



**Bank of Israel**  
Payment and Settlement Systems

# Israel's Payment and Settlement Systems

**Red Book 2012**

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Bank of Israel  
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## Acronyms and abbreviations

ACH	Automated Clearing House <sup>1</sup>
ATM	Automated Teller Machine
BIS	Bank for International Settlements
CCP	Central Counterparty
CET	Central European Time
CLS	Continuous Linked Settlement
CPSS	Committee on Payment and Settlement Systems
CSD	Central Securities Depository
DVP	Delivery Versus Payment
FIFO	First-In-First-Out
FSAP	Financial Sector Assessment Program
FX	Foreign Exchange
IBAN	International Bank Account Number
ICS	Intraday Credit System
IOSCO	International Organization of Securities Commissions
FMI	Financial Market Infrastructure
LSA	Loss Sharing Arrangement
POS	Point Of Sale
PVP	Payment Versus Payment
RTGS	Real Time Gross Settlement <sup>2</sup>
SIPS	Systemically Important Payment Systems
SSS	Securities Settlement System
SWIFT	Society for Worldwide Interbank Financial Telecommunication

<sup>1</sup> In Israel the automated clearing house is known as Masav (a Hebrew acronym for Banks Clearing Center).

<sup>2</sup> In Israel the RTGS clearing house is known as the Zahav system (a Hebrew acronym for Credits and Transfers in Real Time).



## Preface

This is the fourth report, known as the Red Book, on the payment and settlement systems in Israel. The report is meant to provide a comprehensive description of the main payment and settlement systems in Israel and to review their activity in 2012.

The Bank of Israel, like other central banks worldwide, acts to increase the stability and efficiency of the country's payment and settlement systems, in accordance with the Bank of Israel Law, 5770-2010, and the Payment Systems Law, 5768-2008. The stability of the payment systems is critical to maintaining the stability of financial activity in Israel and fulfilling the functions of the Bank of Israel as the country's central bank. If the payment and settlement systems are not sufficiently reliable, they are liable to expose their users to risk and may even lead to the transfer of risk from one economic system to another. Furthermore, the growth in financial activity worldwide, as well as the increase in the volume of payments in international capital markets, has increased the importance of these systems. Therefore, strengthening them is likely to enhance the ability to deal with a financial crisis. Since the Bank of Israel wishes to bolster financial stability, it acts to enhance the safety, efficiency and reliability of the payment and settlement systems and takes steps to reduce the risks originating from those systems.

The Red Book has a similar structure to corresponding documents in other countries and is composed of four chapters. The first chapter surveys the principal developments in this area during the year being reviewed. The second chapter presents the institutional aspects of the payment systems and briefly describes the relevant entities. The third chapter describes the principal payment and settlement systems operating in Israel. The fourth chapter focuses on the means of payment in the economy. The last part of the document contains a statistical appendix, including tables which are presented according to the guidelines of the BIS, as well as a glossary.

## Chapter 1: Main Developments in 2012

In recent years, there has been significant progress in the regulation of payment and settlement systems, both in Israel and worldwide, a process that gained momentum following the financial crisis in 2008. International bodies and central banks then began examining the existing core principles and decided to revise them. Within this framework, the IMF has examined the level of financial stability in various countries, including Israel.

In the first quarter of 2012, the IMF published a report, which included an FSAP<sup>1</sup> evaluation. The report presented an assessment of several focal points in the Israeli economy, including the Zahav (RTGS – Real Time Gross Settlement) system and the Tel Aviv Stock Exchange (TASE) clearing houses. The FSAP report states that these systems meet most international standards, that they are stable and that they meet the needs of their users. The main findings regarding the Zahav system relate to, among other things, the need to institute oversight over the payment and settlement systems in Israel<sup>2</sup>, the need to continue to advance the business continuity plan for the Zahav system as part of the Bank of Israel overall business continuity plan and the need for changes in the Payment Systems Law, to expand the protection it provides to globally accepted levels.

In August 2011, the Knesset approved Amendment 18 to the Banking (Licensing) Law, 5741–1981. The amendment primarily relates to Section D2 “Settlement of Payment Card Transactions” and among other things is meant to remove entry barriers to new issuers and clearing houses that wish to enter the market, thus increasing competition in the sector. In this context, the amendment permits non-bank entities to obtain a license for this activity. According to the amendment, the Bank of Israel is the entity responsible for providing such licenses and any company that receives a settlement license will be subject to its oversight. Accordingly, in 2012 the Bank of Israel created working groups that outlined the licensing process and defined the oversight framework for clearing houses, including regulatory requirements.

In view of the developments in the pension savings market in recent years and the computerization of much of the market, there is now a need to automate the work processes involved in the transfer of information and funds to and from institutional entities. To this end, the Capital Market, Insurance and Savings Division of the Ministry of Finance has published a tender for the establishment of a central pension clearing house system which will transfer information and funds between the various participants in the long term savings market. This system will become operational in four stages over a period of 32 months, beginning in June 2013. In the first stage, it will transfer information between license holders and institutional entities; in the second stage, savers as well will be able to obtain information by means of the system; in the third stage, the system will settle

<sup>1</sup> Financial Sector Assessment Program.

<sup>2</sup> In July 2013, the Masav and Shva systems were declared to be controlled systems.

fund flows between bodies that operate in the pension savings market by means of the Zahav system; and in the fourth stage employers will also be able to transfer funds using the system.

In 2012, the Bank of Israel continued working to improve the payment systems. As part of this effort, the Bank took steps to encourage the use of advanced, lower risk methods of electronic payment: 1) It continued its encouragement of the settlement of large amounts directly within the Zahav system, by limiting the payment amount that can be transferred in a single transaction through the Masav (ACH—automated clearing house) system. The goal is to reduce the settlement risk in both the Masav and Zahav systems. 2) It introduced an advanced settlement system based on state of the art technology into the Paper-based Clearing House; and 3) it worked to reduce manual settlement (manual debits and credits) in the Paper-based Clearing House. In the context of the effort to reduce the scope of manual settlements, the need arose for a comprehensive reform of the settlement process in the issuance of corporate securities.<sup>3</sup> In order to meet this need, a committee led by the Bank of Israel and the Israel Securities Authority was established. The committee prepared a plan for the replacement of labor-intensive business processes with efficient and low-risk electronic processes. In addition to encouraging the use of low-risk means of payment, the Bank of Israel has continued its efforts to strengthen the business continuity of the payment and settlement systems that it operates, i.e., the Zahav system and the checks clearing house.

### Box 1 Global developments

**The EU:** The European Central Bank (ECB) decided to carry out a reform of the payment systems and electronic means of payment<sup>1</sup> and to consolidate similar payment systems throughout the eurozone. The reform, known as the Single Euro Payment Area (SEPA), is meant to increase the efficiency of the systems, to improve customer service and to reduce operating costs. Simultaneous with the decision to consolidate existing systems, it was decided: a) to create uniform arrangements and standards for the quick, efficient and safe transfer of payments between EU countries and b) to improve the means of payment by, among other things, creating new regulations and by opening up this area to competition through the removal of barriers to entry for new players and the reduction of costs in the execution of payments. To this end, the legal infrastructure was put in place in the eurozone by means of the Payment System Directive (PSD). The PSD relates to three main areas: uniformity in entry requirements, primarily those applying to nonbank financial

<sup>1</sup> Credit cards, debit cards, bank transfers and direct transfers.

<sup>3</sup> The financial settlement of corporate security issuance is currently carried out by manual settlement (in the Paper-based Clearing House).

entities; transparency of the information transferred by entities providing payment services in all the EU countries; and uniformity of rights and obligations of service providers and users in the eurozone.

**The US:** As a result of the lessons learned from the last financial crisis, the Dodd-Frank Wall Street Reform and Consumer Protection Act was passed in July 2010. The law specifies a series of regulatory changes that apply to entities operating in the financial markets, including: the expansion of the supervisory authority over banks and nonbank financial corporations; directives and guidelines to reduce risk and to reduce the levels of exposure to other financial corporations; guidelines and methods of operating in the case of bankruptcy of financial corporations; provision of financial protection to consumers and investors; creation of mechanisms for transparency and the submission of information to regulators; and the definition of standards for joint activity between regulators in the US and those in other countries. In addition, the law stipulates the creation of a council of regulators in the US whose function is to define and identify critical entities operating in the financial markets; to identify and understand macroprudential risks; to identify gaps in regulation; and to encourage cooperation between the various regulators. The Dodd-Frank Act affects not only entities in the US but also any entity operating in the US market. Therefore, it is also expected to have an impact on the activity of banks and financial entities in the Israeli capital market.

**Global:** In April 2012, the BIS and the CPSS-IOSCO Committee published a report that presents the principles for oversight of Financial Markets Infrastructure (FMI).<sup>2</sup> The report lists 24 principles that apply to the entire financial infrastructure, including: critical payment systems, systems for the maintenance of collateral, systems for the settlement of securities, central counterparty systems and repurchase agreement (REPO) systems. In accordance with this report, central banks are required to adopt new regulations, rules and procedures based on these principles and to implement them as early as possible.

<sup>2</sup> <http://www.bis.org/publ/cpss101a.pdf>

### 1.1 The Zahav system<sup>4</sup>

In 2012, about 400,000 transactions, with a value of about NIS 80 billion, settled through the Zahav system. This compares to about 350,000 transactions with a total value of NIS 89 billion in 2011 an increase of about 15 percent in the number of transactions and a decrease of about 10 percent in the total value of transactions.

Table 1 indicates that the number of interbank transactions increased by about 16 percent while their value declined by about 8 percent. Total interbank activity also includes

<sup>4</sup> A description of the systems appears in Chapter 3: “The Payment and Settlement Systems”.

conversion transactions (transactions in which one side is the shekel) carried out at the Continuous Linked Settlement (CLS) bank. The value of these transaction grew by about 14 percent while the value of interbank activities not including the CLS declined by about 13 percent this year.

**Table 1**  
**Zahav activity, by components, 2008–12**

	Interbank <sup>1</sup>			Clearing houses	Bank of Israel	Total
	Without CLS	CLS alone	Total			
<b>Value (NIS billion)</b>						
2008	5,894	508	6,402	7,506	7,966	21,874
2009	3,809	933	4,742	4,831	52,731	62,304
2010	4,575	1,097	5,672	4,294	65,818	75,784
2011	5,897	1,408	7,305	4,066	77,573	88,944
2012	5,109	1,606	6,715	3,515	69,637	79,867
<b>YOY change (percent)</b>	<b>-13.4</b>	<b>14.1</b>	<b>-8.1</b>	<b>-13.6</b>	<b>-10.2</b>	<b>-10.2</b>
<b>Volume (thousands)</b>						
2008	185,584	7,913	193,497	8,948	13,959	216,404
2009	156,430	10,427	166,857	9,398	21,394	197,649
2010	217,872	10,774	228,646	10,707	21,864	261,217
2011	305,138	10,813	315,951	11,068	22,591	349,610
2012	355,821	10,632	366,453	12,184	21,693	400,330
<b>YOY change (percent)</b>	<b>16.6</b>	<b>-1.7</b>	<b>16.0</b>	<b>10.1</b>	<b>-4.0</b>	<b>14.5</b>

<sup>1</sup> The New Shekel began to participate in CLS settlement on May 26, 2008.

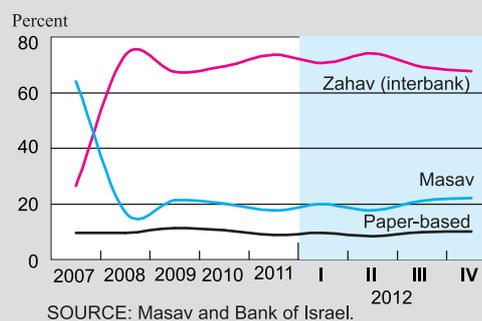
SOURCE: Bank of Israel.

The total volume of financial activity in the clearing houses, i.e., the TASE clearing houses for securities, the paper-based (checks) clearing house and Masav, declined this year by about 13.6 percent. In the TASE clearing houses, there was a decline of about 18.7 percent in the total value settled in the Zahav system,<sup>5</sup> which was partly the result of the significant drop in the amount of collateral held by Zahav participants in the Bank of Israel account at the Stock Exchange. Excluding activity related to collateral, the volume of activity in the TASE clearing houses remained unchanged in 2012. Similarly, the volume of activity in the paper-based clearing house remained similar to that in 2011. Total activity in the Masav system grew by about 9.7 percent.

<sup>5</sup> Including the amounts transferred by the TASE clearing houses to the intraday credit line accounts of the banks in the Zahav system.

In 2012, the sixth year of operation for the Zahav system, most of the large amounts (which were interbank transactions) were settled directly. The proportion of interbank settlement in the Zahav system during the year under review was about 68 percent; the credits in Masav accounted for about 23 percent and checks accounted for about 9 percent (Figure 1). To the extent that the share of interbank settlement through Zahav increases, at the expense of reduced credits cleared through Masav<sup>6</sup> and the amount settled through the paper-based clearing house, the risks in the systems will be reduced. The Bank of Israel continued to encourage the public to carry out large payments directly in the Zahav system.

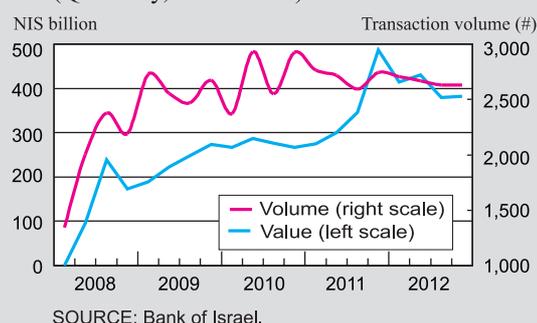
**Figure 1**  
Distribution of the Clearing Houses' Activity, 2007-12



## 1.2 CLS Bank

CLS Bank settles more than 50 percent of the international foreign exchange market and provides settlement services in 17 currencies. It is responsible for most of the activity in Israel involving the exchange of shekels against foreign currencies. In 2012, the activity in CLS was about NIS 1.6 trillion (cumulative for the year), an increase of 14 percent from the previous year. The number of transactions settled in CLS declined by about 2 percent this year.

**Figure 2**  
CLS Shekel Activity in Zahav System, 2008-12  
(Quarterly, cumulative)



## 1.3 The Banks' Clearing House

### 1.3.1 The Paper-based Clearing House

Manual drafts and checks are settled in the paper-based clearing house. During the year being reviewed, activity in the Paper-based Clearing House totaled about NIS 888 billion, compared to NIS 877 billion in 2011. The number of transactions declined from about 124,000 to 122,000, about a one percent decline.

<sup>6</sup> The Zahav system only allows the settlement of credits, i.e., self-debit and credit of the beneficiary, and therefore the debits cannot be shifted to the Zahav system. They will continue to be settled in the Masav system.

Table 2

## Paper-based Clearing House, by components, 2007–12

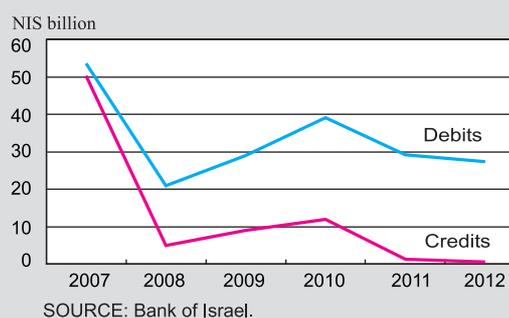
	Manual instructions			Checks			Total in Paper-based Clearing House
	Debits	Credits	Total	Presented	Returned	Total	
	Value (NIS billion)						
2007	55	51	106	749	24	773	879
2008	21	5	26	776	24	800	826
2009	29	9	38	727	22	749	787
2010	39	12	51	784	23	807	858
2011	29	1	30	822	24	846	877
2012	27	1	28	835	25	860	888
<b>YOY change (percent)</b>	<b>-6.6</b>	<b>-56.8</b>	<b>-8.5</b>	<b>1.6</b>	<b>2.1</b>	<b>1.6</b>	<b>1.3</b>
Volume (thousands)							
<sup>1</sup> 2007				148,254	3,508	151,762	151,762
2008	252	233	485	131,739	3,609	135,348	135,833
2009	229	270	499	121,258	3,249	124,507	125,006
2010	190	241	431	121,645	2,963	124,608	125,039
2011	180	37	217	120,583	2,883	123,466	123,683
2012	193	57	250	119,094	2,804	121,898	122,148
<b>YOY change (percent)</b>	<b>7.5</b>	<b>54.6</b>	<b>15.5</b>	<b>-1.2</b>	<b>-2.7</b>	<b>-1.3</b>	<b>-1.2</b>

<sup>1</sup> In 2007, data on the number of manual instructions were not collected.

SOURCE: Bank of Israel.

Total manual transactions declined by about 9 percent this year, compared to a decline of about 40 percent in 2011. About 90 percent of the manual debit amounts were due to the settlement of funds from the issuance of corporate securities. The Bank of Israel, together with the Israel Securities Authority, the TASE and other interested parties, is working to carry out a reform in this area. One of the results of the reform will be the shifting of funds settlement from manual settlement to an electronic settlement, which will significantly reduce the amount of debits settled in the manual clearing house.

**Figure 3**  
Manual settlement (NIS billion), 2007-12



**Table 3**  
**Masav, by components, 2007–12**

	Credits	Debits	Credits returned <sup>1</sup>	Debits returned	Total
Value (NIS billion)					
2007	5,940	235	-	3.9	6,179
2008	1,473	261	-	4.9	1,739
2009	1,503	271	-	5.5	1,779
2010	1,635	317	1	4.6	1,958
2011	1,752	342	1	4.7	2,100
2012	1,911	364	1	4.7	2,280
<b>YOY change (percent)</b>	<b>9.1</b>	<b>6.2</b>	<b>3.9</b>	<b>1.0</b>	<b>8.6</b>
Volume (thousands)					
2007	92,955	146,116	-	4,535	243,606
2008	96,316	152,892	-	5,003	254,211
2009	97,478	157,749	-	5,395	260,622
2010	103,326	168,186	104	4,926	276,541
2011	111,055	174,125	108	4,446	289,734
2012	119,100	180,180	109	4,295	303,684
<b>YOY change (percent)</b>	<b>7.2</b>	<b>3.5</b>	<b>1.3</b>	<b>-3.4</b>	<b>4.8</b>

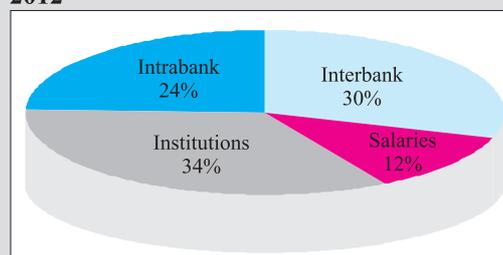
<sup>1</sup> Credits returned began to settle via Masav, instead of via the Paper-based Clearing House, in December 2009.

SOURCE: Masav.

### 1.3.2 Masav

Electronic credits and debits are carried out in the Masav system (electronic credits are also carried out in the Zahav system). Table 3 indicates that credits account for about 84 percent of total payments settled in Masav. The growth in Masav activity is the result of both credits and debits: debits grew by about 6 percent during the year being reviewed, compared with about 8 percent in the previous year, and credits grew by about 9 percent, compared with 7 percent in the previous year.

**Figure 4**  
**Masav - Credit value distribution, by target, 2012**



SOURCE: Masav.

The number of institutions operating in Masav increased by about 3.5 percent in 2012 compared with an increase of 5 percent in 2011.

It can be seen from Figure 4 that the credits component is composed of the activity of banks (about 54 percent of total activity) and of financial entities and organizations (about 46 percent of total). Banking activity grew during the year being reviewed by about 8 percent to a total of about NIS 1,039 billion (compared with about NIS 962 billion in the previous year). The activity of organizations grew during the year being reviewed by about 10 percent to a total of about NIS 872 billion (compared with about NIS 790 billion in the previous year).

#### 1.4 The TASE Clearing Houses

The TASE clearing houses—the securities clearing house and the Maof clearing house—settle the results of trading on the stock exchange. Securities are settled in the TASE clearing houses after the transfer of funds has been settled between the members of the stock exchange in the Zahav system.

As is the case for most stock exchanges worldwide, the local stock exchange has also experienced a drop in trading volume. Table 4 shows that in 2012, trading volume on the TASE totaled about NIS 1,414 billion, compared with about NIS 1,629 billion in the previous year (a decline of about 13 percent). Daily trading volume in shares continued to decline in 2012 and stabilized at an average level of about one billion shekels (a decline of about 37 percent relative to the previous year). Daily trading volume rose in the bond market, reaching NIS 5 billion (an increase of about 32 percent relative to the previous year). The amount raised by the government rose in 2012 to a total of NIS 83 billion, in comparison with about NIS 65 billion in the previous year.

	Stocks and convertibles	Bonds			<i>Makam</i>	Total
		Gov't	Other	Total		
<b>Value (NIS billion)</b>						
2006	360	356	68	424	198	982
2007	506	636	165	801	207	1,514
2008	481	761	224	985	192	1,658
2009	423	789	223	1,012	160	1,595
2010	498	579	218	797	291	1,586
2011	422	703	217	920	287	1,629
2012	264	748	247	995	155	1,414
<b>YOY change (percent)</b>	<b>-37.4</b>	<b>6.4</b>	<b>13.8</b>	<b>8.2</b>	<b>-46.0</b>	<b>-13.2</b>

SOURCE: Tel Aviv Stock Exchange.

## Chapter 2: Institutional Aspects

### 2.1. The regulatory environment

A firm legal grounding is essential for the Bank of Israel's regulatory activity and the activity of the various payment systems in Israel. Following are the laws and agreements that regulate the activity of the payment systems in Israel:

**Paragraph 4 of the Bank of Israel Law, 5770-2010**, establishes that one of the functions of the Bank of Israel is “to regulate the economy's payment and settlement systems so as to ensure their efficiency and stability”. This law provides the Bank of Israel with the authority to fulfill its functions in the payment and settlement systems, including the operation of payment systems with systemic importance and the oversight of payment systems.

As part of the reform of the payment and settlement systems in Israel, the Bank took a leading role in the legislation of the **Payment Systems Law, 5768-2008**, the goal of which is to ensure the efficiency of the payment systems in Israel and to reduce the risks related to them. The law sets out the arrangements necessary for the proper functioning of the payment systems and includes, among other things, a definition of the term “payment system”, the criteria for finality of payments in the system and the procedure in the case of a bankruptcy of a system participant. In addition, the law provides the Bank of Israel with the authority to introduce regulations and to oversee the payment systems in Israel. Thus, it determines under what conditions the payment system will be subject to oversight authority, which obligations apply to the operator of such a system, and what oversight tools are available to the Bank of Israel.

In August 2011, the Knesset approved **Amendment 18 to the Banking (Licensing) Law, 5741-1981**. As part of the amendment, a chapter was added to the law which deals with the settlement of transactions carried out with payment cards. Among other things, the chapter prohibits the provision of settlement services without a license granted by the Governor of the Bank of Israel. A company that receives a settlement license will be subject to the oversight of the Bank of Israel.

The securities clearing house and the Maof clearing house belong to the Tel Aviv Stock Exchange (TASE) and operate in accordance with the Securities Law, 5728-1968, and according to the bylaws of the clearing houses. As part of its function as overseer of the payment and settlement systems, the Bank of Israel signed a **memorandum of understanding with the Israel Securities Authority** in order to regulate the cooperation between the two entities with respect to oversight of the TASE clearing houses.

The Banks' Clearing House is made up of the Paper-based (checks) Clearing House and the Automated Clearing House (Masav), and operates according to the **Clearing House Rules**. These rules are revised from time to time in accordance with the decision of the Clearing House Committee, which includes representative of the banks, the Postal Bank and the Bank of Israel.

In recent years, the Bank of Israel has been involved in the passage of the **Electronic Check Clearing Law, 5768-2008**, (also known as the “Check Truncation Law”). The Law will allow for checks to be kept by the presenting banks, which will only transfer files of scanned checks to the collecting banks. These files will serve as binding legal and business evidence. However, until the law is approved, scanned checks cannot serve as legal proof in place of the original check.

The **Prohibition on Money Laundering Law, 5760-2000**, was approved in Israel in August 2000. About 18 months following that, the sections dealing with the obligations of financial entities came into effect. During this period, the Governor of the Bank of Israel also released a directive on the prohibition on money laundering. It imposes requirements on the banks with regard to the identification of clients, maintenance of records and reporting to the Israel Money Laundering and Terrorism Financing Prohibition Authority. At the beginning of 2005, the **Prohibition of the Financing of Terrorism Law, 5765–2005**, went into effect. At the same time changes were made in the directives to the Israeli banking system in order that they include the means for preventing the financing of terror. Additional measures in this effort were taken in November 2006, including approval by the Knesset of regulations that deal with the prohibition of financing terror. Israel is continually examining new ways of fighting money laundering and the financing of terror and is also reconsidering (or revising) existing measures as circumstances change. The goal is to provide solutions that can deal with the increase in sophistication of criminals in this area. The steps include changes in legislation and the revision of regulations in order to strengthen the requirements regarding risk management (including special requirements with respect to the use of payment cards for illegal transactions through the Internet).

In March 2011, the Knesset approved **Amendment 3 to the Oversight of Financial Services (provision of pension advice and pension marketing) Law, 5771-2001**. The amendment required the creation and operation of a pension settlement system and also specified the conditions for its operation and the services that it will provided.

In addition to the amendment of legislation, the Bank of Israel has signed several agreements and memorandums of understanding with entities active in the payment and settlement systems in Israel. In preparation for the launch of the Zahav system and in order to formalize the relations with the entities active in the system, the Bank of Israel signed agreements with the banks, Masav and the TASE clearing houses. These agreements include the **Zahav System Rules** which formalize the rules and arrangements for the activity of the Zahav system.

## **2.2 Financial intermediaries**

The following entities provide services within the payment and settlement systems:

**Banking Corporations** – There are 24 banking corporations operating in Israel. They can be classified into four types—banking corporations, foreign banks, mortgage banks and

joint services companies.<sup>7</sup> The banks provide a wide variety of banking services and also participate in the various settlement systems. The banks are under the supervision of the Banking Supervision Department at the Bank of Israel.

The **Postal Bank** is a subsidiary of the Israel Postal Company, which is a government corporation. The Postal Bank provides a range of financial services to business customers, government entities and the general public through a nationwide network of branches. According to the Postal Law, 5746-1986, the Postal Bank is not permitted to manage deposits or to provide credit to customers (since it is not permitted to pay or charge interest). The Postal Bank is government-owned and is subject to the supervision of the Ministry of Communication. It participates in the various payment systems, including the Zahav system.

**Banks in the Palestinian Authority** – The members of the Banks' Clearing House include 15 banks that operate within the Palestinian Authority and whose customers use checks written in Israeli currency within the area of the Palestinian Authority. These banks are represented in the paper-based clearing house by Israeli banks.

**Payment Card Companies** – There are three large payment card companies in Israel,<sup>8</sup> which issue five local and international brands.<sup>9</sup> The companies issue both bank and nonbank payment cards. In addition, they provide customers with a variety of credit solutions and in recent years have begun issuing combined customer club and payment cards, as well as cards aimed at specific sectors which provide special benefits to various target populations.

## **2.3 The functions of the Bank of Israel**

### **2.3.1 The functions of the Bank of Israel as the central bank**

The Bank of Israel Law details the Bank's functions, including:

**Managing monetary policy** – with the aim of maintaining price stability, which provides support for economic growth. Price stability is defined by means of flexible inflation targets that the government sets as part of its economic policy.

**Holding and managing the country's foreign currency reserves** – The reserves are used primarily to provide the government with foreign currency to fulfill its obligations and to reduce the probability of a crisis in the foreign exchange market in Israel and improve Israel's position in the international financial environment.

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<sup>7</sup> The Banking Supervision Department uses a fifth category called "financial institutions", which includes only one institution: "Hasah" an education savings fund.

<sup>8</sup> Leumi Card, Isracard and Cal.

<sup>9</sup> Visa, Mastercard, American Express, Diners and Isracard (the only local brand). Some of the brands have more than one operator. For example, the international Visa brand is offered by all three companies in Israel.

**Acting as the banker of the government and the banking corporations** – To manage the government's shekel and foreign currency accounts and to provide it with banking services, such as the execution of receipts and payments due to the activity of the various government ministries and its auxiliary units, the calculation of interest due to interest-bearing activity in its accounts and the issue of daily bank statements and balance confirmations.

In addition, the Bank of Israel serves as the banker for banking corporations. As part of this function, it manages various types of deposits for the banking corporations, both in shekels and dollars: deposits as a result of liquidity regulations and deposits of excess funds held by the banks, which are deposited at their initiative. The banks' use their current accounts at the Bank of Israel for the management of intraday and overnight liquidity. In addition, the Bank of Israel provides loans to the banks in daily auctions, overnight loans and settlement services for shekel-dollar transactions.

**Issuing currency<sup>10</sup> and regulating and managing the cash system in the economy** – in order to ensure the provision of currency, in accordance with supply and demand.

**Supervising and regulating the banking system** – To supervise the banks, in view of the essential role of the banking system and the recognition that a failure in the banking system is liable to severely disrupt the functioning of the economy. The functions of the Banking Supervision Department include ensuring the stability of the banks in order to protect the funds of depositors, ensuring the proper conduct of the banks and maintaining fair business relations between the banks and their customers.

### **2.3.2 The functions of the Bank of Israel in the payment, settlement and means of payments systems**

The Bank of Israel Law specifies that in addition to the functions mentioned above, the central bank has the function of “regulating the payment and settlement systems in the economy, so as to ensure their efficiency and stability”. To this end, the Bank works to ensure the safety, efficiency and reliability of the payment and settlement systems and takes measures to reduce the risks inherent in settlement, which include:

#### **2.3.2.1 Operation of critical payment systems**

The Bank of Israel operates the Zahav system and the Paper-based Clearing House and participates in the various payment systems in order to carry out payments. These activities require electronic links to financial institutions in Israel and abroad, which are provided by various communication interfaces and applications, among them Shva, Kasefet and SWIFT.

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<sup>10</sup> Banknotes, coins, commemorative coins and special coins.

### **2.3.2.2 Payment systems oversight**

The recognition of the importance of the payment and settlement systems and the magnitude of the risks inherent in them led central banks throughout the world—including the Bank of Israel—to create frameworks for the oversight of payment and settlement systems.

The Payment Systems Law grants authority to the Bank of Israel to oversee the payment systems. It specifies, among other things: the conditions and criteria for declaring a payment system to be a controlled system or a designated controlled system that is subject to oversight authority; the tools available to the Bank of Israel in order to implement its authority; and the obligations that apply to the operator of the system. According to the law, the Bank of Israel has the power to demand information from the payment systems and to dictate changes in their methods of operation. To date, the Governor has declared the Zahav system and CLS Bank to be designated controlled systems that are subject to the oversight of the Bank of Israel<sup>11</sup>.

The main function of the payment systems oversight is to regulate the payment and settlement activity in systems that have been declared as either controlled systems or designated controlled systems, with the goal of ensuring their efficiency and stability. This function includes the identification of risks inherent in the activities of the payment systems and the adoption of measures to eliminate or control them. In addition, the Payment Systems Oversight Unit will determine to what extent the payment systems meet international principles for oversight of financial infrastructures, as defined by the BIS (see Box 2). These principles cover a wide range of issues, including: organizational issues, such as legal infrastructure and corporate governance; management of credit and settlement risk; liquidity risk; operation of the system in a failure situation; business risk; operational risk; accessibility of the system; and efficiency and transparency.

### **2.3.2.3 Assimilation of improvements and promoting reforms in the payment systems in Israel**

(1) More widespread use of electronic means of payment by all the target groups, which includes the introduction of guidelines for encouraging their use; reducing the use of paper-based means of payment and advocating electronic alternatives; and the reinforcement of the supporting legal infrastructure, including the acceptance of electronic files as legal evidence; (2) determining rules for operating the payment systems and enforcing them; (3) initiation of reforms to increase efficiency and to meet international standards.

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<sup>11</sup> During July 2013 the Masav and Shva systems were also declared as controlled systems.

## Box 2 Principles for the oversight of financial infrastructures

The recognition of the magnitude and severity of the risks inherent in settlement motivated the BIS to establish international standards for payment and settlement systems, with the goal of reducing those risks. In January 2001, the BIS published ten Core Principles<sup>1</sup> for payment systems.

In April 2012, the Core Principles were replaced by the Principles for Financial Market Infrastructures issued by the BIS and SPSS-IOSCO in a report (hereafter: the FMI Principles).<sup>2</sup> The report includes standards for the overall operations of the financial infrastructures. It presents a single comprehensive system composed of 24 principles which is meant to apply to all the entities that make up the infrastructure of a financial market, including systemically important payment systems (SIPS), central security depositories (CSD), securities settlement systems (SSS), central counter-party systems (CCP) and repo trading systems.

Following on the ten Core Principles published in 2001, the FMI Principles establish the standards and requirements in new areas, such as the connections and interdependencies between the various entities operating in the market, which may lead to the spread of operational risk. In addition, the FMI Principles tightened the requirements of the Core Principles. Thus, the Core Principles required, as part of the financial infrastructure's management of risk, the ability to continue operations in the event that one participant—the largest one—fails, while the FMI Principles require this in the event that two large participants fail.

According to the report, the central banks are required to assimilate the FMI Principles within the relevant legislation, rules and procedures. In addition, they are required to begin the implementation of the principles in their oversight activity as early as possible.

In December 2012, the BIS and CPSS-IOSCO published a document presenting the methodology for implementing the FMI Principles (called the Disclosure Framework and Assessment Methodology). The document will be used by oversight entities as the basis for determining whether the overseen systems are complying with the twenty-four principles.

<sup>1</sup> <http://www.bis.org/publ/cpss43.pdf>

<sup>2</sup> <http://www.bis.org/publ/cpss101a.pdf>

## 2.4 Public and private entities involved in payment and settlement

**The Council for Payment and Settlement Systems** was established in 2009 in order to improve the efficiency and stability of the payment systems in Israel. The Council is headed by the Director General of the Bank of Israel, and its members include representatives of the various entities connected to the payment systems in Israel, such as the Bank of Israel, the banking corporations and the payment systems themselves. In addition, three Council members are representatives of relevant institutions.

The **Banks' Clearing House** includes the paper-based (checks) clearing house and Masav. The clearing house is managed by the Clearing House Committee) which includes representatives of the Bank of Israel and the banking system. The main function of the Clearing House Committee is to regulate the transfer of transactions and settlements between the banks, and to that end the Committee determines the rules for the clearing house. The **Paper-based (checks) Clearing House** is operated by the Bank of Israel. **Masav** is a joint service company owned by the five largest banks in Israel. The company has been in operation since 1984 and provides services to all the banks, as well as business customers. These services include the execution of payments through standing order (direct debits) and the transfer of salary payments (direct credits).

The **TASE Ltd.** is a private company established by banks and brokers in 1953. The TASE operates computerized trading systems for all traded securities: shares, convertibles, bonds, makam, ETFs, short ETFs and options. The TASE operates two clearing houses: the securities clearing house for the settlement of trading in securities and the Maof Clearing House Ltd. for settlement in the derivatives market.

**Shva** (Hebrew acronym for “automated bank services”) is a limited company established in 1978 and owned by the five largest banks in Israel. The company is a banking corporation and considered to be a joint services company, as defined in Paragraph 23 of the Banking (Licensing) Law, 5741–1981. Shva operates according to the license and permits for operation granted it by the Bank of Israel and on the basis of an exemption from obtaining approval for a noncompetitive arrangement from the Antitrust Authority. The company provides services to various financial institutions, such as banks, monetary institutions, credit card companies and provident funds. The company focuses on the following activities: management of the communication network for payment card activity; management of the network of ATMs, which are located at the bank branches and various other points throughout the country; and the provision of additional communication services.

The **Israel Securities Authority (ISA)** was established by the Securities Law, 5728-1968, and its function is to protect the interests of the investing public. The ISA deals with the following areas, among others: publishing of the prospectuses of corporations and mutual funds; examination of reports presented by reporting entities; regulation and supervision of activity in the mutual funds industry; and licensing of portfolio managers, investment advisors and investment marketers, including regulation and oversight of their activity. Since the Payment Systems Law came into effect, the ISA has also been responsible for the oversight of the TASE clearing houses. The Bank of Israel and the ISA cooperate in all

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aspects of the oversight of the TASE clearing houses, in accordance with the memorandum of understanding signed between them in 2009.

**The Association of Banks in Israel** was established in 1959 as an umbrella organization for all the banking corporations in Israel. The banking industry established the association in order to facilitate effective dialog with government authorities and the public and private sectors on system-wide issues, with its main goal being to advance the interests of this industry. The activity of the association focuses on various areas of regulation and the economy and the representation of the banks in dealing with government institutions. It is also involved in public relations and research related to banking. In addition, the association represents the banking industry on the Coordinating Bureau of Economic Organizations and parallel international forums. The association has eighteen members, which include the commercial banks, foreign banks and the mortgage banks.

## Chapter 3: Payment and Settlement Systems

### 3.1 The existing infrastructure

The financial infrastructure in Israel includes: inter-bank payment and settlement systems, which are used for the transfer and settlement of payments; means of payment; participants; and communication systems, as presented in Figure 5.

The important payment systems in Israel include: the Zahav system, which is used for the irrevocable transfer of large sums in real time and which serves as the final settler for all the payment systems in the economy; the paper-based

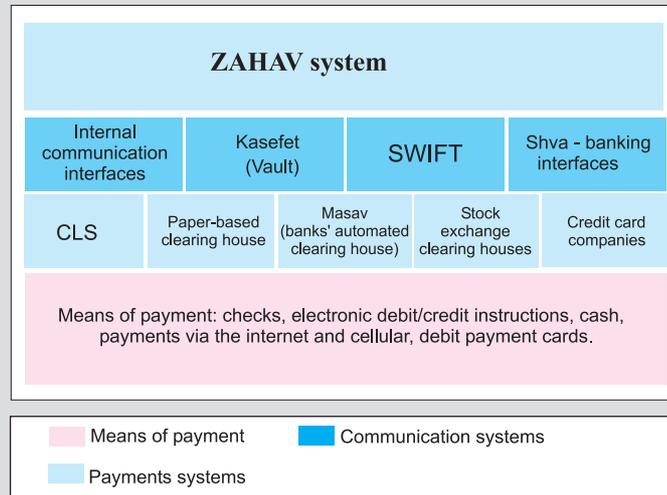
(checks) clearing house which is used for the transfer of paper-based transactions; Masav which settles electronic payment transactions; the TASE clearing houses (the securities clearing house and the Maof clearing house); and the payment card companies. The CLS system, which operates abroad, has been an integral part of the payment and settlement systems in Israel since the shekel was added to settlement in the CLS in May 2008. The system provides settlement for the Israeli currency against the foreign currencies settled in the CLS.

The participants in the payment systems are banking corporations, the Postal Bank, the Bank of Israel, financial entities, the government and also the general public. The participants make use of a variety of means of payment, such as cash, electronic payments (credits/debits), checks and paper-based vouchers, payment cards, payments through the Internet, transfers abroad and foreign currency–shekel conversions.

### 3.2 The Zahav system

Zahav is an advanced system for the efficient and reliable settlement in real time of shekel payments in the economy. Settlement in the Zahav system is final—it serves as the final settler for all of the payment systems in Israel. The system guarantees its users fast and secure execution of payments. Settlement activity is completed within minutes and is irrevocable once complete. The beneficiary of a payment can make use of the transferred

**Figure 5**  
**Israel's Payments System**



funds immediately, without being exposed to risk. The system began operating in July 2007 and is run by the Bank of Israel.

The Zahav system significantly reduces the risk inherent in the activity of the payment systems, including both credit and liquidity risks and the dependency of each participant on the other participants in settlement. This significantly reduces systemic risk as well. The Zahav system makes it possible to carry out transactions safely and without settlement risk, even during periods of financial uncertainty.

In addition, the system provides the Bank of Israel with access to real time financial indicators of the banks' liquidity situation and thus is a tool for maintaining the stability of the participants in the system and of the financial system as a whole.

### **Principles of the Zahav system**

Zahav is a settlement system in a single currency—the New Shekel. It facilitates the execution of securities transactions against payment (delivery versus payment—DVP) and of payment versus payment (PVP). Settlement in the Zahav system is carried out in real time during the system's hours of operation (which were set according to the hours of the banking business day): weekdays from 7:45 to 18:30 and Fridays and holiday eves from 7:45 to 14:00. Each payment instruction is settled separately, without netting the debit and credit transactions of the presenting bank.

Activity in the Zahav system takes place by means of settlement accounts, which are defined for each settlement participant. This account includes a current account and an intra-day credit account, to which the Bank of Israel transfers intra-day credit against collateral, as needed. The Zahav system manages the payment instructions according to their time of arrival (i.e., First In First Out – FIFO). However, it also enables a participant to determine the priority for its payment instructions, according to their importance and urgency. If the presenting bank does not have a sufficient balance in its account at the Bank of Israel, the payment instruction is put in a queue until there is a sufficient balance. The transactions in the queue are sorted according to the priority set by the participant and according to FIFO within each level of priority.

The Zahav system meets the stringent criteria of the Israeli National Information Security Authority, due to the system's use of the international standard for identifying bank accounts, i.e., the International Bank Account Number—IBAN.

### **There are two types of transactions carried out in the Zahav system:**

**Bilateral transactions:** These are instructions to debit the account of the presenting participant and to credit the account of another participant. The transactions are conducted between the customers of the banks, between the banks participating in settlement and also between the settlement participants and the Bank of Israel (such as provision of credit to the banks, deposits of the banks with the Bank of Israel, withdrawal of cash from the Bank of Israel, etc.). The bilateral payment instructions are received continuously during the system's hours of operation.

**Multilateral transactions:** These are instructions carried out simultaneously between a number of participants and which are composed of a number of debits and a number of credits. In these transactions, the net results from other payments systems (Masav, the paper-based clearing house and the TASE) and instructions from the Bank of Israel are settled. Instructions of this type are settled during the course of the day at predefined intervals and they receive preference over bilateral payment instructions.

### **Participants in the Zahav system**

The participants in the Zahav system include all of the banking corporations in Israel, the Postal Bank, CLS bank, the clearing houses (Masav, the TASE clearing houses and the paper-based clearing house) and the Bank of Israel. The participants who maintain a settlement account in the system and are considered to be settlement participants include the banking corporations, CLS, the Postal Bank and the Bank of Israel. These participants, as well as the payment systems, are permitted to send payment instructions for settlement within the Zahav system.

There are two types of settlement participants: online participants who are directly connected to the system and can send and receive payment instructions; and offline participants who are not directly connected and must make use of an online participant in order to transfer and receive payment instructions. As of the end of 2012, there were 18 online participants and 3 offline participants.

### **Operational aspects of the Zahav system**

Bilateral settlements in the Zahav system are carried out throughout the working day in real time. On receipt of an instruction from the customer, the customer's bank branch transmits a payment instruction to the bank's central system and from there the instruction is transferred directly to the Zahav system at the Bank of Israel. If the presenting bank has a sufficient balance in its account at the Bank of Israel, then the settlement is carried out immediately; the system debits the account of the presenting bank and credits the account of the receiving account. The debits and credits are final and cannot be cancelled.

The Zahav system manages the settlement accounts of the settlement participants. The balance of a participant's settlement account includes the balance of the current account in which the settlement of payments takes place and the balance of the participant's intraday credit accounts. The intraday credit accounts include intraday credit that the Bank of Israel provides to a participant against collateral deposited in the Bank of Israel account at the TASE and against deposits (in shekels and in dollars) that the participant maintains at the Bank of Israel. Starting from the end of 2010, the Bank of Israel has been providing credit to Zahav participants against foreign securities as well.

In addition to the settlement account, each participant has reserve accounts, which maintain liquidity for the multilateral transactions of the paper-based clearing house, Masav and the TASE clearing houses. The payment instructions sent by the clearing houses are settled at predetermined times called "settlement windows". During a regular business day, there

are six settlement windows, of which three are for the TASE clearing houses<sup>12</sup>, two are for Masav and one is for the paper-based clearing house.

### **Management of intraday liquidity in the Zahav system**

The system of settlement in the Zahav system requires the banks to manage the liquidity in their accounts on an intraday basis. The bank's liquidity must be sufficient for immediate settlement of all the payment instructions reaching the system during its hours of activity. The Bank of Israel provides intraday credit (through the Intraday Credit System – ICS) to the banks participating in settlement and they are able to use this credit according to their needs during the system's hours of operation. The banks receive interest-free intraday credit against full collateral and during the hours of operation only. By the close of the day in the Zahav system, they must return these funds.

The aforementioned collateral consists of government bonds, the deposits of the banks at the Bank of Israel (in shekels and in dollars) and deposits of foreign securities. The TASE developed a designated system to be used by the Bank of Israel for the management of collateral received against intraday credit. The participants in the system can change the amount of intraday credit held in their accounts during the course of the day, according to the amount of collateral they hold.

### **3.3 The banks' clearing house**

The banks' clearing house determines the rules for the paper-based clearing house, in which paper-based transactions (checks and vouchers) are settled, as well as the rules for Masav, in which credits and debits are settled electronically.

As noted, the banks' clearing house is managed by the Clearing House Committee. The Committee has 14 members (half of which are representatives of the Bank of Israel and half of which are representatives of the banking system) who are appointed by the Governor of the Bank of Israel or someone authorized by him. The activity of the banks' clearing house is carried out according to an agreement between its members, which is known as the Clearing House Rules. These rules are revised from time to time according to the decisions made by the Clearing House Committee at its periodic meetings.

A **Loss Sharing Agreement** is an arrangement between the participants in a payment system which determines the allocation of losses that are liable to result from the failure of a participant in the system. This is in accordance with the Core Principles of the BIS, which state that multilateral payment instructions must be carried out on time and no later than the end of the business day. The Bank of Israel has taken on itself the responsibility to plan and put into effect arrangements to guarantee the multilateral settlements of the banks' clearing house. (Separate arrangements have been set up for each of the other clearing houses, i.e., the paper-based clearing house and Masav.)

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<sup>12</sup> On Fridays and holiday eves the stock exchange has two settlement windows.

The arrangement stipulates the allocation of losses between the settlement participants, according to the relative proportion of each participant's activity. The arrangement will be activated by the Bank of Israel in the event that one of the participants in Masav or in the paper-based clearing house cannot meet its commitments. This principle is critical to the operation of the system since it reduces the uncertainty involved in net settlement, reduces credit and liquidity risk in the system and guarantees that the settlement of a multilateral payment instruction is carried out by the end of the business day.

### **3.3.1 Masav**

Masav is an electronic system for the settlement of interbank transactions in shekels that are not based on paper documents, including authorizations to debit an account and payments of salaries and taxes. These are sent to Masav by banks and authorized organizations.

#### **The principles of Masav**

Two types of instructions are carried out in Masav: **direct credits** which are payments originating from organizations (including the government) and which involve payment of salaries, payments to suppliers, payment of taxes, etc., and payments originating from the banks which reflect the activity of their customers; and **direct debits** which originate from organizations (standing orders to debit an account).

The debit and credit instructions are settled at the end of the day of transfer according to the value on that day (T). Interbank transfers, i.e., settling of accounts between the banks due to instructions sent to Masav, are settled in the Zahav system on the business day following the day of transfer (T+1). Payment instructions are accepted at Masav throughout the working day.

Payment instructions settled in Masav are not final since the beneficiary can return the credit within 3 business days and the debited party can return the debit within 5 business days. Returned payment instructions receive the value of the day on which they are presented.

#### **Participants in Masav**

The participants in Masav include all the organizations that are permitted to submit payment instructions to the system. There are 24,686 organizations that participate in Masav, which include banking corporations, the Postal Bank, government ministries and public institutions, as well as other settlement organizations such as the payment card companies. All of the participants in Masav are direct participants, i.e., they represent themselves.

#### **The operational aspect of Masav**

The participants submit payment instructions in the form of batch files to Masav during the course of the business day. The Clearing House Committee has decided on the hours during which files can be sent to Masav for processing on the same day.

On receipt of the files, Masav carries out a clearing process, which involves the calculation of the mutual liabilities of the participating banks and the creation of a net file that is intended for final settlement in the Zahav system. It should be noted that even before the final net sum is sent to the Zahav system, intermediate calculations which are carried out from time to time during the business day by Masav are sent to the banks. The purpose of this is to allow the banks to prepare the liquidity needed for settlement in the Zahav system.

The Zahav system has two settlement windows for Masav: the first at the beginning of the day (at 10:00) and the second towards the end of the day (at 18:00 on a weekday and at 13:30 on Fridays and holiday eves).

### **3.3.2 The paper-based clearing house (the checks clearing house)**

The paper-based clearing house settles transactions that are submitted on paper. The transactions presented by the paper-based clearing house are for the most part checks they are now presented and returned only electronically. In addition, manual instructions (non-magnetic credits and debits and magnetic payment vouchers), which are also known as vouchers, are presented at the paper-based clearing house.

In recent years, a number of processes have been promoted in Israel related to the paper-based clearing house, including: the writing of draft legislation for the electronic settlement of checks; the introduction of imaging of checks; steps to reduce the number of manual transactions; and the introduction of a standardized check.

#### **Participants in the paper-based clearing house**

The paper-based clearing house has 35 members, which include the banking corporations, the Postal Bank and the Bank of Israel. Some of them operate in the clearing house directly and the rest are represented by other banks. In the settlement of electronic transactions, 8 banks operate as direct participants and 27 are represented (15 of which are located in the area of the Palestinian Authority). In the settlement of manual transactions, 12 banks participate directly and 23 are represented (15 of which are located in the area of the Palestinian Authority). The banks operating in the Palestinian Authority are represented by three banks in Israel.<sup>13</sup> The Bank of Israel participates in the paper-based clearing house in two roles: as a member and as its operator.

#### **The settlement process in the paper-based clearing house**

At the close of the business day at 18:30, the banking corporations gather together all the manual instruments (most of which are checks) that their customers have deposited at the bank branches during that day. At the same time, the banks create (during the day or at its conclusion) electronic files that contain information on the instruments deposited that day. At the end of the day, each bank sends the files to the other members of the clearing house

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<sup>13</sup> Bank Hapoalim, Discount Bank, and Mercantile-Discount Bank, apart from branches located in the Gaza Strip, which Bank Hapoalim and Bank Discount stopped representing in January 2009.

and also sends a summary file to the clearing house which presents the total credit to its account against debits to the accounts of the other banks. The clearing house carries out a net processing of the data and creates a multilateral entry; the entry is sent for settlement in the Zahav system the next morning (T+1) during the settlement window of the paper-based clearing house, which opens at 9: 30. During the night there are settlement meetings during which representatives of the banks transfer checks and manual instruments from the collecting banks<sup>14</sup> to the paying banks.

This process enables the banks' customers to benefit from the difference between the value of the day of deposit (value day T) and the value of the day on which the financial settlement between the banks is recorded in the Zahav system, i.e., the following business day (value day T+1). Since there is a difference of one business day between the value day recorded for the customer and the value day recorded for the bank, the Bank of Israel settles the interest accounting between the banks at the end of each calendar month.

The banks have the right not to honor electronic or manual instruments presented to them for various reasons, such as a lack of coverage, an error in the details, etc., and they have the right to return an instrument on the day following its deposit but not later than 3 business days from the day of deposit.

### **3.4 The TASE clearing houses**

The TASE has two clearing houses: the securities clearing house which settles all the transactions in securities whether or not they were carried out on the stock exchange. In addition, it provides services related to mutual funds and securities in custody and carries out payments of dividends, interest, etc. The Maof clearing house settles options and futures traded on the TASE.

The results of the net financial settlement of these clearing houses are settled in the Zahav system.

#### **The participants in the TASE clearing houses**

The members of the TASE consist of both banks and non-banking entities and through them any investor can trade on the stock exchange. Trading is conducted between TASE members and they submit buy and sell orders on behalf of their customers. As of the end of 2012, the TASE had 29 members, which consisted of 14 banks, the Bank of Israel and 14 non-bank members.

Most of the members of the TASE are also members of the TASE clearing house. The TASE clearing house has 21 members, consisting of 11 banks, the Bank of Israel and 9 non-bank members. The members of the Maof clearing house consist of 9 banks.

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<sup>14</sup> The collecting bank is the one in which the account of the beneficiary is maintained.

### **The principles of the TASE clearing houses**

The trading on the TASE takes place from Sunday to Thursday, between the hours of 9: 30 and 16: 30. The TASE clearing houses (each separately) calculate the net amount of each bank in the trading activity and in the various payments and submit them to the Zahav system in order to debit and credit the accounts of the banks at the Bank of Israel.

The TASE clearing houses submit two types of payment instructions to the Zahav system: bilateral instructions for transactions outside the stock exchange, which can be settled throughout the business day, starting from the opening of the business day at 7: 45 until the end of activity of the clearing houses in the Zahav system at 19: 30; and multilateral instructions which reflect the net calculation of the banks participating in settlement and which are settled during three settlement windows: at 8: 50, 15: 45 and 17: 45. On Fridays and holiday eves, there are only two settlement windows: at 8: 50 and 12: 30.

### **3.5 Intraday Credit System (ICS)**

In order to provide an intraday credit line to participants in the Zahav system, the Bank of Israel requires full collateral. Therefore, an intraday credit system (ICS) was established within the TASE. The Bank of Israel manages the system while the TASE is responsible for its ongoing operations. The system is updated on a dynamic basis, in accordance with the balance of securities earmarked as collateral for the provision of intraday credit.

When a participant is interested in obtaining intraday credit from the Bank of Israel against collateral on the stock exchange,<sup>15</sup> he deposits the collateral in the Bank of Israel's account in the ICS system. Once this is done, the participant can receive intraday credit in the Zahav system. The amount of the intraday credit is determined according to the haircut rates. Transactions are carried out immediately in the ICS system and the interface between the banks, the stock exchange and the Zahav system enables participants to view the information on credit lines and collateral in real time. These processes are based on an agreement between the Bank of Israel, the TASE and the Zahav participants.

### **3.6 Payment card companies**

The payment card companies in Israel issue payment cards—debit and credit cards—to their customers. The holder of such a card can use it as a means of payment in exchange for goods or services. In addition, the companies provide settlement services for the payment cards.

There are three large payment card companies in Israel: Isracard, Leumi Card and Cal. The companies also issue and provide settlement for international payment cards on the basis of licenses they receive from the relevant international organizations.

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<sup>15</sup> Government bonds according to a list issued and updated by the Bank of Israel.

The activity in this area has grown significantly in recent years, which can be attributed to a number of factors: the issue of nonbank payment cards (which in general involve customer clubs); an expanded range of credit and financing services provided by the companies, by means of instruments that allow cardholders to determine the amounts to be debited and the dates of the debiting according to their needs and ability; and the continued growth in the use of payment cards due to their convenience of use and the option of making purchases through the Internet and on the telephone.

### **3.7 CLS (Continuous Linked Settlement)**

The operation of the Zahav system opened up new possibilities for Israel internationally. The most important of these is the inclusion of the shekel in the CLS system in May 2008. CLS Bank, which serves as an international clearing house for currency exchange, began its commercial operations in September 2002. Its activity is similar to that of an RTGS system but instead of operating in one currency, the CLS system simultaneously carries out settlement and exchange of one currency against another. The daily activity in the CLS is carried out by banks, including those who have the ability to send payment instructions in the name of their customers for settlement in the CLS. These banks are called “settlement members”.

A settlement member provides settlement services in the CLS to its customers, which include other banks, financial entities and corporations. A bank that wishes to become a settlement member is required to hold shares in the CLS and to meet various operational and financial requirements. In order to open a branch in Israel, the CLS required the appointment of two settlement members as well as three liquidity providers whose function is to assist in the provision of liquidity in shekels if needed, as will be described below.

The CLS mechanism for the provision of liquidity is set up in such way that if the CLS does not have sufficient liquidity for settling transactions in a particular currency, then it can require a liquidity provider to cover the shortfall in that currency, in exchange for the transfer of other currencies to its account. Essentially, this is a commitment by the liquidity provider to carry out an overnight swap. The Bank of Israel is prepared to provide liquidity to the liquidity providers up the amount required by the CLS, subject to certain conditions. It should be noted that since the shekel was included in CLS settlement the arrangement for the provision of liquidity has not been used.

It should be emphasized that the immediate implication of the inclusion of the shekel in the CLS system was the definition of CLS Bank as a participant in the Zahav system. Thus, an account was opened in the system for the CLS, through which CLS payments are transferred. In addition, the conversion activity in Israel between the shekel and other currencies settled by the CLS is carried out primarily at the CLS, which reduces the settlement risks that exist in exchange transactions that are not carried out through the CLS clearing house.

### **3.8 Means of Communication**

Data between payment systems are transmitted through the following communication interfaces and designated applications:

#### **SWIFT**

The Bank of Israel began using SWIFT in 1983 in order to provide banking services in foreign currency to the government (executing payment instructions and receiving payments) and to the banks (transfers to and from abroad against their foreign currency accounts at the Bank of Israel) and to send instructions and confirmations to outside parties following the execution of a transaction. Starting from 2007, the year in which the Zahav system began operating, SWIFT has served as a platform for the transfer of data on payment and other types of instructions between the Zahav system and its participants (banking corporations, the Postal Bank, CLS and the TASE) and between the banks and the TASE clearing houses.

#### **Kasefet**

The Kasefet system enables organizations to manage virtual safes for the purpose of secure and encoded transfer of information (data files) to each other via the Internet. The system provides a number of layers of data encryption and security. The information that is sent from the source to the destination organization is kept in computerized safes with advanced access authorizations and control systems. Each safe can be accessed only by a defined group of users that share the safe. On entering the system, a user sees only the safes that he is authorized to access.

In 2003, Kasefet began being used to electronically transfer payment instructions from the Foreign Ministry to the Foreign Currency Department in the Bank of Israel. Starting at the end of 2004, Kasefet was used to transfer most of the information between banking corporations and the Bank of Israel (including statistical data, confidential documents, account statements for the banks, etc.). With the establishment of the Zahav system, use of the Kasefet was expanded in order to transfer payment instructions to it from Masav, from the paper-based clearing house and from government ministries.

#### **Shva (Automated Banking Services)**

The Shva company operates in four main areas: management of the communication network between payment card companies and the terminals at the points of sale, which accept cards issued by companies in Israel and abroad; the management of ATMs that are not located in a bank branch; management of the communication network of ATMs in banks, and provision of communication services between the payment card companies and Masav and between the banks participating in the monetary auctions and the Bank of Israel.

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## Chapter 4: Means of Payment

The principal means of payment available to the general public in Israel include cash, paper-based payments (checks and vouchers), electronic payments, payment cards, Internet payments, and payments by means of cellular telephones.

### Characteristics of the means of payment

The choice of a means of payment reflects an agreement on its use between the parties to a transaction. The main characteristics that influence this choice include: its convenience of use for the payer and the beneficiary; the conditions and the time until the money becomes available (the beneficiary would like to know when funds will be available for use); security—reflected mainly in the ability to verify the information on the payer or the beneficiary; the maintenance of confidentiality and the reliability of that means of payment; the ability to prove that the payment has been made; and the cost in terms of the fees collected from the payer or the beneficiary and the liquidity costs.

### 4.1 Cash

Banknotes and coins are the most liquid means of payment. In Israel, banknotes are issued in denominations of NIS 20, 50, 100 and 200 and coins in values of NIS ½, 1, 2, 5 and 10, as well as 10 agorot.

The demand for cash in Israel has a seasonal component, with higher demand during Passover, the summer vacation months (July and August), the High Holidays period and Hanukah. Over the years, the seasonal pattern of demand for each of the banknote denominations has been the same and this is also the case for demand for coins.

In 2012, total banknotes and coins in circulation grew by about 12 percent and the upward trend in the use of means of cash withdrawal continued. This is primarily the result of the low rate of interest in recent years since the financial crisis. In addition, the number of possibilities for withdrawing cash has grown: the number of ATMs has increased; there are now additional possibilities for withdrawing cash in supermarket chains, in public places and in gas stations throughout the country; and businesses have installed privately-owned cash withdrawal machines.

### 4.2 Paper-based payments

Paper-based means of payment can be a voucher or a check and the payments (and returns) are settled in the paper-based clearing house. The use of checks is widespread and generally accepted in Israel and they constitute more than half of the payment instructions settled in the interbank payment systems.<sup>16</sup>

<sup>16</sup> Payment instructions settled in Zahav (interbank), Masav (credits) and in the paper-based clearing house.

When a check is deposited in a commercial bank before the end of the business day (at 18:30), the account of the depositor is credited on that same day (day T). The credit is conditional, since according to the Clearing House Rules, the debited bank has the right to return the check on the day following its presentation.

In Israel, a check can be endorsed to a third party. On September 27, 2011, a law was passed<sup>17</sup> that requires the banks to issue, as the default, checkbooks with limited negotiability checks, unless the customer requests otherwise. This is meant to reduce the number of third-party endorsed checks in the system, though it will not eliminate them completely.

Also unique to Israel is the widespread use of post-dated checks relative to other countries, in both the business and public sectors. Post-dated checks are used by bank customers as collateral against the receipt of credit for their business activity. In addition, they are used for the payment of periodic tax payments and to pay suppliers in installments.

The use of post-dated checks has led beneficiaries to use check discounting services, which enables them to receive cash immediately in exchange for a post-dated check. This is essentially a method of financing in which the beneficiaries receive the financial value of the check in exchange for a fee. Check discounting in Israel is provided by currency service providers, who are under the supervision of the Currency Service Providers Unit of the Ministry of Finance's Capital Market Branch. There are 1,664 corporations and private individuals listed in the database of currency service providers and they are permitted to provide check discounting services in Israel.

Checks have numerous uses, including payments to private beneficiaries (service providers, kindergartens, rent, gifts, etc.); payments to businesses (to various companies, a check given as a deposit, donations, etc.); and payments to public entities (the tax authority, educational institutions and provident and pension funds).

In 2012, the use of checks declined by about 1 percent and stood at 119 million, while the total value of settled checks rose by 1 percent. Since 2004, the number of checks has gradually declined and by 2012 had fallen by a total of 34 percent. In contrast, the total value of checks rose by about 12 percent, from NIS 745 billion in 2004 to about NIS 835 billion in 2012. The average value of a check also rose, from NIS 4,140 in 2004 to NIS 7,014 in 2012, which represents a marked increase of 69 percent. It is evident from the high average value of check transactions that checks are widely accepted in the business sector in Israel as a means of payment in large transactions, including, among others, payment of taxes and conducting transactions. The annual rate of check returns stood at about 3 percent.

### **4.3 Direct electronic payments**

Direct electronic payments (direct debit/credit) are automated payments that do not involve manual intervention in the process. Two systems carry out such payments in Israel: Zahav and Masav. The Zahav system carries out credits only (the initiator of the instruction can

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<sup>17</sup> Proper Conduct of a Banking Business Directive 431, in effect since October 1st, 2011.

credit the other party but not debit him). In contrast, Masav can be used also for debits.

**Direct credits:** Direct credits, as mentioned, are carried out via the Zahav or the Masav systems and are initiated by the debited party, who instructs the bank to debit his account and credit that of the beneficiary. If there is a sufficient balance in his account, the bank will submit the payment instruction to the clearing house (Zahav or Masav) which settles the payment. If the payment is settled in Zahav, the credit is immediate, final and irrevocable; if it is settled in Masav, the credited party can return the payment within 3 days of the execution date. Most direct credits (salaries, pension payments and other payments) are initiated electronically, which significantly reduces the cost of handling each payment instruction (for the customer, the banks and the clearing house).

In recent years, there has been continuing growth both in the number of direct credits and in their total value. In 2012, total direct credits totaled about NIS 1,911 billion as compared to NIS 1,752 billion in the previous year (annual growth of about 9 percent).

**Direct debits:** Direct debits are carried out in Israel only through Masav and are initiated by the beneficiary, through the bank at which he holds his account. The bank of the beneficiary is the one that collects the funds from the bank that manages the account of the debited party, subject to the legal conditions that the debited party has agreed to. Underlying direct debits is a commitment that the debited party can cancel erroneous or illegal debits within 5 business days of the date of their execution. The main type of direct debit in Israel is the standing order (payments to service providers, including electricity, water, telephone, etc.). The payment is automatic each month and its value changes each time.

In recent years, there has been continuous growth in the number of direct debits and in their value. Thus, in 2012, direct debits totaled NIS 364 billion, compared with NIS 342 billion in the previous year (annual growth of about 6 percent).

#### **4.4 Payment cards**

The most widely used payment card in Israel is the **deferred debit card**. This card is directly linked to the customer's bank account and allows the card holder to withdraw cash from ATMs (and/or to pay for goods and services) up to the credit limit allocated by the card issuer. The sum of the transactions carried out by the customer is calculated monthly and this amount is debited from his bank account. An **immediate debit card** is similar to a delayed debit card except that the debiting of the customer's account is carried out immediately with the execution of the transaction and not on a specified day each month. Thus, it is similar in its characteristics to payment in cash. In contrast, the holder of a **credit card (revolving credit)** can choose at the end of each month whether to pay the complete balance all at once or in installments. In the case of installments, the customer pays interest to the payment card company. A **prepaid card** is a payment card that the customer loads up to the maximum debit amount. Each payment is subtracted from the balance of the card until it is empty. This type of card includes gift cards, gas credit cards, phone cards, etc. Some of these cards can be loaded repeatedly while others are for one-time use.

The accepted payment cards in Israel are used as both immediate/delayed debit cards and as credit cards. In recent years, there has been an increase in the number of cards that are active in Israel, and in 2012 their number grew by about 6 percent. The total payments made with payment cards issued in Israel also grew this year, by about 11 percent.

#### **4.5 Internet banking**

The banks in Israel allow their customers to manage their activities via the Internet and via designated smartphone applications. Once the customer has been issued a personal and confidential password, he can carry out payments and monitor the account in a secure manner. The customer can transfer funds between accounts and make payments to government and public institutions. In most cases, the maximum amount of the payment that can be made by computer or smartphone is limited, and when the amount of the payment is higher than the amount determined by the bank, the instruction will be routed to the banks for approval. Since activity through the Internet can be carried out even when the bank branches are closed, this interface greatly increases the efficiency of the bank's service to the customer since it saves waiting in line at the branches.

#### **4.6 Electronic commerce**

In recent years, the scope of electronic commerce (or e-commerce) has grown significantly both in Israel and worldwide. This involves the execution of commercial transactions electronically, usually through computer communication. The increase in accessibility of the Internet and the development of technology in Israel and worldwide, as well as advertising on the social networks, have increased the use of electronic commerce as a means of purchasing goods and services, including purchasing at virtual stores, i.e., without the need for the buyer and seller to meet. Electronic commerce now encompasses all types of transactions: transactions carried out by individuals, retail transactions and wholesale transactions, both within the same country and between countries. The emphasis in electronic commerce is on convenience and easy accessibility, without the need to travel long distances or to take into account the limits on the supply of goods and services in the country.

#### **4.7 Digital wallet<sup>18</sup>**

The cellular/electronic wallet is a new means of payment and in recent years has developed and gathered momentum, both in Israel and worldwide, as a result of the increased use of cellular phones and smartphones and also technological developments. The development of the digital wallet is being led by the banking corporations, the credit card companies, entrepreneurs and private companies. The digital wallet makes it possible to receive funds and to transfer them between accounts. Periodically, the owner of a cellular phone deposits

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<sup>18</sup> Also known as "Cellular/Mobile Wallet" or "Electronic Wallet".

a certain amount of money in the digital wallet and this allows him to purchase goods and services. The payment is carried out directly from his cellular phone, by SMS or through a designated application installed on a smartphone or by means of an external sticker with a magnetic code that can be read using a special reader at the point of sale.

In recent years, there has been significant progress in this area in Israel and cellular phones are starting to be used in a variety of additional financial activities, including the payment of salaries to temporary/foreign workers, withdrawal from an ATM, payment for taxis, payment for parking, the confirmation of transactions for individuals and businesses, the purchase and sale of securities (remote access to the bank's securities system), receipt of information, etc.

#### **4.8 Foreign currency transfers to abroad**

The transfer of foreign currency abroad is carried out by the banking corporations and the Postal Bank, as well as through entities included under the category of "currency service providers", which are located throughout the country.<sup>19</sup> These payments are carried out via various payment systems/communication infrastructures—SWIFT, GMT (Global Money Transfers), Western Union, MoneyGram, etc. In some cases the payment is made directly to a currency service provider abroad who has an agreement with a currency service provider in Israel. These transfers of funds make it possible to deposit cash at some location in Israel and to withdraw it in cash at the target location abroad.

The transfer of foreign currency abroad by foreign workers is in general carried out via the Postal Bank or currency service providers. This is primarily because these institutions do not require the opening of an account and therefore are accessible to guest workers, their service is cheaper and quicker than that of the banks and their hours of operation are more convenient.

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<sup>19</sup> The Prohibition on Money Laundering Law, 5760-2000, defines a currency service provider as an entity which provides the following services: the exchange of currency of one country for that of another; sale or redemption of travelers checks in any currency; receipt of financial assets in one country against the presentation of financial assets in another (financial assets are defined as cash, travelers checks, checks, bills of exchange, promissory notes, negotiable securities, credit or monetary deposits); exchange of cash; discounting of checks, bills of exchange and promissory notes.

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## Statistical Appendix: Tables of Statistical Data (BIS Tables)

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Table 1  
**Basic Information on the Israeli Economy**  
 (Current prices, at year end)

	2008	2009	2010	2011	2012	Annual Change (percent)
Average population (thousands) <sup>1</sup>	7,309	7,463	7,625	7,728	7,909	2.34
GDP (NIS billion)	726	768	814	870	928	6.71
Per capita GDP (NIS thousand)	99.3	102.9	106.8	112.6	117.4	4.26
Annual rate of change in CPI (percent) <sup>2</sup>	3.8	3.91	2.66	2.17	1.63	-24.68
Average monthly inflation rate (percent)	0.31	0.32	0.22	0.18	0.14	-24.68
NIS/dollar exchange rate	3.802	3.775	3.549	3.821	3.73	-2.38
NIS/dollar exchange rate, annual average	3.586	3.923	3.732	3.579	3.858	7.80

<sup>1</sup> Calculated as the average between December of the current year and the previous December.

<sup>2</sup> CPI of December of the current year against CPI of the previous December.

SOURCE: Central Bureau of Statistics and Bank of Israel.

Table 2  
**Means of Payment Used by Nonbank Entities**  
 (NIS million, average for December)

	2008	2009	2010	2011	2012	Annual Change (percent)
Value of the public's current account deposits in banks	41,916	73,621	75,889	73,505	77,824	5.88
Money supply (M1) <sup>1</sup>	71,895	109,481	114,467	116,518	126,619	8.67

<sup>1</sup> Cash held by the public and current-account deposits.

SOURCE: Bank of Israel.

Table 3  
**Means of Payment Used by the Banks**  
 (NIS million, daily average for December)

	2008	2009	2010	2011	2012	Annual Change (percent)
Banks' deposits in the Bank of Israel <sup>1</sup>	27,172	99,939	92,950	119,656	122,216	2.14
<i>Of which:</i>						
Reserve requirement <sup>2</sup>	18,063	21,468	21,702	25,487	26,240	2.95
Free reserves	9,109	78,471	71,248	94,169	95,976	1.92
Credit provided by the Bank of Israel:						
Volume of intraday credit lines <sup>3</sup>	29,986	93,049	86,385	105,791	106,477	0.65
Intraday credit <sup>4</sup>	0	16	0	0	0	-
Long-term credit <sup>5</sup>	0	0	0	0	0	-

<sup>1</sup> Current account deposits and short-term deposits, in domestic and foreign currency.

<sup>2</sup> The reserve requirement is calculated according to the average of the last liquidity month of the year (starting on the last Thursday of November and ending on the last Wednesday of December).

<sup>3</sup> Start of day balances. The collateral system is dynamic and enables immediate matching of the amount of collateral to the banks' needs.

<sup>4</sup> Credit provided by the Bank of Israel for one business day.

<sup>5</sup> Credit provided by the Bank of Israel for more than one business day.

SOURCE: Bank of Israel.

**Table 4**  
**Banknotes and Coins**  
(NIS million, at year end)

	2008	2009	2010	2011	2012	Annual Change (percent)
Banknotes and coins in circulation <sup>1</sup>	34,351	41,479	44,828	48,976	54,767	11.83
Banknotes in circulation	33,073	40,114	43,367	47,419	53,114	12.01
<i>Of which:</i>						
NIS 200 banknote	16,132	21,485	25,773	30,356	35,291	16.26
NIS 100 banknote	13,998	15,425	14,486	14,090	14,571	3.41
NIS 50 banknote	2,298	2,535	2,397	2,288	2,556	11.71
NIS 20 banknote	612	637	709	683	693	1.54
Other <sup>2</sup>	33	32	2	2	2	0.00
Coins in circulation	1,278	1,365	1,461	1,557	1,653	6.21
<i>Of which:</i>						
NIS 10 coin	452	486	524	566	604	6.76
NIS 5 coin	265	280	300	319	336	5.39
NIS 2 coin	45	70	81	88	100	13.44
NIS 1 coin	369	376	392	411	432	4.99
NIS 1/2 coin	59	61	65	71	70	-0.58
10 agorot coin	88	92	99	102	112	9.19
Cash held by the banks <sup>3</sup>	4,372	5,619	6,231	5,963	6,052	1.50
Cash held by the public	29,979	35,860	38,597	43,013	48,715	13.26

<sup>1</sup> The value of the banknotes and coins in circulation includes the cash held by the public and in the banks' safes, excluding commemorative coins and collectors' coins.

<sup>2</sup> Old banknotes which can be exchanged at the Bank of Israel.

<sup>3</sup> Banknotes and coins in the safes of the commercial banks. Does not include money held by the public.

SOURCE: Bank of Israel.

Table 5  
**Institutions Offering Payment Services to Nonbank Entities**  
 (At year end)

	2008	2009	2010	2011	2012
<b>Bank of Israel<sup>1</sup></b>					
Number of branches or offices	3	3	3	3	3
Number of accounts, (banks and non-banks)	427	431	449	616	633
Number of accounts, banks	60	60	60	61	56
Number of accounts, non-banks	367	371	389	555	577
Value of the accounts, all (NIS million)	45,315	117,738	112,488	140,855	137,442
<b>Banking corporations</b>					
Number of institutions	24	23	23	24	22
Number of branches and offices	1,105	1,137	1,177	1,205	1,226
<b>Banking corporations in Israel, by categories:</b>					
<b>Regular banking corporations</b>					
Number of institutions	15	15	15	15	15
Number of branches or offices	1,071	1,112	1,150	1,179	1,205
<b>Mortgages banks</b>					
Number of institutions	3	2	2	2	1
Number of branches or offices	25	15	17	16	12
<b>Joint services companies<sup>2</sup></b>					
Number of institutions	2	2	2	2	2
Number of branches or offices	2	2	2	2	2
<b>Branches of foreign banks<sup>3</sup></b>					
Number of institutions	4	4	4	5	4
Number of branches or offices	7	8	8	8	7
<b>Other institutions<sup>4</sup></b>					
Number of institutions	4	4	4	4	4
<i>Of which:</i>					
<b>Postal Bank</b>					
Number of institutions	1	1	1	1	1
Number of branches or offices	717	723	737	729	751
<b>Credit card companies<sup>5</sup></b>					
Number of institutions	3	3	3	3	3

<sup>1</sup> Accounts in which payments can be executed in local currency.

<sup>2</sup> Masav and Shva.

<sup>3</sup> Foreign banks that are legally recognized as banking corporations in Israel.

<sup>4</sup> Credit card companies and the Postal Bank.

<sup>5</sup> These are Isracard, Leumi Card, and Cal.

SOURCE: Bank of Israel.

Table 6  
**Number of Payment Cards and Terminals**  
 (At year end)

	2008	2009	2010	2011	2012	Annual Change (percent)
<b>Cards issued in Israel<sup>1,2</sup> (thousands)</b>						
Cards with cash withdrawal function	na	5,949	6,452	6,986	7,507	7.46
Debit cards <sup>3</sup>	na	2,099	2,269	2,457	2,611	6.27
Deferred-debit cards <sup>4</sup>	na	4,021	4,260	4,589	4,886	6.47
Credit cards	na	4,607	4,857	5,145	5,393	4.81
Electronic Money Cards <sup>5</sup>	na	557	624	460	399	-13.36
<i>Of which</i> : cards that were loaded at least once	na	380	398	302	298	-1.30
Total number of active cards <sup>6</sup>	5,014	5,354	5,674	5,998	6,350	5.87
<b>Terminals located in Israel</b>						
ATMs	4,637	5,504	5,944	6,269	6,671	6.41
<i>Of which</i> : ATMs with cash withdrawal	2,453	3,237	3,662	4,029	4,431	9.98
Selling points that honor payment cards <sup>7</sup>	99,793	105,112	108,576	111,461	117,223	5.17

<sup>1</sup> Each card can be used for several functions (e.g., card that is used both for deferred debit and cash withdrawal).

<sup>2</sup> Valid cards at the end of the year (active and inactive).

<sup>3</sup> Cards allowing an immediate debit of the customer's account for transactions executed in Israel.

<sup>4</sup> Cards allowing a debit of the customer's account at the end of the period, and do not permit the division into installments against interest.

<sup>5</sup> Prepaid cards, both reloadable and non-reloadable.

<sup>6</sup> Cards that had at least one transaction during the last quarter of the year.

<sup>7</sup> Electronic terminals in which payments can be made by means of payment cards.

SOURCE: The credit-card companies, Shva, the Banking Supervision Department, and Bank of Israel calculations.

Table 7  
**Indicators of the Use of Payment Systems by Nonbank Entities: Volume of Transactions**  
 (Thousands, cumulative annual)

	2008	2009	2010	2011	2012	Annual Change (percent)
<b>Volume by the means of payment</b>	<b>944,789</b>	<b>990,469</b>	<b>1,070,159</b>	<b>1,143,545</b>	<b>1,234,154</b>	<b>7.92</b>
<b>Direct credits</b>	<b>96,638</b>	<b>98,175</b>	<b>103,725</b>	<b>111,323</b>	<b>119,436</b>	<b>7.29</b>
<i>Of which:</i>						
Paper-based credits <sup>1</sup>	252	270	241	37	57	54.05
Electronic credits <sup>2</sup>	96,386	97,905	103,484	111,286	119,379	7.27
<b>Direct debits<sup>3</sup></b>	<b>153,170</b>	<b>157,979</b>	<b>168,376</b>	<b>174,305</b>	<b>180,373</b>	<b>3.48</b>
<i>Of which:</i>						
Paper-based debits	278	229	190	180	193	7.49
Electronic debits	152,892	157,749	168,186	174,125	180,180	3.48
<b>Payments with cards issued in Israel<sup>4</sup></b>	<b>535,634</b>	<b>582,567</b>	<b>647,193</b>	<b>708,770</b>	<b>786,806</b>	<b>11.01</b>
<b>Checks<sup>5</sup></b>	<b>159,347</b>	<b>151,748</b>	<b>150,865</b>	<b>149,147</b>	<b>147,539</b>	<b>-1.08</b>
<b>Volume by type of terminal in Israel<sup>6</sup></b>	<b>826,668</b>	<b>870,115</b>	<b>896,861</b>	<b>950,295</b>	<b>1,030,915</b>	<b>8.48</b>
<i>Of which:</i>						
Withdrawals from ATMs <sup>7</sup>	128,494	125,573	124,863	123,248	124,961	1.39
Transfer of payments at points of sale <sup>8</sup>	698,174	744,542	771,998	827,047	905,954	10

<sup>1</sup> Manual credits at the paper-based clearing house. Estimation based on one day in each month.

<sup>2</sup> Interbank credits settled in Masav and Zahav.

<sup>3</sup> Manual debits in the paper-based clearing house (estimation based on one day in each month) and debits in Masav.

<sup>4</sup> Payments executed in Israel or abroad, including actions for obtaining information at terminals, excluding ATM withdrawals.

<sup>5</sup> Including interbank and intrabank transactions.

<sup>6</sup> Including transfers by manual terminals.

<sup>7</sup> Including ATMs owned by the banks and by Shva.

<sup>8</sup> Transfers executed at electronic points of sale by means of payment cards, including debit and credit transactions.

SOURCE: Bank of Israel and Shva.

Table 8  
**Indicators of the Use of Payment Systems by Nonbank Entities: Value of Transactions**  
 (NIS million, cumulative annual)

	2008	2009	2010	2011	2012	Annual Change (percent)
<b>Value by the means of payment</b>	4,049,107	3,886,108	4,295,499	4,715,084	4,950,192	4.99
Direct credits <sup>1</sup>	2,741,691	2,621,267	2,915,942	3,273,089	3,455,304	5.57
<i>Of which:</i>						
Paper-based credits <sup>2</sup>	4,999	9,027	11,693	1,204	521	-56.73
Electronic credits <sup>3</sup>	2,736,692	2,612,240	2,904,249	3,271,885	3,454,783	5.59
Direct debits <sup>4</sup>	282,153	300,322	355,681	371,642	391,133	5.24
<i>Of which:</i>						
Paper-based debits	21,360	29,088	38,895	29,184	27,272	-6.55
Electronic debits	260,793	271,235	316,785	342,458	363,861	6.25
Payments with cards issued in Israel <sup>5</sup>	101,132	104,853	117,927	128,826	139,335	8.16
Checks <sup>6</sup>	924,131	859,666	905,949	941,527	964,420	2.43
<b>Value by type of terminal in Israel<sup>7</sup></b>	229,590	241,729	258,919	275,126	293,422	6.65
<i>Of which:</i>						
Withdrawals from ATMs <sup>8</sup>	63,297	67,157	70,853	73,718	78,796	6.89
Transfer of payments at points of sale <sup>9</sup>	166,293	174,572	188,066	201,408	214,626	6.56

<sup>1</sup> Interbank credits of customers, settled in Masav, Zahav, and the paper-based clearing house.

<sup>2</sup> Manual interbank credits, in the paper-based clearing house.

<sup>3</sup> Interbank credits of customers in Masav and Zahav.

<sup>4</sup> Debits in Masav and manual debits in the paper-based clearing house.

<sup>5</sup> Payments executed in Israel or abroad. Does not include ATM withdrawals.

<sup>6</sup> Includes interbank and intrabank transactions.

<sup>7</sup> Includes transfers with manual terminals.

<sup>8</sup> ATMs owned by the banks and by Shva.

<sup>9</sup> Transfers executed at electronic points of sale by means of payment cards. Includes debit and credit transactions.

SOURCE: Bank of Israel and Shva.

Table 9  
**Participation in Interbank Systems for Transferring Payments**  
 (At year end)

	2008	2009	2010	2011	2012
<b>Zahav - Payment system for large amounts</b>					
<b>Number of participants</b>	22	22	22	22	21
<b>Direct participants<sup>1,2</sup></b>	18	18	18	19	18
Banking corporations	15	15	15	16	15
Bank of Israel	1	1	1	1	1
Postal Bank	1	1	1	1	1
CLS Bank <sup>3</sup>	1	1	1	1	1
<b>Indirect participants<sup>4</sup></b>	4	4	4	3	3
<b>Retail payment systems</b>					
<b>Masav</b>					
<b>Number of participants</b>	na	25,023	25,023	23,983	24,686
<b>Direct participants<sup>1,4</sup></b>	na	25,023	25,023	23,983	24,686
Banking corporations	18	18	18	18	18
Bank of Israel	1	1	1	1	1
Postal Bank	1	1	1	1	1
Other institutions <sup>5</sup>	na	25,000	25,000	23,960	24,663
Payment card companies	3	3	3	3	3
Indirect participants	0	0	0	0	0
<b>Paper-based clearing house</b>					
<b>Number of participants in the manual clearing house</b>					
	37	37	36	36	35
Direct participants <sup>1</sup>	13	13	13	13	12
Indirect participants <sup>6</sup>	24	24	23	23	23
<i>Of which</i> : Israeli banking corporations	8	8	8	8	8
Palestinian banking corporations <sup>7</sup>	16	16	15	15	15
<b>Number of participants in the electronic clearing house</b>					
	36	36	35	35	35
Direct participants <sup>1</sup>	8	8	8	8	8
Indirect participants <sup>6</sup>	28	28	27	27	27
<i>Of which</i> : Israeli banking corporations	12	12	12	12	12
Palestinian banking corporations <sup>7</sup>	16	16	15	15	15

<sup>1</sup> A direct participant is one that can execute actions in the system without an intermediary.

<sup>2</sup> BNP Paribas Bank stopped its activity in Israel in July 2012.

<sup>3</sup> CLS Bank settles payments between 17 currencies.

<sup>4</sup> Banks that manage liquidity independently, but their communication interface to Zahav is through another bank.

<sup>5</sup> Data for 2008–10 are estimated. Includes entities such as large companies, small businesses and community centers.

<sup>6</sup> Participants represented by direct participants.

<sup>7</sup> The Palestinian corporations are represented by Israeli banks.

SOURCE: Masav and the Bank of Israel.

Table 10  
**Volume of Transactions in Selected Payment Systems**  
 (Thousands, cumulative annual)

	2008	2009	2010	2011	2012	Annual Change (percent)
<b>Zahav - payment system for large amounts</b>						
Total transactions <sup>1</sup>	217	197	261	349	400	14.61
Local transactions	211	187	251	339	390	15.04
Transactions sent to CLS	3	5	5	5	5	0.00
Transactions received from CLS	3	5	5	5	5	0.00
Concentration ratio in terms of the volume of transactions (%) <sup>2</sup>	75.78	73.28	74.88	76.46	77.58	1.47
<b>The retail payment systems</b>						
<b>Masav<sup>3</sup></b>						
Total transactions	249,208	255,227	271,512	285,180	299,280	4.94
Direct credits	96,316	97,478	103,326	111,055	119,100	7.24
Direct debits	152,892	157,749	168,186	174,125	180,180	3.48
Concentration ratio in terms of the volume of transactions (%) <sup>2,4</sup>	75.00	76.32	77.15	77.40	77.08	-0.42
<b>Checks clearing house<sup>3</sup></b>						
Total transactions	132,224	121,757	122,076	120,800	119,344	-1.21
Direct credits	233	270	241	37	57	54.05
Direct debits	252	229	190	180	193	7.22
Checks	131,739	121,258	121,645	120,583	119,094	-1.23
Concentration ratio in terms of the volume of transactions (%) <sup>2,5</sup>	77.00	77.62	78.06	78.06	78.11	0.06

<sup>1</sup> Transactions of customers, banks, clearing houses, and the Bank of Israel.

<sup>2</sup> Market share of the five most active institutions in the system.

<sup>3</sup> The data does not include returns.

<sup>4</sup> Estimation.

<sup>5</sup> The 2008 data is an estimation.

SOURCE: Masav and Bank of Israel.

Table 11  
**Value of Transactions in Selected Payment Systems**  
(NIS million, cumulative annual)

	2008	2009	2010	2011	2012	Annual Change (percent)
<b>Zahav - payment system for large amounts</b>						
Total transactions <sup>1</sup>	21,874,139	62,303,647	75,784,201	88,943,903	79,867,368	-10.20
Local transactions	21,368,871	61,374,025	74,688,533	87,535,915	78,261,344	-10.60
Transactions sent to CLS <sup>2</sup>	252,634	464,811	547,834	703,994	803,012	14.07
Transactions received from CLS <sup>2</sup>	252,634	464,811	547,834	703,994	803,012	14.07
Concentration ratio in terms of the value of transactions (%) <sup>3</sup>	79.24	76.62	77.56	80.75	81.55	0.99
<b>Retail payment systems</b>						
<b>Masav<sup>4</sup></b>						
Total transactions	1,733,581	1,773,858	1,951,934	2,094,174	2,274,799	8.63
Direct credits	1,472,788	1,502,623	1,635,149	1,751,716	1,910,938	9.09
Direct debits	260,793	271,235	316,785	342,458	363,861	6.25
Concentration ratio in terms of the value of transactions (%) <sup>3</sup>	78.50	79.88	80.75	81.01	80.67	-0.42
<b>Checks clearing house<sup>4</sup></b>						
Total transactions	803,223	765,427	834,245	852,562	863,169	1.24
Direct credits	4,999	9,027	11,693	1,204	521	-56.73
Direct debits	21,360	29,088	38,895	29,184	27,272	-6.55
Checks	776,864	727,312	783,657	822,174	835,376	1.61
Concentration ratio in terms of the value of transactions (%) <sup>3</sup>	84.38	84.43	84.76	84.29	83.98	-0.37

<sup>1</sup> Transactions of customers, banks, clearing houses, and the Bank of Israel.

<sup>2</sup> The data for 2008 are for the period beginning on May 27, the date the shekel joined the CLS.

<sup>3</sup> Market share of the five most active institutions in the system.

<sup>4</sup> The data does not include returns.

SOURCE: Masav and Bank of Israel.

Table 12  
**Israeli Participants in SWIFT**  
 (Year end)

	2008	2009	2010	2011	2012	Annual Change (percent)
Members <sup>1</sup>	9	9	9	9	9	0.0
Secondary members <sup>2</sup>	5	5	6	7	7	0.0
Participants <sup>3</sup>	4	4	4	4	3	-25.0
Total users	18	18	19	20	19	-5.0
Total SWIFT users <sup>4</sup>	8,830	9,281	9,705	10,118	10,279	1.6
Members <sup>1</sup>	2,276	2,356	2,344	2,334	2,398	2.7
Secondary members <sup>2</sup>	3,305	3,306	3,331	3,355	3,340	-0.4
Participants <sup>3</sup>	3,249	3,619	4,030	4,429	4,541	2.5

<sup>1</sup> Organizations with shares in the SWIFT organization.

<sup>2</sup> Organizations that are owned by the members of SWIFT.

<sup>3</sup> restricted.

<sup>4</sup> Global data.

SOURCE: SWIFT.

Table 13  
**Transfer of SWIFT Messages From and To Local Participants<sup>1</sup>**  
 (Thousands, cumulative annual)

	2008	2009	2010	2011	2012	Annual Change (percent)
Messages sent	7,262	7,979	9,160	9,797	10,579	7.98
<i>Of which:</i>						
Category I <sup>2</sup>	2,054	2,021	2,268	2,392	2,473	3.38
Category II <sup>3</sup>	1,124	854	553	555	544	-1.98
Messages received	7,793	9,225	10,154	10,542	10,614	0.68
<i>Of which:</i>						
Category I <sup>2</sup>	1,998	1,983	2,229	2,397	2,534	5.72
Category II <sup>3</sup>	601	507	506	526	546	3.78
Local traffic in Israel	965	849	628	776	862	11.11
Global traffic	3,854,576	3,760,314	4,031,935	4,431,100	4,589,109	3.57

<sup>1</sup> The traffic of messages in the table includes transfers in shekels and foreign currency.

<sup>2</sup> Transmissions used by the banks to transfer money to the customer's account.

<sup>3</sup> Transmissions used by the banks to transfer money to the account of another bank.

SOURCE: SWIFT.

Table 14  
**Number of Participants in the TASE**  
 (At year end)

	2008	2009	2010	2011	2012
<b>Number of participants</b>	28	28	27	28	29
<i>Of which:</i>					
<b>Local participants</b>	24	23	22	22	22
Bank of Israel	1	1	1	1	1
Banks	11	11	11	11	11
Other	12	11	10	10	10
<b>Foreign participants</b>	4	5	5	6	7
Banks	2	2	2	2	3
Other	2	3	3	4	4

SOURCE: TASE.

Table 15  
**Number of Registered Securities**  
 (At year end)

	2008	2009	2010	2011	2012	Annual Change (percent)
Total number of securities designated for trading	1,880	1,885	2,003	1,947	1,848	-5.08
Bonds	720	747	710	733	685	-6.55
Bonds issued for a year or less <sup>1</sup>	11	12	15	13	12	-7.69
Bonds issued for more than a year <sup>2</sup>	709	735	695	720	673	-6.53
Stocks	632	611	603	580	539	-7.07
Other <sup>3</sup>	528	527	690	634	624	-1.58

<sup>1</sup> Short-term loans (*makam*).

<sup>2</sup> Government and corporate bonds.

<sup>3</sup> ETFs and options.

SOURCE: TASE.

Table 16  
**Market Capitalization of Listed Companies**  
 (NIS million, at year end)

	2008	2009	2010	2011	2012	Annual Change (percent)
Market Capitalization of Listed Companies <sup>1</sup>	670,200	769,700	806,140	600,102	603,902	0.63

<sup>1</sup> The data includes dual-listed stocks issued in Israel and abroad.

SOURCE: TASE.

Table 17  
**Number of Members of the TASE Clearing Houses**  
 (At year end)

	2008	2009	2010	2011	2012
<b>Securities clearing house</b>					
Members of the clearing house	23	22	21	21	21
Bank of Israel	1	1	1	1	1
Banking corporations	11	11	11	11	11
Other	11	10	9	9	9
Local members of the clearing house	21	20	19	19	19
Bank of Israel	1	1	1	1	1
Banking corporations	9	9	9	9	9
Other	11	10	9	9	9
Foreign members of the clearing house	2	2	2	2	2
Banking corporations	2	2	2	2	2
Other	0	0	0	0	0
<b>Maof clearing house</b>					
Local banking corporations that are members of the clearing house	10	10	9	9	9

SOURCE: TASE.

Table 18  
**Volume of Transactions Settled in the TASE Clearing Houses**  
 (Thousands, cumulative annual)

	2008	2009	2010	2011	2012	Annual Change (percent)
<b>Volume of transactions settled</b>	109,617	94,934	106,294	122,722	86,431	-29.57
<b>Securities clearing house</b>						
Volume of securities transactions settled	17,114	23,879	27,506	23,734	19,252	-18.88
Bonds	4,577	6,867	6,860	6,764	7,110	5.12
<i>Makam</i>	782	438	368	391	311	-20.46
Bonds issued for more than a year <sup>1</sup>	3,795	6,429	6,492	6,373	6,799	6.69
Stocks	12,537	17,012	20,646	16,970	12,152	-28.39
Volume of repo actions settled <sup>2</sup>	na	18	4	24	0	-100.00
<b>Maof clearing house</b>						
Volume of derivatives transactions settled	92,503	71,037	78,784	98,964	67,179	-32.12

<sup>1</sup> Government and corporate bonds.

<sup>2</sup> Trade in repo takes place only in government bonds are issued for more than a year.

SOURCE: TASE.

Table 19  
**Value of Transactions Settled in the TASE Clearing Houses**  
 (NIS million, cumulative annual)

	2008	2009	2010	2011	2012	Annual Change (percent)
<b>Value of transactions settled</b>	1,609,399	1,518,955	1,672,347	1,468,447	1,276,027	-13.10
<b>Securities clearing house</b>						
Value of securities transactions settled	1,492,332	1,437,644	1,586,478	1,347,185	1,198,013	-11.07
Bonds	1,109,662	1,124,879	1,067,998	1,071,321	1,088,599	1.61
<i>Makam</i>	181,054	149,879	291,143	186,796	136,657	-26.84
Bonds issued for more than a year <sup>1</sup>	928,608	975,000	776,855	884,525	951,942	7.62
Stocks	447,952	382,716	497,832	377,493	236,608	-37.32
Value of repo actions settled <sup>2</sup>	na	106	2,752	1,238	0	-100.00
<b>Maof clearing house</b>						
Value of derivatives transactions settled	117,067	81,205	83,117	120,024	78,014	-35.00

<sup>1</sup> Government and corporate bonds.

<sup>2</sup> Trade in repo takes place only in government bonds that are issued for more than a year.

SOURCE: TASE.

## Glossary

Authorized debits (standing orders)	A method of executing payments in which the beneficiary collects money from the payer through the bank. The payer's bank account is debited, and the beneficiary's account is credited by virtue of a debit presented by the beneficiary according to a letter of authorization given by the payer.
Batch processing in the payments system	Accumulation of a group of payment instructions and their joint processing at a particular time.
Business continuity in the payments system	Arrangements in the payments system to ensure that it will meet agreed levels of service, even in the event of failure of one or more of its components, or as a result of an exceptional external event. This term includes both preventive measures as well as arrangements for dealing with unexpected events.
Clearing house	A central location or a central processing mechanism by means of which financial institutions agree to exchange among themselves payment instructions or other financial obligations. The institutions settle between themselves the exchanged items at an agreed time.
Controlled system	A payment system subject to the authority of the Bank of Israel's oversight of payment and settlement systems, in accordance with the Payment Systems Law. The activity of a controlled system is critical to the payment system in the economy, and there is concern that irregular, inefficient or unreliable activity can negatively impact the payment system.
Credit	The right to use goods and services, or to purchase them, with an undertaking to pay at a later date.
Daily credit	Credit provided for a single business day. This credit is also known as a daily overdraft and intraday credit.
Designated controlled system	A payment system subject to the authority of the Bank of Israel's oversight of payment and settlement systems, in accordance with the Payment Systems Law. The activity of a designated controlled system has a significant role in monetary and financial stability in Israel, and there is concern that irregular, inefficient or unreliable activity can negatively impact the payment system. The system needs to determine the finality of the payments settled in it and protect payments against insolvency on the part of a participant.

Intraday liquidity	Liquidity ability in the course of the business day.
Liquidity	The ability of a business entity to meet current liabilities from its current assets (cash, tradable securities, etc.).
Money supply (M1)	Total cash in the hands of the public and the amount of the public's current account deposits in the banks. This definition does not include the balances deposited in the Bank of Israel and the balances kept in the banks' safes.
Monetary loan	A loan that the Bank of Israel gives to the banks for the period of a day (daily auction) or a week (weekly auction), using a method of auctioning at different interest-rate intervals.
Money laundering	Financial actions whose purpose is to conceal the source of the money, usually money from an illegal source or money on which tax has not been paid. The process of "prohibition of money laundering" returns the money to the legal system.
Net settlement	Settlement of several obligations or transfers between or within a group of opposing parties on a net basis.
Payment-card companies	In Israel three companies issue and settle payment cards: Isracard, Leumi Card, and Cal. The companies issue and settle international payment cards according to licenses given to them by the relevant international organizations.
Security/collateral	Tangible property pledged to a bank as security for the repayment of a loan. Collateral can be liquid, enabling it to be realized easily—such as securities traded on the stock exchange, bank deposits, debtors accounts, and other property of various kinds (tradable collateral)—or immovable assets (non-tradable collateral). This collateral becomes the property of the lender in the event that the borrower does not comply with the conditions of the loan.
Settlement	An action that discharges the obligations between two or more parties regarding the transfer of money, securities or other financial assets.
SWIFT	The communications system of the SWIFT international organization (Society for Worldwide Interbank Financial Telecommunication), which enables the secure dispatch and receipt of designated electronic messages between financial institutions worldwide.
Value day	The day on which the participant's account in the payment and settlement systems or the customer's account is credited/ debited.

