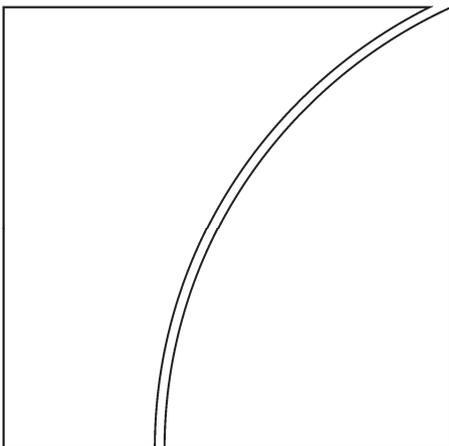


Committee on Payment and Settlement Systems



CPSS – Payment, clearing and settlement systems in Macedonia, FYR, 2013

Prepared by the National Bank of the Republic of Macedonia and
the Committee on Payment and Settlement Systems

October 2013



BANK FOR INTERNATIONAL SETTLEMENTS

This publication is available on the BIS website (www.bis.org).

© *Bank for International Settlements 2013. All rights reserved. Brief excerpts may be reproduced or translated provided the source is cited.*

ISBN 92-9131-900-9 (print)

ISBN 92-9197-900-9 (online)

Foreword

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

The present volume, the first edition of the Red Book for Macedonia, FYR, 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 Macedonia, FYR, both domestically and internationally.

Paul Tucker
Chairman,
Committee on Payment and
Settlement Systems

Dimitar Bogov
Governor
National Bank of the
Republic of Macedonia

Contents

Foreword.....	iii
List of abbreviations.....	vii
Introduction.....	1
1. Institutional aspects.....	2
1.1 The general institutional framework.....	2
1.1.1 Institutions.....	2
1.1.2 Legal framework.....	2
1.2 The role of the central bank.....	3
1.2.1 Payment systems oversight.....	3
1.2.2 Operational role.....	3
1.2.3 Provision of payment and settlement services.....	4
1.2.4 Cooperation with other institutions.....	4
1.3 The role of other private and public sector bodies.....	5
1.3.1 KIBS (Clearing House Klirinski interbankarski sistemi AD).....	5
1.3.2 CaSys International (International Card Systems AD Skopje).....	5
1.3.3 Securities and Exchange Commission of the Republic of Macedonia (SEC).....	5
1.3.4 Treasury operations and the Ministry of Finance.....	5
1.3.5 Treasury operations of the Health Insurance Fund of Macedonia.....	6
1.3.6 Banking Association.....	6
1.3.7 Commission for Protection of Competition.....	6
1.3.8 Consumers' Organisation of Macedonia (OPM).....	7
2. Payment media used by non-banks.....	7
2.1 Cash payments.....	7
2.2 Non-cash payments.....	7
2.2.1 Transaction accounts.....	7
2.2.2 Credit transfers.....	8
2.2.3 Cheques.....	9
2.2.4 Card payments.....	9
2.2.5 Automated teller machines.....	9
2.2.6 EFTPOS infrastructure.....	10
2.3 Recent developments.....	10
3. Payment systems in Macedonia, FYR.....	10
3.1 General overview.....	10
3.2 Large-value payment system.....	11

3.2.1	Macedonian Interbank Payment System (MIPS)	11
3.3	Retail payment systems	17
3.3.1	Clearing House Klirinski interbankarski sistemi AD Skopje	17
3.3.2	International Card Systems AD Skopje	20
4.	Securities trade and settlement systems	22
4.1	Trade	23
4.1.1	Macedonian Stock Exchange AD Skopje.....	23
4.1.2	Central Securities Depository AD Skopje.....	23
4.1.3	Authorised participants in the securities market.....	24
4.1.4	Over-the-counter market	24
4.2	Settlement	25
4.2.1	Main features	25
4.2.2	Securities accounts	26
4.2.3	Risk management	26
4.2.4	Over-the-counter settlement	26
4.2.5	Monetary policy operations and settlement systems	27

List of abbreviations

ATM	automated teller machine
BEST	Bourse Electronic System for Trading
CaSys	International Card Systems AD Skopje
CSD	Central Securities Depository AD Skopje
DNS	deferred net settlement
DVP	delivery versus payment
FIFO	first in, first out
EACHA	European Automated Clearing House Association
HIFM	Health Insurance Fund of Macedonia
KIBS	Clearing House Klirinski interbankarski sistemi AD Skopje
MIPS	Macedonian Interbank Payment System
MKD	Macedonian denar
MSE	Macedonian Stock Exchange AD Skopje
NBRM	National Bank of the Republic of Macedonia
NPSC	National Payment Systems Council of the Republic of Macedonia
OPM	Consumers' Organisation of Macedonia
OTC	over-the-counter
PHI	public health institution
POS	point of sale
RTGS	real-time gross settlement
SEC	Securities and Exchange Commission of the Republic of Macedonia
SWIFT	Society for Worldwide Interbank Financial Telecommunication

Introduction

In 2001, one of the most complex reforms was conducted in Macedonia, FYR, namely the reform of the national payment system. The reform was governed by a Steering Committee managed by the Ministry of Finance and comprising experts from the Ministry, the National Bank of the Republic of Macedonia (NBRM), banks and the Payment Operations Bureau,¹ as well as eminent professors of the Faculty of Economics in Skopje.

With the reform, a new payment system was built on the model of payment systems in advanced market economies. The new payment system encouraged competition among banks and created the basis for the introduction of new banking products that increased the efficiency of banks and the banking system in general. This setup on market principles in the field of payment services prompted the introduction of new information technology advances in banking. The reform of the payment system also contributed to greater efficiency in the central bank's conduct of monetary policy.

The following payment and securities settlement systems operate in the country:

- Macedonian Interbank Payment System (MIPS);
- Clearing House Klirinski interbankarski sistemi AD (KIBS);
- CaSys International;
- banks' in-house systems; and
- the securities settlement system (CSD).

For cross-border payments, correspondent banking arrangements of domestic banks with foreign banks are used for commercial payments, and correspondent arrangements of the NBRM with foreign central or commercial banks are used for payments of government agencies and budget entities.

The NBRM acts as operator of MIPS and settlement agent, providing participants with accounts for settlement in central bank money and with liquidity. MIPS is a real-time gross settlement (RTGS) system for large-value and urgent payments in MKD, including payments related to NBRM monetary policy operations.

KIBS, which is owned by the banks, is a multilateral deferred net settlement system for small-value payments up to the amount of MKD 1,000,000.

CaSys International is a payment system for multilateral deferred net settlement of payments with domestic brands of payment cards, and is operated by International Card Systems AD Skopje.

Banks' in-house systems are used for payments among customers of the same bank (intrabank payments).

Central Securities Depository (CSD) is an authorised securities depository and is simultaneously the owner and operator of the securities settlement system.

The NBRM and the Securities and Exchange Commission of the Republic of Macedonia (SEC) are legally authorised regulators of the payment, clearing and settlement infrastructure in Macedonia, FYR.

¹ The Payment Operations Bureau, a state monopoly, was the only institution for carrying out payments, concentrating different risks of a financial nature. The institution was a legacy of the socialist period in the states that emerged from the disintegration of former Yugoslavia.

Most non-cash payments in Macedonia, FYR, take the form of credit transfers. Direct debits have not been used to date; however, in order to take advantage of the benefits that this payment instrument offers, a project is under way to introduce an electronic direct debit scheme in accordance with the standards of the Single Euro Payments Area (SEPA standards). The guaranteed cheque as a non-cash payment instrument was abolished by administrative decision in 2007, and as an alternative a massive use of payment cards (credit and debit) began. Besides using international card brands, some banks have issued own-branded domestic payment cards. Of particular interest is the introduction of innovations in small payments, such as: online payment with a digital signature, online sales with credit cards supported by the security services MasterCard SecureCode and Verified by Visa, payment of bills with credit cards online and at ATMs, and payment of instalments at POS terminals.

Given the strategic orientation of Macedonia, FYR, towards membership of the European Union, the coming years will see a process of amending and completing the legal framework for payment systems, ie the implementation of EU directives in this domain. The country has candidate status for membership of the European Union, with which it has already started a high-level accession dialogue.

1. Institutional aspects

1.1 The general institutional framework

1.1.1 Institutions

The **National Bank of the Republic of Macedonia (NBRM)** is the central bank of Macedonia, FYR. The legal basis for its operation is contained in the Constitution of the Republic of Macedonia, which stipulates that the NBRM is a bank of issue which is autonomous and responsible for the stability of the currency, monetary policy and the general liquidity of payments in the country and abroad. The independence, tasks and objectives of the NBRM are regulated in detail in the Law on the National Bank, which entered into force on 17 December 2011. One of the tasks of the NBRM under the legislation is oversight of the security, stability and efficiency of payment, settlement and clearing systems, which makes supervision of payment systems one of the instruments contributing to financial stability.

The **Securities and Exchange Commission of the Republic of Macedonia (SEC)** is an autonomous and independent regulatory body exercising public powers established by the Law on Securities. The SEC has taken measures to implement the Law on Securities, the Law on Investment Funds, the Law on Takeover of Joint Stock Companies and all other laws under its jurisdiction. At the same time, the Commission adopts and implements the by-laws based on the laws under its jurisdiction. According to these by-laws, the SEC regulates and controls securities transactions in Macedonia, FYR. Within its statutory responsibilities and powers, the SEC ensures the lawful and efficient functioning of the securities market and protection of the rights of investors in order to continuously strengthen public confidence in the institutions operating in the country's securities market.

1.1.2 Legal framework

The legal framework governing payment operations, clearing and securities settlement systems in Macedonia, FYR, is defined in the Law on Payment Operations and the Law on Securities.

The powers of the NBRM in the field of payment systems operation are defined in the Law on the National Bank and the Law on Payment Operations. According to these laws, the NBRM is an institution conducting oversight over payment, clearing and settlement systems and it is

authorised to prescribe standards for the payment systems, which also need to be internationally accepted standards. In the process of monitoring compliance with the standards, the NBRM issues regulations that are mandatory for the payment system operator.

The powers of the SEC in the field of securities transactions are defined in the Law on Securities. In the process of oversight of the securities settlement systems and overall securities transactions, the SEC issues licences, approvals and consents. The SEC also takes measures and makes decisions to protect the interests of persons who own or invest in securities (for details see Section 4.1.1).

1.2 The role of the central bank

1.2.1 Payment systems oversight

The NBRM has an explicit mandate to conduct oversight of the payment systems under the Law on the National Bank (Official Gazette 158/2010) and the Law on Payment Operations (Official Gazette 113/2007, 22/2008, 159/2008, 133/2009, 145/2010, 35/2011 and 11/2012). Pursuant to the Law on Payment Operations, the NBRM conducts oversight of payment systems in Macedonia, FYR, and the manner and methodology of oversight are prescribed by the NBRM Council. The main objective of the oversight to limit the risks associated with the functioning of payment systems in the country and protect against possible “domino effects” that may occur in case one or more participants in the payment system face credit or liquidity problems, ie to promote the sound and efficient functioning of payment systems in the country.

The NBRM conducts oversight of the following payment systems:

- MIPS as a single system for real-time gross settlement through which large and urgent payments are processed;
- the KIBS deferred net settlement system for processing small-value payments; and
- the CaSys International system for deferred net settlement processing of card payments.

The objectives of the oversight include: monitoring of these systems, assessment against internationally accepted standards for payment systems and, if necessary, issuing recommendations for compliance with these standards. According to a Decision of the NBRM, the CPSS Core Principles for systemically important payment systems are accepted as international standards for payment systems. One of the strategic objectives of the NBRM is to follow internationally accepted standards for payment system operations, and to that end it is planned to adopt the CPSS/IOSCO principles for financial market infrastructures published in April 2012.

1.2.2 Operational role

The NBRM is the owner and operator of the MIPS system for payments over MKD 1 million and urgent payments in MKD, with settlement being made on a gross basis, in real time. MIPS handles payments between the NBRM and banks arising from monetary policy operations and the delivery and withdrawal of cash, payments between banks based on transactions on the money market and other in-house payments, as well as large and urgent payments by banks’ customers. The system also handles settlement of net claims and liabilities arising from other payment systems for which the NBRM acts as settlement agent, as well as payments associated with the domestic settlement systems for securities in real time.

The MIPS system is managed by the NBRM and its operation is governed by the Rules for Operation of MIPS, which are publicly available on the NBRM website. The rules prescribe

the conditions for participation in the payment system, the rights and obligations of participants, the standard and use of messages, the method of settlement and the availability of the system.

Besides the above, pursuant to the Law on the National Bank, the NBRM performs banking operations for the government of Macedonia, FYR, acting as government agent for payments abroad.

Since January 2009, the NBRM has been acting as settlement agent of MasterCard for this brand of cards issued by domestic banks for payments in local currency.

1.2.3 Provision of payment and settlement services

The Law on the National Bank authorises the NBRM to maintain settlement accounts for banks and other financial market participants as part of its activities for accomplishing the tasks that arise from monetary policy. These settlement accounts are used for transactions in the NBRM, such as depositing and withdrawing cash, and they are a prerequisite for participation in MIPS. Maintaining accounts in the NBRM is free of charge and the balances are non-interest bearing. At the end of 2012, the number of accounts in the NBRM totalled 113.

The NBRM defines the general conditions, the conditions for opening an account and the conditions for access to the system. Participants in the system, in principle, are professional market participants subject to supervision in the area of combating money laundering and the financing of terrorism. Participants should have an appropriate technological infrastructure for the exchange of payment information with the NBRM.

The NBRM opens accounts for banks, institutions for clearing and settlement of securities, public authorities, foreign central banks and international organisations.

1.2.4 Cooperation with other institutions

As overseer

In the process of overseeing the payment systems and the securities settlement system, the NBRM and the SEC cooperate by exchanging information on the manner and methodology of assessing the systems' compliance with standards, at joint meetings on an ad hoc basis.

As catalyst

In 2004, by means of an Agreement between the Minister of Finance, the NBRM Governor and the President of the Banking and Insurance Association of the Economic Chamber of the Republic of Macedonia, the National Payment Systems Council of the Republic of Macedonia (NPSC) was established. The NPSC serves as a forum for cooperation in both a regional and a broader international context in the field of payment systems. The NPSC aims, through coordinated and organised participation by the signatories to the Agreement, to contribute to the stability, reliability and efficiency of the country's payment and settlement systems. The work of the NPSC consists in bringing initiatives and submitting proposals and recommendations to regulatory bodies and payment services providers for improvement of the institutional framework, payment infrastructure and payment instruments. The NPSC follows international requirements, as defined by the Core Principles for systemically important payment systems and international practices, as well as the needs and opportunities at the national level. The president of the NPSC is a senior manager in the NBRM and the deputy is a senior manager in the Ministry of Finance. Meetings of the NPSC are held quarterly. Since 2011, the work of the NPSC has included representatives of the SEC and the clearing institutions. The overall administrative and logistical support to the NPSC is provided by the NBRM.

1.3 The role of other private and public sector bodies

1.3.1 KIBS (*Clearing House Klirinski interbankarski sistemi AD*)

Clearing House Klirinski interbankarski sistemi AD Skopje (KIBS) operates a deferred net settlement (DNS) system for processing small-value payments up to MKD 1 million on a multilateral basis. KIBS was incorporated as a joint stock company in May 2001, founded by 16 of the 20 banks then operating in the territory of Macedonia, FYR. Presently, KIBS is owned by 14 banks. The legal basis for the functioning of KIBS is the Law on Payment Operations.

According to the Law on the National Bank, the NBRM is authorised to oversee the safety, soundness and efficiency of payment, settlement and clearing systems. As a DNS system operator, therefore, KIBS is subject to oversight by the NBRM in a manner specified by the NBRM Council.

For details on the operation of KIBS, see Section 3.3.1.

1.3.2 CaSys International (*International Card Systems AD Skopje*)

In the framework of the systems for interbank settlement of small-value payments, CaSys International is a multilateral DNS system for payments with domestic brands of payment cards. The system is managed by International Card Systems AD Skopje, which is jointly owned by a number of private shareholders and the state. Also, nationwide, CaSys International processes all transactions by legal entities and individuals using domestic payment cards issued and served by the 12 domestic banks that are signatories to the Multilateral Agreement on mutual acceptance of domestic cards. Simultaneously, CaSys International is a centre for processing payments on the basis of transactions with domestic and international payment cards. The legal basis for the functioning of CaSys is the Law on Payment Operations.

The Law on the National Bank empowers the NBRM to oversee the safety, soundness and efficiency of payment, settlement and clearing systems. Accordingly, as a multilateral DNS system for payment card transactions, CaSys International is subject to oversight by the NBRM in a manner specified by the NBRM Council.

1.3.3 Securities and Exchange Commission of the Republic of Macedonia (SEC)

The Securities and Exchange Commission of the Republic of Macedonia is an autonomous and independent regulatory body (founded in 1992 by government decision) exercising public powers under the Law on Securities, the Law on Investment Funds, the Law on Takeover of Joint Stock Companies and all by-laws deriving therefrom. Within its statutory responsibilities and powers, it ensures the efficient functioning of the securities market in conformity with the law, and protects the rights of investors in order to permanently strengthen public confidence in the country's securities market institutions.

The SEC performs the following functions: it controls the complete documentation of securities issuers; takes actions and makes decisions to protect the interests of securities owners or investors; issues licences and approvals; regulates the trading of securities on the markets; monitors and controls the operations of participants and the functioning of the securities market; determines standards of competition among securities market participants; approves the appointment of managers of brokerage houses, the stock exchange, depositories, investment funds management companies and investment funds; and collaborates with other institutions in the country.

1.3.4 Treasury operations and the Ministry of Finance

By defining the Treasury at the Ministry of Finance as a separate payment services provider, the new Law on Payment Operations, which entered into force on 1 January 2008, resolved

the problem of its anomalous status in the payment system. Although the Law on Payment Operations of 2001 did not provide for it, in managing the Treasury account with the NBRM the Treasury assumed the role of payment services provider for the state budget and state budget entities. Moreover, using specially prescribed payment instruments, it performed collection of revenues and payment of expenditures for state budget users, executed official orders for enforced collection from the Treasury account, and notified state budget users about the turnover and the balance on their accounts.

According to the Budget Law, the term Treasury account has been defined as an account or system of accounts managed by the Treasury through which all funds received are booked and all outpayments from the budgets of the central government, municipalities and other institutions are made. For the purpose of managing these budgetary funds as well as all other government funds, the Ministry of Finance has opened a Treasury account with the NBRM. Treasury operations are governed in detail by instructions issued by the Minister of Finance. The collection of revenues for the Treasury account is made through MIPS or KIBS, while payment of expenditures from the Treasury account is made via MIPS only.

1.3.5 Treasury operations of the Health Insurance Fund of Macedonia

On 1 January 2011, the Health Insurance Fund of Macedonia (HIFM) introduced a treasury system for monitoring and controlling payments of public health institutions (PHIs). The HIFM Treasury (independent of the Treasury in the Ministry of Finance) has the objective of ensuring the efficient, economical and targeted use of health insurance finances. It also provides timely and accurate data on the cash flows of every PHI, and ensures the transparency of all PHI financial activities. The HIFM Treasury manages the health treasury account and other PHI accounts. Through this system of accounts, all inflows and outflows under the PHI financing budget and the annual revenue and expenditure plans of PHIs are recorded and controlled. Transactions of the HIFM Treasury are settled in MIPS and KIBS.

1.3.6 Banking Association

The Banking Association was founded in 1970 as a professional organisation operating within the framework of the Economic Chamber of Macedonia. Members of the Association are financial organisations in Macedonia, FYR – banks, securities companies, insurance companies, leasing companies, savings houses and fund managers. The Association operates in accordance with its organisational and operating rules. These rules define the basic goals and tasks of the Association, such as considering issues related to improving operations, resolving current problems, carrying out promotional activities, improving the domestic business climate, encouraging the implementation of European rules and standards, considering and giving opinions on draft laws and other regulations, and cooperating with other associations, regional chambers, etc. The Banking Association is a founder member of and active participant in the National Payment Systems Council.

1.3.7 Commission for Protection of Competition

The Commission for Protection of Competition is responsible for implementing the Law on Protection of Competition adopted in January 2005. The application of competition rules is aimed at establishing a market in which economic operators participate on equal terms, and their market position should be evaluated primarily on the basis of the quality of the products and services they offer. In this sense, the task of competition law is to prevent certain practices and business activities on the market that could put certain economic agents in a position that is unjustifiably more favourable than that of other economic agents, and could thereby jeopardise free competition among enterprises. Core responsibilities of the Commission are: controlling the application of the provisions and regulations adopted pursuant to the Law on Protection of Competition; monitoring and analysing the market situation to the extent necessary for the development of free and effective competition; and conducting procedures and taking decisions according to the provisions of the law.

1.3.8 Consumers' Organisation of Macedonia (OPM)

The Consumers' Organisation of Macedonia (OPM) is an independent, non-governmental, non-party organisation, founded in 1996, which actively cooperates with Consumers International (CI) based in London, the European Consumer Organisation (BEUC) and consumer organisations regionally and worldwide. The OPM constantly strives to represent the interests of consumers, to raise public awareness by informing and educating citizens/consumers, and to help formulate and implement appropriate legislation and a consistent consumer policy. The OPM works to strengthen consumer rights by ensuring that safe, environmentally friendly and high-quality products and services are available on the market, that consumers are informed and educated on the proper choice of products and services, and that they are compensated for violations of their rights. The OPM participated in the consultation process setting strategic directions for the development of the Macedonian payment system over the period 2013–17.

2. Payment media used by non-banks

2.1 Cash payments

In accordance with the Law on the National Bank, the NBRM is the only institution authorised to issue and distribute banknotes and coins in Macedonia, FYR. From monetary independence in 1992 to 2005, the production of banknotes and coins was organised through a legally authorised printing house and mint in the country. Following the legislative changes in 2005, the NBRM has put the production of paper money out to international tender, while the production of coins has been organised in its own mint.

The process of distribution, ie the supply/withdrawal of banknotes and coins to/from the banks, is handled by the NBRM through six vaults dispersed throughout the national territory.

Legal tender in Macedonia, FYR, is the Macedonian denar (MKD), which consists of 100 deni. For cash payments in Macedonia, FYR, both banknotes and coins are used.

Macedonian banknotes are in circulation in denominations of MKD 5,000, 1,000, 500, 100, 50 and 10, while coins circulate in denominations of MKD 50, 10, 5, 2 and 1, and 50 deni.²

The NBRM makes timely and regular issues of cash in all denominations for the smooth execution of payment transactions.

Cash is widely used as a payment instrument in Macedonia, FYR. However, no precise statistics are available to determine the number and value of transactions made with cash. Cash withdrawals are mainly carried out from bank counters and ATMs.

On 31 December 2012, the issued cash in circulation amounted to MKD 23,979 million, compared with MKD 19,893 million in 2007.

2.2 Non-cash payments

2.2.1 Transaction accounts

In view of the wide network of branches and branch offices of the commercial banks in Macedonia, FYR, in which payment services are offered, the Macedonian population has easy access to bank accounts. All firms and the vast majority of individuals have at least one

² The 50 deni coins were being abolished by a Decision of the NBRM Council, and ceased being legal tender as of 1 January 2013.

transaction account. Payment of wages in Macedonia, FYR, is made exclusively into transaction accounts. Non-cash payment transactions are generally made using the balances on these accounts.

All transaction accounts in Macedonia, FYR, are recorded in the Single Register of Transaction Accounts (ERTS) maintained at KIBS. Under the Law on Payment Operations (Article 5), payments may be executed only through transaction accounts registered in the ERTS. The ERTS serves for the blocking of accounts in cases of enforced collection. Where a lack of funds prevents full recovery of the amount subject to the enforced collection decision, the payment service provider enforcing the decision collects the amount available and blocks the debtor's account. At the same time, it advises all other payment service providers via the ERTS that they must not make payments using funds on the debtor's denar and/or foreign currency accounts until the complete enforcement of the decision, except for orders to transfer funds to the account of the payment service provider enforcing the decision.

In 2007, a total of 3,477,522 accounts of natural and legal persons were reported in the ERTS, of which 9,333 were available to pay online and 100,156 were available online only for statements. In 2012, a total of 3,516,744 accounts of natural and legal persons were reported in the ERTS, of which 76,429 were available to pay online and 313,293 were available online for statements only.

2.2.2 Credit transfers

Most non-cash payments in Macedonia, FYR, take the form of credit transfers, whereby the payer (debtor) instructs the bank to transfer funds from their account to that of the payee (creditor). With 55.60 million transactions or 60.45% in 2012 (2007: 31.78 million transactions or 67.63%), credit transfers have the highest share in the total number of domestic payment transactions. The dominance of credit transfers is more evident in the total value of executed payment transactions: in 2012 they accounted for MKD 3,052.82 billion or 96.37% (2007: MKD 1,967.74 billion or 97.30%).

Credit transfers in the Republic of Macedonia are made through the following systems:

- Macedonian Interbank Payment System (MIPS), the RTGS system for processing high-value payments and urgent interbank payments;
- Clearing House Klirinski interbankarski sistemi AD (KIBS), the DNS system for processing small-value payments; and
- banks' in-house systems for payments between customers of the same bank.

Large-value payments are mainly made by financial institutions, large companies and government institutions, and are generally executed electronically on the RTGS principle. Small-value payments are mainly made by individuals, small businesses and other economic agents. With the development of telecommunications and computer technology, electronic payment has become increasingly frequent also for small-value payments.

In all payment instruments for interbank transfers, the credit transfer initiator has the option of determining through which payment system the payment will be made.

In Macedonia, FYR, paper orders (forms with defined elements) and electronic orders (online payment) are used for non-cash payments. Payment instruments in electronic form obligatorily contain the same elements as paper payment instruments, but with a mandatory electronic signature. With the development of technology, especially the growth in internet usage, and with massive promotion by the banks, the country has seen an upward trend in the use of electronic banking.

2.2.3 Cheques

Guaranteed cheques were abolished as a payment instrument in Macedonia, FYR, by administrative decision in 2007. In contrast, although there is a legal basis for non-guaranteed cheques as a payment instrument, they are not used.

The abolition of guaranteed cheques was designed to support banks' financial consolidation by lowering their costs. It also had the effect of stimulating citizens' use of payment cards (credit and debit), increasing standardisation and efficiency in the development of modern payment instruments.

2.2.4 Card payments

Credit cards

Traditionally, Macedonian consumers make little use of credit cards. In the last few years, most banks have reported offering more credit cards free of the annual charge and with low usage fees and commissions, thus increasing the usage of these cards.

At the end of 2012, 350,580 credit cards issued by commercial banks were in circulation, compared to 178,630 in December 2007. The volume and value of credit card transactions increased in parallel, from 2.39 million transactions worth MKD 6.42 billion in 2007 to 6.34 million transactions worth MKD 13.52 billion in 2012.

Macedonian consumers may choose from among a variety of brands of credit cards issued by commercial banks, such as MasterCard, Visa, American Express and Diners Club, that offer a wide range of cards for both individuals and commercial agents (business cards).

Some banks in Macedonia issue only their own credit cards, which are not internationally accepted brands, but own-brand domestic cards.

Debit cards

Debit cards are the most widely used payment cards in Macedonia, FYR.

As of December 2012, there were 1,156,562 debit cards in circulation, ie 76.7% of the total number of issued payment cards in circulation. The volume and value of debit card transactions increased steeply from 6.38 million transactions worth MKD 24.85 billion in 2007 to 30.03 million transactions worth MKD 101.34 billion in 2012.

Some banks in Macedonia, FYR, issue their own debit cards that bear no internationally approved brand. They are merely domestic cards branded by the card-issuing bank.

The dominance of debit cards in the total number of cards in circulation owes to the abolition of guaranteed cheques and the fact that Macedonian citizens use them to draw funds from their transaction accounts, to which their wages and pensions are credited.

Retail trade cards

Petrol companies and retail chains issue their own cards, but these are valid only at their particular outlets. Customers normally receive a monthly statement of their purchases.

2.2.5 Automated teller machines

All Macedonian banks except one have their own ATM network. In December 2012, 852 ATMs were in operation throughout the national territory, up sharply from 529 in 2007. Most ATMs accept Visa and MasterCard/Maestro cards, and a smaller number accept Diners Club and/or American Express cards.

Domestic branded cards are accepted not only at the issuer's own ATMs, but also by the ATM networks of other banks in the country. Debit cardholders are usually not charged for drawing cash from the card issuer's ATM network, but pay a certain commission for drawing cash from an ATM of another bank. Cash withdrawals using credit cards are usually subject

to a commission, the rate of which depends on whether cash is drawn using an ATM of the card-issuing bank or another bank.

Most Macedonian banks have passed EMV certification by international payment organisations Visa and MasterCard, and some ATMs (of larger banks) also have anti-skimming devices and security cameras.

Besides the common functions of cash withdrawals and balance checks, in the past two years some of the leading banks in Macedonia, FYR, have introduced non-cash transactions using ATMs:

- cell phone prepaid top-ups, offered by the ATM networks of three banks;
- payment of utility bills, offered by the ATM network of one bank;
- funds transfers between accounts and monthly credit payments, offered by the ATM network of one bank; and
- short statement of credit card transactions, offered by the ATM network of one bank.

Some banks are evidently promoting non-cash bank operations at ATMs, based on their 24/7 operability and the possibility to earn additional service fees (prepaid top-up and payment of utility bills).

2.2.6 EFTPOS infrastructure

Most of the POS terminals in Macedonia accept Visa and MasterCard/Maestro, while POS terminal networks owned by larger Macedonian banks also accept Diners, American Express and some other co-branded cards (that can be used at the retailer's terminals), besides Visa and MasterCard/Maestro. Some Macedonian banks also offer interest-free instalment plans for POS transactions made using credit cards issued by them. The number of POS terminals has increased rapidly, from 17,884 in 2007 to 33,267 in 2012.

Almost the entire POS terminal network in Macedonia, FYR, has been EMV certified, ie for transactions where both the card and the POS terminal are EMV certified, demonstrating the banks' commitment to making non-cash card transactions secure.

Merchants cannot pay out cash through their POS terminals (ie there is no cash-back facility).

2.3 Recent developments

To date, direct debits have not yet been introduced in the Macedonian payment system. To take advantage of the benefits offered by this payment instrument, a project for introducing an electronic direct debit scheme under SEPA standards is under way. The project is being conducted by the electronic direct debit working group set up by the NPSC, together with KIBS (as clearing institution responsible for implementation of the direct debit scheme) and the Banking Association, and in cooperation with EACHA (see also Section 3.3.1.7).

3. Payment systems in Macedonia, FYR

3.1 General overview

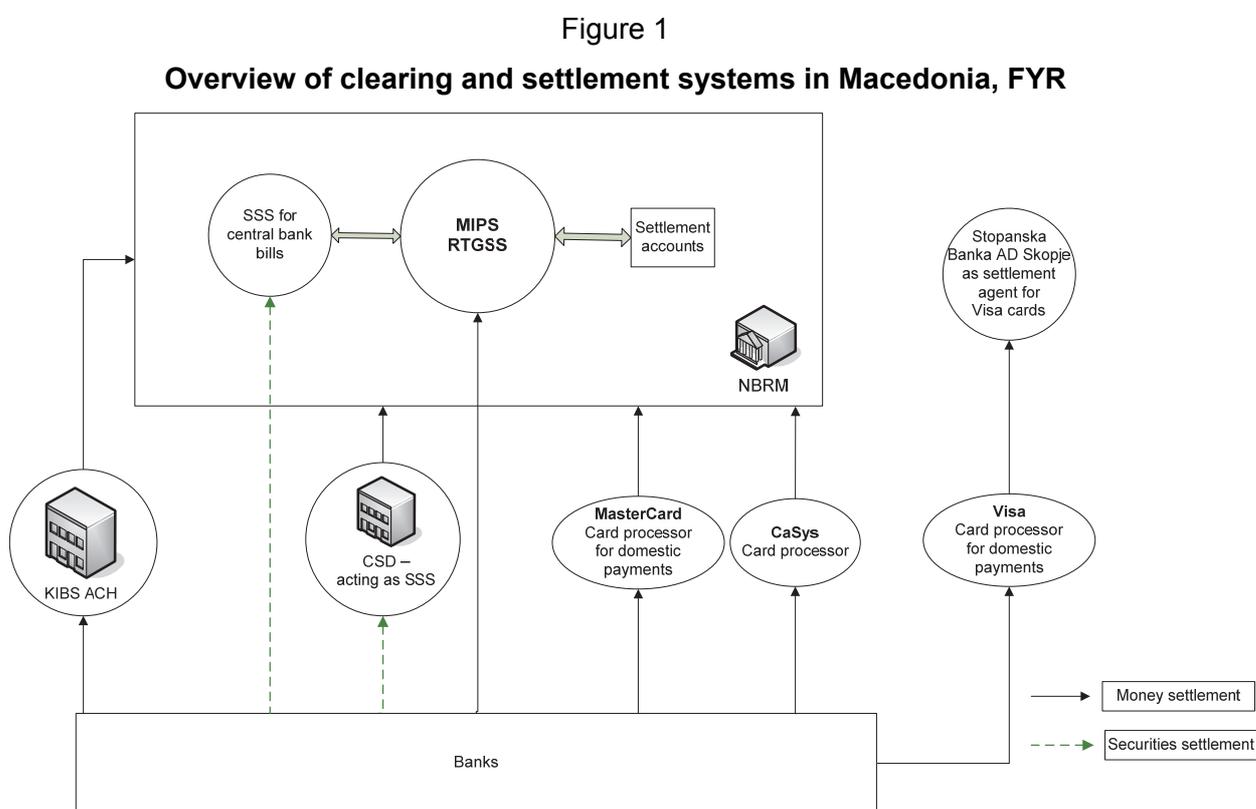
Non-cash payments among customers of the same bank are processed within the bank (in-house payments), and interbank non-cash payments are processed through the following interbank payment systems:

- Macedonian Interbank Payment System (MIPS);

- Clearing House Klirinski interbankarski sistemi AD (KIBS);
- CaSys International.

The above systems are domestic currency payment systems.

Figure 1 presents non-cash payment links among Macedonian clearing and settlement systems.



The cash leg of the securities transactions processed via CSD is settled via MIPS.

Concerning MasterCard payments, MasterCard carries out the clearing, and the settlement of net positions is effected via MIPS.

Concerning Visa payments, Visa carries out the clearing, and the settlement of net positions is effected via Stopanska Banka AD Skopje.

3.2 Large-value payment system

3.2.1 Macedonian Interbank Payment System (MIPS)

3.2.1.1 Institutional framework

The NBRM is owner and operator of MIPS, which is a real-time gross settlement (RTGS) system. MIPS was the first payment system to be commissioned in Macedonia, FYR (July 2001). The NBRM manages the system and acts as settlement agent, and also defines the MIPS operational rules accepted by participants when entering into a MIPS membership agreement.

MIPS is governed by the Law on Payment Operations, which specifies that the processed payments are final and irrevocable. Macedonian regulations recognise no “zero-hour rule” that would affect the validity of transaction orders in case of bankruptcy of a participant.

The rights and obligations of the NBRM and system participants are defined in the Law on Payment Operations, and regulated in more detail in the MIPS Operating Rules and the respective documentation derived from these rules. The NBRM is allowed to amend the MIPS operating rules and, if no objections are lodged within seven days, such amendments become final. For their part, participants may propose amendments to the rules, which then have to be approved by the NBRM.

MIPS is the key system through which the NBRM conducts its monetary policy. MIPS is a systemically important payment system, and according to the Law on Payment Operations and bylaws, it has to comply with the internationally accepted payment system standards.³

In 2012, 4,930,849 transactions were processed via MIPS, totalling just under MKD 2,563 billion. The average value per transaction was MKD 519,847.

3.2.1.2 Participation

Under the regulations, only Macedonian-domiciled banks that are subject to NBRM supervision may participate in MIPS. As well as the NBRM, other eligible participants are brokerage houses, clearing systems, the treasury system and other non-bank institutions under an agreement with the NBRM.

To be included in MIPS, potential participants need to connect to the NBRM application. As required by the MIPS Operating Rules, candidate participants must notify the bank identification code to be used in the system, comply with technical standards and MIPS connection requirements, indicate the name of the officer responsible for the MIPS system and the MIPS security officer, and enter into a binding agreement with the NBRM whereby they accept and commit to adhere to the MIPS Operating Rules.

Following the merger of two commercial banks in October 2012, MIPS has 24 participants, of which 17 (previously 18) are Macedonian-domiciled banks and seven are non-bank institutions (clearing and settlement institutions, government-related institutions, etc).

3.2.1.3 Types of transactions

Generally, MIPS is a payment system for large-value payments and urgent payments in MKD.

Three categories of payments are executed via MIPS:

- (1) customer-related payments (sender and receiver are non-banks);
- (2) bank-to-bank payments (both parties are banks or MIPS participants); and
- (3) service payments (where a third party such as an SSS, ACH or card processor is allowed to debit the account of a MIPS participant and to credit the amount to another MIPS participant's account).

In 2012, an average total of 19,802.61 transactions for a value of around MKD 10.3 billion were settled daily in MIPS.

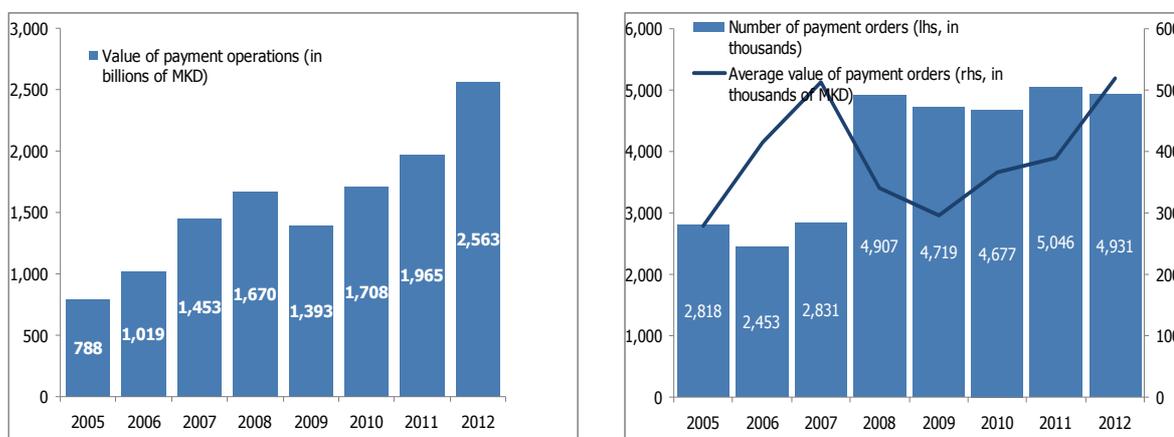
In 2012, the peak daily transaction volume settled through MIPS was 57,983 transactions, for a value of approximately MKD 67.6 billion. The peak daily transaction value in 2012 was approximately MKD 77.1 billion (38,536 transactions).

³ The Macedonian Interbank Payment System of the National Bank of the Republic of Macedonia, as single payment system in the country that executes and settles large-value payment transactions and settles payment transactions from other payment systems and financial market transactions, is deemed to be a systemically important payment system in Macedonia, FYR.

Chart 1 presents additional statistics for MIPS operations in the period 2005–12.

Chart 1

Indicators for payment operations via MIPS



Source: National Bank of the Republic of Macedonia.

According to the MIPS concentration index (Table 1), the five banks with the largest shares of traffic by volume accounted for 20% of the total number of transactions in 2012, while the five banks with the largest shares by value accounted for 39% of the total value of transactions.

Table 1

MIPS concentration index for 2012

	Number of transactions	Value of transactions (in billions of MKD)
Five banks ¹	982,944	1,007
Share (in %)	20	39
Total	4,930,849	2,563

¹ Banks with the largest share in the volume and value of transactions respectively.

Source: National Bank of the Republic of Macedonia.

3.2.1.4 Operation of the system and settlement procedures

Real-time gross settlement system

MIPS is an RTGS system. Unlike the deferred net settlement systems where incoming and outgoing payments are accumulated and the net amount is settled irrevocably and finally within a predetermined time period, MIPS settles each transaction individually, irrevocably and finally, on a gross basis, in real time.

Account management

MIPS payments are settled in central bank money using participant settlement accounts held at the NBRM (see also Section 3.2.1.5).

Connectivity

There are three ways for participants to connect to MIPS:

- Via SWIFT: the participant must be a SWIFT member and be connected to the SWIFT telecommunication network through a permanent link. The participant needs to indicate the logical terminal to be used for MIPS, to enclose evidence of connection to SWIFT via permanent link and to exchange authorisation keys with the NBRM BIC code for MIPS (used by 8% of participants).
- Via IP VPN MPLS and ISDN lines: the participant needs to provide one BIC code, at least one logical terminal and one registered user for each logical terminal, and use a proper communication channel and defined protocol, hardware and software (used by 72% of participants).
- Via direct link (LAN) and ISDN lines: the participant needs to provide one BIC code, at least one logical terminal and one registered user for each logical terminal, and use a proper communication channel and defined protocol, hardware and software (used by 20% of participants).

Process sequence of a settlement day

MIPS is available to participants every working day, ie excluding Saturdays, Sundays and holidays declared to be non-working days. The list of MIPS non-working days is posted on the NBRM official website. MIPS starts operating at 07:30 and ends at 17:30, according to the timetable defined in the MIPS Operating Rules. MIPS working hours may be extended on demand of one participant or more, by not more than 60 minutes, except in cases of systemic problems, when the extension may be longer. Payments that enter the system outside the specified schedule are rejected, triggering an error message.

Under the schedule, user payments are executed from 08:00 to 16:30. Liquidity creation payments are bank-to-bank payments, made on behalf and for account of the transfer order-issuing bank. For these payments, the system is open until 17:00. Liquidity credit payments issued by the NBRM may be executed until 17:05.

MIPS is available in the following intervals for other systems' settlements:

1. For CaSys (card processor) from 09:00 to 11:00
2. For CSD from 10:00 to 11:00
3. For MasterCard from 11:00 to 15:30
4. For KIBS from 14:30 to 15:30

Settlement algorithm

When sending transfer messages, the participant may set various priority levels. Higher-priority messages are processed before those with lower priority. Within priority levels, transfer messages are processed on a FIFO basis. The participant may change the priority level only while the transfer message is queuing.

Transfer messages received by MIPS are executed only if there are sufficient funds on the participant's account and if there are no transfer messages with equal or higher priority in the queue. Any unexecuted transfer messages are placed in the queue.

The NBRM initiates a procedure for settlement of queued messages by means of netting in the following cases:

- where the first payment messages of two or more participants have each been queued for longer than 60 minutes;
- upon request by two or more participants with queued messages.

After the specified cutoff time for the receipt of messages (17:00), queued payment messages are returned to participants and are not executed.

3.2.1.5 Risk management

MIPS settles only transactions with account coverage, and allows only secured (collateralised) intraday credit that significantly reduce liquidity and credit risk.

Credit risk

MIPS is an RTGS system, so payments are executed only if there are sufficient funds and are settled in real time as final, and hence credit risk does not arise.

Concerning settlement risk, all banks are allowed direct participation in MIPS and settlement takes place in central bank money, thus eliminating this risk (no risk of bankruptcy of the settlement institution).

Liquidity risk

MIPS has several features that minimise liquidity risk:

- First, participants have access to various liquidity sources, such as temporary drawdown of required reserve balances and an intraday and overnight credit facility.
- Second, MIPS supports liquidity management by:
 1. giving participants the option to check their account balances in real time;
 2. providing information on queued incoming and outgoing payments; and
 3. enabling participants to deal with queued payments by changing the priority of payment messages or recalling payments.
- Third, the following elements serve to reduce the liquidity requirements of the overall system:
 1. In the event of gridlock, MIPS initiates the message settlement procedure referred to in Section 3.2.1.4.
 2. The remitter of a payment pays a dual-component fee (see details on pricing policy in Section 3.2.1.6). One component depends on the time of settlement: the transaction price increases during the day, giving participants an incentive to settle transactions earlier. The aim is to dissuade participants from waiting for incoming payments to fund their own outgoing payments.

Operational risk

Operational discontinuity of MIPS may have serious repercussions (both financial and reputational), affecting confidence in the domestic payment system and the efficient operational conduct of the NBRM's monetary policy.

A wide range of organisational and technical measures have been put in place to minimise any disruption to MIPS operations, by ensuring that operations are immediately back on track. MIPS data are recorded synchronously and stored at two separate locations.

Also, each participant is connected to MIPS through a primary link to the regular operations and through a secondary link that serves for cases when the primary link is not operational. The secondary link is tested on a regular quarterly basis.

In the event of technical problems with MIPS participants, the NBRM is able to execute payment orders on their behalf, but only if validly signed in electronic form or on paper.

The NBRM Payment Systems Department has an application in place for monitoring and tracing operational incidents that influence operations in MIPS and a system for collecting audit trails that could be used during investigations.

The NBRM Business Continuity Policy adopted by the NBRM Council defines MIPS as a key element in the financial market that must maintain critical business processes even in the event of a major problem (eg a natural disaster). To meet these requirements, a MIPS Business Continuity Plan has been developed that elaborates scenarios with all the various factors, including rooms, IT infrastructure and staff, with a recovery time of up to two hours.

3.2.1.6 Pricing

The NBRM covers its operating costs by fees charged to the MIPS participants. It imposes a one-off charge on each accountholder for connection and testing at a rate that depends on the manner of connection, and also charges a one-time fee of MKD 10,000 for each indirect participant account that a direct participant is servicing.

Each participant also pays dual-component transaction fees, comprising:

- a variable component that depends on the time of payment order submission (the later the payment order is submitted, the higher the transaction price); and
- a fixed component regulated by one-time monthly subscription.

The average transaction price in 2012 was MKD 51.

3.2.1.7 Major ongoing and future projects

There are three projects under way, of which two are of great significance for overall payment operations in Macedonia, FYR.

The first project relates to the implementation of an integrated solution for monitoring all MIPS activities for the purpose of obtaining audit trails. This system obtains logs of all relevant events in all MIPS segments: hardware, systemic and application software, databases, network and security devices. This system assists during the investigation and analysis of any system incident.

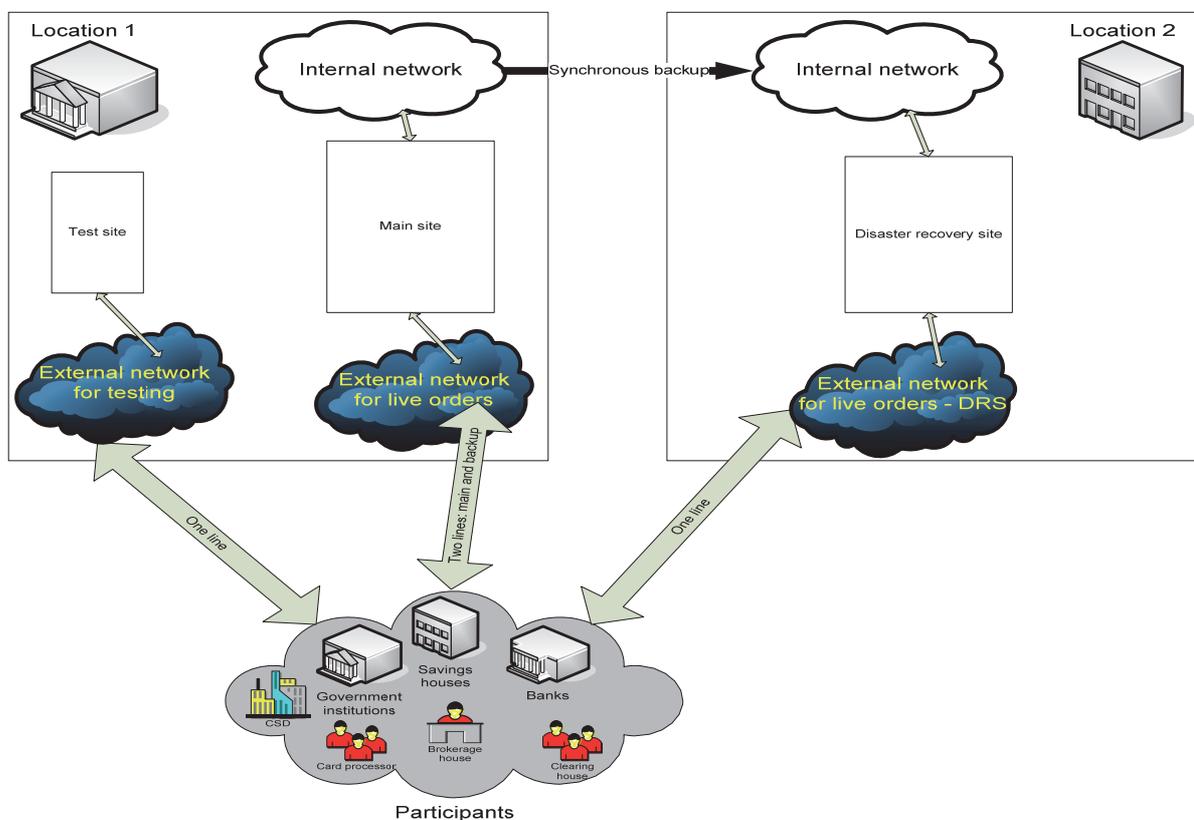
The second project concerns the replacement of MIPS hardware. The current production hardware is being replaced by a newer version, with upgraded performances and capacity to host recently purchased systems: monitoring system, imaging system and audit trail system.

The third project is to install MIPS at a remote location in completely renewed premises, built to modern standards. This project will be carried out after the completion of the second project, using the current production hardware.

Figure 2 shows the MIPS technical architecture following completion of all projects.

Figure 2

MIPS technical architecture



3.3 Retail payment systems

3.3.1 Clearing House Klirinski interbankarski sistemi AD Skopje

Clearing House Klirinski interbankarski sistemi AD Skopje (KIBS) operates a deferred net settlement (DNS) system for processing small-value payments up to the amount of MKD 1 million on a multilateral basis. KIBS provides services based on predefined operating rules under its Operating Regulations as follows:

1. Retail interbank clearing (KIBS Clearing);
2. Single Registry of Transaction Accounts (KIBS ERTS);
3. Information on Blocked Transaction Accounts (KIBS Blockages);
4. Information Services (KIBS Info);
5. Other services.

3.3.1.1 Institutional framework

The operations of KIBS, as a DNS system for small-value payments, are governed by the Law on the National Bank, the Law on Payment Operations and bylaws defined by the NBRM.

KIBS was incorporated as a joint stock company in May 2001. It was founded by 16 of the 20 banks then operating on the territory of the Macedonia, FYR. Presently, KIBS is owned by 14 banks.

Primarily incorporated to process small-value payments of up to MKD 1 million, KIBS is a leader in the clearing of retail interbank payment transactions in Macedonia, FYR. Since June 2006, KIBS has issued Verba digital certificates and is registered in the Single Registry of Certificate Issuers maintained by the Ministry of Finance. Since 2010, KIBS has been a representative and vendor of a wide range of SSL (server) certificates issued by leading issuers of this type of certificate VeriSign, GeoTrust and Thawte. At the end of 2008, KIBS set up the Macedonian Credit Bureau, the country's first private credit bureau, to collect and process full or partial data on entities' liabilities and other data in accordance with the Law on Credit Bureau, and to produce reports on entities' debt and debt servicing.

According to the Law on the National Bank, the NBRM is authorised to oversee the safety, soundness and efficiency of systems for payment settlement and clearing. As a DNS system operator, therefore, KIBS is subject to oversight by the NBRM in a manner specified by the NBRM Council.

3.3.1.2 Participants

Participants in retail interbank payment clearing include banks as general payment operations carriers, the Treasury at the Ministry of Finance as special payment operations carrier for budget beneficiaries and individual users, and the Health Insurance Fund as special payment operations carrier for health institutions.

3.3.1.3 Types of transactions

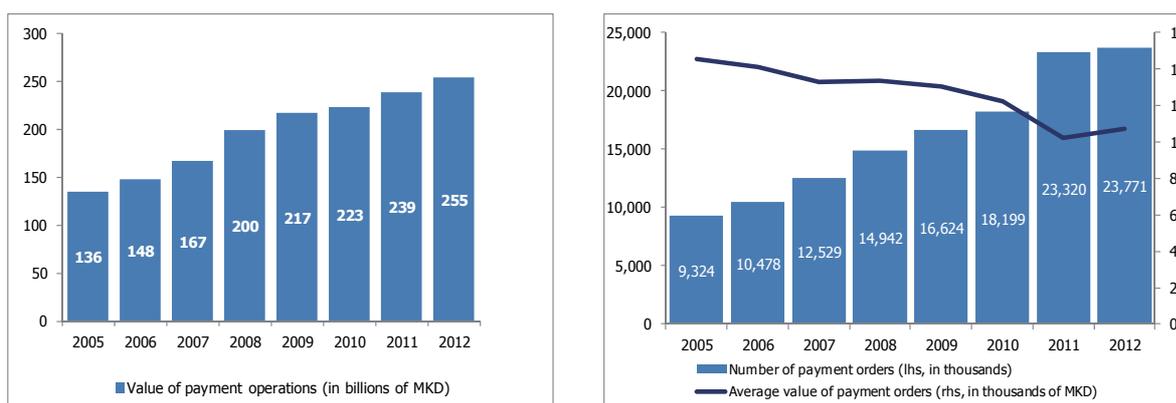
Small-value interbank payment clearing is the basic service offered by KIBS. KIBS exchanges small-value transactions sent by banks that debit their clients' or their own accounts, for credit of clients' or own accounts of other banks. KIBS also exchanges payment transactions in favour of the Treasury and Health Insurance Fund accounts, which are forwarded to the NBRM for final settlement.

In 2012, 23,771,404 retail interbank payment transactions were exchanged via KIBS (a 1.93% increase over the preceding year), for a total amount of MKD 255 billion.

Chart 2 presents additional statistics for KIBS operations for the period 2005–12.

Chart 2

Indicators for payment operations via KIBS



Source: National Bank of the Republic of Macedonia.

According to the KIBS concentration index (Table 2), the five banks with the largest shares of traffic by volume and value of transactions accounted for 74% of the total number and the total value of transactions in 2012.

Table 2
KIBS concentration index for 2012

	Number of transactions	Value of transactions (in billions of MKD)
Five banks ¹	17,521,350	188
Share (in %)	74	74
Total	23,771,404	255

¹ Banks with the largest share in the volume and value of transactions respectively.

Source: National Bank of the Republic of Macedonia.

3.3.1.4 Operation of the system and settlement procedures

Transaction processing

KIBS members are connected through the following communication channels: KIBS – FiNET (a network leased from telecom operators for a closed group of users to exchange data with KIBS); dial-up connection; internet; other networks.

The clearing process starts with the receipt of data from banks on payment orders issued by their clients and by the banks themselves. KIBS calculates a cumulative balance for each bank individually and then, based on the multilateral netting principle, calculates a net balance for each bank participating in the clearing (these balances are settled in MIPS – see below). The banks receive a detailed report. They book credit transactions received from the clearing house for each of their clients and notify the clients accordingly.

Clearing participants can send KIBS data on transactions for each settlement day from 17:30 on the previous day. The calculation for one clearing day includes transactions received from clearing participants during the day until 14:30. After the 14:30 cutoff time, KIBS prepares a calculation, ie nets the transactions sent by the participants, calculates the net balance on the settlement account of each participant in the settlement (transaction net balance matrix) for the current clearing day, and submits the balance for each participant in the settlement separately.

Settlement procedures

The clearing of transactions is carried out in accordance with the KIBS Operational Regulations, Operational Schedule and other KIBS bylaws that regulate its operational processes and procedures under the Law on Payment Operations.

Each clearing day's net clearing balances are settled in MIPS. KIBS sends MIPS settlement orders of the calculation (authorised by the clearing participants), and after successful settlement in MIPS the payment transactions are final and irrevocable. KIBS carries out settlement once every working day in a period (14:30–15:30) specified by the central bank, previously agreed upon by the participating banks. KIBS receives a message from MIPS on the settlement of calculated balances of clearing participants for each cycle (presently, one cycle is performed in one clearing day), until 15:30 for the current clearing day.

3.3.1.5 Risk management

The KIBS system enables clearing participants to have continuous real-time insight during the clearing day into the current net balance of the settlement account of each participating bank, which is of relevance for liquidity forecasting and management, and consequently for hedging credit risk.

3.3.1.6 Pricing

KIBS charges fees to members for the services it provides according to a Service Pricelist. Through the KIBS management bodies, participants (commercial banks) are involved in price setting and pricing policy. Where requested by a number of participants, KIBS conducts an analysis of a given product and elaborates the options for its repricing.

3.3.1.7 Major ongoing and future projects

Presently, KIBS is in the process of introducing an electronic direct debit scheme under SEPA standards. The projects consists of several stages within the working groups of the NPSC, within KIBS and in cooperation with the Banking Association and EACHA. KIBS also intensively seeks to promote the existing services it offers its users.

Major KIBS projects for the future are as follows:

- Introduction of E-trade, a new payment service through KIBS (payments via the internet or mobile telephony).
- Monitoring of interoperability and EU payment system availability for interchange of payment transactions and compliance with operational standards issued by EACHA.

3.3.2 International Card Systems AD Skopje

International Card Systems AD Skopje (CaSys International) is a system for multilateral deferred net settlement of payments made with domestic payment cards. CaSys connects and manages the network of ATMs and POS terminals of the banks, on whose behalf it authorises/switches and processes transactions at these terminals and transactions with the banks' payment cards. A total of 9.5 million domestic bank transactions were processed through CaSys in 2012.

3.3.2.1 Institutional framework

As a multilateral DNS system for payments with domestic payment cards, CaSys is governed by the Law on Payment Operations. The operations of CaSys as a payment system are regulated by the Law on the National Bank, the Law on Payment Operations and the bylaws defined by the NBRM.

CaSys was set up by the government of Macedonia, FYR, as part of the reform of the payment system in 2001. The company was privatised in 2003, and the current ownership structure comprises two foreign individuals (70%), the Macedonian government (20%), several domestic banks and one foreign card processor. In 2004, CaSys obtained all necessary certificates from MasterCard and Visa to remain an authorised card processor of these international organisations, and acquired the status of MasterCard Member Service Provider and Visa Third Party Processor.

The Law on the National Bank empowers the NBRM to oversee the safety, soundness and efficiency of payment, settlement and clearing systems. Accordingly, as a multilateral DNS system for payment card transactions, CaSys International is subject to oversight by the NBRM in a manner specified by the NBRM Council.

CaSys conducts clearing (collection of individual transactions of each participating bank and other financial institutions in the CaSys system) and netting, ie calculation of the net balance of each CaSys participant for all transactions subject to clearing. The settlement of interbank net positions is made through MIPS.

3.3.2.2 Participation

CaSys services 11 out of the total of 15 domestic banks that operate on the territory of Macedonia, FYR. Nationwide, CaSys processes all transactions of legal entities and individuals made via domestic payment cards issued and served by the 9 domestic banks that are signatories of the Multilateral Agreement on mutual acceptance of domestic cards.

CaSys also services four foreign entities: three banks from Bulgaria and one bank from Albania.

3.3.2.3 Types of transactions

CaSys services all types of transactions with payment cards.

3.3.2.4 Operation of the system and settlement procedures

Transaction processing

Depending on the card issuer and terminal acquirer involved, there are several possible permutations:

- 1) transactions with cards issued by one bank, via terminals served by the same bank;
- 2) transactions with cards issued by one bank, via terminals served by other banks;
- 3) transactions with cards issued by other banks, via terminals served by one bank.

In the first case, CaSys is the authorisation system of the card-issuing bank, and the bank's terminals are connected in CaSys. Since these transactions are between clients of the same bank, they remain within that bank's system, and do not enter any clearing system. Based on the authorisations of these transactions in CaSys, at the end of each business day CaSys creates information files based on which the bank debits/credits the accounts of its clients, both cardholders and vendors.

In the second case, CaSys is the authorisation system of the card-issuing bank, and the terminals are served by other banks. These transactions are between clients of different banks. In the case of international cards, CaSys receives authorisations for these transactions via international card networks. The clearing and settlement among banks for these transactions are carried out by international card organisations. In Macedonia, FYR, the NBRM is the settlement agent for MasterCard, and Stopanska Banka AD Skopje is the settlement agent for Visa. When it comes to private bank cards, CaSys directs the authorisations from the serving bank's terminals to the authorisation system of the card-issuing banks. CaSys executes the clearing and settlement among banks, and the central bank is settlement agent. In the case of both international and private bank cards, at the end of each business day CaSys creates information files based on which the bank debits the accounts of its cardholders.

In the third case, CaSys is connected to the serving bank's terminals, while other banks are card issuers. These transactions are between clients of different banks. In the case of international cards, CaSys sends authorisations for these transactions via international card networks to the issuing banks. The clearing and settlement among the banks in this case are carried out by international card organisations. In Macedonia, FYR, the central bank is the settlement agent for MasterCard, and Stopanska Banka AD Skopje is the settlement agent for Visa. When it comes to private bank cards, CaSys directs the authorisations from the serving bank's terminals to the authorisation system of the card-issuing banks. CaSys executes the clearing and settlement among banks, and the central bank is settlement agent. In the case of both international and private bank cards, at the end of each business day CaSys creates information files based on which the bank credits the accounts of its vendors.

Data between CaSys and banks are exchanged through leased communication channels using file transfer or online connection.

Settlement procedures

The clearing procedure is based on calculating net positions of banks for the past business day and their settlement in the central bank's MIPS. CaSys carries out settlement once every working day in a period (9:00–11:00) specified by the central bank, previously agreed upon by the participating banks. Transaction settlement via CaSys is irrevocable.

3.3.2.5 Risk management

Credit and liquidity risk arising from card operations of banks that use the CaSys services are not managed by CaSys. Clearing and settlement of interbank transactions with international payment cards nationwide are carried out by the card-issuing organisations, which have specified rules, binding for the banks, that regulate both credit and liquidity risk. Clearing and settlement of interbank transactions with private bank payment cards nationwide are carried out by CaSys, and the risks (credit and liquidity) are regulated among the banks.

3.3.2.6 Pricing

CaSys is a private company that operates on a basis of self-financing. Therefore, the prices are based on the principle of full cost coverage and earning a profit.

3.3.2.7 Major ongoing and future projects

Recently, CaSys has launched the following projects: online sales with payment cards, with the support of the security services of MasterCard Secure Code and Verified by Visa; work on contactless cards; account payments with payment cards via the internet and ATM terminals; and payments in instalments via POS terminals. With regard to money transfer, CaSys has implemented a solution for real-time money transfer, transfer from account to account and transfer from card to card, on-us and not-on-us. The transfer may be performed for all accounts in Macedonia, FYR, and for all MasterCard/Visa/domestic private cards issued by banks in the CaSys network.

Future and ongoing CaSys projects include payments through new payment channels, such as payments via cell phones, via PSTN, via ATM terminals, and payments other than sales through POS terminals. CaSys is also developing account payments, prepaid top-ups and obtaining bank statements through the new channels. For this purpose, interfacing is under way between CaSys and databases of water, electricity and heating utilities, etc. To improve the cooperation between banks (and their clients) and vendors, CaSys is in the process of developing loyalty schemes for POS terminals.

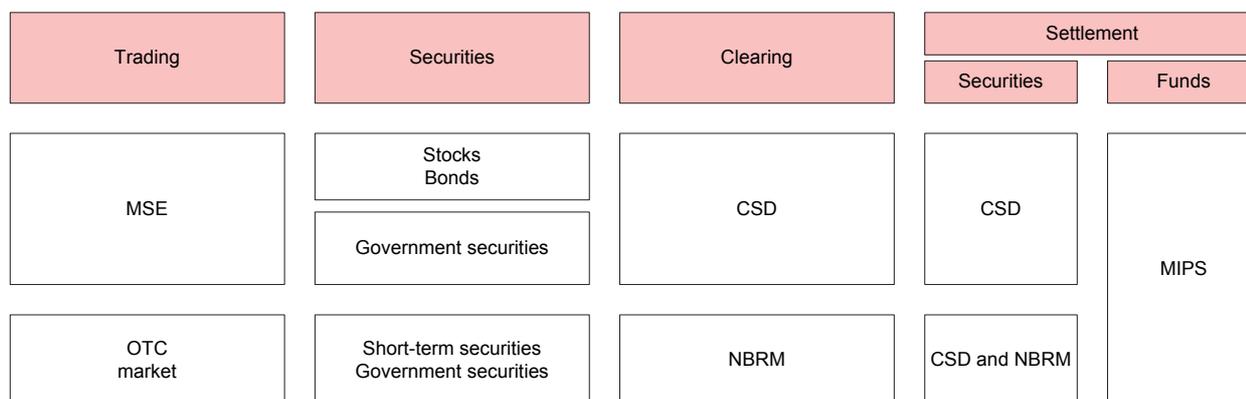
Concerning payments via cell phone, CaSys plans to implement NFC technology that ensures high security. Here, CaSys is again playing the role of mediator that connects and integrates the systems of all participants: banks, mobile operators and end users.

4. Securities trade and settlement systems

Trading, clearing and settlement of securities in Macedonia, FYR, are presented in Figure 3.

Figure 3

Trading, clearing and settlement of securities in Macedonia, FYR



The provider of trade services for stocks, bonds and government securities on the Macedonian securities market is Macedonian Stock Exchange AD Skopje (MSE). Trading in short-term securities and government securities takes place through the OTC Market.

The provider of clearing and settlement services for stocks, bonds and government securities on the Macedonian securities market is CSD.

The NBRM is provider for clearing services for short-term securities and government securities which are traded through the OTC Market. Settlement services for central bank bills take place through the NBRM.

Settlement of the cash leg of all securities transactions takes place through the RTGS system of the NBRM (MIPS).

4.1 Trade

4.1.1 Macedonian Stock Exchange AD Skopje

At the end of 2012, 32 companies listed shares on the official market of the Macedonian Stock Exchange AD Skopje (MSE).

In 2012, the total market capitalisation of all market segments on the last trading day equalled MKD 190.7 billion. The market capitalisation of the listed companies equalled MKD 25.92 billion, while the market capitalisation of the bonds equalled MKD 7.35 billion. Hence, the market capitalisation of the companies of the other market segments (composed of the companies with special reporting requirements with a value of MKD 87.10 billion and free market with a value of MKD 70.33 billion) totalled MKD 157.43 billion.

In 2012, MSE (official and regular market, block transactions and public stock market auctions) reported a total turnover of MKD 5.6 billion, with 14,951 transactions in total. The trade in bonds and shares amounted to MKD 1.20 billion and MKD 1.55 billion, respectively. Total turnover through block transactions equalled MKD 2.39 billion, and turnover through public stock auctions equalled MKD 44.5 billion.

To be eligible for stock exchange trading, according to the Law on Securities, securities must be listed or registered on one of the MSE markets under MSE laws and regulations and traded with MSE system and organisational support. Stock exchange transactions are executed through MSE's Bourse Electronic System for Trading (BEST). "Bestnet" is an online system for 24/7 distribution of stock exchange information via the internet, providing official information on every event on the stock exchange in real time. The following types of transactions are executed on MSE: exchange transactions (purchase and sale of securities), matched transactions, block transactions (administrator and system block transactions), transactions for public stock exchange auctions and transactions for public offerings of securities.

4.1.2 Central Securities Depository AD Skopje

Central Securities Depository AD Skopje (CSD) is a depository authorised by the Securities and Exchange Commission of the Republic of Macedonia. Under the Securities Law the CSD is established as a self-regulating organisation for the purposes of registering securities, settling trades concluded on the authorised stock market and conducting non-trade securities transfers (gift agreements, execution of securities pledge agreements, inheritances and court decisions) for securities registered in Macedonia, FYR. Only authorised securities market participants registered in the Trade Registry may be CSD members.

The functions of CSD include:

- registration of securities issuance and transfer in Macedonia, FYR, as electronic records (maintenance of the securities registry);
- providing the International Securities Identification Number for all issues of securities;

- registration of owners of securities;
- settlement of trades on the delivery versus payment (DVP) principle;
- execution of non-trade transfers;
- facilitation of securities borrowing;
- monitoring of the financial position of its members for the purpose of managing settlement risk; and
- provision of additional services for securities issuers, such as updating the list of owners of a given issuer's securities, calculation and payment of dividends/interest, notifications on meetings of shareholders, etc.

The Securities and Exchange Commission of the Republic of Macedonia gives approval for the following CSD actions:

- adoption of the statute, including its amendments;
- adoption of operational rules, membership rules, ethics and discipline rules and arbitration rules, and their amendments;
- adoption of the pricelist and its amendments;
- issuance of approval to a potential shareholder for acquiring a qualified shareholding of the depository; and
- adoption of regulations for various methods of connection to or merger with other depositories.

Governance of the CSD is regulated under the Law on Trade Companies and the Law on Securities and supervised by the SEC.

4.1.3 *Authorised participants in the securities market*

Authorised participants in the securities market in the Republic of Macedonia include depositories, stock exchanges, banks, brokerage houses and investment advisers. CSD members – all of which require an operating licence from the SEC – include brokerage houses, banks authorised under the Banking Law and foreign brokerage house subsidiaries. CSD members have one account for securities owners in one depository and other accounts for the execution and settlement of client transactions. In 2012, CSD had a total of 14 members (10 brokerage houses and four authorised banks).

4.1.4 *Over-the-counter market*

Over-the-counter (OTC) markets are markets organised by the NBRM, in cooperation with the Ministry of Finance, that serve for the purchase and sale of short-term securities and government bonds (except for bonds issued for payment of household foreign currency deposits and denationalisation bonds) and the execution of repo agreements.

Any legal or natural person may purchase or sell securities on OTC markets. The purchaser and seller agree on the purchase and sale of securities through direct contact, over the phone, electronic communication or other communication media. In the case of direct negotiation, the purchaser and the seller conclude a purchase and sale agreement. In case of negotiation over the phone, via electronic communication or through other media, the purchaser and seller exchange a confirmation, ie they conclude a confirmation note which is legally binding in the same way as a purchase and sale agreement.

4.2 Settlement

4.2.1 Main features

Securities issued in Macedonia, FYR, are entirely dematerialised; this is mandated by the Law on Securities. Presently, CSD is the only institution licensed by the SEC to register the ownership of securities.

CSD provides clearing and settlement of funds and securities. The transfer of funds and securities is based on the DVP principle, is final and irrevocable in line with the operational policy, and is carried out not later than T+3. Trade transaction settlement by T+3 is mandated by the Law on Securities.

Clearing and settlement of trades carried out through MSE is based on the DVP principle, ie the final delivery of securities at CSD occurs if, and only if, payment occurs. CSD clears and settles stock exchange trades based on transaction data submitted electronically on the trade date, not later than 15:30. Data received from MSE contain elements prescribed by CSD for the clearing and settlement of trades matched by MSE's Bourse Electronic System for Trading (BEST). Consequently, when CSD receives data on matched trades from MSE, the transaction becomes binding for both parties to the transaction.

Transactions received from MSE are final and cannot be unilaterally cancelled by either party. Only CSD is allowed to change the received data or to cancel transactions, based on a request from MSE, specifically for the purpose of correcting errors. Any transaction may be changed or cancelled until three hours before the settlement time on the settlement day. The Law on Securities allows immediate settlement of securities transactions, but, as mentioned, settlement must take place not later than three working days from the trade date. The CSD operational and technical systems are capable of supporting a settlement cycle shorter than T+3, should future legal and/or regulatory amendments require it.

On the Macedonian money market, CSD does not function as a central counterparty, as the current volume and value of transactions and opportunity costs along with settlement liquidity do not make it necessary.

CSD's current operational procedures are in line with the generally accepted worldwide standards and as such give market participants in Macedonia, FYR, maximum assurance that transactions will be settled securely. The CSD electronic system fully supports DVP settlement through in-house operational systems and security links between CSD and the NBRM. Presently, CSD's systems use ISO standards.

When managing settlement of the money component, CSD uses a secure connection with the NBRM. CSD uses SWIFT messages to facilitate the movement of settlement funds within the NBRM.

The CSD Tariff Book is subject to review and approval by the SEC. A combination of legal and regulatory control of the CSD cost policy ensures that the costs for CSD participants are controlled. The elimination of physical securities is a significant advantage for CSD and its participants, the aim being to provide clearing and settlement services at a reasonable price.

Securities transactions are settled chronologically, based on the trade data submitted by MSE. CSD operates in line with settlement Model 2, ie with net settlement of funds and gross settlement of securities. Settlement is final and irrevocable at 10:00 on T+3. CSD transfers securities from the securities account of the selling member to the account of the purchasing member on the settlement date.

The operation of CSD is regulated and overseen by the SEC. In addition, during the management of settlement funds, when CSD uses settlement accounts with the NBRM, it has to operate in accordance with NBRM rules.

4.2.2 Securities accounts

Securities accounts are registered in the name of the owner of the securities (securities owner account) and represent the aggregate amount of all securities owned by that person.

Securities accounts may also be opened with the depository in the name of authorised market participants or other persons acting on its own behalf and for account of a third party, in the form of either: representative accounts, portfolio accounts, custody accounts and omnibus accounts. CSD may also open other types of accounts such as co-owner accounts, government accounts, group accounts and restricted accounts.

Securities ownership rights may only be restricted or modified by a court decision or an instrument issued by another authorised body.

4.2.3 Risk management

CSD oversees the settlement of its members' transactions in order to detect any breach of CSD regulations or other misdemeanours of its members.

CSD has put risk controls in place to minimise any settlement failure on both the purchase side and the sale side. CSD rules require that the securities to be sold on the stock exchange need to be previously reserved by the authorised market participant. As a part of its calculations, CSD determines the cash value of each broker's largest purchase side.

CSD operational rules require that the cash value of each broker's largest purchase transaction, once calculated and communicated to the broker, be deposited on the broker's settlement account with the NBRM. CSD maintains a secure real-time link to the NBRM through which the authorised CSD staff may check participants' accounts to make sure that the value of each broker's largest purchase side is deposited as required.

CSD rules require that settled funds may not be moved from a participant's settlement account at the NBRM between 10:00 and 11:00 on T+3.

All funds related to CSD-settled transactions are transferred through the NBRM.

On 1 January 2011, CSD established a guarantee fund. The fund's assets are to be used solely for settlement of CDS members' liabilities in respect of concluded securities transactions when there are insufficient funds on their special accounts with the NBRM, ie when they fail to meet their liabilities within the set deadlines.

The guarantee fund is financed by payments from CSD members that use its calculation and settlement services. Securities subject to unsettled transactions are transferred to a special securities account opened on behalf of CSD, in favour of the fund. Should the illiquidity of several members mean the Fund's assets are not sufficient to settle all transactions, the FIFO principle will apply.

4.2.4 Over-the-counter settlement

Securities transaction settlement on OTC markets involves a final transfer of securities ownership in CSD and a simultaneous transfer of funds in MIPS, on the DVP principle.

The following systems used for securities transaction settlement:

- MIPS ensures the smooth flow of securities ownership transfer messages and ensures the transfer of funds;
- the matching system ensures matching of securities ownership transfer messages received via MIPS;
- the CSD system carries out the transfer of securities ownership at the same time as the funds transfer occurs.

Banks and the NBRM are participants in securities transaction settlement, as buyers or sellers. They submit securities transaction settlement instructions on their own behalf and for

their own account, or as intermediaries for their clients. OTC securities transactions may be settled immediately, and must be settled not later than on T+1.

Participants open special settlement accounts with MIPS to transfer funds for securities transaction settlement. For transfer of securities ownership to take place, participants must be registered with CSD in line with its rules.

Trading, clearing and settlement of securities in Macedonia, FYR, are presented in Figure 3.

4.2.5 Monetary policy operations and settlement systems

To achieve its primary monetary policy objective of price stability, the NBRM uses various monetary regulation instruments. The most flexible instruments are open market operations, that is, indirect market instruments of monetary policy whereby the NBRM sells or purchases securities. Depending on the liquidity in the overall banking system, open market operations can be conducted either on the primary market through the issue of NBRM securities (central bank (CB) bills), or on the secondary market through temporary or outright purchases/sales of securities.

The structural position of the banking system vis-a-vis the central bank led to a long-term dominance of operations for the withdrawal of liquid assets from the banking system through the issue of CB bills. The interest rate on CB bills is the reference rate that determines the course of monetary policy. CB bills have a maturity of 28 days, in line with the monthly cycle of changes in autonomous factors (government deposits, currency in circulation). The NBRM conducts two types of CB bill auctions: volume tenders, where the NBRM determines the CB bill rate and commercial banks bid with amounts; and interest rate tenders, where the NBRM discloses the amount of CB bills offered for sale, and the banks bid with amounts and interest rates.

Temporary and outright securities sales/purchases on the secondary market are less frequent. The NBRM undertakes repo transactions to fine-tune liquidity in the banking system and dampen interest rate fluctuations on the money market. The NBRM may execute such fine-tuning transactions through auctions or on a bilateral basis with individual banks. Outright transactions for the purchase or sale of securities may be used for the structural regulation of liquidity in the banking system. The NBRM conducts these transactions on a bilateral basis with individual banks.

To overcome banks' short-term liquidity shortage at the end of the day, the NBRM extends overnight credit based on proportional collateral. The interest rate on the overnight credit facility is tied to the interest rate on CB bills and represents the interest rate ceiling on the money market. Also, to facilitate smooth payment operations during the day, the NBRM extends non-interest bearing intraday credit to banks based on proportional collateral. The overnight credit facility and intraday credit facility are made available through the conclusion of repo transactions.

Monetary policy operations are settled in the securities depositories (the NBRM is the depository for CB bills and CSD is the depository for all other securities), based on the DVP principle. This principle ensures transfer of securities ownership in the depositories and automatic transfer of funds in MIPS. Issued CB bills are registered in the CB bills depository when the funds for purchased CB bills are paid in by the bank. Also, when acting as government fiscal agent, the NBRM registers government securities issued at auctions with CSD once investors pay in funds for the purchased securities.

Secondary market monetary policy operations (temporary and outright purchases/sales of securities, and overnight and intraday credit) are executed through the electronic system for OTC transaction settlement established by the NBRM in cooperation with CSD. The NBRM and banks submit transaction settlement instructions (messages) to the electronic system as buyers or sellers. These messages are controlled within the matching system, after which the system produces a single message submitted to the respective securities depository. Eventually, CSD transfers the securities ownership simultaneously with the transfer of funds, upon which participants are notified of the settlement outcome.

Statistical tables

Table 1
Basic statistical data

	2007	2008	2009	2010	2011
Population (thousands) ¹	2,044	2,047	2,051	2,055	2,059
GDP (MKD billions) ²	365.0	411.7	410.7	424.8	449.6
GDP per capita (MKD)	178,566	201,137	200,260	206,697	nav
Consumer price inflation (%) ²	2.3	8.3	-0.8	1.6	3.9
Exchange rate (MKD/USD): ³					
<i>end of year</i>	41.6564	43.5610	42.6651	46.3140	47.5346
<i>average</i>	44.7298	41.8677	44.1006	46.4526	44.2308

¹ Source: State Statistical Office (SSO), *Statistical Yearbook* 2012. Estimates based on the total population from the 2002 census. ² Source: SSO. ³ Source: National Bank of the Republic of Macedonia (NBRM).

Table 2
Settlement media used by non-banks
(MKD billions, end of year)

	2007	2008	2009	2010	2011
Notes and coin in circulation outside banks	17.9	17.6	16.3	17.0	19.3
Value of transferable deposits ¹	29.3	36.5	36.0	40.4	42.0
Other	nap	nap	nap	nap	nap
Narrow money supply (M1)	47.3	54.1	52.2	57.4	61.3
<i>Memo:</i>					
Transferable deposits in foreign currencies	nap	nap	nap	nap	nap
Outstanding value on e-money storages	nap	nap	nap	nap	nap
<i>on card-based products</i>	nap	nap	nap	nap	nap
<i>on software- or network-based products</i>	nap	nap	nap	nap	nap

¹ Transferable deposits refer to current accounts with banks and savings houses, and current accounts of other financial corporations with the NBRM.

Table 3
Settlement media used by banks
(MKD billions, average for December)

	2007	2008	2009	2010	2011
Transferable balances held at the central bank ¹	9.1	10.8	14.3	15.6	17.1
<i>required reserves</i>	8.4	10.1	13.9	15.3	16.6
<i>free reserves</i>	0.7	0.6	0.4	0.3	0.6
Transferable balances held at other banks ²	0.3	0.8	0.3	0.6	0.6
<i>Memo:</i>					
Credit extended by the central bank:					
<i>intraday</i>	0.08	0.05	0	0	0
<i>overnight</i>	0	0	0	0	0.07
<i>longer-term refinancing operations</i>	nap	nap	nap	nap	nap

¹ Data for required and free reserves refer to the last reserve maintenance period of the year (11 December - 10 January).

² Transferable deposits held at other depository corporations, in domestic and foreign currency.

Table 4**Banknotes and coin***(MKD thousands, end of year)*

	2007	2008	2009	2010	2011
Total banknotes and coin issued	19,893,323	20,799,162	19,482,000	20,173,010	22,767,435
Total banknotes issued	19,633,667	20,503,292	19,103,841	19,765,399	22,234,866
<i>MKD 5000</i>	621,010	542,100	353,100	331,435	295,525
<i>MKD 1000</i>	13,696,327	14,775,805	13,973,884	14,788,731	16,791,516
<i>MKD 500</i>	3,781,417	3,591,564	3,191,972	3,014,784	3,509,321
<i>MKD 100</i>	993,212	1,032,136	1,061,283	1,093,163	1,152,932
<i>MKD 50</i>	291,327	295,325	263,612	279,951	262,314
<i>MKD 10</i>	250,374	266,362	259,990	257,335	223,258
Total coins issued	259,656	295,870	378,159	407,611	532,569
<i>MKD 50</i>	nap	3,349	52,432	44,881	73,266
<i>MKD 10</i>	nap	1,362	29,614	55,950	143,911
<i>MKD 5</i>	124,316	139,366	139,839	143,151	144,433
<i>MKD 2</i>	74,765	84,537	86,711	90,697	94,469
<i>MKD 1</i>	58,972	65,649	67,924	71,290	74,837
<i>MKD 0.5</i>	1,603	1,607	1,639	1,642	1,653
Banknotes and coin held by banks	1,986,660	3,197,850	3,216,200	3,214,870	3,459,500
Banknotes and coin in circulation outside banks	17,906,660	17,601,300	16,265,800	16,958,140	19,307,930

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

	2007	2008	2009	2010	2011
Central bank					
Number of branches or offices	1	1	1	1	1
Number of accounts (thousands)	0.11	0.12	0.11	0.11	0.11
Value of accounts (MKD billions)	73.96	68.06	61.11	74.41	83.73
Banks					
Number of institutions	18	18	18	18	17
Number of branches or offices	333	409	428	436	413
Number of accounts (thousands)	3,477.52	2,959.27	3,293.26	3,412.30	3,381
<i>of which: number of internet/PC-linked accounts</i>	9.33	15.35	25.17	38.38	55
Value of accounts (MKD billions)	28.40	35.90	34.50	39.80	41.10
Credit institutions legally incorporated in the reporting country					
Number of institutions	nap	nap	nap	nap	nap
Number of branches or offices	nap	nap	nap	nap	nap
Value of accounts (MKD billions)	nap	nap	nap	nap	nap
Branches of euro area-based credit institutions					
Number of institutions	nap	nap	nap	nap	nap
Number of branches or offices	nap	nap	nap	nap	nap
Value of accounts (MKD billions)	nap	nap	nap	nap	nap
Branches of EEA-based credit institutions (outside the euro area)					
Number of institutions	nap	nap	nap	nap	nap
Number of branches or offices	nap	nap	nap	nap	nap
Value of accounts (MKD billions)	nap	nap	nap	nap	nap
Branches of non-EEA based banks					
Number of institutions	nap	nap	nap	nap	nap
Number of branches or offices	nap	nap	nap	nap	nap
Value of accounts (MKD billions)	nap	nap	nap	nap	nap
Other institutions offering payment services to non-banks¹					
Number of institutions	nap	nap	nap	nap	nap
Number of branches or offices	nap	nap	nap	nap	nap
Number of accounts	nap	nap	nap	nap	nap
Value of accounts	nap	nap	nap	nap	nap
Institutions offering payment services to non-banks (total)					
Number of institutions	nap	nap	nap	nap	nap
Number of branches or offices	nap	nap	nap	nap	nap
Number of accounts held by non-banks (thousands)	nap	nap	nap	nap	nap
<i>of which: number of internet/PC-linked accounts</i>	nap	nap	nap	nap	nap
Value of accounts held by non-banks (MKD billions)	nap	nap	nap	nap	nap
<i>Memo:</i>					
Electronic money institutions					
Number of institutions	nap	nap	nap	nap	nap
Outstanding value on e-money storages issued by e-money institutions	nap	nap	nap	nap	nap

¹ Money transfer institutions.

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

	2007	2008	2009	2010	2011
Cards issued in the country					
Cards with a cash function	716,611	1,047,498	1,289,317	1,422,342	1,450,340
Cards with a debit function	353,551	481,477	559,198	1,048,183	1,098,795
Cards with a credit function	178,630	197,740	267,947	374,159	351,545
Cards with a combined function	184,430	368,281	462,172	0	0
Cards with an e-money function	0	0	0	0	0
Total number of cards (irrespective of the number of functions on the card)	716,611	1,047,498	1,289,317	1,422,342	1,450,340
Terminals located in the country					
ATMs	529	761	832	869	876
<i>ATMs with a cash withdrawal function</i>	529	761	832	869	876
<i>ATMs with a credit transfer function</i>	nap	nap	nap	nap	nap
POS terminals	17,884	29,153	31,447	31,491	33,435
<i>of which: EFTPOS terminals</i>	14,056	21,465	24,538	24,634	26,266
E-money card terminals	nap	nap	nap	nap	nap

Table 7**Indicators of the use of payment instruments and terminals by non-banks: volume of transactions***(millions, total for the year)*

	2007	2008	2009	2010	2011
Transactions per type of payment instrument					
Credit transfers	31.78	51.08	55.68	54.85	55.17
<i>paper-based</i>	19.82	32.09	38.94	38.87	40.28
<i>non-paper-based</i>	11.96	18.99	16.74	15.98	14.89
Direct debits	nap	nap	nap	nap	nap
Card payments with cards issued in the country	12.79	23.55	27.16	30.42	34.31
<i>payments by cards with a debit function</i>	6.38	11.95	14.18	23.57	26.95
<i>payments by cards with a credit function</i>	2.39	4.56	5.01	6.85	7.36
<i>payments by cards with a combined function¹</i>	4.02	7.04	7.97	nap	nap
E-money payment transactions	nap	nap	nap	nap	nap
<i>by cards with an e-money function</i>	nap	nap	nap	nap	nap
<i>through other e-money storages</i>	nap	nap	nap	nap	nap
Cheques	2.42	0	0	0	0
Other payment instruments	nap	nap	nap	nap	nap
Total number of transactions with payment instruments	46.99	74.63	82.84	85.27	89.48
<i>of which: cross-border transactions sent</i>	0.14	0.21	0.23	0.24	0.27
Memo:					
Cross-border transactions received	nav	nav	nav	nav	nav
Transactions per type of terminal					
Total transactions at terminals in the country					
Cash transactions	9.83	17.06	18.27	18.98	19.96
<i>ATM cash withdrawals</i>	9.83	17.06	18.27	18.98	19.96
<i>ATM cash deposits</i>	nap	nap	nap	nap	nap
POS payment transactions	4.35	8.81	10.96	11.68	15.56
E-money card loading/unloading transactions	nap	nap	nap	nap	nap
E-money card payment transactions	nap	nap	nap	nap	nap

¹ Cards with a combined function are divided into cards with a credit and cards with a debit function due to the different methodology and data collection method since reporting year 2009.

Table 8**Indicators of the use of payment instruments and terminals: value of transactions***(MKD billions, total for the year)*

	2007	2008	2009	2010	2011
Transactions per type of payment instrument					
Credit transfers	1,967.74	2,627.78	2,256.49	2,499.33	2,713.78
<i>paper-based</i>	1,467.06	1,829.47	1,606.25	1,765.07	1,813.90
<i>non-paper-based</i>	500.68	798.31	650.24	734.26	899.88
Direct debits	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
Card payments with cards issued in the country	49.41	81.84	93.32	101.43	111.05
<i>payments by cards with a debit function</i>	24.85	44.08	52.67	84.47	94.50
<i>payments by cards with a credit function</i>	6.42	12.84	13.29	16.96	16.55
<i>payments by cards with a combined function¹</i>	18.14	24.92	27.36	<i>nap</i>	<i>nap</i>
E-money payment transactions	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
<i>by cards with an e-money function</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
<i>through other e-money storages</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
Cheques	5.13	0.05	0.00	0.01	0.00
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	2,022.28	2,709.67	2,349.81	2,600.77	2,824.83
<i>of which: cross-border transactions sent</i>	270.44	307.08	260.17	287.19	358.15
<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	48.32	77.46	83.36	88.27	96.54
<i>ATM cash withdrawals</i>	48.32	77.46	83.36	88.27	96.54
<i>ATM cash deposits</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
POS payment transactions	9.18	19.63	19.98	18.47	23.06
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>

¹ Cards with a combined function are divided into cards with a credit and cards with a debit function due to the different methodology and data collection method since reporting year 2009.

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

	2007	2008	2009	2010	2011
Large-value payment systems					
NBRM-RTGS					
Number of participants	48	52	51	50	48
Direct participants	25	24	25	25	25
Banks	18	18	18	18	17
Central bank	1	1	1	1	1
Other direct participants	6	5	6	6	7
Indirect participants	23	28	26	25	23
Retail payment systems					
KIBS					
Number of participants	18	18	18	18	18
Direct participants	18	18	18	18	18
Banks	17	17	17	17	16
Central bank	nap	nap	nap	nap	nap
Other direct participants	1	1	1	1	2
Indirect participants	nap	nap	nap	nap	nap
CaSys					
Number of participants	10	10	11	13	12
Direct participants	10	10	11	13	12
Banks	10	10	11	13	12
Central bank	nap	nap	nap	nap	nap
Other direct participants	nap	nap	nap	nap	nap
Indirect participants	nap	nap	nap	nap	nap

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

	2007	2008	2009	2010	2011
Large-value payment systems					
MIPS					
Total transactions sent	2.83	4.91	4.72	4.68	5.04
Concentration ratio in terms of volume (%)	48.0	34.0	27.0	29.0	23.0
Retail payment systems					
KIBS					
Total transactions sent	12.53	14.94	16.62	18.20	23.32
Concentration ratio in terms of volume (%)	76.0	76.0	75.0	74.0	75.0
CaSys					
Total transactions sent	nav	0.39	0.39	0.35	0.32
Concentration ratio in terms of volume (%)	nav	93.0	88.0	91.0	91.0

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

	2007	2008	2009	2010	2011
Large-value payment systems					
MIPS					
Total transactions sent	1,453	1,670	1,393	1,708	1,965
Concentration ratio in terms of volume (%)	38.8	43.4	42.7	43.2	42.2
Retail payment systems					
KIBS					
Total transactions sent	167	200	217	223	239
Concentration ratio in terms of volume (%)	69.4	70.9	71.9	73.1	73.8
CaSys					
Total transactions sent	nav	0.58	0.59	0.48	0.41
Concentration ratio in terms of volume (%)	nav	99.0	97.6	97.5	99.7

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

	2007	2008	2009	2010	2011
Members	3	3	3	3	3
<i>of which: live</i>	3	3	3	3	3
Sub-members	1	1	1	1	2
<i>of which: live</i>	1	1	1	1	2
Participants	12	15	14	14	12
<i>of which: live</i>	12	14	14	14	12
Total users	16	19	18	18	17
<i>of which: live</i>	16	18	18	18	17
<i>Memo:</i>					
Total SWIFT users	8,332	8,830	9,281	9,705	10,118
<i>members</i>	2,276	2,276	2,356	2,344	2,334
<i>sub-members</i>	3,212	3,305	3,306	3,331	3,355
<i>participants</i>	2,844	3,249	3,619	4,030	4,429

Source: SWIFT.

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

	2007	2008	2009	2010	2011
Total messages sent	536.63	593.44	580.89	624.33	633.89
<i>of which:</i>					
<i>category I</i>	279.69	307.59	305.27	330.87	342.04
<i>category II</i>	132.26	145.87	149.48	162.07	158.11
Total messages received	600.97	659.89	654.24	708.73	786.50
<i>of which:</i>					
<i>category I</i>	306.04	353.78	354.36	393.87	437.88
<i>category II</i>	20.27	22.46	21.27	28.89	34.71
Domestic traffic	58.74	58.75	63.50	65.81	65.91
<i>Memo:</i>					
Global SWIFT traffic	3,501,163	3,854,576	3,760,314	4,031,935	4,431,099

Source: SWIFT.

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

	2007	2008	2009	2010	2011
Macedonian Stock Exchange					
Total number of participants	21	28	25	20	19
<i>central bank</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
<i>central counterparties (CCPs)</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
<i>banks</i>	6	7	7	6	6
<i>other</i>	15	21	18	14	13
Number of domestic participants	21	28	25	20	19
<i>central bank</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
<i>central counterparties (CCPs)</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
<i>banks</i>	6	7	7	6	6
<i>other</i>	15	21	18	14	13
Number of foreign participants					
<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>	0	0	0	0	0
Over-the-counter market					
Total number of participants	19	19	19	19	18
<i>central bank</i>	1	1	1	1	1
<i>central counterparties (CCPs)</i>	0	0	0	0	0
<i>banks</i>	18	18	18	18	17
<i>other</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
Number of domestic participants	19	19	19	19	18
<i>central bank</i>	1	1	1	1	1
<i>central counterparties (CCPs)</i>	0	0	0	0	0
<i>banks</i>	18	18	18	18	17
<i>other</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>	<i>nav</i>
Number of foreign participants	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>

Table 15
Number of listed securities
(end of year)

	2007	2008	2009	2010	2011
Macedonian Stock Exchange					
Total number of listed securities	45	46	45	44	43
debt securities	7	8	9	10	11
<i>short-term paper</i>	0	0	0	0	0
<i>bonds</i>	7	8	9	10	11
equity	38	38	36	34	32
other	0	0	0	0	0
Over-the-counter market					
Total number of listed securities	nap	nap	nap	nap	nap
debt securities	nap	nap	nap	nap	nap
<i>short-term paper</i>	nap	nap	nap	nap	nap
<i>bonds</i>	nap	nap	nap	nap	nap
equity	nap	nap	nap	nap	nap
other	nap	nap	nap	nap	nap

Table 16
Market capitalisation of listed companies
(MKD billions, end of year)

	2007	2008	2009	2010	2011
Macedonian Stock Exchange					
Total market capitalisation/equity	113.49	35.25	38.89	30.44	27.30
Over-the-counter market					
Total market capitalisation/equity	nap	nap	nap	nap	nap

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

	2007	2008	2009	2010	2011
Macedonian Stock Exchange					
Total number of executed securities trades	141.98	43.36	34.44	25.75	23.43
debt securities	6.15	4.11	4.97	3.84	3.24
<i>short-term paper</i>	0.00	0.00	0.00	0.00	0.00
<i>bonds</i>	6.15	4.11	4.97	3.84	3.24
equity	135.82	39.21	29.46	21.89	20.12
other	0.01	0.04	0.01	0.02	0.07
Over-the-counter market					
Total number of executed securities trades	0.160	0.067	0.039	0.011	0.021
debt securities	0.160	0.067	0.039	0.011	0.021
<i>short-term paper</i>	0.051	0.059	0.037	0.011	0.021
<i>bonds</i>	0.109	0.008	0.002	0.000	0.000
equity	nap	nap	nap	nap	nap
other	0.000	0.000	0.000	0.000	0.000
Total number of executed derivatives trades	0.00	0.00	0.00	0.00	0.00

Table 18**Value of executed trades***(MKD billions, total for the year)*

	2007	2008	2009	2010	2011
Macedonian Stock Exchange					
Total value of executed securities trades	41.71	12.38	6.72	5.84	13.65
debt securities	1.56	1.45	1.30	1.25	1.29
<i>short-term paper</i>	0.00	0.00	0.00	0.00	0.00
<i>bonds</i>	1.56	1.45	1.30	1.25	1.29
equity	40.05	10.83	5.40	4.55	11.11
other	0.10	0.10	0.02	0.04	1.25
Over-the-counter market					
Total number of executed securities trades	2.96	2.25	0.77	0.58	1.43
debt securities	2.96	2.25	0.77	0.58	1.43
<i>short-term paper</i>	2.26	1.85	0.77	0.58	1.43
<i>bonds</i>	0.70	0.40	0.00	0.00	0.00
equity	nap	nap	nap	nap	nap
other	0.000	0.000	0.000	0.000	0.000
Total value of executed derivatives trades	nap	nap	nap	nap	nap

Table 19**Number of clearing members**

 Details are not available.

Table 20**Number of contracts and transactions cleared**

 Details are not available.

Table 21**Values of contracts and transactions cleared**

Details are not available.

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

	2007	2008	2009	2010	2011
Total number of participants	23	30	27	22	21
<i>central bank</i>	1	1	1	1	1
<i>central counterparties (CCPs)</i>	nap	nap	nap	nap	nap
<i>central securities depositories</i>	1	1	1	1	1
<i>banks</i>	6	7	7	6	6
<i>other</i>	15	21	18	14	13
Number of domestic participants	23	30	27	22	21
<i>central bank</i>	1	1	1	1	1
<i>central counterparties (CCPs)</i>	nap	nap	nap	nap	nap
<i>central securities depositories</i>	1	1	1	1	1
<i>banks</i>	6	7	7	6	6
<i>other</i>	15	21	18	14	13
Number of foreign participants	0	0	0	0	0

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

	2007	2008	2009	2010	2011
Central Securities Depository					
Total number of securities held	0.864	0.869	0.855	0.820	0.793
debt securities	0.035	0.046	0.032	0.033	0.035
<i>short-term paper</i>	0.016	0.021	0.009	0.014	0.018
<i>bonds</i>	0.019	0.025	0.023	0.019	0.017
equity	0.826	0.823	0.823	0.787	0.758
other ¹	0.003	0	0	0	0

¹ Investment fund units.

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

	2007	2008	2009	2010	2011
Central Securities Depository					
Total value of securities held	347.713	153.433	165.681	148.569	172.920
debt securities	36.416	32.612	34.826	38.243	35.289
<i>short-term paper</i>	7.820	5.836	12.119	19.036	19.809
<i>bonds</i>	28.596	26.776	22.707	19.207	15.480
equity ¹	311.296	120.821	130.854	110.326	137.630
other ¹	0.001	0	0	0	0

¹ Monthly average value for December or latest available month.**Table 25****Number of delivery instructions processed***(thousands, total for the year)*

	2007	2008	2009	2010	2011
Central Securities Depository					
Total number of delivery instructions	142.26	43.35	34.46	25.74	23.42
DVP	142.26	43.35	34.46	25.74	23.42
debt securities	6.33	4.14	5.00	3.85	3.26
<i>short-term paper</i>	0.05	0.02	0.03	0.01	0.02
<i>bonds</i>	6.27	4.12	4.97	3.84	3.24
equity	135.94	39.22	29.46	21.89	0.00
free of payment	0	0	0	0	0

Table 26**Value of delivery instructions processed**

	2007	2008	2009	2010	2011
Central Securities Depository					
Total number of delivery instructions	52.31	12.92	7.15	6.18	19.39
DVP	52.31	12.92	7.15	6.18	19.39
debt securities	12.16	1.95	1.71	1.58	7.04
<i>short-term paper</i>	9.88	0.18	0.42	0.33	5.74
<i>bonds</i>	2.28	1.77	1.29	1.25	1.30
equity	40.15	10.97	5.44	4.61	0.00
free of payment	0	0	0	0	0