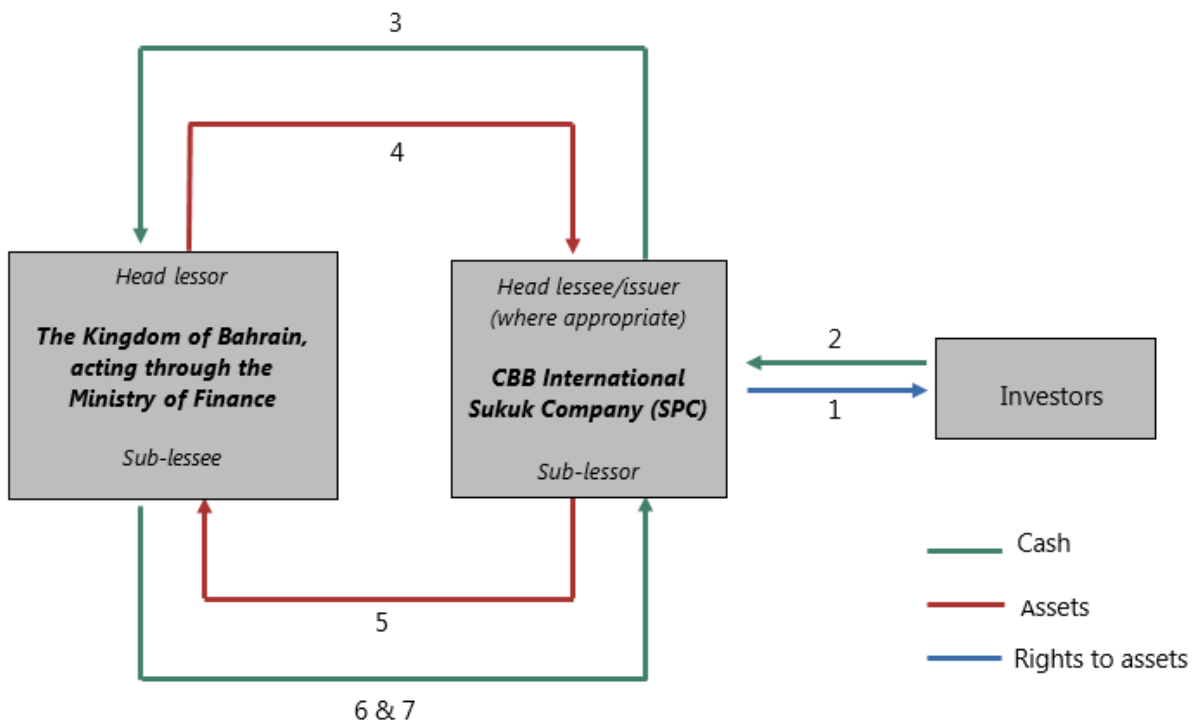
4.1 Trading of securities

4.1.1 Government securities

The CBB started issuing conventional government development bonds and treasury bills in 1977 and 1986, respectively. In 2001, the CBB became the first central bank in the Middle East to develop and issue sukuk-al-ijara, which are Shari'a-compliant bonds. With the introduction of the SSS System in June 2007, the CBB started issuing conventional and Islamic government debt securities in scripless form. All securities in the form of physical certificates issued prior to 2007 were dematerialised.

Structure of international sukuk-al-ijara¹

Diagram 4.1



¹ 1. Sukuk-al-ijara (trust certificates) issued to investors. 2. Sukuk proceeds received by the issuer. 3. Advance rental payment made by the issuer as head lessee to the head lessor; 4. Head lease of the asset granted by the head lessor to the Issuer as head lessee; 5. Sub-lease of the asset granted by the issuer as sub-lessor to the sub-lessee; 6. Semiannual rental payments made by the sub-lessee to the issuer as sub-lessor, equal to periodic distribution amounts; 7. Termination payment to redeem the sukuk-al-ijara in full made by the sub-lessee to the issuer as sub-lessor on maturity/dissolution.

Sukuk-al-ijara

Sukuk-al-ijara are Islamic leasing (ijara) securities (sukuk) issued by the CBB to obtain funds needed by the Government of Bahrain to finance development projects, while providing a Shari'a-compliant investment opportunity. Sukuk-al-ijara are based on specific assets owned and selected by the government. In issuing these securities, the government sells the asset to the participants (investors) who, in turn, will lease the same asset back to the government at a predetermined rental rate, via a rental contract. The government will also issue a binding promise to buy back these assets at their par value at the end of the rental period (maturity). Accordingly, at the end of the lease period, upon the sale of the assets under the sale contract, the securities are redeemed by the CBB at par value.

The participants who subscribe to sukuk-al-ijara hold a proportionate share of the value of the leased assets (equivalent to the original par value) for which they receive a relative share of the rental return.

The structure of local sukuk-al-ijara involves four contracts:

- **The First Sale Contract** states that the first party (CBB) is the owner of the specific asset. The second party, the agent bank, accepts to buy the asset from the CBB at a certain cost (the cost of the issue of sukuk-al-ijara) on behalf of the investors;
- **The Lease Contract** states that the agent bank (on behalf of the sukuk-al-ijara participants) wishes to rent the said asset to the CBB and the CBB agrees to do so;
- **The Promise to Buy** states that the CBB promises to buy back the asset from the agent bank at the original cost agreed upon in the first sale contract; and
- **The Sale Contract (at the end of the issue)** involves the sale of the asset by the agent bank to the CBB.

The CBB (Bahrain Monetary Agency at that time) started issuing local sukuk-al-ijara in September 2001.

The CBB issues the following three categories of sukuk-al-ijara in an auction:

- local short-term (six-month) sukuk-al-ijara denominated in Bahraini dinars. They were first issued in 2005;
- local long-term (three- to 10-year) sukuk-al-ijara are issued in denominations of Bahraini dinars or US dollars.
- international long-term (three- to 10-year) sukuk-al-ijara (first issued in 2009).

Each international issue of sukuk-al-ijara is issued by a special purpose company (SPC) called the CBB International Sukuk Company (a non-profit-making trust) created by the CBB (incorporated in Bahrain under Article 76 of the Commercial Companies Law), as a legal entity for the duration of the sukuk-al-ijara. In addition, the SPC acts as a head lessee in the head lease contract and a sub-lessor in the sub-lease agreement. The structure of international sukuk-al-ijara is explained in Diagram 4.1.

All the sukuk-al-ijara issued have carried either a fixed or a floating rate of return. The rate of return is set by the CBB Monetary Policy Committee and paid semiannually.

All eligible financial institutions such as Islamic and conventional retail banks, financial institutions, including pension funds/insurance companies and retail investors, (through their retail banks) can invest in local sukuk-al-ijara.

Sukuk-al-ijara is a popular mode of Islamic financing and can be traded in the secondary market. They accounted for 19% (2% short-term and 17% long-term) of the total outstanding value of public debt at the end of December, 2015.

Matters relating to the issuance of sukuk-al-ijara are subject to Bahraini laws, provided that they do not conflict with Shari'a principles. The CBB has a Shari'a Committee of Islamic Securities which reviews the procedures undertaken with the issuance of each new Islamic security in the form of a fatwa, legitimising its compliance with Shari'a principles.

The CBB issues government debt securities through auctions in the SSS System, according to the issuance calendar (for short-term securities) published annually, in advance, at the beginning of the year.

The short-term securities include:

- conventional treasury bills issued for three months (weekly basis), six months (monthly basis) and one year (quarterly basis);
- Sukuk-al-salam (non-tradable) securities that represent a commodity (raw aluminium) owned by the government and issued to finance development projects, on a monthly basis with a three-month maturity; and
- Sukuk-al-ijara (tradable) sale and lease back securities that represent assets owned by the government and issued on a monthly basis with a six-month maturity.

Sukuk-al-ijara and the medium- and long-term government development bonds are issued in either Bahraini dinars or US dollars, as and when required by the government, with maturities between two and 10 years.

All Islamic securities are issued in accordance with Shari'a standards. The legality of the Islamic securities issuance are declared by the Shari'a Committee of Islamic Securities, appointed by the CBB.

Direct members submit their tender bids for auctions directly through the SSS System. Indirect members submit tender bids via SWIFT or e-mail. In the case of indirect members, the CBB pays the coupon/return/redemption to their respective call or current accounts at the BKS System.

The government securities market is open to domestic as well as foreign retail investors. Since January 2012, the CBB has provided an allotment of government securities for retail investors at a primary issuance/auction to encourage participation in government securities. During the subscription period, retail investors can purchase new issues of government securities by subscribing through their retail banks (since January 2012) or BHB (since January 2015), which are direct members of the SSS System. In the case of treasury bills, the bids are non-competitive for retail investors, who get their treasury bills at a discount rate calculated using the weighted average rate of all accepted bids. Customer securities allotment is done at the direct member level. Each retail bank that participates in the SSS System as a direct member maintains, in their books, securities accounts for each customer and a register to record the ownership and changes of ownership of government securities of each customer. The ownership records relating to those government securities purchased by retail investors through BHB are maintained in the CSD and are made available to retail investors for trading, clearing and settlement.

All conventional government securities and Islamic sukuk-al-ijara issued in the primary market are tradable in the secondary market. The secondary market for government securities is predominantly an OTC market and the transactions mainly comprise: outright sales and purchases; and repos. Direct members send confirmations to their customers at the time of the securities transaction.

Trading in the secondary market of government securities is relatively small when compared with the amount invested, as most investors hold government securities to maturity.

4.1.2 Equity and debt securities listed on BHB

4.1.2.1 *Institutional framework*

The companies listed on BHB comprise Bahraini and non-Bahraini shareholding companies (public and closed shareholding companies). These companies are classified into six business sectors (commercial bank, investment, services, insurance, industrial and hotels/tourism). At the end of 2015, the ordinary shares of 46 companies, preferred shares of one company, 19 mutual funds (conventional and Islamic investment funds) and 12 debt securities (conventional and Islamic) were listed on BHB. These listed securities also included cross-listed regional securities. At the end of 2015, there were 10 cross-listed companies.

Non-Bahraini investors are permitted to invest in shares listed on BHB. The number of nationalities registered in the CSD was 99, while the number of investors holding shares in Bahraini public shareholding companies was 62,437 as at 31 December 2015. Bahrainis held 63.42% of the total value of shares, while the rest was held by other nationalities.

4.1.2.2 Participation

The local and foreign brokers licensed by the CBB and registered as members at BHB participate in the ATS. Brokers act as principals and as agents in trading, clearing and settlement of securities transactions on their own behalf and on behalf of customers, subject to their type of licence. Brokers are categorised as A, B and C. Category A are shareholding companies that carry out brokerage or market-making activities. Category B are limited liability companies that carry out brokerage activities. Individual brokers in Category C are Bahraini nationals who commenced brokerage in securities before the establishment of BSE. Brokers with the required infrastructure and resources participate in the Online Trading Incentive Program (OTIP) of ATS to conduct online trading. Custodian banks licensed by the CBB act as subcustodian on behalf of global custodians' clients. They perform functions such as maintaining bank accounts, administering corporate actions and collecting dividends in the case of stocks/equities. They do not participate in clearing and settlement, therefore, their clients' transactions are executed through licensed brokers appointed by the custodian banks.

The criteria for membership at BHB include capital requirements, financial soundness, ability to contribute to the guarantee fund and operational readiness.

At the end of 2015, BHB had 16 members which comprised 11 licensed brokers (seven in category A, one in category B and three in category C) and five custodian banks.

4.1.2.3 Types of transaction

The ATS provides for buying/selling securities listed on BHB in the secondary market.

In January 2015, BHB (the first stock exchange in the Middle East) allowed retail investors to buy tradable conventional and Islamic Government securities in the primary market through brokers, in a bid to develop the capital market. This move allowed retail investors to obtain the beneficial ownership of government securities at the CSD and trade them in the secondary market at the ATS.

In 2015, the volume and value of securities trades executed in ATS totalled 11,248 and BD 110 million, respectively. There were 38 government securities-related trades with a value of BD 3.3 million, carried out during this period.

4.1.2.4 Operations of the system

In 1999, BHB replaced its manual trading system with the ATS, an online, order-driven trading system. The trading platform of ATS was replaced with a more advanced X-stream, multi-asset trading platform in July 2014.

The ATS has a pre-market session from 09:15 to 09:30 and a regular trading session from 09:30 to 13:00 from Sunday to Thursday, except for holidays declared by BHB.

During the pre-market session, orders are entered into ATS to determine the opening price for each security. These orders are queued in accordance with the priority of orders for execution (queue priority) and are not processed immediately. During this period, brokers can submit orders, change previous orders, cancel orders and carry out enquiries.

During the regular trading session, an opening price is chosen in accordance with the opening algorithm. Once the opening price is chosen, the market is open for trading. Each new order or cancellation is processed by the system. If an order cannot be executed immediately, it will be queued according to the priority of orders for execution.

4.1.2.5 Risk management

Please see Section 4.4.2.5

4.1.2.6 Links to other systems

The ATS is linked, in real time, to Equator, the CSD clearing and settlement system.

4.1.2.7 Pricing

The brokers' commission is 0.275% of the total value (calculated based on the total value of buy and sell transactions for each investor and securities within the same trading session), with a minimum amount of BD 3. BHB's commission is 20% of the brokers' total commission.

The brokers' commission for subscribing and trading of government securities by retail investors at ATS is 0.08% of each transaction (commission is negotiable between the broker and the investor) with a minimum amount of BD 3. BHB's commission is 20% of the brokers' total commission.

4.2 Post-trade processing systems

4.2.1 Confirmation system

Currently, there are no systems in Bahrain that only provide trade confirmation services.

4.2.2 Trade repository

There are no trade repositories in Bahrain.

4.3 Central counterparties and clearing systems

As stated above, there is no clearing system for government securities transactions as all transactions are settled trade by trade on a real-time basis in the SSS System.

CSD of BHB provides clearing and settlement services for securities listed on BHB (its functions are explained in Section 4.4.2). CSD is not a CCP.

4.4 Securities settlement systems

There are two major securities settlement systems in Bahrain:

- The SSS System; and
- The CSD of BHB.

4.4.1 Scripless Securities Settlement (SSS) System

4.4.1.1 Institutional framework

The CBB owns, operates, regulates and oversees the SSS System. The CBB Law (see Section 1.1.2.1) empowers the CBB to:

- issue government securities; and
- own, operate and regulate securities clearing and settlement systems as well as depositories.

Regulations, directives and circulars issued by the CBB, the SSS (Membership) Regulations, 2007 and the SSS (Membership) Business Operating Guidelines, 2007 (available on the CBB website⁹) provide the rules and regulations for the operations of the SSS System. The Membership Regulations and Business Operating Guidelines are contractual in nature and members are required to sign a written undertaking to comply with these regulations and guidelines. They specify the duties of the CBB; regulations for members; and guidelines for the functioning of the SSS System (including procedures and terms and conditions).

4.4.1.2 Participation

The CBB, licensed retail banks and other financial institutions that participate in government securities transactions and holding accounts in the BKS System of the CBB are eligible to become members of the SSS System.

There are two membership types:

- membership Type A or Direct members: They have securities accounts in the SSS System and online access to the system to carry out transactions.

Direct members include the CBB, licensed retail banks, BHB and other institutions that fulfil the following membership criteria:

- membership in SWIFT and having the required infrastructural facilities, specified by the CBB; and
- membership in the RTGS System.
- membership Type B or indirect members: They include pension funds, insurance companies, international government institutions, local and foreign financial and investment institutions and wholesale banks. They participate only in primary market transactions in the SSS System, offline via the CBB.

Direct and indirect members can be either conventional or Islamic institutions. Conventional direct and indirect members are eligible to purchase conventional and Islamic securities. Islamic banks that participate as direct members purchase only Islamic securities. The CBB holds both conventional and Islamic securities. At the end of 2015, 28 direct members and 21 indirect members were eligible to participate in auctions. These direct members comprised the CBB, 20 conventional retail banks, six Islamic retail banks and BHB. The membership criteria, duties, rights and responsibilities of members are stated in the SSS (Membership) Regulations 2007.

The SSS System currently offers depository services for government securities holdings of retail investors at the aggregate level. Accordingly, direct members act as agents or trustees for their customers' government securities holdings in their customer accounts in the SSS System. This agency or trustee relationship is governed by a CBB directive that ensures the legal or beneficial ownership of government securities by customers at any point in time.

4.4.1.3 Types of transaction

The SSS System settles all transactions relating to scripless government securities issued by the CBB in Bahraini dinars:

- transactions in the primary market (auction, bidding, when issue, securities coupon/return payments and securities redemptions etc); and
- transfer and settlement of tradable securities relating to the following secondary market transactions between the CBB and members as well as among other members:

⁹ Available at www.cbb.gov.bh/page-p-payment_settlement_systems.htm.

- outright sales and purchases;
- free of payments (FOP);
- repurchase agreement (conventional and Islamic transactions of direct members); and
- intraday credit (IDC) transactions.

Direct members hold the following accounts for their own securities and those held on behalf of their customers depending on their membership type:

- trade (TRD) account: records the details of holdings of the member’s own securities that can be used for settlement;
- customer (CUS) account: records the total holdings of government securities of resident customers of a direct member;
- non-resident (NRD) account: records the total holdings of government securities of non-resident customers of a direct member;
- IDC account: records securities that are pledged by a direct member under the IDC arrangement.

Direct members maintain all the types of accounts mentioned above. Indirect members have only the TRD account. The CBB has TRD and IDC accounts. At the end of 2015, securities worth BD 4.1 billion were held in the SSS System. In 2015, the SSS System settled 8,000 DVP transactions worth around BD 18 billion. There were no FOP transactions.

4.4.1.4 Operation of the system

The SSS System settles government securities transactions on a DVP 1 basis ie simultaneous settlement of the cash leg in the RTGS System and securities leg in the SSS System. It allows securities to be transferred between accounts on an FOP basis without a corresponding fund transfer. It also transfers and settles each transaction as a whole on a gross basis.

Furthermore, the SSS System provides an electronic auctioning of government securities on behalf of the government.

Direct members submit their transactions online through a SWIFT computer-based terminal (CBT). All transaction messages and notifications are transmitted over SWIFT. The SSS System uses “V” topology and transaction notifications are transmitted using SWIFT FIN. Direct members are also able to submit bid transactions, receive alerts/broadcasts, enquiry requests, view enquiry results, perform queue management and download reports from the SSS web services using the SWIFT InterAct and Browse services.

Indirect members submit their instructions offline to the CBB, who will execute the transaction requests on their behalf. The offline transactions include allotment, coupon/return payment and redemption. Indirect members maintain accounts in the BKS System to settle the cash legs of the securities transactions.

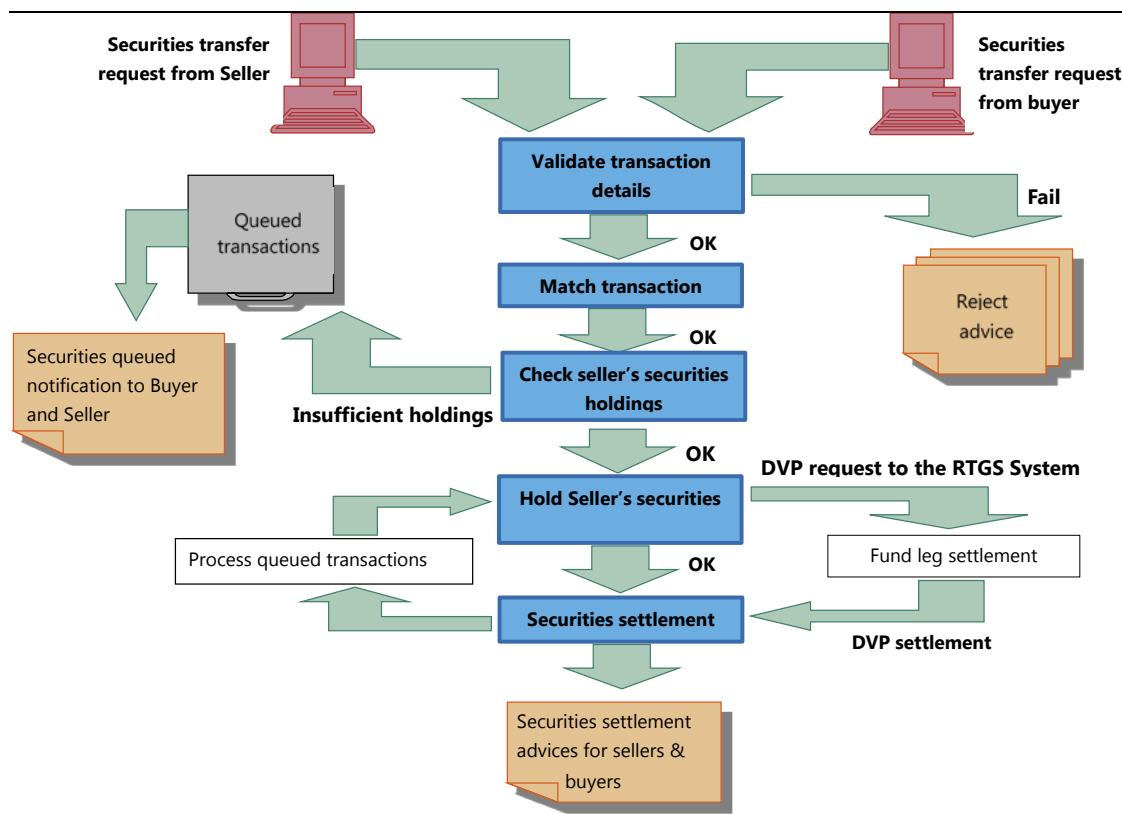
The SSS System is open from 08:00 to 14:11 on business days (Sunday to Thursday).

SSS System operating hours		Table 4.2
Activity		Time
Pre-market open: SSS System BOD (the CBB executes all the BOD activities).		07:45
System open for current day payment settlement.		08:00
System cut-off for current day payment settlement.		14:11
System cut-off warning.		14:12
System cut-off.		14:13

Each issue of securities in the SSS System is identified by an International Securities Identification Number (ISIN). The minimum marketable parcel in the SSS System is one unit, which has a face value of one Bahraini dinar.

Each party to the transaction (buyer and seller) submits the settlement instructions to the SSS System. Settlement instructions of both the seller and the buyer, are automatically matched and authenticated by the SSS System (Diagram 4.2). After the current-dated securities transactions are successfully matched, no party can unilaterally cancel its instructions.

Transaction flow in the SSS System Diagram 4.2



The SSS System sends matching advices to the seller (deliverer), as well as the buyer (receiver) and immediately commences the settlement process. If sufficient holdings are available in the securities account of the seller, the respective securities are "earmarked" and the SSS System instructs the RTGS System to settle the fund leg. If sufficient funds are available in the buyer's settlement account, the fund settlement between the buyer and the seller takes place directly through their settlement accounts in the RTGS System. When the SSS System receives confirmation of payment from the RTGS System, securities settlement takes place immediately. After settlement, the system sends securities settlement advices to the seller and the buyer. The transfers of securities at the SSS System and the respective funds in the RTGS System are final and irrevocable.

If the seller does not have sufficient securities, the transaction will remain in the queue at the SSS System and will be cancelled at the cut-off time for the current day settlement. The SSS system accepts future-dated transactions from the members up to 10 calendar days.

The SSS System provides for interbank repurchase (repo) transactions against eligible conventional and Islamic government securities. Direct members are permitted to initiate only the

interbank repo transaction against conventional government securities. On the repo closing date, the SSS System automatically transfers securities back to the original deliverer and funds to the original receiver.

A different mechanism is available for ISLI, the Islamic "repo". ISLI is available for SSS direct members to obtain liquidity against eligible Islamic securities (currently sukuk-al-ijara) holdings in the SSS System. An ISLI transaction involves: three parties; and three separate sales and purchases:

- A direct member in need of liquidity sells Islamic securities to an intermediary direct member acting as a market-maker, who simultaneously sells the same to the CBB (which offers the liquidity to the direct member requiring liquidity);
- a repurchase agreement between the direct member that sells the Islamic securities to the CBB through the market-maker; and
- an undertaking or promise of the direct member (that sold the Islamic securities) to buy back the Islamic securities from the CBB at the end of the repo period.

Islamic securities are sold and repurchased using dual level (first and second level) of matching and confirmation with three parties: a direct member (as the original deliverer), market-maker (as the first receiver and as the second deliverer) and the CBB (as the ultimate receiver). Prior to the submission of the ISLI request, all three parties agree to a unique deal reference (this reference is used to process the matching and settlement of the requested transaction sent by the three parties).

4.4.1.5 Risk management

The SSS System keeps settlement risk in the primary and secondary government securities market to a minimum by settling securities transactions in real time using DVP 1. This ensures immediate, final and simultaneous transfer of eligible securities in the SSS System against the respective fund transfer in central bank money in the RTGS System. Settlement finality and irrevocability of transactions settled in the SSS System are assured by the regulations and directives issued by the CBB.

The SSS System has a comprehensive business continuity arrangement identical to that of the RTGS System (see Section 3.2.1.5.3).

4.4.1.6 Links to other systems

The SSS system is integrated with the RTGS System to facilitate settlement of the fund legs of securities transactions on a DVP 1 basis and granting of IDC against securities pledged as collateral in the IDC accounts and reversal thereof. Given the interdependencies, the operating hours of both systems are managed and any extension of operating hours is generally granted to both systems. It is also linked to the BKS System.

4.4.1.7 Pricing

The SSS System does not charge a transaction fee. It charges direct members an annual membership fee of BD 4,500.

4.4.1.8 Major ongoing and future projects

In order to develop a secondary market for government securities, work is under way to implement an automated trading system (ATS) to facilitate STP of the entire process covering buying, selling, trading, clearing and settlement of transactions related to government securities. ATS will include an electronic order-driven trading platform with automatic transaction-matching capability and will be fully integrated with the RTGS and SSS Systems.

4.4.2 Central Securities Depository (CSD) of Bahrain Bourse

4.4.2.1 Institutional framework

The CSD, a division of BHB, performs the following functions:

- clears and settles exchange traded securities transactions. It calculates the clearing obligations and claims of members and ensures their settlement through the designated settlement bank. Every member is required to have a clearing account and operating account with the designated settlement bank;
- operates the centralised depository for securities listed at BHB and dematerialised via the CSD;
- operates the Central Securities Registry (CSR); and
- issues ISINs for securities issued in Bahrain.

All dematerialised securities of listed companies and shares of new initial public offerings bought and sold by members of the ATS are deposited, withdrawn, transferred, pledged/unpledged, cleared and settled in the CSD. Transfer of titles is effected in computer book-entry form.

Members of the ATS and their clients are required to open securities trading accounts at the CSD. Clients of members of the ATS who wish to sell or buy securities are required to dematerialise their physical securities by depositing them with the CSD and opening a securities trading account (to reflect beneficial ownership) with a member of the ATS. Only dematerialised securities can be traded, cleared and settled through the CSD. Since 2009, it has been mandatory for IPOs to be in dematerialised form. BHB is in the process of encouraging listed companies that issued shares prior to 2009 to dematerialise their physical securities. At the end of December 2015, the shares issued by 46 listed companies were in full dematerialised form, with BHB acting as their share registrar. The dematerialised securities accounted for about 47.5% of the market capitalisation of Bahraini public shareholding companies listed on the BHB at the end of 2015. Physical securities (52.5% of market capitalisation) are not permitted to be used as collateral or for pledges. Physical securities need to be dematerialised in the CSD in order to be used as collateral or for pledges. All pledges are registered through CSD in dematerialised form.

The CSD maintains electronic records of dematerialised securities at the client level and member level whenever they act as principal. The legal owner of the security is the person whose CSD securities trading account is credited.

Every investor has a unique number in the CSD, known as the National Investor Number (NIN). The NIN is based on the related investor's identity, such as passport and the Central Population Registration (CPR) number or national ID. In accordance with the rules and regulations, all securities are required to be held in the beneficial owner's name. A unique securities trading account number with a licensed broker(s) at BHB is linked to each NIN. The NIN is unique for each investor; however, an investor can have multiple securities trading accounts with different members and transfer securities across these accounts.

The CSR is a central database of eligible securities deposited in the CSD, where all securities, holders, rights (including third-party rights), pledges and limitations on the disposal/transfer of securities are recorded. The CSR updates shareholders' ownership records subsequent to share transfer through trades at ATS, exceptional cases, pledges, mergers, acquisition, capital reduction, bonus issues etc.

According to Article 36 of BHB's internal regulations, four types of dealing are exempted from trading at ATS. These include dealing in securities at the initial subscription stage (including public offering), dealing in securities between spouses or relatives up to the second degree that takes place without consideration, transfer of securities in case of inheritance/pursuant to court orders/request from a governmental authority, in case of a will or amicable settlement with a financial institution etc. However, these exempted dealings are required to be transacted through the CSD.

4.4.2.2 Participation

Please see Section 4.1.2.2.

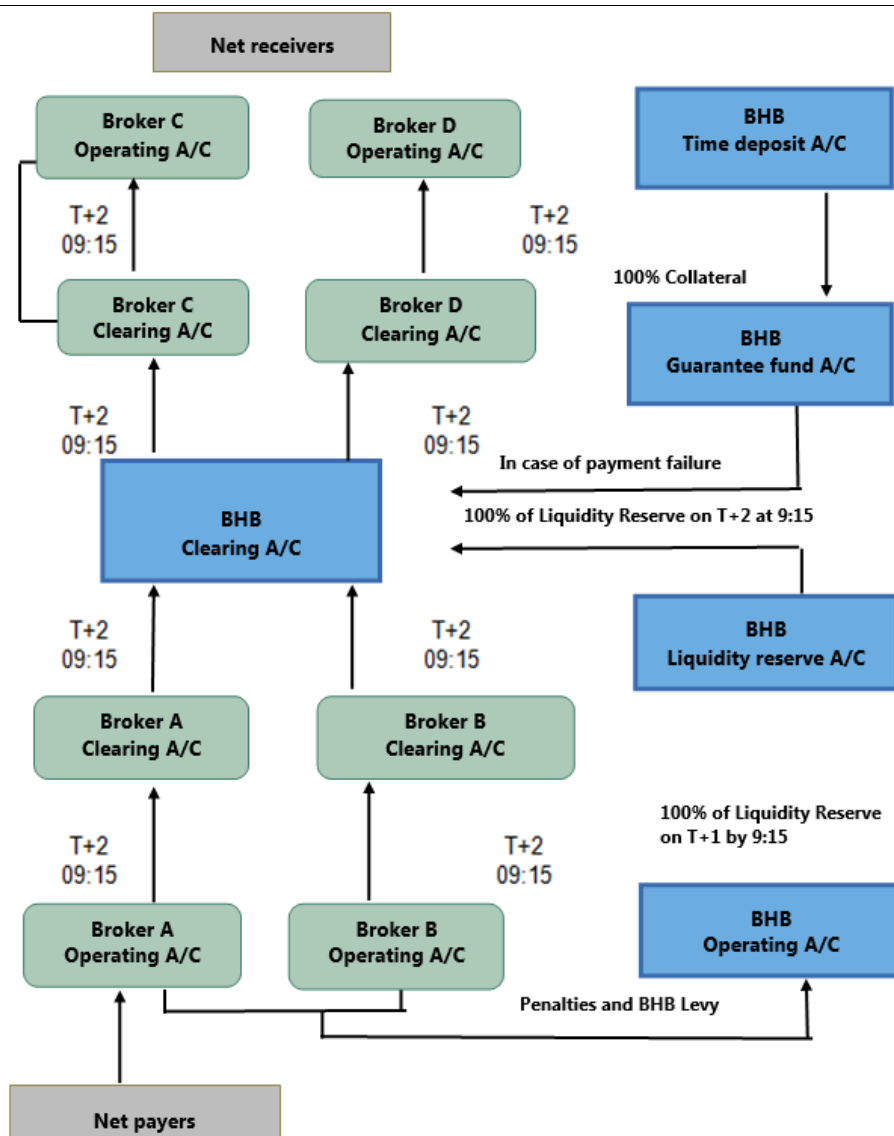
4.4.2.3 Types of transaction

The CSD clears and settles securities traded in the ATS.

4.4.2.4 Operation of the system

All trades executed at the ATS are transmitted to the clearing system at the CSD as and when they are executed. The net clearing obligations are calculated in real-time and members have online access to the CSD to view their clearing obligations. The final settlement reports ("to collect" report, "to pay" report and "liquidity reserve" report) are issued to members and to the settlement bank at 13:30 within half an hour after the end of the trading session on the same day of trading.

Securities sold on the ATS are transferred electronically from the seller's security trading account to the buyer's security trading account in the CSD upon the execution of the transaction, enabling the buyer to resell such securities in the same trading session. Such securities remain outstanding in the buyer's securities trading account until settlement. The settlement and ownership transfer of securities traded on the ATS takes place at the CSD in electronic book entry form on a gross basis immediately upon the completion of the settlement of net clearing obligations on the second market day following the trade day (T+2) at 09:15 on a DVP 2 basis. Members settle transactions with their clients through their operating accounts (see Diagram 4.3).



4.4.2.5 Risk management

Members of BHB are licensed by the CBB and registered at BHB. As the CSD is not a central counterparty for securities transacted at the ATS, the counterparty risk is kept to a minimum by using DVP 2 for settlement and via a number of other risk management measures.

The risk management measures are focused on the timely settlement of net obligations of each clearing member against the security traded at the ATS, at the designated settlement bank. The members' trading (bid orders) at the ATS are subjected to a trading cap limit fixed by BHB and supported by the guarantee fund and liquidity reserve. Payments of net-to-pay or net-to-receive balances made to/from BHB's clearing account are final and irrevocable. The CSD closely monitors timely settlement of clearing obligations by members and imposes default charges on members that fail to meet their obligations.

4.4.2.5.1 Trading cap limit

Trading members are permitted to execute trades in the ATS up to the trading cap limit (the cap on the multilateral net debit position). Each member has to make a contribution equivalent to its trading cap limit to the guarantee fund. A member who wishes to carry out a trade that exceeds its permitted trading cap limit is required to get permission from BHB and deposit the total value of such a transaction (in the form of cash or securities) in the liquidity reserve account, no later than 09:15 on T+1 (which is then adjusted within their settlement position on T+2). If a member fails to meet its liquidity reserve obligation, the CSD then requests the BHB's Trading Division to suspend that member from trading.

4.4.2.5.2 Guarantee fund

The CSD maintains a guarantee fund to meet any liability caused by a failure of one or more clearing members to fulfil its obligations to pay the net-to-pay balance on the settlement day (T+2). One of the requirements for admission of a clearing member to the CSD is the financial ability to pay the prescribed minimum contribution to the guarantee fund and meet the calls for additional funds by BHB. The initial contribution varies according to the membership category:

- Minimum of BD 100,000 (for Category A members)
- Minimum of BD 50,000 (for Category B and C members)

Contributions of members are paid in cash to the guarantee fund account at the settlement bank. If the settlement bank informs the CSD of the failure of a clearing member to settle its payment obligations, the CSD will immediately debit the guarantee fund and credit BHB's clearing account to meet the shortfall. In accordance with Resolution 20 of 2001 with respect to the clearing, settlement and central depository procedures, the defaulting broker who fails to pay the net payable balance amount due by 09:15 on the settlement day (T+2), is required to replenish the guarantee fund account with the amount drawn from the fund by BHB to cover the debit balance.

In the case of a member's failure to pay back the amount debited from the guarantee fund account and costs associated with the use of the guarantee fund, BHB will place a lien on the securities purchased by the defaulted member and initiate action to recover the dues.

The guarantee fund is managed by a committee of three members (one representing brokers, one representing the settlement bank and one representing BHB). BHB pays interest on funds in the guarantee fund.

4.4.2.5.3 Liquidity reserve

In order to ensure clearing members meet their clearing obligation on the settlement day (T+2), members are required to pay into BHB's liquidity reserve account the full value of transactions as follows:

- 30% of the trading transaction on (T+1), before 09:15.
- 70% of the trading transaction on (T+2), before 09:15.

The liquidity reserve payments are settled in BHB's settlement account. If a member fails to pay the liquidity reserve amount on (T+1), BHB will immediately cease to provide trading services to such a member. The unpaid amount on (T+1) will be added to the member's net-to-pay balance on the settlement day (T+2).

The funds in the liquidity reserve account are transferred to BHB's clearing account at 09:15 on (T+2) for settlement of net-to-pay and net-to-receive amounts at the settlement bank. After the settlement bank confirms the settlement of the cash leg, securities are transferred in the CSD no later than 09:15 on (T+2).

4.4.2.5.4 Business continuity

BHB has a business continuity management framework approved by its board of directors to ensure continuous and reliable delivery of services to its customers in the event of significant business disruption(s). The framework complies with regulatory requirements and international standards (BS 25999, ISO 22301:2012 and IOSCO Business Continuity guidelines).

4.4.2.6 Links to other systems

The CSD system is linked to the ATS on a real-time basis.

4.4.2.7 Pricing

The CSD does not charge for any clearing or settlement services. It charges on other services as given in Table 4.3 below.

No	Service	Charges
1.	Entry of investors' details into the CSD system.	BD 4 (payable once).
2.	Opening investor account and depositing the securities with a broker.	BD 1
3.	Transfer of securities other than exempted transfers.	BD 1 (per company).
4.	Pledging and freezing of securities (except margin transfers).	0.025% of the pledged securities market value, with a minimum of BD 5 for a single transaction.
5.	Management of shareholders' register.	BD 0.500 per shareholder per annum at a minimum of BD 2,000 and a maximum of BD 10,000 per company.

4.4.2.8 Major ongoing and future projects

BHB's trading, clearing and settlement infrastructure is currently undergoing changes to increase efficiency, provide more advanced trade and post-trade services, and reduce risks. These changes include:

- developing the legislation and rules governing the capital market in line with the CBB's regulatory requirements and international standards, while promoting additional listings of investment instruments and trading them in a well regulated environment that protects the rights of all related parties as well as those of investors. In order to provide more opportunities for investors, in November 2015, Resolution 5 of 2015 was issued, amending the listing requirements of shareholding companies on the Main Board requiring all listed companies to move their shares to the CSD and applying a requirement on minimum tradable stocks. The resolution also raises the minimum capital of a listed company to BD 1 million, in addition to raising the minimum company's shareholders to 100, excluding the shareholders from the company's employees, staff, and key persons and their directly related people. Furthermore, the resolution approved a number of amendments related to the company's profitability, its financial conditions, the balance of its financial structure and its performance efficiency (by applying the requirements of transparency and standards and corporate governance standards issued by the CBB); and
- forming a clearing house to carry out services relating to clearing, settlement and central securities depository, independent from the BHB's exchange.

4.5 Use of securities infrastructure by the central bank

The CBB is a direct participant in the SSS System and uses the SSS System to:

- carry out its securities-related transactions with members on a real-time DVP 1 basis by using its securities account in the SSS System and its settlement account in the RTGS System;
- carry out the following activities relating to primary auctions of government securities on behalf of the government:
 - accept bidding transactions submitted by direct members;
 - conduct auction result simulations;
 - issue securities;
 - pay coupons to holders of securities; and
 - redeem securities.
- provide intraday liquidity for RTGS members against their eligible government securities;
- provide repo facilities for direct members to borrow overnight against eligible government securities in the SSS System;
- provide one-week and one-month ISLI against Sukul-al-Ijara in the SSS System; and
- perform securities settlement services in the SSS System on behalf of indirect members, including international organisations.

Statistical tables

Table 1

Basic statistical data

	2011	2012	2013	2014	2015
Population (thousands)	1,195.0	1,209.0	1,253.2	1,314.6	1,358.3
GDP (BD millions) ¹	10,820.0	11,562.0	12,235.0	12,554.0	11,703.3
GDP per capita (BD) ¹	9,054.0	9,563.0	9,763.0	9,550.0	8,616.0
Consumer price inflation (%)	-0.4	2.8	3.3	2.6	1.9
Exchange rate (BD/USD):					
<i>end of year</i>	0.3760	0.3760	0.3760	0.3760	0.3760
<i>average</i>	0.3760	0.3760	0.3760	0.3760	0.3760

¹Data relating to GDP and GDP per capita for 2015 are provisional.

Sources: Central Bank of Bahrain, Information & eGovernment Authority.

Table 2

Settlement media used by non-banks

(BD millions, end of year)

	2011	2012	2013	2014	2015
Notes and coin in circulation outside banks ¹	402.20	421.40	461.10	493.20	525.20
Value of transferable deposits ²	2,234.70	2,189.70	2,334.70	2,601.90	2,769.20
Narrow money supply (M1) ³	2,636.90	2,611.10	2,795.80	3,095.10	3,294.43
<i>Memo:</i>					
Transferable deposits in foreign currencies ⁴	687.50	620.60	534.90	626.30	658.80
Outstanding value on e-money storages	1.08	1.43	1.66	2.44	2.85
<i>on card-based products</i>	1.08	1.43	1.66	2.44	2.85
<i>on software- or network-based products</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>

¹ Estimated, based on a monthly survey conducted by the CBB among retail banks. ² Non-bank demand deposits in BD and other currencies as included in M1. ³ Data relating to M1 for 2015 is provisional. ⁴ Domestic demand deposits of non-banks in other currencies.

Source: Central Bank of Bahrain.

Table 3

Settlement media used by banks

(BD millions, as of end of December unless otherwise stated)

	2011	2012	2013	2014	2015
Transferable balances held at the central bank	75.72	92.18	125.99	189.27	135.53
<i>required reserves</i> ¹	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
<i>free reserves</i>	75.72	92.18	125.99	189.27	135.53
Transferable balances held at other banks ²	190.10	158.00	178.75	173.06	126.50
<i>Memo:</i>					
Credit extended by the central bank ³	403.29	367.47	826.72	371.62	870.66
<i>intraday</i> ³	373.48	365.97	826.72	369.62	849.16
<i>overnight</i> ⁴	20.40	1.50	0.00	2.00	21.50
<i>longer refinancing operations</i> ⁵	9.41	0.00	0.00	0.00	0.00

¹ Banks are not allowed to use required reserves for payment purposes. ² Resident retail banks demand and saving deposits in BD and other currencies. ³ Credit extended during the month of December. ⁴ Includes facilities under repo and BD secured loans during December. ⁵ Includes ISLI for the month of December.

Source: Central Bank of Bahrain.

Table 4**Banknotes and coin***(BD millions, end of year)*

	2011	2012	2013	2014	2015
Total banknotes and coin issued	509.00	522.50	577.96	610.50	650.10
Total banknotes issued	494.90	507.40	561.56	593.00	631.50
<i>BD 20</i>	404.00	411.60	457.50	483.90	512.40
<i>BD 10</i>	53.10	55.80	58.95	60.30	66.10
<i>BD 5</i>	14.40	15.70	17.20	18.10	19.60
<i>BD 1</i>	17.70	18.90	20.96	22.70	25.10
<i>BD 0.500</i>	5.70	5.40	6.95	8.00	8.30
Total coin issued	14.10	15.10	16.40	17.50	18.60
<i>BD 0.500</i>	1.50	1.50	1.53	1.50	1.50
<i>BD 0.100</i>	9.60	10.50	11.42	12.30	13.20
<i>BD 0.050</i>	1.80	1.90	2.05	2.20	2.30
<i>BD 0.025</i>	0.70	0.70	0.77	0.80	0.90
<i>BD 0.010</i>	0.40	0.40	0.46	0.50	0.50
<i>BD 0.005</i>	0.10	0.10	0.15	0.20	0.20
Banknotes and coin held by banks	106.80	101.10	116.86	117.3	124.9
Banknotes and coin in circulation outside banks	402.20	421.40	461.10	493.2	525.2

Source: Central Bank of Bahrain.

Table 5**Institutions offering payment services to non-banks***(end of year)*

	2011	2012	2013	2014	2015
Central bank					
Number of branches or offices	1	1	1	1	1
Number of accounts	34	34	35	36	40
Value of accounts (BD millions)	7.62	10.45	10.17	7.95	10.84
<i>Memo:</i>					
Number of accounts, all	65	64	64	65	69
Number of accounts, banks	31	30	29	29	29
Value of accounts, all (BD millions)	83.34	102.63	136.16	197.22	135.53
Banks					
Number of institutions	29	28	27	27	27
Number of branches or offices	136	147	163	167	171
Number of accounts ¹	1,373,503	1,400,310	1,505,233	1,521,724	1,636,519
<i>of which: number of internet/PC-linked accounts</i>	<i>286,188</i>	<i>313,783</i>	<i>352,982</i>	<i>471,535</i>	<i>468,746</i>
Value of accounts (BD million)	3,938.24	4,148.91	4,552.05	5,234.29	5,761.94
Local retail banks					
Number of institutions	14	13	12	12	12
Number of branches or offices	110	127	143	142	144
Value of accounts (BD millions)	2,896.30	3,074.45	3,345.41	3,972.85	4,495.21
Branches of foreign banks (Retail)					
Number of institutions	15	15	15	15	15
Number of branches or offices	26	20	20	25	27
Value of accounts (BD millions)	1,041.93	1,074.46	1,206.65	1,261.45	1,266.73
Other institutions offering payment services to non-banks²					
Number of institutions	4	4	4	4	4
Number of branches or offices	7	8	9	9	9
Value of accounts	nap	nap	nap	nap	nap
Institutions offering payment services to non-banks (total)					
Number of institutions	34	33	32	32	32
Number of branches or offices	144	156	173	177	181
Number of accounts held by non-banks	1,373,537	1,400,344	1,505,268	1,521,760	1,636,559
<i>of which: number of internet/PC-linked accounts</i>	<i>286,188</i>	<i>313,783</i>	<i>352,982</i>	<i>471,535</i>	<i>468,746</i>
Value of accounts held by non-banks (BD millions)	3,945.85	4,159.36	4,562.22	5,242.24	5,772.78
<i>Memo:</i>					
Electronic money institutions³					
Number of institutions	nap	nap	nap	nap	nap
Outstanding value on e-money storages issued by e-money institutions (BD millions)	nap	nap	nap	nap	nap

¹ Includes saving deposits as they are used for payments in Bahrain ² These institutions do not take customer deposits³ Includes retail banks and financing companies that issue internationally branded e-money cards.

Source: Central Bank of Bahrain.

Table 6**Payment card functions and accepting devices***(end of year)*

	2011	2012	2013	2014	2015
Cards issued in the country (thousands)					
Cards with a cash function	1,082.57	1,157.16	1,199.73	1,229.62	1,352.62
Cards with a debit function	898.09	976.38	1,002.22	1,010.56	1,097.17
Cards with a credit function ¹	189.57	187.74	202.26	222.04	253.31
Cards with an e-money function	17.22	31.24	43.09	55.32	59.24
<i>of which: cards with an e-money function which have been loaded at least once</i>	10.28	16.10	22.29	26.76	32.83
Total number of cards (irrespective of the number of functions on the card)	1,104.88	1,195.35	1,247.57	1,233.00	1,351.29
<i>of which: cards with a combined debit, cash and e-money function</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	0.28	0.94
Memo:					
Retailer cards	nav	nav	nav	nav	nav
Terminals located in the country					
ATMs	450	462	471	452	458
<i>ATMs with a cash withdrawal function</i>	450	462	471	452	458
<i>ATMs with a credit transfer function</i>	324	304	310	278	291
POS terminals	13,197	14,068	15,395	16,914	18,133
<i>EFTPOS terminals</i>	13,197	14,068	15,395	16,914	18,133
E-money card terminals					
<i>e-money card loading/unloading terminals</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
<i>e-money card payment terminals</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>

¹Also includes cards with a delayed debit function.

Source: Central Bank of Bahrain.

Table 7

Indicators of the use of payment instruments and terminals by non-banks: volume of transactions

(thousands, total for the year)

	2011	2012	2013	2014	2015
Transactions per type of payment instrument					
Credit transfers ¹	327.5	374.1	532.1	787.8	971.9
<i>paper-based</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
<i>non-paper-based</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
Direct debits	68.4	80.7	112.0	236.6	552.8
Card payments with cards issued in the country	15,529.4	18,849.7	22,048.3	26,709.0	31,853.6
<i>payments by cards with a debit function</i>	<i>9,632.1</i>	<i>11,999.9</i>	<i>14,261.3</i>	<i>17,683.0</i>	<i>20,808.8</i>
<i>payments by cards with a credit function²</i>	<i>5,897.3</i>	<i>6,849.7</i>	<i>7,787.0</i>	<i>9,026.0</i>	<i>11,044.8</i>
E-money payment transactions	183.6	344.7	515.7	718.1	973.7
<i>by cards with an e-money function</i>	<i>183.6</i>	<i>344.7</i>	<i>515.7</i>	<i>718.1</i>	<i>973.7</i>
<i>through other e-money storages</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
Cheques ³	2,918.2	3,093.6	3,162.3	3,382.4	3,287.5
Other payment instruments	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
Total number of transactions with payment instruments	19,027.1	22,742.9	26,370.4	31,833.9	37,639.5
<i>of which: cross-border transactions sent</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
<i>Memo:</i>					
Cross-border transactions received	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
Transactions per type of terminal					
Total transactions at terminals in the country					
Cash transactions	21,437.4	24,273.3	25,518.5	27,541.2	29,627.2
<i>ATM cash withdrawals</i>	<i>21,176.2</i>	<i>23,957.0</i>	<i>25,098.7</i>	<i>26,663.6</i>	<i>28,823.8</i>
<i>ATM cash deposits</i>	<i>261.2</i>	<i>316.3</i>	<i>419.8</i>	<i>877.6</i>	<i>803.4</i>
POS payment transactions ⁴	16,567.6	19,958.4	23,427.1	28,097.6	34,203.1
E-money card loading/unloading transactions ⁵	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
E-money card payment transactions	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
a) Transactions at terminals in the country by cards issued in the country					
Cash transactions	20,237.2	22,832.2	23,852.3	25,344.0	27,334.4
<i>ATM cash withdrawals</i>	<i>19,976.1</i>	<i>22,515.9</i>	<i>23,432.5</i>	<i>24,466.4</i>	<i>26,531.0</i>
<i>ATM cash deposits</i>	<i>261.2</i>	<i>316.3</i>	<i>419.8</i>	<i>877.6</i>	<i>803.4</i>
POS payment transactions ⁴	10,930.3	13,069.2	15,202.3	18,032.1	21,509.2
E-money card loading/unloading transactions ⁵	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
E-money card payment transactions	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
b) Transactions at terminals in the country by cards issued outside the country					
Cash transactions	1,200.1	1,441.0	1,666.2	2,197.2	2,292.7
<i>ATM cash withdrawals</i>	<i>1,200.1</i>	<i>1,441.0</i>	<i>1,666.2</i>	<i>2,197.2</i>	<i>2,292.7</i>
<i>ATM cash deposits</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
POS payment transactions ⁴	5,637.2	6,889.1	8,224.8	10,065.5	12,693.9
E-money card loading/unloading transactions ⁵	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
E-money card payment transactions	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
c) Transactions at terminals outside the country by cards issued in the country ⁶					
Cash transactions ⁶	548.5	522.7	576.2	601.9	545.5
<i>ATM cash withdrawals⁶</i>	<i>548.5</i>	<i>522.7</i>	<i>576.2</i>	<i>601.9</i>	<i>545.5</i>
<i>ATM cash deposits⁶</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
POS payment transactions ⁶	1,802.2	2,141.5	2,358.7	2,292.4	2,806.2
E-money card loading/unloading transactions	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
E-money card payment transactions	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>

¹Includes only customer credit transfers in the RTGS System and credit transfers performed at ATMs. ²Also includes payments by cards with a delayed debit function. ³Cheques paid in the semi-automated cheque clearing system at the CBB up to 10th May 2012 and thereafter in the BCTS. ⁴Includes some e-money card payment transactions. ⁵E-money card loading/unloading terminals do not exist in Bahrain, as all e-money cards are internationally branded. ⁶Transactions are counted on the issuing side.

Source: Central Bank of Bahrain.

Table 8

Indicators of the use of payment instruments and terminals by non-banks: value of transactions

(BD millions, total for the year)

	2011	2012	2013	2014	2015
Transactions per type of payment instrument					
Credit transfers ¹	8,915.91	9,699.01	10,466.27	12,448.85	15,086.23
<i>paper-based</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
<i>non-paper-based</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
Direct debits	6.06	7.63	14.11	23.3	40.2
Card payments with cards issued in the country	909.21	989.04	1,193.99	1,351.51	1,537.84
<i>payments by cards with a debit function</i>	<i>478.30</i>	<i>502.21</i>	<i>552.43</i>	<i>613.21</i>	<i>658.40</i>
<i>payments by cards with a credit function²</i>	<i>430.91</i>	<i>486.83</i>	<i>641.56</i>	<i>738.30</i>	<i>879.45</i>
E-money payment transactions	9.23	15.42	21.90	29.18	39.85
<i>by cards with an e-money function</i>	<i>9.23</i>	<i>15.42</i>	<i>21.90</i>	<i>29.18</i>	<i>39.85</i>
<i>through other e-money storages</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
Cheques ³	4,335.74	6,825.12	8,869.40	10,136.71	10,225.28
Other payment instruments	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
Total value of transactions with payment instruments	14,176.14	17,536.22	20,565.67	23,989.53	26,929.81
of which: cross-border transactions sent	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
<i>Memo:</i>					
Cross-border transactions received	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
Transactions per type of terminal					
Total transactions at terminals in the country					
Cash transactions	2,393.49	2,523.09	2,790.57	3,075.87	3,361.50
<i>ATM cash withdrawals</i>	<i>2,259.39</i>	<i>2,403.64</i>	<i>2,654.33</i>	<i>2,930.42</i>	<i>3,167.72</i>
<i>ATM cash deposits</i>	<i>134.10</i>	<i>119.45</i>	<i>136.24</i>	<i>145.44</i>	<i>193.78</i>
POS payment transactions ⁴	729.55	873.41	1,089.26	1,269.03	1,996.47
E-money card loading/unloading transactions ⁵	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
E-money card payment transactions	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
a) Transactions at terminals in the country by cards issued in the country					
Cash transactions	2,267.44	2,368.57	2,603.82	2,828.52	3,111.18
<i>ATM cash withdrawals</i>	<i>2,133.34</i>	<i>2,249.13</i>	<i>2,467.58</i>	<i>2,683.08</i>	<i>2,917.39</i>
<i>ATM cash deposits</i>	<i>134.10</i>	<i>119.45</i>	<i>136.24</i>	<i>145.44</i>	<i>193.78</i>
POS payment transactions ⁴	422.22	498.43	656.33	748.02	1,372.87
E-money card loading/unloading transactions ⁵	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
E-money card payment transactions	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
b) Transactions at terminals in the country by cards issued outside the country					
Cash transactions	126.05	154.51	186.75	247.35	250.33
<i>ATM cash withdrawals</i>	<i>126.05</i>	<i>154.51</i>	<i>186.75</i>	<i>247.35</i>	<i>250.33</i>
<i>ATM cash deposits</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
POS payment transactions ⁴	307.33	374.98	432.93	521.02	623.59
E-money card loading/unloading transactions ⁵	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
E-money card payment transactions	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
c) Transactions at terminals outside the country by cards issued in the country ⁶					
Cash transactions ⁶	61.54	59.36	71.68	75.44	64.21
<i>ATM cash withdrawals⁶</i>	<i>61.54</i>	<i>59.36</i>	<i>71.68</i>	<i>75.44</i>	<i>64.21</i>
<i>ATM cash deposits⁶</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
POS payment transactions ⁶	165.88	181.84	204.50	209.50	227.52
E-money card loading/unloading transactions	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
E-money card payment transactions	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>

¹Includes only customer credit transfers in the RTGS System and credit transfers performed at ATMs. ²Also includes payments by cards with a delayed debit function. ³Cheques paid in the semi-automated cheque clearing system at the CBB up to 10th May 2012 and thereafter in the BCTS. ⁴Includes some e-money card payment transactions. ⁵E-money card loading/unloading terminals do not exist in Bahrain, as all e-money cards are internationally branded. ⁶Transactions are counted on the issuing side.

Source: Central Bank of Bahrain.

Table 9**Participation in selected interbank funds transfer systems***(end of year)*

	2011	2012	2013	2014	2015
Large-value payment systems					
RTGS					
Number of participants	29	28	28	28	28
Direct participants	29	28	28	28	28
Banks	28	27	27	27	27
Central bank	1	1	1	1	1
Other direct participants	nap	nap	nap	nap	nap
<i>General government</i>	nap	nap	nap	nap	nap
<i>Postal institution</i>	nap	nap	nap	nap	nap
<i>Clearing and settlement organisations</i>	nap	nap	nap	nap	nap
<i>Other financial institutions</i>	nap	nap	nap	nap	nap
<i>Other</i>	nap	nap	nap	nap	nap
Indirect participants	nap	nap	nap	nap	nap
Retail payment systems					
BCTS¹					
Number of participants	nap	28	28	28	28
Direct participants	nap	27	27	27	27
Banks	nap	27	27	27	27
Central bank	nap	nap	nap	nap	nap
Other direct participants	nap	nap	nap	nap	nap
<i>General government</i>	nap	nap	nap	nap	nap
<i>Postal institution</i>	nap	nap	nap	nap	nap
<i>Clearing and settlement organisations</i>	nap	nap	nap	nap	nap
<i>Other financial institutions</i>	nap	nap	nap	nap	nap
<i>Other</i>	nap	nap	nap	nap	nap
Indirect participants	nap	1	1	1	1
Cheque clearing system²					
Number of participants	29	nap	nap	nap	nap
Direct participants	29	nap	nap	nap	nap
Banks	29	nap	nap	nap	nap
Central bank	nap	nap	nap	nap	nap
Other direct participants	nap	nap	nap	nap	nap
<i>General government</i>	nap	nap	nap	nap	nap
<i>Postal institution</i>	nap	nap	nap	nap	nap
<i>Clearing and settlement organisations</i>	nap	nap	nap	nap	nap
<i>Other financial institutions</i>	nap	nap	nap	nap	nap
<i>Other</i>	nap	nap	nap	nap	nap
Indirect participants	nap	nap	nap	nap	nap
BENEFIT					
Number of participants	34	32	32	31	31
Direct participants	34	32	32	31	31
Banks	26	25	25	24	24
Central bank	nap	nap	nap	nap	nap
Other direct participants	8	7	7	7	7
<i>General government</i>	nap	nap	nap	nap	nap
<i>Postal institution</i>	nap	nap	nap	nap	nap
<i>Clearing and settlement organisations³</i>	7	6	6	6	6
<i>Other financial institutions</i>	1	1	1	1	1
<i>Other</i>	nap	nap	nap	nap	nap
Indirect participants	nap	nap	nap	nap	nap

¹ BCTS commenced operations on 13th May, 2012. ² Semi-automated cheque clearing system was terminated on 13th May 2012.

³ Includes switches of GCC countries.

Source: Central Bank of Bahrain, The BENEFIT Company.

Table 10**Payments processed by selected interbank funds transfer systems: volume of transactions***(thousands, total for the year)*

	2011	2012	2013	2014	2015
Large-value payment systems					
RTGS					
Total transactions sent	407.03	457.82	608.73	816.81	978.15
Concentration ratio in terms of volume (%)	64.2	67.1	68.5	73.4	76.5
Retail payment systems					
BCTS¹					
Total transactions sent	nap	1,988.64	3,162.34	3,298.77	3,287.53
Concentration ratio in terms of volume (%)	nap	67.29	66.23	64.80	65.47
Cheque clearing system²					
Total transactions sent	2,918.21	1,105.00	nap	nap	nap
Concentration ratio in terms of volume (%)	68.6	68.3	nap	nap	nap
BENEFIT					
Total transactions sent ³	12,952.23	16,043.72	19,312.60	23,357.51	28,275.34
<i>ATM cash withdrawals</i>	5,511.46	6,612.62	7,743.68	9,232.09	10,948.18
<i>Debit card transactions at EFTPOS terminals</i>	6,952.09	8,625.72	10,392.73	12,507.37	14,879.36
<i>Direct debts</i>	68.38	80.74	112.02	236.60	552.82
<i>Payment Gateway transactions</i>	420.30	724.64	1,064.18	1,381.44	1,882.21
Concentration ratio in terms of volume (%)	66.0	64.4	64.5	64.3	64.0
<i>Memo:</i>					
Cash withdrawals done at ATMs outside Bahrain, linked to BENEFIT under GCCNET shared ATM services	289.95	311.86	327.45	340.62	704.11
¹ BCTS commenced operations on 13 th May, 2012. ² The semi-automated cheque clearing system was terminated on 13 th May 2012.					
³ Transactions processed by BENEFIT in Bahrain.					
Source: Central Bank of Bahrain, The BENEFIT Company					

Table 11**Payments processed by selected interbank funds transfer systems: value of transactions***(BD millions, total for the year)*

	2011	2012	2013	2014	2015
Large-value payment systems					
RTGS					
Total transactions sent	51,196.58	49,143.57	58,796.39	63,368.50	68,578.52
Concentration ratio in terms of value (%)	58.44	60.53	57.07	56.75	58.89
Retail payment systems					
BCTS¹					
Total transactions sent	nap	5,107.87	8,869.40	9,900.17	10,225.28
Concentration ratio in terms of value (%)	nap	64.2	63.1	59.4	59.9
Cheque Clearing System²					
Total transactions sent	4,335.74	1,717.25	nap	nap	nap
Concentration ratio in terms of value (%)	66.1	66.4	nap	nap	nap
BENEFIT					
Total transactions sent ³	768.98	936.61	1,130.52	1,386.63	1,668.49
<i>ATM cash withdrawals</i>	546.16	650.55	776.02	934.13	1,109.96
<i>Debit card transactions at EFTPOS terminals</i>	195.21	239.30	281.14	339.65	390.20
<i>Direct debts</i>	6.06	7.63	14.11	23.28	40.20
<i>Payment Gateway transactions</i>	21.55	39.13	59.25	89.57	128.12
Concentration ratio in terms of value (%)	62.9	61.8	60.6	60.0	59.8
<i>Memo:</i>					
Cash withdrawals done at ATMs outside Bahrain, linked to BENEFIT under GCCNET shared ATM services	38.47	40.87	43.71	45.98	48.38

¹ BCTS commenced operations on 13th May, 2012. ²The semi-automated cheque clearing system was terminated on 13th May 2012.

³ Transactions processed by BENEFIT in Bahrain.

Source: Central Bank of Bahrain, The BENEFIT Company

Table 12**Participation in SWIFT by domestic institutions***(end of year)*

	2011	2012	2013	2014	2015
Members	19	19	19	18	18
<i>of which: live</i>	19	19	18	18	18
Sub-members	44	44	44	43	45
<i>of which: live</i>	43	44	44	43	45
Participants	20	19	20	20	20
<i>of which: live</i>	20	19	20	20	20
Total users	83	82	83	81	83
<i>of which: live</i>	82	82	82	81	83
<i>Memo:</i>					
Total SWIFT users	10,084	10,679	10,582	10,807	11,538
<i>members</i>	2,336	2,400	2,389	2,379	2,459
<i>sub-members</i>	3,351	3,360	3,343	3,354	3,391
<i>participants</i>	4,397	4,919	4,850	5,074	5,688

Source: SWIFT.

Table 13**SWIFT message flows to/from domestic users***(thousands, total for the year)*

	2011	2012	2013	2014	2015
Total messages sent	3,828.5	4,202.7	4,347.8	4,597.0	4,515.4
<i>of which:</i>					
<i>category I</i>	696.3	834.3	897.7	1,006.9	1,612.1
<i>category II</i>	672.9	639.4	604.2	585.1	625.4
Total messages received	3,370.3	3,604.4	3,838.5	4,155.5	4,658.7
<i>of which:</i>					
<i>category I</i>	559.4	651.4	756.3	846.4	961.2
<i>category II</i>	347.2	363.6	347.8	341.2	339.5
Domestic traffic	2,218.7	2,264.3	2,428.5	2,704.8	1,590.9
<i>Memo:</i>					
Global SWIFT traffic	4,431,099.9	4,589,109.3	5,065,668.4	5,612,723.9	6,471,897.3

Source: SWIFT.

Table 14**Number of participants in exchanges and trading systems***(end of year)*

	2011	2012	2013	2014	2015
ATS- BHB					
Total number of participants ¹	16	17	17	16	16
<i>central bank</i>	0	0	0	0	0
<i>central counterparties (CCPs)</i>	0	0	0	0	0
<i>banks</i>	7	8	8	7	7
<i>other</i>	9	9	9	9	9
<i>Individuals</i>	4	4	4	4	4
<i>Custodians</i>	5	5	5	5	5
Number of domestic participants	13	14	14	13	13
<i>central bank</i>	0	0	0	0	0
<i>central counterparties (CCPs)</i>	0	0	0	0	0
<i>banks</i>	7	8	8	7	7
<i>other</i>	6	6	6	6	6
<i>Individuals</i>	4	4	4	4	4
<i>Custodians</i>	2	2	2	2	2
Number of foreign participants	3	3	3	3	3
<i>central bank</i>	0	0	0	0	0
<i>central counterparties (CCPs)</i>	0	0	0	0	0
<i>banks</i>	0	0	0	0	0
<i>other</i>	3	3	3	3	3
<i>Individuals</i>	0	0	0	0	0
<i>Custodians</i>	3	3	3	3	3

¹ The trading members at ATS act as clearing members in CSD.

Source: Bahrain Bourse.

Table 15**Number of listed securities***(end of year)*

	2011	2012	2013	2014	2015
ATS- BHB					
Total number of listed securities	92	82	81	77	77
debt securities	11	8	10	8	12
<i>bonds</i>	11	8	10	8	12
equity	49	47	47	47	46
other	32	27	24	22	19
<i>Mutual Funds</i>	31	26	23	21	19
<i>Preferred Shares</i>	1	1	1	1	0

Source: Bahrain Bourse.

Table 16**Market capitalisation of listed companies***(BD millions, end of year)*

	2011	2012	2013	2014	2015
ATS- BHB					
Total market capitalisation/equity	6,254.41	5,855.64	6,962.95	8,327.07	8,431.74

Source: Bahrain Bourse.

Table 17**Number of executed trades***(total for the year)*

	2011	2012	2013	2014	2015
ATS- BHB					
Total number of executed securities trades	11,818	10,168	14,197	16,217	11,286
debt securities	0	0	0	0	0
<i>bonds</i>	0	0	0	0	38
equity	11,818	10,168	14,197	16,217	11,248
other	0	0	0	0	0
Total number of executed derivatives trades	nap	nap	nap	nap	nap

Source: Bahrain Bourse.

Table 18**Value of executed trades***(BD millions, total for the year)*

	2011	2012	2013	2014	2015
ATS- BHB					
Total value of executed securities trades	104.97	110.24	225.87	269.33	113.24
debt securities	0.00	0.00	0.00	0.00	0.00
<i>bonds</i>	0.00	0.00	0.00	0.00	3.26
equity	104.97	110.24	225.87	269.33	109.97
other	0.00	0.00	0.00	0.00	0.00
Total value of executed derivatives trades	nap	nap	nap	nap	nap

Source: Bahrain Bourse.

Table 19**Number of clearing members***(end of year)*

	2011	2012	2013	2014	2015
CSD- BHB					
Total number of clearing members ¹	16	17	17	16	16
<i>central bank</i>	0	0	0	0	0
<i>central counterparties (CCPs)</i>	0	0	0	0	0
<i>banks</i>	7	8	8	7	7
<i>other</i>	9	9	9	9	9
<i>Individuals</i>	4	4	4	4	4
<i>Custodians</i>	5	5	5	5	5
Number of domestic clearing members	13	14	14	13	13
<i>central bank</i>	0	0	0	0	0
<i>central counterparties (CCPs)</i>	0	0	0	0	0
<i>banks</i>	7	8	8	7	7
<i>other</i>	6	6	6	6	6
<i>Individuals</i>	4	4	4	4	4
<i>Custodians</i>	2	2	2	2	2
Number of foreign clearing members	3	3	3	3	3
<i>central bank</i>	0	0	0	0	0
<i>central counterparties (CCPs)</i>	0	0	0	0	0
<i>banks</i>	0	0	0	0	0
<i>other</i>	3	3	3	3	3
<i>Individuals</i>	0	0	0	0	0
<i>Custodians</i>	3	3	3	3	3

¹ The trading members at ATS act as clearing members in CSD.

Source: Bahrain Bourse.

Table 20**Number of contracts and transactions cleared***(total for the year)*

	2011	2012	2013	2014	2015
CSD- BHB					
Total number of contracts and transactions cleared	11,818	10,168	14,197	16,217	11,286
Number of securities transactions cleared	11,818	10,168	14,197	16,217	11,286
debt securities	0	0	0	0	0
<i>bonds</i>	0	0	0	0	38
equity	11,818	10,168	14,197	16,217	11,248
other	0	0	0	0	0
<i>of which: number of repurchase transactions cleared</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
Number of exchange-traded derivatives contracts cleared	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
Number of OTC derivatives contracts cleared	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>

Source: Bahrain Bourse.

Table 21**Value of contracts and transactions cleared***(BD millions, total for the year)*

	2011	2012	2013	2014	2015
CSD- BHB					
Total value of contracts and transactions cleared	104.97	110.24	225.87	269.33	113.24
Value of securities transactions cleared	104.97	110.24	225.87	269.33	113.24
debt securities	0.0	0.0	0.0	0.0	0.0
<i>bonds</i>	0.0	0.0	0.0	0.0	3.3
equity	104.97	110.24	225.87	269.33	109.97
other	0.0	0.0	0.0	0.0	0.0
<i>of which: value of repurchase transactions cleared</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
Value of exchange-traded derivatives contracts cleared	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
Value of OTC derivatives contracts cleared	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>

Source: Bahrain Bourse.

Table 22**Number of direct participants in CSDs***(end of year)*

	2011	2012	2013	2014	2015
SSS System					
Total number of participants	25	26	27	27	28
<i>central bank</i>	1	1	1	1	1
<i>central counterparties (CCPs)</i>	0	0	0	0	0
<i>central securities depositories</i>	0	0	0	0	0
<i>banks</i>	24	25	26	26	26
<i>other</i>	0	0	0	0	1
<i>Memo:</i>					
Indirect participants	16	16	17	17	21
Number of domestic participants					
<i>central bank</i>	1	1	1	1	1
<i>central counterparties (CCPs)</i>	0	0	0	0	0
<i>central securities depositories</i>	0	0	0	0	0
<i>banks</i>	24	25	26	26	26
<i>other</i>	0	0	0	0	1
<i>Memo:</i>					
Domestic indirect participants	14	14	15	15	19
Number of foreign participants					
<i>central bank</i>	0	0	0	0	0
<i>central counterparties (CCPs)</i>	0	0	0	0	0
<i>central securities depositories</i>	0	0	0	0	0
<i>banks</i>	0	0	0	0	0
<i>other</i>	0	0	0	0	0
<i>Memo:</i>					
Foreign indirect participants	2	2	2	2	2
CSD- BHB					
Total number of participants	16	17	17	16	16
<i>central bank</i>	0	0	0	0	0
<i>central counterparties (CCPs)</i>	0	0	0	0	0
<i>central securities depositories</i>	0	0	0	0	0
<i>banks</i>	7	8	8	7	7
<i>other</i>	9	9	9	9	9
<i>Individuals</i>	4	4	4	4	4
<i>Custodians</i>	5	5	5	5	5
Number of domestic participants					
<i>central bank</i>	0	0	0	0	0
<i>central counterparties (CCPs)</i>	0	0	0	0	0
<i>central securities depositories</i>	0	0	0	0	0
<i>banks</i>	7	8	8	7	7
<i>other</i>	6	6	6	6	6
<i>Individuals</i>	4	4	4	4	4
<i>Custodians</i>	2	2	2	2	2
Number of foreign participants					
<i>central bank</i>	0	0	0	0	0
<i>central counterparties (CCPs)</i>	0	0	0	0	0
<i>central securities depositories</i>	0	0	0	0	0
<i>banks</i>	0	0	0	0	0
<i>other</i>	3	3	3	3	3
<i>Individuals</i>	0	0	0	0	0
<i>Custodians</i>	3	3	3	3	3

Sources: Central Bank of Bahrain, Bahrain Bourse.

Table 23**Number of securities held on accounts at CSDs***(end of year)*

	2011	2012	2013	2014	2015
SSS System					
Total number of securities held	36	36	38	37	41
debt securities ¹	36	36	38	37	41
<i>short term paper</i> ¹	29	29	29	29	29
<i>bonds</i> ¹	7	7	9	8	12
equity	nap	nap	nap	nap	nap
other	nap	nap	nap	nap	nap
CSD- BHB					
Total number of securities held (millions)	12,007.5	11,903.2	13,042.4	14,334.6	15,127.4
debt securities	0	0	0	0	0
<i>short-term paper</i>	0	0	0	0	0
<i>bonds</i>	0	0	0	0	53
equity (millions)	12,007.5	11,903.2	13,042.4	14,334.6	15,074.3
other	0	0	0	0	0

¹ Includes Islamic securities

Sources: Central Bank of Bahrain, Bahrain Bourse.

Table 24**Value of securities held on accounts at CSDs***(BD millions, end of year)*

	2011	2012	2013	2014	2015
SSS System					
Total value of securities held	2,004.00	2,139.00	2,943.00	3,003.00	4,140.00
debt securities ¹	2,004.00	2,139.00	2,943.00	3,003.00	4,140.00
<i>short term paper</i> ¹	1,054.00	1,104.00	1,358.00	1,458.00	1,995.00
<i>bonds</i> ¹	950.00	1,035.00	1,585.00	1,545.00	2,145.00
equity	nap	nap	nap	nap	nap
other	nap	nap	nap	nap	nap
CSD- BHB					
Total value of securities held	3,278.42	2,129.78	3,612.33	4,441.59	4,329.61
debt securities	0.0	0.0	0.0	0.0	0.0
<i>short-term paper</i>	0.0	0.0	0.0	0.0	0.0
<i>bonds</i>	0.0	0.0	0.0	0.0	51.7
equity	3,278.42	2,129.78	3,612.33	4,441.59	4,277.91
other	0.0	0.0	0.0	0.0	0.0

¹ Includes Islamic securities

Sources: Central Bank of Bahrain, Bahrain Bourse.

Table 25**Number of delivery instructions processed***(total for the year)*

	2011	2012	2013	2014	2015
SSS System					
Total number of delivery instructions	1,996	2,407	2,626	1,390	8,019
DVP	1,994	2,399	2,619	1,384	8,000
debt securities	1,994	2,399	2,619	1,384	8,000
<i>short-term paper</i>	760	919	868	1,075	1,268
<i>bonds</i>	1,234	1,480	1,751	309	6,732
equity	nap	nap	nap	nap	nap
other	nap	nap	nap	nap	nap
free of payment	2	8	7	6	19
debt securities	2	8	7	6	19
<i>short-term paper</i>	0	3	4	0	0
<i>bonds</i>	2	5	3	6	19
equity	nap	nap	nap	nap	nap
other	nap	nap	nap	nap	nap
CSD- BHB					
Total number of delivery instructions	11,818	10,168	14,197	16,217	11,286
DVP	11,818	10,168	14,197	16,217	11,286
debt securities	0	0	0	0	0
<i>short-term paper</i>	0	0	0	0	0
<i>bonds</i>	0	0	0	0	38
equity	11,818	10,168	14,197	16,217	11,248
other	0	0	0	0	0
free of payment	nap	nap	nap	nap	nap

Sources: Central Bank of Bahrain, Bahrain Bourse.

Table 26**Value of delivery instructions processed***(BD millions, total for the year)*

	2011	2012	2013	2014	2015
SSS System					
Total value of delivery instructions	6,056.21	7,171.13	8,036.51	7,348.50	18,106.32
DVP	6,053.66	7,130.23	8,003.82	7,338.98	18,081.73
debt securities	6,053.66	7,130.23	8,003.82	7,338.98	18,081.73
<i>short-term paper</i>	4,134.4	5,264.0	5,560.9	6,848.2	9,072.6
<i>bonds</i>	1,919.3	1,866.2	2,442.9	490.8	9,009.1
equity	nap	nap	nap	nap	nap
other	0.0	0.0	0.0	0.0	0.0
free of payment	2.55	40.90	32.7	9.5	24.6
debt securities	2.55	40.90	32.7	9.5	24.6
<i>short-term paper</i>	0.0	8.88	20.0	0.0	0.0
<i>bonds</i>	2.55	32.02	12.7	9.5	24.6
equity	nap	nap	nap	nap	nap
other	nap	nap	nap	nap	nap
CSD- BHB					
Total value of delivery instructions	104.97	110.24	225.87	269.33	113.24
DVP	104.97	110.24	225.87	269.33	113.24
debt securities	0.0	0.0	0.0	0.0	0.0
<i>short-term paper</i>	0.0	0.0	0.0	0.0	0.0
<i>bonds</i>	0.0	0.0	0.0	0.0	3.3
equity	104.97	110.24	225.87	269.33	109.97
other	0.00	0.00	0.00	0.00	0.00
free of payment	nap	nap	nap	nap	nap

Sources: Central Bank of Bahrain, Bahrain Bourse.