



Bank of Israel
Payment and Settlement Systems

Israel's Payment and Settlement Systems

Red Book 2013

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Acronyms and abbreviations

ACH	Automated Clearing House ¹
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
EMV	Europay, MasterCard, and Visa
FIFO	First-In, First-Out
FMI	Financial Market Infrastructure
FSAP	Financial Sector Assessment Program
FX	Foreign Exchange
IBAN	International Bank Account Number
ICS	Intraday Credit System
IOSCO	International Organization of Securities Commissions
LSA	Loss Sharing Arrangement
NFC	Near Field Communication
PFMI	Principles for Financial Market Infrastructures
POS	Point Of Sale
PVP	Payment Versus Payment
RTGS	Real Time Gross Settlement ²
SIPS	Systemically Important Payment Systems
SSS	Securities Settlement System
SWIFT	Society for Worldwide Interbank Financial Telecommunication

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

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

Preface

This report is meant to provide a comprehensive description of the main payment and settlement systems in Israel and to review their activity in 2013.

The Bank of Israel, like other central banks worldwide, works to increase the stability and efficiency of the country's payment and settlement systems. It does so 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 to fulfilling the Bank of Israel's functions as the country's central bank. If the payment and settlement systems are not sufficiently reliable, they are liable to expose their users to risks and may even lead to the transfer of risks 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 increase the economy's ability to deal with a financial crisis. Since the Bank of Israel wishes to increase financial stability, it works 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 focuses on the means of payment in the economy. The third chapter presents the institutional aspects that affect the payment systems and briefly describes the relevant entities. The fourth chapter describes the operations of the main payment and settlement systems in Israel. At the end of the document there is 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 2013

1. Review of main developments

1.1 Payment systems

In 2013, the Bank of Israel continued working to improve the efficiency of the payment systems. The Bank took steps to encourage the use of advanced, lower risk electronic means of payment, such as working to increase the amounts settled directly through the Zahav system, bolstering the enforcement of the limitation on the payment amount that can be transferred in a single transaction through the Masav (ACH—automated clearing house) system, and planning a new pricing module for the Zahav system—setting usage costs of the system for banks and clearing houses. The goal of all these activities is to increase the use of secure means of payment, including the Zahav system, which allows high value, irrevocable payments in real time.

Due to the systemic importance of the Zahav system, the Bank of Israel examines its stability through various measures, including surplus liquidity in the system, its availability, and its concentration. The availability¹ of the Zahav system has been maintained at a high level since it began operation in 2007. This high level is a sign of stability and business continuity capability. In 2013, the system's availability was 99.92 percent, similar to its level in 2012 and to accepted rates worldwide in RTGS systems.

To improve the efficiency of the Paper-based (Checks) Clearing House, the Bank of Israel worked on various planes. Among other things, it continued to advance electronic clearing legislation, which will arrange the check payment system so that interbank clearing will take place through the exchange of image files, while the physical checks will remain at the bank in which they were deposited (check truncation). The Bank also acted, and continues to act, to establish a set of rules, within the check clearing house rules, to settle checks drawn on diamond denominated accounts (called by their Hebrew acronym "HANY") in order to regulate the work processes between bank branches that provide interbank clearing services in accounts intended for diamond transactions, and the Bank of Israel also acted to reduce manual settlement in the checks clearing house.

In this context, the need arose to carry out a comprehensive reform of the settlement process in the issuance of corporate securities. In order to meet this need, a committee was set up, headed by the Bank of Israel and the Israel Securities Authority, and the committee prepared a plan to replace manual-labor intensive business processes with automated, efficient, and lower-risk processes.

The goal of those activities is to reduce the settlement risks and liquidity risks in the

¹ The level of availability is estimated by the number of hours that the system was available out of its total number of hours of operation during a given year.

Paper-based (Checks) Clearing House and Masav (ACH), as well as in Zahav—the system settling their net transactions.

This year, the Bank of Israel continued to monitor the development of risks posed to the payment systems in general and to check ways of strengthening and enhancing their stability. Likewise, the Bank of Israel took steps to bolster the stability of important payment systems in particular. To that end, the Bank oversees the Zahav and CLS (Continuous Linked Settlement) systems, which were declared designated controlled systems in 2008, on an ongoing basis. Under the Payment Systems Law, 5768-2008, the Governor declared, in July 2013, the Masav and Shva systems as controlled payment systems. These systems are important in Israel's payments system as they provide, among other things, critical retail services to the general public. The declaration places them under oversight authority², grants them various protections, contributes to their safety and stability, and reduces systemic risk.

The stability of the financial infrastructure in Israel will continued to grow the more the payment systems will progress and improve their meeting of international standards.

During the course of 2013, the Tel Aviv Stock Exchange adopted several measures intended to strengthen its stability and to align the activity of its clearing houses with international standards. Among other things, the stock exchange, beginning in June 2013, extended its hours of operation in order to bring the trading hours in Israel in line with trading hours in global markets.³ The stock exchange began to adjust the securities clearing house and the Maof derivatives clearing house to the EMIR⁴ and PFMI⁵ international standards. (A detailed explanation of PFMI can be found below.) In addition, the stock exchange completed its preparation for the switch to its new location in Tel Aviv. The move was completed in July 2014.

1.2 Regulation

Payment card payment network—policy for licensing merchant acquirers

Amendment 18 to the Banking (Licensing) Law established that the Bank of Israel is responsible for granting acquirer licenses to entities that wish to deal in clearing of transactions carried out by payment (credit or debit) card. Further to this legislative

² Shva and Masav are also supervised by the Banking Supervision Department, in accordance with the Banking (Licensing) Law, 5741-1981.

³ Trading in stocks and bonds on Monday–Thursday was extended and now ends at 5:25 pm, and for derivatives it ends at 5:35 pm.

⁴ European Market Infrastructure Regulation—an EU regulation intended to strengthen the stability of derivatives markets on exchanges in Europe.

⁵ The report on the new principles was written by the Committee on Payment and Settlement Systems (CPSS) and the Technical Committee of the International Organization of Securities Commissions (IOSCO), and can be found at <http://www.bis.org/cpmi/publ/d101a.pdf>.

amendment, the Bank of Israel acted to formulate a regulatory infrastructure for licensing and oversight of acquirers. In December 2013, the Banking Supervision Department published the supervisory policy on the process of accepting an acquirer's license, including the criteria and general terms for the controlling interest and holders of means of control at a clearing license applicant. The policy includes a detailed listing of the considerations in granting a license, the standard requirements of an acquirer, the stages in the licensing process and the information necessary for reviewing an application to receive a license. In order to complete the supervisory framework, a draft Proper Conduct of a Banking Business directive was formulated—"Clearing Payment Card Transactions"—and published for the public's comments in May 2013.

PFMI—Principles for Financial Market Infrastructures

The recognition of the power and extent of risks in clearing led the Bank for International Settlements to establish international standards for payment and settlement systems. In April 2012, the Principles for Financial Market Infrastructures (PFMI) were published. The report establishes 24 international principles that will apply to all financial infrastructures, including payment systems and securities deposit and settlement systems. These principles united, expanded, and strengthened the systems of standards that applied to the systems in the past. They establish standards in various areas, including reference to the interdependence and ties between payment systems, which can lead to increased systemic risk. The new report also expands the responsibilities of oversight entities—the central bank, financial market overseers, and other oversight authorities—with regard to regulation, oversight and control of financial market infrastructures, when they implement the principles.

In 2013, the Bank of Israel, the payment systems oversight authority in Israel, began work to implement the PFMI principles on the critical financial infrastructures operating in the payment system in Israel. Identifying the risks inherent in the operation of the financial infrastructures, and adopting the measures noted above to reduce risks, will lead to strengthening the stability and efficiency of those entities.

Box 1**FATCA—Foreign Account Tax Compliance Act¹**

In 2010, the US government established the FATCA provisions, within the framework of a law known as the HIRE Act. The goal of the provisions is to expand the information base on accounts at financial institutions outside the US, and thus to enhance tax collection from them. This, as part of the global battle against tax evasion and unreported capital—that is, citizens who manage money in various countries in order not to pay tax on the funds.

The FATCA provisions impose a requirement on financial institutions around the world to report to US tax authorities on financial accounts held by a US citizen, a US resident, a holder of a “green card”, and even a legal entity in which a US person has a significant influence (ownership of 10 percent or more). A financial institution that does not comply with the FATCA provisions is liable to significant financial sanctions, in particular withholding tax at source of up to 30 percent on US-source income. In July 2014, an agreement was signed between the State of Israel and the US to improve international tax enforcement and to implement the FATCA provisions. The agreement regulates the transfer of information from the Israel Tax Authority, which will receive such information from financial institutions in Israel, to US tax authorities. The agreement also allows the Israel Tax Authority to receive information from US tax authorities on income in US accounts held by Israeli residents.

¹ FATCA - Foreign Accounts Tax Compliance Act

1.3 Means of Payment

There are various types of means of payment. Some of them—such as payment cards, checks (not third-party), bank transfer and Zahav transfer—allow the identification of the payer and the receiver of the payment. Another type of means of payment—including cash, endorsed checks, unidentified prepaid cards, and virtual currencies—is anonymous, not allowing the identification of the payer and the receiver of the payment. These are legal means of payment, and they are in widespread use in Israel, though they enable the sides involved in the transaction—the payer and the receiver of the payment—to hide the transaction from government authorities, and thus they allow tax crimes (tax evasion). Tax evasion can be in respect of legal activity, such as selling products and services, without reporting them, or in respect of criminal activities such as drug dealing and gambling. Tax evasion expands the shadow economy in Israel.

On September 17, 2013, the government decided to establish a committee to examine reducing the shadow economy and money laundering by limiting the use of cash and paper-based means of payment. The committee was headed by the Director General of the Prime Minister's Office, and members include representatives of the Bank of Israel, the Ministry of Finance, the Israel Tax Authority, the State Attorney, the Attorney General, and the Israel Money Laundering and Terror Financing Prohibition Authority.

The committee was charged with formulating an outline for policies to gradually reduce the use of cash and other paper-based means of payment, including by limiting the negotiability of checks, and to offer proposals regarding providing incentives, and reducing barriers, to encourage the use of advanced and identified electronic means of payment.

Within the framework of the Committee, two subcommittees were established. One was a subcommittee to establish norms of cash payment, led by the head of the Israel Tax Authority and the head of the Israel Money Laundering and Terror Financing Prohibition Authority, and the second subcommittee was a team to formulate a gradual reduction in the use of cash and to encourage the use of advanced electronic means of payment, headed by the Director of the Bank of Israel's Accounting, Payment and Settlement Systems Department.

The Committee's work was guided by several principles. The main one was the starting point that most of the population are law-abiding citizens and it is thus appropriate to minimize the negative impact on the usual course of business, and to limit it to the aspects which are crucial to achieving the goal. The Committee's guiding principles refer to various aspects, including: the points of view of consumers and businesses and the unique characteristics of different population segments; the understanding that the Committee's goal is first and foremost to reduce the size of the shadow economy and money laundering; increasing the public's awareness of the connection between anonymous means of payment and the shadow economy; the importance of the systemic perspective, which requires the inclusion of all means of payment in the economy and all sectors—business, public, and government. One of the committee's recommendations is that it is appropriate to implement the reform gradually.

The committee's recommendations were published in a final report and were approved by the government in October 2014. An interim report, for comment by the public, had been published in May 2014.

Reducing the use of cash and negotiable checks occurs, as noted, in parallel with promoting the use of advanced electronic means of payment. Various electronic means of payment have already been implemented in Israel, and in recent years their use has grown: in July 2007 the Zahav system went on line, and over the years the Bank of Israel has worked to expand the use of that system. Likewise, use of payment cards became entrenched in Israel, and there were technological developments that yielded a range of payment

methods. The innovative means of payment offer flexibility, comfort, shorter payment processes, customer identification, reduced transaction costs, and sometimes increased security, all this by the use of the existing financial and communication infrastructures. Every year, entrepreneurs, public entities, and government ministries offer new solutions to conducting payments, and bring various possibilities for use of new access devices, alternative access channels, and the possibility to improve payment efficiency and level of security. Leading innovations and developments in recent years include near field communication (NFC) technologies, mobile POS devices, intrabank check deposits via mobile device, Internet payments and widespread use of cellular wallets and payment applications for mobile computers and phones.⁶

2. The Zahav system⁷

In 2013, about 449,000 transactions, with a total value of about NIS 72 billion, settled through the Zahav system. This compares to about 400,000 transactions with a total value

Table 1

Zahav activity, by components, 2008–13

	Interbank ¹			Clearing houses	Bank of Israel	Total
	Without CLS	CLS alone	Total			
Value (NIS billion)						
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
2013	3,746	1,145	4,890	3,069	63,723	71,682
YOY change (percent)	-26.68	-28.74	-27.17	-12.69	-8.49	-10.25
Volume (Units)						
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
2013	406,627	10,871	417,498	10,768	20,602	448,868
YOY change (percent)	14.28	2.25	13.93	-11.62	-5.03	12.12

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

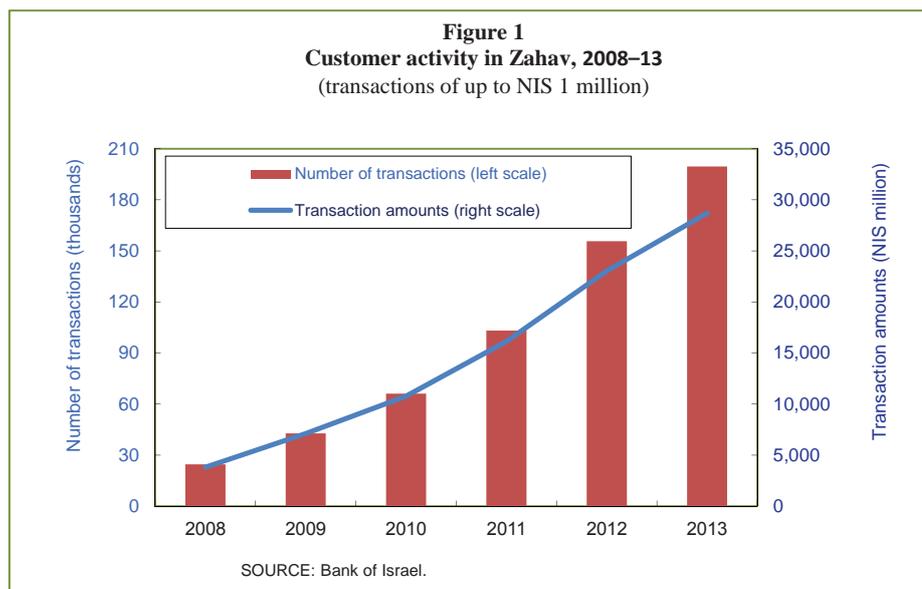
SOURCE: Bank of Israel.

⁶ Developments that are widespread in Israel include cellular wallets arranged by banks and credit card companies, and mobile payment applications for transportation, parking and restaurant payments.

⁷ A description of the Zahav system appears in the chapter, "The Payment and Settlement Systems".

of NIS 80 billion in 2012 (an increase of about 12 percent in the number of transactions and a decrease of approximately 10.2 percent in their total value). The change indicates that the average amount of a transaction in the system declined by about 20 percent.

Table 1 shows that the number of interbank transactions increased by about 13.9 percent while their value declined by about 27 percent. This indicates that more transactions, at smaller amounts, were conducted via the system. These changes may signal that the system is beginning to be more widespread among households and small to medium sized businesses (Figure 1).

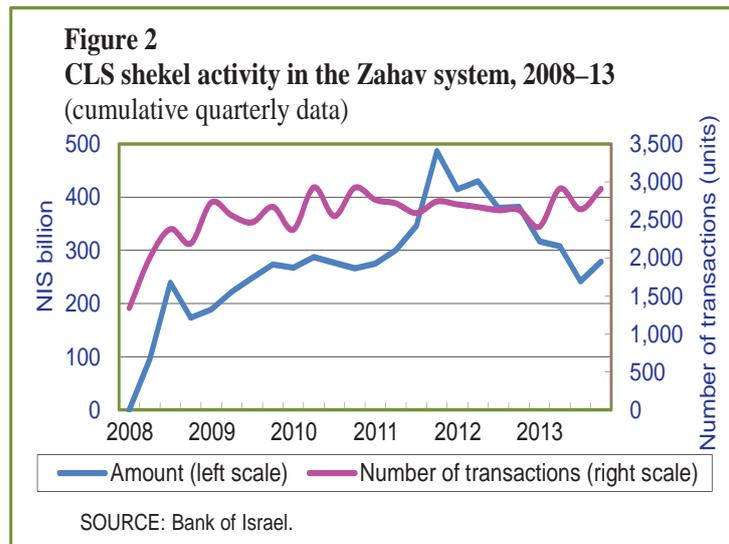


The total volume of financial activity in the clearing houses through Zahav—i.e., the Tel Aviv Stock Exchange clearing houses, the Paper-based (Checks) Clearing House and Masav—declined this year by about 12.7 percent. In the TASE clearing houses, there was a decline of about 18.5 percent in the total value settled in the Zahav system,⁸ 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 value of activity in the TASE clearing houses increased by 1.3 percent in 2013. The value of financial activity in the Paper-based Clearing House in Zahav increased by about 7.5 percent in 2013 compared with 2012. Total activity in the Masav system grew by about 3.9 percent.

⁸ Including the amounts transferred by the TASE clearing houses to the intraday credit line accounts of the banks in the Zahav system.

3. CLS Bank

CLS Bank settles more than 50 percent of the international foreign exchange market and provides settlement services for 17 currencies. It is responsible for most of the activity in Israel involving the exchange of shekels against foreign currencies. In 2013, the activity in CLS was about NIS 1,140 billion (cumulative for the year), a decrease of about 29 percent from the previous year. The number of transactions settled in CLS increased by about 2.3 percent this year (Figure 2).

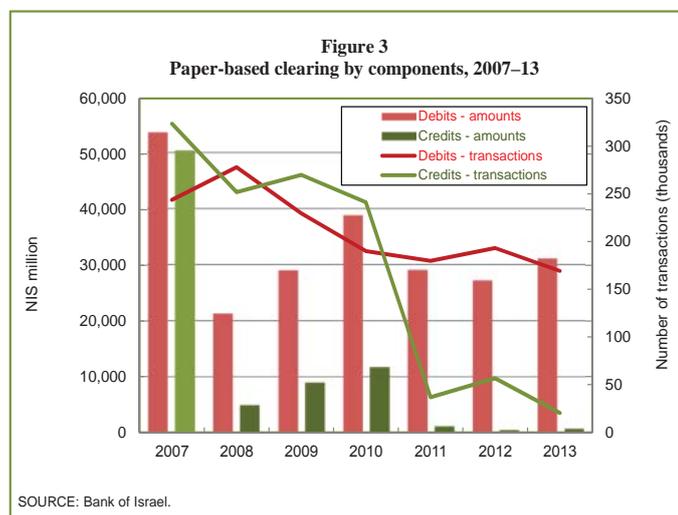


4. The Banks' Clearing House

4.1 The Paper-based Clearing House

Checks, manual drafts, and collection vouchers are settled in the Paper-based Clearing House. During the year being reviewed, activity in the Paper-based Clearing House totaled about NIS 934 billion, compared to about NIS 888 billion in 2012. The number of transactions declined from about 122,000 to 121,000, a decline of about 1.3 percent.

Total manual transactions increased by about 15 percent this year, compared with a decline of about 7.4 percent in 2012. About 90 percent of the manual debit amounts were due to the settlement of funds from the issuance of corporate



securities.⁹ This explains the increase in debit amounts in manual clearing, in parallel with an increase in the issue 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 comprehensive reform in the clearing process for corporate security issuances. One of the results of the reform will be the shifting from manual clearing to electronic clearing, which will markedly reduce the amount of debits clearing manually.

Table 2
Paper-based Clearing House, by components, 2007–13

	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	0.5	28	835	25	860	888
2013	31	0.8	32	876	26	902	934
YOY change (percent)	14.39	51.44	15.08	4.88	4.86	4.88	5.20
	Volume (thousands)						
¹ 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
2013	169	20	189	117,720	2,647	120,366	120,555
YOY change (percent)	-12.44	-64.33	-24.22	-1.15	-5.60	-1.26	-1.30

¹ In 2007, data on the number of manual instructions were not collected.

⁹ Tel Aviv Stock Exchange data, Annual Report 2013, Table 10—“Capital raised by security type, 2004–13”.

4.2 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 83.4 percent of total payments settled in Masav. The increase in Masav activity is the result of both credits and debits: debits (by value) grew by about 7.6 percent during the year being reviewed, compared with about 6.4 percent in the previous year, and credits (by value) grew by about 4.5 percent, compared with 9 percent in the previous year. There are 25,395 institutions participating in Masav, including banking corporation, the Postal Bank, government ministries and public entities, as well as other clearing institutions such as credit card companies. All participants in Masav are direct participants, meaning they represent themselves.

The number of institutions operating in Masav increased by about 3 percent in 2013 compared with 2012.

The credits component is composed of institutions' payments, which are primarily salaries, payments to suppliers, taxes, and others, as well as banks' payments reflecting their customers' activities. Figure 4 below presents a segmentation of credit activity by institutions (salaries and other), and by interbank and intrabank activity (including institutions that do not report directly to Masav). The distribution is about 53 percent bank activity and about 47 percent institutional activity. Bank activity grew during the year being reviewed by about 2.2 percent to a total of about NIS 1,062 billion, compared with about NIS 1,039 billion in the previous year. Institutions' activity grew by about 7.3 percent during the year being reviewed, to a total of about NIS 936 billion, compared with about NIS 872 billion in the previous year.

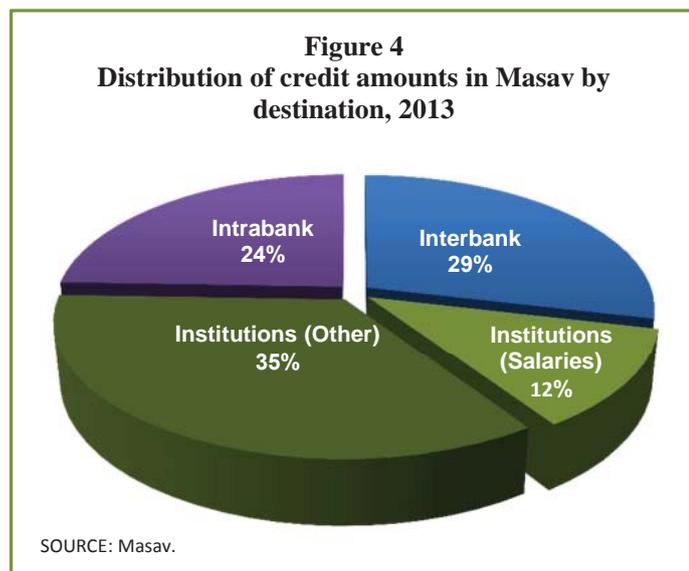


Table 3
Masav, by components, 2007–13

	Credits	Debits	Credits returned¹	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	5	2,280
2013	1,998	392	1	5	2,395
YOY change (percent)	4.53	7.60	17.60	-2.72	5.01
	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
2013	125,651	187,204	136	4,188	317,179
YOY change (percent)	5.50	3.90	24.78	-2.49	4.44

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

SOURCE: Masav.

5. 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 (DVP).

Like most stock exchanges worldwide, trading volume increased on the domestic stock exchange as well. Average daily trading volume in shares increased in 2013 to NIS 1.1 billion (an increase of about 7 percent relative to the previous year). Average daily trading volume increased in the bond market, reaching NIS 4.3 billion (an increase of about 4 percent relative to the previous year). Table 4 shows that in 2013, annual securities trading volume on the TASE was about NIS 1,486 billion, compared with about NIS 1,414 billion in the previous year (an increase of about 5 percent).

Table 4
Securities trading, 2006–13

	Stocks and convertibles	Bonds			<i>Makam</i>	Total
		Gov't	Other	Total		
Value (NIS billion)						
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
2013	286	810	249	1059	141	1,486
YOY change (percent)	8.38	8.31	0.57	6.39	-9.01	5.10

SOURCE: Tel Aviv Stock Exchange.

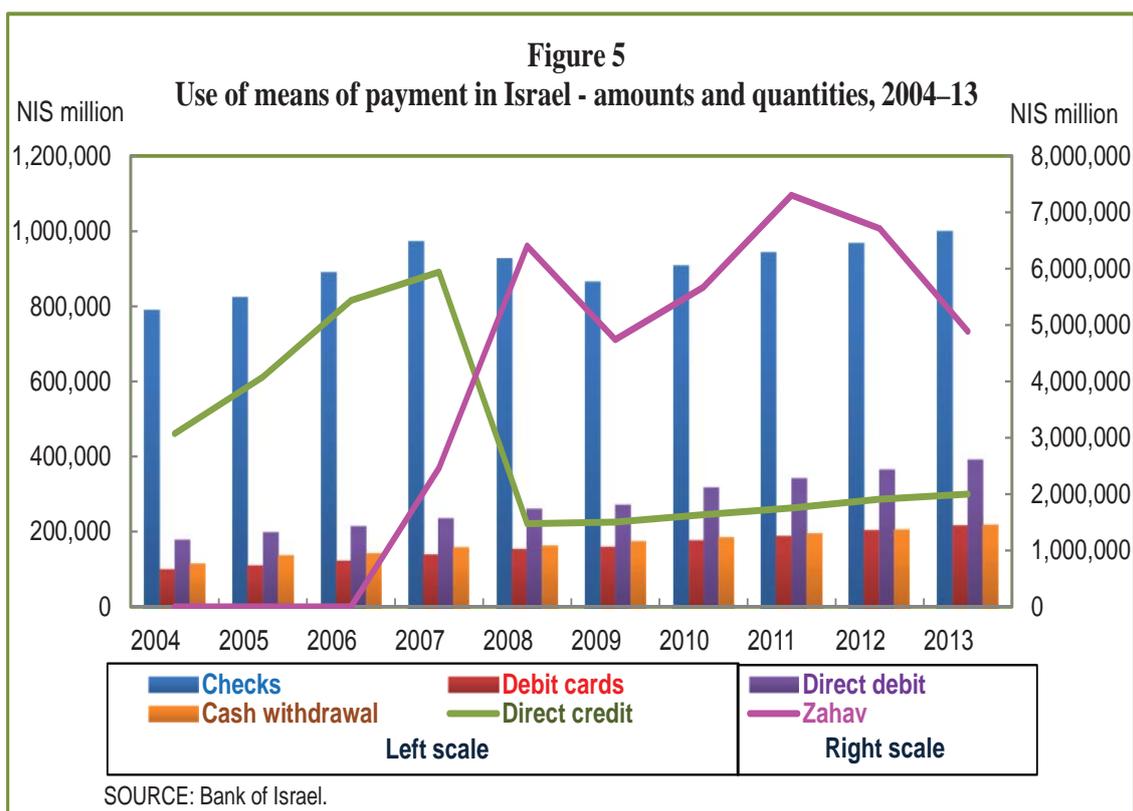
Chapter 2 - Means of Payment

The principal means of payment available to the general public in Israel are cash, paper-based payments (checks and vouchers), payments (including standing orders) via Masav, payment cards, Internet payments, and payments by means of cellular telephones.

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 about 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.

1. Trends

Developments in common means of payment in Israel over recent years are presented in Figure 5.



2. Paper-based means of payment

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.¹⁰

2.1 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 denominations of NIS ½, 1, 2, 5 and 10, as well as 10 agorot (NIS 0.10).

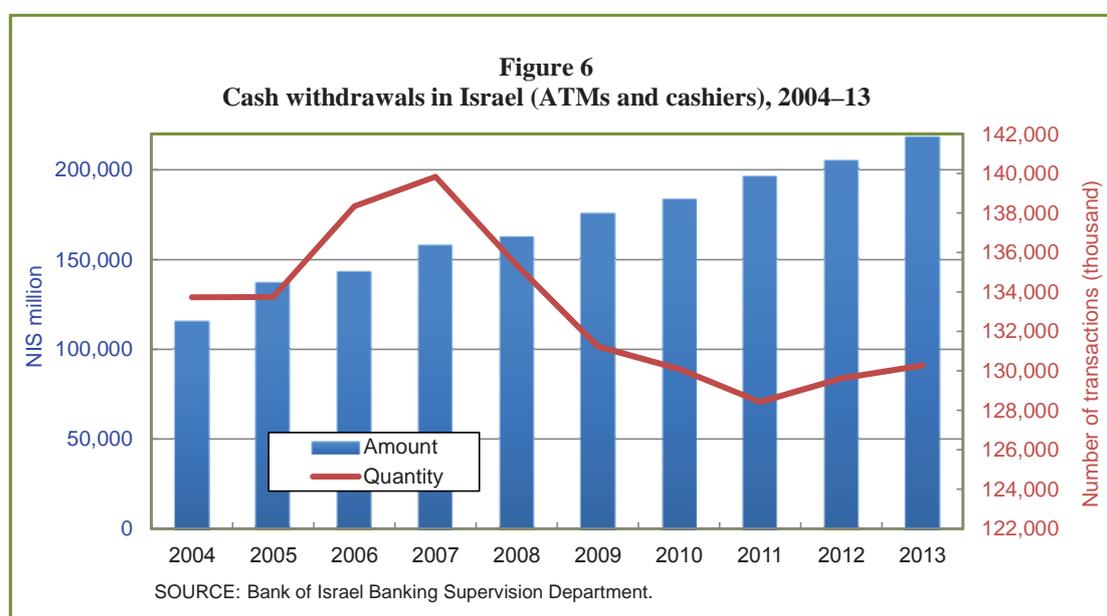
The demand for cash in Israel has a seasonal component, with higher demand during Passover (March/April), the summer vacation months (July and August), the High Holidays period (September/October) and Hanukah (December). Over the years, the seasonal pattern of demand for each of the banknote denominations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

¹⁰ Payment instructions settled in Zahav (interbank), Masav (credits) and in the Paper-based Clearing House.

In 2013, total banknotes and coins in circulation grew by about 5 percent and the upward trend in the use of means of cash withdrawal continued. This is primarily the result of the low interest rates in recent years due to the financial crisis. In addition, the number of options for withdrawing cash has grown: the number of bank ATMs increased by 6 percent between 2012 and 2013; there are 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 on their premises.

In recent years, there has been a trend of decline in the number of cash withdrawals (from 140 million transactions in 2007 to 130.3 million in 2013), while the amount of funds withdrawn has increased consistently—from NIS 158 billion in 2007 to NIS 218 billion in 2013).¹¹

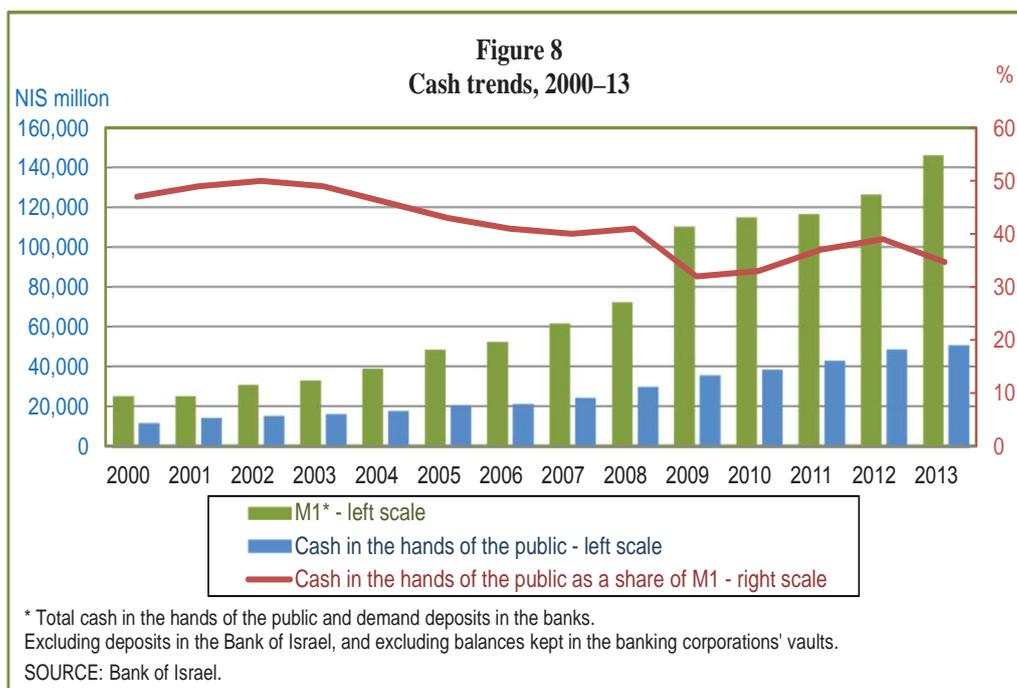
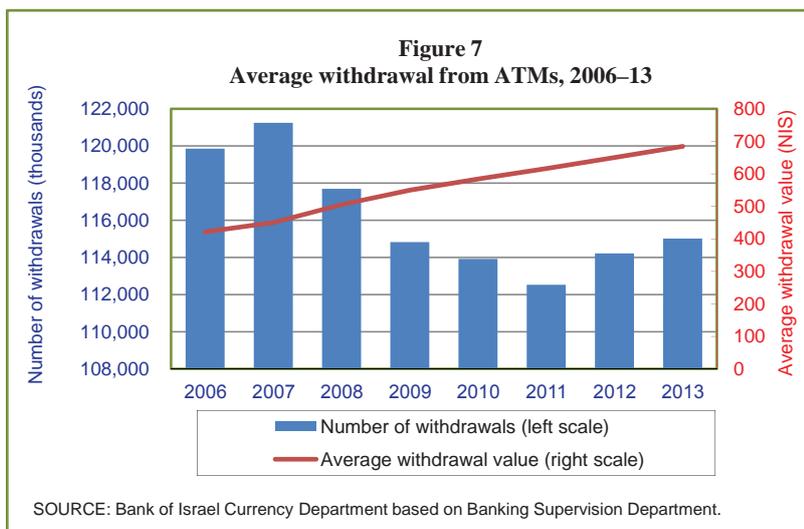
In 2013, the upward trend in the average amount of an ATM withdrawal continued, as the figure increased by 5 percent to NIS 684. (The average rate of increase since 2006 has been 7 percent.)



Although the amount of cash held by the public has increased consistently, from NIS 25 billion in 2007 to NIS 51 billion in 2013, the share of cash held by public out of the total money supply (total cash held by the public plus the public's demand deposits with banks) has been declining. At the end of 2013, currency in circulation was NIS 58 billion,

¹¹ Source: The Bank of Israel, Annual Data on Banking Corporations, Table XI.5—Debits against the Public's Current Accounts. Nominal financial data.

compared with NIS 55 billion at the end of 2012 (an increase of 5 percent, compared with an increase of 12 percent in the previous year).¹²



¹² In addition to cash held by the public, the circulation value includes cash that banking corporations hold in vaults. The figure also includes cash held by nonresidents (this is more of an issue in the EU and US, where the currencies are used extensively outside their borders as well).

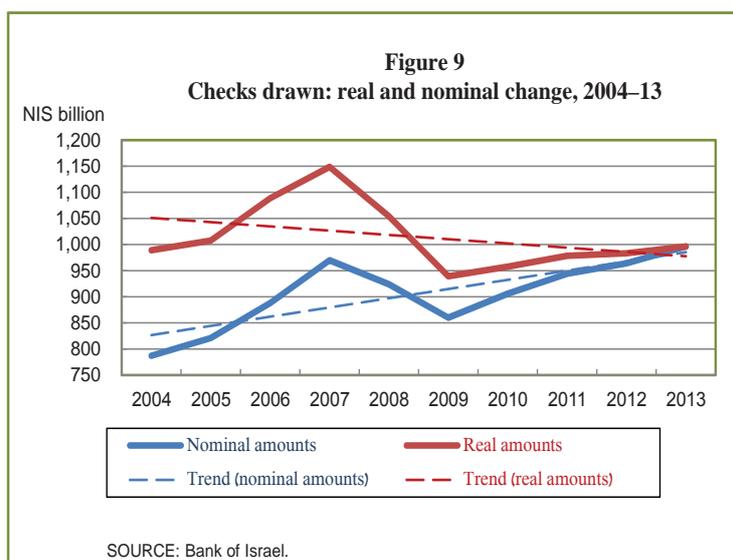
2.2 Checks

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

Based on data on all checks (intrabank and interbank¹³), in 2013, the use of checks declined by about 2 percent to 145 million checks, while the total value of settled checks increased by 3.3 percent. Since 2008, the number of checks has gradually declined and by 2013 had fallen by a total of 9 percent. In contrast, the total value of checks increased by about 7.8 percent, from NIS 924 billion in 2008 to about NIS 996 billion (nominal) in 2013. The average value of a check also increased, from NIS 5,799 in 2008 to NIS 6,890 in 2013, an increase of 19 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 number of checks returned declined by about 5.6 percent in 2013, while in shekel amounts there was an increase of 4.86 percent in check returns.

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 passed¹⁴ that requires the banks to issue, as the default, checkbooks with limited negotiability checks, unless the customer requests otherwise. It was understood that this will reduce the number of third-party endorsed checks in the system, though not eliminate them completely.



¹³ In contrast to the net amounts which reach the Paper-based Clearing House, as described in Section 1.4.1 and in Table 2.

¹⁴ Proper Conduct of a Banking Business Directive 431, in effect since October 1st, 2011.

Use of post-dated checks is widespread in Israel, 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 subject to the supervision of the Currency Service Providers Unit of the Ministry of Finance's Capital Market Branch. There are 1,663 corporations and private individuals listed in the database of currency service providers and they are permitted to provide check discounting services in Israel.¹⁵

Households in Israel reduced their use of checks for two main reasons. First, they expanded the use of electronic means of payment, mainly payment cards and electronic transfers, because electronic means of payment became more efficient and user-friendly alternatives (as detailed below). Second, an increasing number of businesses do not accept checks in order to avoid the risks inherent in accepting them.

A fee is charged for printing checkbooks. This is subject to the supervision of the Supervisor of Banks, and the maximum is set at NIS 0.36 per check. There are two levels of fees for depositing checks, depending on how the deposit was made—customer-executed or teller-executed—and the fee applies to an individual deposit of up to 20 checks.

In 2013, the Bank of Israel took steps to encourage the use of advanced, lower-risk electronic means of payment, including measures to reduce manual clearing and to integrate an advanced checks clearing house based on innovative technology. These were intended to reduce the risks in the checks clearing house, and the system that settles its net transactions—Zahav.

In addition, approval for depositing an intrabank check of up to NIS 10,000 via mobile phone was granted and the concept came into effect in 2013.¹⁶ Photocopying a check by a mobile device allows the check to be deposited into a personal account. The service allows depositing a non-postdated check marked “for beneficiary only”, up to a total of NIS 24,000 in one business day, and up to a total of NIS 60,000 in a given month, with the condition that no single check deposited is greater than NIS 10,000.

¹⁵ As of August 2014.

¹⁶ In 2013, it was in effect at 2 banks. The check can only be deposited into an account held by the depositor.

3. Electronic means of payment

3.1 Payment via Zahav

The Zahav system serves as final clearer of all the payment and settlement systems in Israel. In the Zahav system today, there are 21 clearing participants (banks, CLS, the Bank of Israel, and the Postal Bank), and 4 clearing houses (the Maof clearing house, the TASE clearing house, Masav (ACH), and the Paper-based (checks) Clearing House). As of the end of 2013, about 1,500 transactions (bilateral and multilateral) are settled on the Zahav system each day.

In the Zahav system, settlement is in real time, without any delay between carrying out the payment instruction and its approval, and in this way it prevents a payment recipient's exposure to a number of risks.

Zahav system users know immediately with the funds transfer that the payment that they receive is final and irrevocable. The system allows individuals and business entities in the economy to transfer funds rapidly and reliably, thus removing the question mark that has hovered until now over other payments that are not immediately final. Payment transactions are conducted efficiently and in real time: conducting a transaction takes only a few minutes. Use of the Zahav system is not contingent on minimum or maximum amounts.

Customers who want to pay via the Zahav system need to approach a teller at the bank branch in which they hold a shekel-denominated account, who will then make the payment in the Zahav system at the Bank of Israel. Some banks allow payments via Zahav to be placed through fax, Internet (up to NIS 6,000) or telephone call center.

In order to transfer a payment via the Zahav system, the beneficiary's name in English and the IBAN number is needed.¹⁷ Bank customers can obtain the IBAN number in several easy ways, as every commercial bank provides the information to its customers through one or more of the following: branch teller, Internet, telephone service, or automated bank device. In addition, since 2012 the IBAN number has been printed on checks.

Within the framework of the Locker Committee, recommendations were formulated with the goal of working to reduce unreported capital by reducing the use of cash and paper-based means of payment, and by increasing the use of advanced means of payment. As part of setting incentives for increasing the use of advanced, efficient, overseen, and very secure electronic means of payment, a draft amendment to the Banking (Customer Service) (Fees) Rules, 5768-2008, was published. The amendment establishes that the amount of the fee that a bank is allowed to collect for transferring amounts of up to NIS 1 million via Zahav cannot be greater than the amount of the fee charged for a teller-

¹⁷ The Zahav number—IBAN—is a unique identifier of the customer's account. It includes, among other things, the number of the bank, branch, and account.

executed transaction (that is, up to NIS 6).¹⁸ The amendment is to come into effect on January 1, 2015.

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

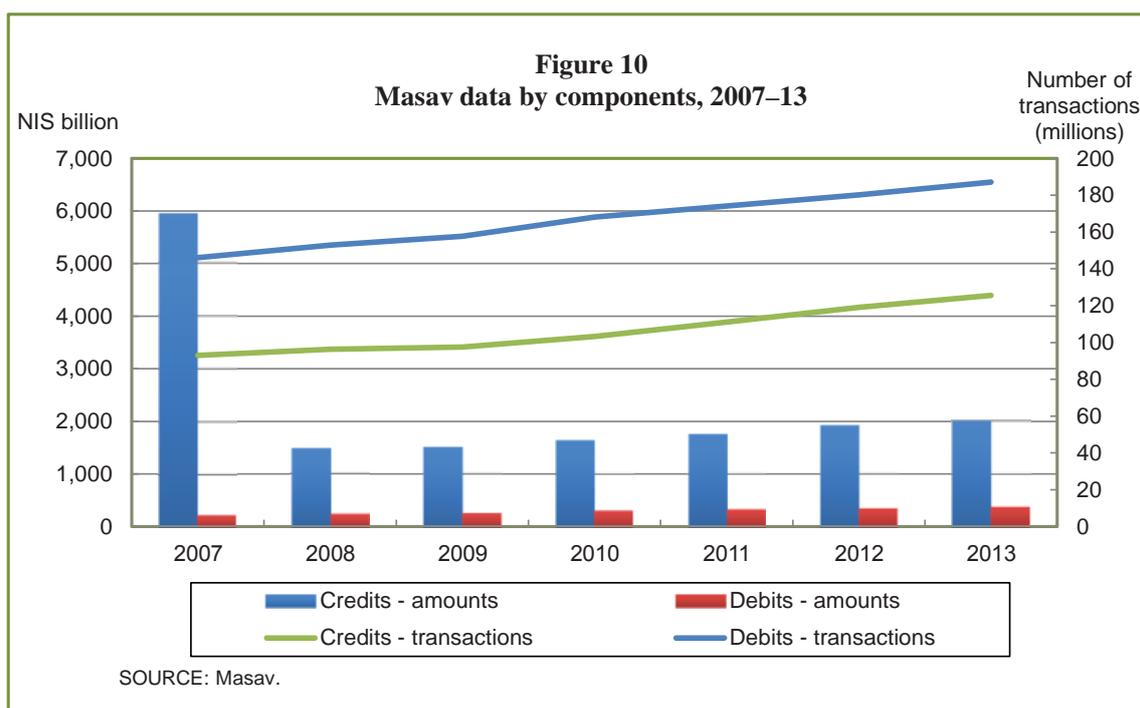
Direct credits: Direct credits, as noted, are carried out via the Zahav or the Masav systems and are initiated by the debited party, who instructs the bank to debit his account and credit that of the beneficiary. If there is a sufficient balance in his account, the bank submits the payment instruction 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 2 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 2013, total direct credits totaled about NIS 1,998 billion as compared to NIS 1,911 billion in the previous year (annual growth of about 4.5 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 executed automatically each month, at its updated amount.

In recent years, there has been continuous growth in the number of direct debits and in their value. Thus, in 2013, direct debits totaled NIS 392 billion, compared with NIS 364 billion in the previous year (annual growth of about 7.6 percent).

¹⁸ The directive will apply to customers as defined in Section 9i(f) of the Banking (Service to the Customer) Law, 5741-1981.



3.3 Payment cards

The most widely used payment card in Israel is the **deferred debit card**. The card allows a customer to purchase goods and services with the card and to pay once a month, or over the course of several deferred payments. Other cards issued in Israel are a revolving credit card, preloaded card, and immediate debit card.

A deferred debit card is directly linked to the customer's credit framework¹⁹ 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. With a deferred debit card, there are two aspects to granting credit: non-interest bearing credit, which is credit granted by the business for a period of several days to several months; and interest bearing credit, which is credit extended by the credit card company for a period of several months and at time for more than a year, through a credit program.

Customers' accounts are charged once a month, in the following month, while the merchant is credited in accordance with the acquiring agreement (several times per month). Businesses finance the credit days between the date the customer's account is charged and the date they are credited. This is one of the reasons that a deferred debit card cannot serve as a complete substitute for cash. Another reason is that it is only accessible to consumers who have a bank account with a credit facility.

¹⁹ With bank debit cards, the charge is reflected directly in the customer's account.

Transactions using a **debit card** are ones using a card in which the cardholder's (buyer's) card is debited, and the seller's account is credited, together, immediately with the execution of the transaction.²⁰ An (immediate) debit card integrates the convenience of a debit card and provides (nearly) immediate transfer of the payment, similar to payment by cash, (unendorsed) checks, or bank transfer—this is in contrast to payment by deferred debit card or credit card, which include an element of credit. Use of debit cards is very common in many countries around the world, and is in an upward trend in the past decade. In Israel, debit transactions are executed to a relatively low extent. The total cost of carrying out an immediate debit transaction is lower than that of a deferred debit transaction, without depending on the amount of the transaction. The saving is possible due to the cancellation of the element of credit in the transaction, and the reduction of the cardholder's default risk, as the funds are transferred immediately from the card holder to the issuer.

The holder of a **credit card (revolving credit)** can set the maximum amount to pay each month, with the remainder of the balance, due to the purchase of goods or services, carried over to future months, accruing interest. Most cards of this type are issued by credit card companies, not by banks.

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 and phone cards. Some of these cards can be loaded repeatedly while others are for one-time use.

In Israel there are anonymous, one-time use cards²¹ preloaded with a shekel amount, and there are identified cards that can be reloaded (in shekels or in foreign currency). Reloadable cards are issued by credit card companies and they can be used at any business that accepts credit or debit cards. Prepaid cards are limited to a maximum amount that can be loaded on the card. Funds can be added to the card in several ways—directly from a bank account, charging another payment card (deferred, revolving or immediate), or with cash.

In recent years, there has been an increase in the number of active cards in Israel, and in 2013 there was an increase of 6 percent, from 6.35 million cards to 7 million cards.²²

In 2013 the number of valid cards²³ grew by about 7 percent, from around 7.5 million cards to 8 million cards. Since 2008, the number of cards has increased by about 35 percent. There were 560 thousand immediate debit cards in 2013, an increase of 14 percent from

²⁰ Generally up to 1–3 days from the date the transaction is carried out.

²¹ Cards with and without the ability to withdraw funds through an ATM.

²² Active cards had at least one transaction made with them during the course of the final quarter of the year.

²³ Cards that are valid at the end of the year (active and inactive).

2012 and an increase of 47 percent from 2008. The total payments made with payment cards issued in Israel also grew this year, by about 11 percent, and has increased by 63 percent since 2008.

Today, payment cards are accepted at all large and medium-sized businesses and at most small businesses. Accepting payment through debit cards is easy to implement at a business, is widespread, and serves as a relatively secure form of income for the business. There are very small businesses that do not accept credit card payments as they chose not to link up with a merchant acquirer for various reasons, including the relatively high cost of the service. This means of payment is relatively expensive for the tiny company and the payment is not immediate (it is received on dates set vis-à-vis the merchant acquirer.) In payment transactions carried out via debit cards, businesses submit the debit card receipts for discounting in order to shorten the financing days, in exchange for a fee.

From the perspective of the business owner, there is no difference between a deferred debit card and a debit card or prepaid card, since in all those cases the business receives its payment on dates agreed to with the merchant acquirer, even though in some of those means of payment the customer is charged the day after the transaction. Prepaid cards are likely to be used as a substitute for cash for customers who do not have a bank account.

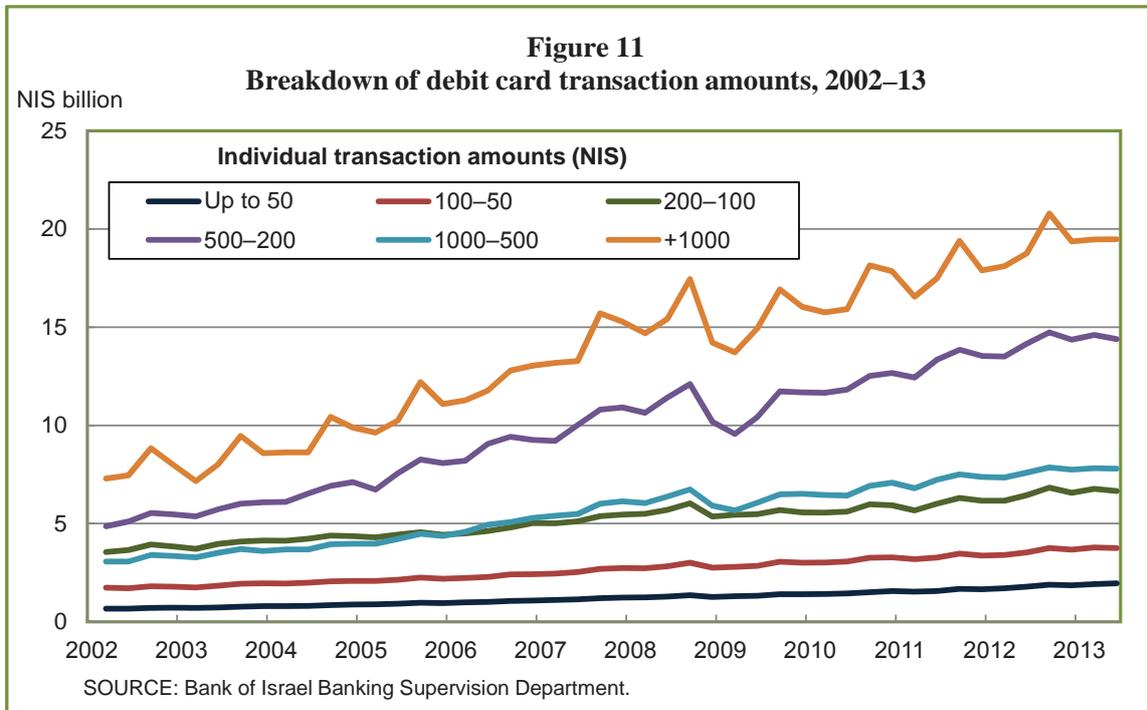
In Israel, there are three credit card companies: Isracard Group, Leumi Card, and Cal (Cartisey Ashrai Le'Israel)-Israel Credit Cards. The companies issue and settle domestic brands of debit cards under licenses from the relevant international organizations. The activity in the sector expanded in recent years at a notable rate, affected by several factors: the issuance of nonbank debit cards (which are generally related to customer clubs); the expansion of the range of services provided by financing and credit companies through instruments that allow the card holder to set the amount and date of the payment in accordance with the customer's needs and ability; and the continued increase in use of cards because using them at businesses is easy and convenient and because the number of e-commerce sites has increased.

The total value of debit card transactions has increased consistently, and there is a tendency at businesses to implement the use of debit cards for micropayments as well—such as in vending machines and photo booths (Figure 9). In 2013, the total value of debit card transactions was about NIS 216 billion, an increase of 6.8 percent from the NIS 202 billion in 2012. Most of the transactions (70 percent) in 2012–13 were for less than NIS 200. This figure likely indicates that this means of payment serves as an alternative to cash in retail goods and services transactions.

In order to carry out a debit card transaction, the issuer and merchant acquirer need to be linked, both contractually and technologically. The contractual link sets the dates on which payment is transferred and each side's responsibility in various situations. The technological interface allows the transaction to be recorded at the business, the electronic transfer of the authorization request to the merchant acquirer and the issuer,

and the settlement of the transaction on the agreed upon date.

In Israel, there is an agreement which regulates the contractual relationship between the three credit card companies.²⁴ The technological connection is via the single technological interface in Israel for debit and credit card transactions—an interface which is operated by Shva (the Hebrew acronym for Automated Bank Services) Ltd.



4. Advanced electronic means of payment

The new means of payment are not necessarily that different from existing means of payment. Although they offer flexibility in means of payment (the customer may choose whether to pay with a debit or credit card, bank transfer, or direct debit), they use the existing infrastructure (the bank infrastructure or others).

Recent years have seen progress in the means of payment area, and this movement is strengthening with time. Each year entrepreneurs and governments offer new solutions for making payments, and bring to the general public various options for using new

²⁴ This constitutes a monopolistic agreement as defined in the Antitrust Law, 5748–1988, and is subject to the approval of the Israel Antitrust Authority.

access devices, alternative access devices (such as mobile POS)²⁵, the possibility of improving payment efficiency and security. A CPSS study, which examines advances in various countries, reports that the trends of innovation in means of payment are seen in the following areas:

- Most of the innovations are intended to improve the convenience of making the payment.
- About half of the innovations shorten the payment period.
- About a third of the innovations lower the costs of processing a transaction.
- About a third of the innovations focus on improving the level of security.

4.1 Near field communication

A standard covering a group of communication protocols, based on radio frequency identification (RFID) that allows radio waves to be transmitted over a short distance (about two centimeters), to a passive electronic device held for identification, verification, and monitoring. Today, NFC technology is embedded in most cellular phone devices, and with it, payments can be made through smartphones by bringing them close to a payment reader device. This is a technological innovation that can be implemented in every device that can be appropriate for transmitting from it (payment cards, mobile phone, SIM, smart watch, or sticker).

Enabling a mobile phone with NFC through the use of a designated SIM card that also includes details of means of payment requires a dialogue between the credit company and the phone company. The coordination between them is carried out through TSM (trusted service manager) technology, which allows the operation of the credit option remotely, by the cellular company.

The Bank of Israel granted two credit card companies in Israel permission enabling them to use the NFC component (a “credit card” sticker attached to a mobile phone that facilitates payment at points of sale by contactless technology).

Executing a transaction through NFC technology requires a designated NFC-supporting reader in the business. Supporting devices are active today in a very small percent of businesses in Israel. Therefore, payment cards supporting NFC also support execution of transactions through magnetic strips.

Some cellular device manufacturers announced that they would implement NFC

²⁵ There is a product in Israel that allows payments to be received from credit card customers by smart phone, via a compact device attached to the mobile device and a specific application, which turn the cellular phone into a mobile credit terminal. In various countries around the world, devices are sold that make it possible to carry out transactions via payment cards in companies' mobile stands, provided that the local business representative has a smartphone.

technology by embedding payment cards with in mobile devices. Some of them did this by embedding a component in the smartphone's hardware and some of them did it by using Host-based Card Emulation (HCE) technology which is based on cloud technology. Both options do not require collaboration between the issuer and the cellular company.

Among the world's leading companies that make use of an NFC component embedded in customers' credit cards are Visa, MasterCard, and American Express. NFC operates in, among other places, Europe, Canada, Korea, Hong Kong and South Africa.

In various countries around the world, similar to the use of Rav-Kav cards for public transportation in Israel, contactless technology is used for payment on public transportation. In these cases, it is Proxy technology, which allows quick and easy payment of small amounts, with identification of the payer and without the need for swiping the card or use of cash.

4.2 Smart credit card

In Israel, the process of bringing the market in line with smart payment cards that use the EMV²⁶ advanced security standard has begun. Smart cards grant customers new advantages. First, in order to use a smart card at a terminal in a business, a PIN code needs to be entered, which reduces the use of lost or stolen cards. The switch will thus reduce the potential for fraud and increase customer and card company trust. Second, the switch brings the economy in line with the world, which in turn allows broader use of Israeli credit cards abroad.

The switch to smart cards requires bringing various systems in line with each other—including Shva and points of sale—according to the plan outlined by the Israel Antitrust Authority in collaboration with the Supervisor of Banks and the Payment Systems Oversight Unit. The Shva company is expected to complete the preparations during 2015. The banks and credit card companies will formulate a plan that will allow all credit cards in Israel, as well as related infrastructures, to switch to smart cards.

4.3 Digital wallet

As part of the ease of use and the many possibilities provided by the Internet, the digital/electronic wallet for online purchases has been developed in recent years. The wallet stores funds online and money can be deposited into it through various means. It can be used to make secure payments online. The details of the charge are not exposed, because they are not transferred to the business, but rather are stored on the service provider's servers. When signing up for the service, customers are asked to enter their details and those of the means of payment they will choose to use. From the moment the registration is complete, the information is stored only at the service provider, and is not transferred to

²⁶ EMV is a collection of specifications developed by international organizations for credit cards in order to provide a uniform and secure method for companies to receive payment from debit and credit cards, in "in presence of card" transactions.

any other external entity. To pay for a purchase through the service provider, the customer connects securely to the provider, which authorizes the purchase. At the stage of making the payment, the provider collects the final payment amount from the customer, and then transfers the amount to the seller. Purchasing products online through the digital wallet service is contingent on the readiness of the businesses to accept such payment.

In recent years, use of the digital wallet has crossed over from the Internet and reached cellular phones as well: today there are suppliers who offer use of a digital wallet through a smartphone as well, by installing an application. Payment is made through a service provider in a physical store, similar to payment by credit card, but without the buyer's details being exposed to the seller. The digital wallet technology in smartphones ("cellular wallet") uses an NFC device, which is embedded into smartphones in order to transfer information. When the payment is made, the customer brings the smartphone near to the card reader and connects to the application in order to authorize the payment. At this stage, the customer's account is charged, and the service provider transmits the payment to the seller. If the smartphone does not contain an NFC device, it can be added by means of an external device or designated sticker. Most applications work with these items as well.

Business owners who are interested in allowing their customers to pay via the online digital-wallet service can integrate a button on their website to execute a charge through this service by preregistration. The cost to business owners for the use of the service depends on the volume of transactions and their total amount. The owner of a physical business who is interested in allowing payment by a digital wallet service installed on a smartphone needs to have a card reader that support NFC devices. The most prevalent option in Israel today is use of a PayPass device by the Isracard company, which makes it possible to use this technology.

Use of the digital wallet allows the monitoring of all online purchases through the Internet or the application.

There is a range of suppliers on the Internet who offer digital wallet services, with various features and costs. Several banks in Israel offer various digital wallet services that are directly synchronized with the bank account, and allow fund transfers and various payments directly from the application. Most credit card companies also offer a mobile device application that can be used as a digital wallet.

Development of the digital wallet is being led by banking corporations, credit card companies, entrepreneurs and private companies. The digital wallet also makes it possible to receive funds and to transfer them between accounts. In recent years, there has been considerable development in this area in Israel, and mobile phones have begun to be used for a wide range of financial activities, beyond paying for goods, such as payment of salaries to temporary/foreign workers, 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, transfer of funds to customers at other banks, transferring funds between bank customers by bringing two devices side by side, and ATM withdrawals without a card.

4.4 Online payments and e-commerce

The technological development of the Internet in recent years has led to a marked increase in the number of online transactions. Essentially, any product or service may be purchased today without leaving one's house, even if the supplier is abroad. The purchase of goods and services via the Internet is generally termed electronic commerce (or e-commerce). Electronic commerce (or e-commerce) has developed significantly both in Israel and worldwide in recent years. The increase in accessibility of the Internet and the development of technology in Israel and worldwide, as well as advertising on social networks, have provided a strong impetus for 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. Electronics and electrical products are the leading retail sectors in digital channels, followed by purchases of clothing and footwear, and food products.

The development in online payments in Israel has also made it possible to use the Internet to pay for a wide range of government and public services—taxes, traffic tickets, police fines, fees, driver's license and passport renewals, water, electricity, municipal taxes, and others. Banks in Israel also allow their customers to manage their activities via the Internet and via designated smartphone applications. Once customers have been issued a personal and confidential password, they can monitor the account, securely 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 as it saves waiting in line at the branches.

4.5 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.²⁷ 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 abroad.

Most of 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 don't require opening an account for such service and therefore it is accessible to temporary residents, their service is cheaper and quicker than that of the banks, and their hours of operation are more convenient.

4.6 Virtual currencies

A virtual digital currency is a currency that is not backed by a country, company, bank, or organization. It is a currency that exists only as digital numbers, and through a unique encrypted code the user holding it can be identified. Virtual currencies try to be substitutes for cash. Storage is on chips and/or digital storage devices, and the currencies represent “virtual wallets”, or digital files that contain a series of encoded numbers.

When a transaction is executed, users' details are not recorded, only the transaction content—the amount transferred from one account to another—is recorded. There is no bank, site, or server on which the transaction details are listed; instead, they are distributed over a peer-to-peer network, meaning that all users maintain all the data on all transactions on the network. This is essentially a file with tens or hundreds of thousands of copies on computers around the world termed “nodes”. The file contains many records (it's a type of database), and in each record the sender's wallet, the receiver's wallet, and the quantity of virtual currency to transfer are listed.

A wallet used to store virtual currency basically contains two numbers, connected to each other in an encrypted manner—a private key and a public key (address). The address serves to identify the transfer destination of the currency (entry routing), and the key serves to authorize the exit of the currency. The public key is derived from the private key—activity carried out on the private key allows the public key to be found, but the reverse direction does not work. The public key is exposed to all users, but in order to authorize activities and to carry out payments, the parallel private key's signature is required. Thus, transactions can't be forged, since only the parallel private key can sign on the decrypted transaction through the public key.

²⁷ The Prohibition on Money Laundering Law, 5760-2000, defines a currency service provider as an entity that 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.

Most conversion activities take place on trading platforms which intermediate between buyers and sellers. After the transaction takes place, the currency can be dragged into the private virtual wallet. The exchange rate at which virtual currency trades on the main trading platform serving it is used as the main indicator of a digital currency's value.

A virtual currency has no central bank, and new money enters circulation through "mining", an automated activity which is carried out through a solution of complex equations, which in the end produce the unique encrypted code of each amount. In addition to "mining", the most common method of acquiring virtual currencies is exchanging formal and legal money, such as dollars or shekels, in exchange for virtual currency on digital exchange sites. Traders can also choose to receive the virtual currency as a means of payment. While every currency in the world today is backed by a government bank, state lands, or even gold, there is no backing behind a virtual currency and it does not serve today as legal tender in the world. It is not a national currency, and there is no country, market, or specific place that it can be known that it will be accepted there. However, gradually, an increasing number of businesses around the world have decided to accept virtual currencies as means of payment. As of today, several thousand stores, hotels, individuals, and service providers accept various virtual currencies as means of payment. The most notable such currency is Bitcoin, but there are quite a few others around the world, such as Auroracoin, Litecoin, Ripple, Mastercoin, Namecoin, Dogecoin, and even Israeli technologies Isracoin and Israbit.

When using virtual currency, consumers do not benefit from the same protections they have when investing in traditional financial products. In addition, the anonymity of such currencies has made them popular among criminal elements, and if law enforcement agencies assess that it is being used for money laundering, they can take extensive action against them, which could lead to a sharp decline in their value and availability.

Chapter 3 - Institutional Aspects

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:

Section 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 representatives of the banking corporations, 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 guidelines 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 continuously examines new ways of fighting money laundering and the financing of terror and also reconsiders (or revises) 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 banking corporations, 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. Financial intermediaries

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

Banking Corporations – There are 21 banking corporations operating in Israel. They can be classified into three types—banking corporations, foreign banks, and joint services companies.²⁸ The banking corporations 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 though 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

²⁸ The Banking Supervision Department uses an additional category called “financial institutions”, which includes only one institution: “Hasah”—an education savings fund.

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 Banks' Clearing House by Israeli banking corporations.

Payment Card Companies – There are three large payment card companies in Israel,²⁹ which issue five domestic and international brands.³⁰ The companies issue both bank and nonbank payment cards. In addition, they provide customers with a variety of credit solutions.

3. The functions of the Bank of Israel

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.

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.

²⁹ Leumi Card, Isracard and Cal.

³⁰ Visa, Mastercard, American Express, Diners and Isracard (the only domestic brand). Some of the brands have more than one operator. For example, the international Visa brand is offered in Israel by all three companies.

Issuing currency³¹ 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 – This is 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 banking corporations and maintaining fair business relations between the banks and their customers.

3.2 The functions of the Bank of Israel in the payment and settlement systems and means of payments

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:

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.

3.2.2 Implementation of improvements and advancing 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 framework, 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.

3.2.3 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

³¹ Banknotes, coins, commemorative coins and special coins.

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 payment systems that are subject to the oversight of the Bank of Israel, and in July 2013 the Bank of Israel declared the “Credit, Debits, and Transfer of Payments” system operated by Masav, and the “Debit Card Services” and “Automated Teller Machines” systems operated by Shva as controlled systems under the Payment Systems Law.

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, in order to ensure 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 market infrastructures (PFMI).³² These principles cover a wide range of issues, including: general 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.

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 Director General of the Bank of Israel heads the Council, 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 process of settlement between the banks, and to that end, the Committee formulated the clearing house rules.

³² The Principles for Oversight of Financial Market Infrastructures were published in 2012 and can be found at <http://www.bis.org/publ/cpss101a.pdf>. In addition to the aspects noted, the document expands the areas of responsibility of the overseeing entities (the central bank, financial market oversight entities and other oversight authorities) in terms of implementing the principles related to regulation, oversight, and control of financial infrastructures.

The **Paper-based (checks) Clearing House** is operated by the Bank of Israel, and deals with checks and manual vouchers. **Masav** is a joint service company owned by the five largest banks in Israel. Masav is an electronic system that transfers interbank shekel transactions, which are not final, in real time. These include the execution of payments through standing order (direct debits), the transfer of salary payments (direct credits), and tax payments. The company has been in operation since 1984 and provides services to all the banking corporations, as well as to business customers.

The **Tel Aviv Stock Exchange (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 private limited company established in 1978 and owned by four of the largest banks in Israel. Shva operates as a joint services company, as defined in Section 23 of the Banking (Licensing) Law, 5741–1981. Shva operates in accordance with the license and permits for operation granted it by the Bank of Israel and according to an exemption from obtaining approval for a noncompetitive arrangement from the Antitrust Authority. The company provides services to various financial institutions—banks, monetary institutions, and credit card companies. The company focuses on the following activities: operation and management of the interbank switching network—the network of ATMs (cash withdrawals); operation and management of the credit card network throughout Israel—the “Ashrait” system (payment card transactions); settlement interface; and the Bank of Israel tenders network. The company operates two payment systems³³ that have been declared as overseen and controlled systems.

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: publication of 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 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

³³ The “Debit card services” and “Automated teller machines” systems.

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 and foreign banks.

Chapter 4 - The Payment and Settlement Systems

1. The existing infrastructure

The financial infrastructure in Israel includes: interbank payment and settlement systems, which are used for the transfer and settlement of payments; means of payment; participants; and communication systems.

There are six payment and settlement systems in Israel: (a) the Zahav (RTGS³⁴) 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; (b) the Paper-based (checks) Clearing House which is intended for the transfer of checks and manual vouchers; (c) Masav, an electronic system that transfers interbank shekel transactions, which are not final, in real time. These include, among others, direct debits, salary payments, and tax payments; (d) Shva (Hebrew acronym for “Automated bank services”). This company collects, approves, and processes all the payment card transactions in Israel, and it manages the communication networks for bank ATMs around the country; (e) the TASE clearing houses (the securities clearing house and the Maof clearing house), which settle the results of stock exchange trades, and (f) the international currency exchange clearing house (CLS³⁵). The shekel was added to settlement in the CLS in 2008, and thus financial entities in Israel are able to securely carry out conversion transactions with foreign entities.

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.

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—the system serves as the final settler for all of the payment systems in Israel. It guarantees users fast and

³⁴ Real Time Gross Settlement.

³⁵ Continuous Linked Settlement.

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 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. 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 in such way assists in 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 operating hours (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. The Zahav system manages the payment instructions according to the time of their 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 provides a high level of security, in accordance with Israel's National Information Security Authority standards, through the use of the SWIFT communication interface and IBAN code (Zahav number).

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 that 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 2013, 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 houses³⁶, two are for Masav and one is for the Paper-based Clearing House.

Management of intraday liquidity in the Zahav system

The method 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 the hours of its 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. 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 cleared, as well as the rules for Masav, in which credits and debits are cleared 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 the Governor. 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

³⁶ On Fridays and holiday eves the stock exchange has two settlement windows.

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 clearing houses, i.e., the Paper-based Clearing House and Masav.)

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.

3.1 Masav

Masav is an electronic system for the clearing 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 organizations that are authorized to send direct payment instructions.

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 cleared in Masav are not final since the beneficiary can return the credit within 2 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. As of December 2013, there are 25,395 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 toward the end of the day (at 18:00 on Sunday–Thursday and at 13:30 on Fridays and holiday eves).

3.2 The Paper-based Clearing House (the checks clearing house)

The Paper-based Clearing House clears transactions that are submitted on paper. The transactions presented by the Paper-based Clearing House are for the most part checks that 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, eight 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 banking corporations in Israel.³⁷ The Bank of Israel's activity in the Paper-based Clearing House is reflected in two roles: as a member and as its operator.

The clearing 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 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 banks³⁸ 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.

4. The TASE clearing houses

The TASE has two clearing houses: the **securities clearing house** which clears 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** clears futures and options traded on the TASE.

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

³⁷ 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.

³⁸ The collecting bank is the one in which the account of the beneficiary is maintained.

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 2013, the TASE had 26 members, which consisted of 14 banks, the Bank of Israel and 11 non-bank members.

Most of the members of the TASE are also members of the securities clearing house. The securities clearing house has 19 members, consisting of 11 banks, the Bank of Israel and 7 non-bank members. The members of the Maof clearing house consist of 9 banks.

The principles of the TASE clearing houses

Trading on the TASE takes place from Sunday to Thursday, between 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 in the Zahav system 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.

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,³⁹ it 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 updated

³⁹ Government bonds according to a list issued and updated periodically by the Bank of Israel.

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.

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 clearing services for the payment cards.

There are three large payment card companies in Israel: Isracard, Leumi Card and Cal (Cartisey Ashrai Le'Israel)-Israel Credit Cards. The companies also issue and provide clearing for international payment cards on the basis of licenses they receive from the relevant international organizations.

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.

7. International clearing house for currency exchange—CLS

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 that 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.

8. Shva (Automated Banking Services)

The Shva company was established in 1978 and is owned by four of Israel's largest banks. The firm is a private company that operates as a joint services company, as defined in Section 23 of the Banking (Licensing) Law, 5741-1981. Shva provides services to various financial institutions such as banks, financial entities, and credit card companies. The company operates in accordance with the operating license and permits granted to it by the Bank of Israel, and in accordance with a conditional exemption from a noncompetitive agreement authorization from the Israel Antitrust Authority.⁴⁰

The company is subject to the regulation of the Banking Supervision Department in the Bank of Israel as it is a joint services company. Likewise, the company is overseen by the Payment Systems Oversight Unit as it is a controlled payment system operator under the Payment Systems Law, 5768-2008.

Shva operates in four main areas:

1. Operation and management of the interbank communication network—the network of ATMs (cash withdrawals)

The ATM network is a national joint network of all the banks, which enables a customer from one bank to withdraw cash from another bank's ATM in a manner identical to a regular withdrawal, secured and controlled.⁴¹

Shva operates the ATM switch and carries out the interbank communication for all

⁴⁰ See Antitrust Authority Director General's exemption dated September 20th, 2012: <http://www.antitrust.gov.il/item/32053/search/691373a4408b4ba8b7221c60444042f5/highlight/%d7%a9%d7%91%d7%90.aspx>

⁴¹ In the past, the company had dealt with operating Automated Teller Machines that it owns. In accordance with a directive from the Head of the Israel Antitrust Authority, the company sold the activity to a private company. The process was completed in 2014.

ATM withdrawals by a customer who takes cash from a bank other than the one that issued the debit card.⁴²

Shva provides a number of services within the framework of operating the national ATM network: (a) Checks before transferring a message from one bank to another. The switch conducts several checks, defined by each issuer for each card type. (b) Message encryption—transmissions. The messages that are transferred through the system pass through due diligence testing of the encryption in order to verify and ensure the confidentiality and completeness of the messages. (c) Checking the verification code of the messages and the secret code. (d) Stand-in service—providing a response on behalf of the banks to requests for approval in accordance with the decision rules and checks that were defined by the banks.⁴³

2. Operation and management of the credit card network throughout Israel—the “Ashrait” system (payment card transactions)

Shva manages the network of communication between credit card companies and the point of sale terminals. The network supports most payment cards from around the world—Visa, Mastercard, American Express, JCB, Discover (Diners) and private label cards. The network supports all types of transactions carried out with payment cards.⁴⁴

Within the framework of operating the national network for credit cards, Shva provides several services: transaction approval—currently every domestic transaction using a payment card passes through the Shva systems. In most cases, the transaction is approved in real time. Shva, which serves as the switch, receives requests from points of sale, checks whom the merchant acquirer is for that business, communicates between the issuer and the acquirer in order to receive an approval for the transaction and replies to the entity requesting a response. Requests for approval of transactions by tourists are transferred to the appropriate merchant acquirer, who transfers the request to the international companies (Visa and MasterCard); collecting transactions—at the end of each day (and in some cases, several times a day) the terminals at each business send all the transactions actually conducted that day to Shva. Shva collects all the transactions, sorts and separates the transmissions by merchant acquirer, conducts tests for the acquirer⁴⁵ and transfers the transactions to Masav for clearing⁴⁶; stand-in service—providing a response on behalf of the merchant acquirer to requests

⁴² Neither an ON-US transaction nor a tourist transaction passes through Shva's ATM switch.

⁴³ This service is not uniform at all banks, and its availability depends on the bank's decision.

⁴⁴ Tourist transactions are transmitted from the credit system to the relevant clearer in order to receive authorization via the international companies.

⁴⁵ For example: completeness of data, errors, duplicate transmissions, crediting clubs.

⁴⁶ If a business is defined as subject to discounting, the system transfers the file to the discounting firm directly.

for approval in line with the specifications of the checks that were defined and the permissions that were given by each merchant acquirer to each issuer and a response on behalf of each issuer in line with the parameters and checks that it set⁴⁷; additional services—managing the database of terminals’ activity and transactions carried out through them on behalf of the acquirers and businesses; managing the customer club interface, which deals with discounts provided at the time of payment in line with data received from the credit card companies; managing the parameters file, which allows the credit card companies to manage the parameters and businesses’ activity authorizations; encryption services (managing the keys at each POS and consent checks); managing the file of exclusions and transmitting it to the terminals.

3. Clearing interface

Shva manages the clearing interface between credit card companies. The clearing interface concentrates the activity of each merchant acquirer and issuer, and at the end of the process issues clearing reports. This process is conducted in line with defined and agreed-upon rules. The interface manages a central database for the purpose of clarifications and allows the management of a simple accounting control system. The clearing reports are transmitted to Masav and are sent from Masav to Zahav for settlement.⁴⁸

4. The Bank of Israel tenders network

Shva provides the communications services between banking corporations that participate in monetary auctions and the Bank of Israel.

Shva participants

In accordance with the Banking (Licensing) Law, 5741–1981 and the activity license granted by the Supervisor of Banks to Shva, which operates the ATM switch, Shva is authorized to provide ATM switch services to banking entities only, and only for cash withdrawal services. A new participant that is not a banking corporation must receive authorization from the Bank of Israel to connect to the system. Merchant acquirers and issuers are allowed to connect to the “Ashrait” system switch and the clearing interface. The entities that are in fact connected as acquirers and issuers are the three credit card companies (Cal (Cartisey Ashrai Le’Israel)-Israel Credit Cards, Leumi Card, and Isracard).

Protocol

Shva developed a unique protocol for the payment system in Israel (“Ashrait 96”) in accordance with the requirements of the credit card companies, with the goal of uniting,

⁴⁷ For example, usage, maximum, and barrier checks.

⁴⁸ Settling ATM transactions is not carried out by Shva, and the company is not part of the settlement interface. Rather, these take place in a bilateral interface between every two banks.

managing, and defining the work process for payment cards from the various companies in Israel. Businesses' terminals contain software written by the manufacturers in accordance with the characterization documents put together by Shva, and their use is made possible as it checked and authorized that the software is in line with the requirements that were set.

9. 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.

Secure Vault

The secure vault 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 controls. 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, the secure vault 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, the secure vault has been 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 secure vault was expanded in order to transfer payment instructions to it from Masav, from the paper-based clearing house and from government ministries.

Statistical Appendix: Tables of Statistical Data (BIS Tables)

General information, banknotes and coins, institutions and deposits

Table 1—Basic Information on the Israeli Economy

Table 2—Means of Payment Used by Nonbank Entities

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5.2 Interbank settlement (Zahav, Masav, Checks, SWIFT)

Table 9—Participation in Interbank Systems for Transferring Payments

Table 10 —Number of Transactions in Selected Payment Systems

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5.3 The TASE and its clearing houses

Table 14—Number of Participants in the TASE

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Table 1
Basic Information on the Israeli Economy

(Current prices, at year end)

	2008	2009	2010	2011	2012	2013	Annual Change (percent)
Average population (thousands) ¹	7,309	7,463	7,625	7,728	7,909	8,059	1.90
GDP (NIS billion)	726	768	814	870	928	1,053	13.45
Per capita GDP (NIS thousand)	99.3	102.9	106.8	112.6	117.4	130.7	11.33
Annual rate of change in CPI (percent) ²	3.8	3.91	2.66	2.17	1.63	1.82	11.10
Average monthly inflation rate (percent)	0.31	0.32	0.22	0.18	0.14	0.15	11.10
NIS/dollar exchange rate	3.802	3.775	3.549	3.821	3.73	3.47	-6.97
NIS/dollar exchange rate, annual average	3.586	3.923	3.732	3.579	3.858	3.610	-6.44

¹ Calculated as the average between December of the current year and the previous December.

² 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	2013	Annual Change (percent)
Value of the public's current account deposits in banks	41,916	73,621	75,889	73,505	77,824	95,158	22.27
Money supply (M1) ¹	71,895	109,481	114,467	116,518	126,619	145,838	15.18

¹ 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	2013	Annual Change (percent)
Banks' deposits in the Bank of Israel ¹	27,172	99,939	92,950	119,656	122,216	117,735	-3.67
<i>Of which:</i>							
Reserve requirement ²	18,063	21,468	21,702	25,487	26,240	29,073	10.80
Free reserves	9,109	78,471	71,248	94,169	95,976	88,662	-7.62
Credit provided by the Bank of Israel:							
Volume of intraday credit lines ³	29,986	93,049	86,385	105,791	106,477	98,218	-7.76
Intraday credit ⁴	0	16	0	0	0	0	-
Long-term credit ⁵	0	0	0	0	0	0	-

¹ Current account deposits and short-term deposits, in domestic and foreign currency.

² 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).

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

⁴ Credit provided by the Bank of Israel for one business day.

⁵ 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	2013	Annual Change (percent)
Banknotes and coins in circulation ¹	34,351	41,479	44,828	48,976	54,767	57,528	5.04
Banknotes in circulation	33,073	40,114	43,367	47,419	53,114	55,733	4.93
<i>Of which:</i>							
NIS 200 banknote	16,132	21,485	25,773	30,356	35,291	37,798	7.10
NIS 100 banknote	13,998	15,425	14,486	14,090	14,571	14,652	0.56
NIS 50 banknote	2,298	2,535	2,397	2,288	2,556	2,567	0.43
NIS 20 banknote	612	637	709	683	693	716	3.25
Other ²	33	32	2	2	2	2	0.00
Coins in circulation	1,278	1,365	1,461	1,557	1,653	1,795	8.59
<i>Of which:</i>							
NIS 10 coin	452	486	524	566	604	669	10.72
NIS 5 coin	265	280	300	319	336	365	8.68
NIS 2 coin	45	70	81	88	100	114	13.86
NIS 1 coin	369	376	392	411	432	455	5.22
NIS 1/2 coin	59	61	65	71	70	74	5.56
10 agorot coin	88	92	99	102	112	120	7.04
Cash held by the banks ³	4,372	5,619	6,231	5,963	6,052	6,941	14.69
Cash held by the public	29,979	35,860	38,597	43,013	48,715	50,587	3.84

¹ 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.

² Old banknotes which can be exchanged at the Bank of Israel.

³ 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	2013
Bank of Israel¹						
Number of branches or offices	3	3	3	3	3	3
Number of accounts, (banks and non-banks)	427	431	449	616	633	597
Number of accounts, banks	60	60	60	61	56	53
Number of accounts, non-banks	367	371	389	555	577	544
Value of the accounts, all (NIS million)	45,315	117,738	112,488	140,855	137,442	145,122
Banking corporations						
Number of institutions	24	23	23	24	22	21
Number of branches and offices	1,105	1,137	1,177	1,215	1,236	1,203
Banking corporations in Israel, by categories:						
Regular banking corporations						
Number of institutions	15	15	15	15	15	15
Number of branches or offices	1,071	1,112	1,150	1,189	1,215	1,194
Mortgages banks						
Number of institutions	3	2	2	2	1	0
Number of branches or offices	25	15	17	16	12	0
Joint services companies²						
Number of institutions	2	2	2	2	2	2
Number of branches or offices	2	2	2	2	2	2
Branches of foreign banks³						
Number of institutions	4	4	4	5	4	4
Number of branches or offices	7	8	8	8	7	7
Other institutions⁴						
Number of institutions	4	4	4	4	4	4
<i>Of which:</i>						
Postal Bank						
Number of institutions	1	1	1	1	1	1
Number of branches or offices	717	723	737	729	751	756
Credit card companies⁵						
Number of institutions	3	3	3	3	3	3

¹ Accounts in which payments can be executed in local currency.

² Masav and Shva.

³ Foreign banks that are legally recognized as banking corporations in Israel.

⁴ Credit card companies and the Postal Bank.

⁵ 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	2013	Annual Change (percent)
Cards issued in Israel^{1,2} (thousands)							
Cards with cash withdrawal function	na	5,949	6,452	6,986	7,507	8,015	6.76
Debit cards ³	na	379	386	437	490	558	13.89
Deferred-debit cards ⁴	na	4,021	4,260	4,589	4,886	5,211	6.64
Credit cards	na	4,607	4,857	5,145	5,393	5,654	4.85
Electronic Money Cards ⁵	na	557	624	460	399	435	9.12
<i>Of which</i> : cards that were loaded at least once	na	380	398	302	298	346	16.33
Total number of active cards ⁶	5,014	5,354	5,674	5,998	6,350	6,706	5.60
Terminals located in Israel							
ATMs	4,637	5,504	5,944	6,269	6,671	7,091	6.30
<i>Of which</i> : ATMs with cash withdrawal	2,453	3,237	3,662	4,029	4,431	4,849	9.43
Selling points that honor payment cards ⁷	99,793	105,112	108,576	111,461	117,223	123,928	5.72

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

² Valid cards at the end of the year (active and inactive).

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

⁴ 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.

⁵ Prepaid cards, both reloadable and non-reloadable.

⁶ Cards that had at least one transaction during the last quarter of the year.

⁷ 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	2013	Annual Change (percent)
Volume by the means of payment	1,062,486	1,105,296	1,184,091	1,256,085	1,348,389	1,447,397	7.34
Direct credits	96,638	98,176	103,733	111,334	119,449	126,011	5.49
<i>Of which:</i>							
Paper-based credits ¹	252	270	241	37	57	20	-64.33
Electronic credits ²	96,386	97,906	103,492	111,297	119,392	125,990	5.53
Direct debits³	153,170	157,979	168,376	174,305	180,373	187,373	3.88
<i>Of which:</i>							
Paper-based debits	278	229	190	180	193	169	-12.44
Electronic debits	152,892	157,749	168,186	174,125	180,180	187,204	3.90
Payments with cards issued in Israel⁴	653,331	697,393	761,117	821,299	901,028	989,438	9.81
Checks⁵	159,347	151,748	150,865	149,147	147,539	144,575	-2.01
Volume by type of terminal in Israel⁶	826,668	870,115	896,861	950,295	1,030,916	1,113,553	8.02
<i>Of which:</i>							
Withdrawals from ATMs ⁷	128,494	125,573	124,863	123,248	124,961	125,582	0.50
Transfer of payments at points of sale ⁸	698,174	744,542	771,998	827,047	905,954	987,970	9.05

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

² Interbank credits settled in Masav and Zahav.

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

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

⁵ Including interbank and intrabank transactions.

⁶ Including transfers by manual terminals.

⁷ Including ATMs owned by the banks and by Shva.

⁸ 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	2013	Annual Change (percent)
Value by the means of payment	4,108,601	3,955,018	4,422,619	4,852,458	5,084,657	5,244,143	3.14
Direct credits ¹	2,741,691	2,627,043	2,976,495	3,341,114	3,515,500	3,596,324	2.30
<i>Of which:</i>							
Paper-based credits ²	4,999	9,027	11,693	1,204	521	789	51.37
Electronic credits ³	2,736,692	2,612,240	2,904,249	3,339,910	3,514,979	3,595,535	2.29
Direct debits ⁴	282,153	300,322	355,681	371,642	391,133	422,719	8.08
<i>Of which:</i>							
Paper-based debits	21,360	29,088	38,895	29,184	27,272	31,196	14.39
Electronic debits	260,793	271,235	316,785	342,458	363,861	391,523	7.60
Payments with cards issued in Israel ⁵	160,626	167,987	184,494	198,175	213,604	228,867	7.15
Checks ⁶	924,131	859,666	905,949	941,527	964,420	996,234	3.30
Value by type of terminal in Israel⁷	229,590	241,729	258,919	275,126	293,422	311,672	6.22
<i>Of which:</i>							
Withdrawals from ATMs ⁸	63,297	67,157	70,853	73,718	78,796	83,352	5.78
Transfer of payments at points of sale ⁹	166,293	174,572	188,066	201,408	214,626	228,320	6.38

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

² Manual interbank credits, in the paper-based clearing house.

³ Interbank credits of customers in Masav and Zahav.

⁴ Debits in Masav and manual debits in the paper-based clearing house.

⁵ Payments executed in Israel or abroad. Does not include ATM withdrawals.

⁶ Includes interbank and intrabank transactions.

⁷ Includes transfers with manual terminals.

⁸ ATMs owned by the banks and by Shva.

⁹ 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	2013
Zahav - Payment system for large amounts						
Number of participants	22	22	22	22	21	21
Direct participants^{1,2}	18	18	18	19	18	18
Banking corporations	15	15	15	16	15	15
Bank of Israel	1	1	1	1	1	1
Postal Bank	1	1	1	1	1	1
CLS Bank ³	1	1	1	1	1	1
Indirect participants⁴	4	4	4	3	3	3
Retail payment systems						
Masav						
Number of participants	na	25,023	25,023	23,983	24,686	25,395
Direct participants^{1,4}	na	25,023	25,023	23,983	24,686	25,395
Banking corporations	18	18	18	18	18	18
Bank of Israel	1	1	1	1	1	1
Postal Bank	1	1	1	1	1	1
Other institutions ⁵	na	25,000	25,000	23,960	24,663	25,372
Payment card companies	3	3	3	3	3	3
Indirect participants	0	0	0	0	0	0
Paper-based clearing house						
Number of participants in the manual clearing house						
Direct participants¹	13	13	13	13	12	12
Indirect participants⁶	24	24	23	23	23	23
<i>Of which</i> : Israeli banking corporations	8	8	8	8	8	8
Palestinian banking corporations ⁷	16	16	15	15	15	15
Number of participants in the electronic clearing house						
Direct participants¹	8	8	8	8	8	8
Indirect participants⁶	28	28	27	27	27	27
<i>Of which</i> : Israeli banking corporations	12	12	12	12	12	12
Palestinian banking corporations ⁷	16	16	15	15	15	15

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

² BNP Paribas Bank stopped its activity in Israel in July 2012.

³ CLS Bank settles payments between 17 currencies.

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

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

⁶ Participants represented by direct participants.

⁷ 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	2013	Annual Change (percent)
Zahav - payment system for large amounts							
Total transactions ¹	217	197	261	349	400	449	12.12
Local transactions	211	187	251	339	390	438	12.39
Transactions sent to CLS	3	5	5	5	5	5	2.26
Transactions received from CLS	3	5	5	5	5	5	2.26
Concentration ratio in terms of the volume of transactions (%) ²	75.78	73.28	74.88	76.46	77.58	78.30	0.92
The retail payment systems							
Masav³							
Total transactions	249,208	255,227	271,512	285,180	299,280	312,855	4.54
Direct credits	96,316	97,478	103,326	111,055	119,100	125,651	5.50
Direct debits	152,892	157,749	168,186	174,125	180,180	187,204	3.90
Concentration ratio in terms of the volume of transactions (%) ^{2,4}	- -	-	-	-	83.69	84.38	0.83
Checks clearing house³							
Total transactions	132,224	121,757	122,076	120,799	119,344	117,909	-1.20
Direct credits	233	270	241	37	57	20	-64.33
Direct debits	252	229	190	180	193	169	-12.44
Checks	131,739	121,258	121,645	120,583	119,094	117,720	-1.15
Concentration ratio in terms of the volume of transactions (%) ^{2,5}	77.00	77.62	78.07	78.06	78.11	77.40	-0.91

¹ Transactions of customers, banks, clearing houses, and the Bank of Israel.

² Market share of the five most active institutions in the system.

³ The data does not include returns.

⁴ Precise data have been received from Masav beginning with the last quarter of 2012. Figures prior to then are based on estimated data.

⁵ 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	2013	Annual Change (percent)
Zahav - payment system for large amounts							
Total transactions ¹	21,874,139	62,303,647	75,784,201	88,943,903	79,867,368	71,682,254	-10.25
Local transactions	21,368,871	61,374,025	74,688,533	87,535,914	78,261,343	70,537,747	-9.87
Transactions sent to CLS ²	252,634	464,811	547,834	703,994	803,012	572,253	-28.74
Transactions received from CLS ²	252,634	464,811	547,834	703,994	803,012	572,253	-28.74
Concentration ratio in terms of the value of transactions (%) ³	79.24	76.62	77.559503	80.75	81.55	82.70	1.40
Retail payment systems							
Masav⁴							
Total transactions	1,733,581	1,773,858	1,951,934	2,094,175	2,274,799	2,389,089	5.02
Direct credits	1,472,788	1,502,623	1,635,149	1,751,716	1,910,938	1,997,567	4.53
Direct debits	260,793	271,235	316,785	342,458	363,861	391,523	7.60
Concentration ratio in terms of the value of transactions (%) ³	78.49	79.88	80.75	81.01	80.67	82.84	2.70
Checks clearing house⁴							
Total transactions	803,223	765,427	834,245	852,563	863,169	908,101	5.21
Direct credits	4,999	9,027	11,693	1,204	521	789	51.44
Direct debits	21,360	29,088	38,895	29,184	27,272	31,196	14.39
Checks	776,864	727,312	783,657	822,174	835,376	876,116	4.88
Concentration ratio in terms of the value of transactions (%) ³	84.38	84.43	84.76	84.29	83.77	83.46	-0.37

¹ Transactions of customers, banks, clearing houses, and the Bank of Israel.

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

³ Market share of the five most active institutions in the system.

⁴ 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	2013	Annual Change (percent)
Members ¹	9	9	9	9	9	9	0.0
Secondary members ²	5	5	6	7	7	7	0.0
Participants ³	4	4	4	4	3	3	0.0
Total users	18	18	19	20	19	19	0.0
Total SWIFT users ⁴	8,830	9,281	9,705	10,118	10,279	10,583	3.0
Members ¹	2,276	2,356	2,344	2,334	2,398	2,389	-0.4
Secondary members ²	3,305	3,306	3,331	3,355	3,340	3,343	0.1
Participants ³	3,249	3,619	4,030	4,429	4,541	4,851	6.8

¹ Organizations with shares in the SWIFT organization.

² Organizations that are owned by the members of SWIFT.

³ Organizations that do not have shares in SWIFT, and whose activities in the SWIFT system are restricted.

⁴ Global data.

SOURCE: SWIFT.

Table 13
Transfer of SWIFT Messages From and To Local Participants¹
 (Thousands, cumulative annual)

	2008	2009	2010	2011	2012	2013	Annual Change (percent)
Messages sent	7,262	7,979	9,160	9,797	10,579	12,434	17.53
<i>Of which:</i>							
Category I ²	2,054	2,021	2,268	2,392	2,473	2,780	12.44
Category II ³	1,124	854	553	555	544	552	1.43
Messages received	7,793	9,225	10,154	10,542	10,614	11,719	10.41
<i>Of which:</i>							
Category I ²	1,998	1,983	2,229	2,397	2,534	2,851	12.53
Category II ³	601	507	506	526	546	601	10.12
Local traffic in Israel	965	849	628	776	862	1,719	99.50
Global traffic	3,854,576	3,760,314	4,031,935	4,431,100	4,589,109	5,065,668	10.38

¹ The traffic of messages in the table includes transfers in shekels and foreign currency.

² Transmissions used by the banks to transfer money to the customer's account.

³ 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	2013
Number of participants	28	28	27	28	29	26
<i>Of which:</i>						
Local participants	24	23	22	22	22	19
Bank of Israel	1	1	1	1	1	1
Banks	11	11	11	11	11	11
Other	12	11	10	10	10	7
Foreign participants	4	5	5	6	7	7
Banks	2	2	2	2	3	3
Other	2	3	3	4	4	4

SOURCE: TASE.

Table 15
Number of Registered Securities
 (At year end)

	2008	2009	2010	2011	2012	2013	Annual Change (percent)
Total number of securities designated for trading	1,880	1,885	2,003	1,947	1,848	1,915	3.63
Bonds	720	747	710	733	685	734	7.15
Bonds issued for a year or less ¹	11	12	15	13	12	12	0.00
Bonds issued for more than a year ²	709	735	695	720	673	722	7.28
Stocks	632	611	603	580	539	506	-6.12
Other ³	528	527	690	634	624	675	8.17

¹ Short-term loans (*makam*).

² Government and corporate bonds.

³ ETFs and options.

SOURCE: TASE.

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

	2008	2009	2010	2011	2012	2013	Annual Change (percent)
Market Capitalization of Listed Companies ¹	670,200	769,700	806,140	600,102	603,902	705,659	16.85

¹ 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	2013
Securities clearing house						
Members of the clearing house	23	22	21	21	21	19
Bank of Israel	1	1	1	1	1	1
Banking corporations	11	11	11	11	11	11
Other	11	10	9	9	9	7
Local members of the clearing house	21	20	19	19	19	17
Bank of Israel	1	1	1	1	1	1
Banking corporations	9	9	9	9	9	9
Other	11	10	9	9	9	7
Foreign members of the clearing house	2	2	2	2	2	2
Banking corporations	2	2	2	2	2	2
Other	0	0	0	0	0	0
Maof clearing house						
Local banking corporations that are members of the clearing house	10	10	9	9	9	9

SOURCE: TASE.

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

	2008	2009	2010	2011	2012	2013	Annual Change (percent)
Volume of transactions settled	109,617	94,934	106,294	122,722	86,432	80,149	-7.27
Securities clearing house							
Volume of securities transactions settled	17,114	23,879	27,506	23,734	19,252	20,074	4.27
Bonds	4,577	6,867	6,860	6,772	7,110	7,521	5.78
<i>Makam</i>	782	438	368	391	311	199	-36.01
Bonds issued for more than a year ¹	3,795	6,429	6,492	6,381	6,799	7,322	7.69
Stocks	12,537	17,012	20,646	16,970	12,152	12,553	3.30
Volume of repo actions settled ²	na	18	4	24	0	0	-
Maof clearing house							
Volume of derivatives transactions settled	92,503	71,037	78,784	98,965	67,180	60,075	-10.58

¹ Government and corporate bonds.

² 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	2013	Annual Change (percent)
Value of transactions settled	1,609,399	1,518,955	1,672,347	1,468,447	1,276,027	1,424,088	11.60
Securities clearing house							
Value of securities transactions settled	1,492,332	1,437,644	1,586,478	1,347,185	1,198,013	1,354,331	13.05
Bonds	1,109,662	1,124,879	1,067,998	1,071,321	1,088,599	1,099,720	1.02
<i>Makam</i>	181,054	149,879	291,143	186,796	136,657	132,941	-2.72
Bonds issued for more than a year ¹	928,608	975,000	776,855	884,525	951,942	966,779	1.56
Stocks	447,952	382,716	497,832	377,493	236,608	254,611	7.61
Value of repo actions settled ²	na	106	2,752	1,238	0	0	-
Maof clearing house							
Value of derivatives transactions settled	117,067	81,205	83,117	120,024	78,014	69,757	-10.58

¹ Government and corporate bonds.

² 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.
