

Bank of Israel

Payment and Settlement Systems



The Payment and Settlement Systems in Israel

The Red Book for the Years 2016–17

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Acronyms and abbreviations

ACH	Automated Clearing House ¹
ATM	Automated Teller Machine
BIS	Bank of International Settlements
CCP	Central Counterparty
CET	Central European Time
CLS	Continuous Linked Settlement
CPMI	Committee on Payment and Market infrastructures
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 Real Time Gross Settlement).

Preface

We are in the midst of a business, regulatory, and technological revolution in the area of means of payment and payment systems. As a result, these will become more digital and technologically sophisticated, user friendly, and more widely available, both to the general public and to nonbank entities, allowing them to operate directly in the payment systems. In recent years this process has been accompanied by significant technological advances that supported developments in advanced means of payment, including electronic wallets, electronic check deposits and cellular payments, as well as distributed infrastructure and cryptocurrencies. These developments have also been accompanied by appropriate regulation that ensures nonbank entities' direct access to payment systems as well as the stability of these entities and systems.

This report provides a comprehensive description of the main payment and settlement systems in Israel and a review of the main developments in the years 2016–17 in regulatory activity, competition, means of payment, payment infrastructure, and risk management in the field of payments and settlement.

In recent years, the payments and settlement systems division in the Accounting, Payment, and Settlement Systems Department of the Bank of Israel has led a significant reform in the check settlement process in Israel; has examined advanced payment infrastructures that allow immediate and final retail settlement, which replaces the use of cash and also published a Public Consultation document on this issue; and has also promoted regulation concerning the existing payment systems. The Division has taken and continues to take steps to increase nonbanking entities' access to Masav (the Automated Clearing House) and Shva (Automated Bank Services Ltd.), and promotes regulation of the payment services—settlement, issuance, account management, and payment transfers—according to existing EU regulation (PSD 2).

The Israeli Red Book has a similar structure to corresponding documents in other countries, and is composed of four chapters. The first chapter surveys the key developments in this area during the period 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 the fourth chapter focuses on a review of the interbank payment and settlement systems in Israel that are used for payment transfers and settlement, and a review of the means used to make payments and their related communication systems.

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The statistical chapter and annual tables appendix, presented according to the guidelines of the BIS, are published separately at the end of each year.

Main Developments in the Years 2016–17

1. Main Developments

In the years 2016–17, the Bank of Israel (BOI) continued to take action to improve the efficiency of the payment systems. The Bank of Israel took steps to encourage the use of more sophisticated electronic means of payment with reduced risks, and increased its regulatory action to ensure the stability of the payment and settlement systems. The Bank of Israel continues to take steps to increase competition in the payment systems and increase the access of nonbank payment service providers to these systems.

The steps that the Bank of Israel is promoting in the payment and settlement system, in conjunction with additional entities, increase innovation as a result of which the market is adjusting itself to the advanced technological developments in Israel and worldwide; These steps promote competition in many sections of the system, while ensuring trust in the payment services and the stability and safety of the payment infrastructures used by the entire public. These processes are undertaken gradually, to allow the public to benefit from the changes.

The recent processes constitute catalysts for significant changes in the payment world: Innovations encompass the means of payment themselves, in the payment process and its form, innovations in the purchase interface that affect consumption, and various ancillary financial services. All these innovations involve the integration of these developments into the traditional processes. Digital innovation does not merely affect the technological aspects of this world, it also involves processes related to infrastructure, business strategy, and regulatory processes.

These developments enable a range of prominent benefits, including reduced transaction costs, rapid payments, documentation and monitoring of digital transactions, and accessibility and convenience of use for customers—the payers and payment recipients. The Bank of Israel is leading a comprehensive reform in the area of means of payment in Israel, which acknowledges the significance of regulatory action, while maintaining the stability of the payment systems in Israel.

The steps taken in the area of payment systems, either initiated by the Bank of Israel or in whose implementation the Bank played an active role, including steps that are being considered, are designed to remove barriers and establish a solid foundation for future

developments, by granting maximal flexibility to all actors in choosing the services they wish to provide and receive.

Following are the key actions taken in the years 2016–17:

1.1 The Joint Committee for Promoting the Use of Advanced Means of Payment in Israel

The Joint Committee for Promoting Use of Advanced Means of Payment in Israel, headed by Irit Mendelson, the Director of the Bank of Israel's Accounting, Payment, and Settlement Systems Division, was established in Israel in March 2014 with the aim of regulating the area of advanced means of payment. The Committee was established according to recommendations of the Committee on Reducing Use of Cash in the Israeli Economy ("the Locker Committee"). In June 2017, the Committee published its final report¹, containing recommendations for enhancing competition, efficiency, and stability in the advanced means of payment market and in the payment and settlement systems infrastructures, as well as outlining the future direction for payment and settlement system activity with reference to regulation of technological, legal, and consumer-oriented infrastructures.

Interministerial and internal work teams were established to implement these recommendations. Based on their recognition of the significance of this step for understanding the needs of the market, the teams conducted dialogues with various stakeholders and actors in the payment system. The main steps taken within these efforts were:

A. An examination of the infrastructure for immediate payment clearing in Israel: This is part of the BOI's efforts to increase competition and efficiency in the payment system and to promote effective and reliable means of payment as substitutes for cash, such as immediate retail payment settlement systems that are accepted worldwide. Immediate payment is a new type of means of payment in Israel, in which the payment initiator is immediately charged with the payment amount and this amount is immediately credited to the payment recipient, similarly to cash payments, and in contrast to the majority of other popular means of payment. Such a system will contribute to the payment system in Israel in several ways:

- ✓ **It will assist in increasing competition in the payment system** by expanding access of payment service providers to the payment systems in Israel and by expanding the types of actions that can be performed even in the absence of credit and payment cards;

¹ <http://www.boi.org.il/en/NewsAndPublications/PressReleases/Pages/4-6-17.aspx>

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- ✓ **It will enhance the efficiency of the payment process in Israel** by satisfying the existing needs in the Israeli payment market, by offering convenient options to make and receive immediate payments, including micropayments transferred among private individuals or between individuals and merchants;
- ✓ **It will increase the redundancy² of the retail payments systems**, by adding another layer to the payment and settlement systems operating in Israel;
- ✓ **It will improve service to end customers** by allowing payment recipients to make immediate use of amounts credited to their accounts, based on full 24/7 availability at extremely low transaction costs.

Led by the Payment and Settlement Systems Department of the BOI, a team was established in January 2016 to study and review rapid retail payment systems worldwide and the needs of the Israeli market in this field, and to map the various alternatives. Following this study, the BOI published a “Public Consultation” document³ in November 2017, inviting the public to submit proposals for the establishment and operation of an infrastructure for immediate payment settlement in Israel. The call was designed to promote the establishment of a centralized or distributed infrastructure to support immediate payment settlement in the Israeli economy. This is the first step in a process of establishing an advanced, efficient, and reliable clearing infrastructure in the payment system in Israel, which will join the existing payment and settlement systems and will serve for immediate clearing of retail payments, like similar infrastructures in other countries.

B. Digital payment orders – In 2016, the Payment and Settlement Systems Department of the BOI examined the business aspects of digital payment orders that will replace the use of checks yet retains the advantages of checks and addresses their shortcomings. Advances in digital technology, which will make it possible to develop an alternative to traditional checks (a common means of payment in Israel), will offer significant advantages: open the market to competition; reduce fees to consumers due to operational efficiency; reduce times for clearing and payment finality, and protect against money laundering. The use of electronic means of payment will also significantly reduce the number of dishonored checks due to automatic

² Redundancy – Duplication for the purpose of back up. Redundancy is obtained by reproducing information or processes as quickly as possible in order to protect systems against failures. Redundancy is designed to reinforce a system’s ability to provide back-ups in the event of various malfunctions, as part of ensuring business continuity.

³ <http://www.boi.org.il/en/NewsAndPublications/PressReleases/Pages/15-11-17.aspx>

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digitized controls and alerts. Promoting this issue has regulatory and legal ramifications, and, the study of these issues is continuing in 2018 as well, in conjunction with legal professionals at the BOI, the Ministry of Justice, and the Banking Supervision Department. The aim of these efforts is to examine whether there is a need to establish a legal framework that is tailored to digital payment instructions, and to examine the feasibility of establishing a new means of payment.

- C. **Principles for the regulation of payment services** — Under the Mendelson Committee, a subcommittee for the regulation of payment services was established in 2016, headed by the BOI. Subcommittee members included representatives of the Antitrust Authority, the Ministry of Justice, the Ministry of Finance, and the Capital Market Authority. The regulatory framework will define the conditions of licenses for entities that provide account management and payment transfer services, issue means of payment, clear payment transactions, and operate ATMs, and will also define consumer protection regulation with respect to these services. The regulation is based on the EU Revised Payment Service Directive (PSD2) and the necessary adjustments to the market in Israel. In October 2016, the subcommittee published a document of principles for regulation of payment services,⁴ which served as the foundation for two draft legislative memorandums—the Payment Services Contract Bill, which deals with consumer protections and was published by the Ministry of Justice in July 2017, and the second, the Control of Financial Services Bill, which deals with licensing of payment service providers, will be published at a later stage by the Ministry of Finance. The Capital Market Authority will be the regulator that supervises the entities that will be licensed under the Control of Financial Services Law.
- D. **POS (payment terminal) contactless transactions:** On May 1, 2016, the Banking Supervision Department at the Bank of Israel published Proper Conduct of Banking Business Directive no. 472, “Merchant Acquirers and Acquiring Payment Card Transactions.”⁵ The directive notes that in the transition to EMV, all new payments terminals must support contactless transactions. This requirement is in line with international requirements and with the recommendation of the Payment Card Transaction Chain Report⁶ that was drafted by the

⁴ <http://www.boi.org.il/en/NewsAndPublications/PressRele/Pages/5-10-16.aspx>

⁵ <http://www.boi.org.il/he/BankingSupervision/LettersAndCircularsSupervisorOfBanks/HozSup/h2498.pdf>

⁶ [http://www.boi.org.il/en/NewsAndPublications/PressReleases/Documents/Payment%20Card%20Transaction%20Chain%20\(Final%20Report\)%20Bank%20of%20Israel.pdf](http://www.boi.org.il/en/NewsAndPublications/PressReleases/Documents/Payment%20Card%20Transaction%20Chain%20(Final%20Report)%20Bank%20of%20Israel.pdf)

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BOI's interdepartmental work team, led by the Head of the Payment Systems Oversight Unit in the Payment and Settlement systems Department, and whose members included representatives of the Banking Supervision and the Legal departments.

Terminals that support contactless transactions will allow the promotion and introduction of means of payment that are convenient, rapid, and sophisticated into Israel's payment system, while maintaining its stability.

1.2 Payment and Settlement Systems infrastructures

A. Electronic Check Clearing Law – In November 2017, the full implementation of the Electronic Check Clearing Law was completed,⁷ another step in the transition to a world of sophisticated means of payment.

The work of the Payment and Settlement Systems Division is designed to encourage innovation in means of payment and in the payment systems, also included the integration of advanced technology in the check clearing process through legislative change and technological developments. The project, managed by the Banks Clearing House Committee,⁸ was initiated in 2013, marked by the drafting of the Electronic Check Clearing Law. These changes are significant in terms of technology and business processes, and entail revisions to check clearing, retention, and retrieval processes. The complex project required advance preparations and resources of the entire banking system in order to implement these changes in business and technological processes, and to meet the joint schedules defined for all stakeholders, and to implement the law simultaneously across the system. Implementing this law will revolutionize interbank check clearing and will create a check clearing system in Israel that is on par with the standards accepted in the advanced world.

The Electronic Check Clearing Law was passed by the Knesset in February 2016, and its latest implementation date was also defined as February 2018. In effect, the entire banking system completed the advance preparations and implemented reforms in check clearing that the law requires, and launched these operations already in November 2017. The Electronic Check Clearing Law makes it possible to increase the efficiency and speed of the check clearing

⁷ <http://www.boi.org.il/en/NewsAndPublications/PressReleases/Pages/27-11-17.aspx>

⁸ The project was managed by Committee Chair Ronit Chitayate, Head of the Payment and Clearing Systems Division of the BOI, and by Committee Secretary and Project Coordinator Ori Altalat, Head of the Payment Systems Policy Unit at the BOI.

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process; As soon as a check (whether on print or mobile media) is presented at a presenting bank, the check becomes irrelevant to the clearing process, and is also not relevant for the court system or for collection through Execution Office proceedings (if required).

Beyond the progress, digitization, and speed of clearing that is made possible by the Law, the Law also increases the efficiency of the check clearing process between clearing house members, improves convenience for customers both when presenting the check and when dealing with a returned check, improves Execution Office proceedings, and makes it possible to reduce fees due to the transition from physical banking activities to electronic banking activities. In the future, the Law will ensure rapid finality of transactions (instead the current three days). Furthermore, the new process allows the entire banking system to offer its customers check deposit services via more sophisticated technological means, and at lower costs. The main points of the Electronic Check Clearing Law and its implications are:

- ✓ **More efficient check clearing process** — elimination of the need for physical transport, storage, and retrieval of checks.
- ✓ **Regulating the return of dishonored checks** – If a check that was deposited was dishonored (for example, due to insufficient funds), the customer may request a computerized image of the check, which can be used in collection proceedings through the Execution Office.
- ✓ **Regulation of the admissibility of a computerized check image in legal proceedings** — A computerized check image will be deemed a check for all intents and purposes and will serve as admissible evidence in any legal proceeding.
- ✓ **Greater convenience and cost savings for customers** — Check imaging allows banks to offer technologically advanced services such as check deposits on mobile media. This means that customers are not required to physically visit a bank branch in order to deposit a check for payment, and as a result, check deposit costs have been reduced by 75 percent (comparing direct check deposits and check deposits through a bank teller).
- ✓ **Providing the ability to shorten transactions length of time** – In the future, this will assist in the examination of reducing the length of time that will elapse from the time a check is presented for payment to the time the customer's account is credited (today, the funds credited to the customer's account become final only after three business days).

- ✓ **Using checks in an emergency** — When it is not possible to deposit checks through bank branches (for example, if roads are blocked), customers will nonetheless be able to use checks for payment.

B. Large sums of money that are manually cleared in the Paper-based (Checks) Clearing House are being diverted to safe clearing in the Zahav system—Clearing corporate securities issues represents deals with transactions in large sums. The Bank of Israel with the Israel Securities Authority led a reform in the corporate securities issue clearing process, which included changes in the financial clearing processes and other business processes. The new procedure reduces clearing risks (clearing moved from the Paper-based Clearing House to the Zahav system) and created finality of monetary clearing before the securities are deposited with the TASE.

In March 2016, the procedure was defined and gradually assimilated, and beginning from November 1, 2016, all financial clearing of securities issues are performed directly through the Zahav system.

C. Managing TASE risk funds at the Bank of Israel: The Payment and Settlement systems Department has taken action to promote the financial management of the TASE risk funds at the BOI. As central counterparty (CCP), clearing houses, the TASE Clearing House ensures the execution of securities transactions (including transactions involving derivatives) and the Maof Clearing House ensures the execution of transactions involving derivatives (options and future contracts) that are made on the TASE, and cleared by these clearing houses, respectively. Therefore, in the event that a member of the TASE Clearing House or the Maof Clearing House is unable to fulfill its obligations, either in entirety or in part, the relevant clearing house is required to meet the obligations of any defaulting clearing house member. Members of the Maof Clearing House and the TASE Clearing House are required to deposit collateral in the clearing houses' risk funds, and Maof Clearing House members are required to deposit additional collateral in respect of the exposure stemming from the transactions they perform on an ongoing manner. The assets that clearing house members may deposit in the risk funds include government bonds, long-term government securities, and cash. The collateral deposit requirements also require that each member's cash collateral is not less than 25 percent of her share in the fund. Until June 2017, the cash collateral was held in commercial banks. In June 2017, a bank account at the BOI was opened for each clearing house, designated for the

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deposit of cash⁹ to be used as collateral, in order to ensure rapid and safe access to said collateral. The bank accounts at the BOI were opened according to principles defined by CPSS-IOSCO for financial market infrastructure (FMIs) entities.

- D. **International workgroup on business continuity (HORIG):**¹⁰ In recent years, the BOI set up a series of arrangements and procedures designed to maintain and improve the level of business continuity of the payment and settlement systems under its responsibility, under various scenarios. Furthermore, the BOI invests efforts to constantly improve and upgrade the degree of its redundancy and the back-up systems for its various components, and continues to review novel means to improve the components of business continuity both in terms of business processes and in terms of technology and logistics. Business continuity and protecting RTGS (Real Time Gross Settlement)-type systems against cyber events has been discussed in the international workgroup whose members include representatives of the BOI. The main goals of the workgroup are the creation of the desired tools and principles pertaining to all aspects of business continuity for RTGS systems and a discussion of the various challenges facing the operators of such systems. The workgroup works in collaboration with additional international entities, such as CPMI-IOSCO, BIS, and the World Bank, and is managed by the central banks it represents.

1.3 Competition and regulation

Regulation of payment services facilitates the entry of new actors into the market, and protects consumers' interests and the safety of the other entities that operate in Israel's payment system.

Comprehensive regulation of the payment services should be based on an acceptable international standard, with emphasis on the principles of the PSD2, adjusted to the local market. Although these services are under the supervision of multiple regulators, a uniform regulatory framework including conditions that ensure fair and egalitarian access should be established in order to support the participation of nonbank entities in the payment systems while maintaining the stability and efficiency of these systems.

In recent years, the BOI has worked energetically in the area of regulation, both in internal workgroups and in interministerial teams. The Payment Services Contract Bill, developed by an

⁹ The minimum of 25 percent required to be held in cash.

¹⁰ HORIG – High Value Payment Systems Operational Resiliency Industry Group.

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interministerial team including representatives of the BOI, the Ministry of Finance, the Capital Market, Insurance, and Savings Authority, the Ministry of Justice, and the Antitrust Authority, was divided into two: one draft on consumer protection was published by the Ministry of Justice in July 2017, and the second, the Control of Financial Services Bill, which deals with licensing payment service providers, will be promoted by the Ministry of Finance.

In 2016–17, the BOI took major steps in the area of competition and regulation and was a partner in additional processes in this area:

- A. **Publication and implementation of principles for developing a payment card transaction execution protocol:** In July 2016,¹¹ the Payment Card Committee, which is the forum for promoting professional issues related to the payment card system, drafted a document of principles that reflects the business needs of market players, while balancing between their needs and the interests of the system. This document presented the conditions that will allow the entry of new market players across the entire payment card transaction execution chain, and defined the principles related to policy decisions and access, use, international standards, modularity, and primary specifications of the payment card transaction execution protocol. Implementation and the necessary adjustments required to assimilate the protocol in a modular format were completed by August 2017.
- B. **Defining access to the controlled payment systems:** In July 2016, conditions of access to the controlled payment systems were published. These are the preconditions for participation in the payment systems. According to these conditions, new participants will be able to operate in the payment systems as direct or indirect participants, based on the business model that is appropriate for them. The conditions of access to the systems create the framework through which new players will be able to connect to the payment systems and to operate through them. Indirect-participation arrangements will allow additional entities to operate in the payment system and to provide payment services¹² by relying on the services provided by the system's direct participants.

¹¹ <http://www.boi.org.il/he/NewsAndPublications/PressReleases/Pages/18-07-2016.aspx>

¹² Management of payment bills, execution of payment transactions, issuance of means of payment, payment transaction clearing, and ATM operations.

C. Publication of draft Banking (Acquirer Hosting Terms) Rules, 5777-2017¹³ in August 2017 – The Increasing Competition and Reducing Concentration in the Banking System in Israel Law establishes, among other things, that acquirers must allow hosted acquirers to perform clearing through them. The Rules are designed to regulate the status and operations of hosted acquirers, including the terms of hosting.

The steps that the BOI is taking to remove barriers in the payment card market are consistent with the conclusions of the Committee for Increasing Competition in Common Banking and Financial Services (“the Strum Committee”) and constitute implementation of these conclusions in practice.

Box No. 1: The Increasing Competition and Reducing Concentration in the Banking System in Israel Law

The Increasing Competition and Reducing Concentration in the Banking System in Israel Law was based on the conclusions of the Committee for Increasing Competition in Banking and Financial Services. According to this Law, the two largest banks were compelled to sell the credit card companies that they own. Their holdings in Automated Banking Services Ltd. (Shva) were also limited to 10 percent in order to allow additional entities to assume a stake in Shva. It was also determined that a technological interface would be launched that would allow companies, subject to customers’ consent, to collect the information on them that financing entities possess in order to offer alternatives rendered by other financing entities. The operations of payments aggregators were also regulated in order to reduce the clearing fees charged to small and middle-sized businesses.

On January 31, 2017, the Increasing Competition and Reducing Concentration in the Banking System in Israel Law (Legislative Amendments) 5777-2017 was published in the Official Gazette (Reshumot). The Law introduces amendments and addenda to the Banking (Licensing) Law and the Banking (Service to the Customer) Law in order to implement the major recommendations of the Committee for Increasing Competition in Common Banking and Financial Services (“the Strum Committee”).

¹³ <http://www.boi.org.il/he/BankingSupervision/DraftsFromTheSupervisorOfBanks/DocLib/11093.pdf>

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Among other things, the Law includes directives designed to:

- separate the credit card operations from the major banks — including restrictions imposed on these banks designed to ensure the independence and competitive ability of the separated credit card companies. Consequently, Leumi and Hapoalim banks were compelled to sell the credit card companies they own, “Leumi Card” and “Isracard,” respectively.
- allow banks and smaller financial entities to purchase competing and operating services.
- define the status of “hosted acquirers” that perform Acquiring through the services rendered by existing acquirers, in order to increase competition in acquiring.
- modify the structure of ownership of Automated Banking Services Ltd. and regulate the access to its services.
- compel banks to share data on customers’ checking account balances with other financial entities for the purpose of granting credit, either daily or periodically over a longer period, as the customer requests.
- compel banking corporations to sell credit cards of various issuers.
- compel banking corporations that manage customers’ checking counts to present to customers, at the customers’ request, information on the transactions performed using all her payment cards, regardless of the identity of the card issuer.
- allow customers to view their financial information online.
- establish a committee to monitor implementation of the provisions of the proposed law over a period of six years after it comes into effect.

The Law came into effect on the date of its publication in Reshumot, with the exception of the following provisions:

- The provisions in the matter of the ownership structure of Automated Banking Services Ltd, which came into effect on July 1, 2017.
- The provisions in the matter of sharing information on checking account balances will come into effect 18 months after the publication date of the Law, with respect to banks with large-scale operations, and 3 years after the publication date

of the Law with respect to banks with small-scale operations.

- The provisions in the matter of disseminating credit cards of various issuers and presenting information on credit card transactions will come into effect 2 years after the publication date of the Law, with respect to banks with large-scale operations and 3 years after the publication date of the Law with respect to banks with small-scale operations.
- The two largest banks are required to sell their means of control in the credit card companies within 3 years from the date the Law comes into effect, or within 4 years provided that they reduce their holdings in said means of control to below 40 percent and issue at least 25 percent of the means of control to the public.
- After the elapse of 4 years from the date the Law comes into effect and for a period of 2 years, the Minister of Finance may, with the consent of the Governor of the BOI and approval of the Knesset Finance Committee, order the separation of the third-largest bank from the credit card company that it controls.

2. Main developments in the payment systems and means of payment

In 2016–17 the BOI took several steps to promote the use of more sophisticated and lower risk electronic means of payment, including actions designed to increase the amounts that are directly cleared by the Zahav system.

Due to the systemic significance of the Zahav system for the Israeli economy, its stability was studied using multiple measures, including surplus system liquidity, availability, and concentration. Surplus liquidity in the Zahav system is measured as the difference between the daily average in clearing accounts (checking accounts and monetary intraday credit line (ICL) accounts, foreign currency, TASE and foreign securities) and the total debits in the system.¹⁴ Surplus liquidity increased by 17 percent between 2016 and 2017. The daily average of surplus liquidity in the system was NIS 125,618 million in 2017 and NIS 133,043 in the month of December 2017 (surplus liquidity in December 2017 in the Zahav system was 17 percent higher than in December 2016). The change stemmed primarily from an increase in the monetary ICL

¹⁴ Excluding transactions that arrive at the Zahav system from BOI departments.

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account, due to the re-absorption of shekels concurrently with foreign currency purchases (a 22 percent increase between these two years). An additional portion of the increase is attributed to the rise (8 percent) in banks' current accounts, as the public channels less funds into deposits. Concentration in the Zahav system,¹⁵ based on total transaction value, was 83 percent in 2017 and 81 percent in 2016. Zahav system availability¹⁶ has maintained a high level since the system commenced operations in 2007, which attests to the system's stability and strong ability to maintain business continuity. In 2017,¹⁷ system availability was full—100 percent — and identical to availability in 2016, and is consistent with accepted RTGS rates worldwide.

Following the description in paragraph 1.2 above, in order to improve the efficiency of the check clearing system, implementation of the Electronic Clearing Law was completed in November 2017, and the Paper-based Clearing House completed the transition from manual clearing, which entailed numerous risks, to electronic clearing. Most of the debit amounts in the manual clearing session stemmed from clearing the funds from the issuance of corporate securities and bonds. In 2016, a decision was made to transition from manual settlement of corporate securities issues to settlement through the Zahav system, and beginning on January 1, 2017 these funds are cleared exclusively in the Zahav system.

The BOI continued to monitor the risks in the payment system and study methods to reinforce those systems that it declared to be controlled systems or designated controlled systems. The Bank supervises the Zahav system and the Continuous Linked Settlement system (CLS),¹⁸ which, in 2008, were declared designated controlled systems. The Bank also supervises the Credits, Debits, and Payment Transfers system that is operated by Masav, and the Payment Cards Services and Automated Bank Machine Services systems that are operated by Automated Banking Services Ltd., and which, among other things, render essential retail services to the general public.¹⁹

2.1 The Zahav system

In 2017, 1,005,000 transactions representing a total value of approximately NIS 148,000 billion, were settled in the Zahav system, compared with 868,000 transactions of a total value of NIS

¹⁵ The market share of the five most active institutions.

¹⁶ Availability is estimated according to the number of hours the system was available out of the total hours of operation in the year studied.

¹⁷ Availability refers to the operations of the settlement system itself, excluding communications.

¹⁸ As part of the international supervisory group at the United States Federal Reserve.

¹⁹ In July 2013, the Bank of Israel declared that they are controlled systems under the Payment Systems Law.

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116,000 billion in 2016. This represents a 16 percent increase in the number of transactions and of a 27 percent increase in their value. The quantitative increase is attributed mainly to transactions by customers, which increased by approximately 137,000, or 19 percent.

Table 1
Activity in the Zahav system, by component, 2008–17

	Excluding CLS	Interbank ^a CLS only	Total	Clearing houses	Bank of Israel	Total
Amounts (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
2014	3,675	1,119	4,794	3,012	71,527	79,333
2015	3,745	1,037	4,782	2,870	88,779	96,431
2016	3,615	1,006	4,621	2,835	108,919	116,375
2017	3,597	955	4,552	2,935	140,460	147,947
Yearly change (percent)	-0.49	-5.09	-1.49	3.51	28.96	27.13
Transactions (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
2014	471,592	11,765	483,357	10,206	20,690	514,253
2015	562,205	12,002	574,207	8,668	20,423	603,298
2016	826,565	13,070	839,635	8,516	19,359	867,510
2017	965,742	12,211	977,953	8,449	19,528	1,005,930
Yearly change (percent)	16.84	-6.57	16.47	-0.79	0.87	15.96

^a Shekel activity in CLS began on May 26, 2008

SOURCE: Bank of Israel.

According to Table 1, the number of interbank transactions increased by 16.47 percent in 2017 compared to 2016, while the value of the transactions declined by 1.5 percent. This indicates that more transactions, at smaller amounts, were executed in the system. These changes indicate that use of the system is becoming more common among households and small and medium businesses as well (as can be seen in Figure 1 and Table 2 below), as a result of the reduction in fees for amounts of up to NIS 1 million.

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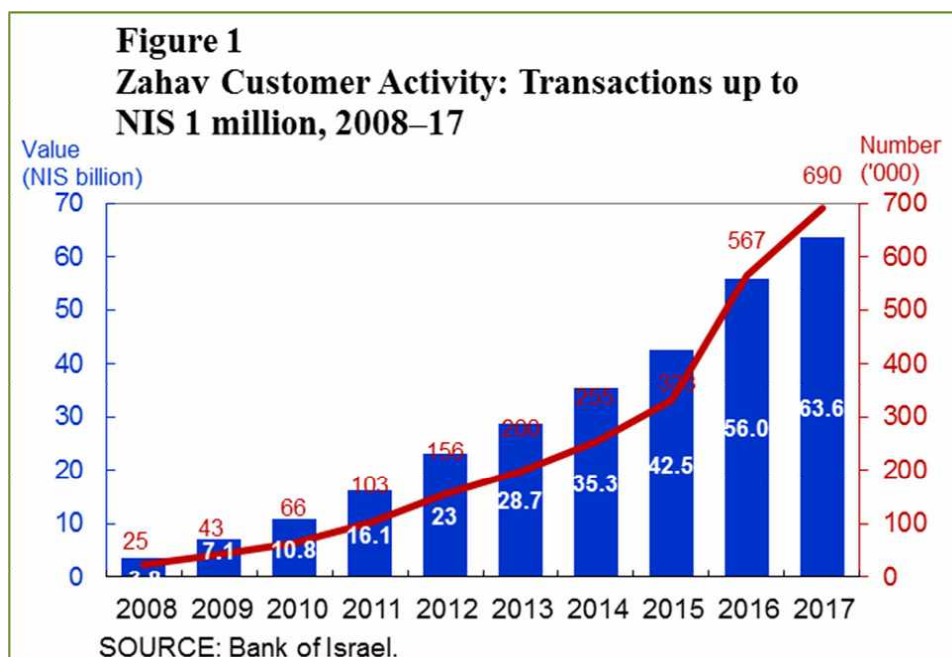


Table 2

Customer transactions in Zahav system (units)												
	2015				2016				2017			
	quarter 1	quarter 2	quarter 3	quarter 4	quarter 1	quarter 2	quarter 3	quarter 4	quarter 1	quarter 2	quarter 3	quarter 4
Up to NIS 50,000	33,318	37,604	41,236	47,324	79,053	81,548	90,237	87,621	100,098	100,784	107,247	115,663
50,000–100,000	12,741	13,714	14,802	16,451	19,432	19,811	21,414	20,404	22,981	22,778	24,051	25,241
100,000–500,000	21,318	22,560	23,193	25,039	28,339	28,665	31,324	29,855	34,287	33,734	35,068	36,410
500,000–1,000,000	5,495	5,820	5,798	6,320	7,078	7,439	7,773	7,303	8,114	7,971	7,923	8,146
1,000,000–10,000,000	30,806	31,183	30,299	31,810	32,035	32,506	33,819	31,894	35,459	34,478	35,334	35,817
Over NIS 10,000,000	8,209	7,904	7,492	7,930	8,088	7,683	7,722	7,746	8,621	7,996	7,965	8,094
Total customers' transactions	111,887	118,785	122,820	134,874	174,025	177,652	192,289	184,823	209,560	207,741	217,588	229,371
Customers in Israel	108,357	115,034	119,043	130,689	168,483	172,187	186,867	179,113	202,988	201,055	210,854	222,191
Customers abroad	3,530	3,751	3,777	4,185	5,542	5,465	5,422	5,710	6,572	6,686	6,734	7,180
Total customers' transactions	111,887	118,785	122,820	134,874	174,025	177,652	192,289	184,823	209,560	207,741	217,588	229,371

SOURCE: Bank of Israel.

The total volume of financial activity settled through Zahav²⁰ — the TASE Clearing Houses, the Paper-based (Checks) Clearing House, and Masav — rose by 3.5 percent. The TASE settlement systems also recorded a 3.5 percent increase in the amounts settled through Zahav.²¹ This change was primarily due to a 7.5 percent increase in the amount of collateral held by Zahav participants in the Bank of Israel account at the TASE. Excluding activity related to collateral, the total value of activity originating from the TASE Clearing Houses increased by 4.8 percent in 2017. Total

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²¹ Including the amounts transferred by the TASE clearing houses to the intraday credit accounts of the banks in the Zahav system.

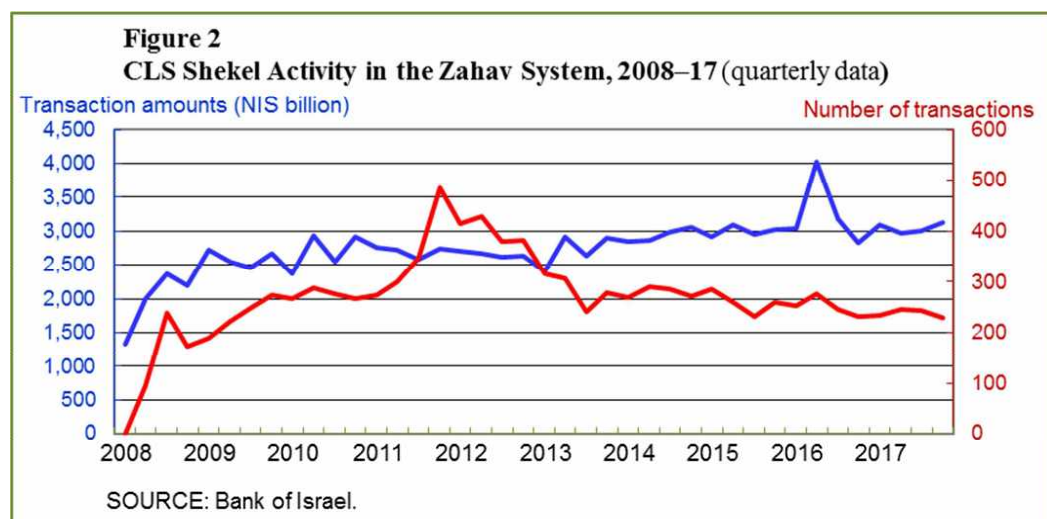
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value of financial activity in the Zahav system's Paper-based (Checks) Clearing House declined by 9.3 percent between 2016 and 2017. Total activity in the Masav section of the Zahav system increased by 7.7 percent.

In January 2015, an amendment to the Banking (Service to the Customer)(Fees) Rules, 5768–2008 was published, which set out that when a bank transfers sums of up to NIS 1 million through the Zahav system, the fee charged may not exceed the fee for a single teller-executed transaction (app. NIS 6).²² The amendment came into force on February 1, 2015. Reducing the fees for these transfers increased the Zahav system's accessibility to the public and may encourage the public to use the system to perform transactions that require real-time payment and finality, even in smaller sums.

2.2 CLS Bank

CLS Bank operates the largest multi-currency settlement system, which is designed to reduce the settlement risks entailed in foreign currency exchange transactions. The bank offers settlement services in 18 currencies²³ including the shekel, and settles the major share of currency conversions performed in Israel against foreign currencies. In 2017, conversions involving shekels performed by CLS totaled NIS 955 billion, a decline of 5 percent from the previous year. The number of transactions settled in CLS increased by 3.8 percent (Figure 2).



²² The provision applies to customers (individuals and small businesses) as defined in Section 9i(f) of the Banking Law (Service to Customers), 5741–1981.

²³ Mexican peso, Canadian dollar, pound sterling, new Israeli shekel, Japanese yen, South Korean won, Danish krone, euro, US dollar, Singapore dollar, Norwegian krone, Australian dollar, New Zealand dollar, South African rand, Swedish krona, Swiss franc, Hungarian forint, and Hong Kong dollar.

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2.3 The Banks' Clearing House

2.3.1 The Paper-based Clearing House (Checks)

In 2017, all manual settlement activities transitioned to electronic settlement, either through the Zahav or the Masav system. Consequently, beginning from 2017, checks and collection vouchers are settled in the Paper-based Clearing House. In 2017, activity totaled NIS 886 billion, compared to NIS 945 billion in 2016, reflecting a 0.6 percent decline. The number of transactions dropped from 110,000 to 104,000, reflecting a decline of 5 percent.

Table 3
Paper-based clearing house, by component, 2007–17

	Manual drafts			Checks			Paper-based clearing house
	Debits	Credits	Total	Presentations ^a	Returns	Total	total
				Amounts (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
2014	34	0.5	34	881	26	907	941
2015	49	0.5	50	910	27	936	986
2016	57	0.4	57	858	30	888	945
2017 ^b	1	0.2	1	854	31	885	886
Yearly change (percent)	-98.08	-52.12	-97.73	-0.50	3.08	-0.37	-6.25
Transactions (thousand)							
2007 ^b				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
2014	161	16	176	115,148	2,499	117,647	117,823
2015	205	18	223	112,594	2,441	115,036	115,258
2016	201	14	215	106,828	2,562	109,390	109,605
2017 ^b	72	6	79	101,605	2,583	104,188	104,267
Yearly change (percent)	-64.00	-54.64	-63.37	-4.89	0.81	-4.76	-4.87

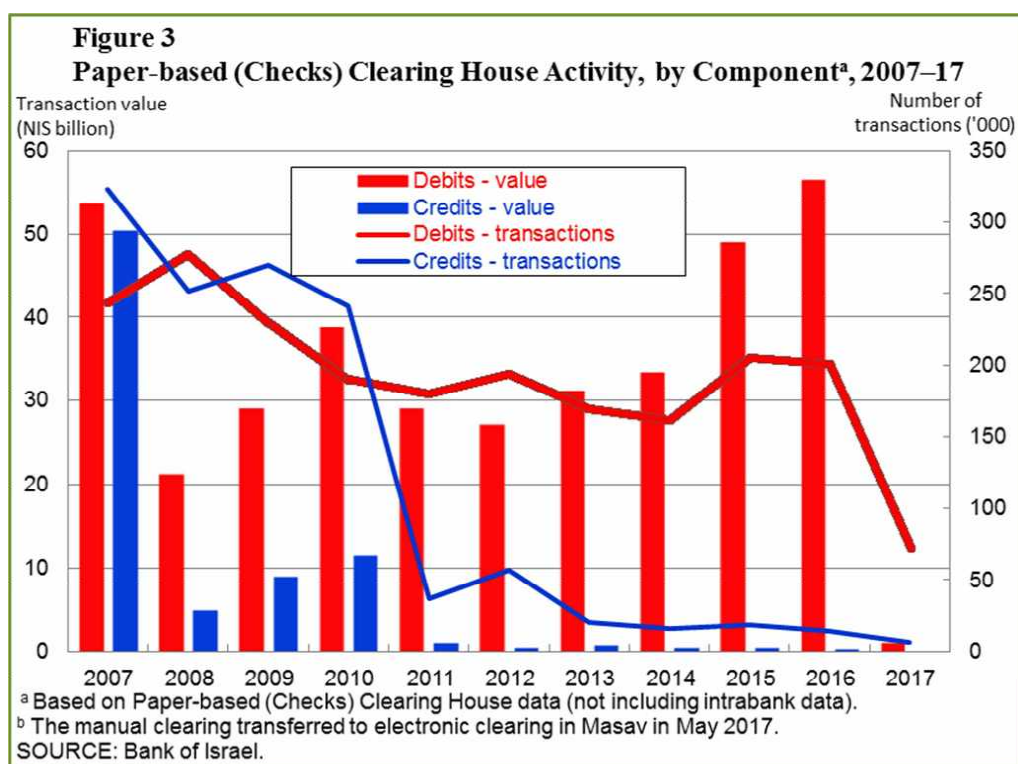
^a Including electronic presentation of collection vouchers.

^b Data on the number of manual drafts were not collected until 2008. In May 2017, the manual clearing was transferred to electronic clearing in Masav.

SOURCE: Bank of Israel.

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Total value of manual drafts decreased by 63 percent this year, after manual settlement was replaced by electronic settlement in the Zahav system, as described above. Over 90 percent of the manual debits stemmed from financial settlement of issuances of corporate securities, and these had transitioned to electronic settlement through the Zahav system already in January 1, 2017. The BOI, in collaboration with the Israel Securities Authority, decided to modify the process to minimize risks, because the securities issuance process entailed liquidity risks and operating risks for various systems and entities, and was also dependent on the manual work of those entities—the TASE, TASE members, underwriters, issue coordinators, the Check Clearing House, the registration company, the ISA, the institutional investors, and the general public. Funds in respect of issues of corporate securities (transfers between the banks' customers) that shifted from manual settlement through the Paper-based Clearing House to safe settlement through the Zahav system reached NIS 71.5 billion in 2017.



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2.3.2 Masav

Electronic credits and debits²⁴ are performed in the Masav system. Table 4 indicates that credits account for about 82 percent of all payments settled in Masav. The increase in Masav activity this year is the result of increases in both credits and debits: This year, the total value of credits and debits both increased by 9.8 percent (between 2015 and 2016), the total value of credits increased by 8 percent and the total value of debits increased by 11 percent).

There are 29,380 institutions participating in Masav, including banking corporations, the Postal Bank, government ministries and public institutions, as well as other clearing institutions such as credit card companies. All participants in Masav are direct participants, meaning they represent themselves.²⁵

Table 4					
Masav by component, 2007–17					
	Credits	Debits	Credit returns ^a	Debit returns	Total
Amounts (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	1.0	4.6	1,958
2011	1,752	342	1.0	4.7	2,100
2012	1,911	364	0.8	4.7	2,280
2013	1,998	392	0.9	4.6	2,395
2014	2,067	440	1.1	4.7	2,513
2015	2,169	465	1.3	4.6	2,640
2016	2,345	517	1.5	5.5	2,869
2017	2,573	568	1.6	6.1	3,149
Yearly change (percent)	9.74	9.82	11.11	11.31	9.76
Transactions (thousand)					
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
2014	130,976	190,645	162	4,221	326,003
2015	138,557	193,950	183	3,801	336,491
2016	150,822	200,092	217	4,043	355,173
2017	159,527	207,247	253	4,364	371,391
Yearly change (percent)	5.77	3.58	16.57	7.92	4.57

^a Credit returns began being settled in Masav instead of in the paper-based clearing house in December 2009.

SOURCE: Masav.

²⁴ Electronic credits are also performed in the Zahav system.

²⁵ Excluding the Palestinian banks that are represented by two Israeli banks.

2.4 The TASE Clearing Houses

The TASE Clearing Houses — the Securities Clearing House and the Maof Clearing House — settle the results of trading on the TASE. Securities are settled in the TASE Clearing Houses immediately after fund transfers between TASE members are settled in the Zahav system (DVP).

Like most stock exchanges worldwide, trading volume on the Israeli TASE has also increased. Average daily trading volume in shares increased in 2017 to NIS 1.4 billion (an increase of 10.6 percent from the previous year). Average daily trading volume in the bond market totaled NIS 3.6 billion (a decline of 3.2 percent from the previous year). Table 5 shows that in 2017, the annual volume of securities traded on the TASE was NIS 1,288 billion, compared with NIS 1,317 billion in the previous year (a decline of 2.2 percent).

Table 5
Securities trading volumes, 2006–17

	Shares and convertibles	Government	Bonds Other	Total	<i>Makam</i>	Total
	Amounts (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	1,059	141	1,486
2014	297	774	249	1,023	157	1,477
2015	355	751	255	1,006	125	1,485
2016	311	670	252	922	85	1,317
2017	344	641	250	892	52	1,288
Yearly change (percent)	10.61	-4.27	-0.52	-3.24	-37.99	-2.20

SOURCE: Tel Aviv Stock Exchange.

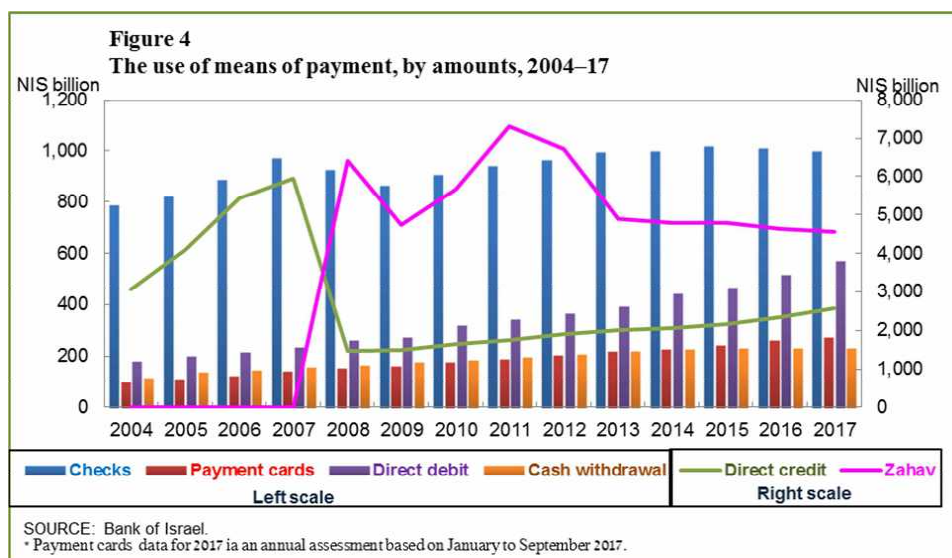
Chapter 2: Means of Payment Used by the Public

The principal means of payment available to the general public in Israel are cash, paper-based payments (checks and vouchers), direct debits (via Masav), direct credits (via Masav and Zahav), and payment cards.

When parties to a transaction select a means of payment, they are expressing their consent to use it. The main factors that influence this choice include: convenience—ease of use for the payer and the beneficiary; availability—the conditions and timeframe for the money to be accessible (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 and ensure that the payment is received, the ability to maintain confidentiality; the ability to rely on that means of payment (its reliability) and prove that the payment has been made, and; cost—in terms of the fees collected from the payer and/or the beneficiary and the liquidity costs.

Figure 4 illustrates the developing use of the most popular means of payment in Israel in recent years, by amounts paid. The figure shows that the total value of direct credits declined after the introduction of the Zahav system (in late 2007), and that the use of payment cards increased gradually from 2004 to 2017 (an increase of 170 percent, from NIS 100 billion per year to NIS 272 billion per year; and an increase of 190 percent from 442 million transactions per year to 1,289 million transactions). It is also possible to see that the use of checks is widespread in Israel, and checks account for NIS 1,000 billion per year (for additional information, see paragraph 1.2 below).

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1. Paper-based means of payment

Paper-based means of payment include cash, checks, and magnetic vouchers.

1.1. Cash

Banknotes and coins are the most liquid means of payment. In Israel, the Bank of Israel issues banknotes 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).

In 2017, total banknotes and coins in circulation increased, against the backdrop of expanding economic activity and low interest rates in recent years. At the end of 2017, total currency in circulation was NIS 82.2 billion, up from NIS 76 billion at end 2016 (an increase of 8.2 percent, compared with an increase of 3.4 percent in the previous year).²⁶ The use of cash withdrawal means has continued to grow, while the number of options for withdrawing cash has also expanded: The number of bank ATMs²⁷ increased by 14.9 percent between 2016 and 2017, and alternative cash withdrawal options became available in supermarket chains, public venues, and gas station convenience stores throughout the country.²⁸

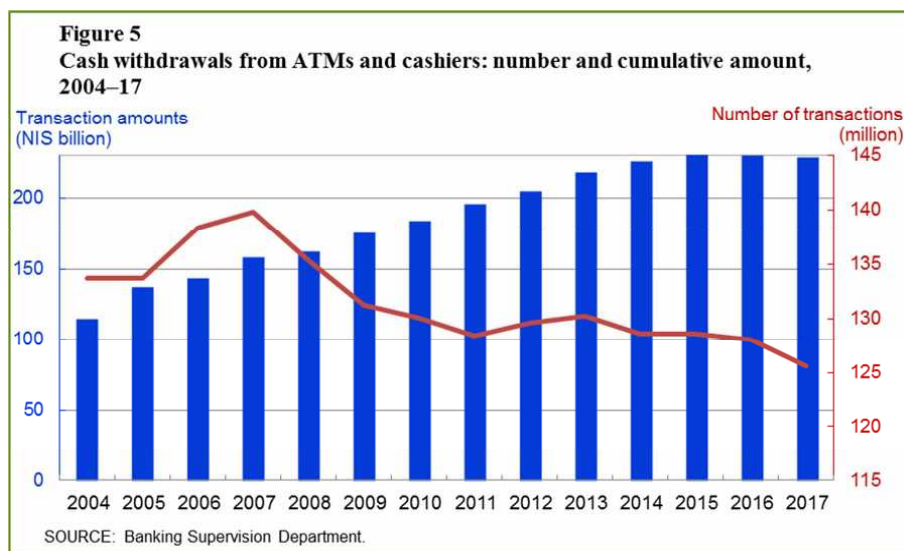
²⁶ Total value in circulation includes the cash held by the public, cash that banking corporations hold in vaults, and cash held by nonresidents (this phenomenon is more typical of the eurozone and the US, because their currencies are used outside their borders).

²⁷ ATMs in and outside banks, excluding credit-card-based cash withdrawal terminals.

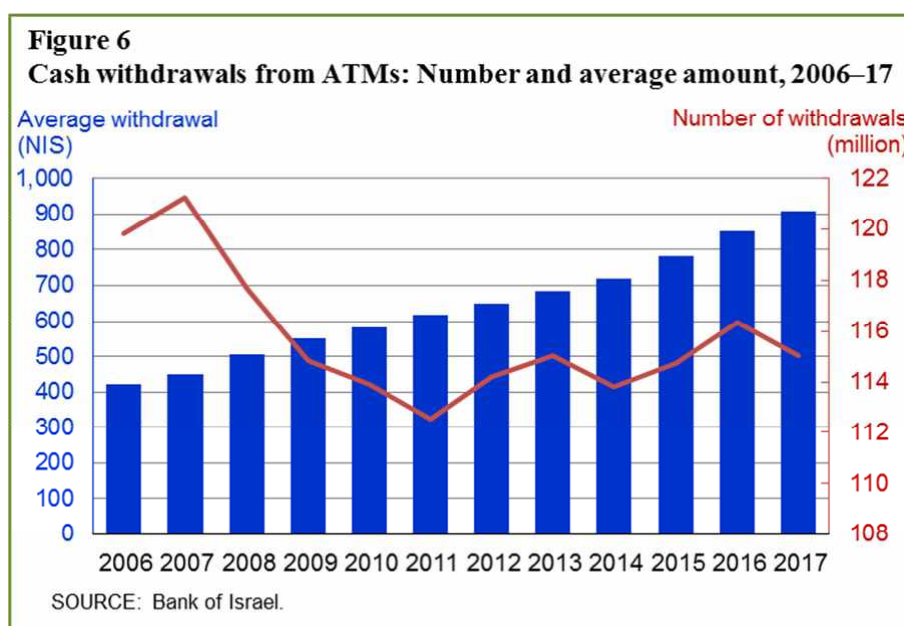
²⁸ Cash withdrawals executed by bank tellers – terminals for credit-card-based cash withdrawal.

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The number of cash withdrawals has remained steady in recent years, with 130 million withdrawals per year between 2009 and 2016, and a slight (2 percent) decline to 125.5 million withdrawals in 2017. The amounts withdrawn declined by 1 percent (NIS 2.3 billion) between 2016 and 2017, with relative stability (at approximately NIS 230 billion) over the past four years.

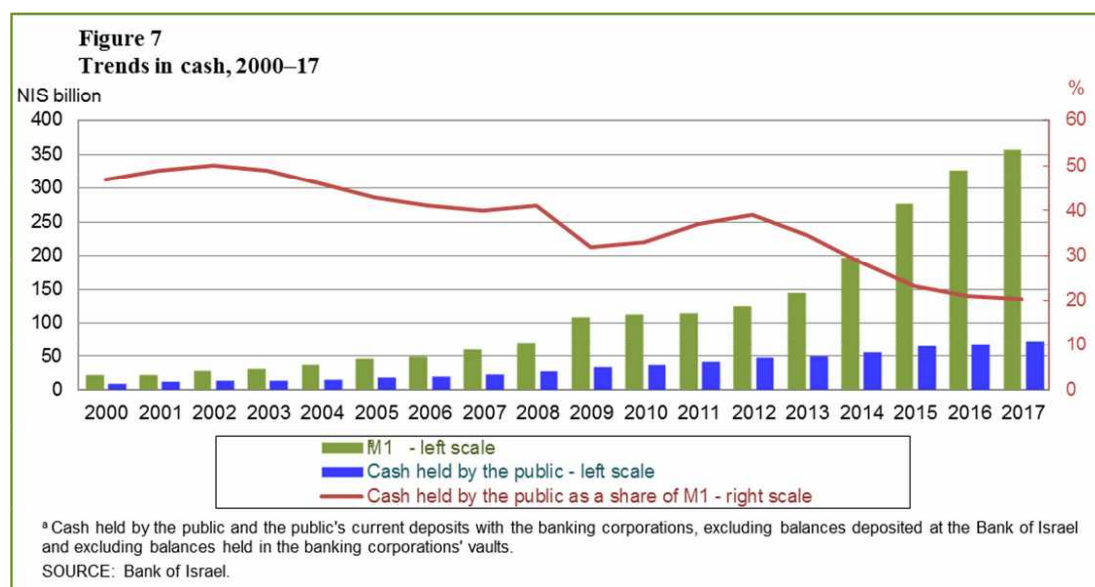


The average cash withdrawal using bank ATMs continued its upward trend, increasing by 5.2 percent from 2016 to 2017, reaching NIS 900. (The average cash withdrawal increase is 53.6 percent since 2010.)



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Although the amount of cash held by the public has increased steadily (from NIS 25 billion in 2007 to NIS 72 billion in 2017), the share of cash of the public's total funds has declined, primarily because current accounts have increased significantly in response to low interest rates.



1.2. Checks

The use of checks is widespread and generally accepted in Israel, and accounts for more than 50 percent of the number of payment orders settled in the interbank payment systems.²⁹ Checks have numerous uses, including payments to private beneficiaries (service providers, educational institutions, rent, gifts, etc.); payments to businesses; and payments to public entities (the Israel Tax Authority, educational institutions, and provident and pension funds).

Based on data on all checks used in Israel (intrabank and interbank³⁰), the use of checks declined by 3.7 percent between 2016 and 2017, to 128 million checks, while the total value of settled checks declined by 1 percent. Since 2008, the number of checks has gradually declined and by 2017 had dropped by a total of 20 percent.

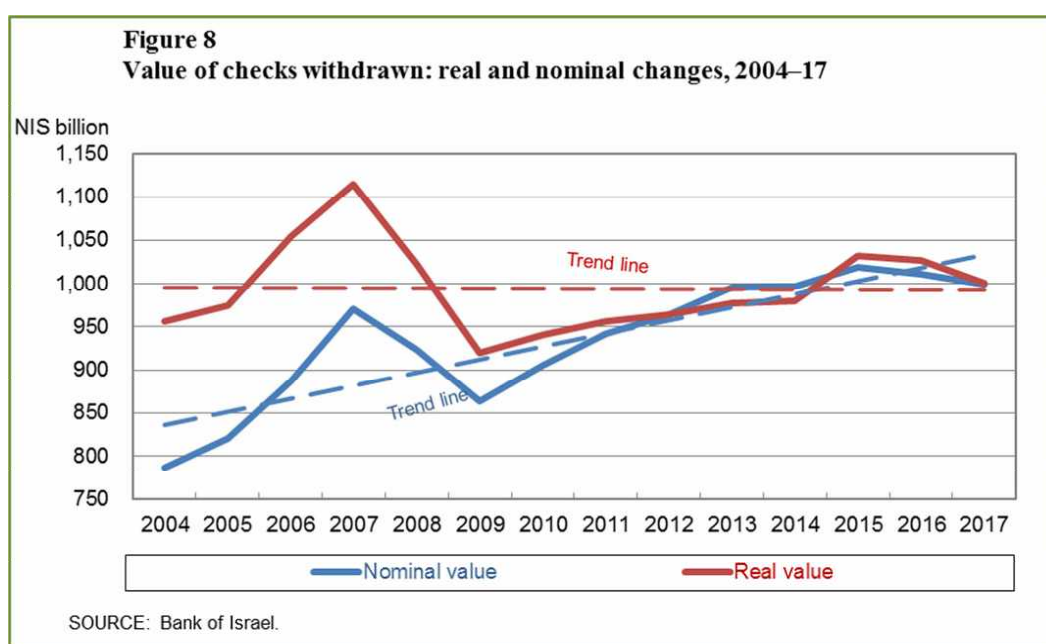
The use of checks declined for two main reasons. First, the public expanded its use of electronic means of payment, and especially payment cards and electronic transfers. Second, some merchants no longer accept checks due to the risks and costs that their acceptance entails.

²⁹ Payment orders settled in the Zahav system (interbank), the Masav system (credits), and in the Paper-based clearing system.

³⁰ In contrast to the net amounts which reach the Paper-based Clearing House, which include only interbank checks, as described in Section 1.3.1 of Chapter 1, and in Table 2.

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In contrast, the total value of checks increased in this period by 8.3 percent in nominal terms, from NIS 924 billion in 2008 to NIS 1,000 billion in 2017.³¹ The average check value also increased, from NIS 5,799 in 2008 to NIS 7,842 in 2017, reflecting an increase of 35.2 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.



The number of dishonored intrabank and interbank checks increased by 9.5 percent in 2017 (an 8 percent increase in checks dishonored for insufficient funds, and a 10.5 percent increase in checks dishonored for technical reasons), and their total value increased by 6.6 percent³² (a 3 percent increase due to insufficient funds and a 7.5 percent increase due to technical reasons). Dishonored checks account for 2.7 percent of the total number of presented checks (2.3 percent in 2016) and 3.7 percent of the total value (3.4 percent in 2016).³³ The main increase in dishonored checks stems from checks dishonored for technical reasons (missing signature, incorrect date, lack of consistency between numbers and words, etc.): The number of checks dishonored for insufficient funds constituted 0.9 percent of the total number of checks in 2016, and 1 percent in 2017, and the share of dishonored checks for technical reasons was 1.4 percent in 2016 and 1.6 percent in 2017.

³¹ Annual estimate based on the first 10 months of the year.

³² Regarding 2017 — estimate is based on data for the first 10 months of the year,

³³ Including intrabank checks.

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The total value of checks dishonored for insufficient funds of the total value of (intrabank and interbank) checks presented remained stable at 0.8 percent in 2016 and 2017. The total value of checks dishonored for technical reasons was 2.7 percent in 2016 and 3 percent in 2017.

When a check is deposited in a commercial bank before the end of the business day (18:30), the depositor's account is credited on that same day (day T). The credit is conditional, because according to the Clearing House Rules, the debited bank has the right to return the check on the day following its presentation. From the customer's perspective, the amount credited is provisional, and becomes final three banking business days after Day T (the settlement date), unless the customer's bank cancels the provisional credit because the paying bank refused to honor the check.³⁴

In Israel, a check can be endorsed to a third party.³⁵ In October 2011, an amendment to the Banking (Services to the Customer) Law³⁶ came into effect requiring banks to issue checkbooks with limited negotiability checks, as the default form of checkbook, unless the customer requests otherwise. It was assumed that this would reduce the number of third-party endorsed checks in the system, though not eliminate them completely.

The use of post-dated checks is relatively widespread in Israel, in both the business sector and among households. 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, less a discount fee. Check discounting in Israel is rendered by currency service providers, which are subject to the supervision of the Currency Service Providers Unit of the Ministry of Finance's Capital Market Authority. There are 1,244 private corporations and entities listed in the database of currency service providers.³⁷

³⁴ Banking (Service to the Customer)(Date of Credits and Debits using Checks) Directives 5752–1992, Section 3(a).

³⁵ Endorsement of a check – when party A issues a check that is not limited to the beneficiary, the check may be transferred to other parties (from one beneficiary to another) if the beneficiary endorses the check by signing on the back of the check.

³⁶ Banking (Service to the Customer) Law, 5741–1981, Section 5(c).

³⁷ As of February 2018.

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As noted in paragraph 1.2 in Chapter 1, implementation of the Electronic Clearing Law was completed, enabling the transformation of paper-based checks into digital records that function as legal evidence and can be retrieved at any time as necessary, without any need to retain the physical checks themselves. As a result of the implementation of this Law, the settlement process has changed, and physical checks are now truncated at the bank where they are presented for payment, where an image of the checks is produced. The digital images of the checks are sent to the paying bank, eliminating the need to retain the physical checks. Implementation of the Law was conducted in two main stages: In the first stage, in November 2016, most banks permitted the interbank settlement of checks deposited using mobile media;³⁸ and in November 2017 implementation of the Law was completed and from that, all banks permit interbank settlement of checks deposited using mobile media. This process allows bank customers to deposit checks without physically visiting a bank branch, and it increases customers' use of electronic services that are promoted through the banking apps offered to them.³⁹

2. Electronic Means of Payment

2.1 Direct electronic payments

Direct electronic payments (direct credits and debits) are automated payments that do not involve manual intervention. Two systems perform such payments in Israel — Zahav and Masav. The Zahav system executes credits only (the initiator of the order may credit but not debit another party's account), while Masav executes both credits and debits.

2.1.1 Direct electronic credits – The Zahav system

The Zahav system allows individuals and business entities to perform immediate, final, and safe transfers of funds. The Zahav system is the final settler of all the payment and clearing systems in Israel. The Zahav system currently has 20 participants in the settlement process (commercial banks, CLS, the TASE Clearing House, Bank of Israel, and the Postal Bank), and four clearing houses (Maof Clearing House, TASE Clearing House, Masav, and the Paper-based Clearing House).

³⁸ Deposit using mobile media of limited negotiability checks up to NIS 10,000 per check.

³⁹ Deposits using mobile media also reduce the check deposit costs for customers by up to 75% (the cost of depositing a check using an automated channel compared to a teller-executed deposit).

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The Zahav system clears orders in real time, with no delay between the execution and confirmation of a payment order, which protects the payment recipient from a number of risks. When a transfer is made, Zahav system users know immediately that the payment they received is final and irrevocable, in contrast to other means of payment.

Individual customers who wish to make a payment via the Zahav system have several options, depending on the bank in which their account is administered. They may personally approach a teller at the bank branch in which they hold a shekel-denominated account; they may send a written request; they may execute the transfer on the bank's website⁴⁰, or they may contact the bank's telephone call center.

To transfer a payment via the Zahav system, the beneficiary's name in English and Zahav (IBAN) number are needed.⁴¹ IBAN is an international standard for identifying bank accounts, and creates a one-to-one correspondence with a customer's bank account.⁴² Bank customers may obtain their IBAN number in any one of several simple ways, as every commercial bank provides the information to its customers through one or more of the following: branch teller, website, telephone call center, automated bank device, or (since 2012) check stub. A customer's IBAN number can also be retrieved from the IBAN simulator on the Bank of Israel website.⁴³

As of end 2017, the Zahav system settles an average of 3,330 (bilateral and multilateral) payment orders per day, of an average daily value of NIS 490 billion, compared to 1,700 transactions of an average daily value of NIS 263 billion in 2014 (before the amendment to the Banking Rules came into effect in January 2015 and contributed to an increase in customers' transactions through the Zahav system; The amendment determined that banks may not charge private customers or small businesses a fee for transfers made through the Zahav system of up to NIS 1 million that exceeds the fee for a single teller-executed transaction). The main increase in the number of transaction is attributed to transactions by customers (an increase of 115 percent and an additional 1,500 daily

⁴⁰ According to the provisions of Proper Conduct of Banking Business Directive 357, Section 25(c), sub-section (2), requests in larger amounts are transferred to a bank clerk for approval. The maximum amount of a single payment for corporate customers is NIS 200,000.

⁴¹ 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.

⁴² Since 2007, SWIFT authorizes IBAN registration. As of end 2017, 82 countries are registered in the IBAN Registry.

⁴³ The IBAN simulator is accessible at:

<http://www.boi.org.il/he/ConsumerInformation/ToolsAndCalculators/Pages/Iban.aspx>

transactions on average). The average daily value of customers' transactions increased by NIS 668 million or 11.5 percent between 2014 and 2017.

2.1.2 Direct electronic payments and credits – the Masav system

Direct electronic 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 or her account and credit the beneficiary's account. If there are sufficient funds in the debited party's account, the bank submits the payment order to the clearing house that settles the payment (Zahav or Masav). If the payment is settled in the Zahav system, the credit is immediate, final and irrevocable. If it is settled in the Masav system, the credited party may return the payment within three business days of the execution date. Most direct credits (salaries, pension payments, and other payments) are initiated electronically, which significantly reduces the handling costs (to the customer, the banks, and the clearing house) of each payment order.

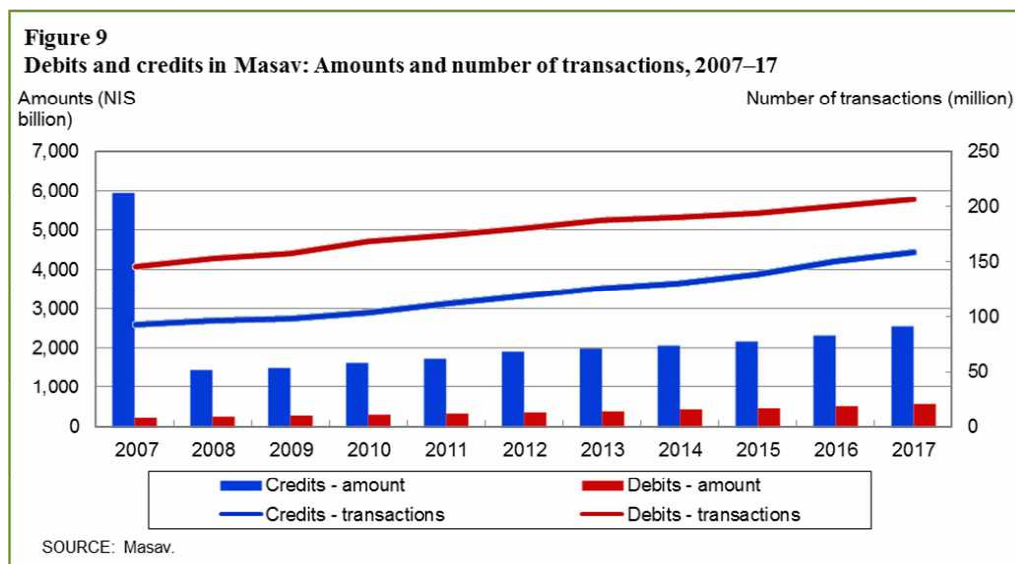
In recent years, there has been a steady increase both in the number of direct credits and in their total value. Total direct credits increased by 75 percent between 2008 and 2017, and by 9.7 percent between 2016 and 2017 (from NIS 2,345 billion in 2016 to NIS 2,573 billion in 2017). The number of transactions increased by 66 percent between 2008 and 2017, and by 5.8 percent between 2016 and 2017 (from 151 million to 160 million transactions). Credit amounts declined significantly between 2007 and 2008, as the Zahav system commenced operations in late 2007 (see Figure 9).

Direct electronic debits: In Israel, direct debits are performed only through Masav and are initiated by the beneficiary, through the bank at which the beneficiary's account is administered. The beneficiary's bank collects the funds from the bank that manages the account of the debited party, subject to the legal terms to which the debited party has agreed. Underlying direct debits is an agreement that the debited party may cancel erroneous or illegal debits within three business days of the date of their execution. The main type of direct debit in Israel is the standing order (payments to utility providers, including electricity, water, telephone, etc.), where payments are executed automatically each month, at their current amount.

In recent years, the number and value of direct debits has increased: The value of direct debits increased by 118 percent from 2008 (after the introduction of the Zahav system) to 2017, and by

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9.8 percent from 2016 to 2017 (from NIS 517 billion in 2016 to NIS 568 billion in 2017). The number of direct debit transactions increased by 36 percent from 2008 to 2017 and by 3.6 percent from 2016 to 2017 (from 200 million transactions to 207 million transactions).



2.2 Payment cards

There are four major participants in the payment card market:

Issuers – The entity that provides the payment card to the customer, according to the agreement between them.⁴⁴ The issuer is typically a bank or credit card company. The card holder maintains an account with the issuer, which is administered by the issuer and may include a credit facility, if one has been approved for the card holder.

Acquirers – The entity that enables the merchant to honor payment card transactions. The acquirer conveys the debit request approval to the issuer, and if the request is approved, the acquirer guarantees payment to the merchant.

Payment card holders – who use payment cards to carry out transactions with merchants.

Merchants – receive funds according to the dates stated in their agreement with the acquirer.

In Israel, several types of payment cards are in use:

The most widely used payment card in Israel is the **deferred debit card**. Customers use these cards to purchase goods and services and to pay once a month, or over the course of several

⁴⁴ The agreement is based on Section 7 of the Payment Cards Law, 5746–1986.

deferred installments.⁴⁵ The merchant is credited according to his settlement agreement, and he finances the credit days that elapse from the date of the customer's payment until the date on which he is credited. This type of card is linked to the cardholder's credit facility, and allows the card holder to withdraw cash from ATMs, and/or to pay for goods and services, up to the credit facility allocated by the card issuer.

When a customer pays for a transaction in installments with a deferred debit card, one of two types of credit is involved: (a) non-interest-bearing credit, which is credit granted by the business for a period of between several days to several months; and (b) interest-bearing credit, which is credit extended by the credit card company to the customer for a period of several months and occasionally for more than a year, through a "credit" program.

This financing element is one of the reasons that a deferred debit card cannot serve as a substitute for cash, which is the reason that deferred debit cards are only available to consumers whose credit card issuer approved a credit facility for them.

Debit cards – In transactions using a **debit card**, the accounts of the cardholder (the buyer) and the seller are debited and credited, respectively, immediately upon execution of the transaction.⁴⁶ A debit card combines the convenience of a payment card and (almost) immediate transfer of the payment that is similar to payment by cash, (non-postdated) check, or bank transfer. Transactions using debit cards cost the issuer less than transactions deferred debit card transactions, regardless of the transaction amount.⁴⁷ According the directives of the Banking Supervision Department, customers in Israel pay a reduced fee for debit card transactions: Customers who, in addition to a debit card also hold a deferred debit card or credit card, will not pay any fees on transactions using their debit card in the first three years of use (in order to encourage the use of debit cards). Furthermore, the directives of the Banking Supervision Department determine that the fees collected on debit card transactions will be lower than the fees in respect of deferred debt card or credit card transactions. Use of debit cards is very common in many countries around the world, but use is not widespread in Israel.

⁴⁵ Debits on bank cards appear directly in the customer's bank account.

⁴⁶ Pursuant to Proper Banking Conduct Directive No. 470, on behalf of the Supervisor of Banks (June 2015), in debit card transactions the issuer must transfer funds to the acquirer within 2 business days from the transaction transmission date, and the acquirer must transfer the transaction funds to the merchant within 3 days of the transaction transmission date. In debit card transactions, customers are debited the transaction value on the transaction transmission date.

⁴⁷ Cost to the customer depends on multiple factors, and mainly the interchange fee formula.

Revolving credit card – The holder of a revolving credit card can set the maximum amount charged each month, while the outstanding balance due on the purchased goods or services is carried over to future months, accruing interest.

A **prepaid card** is a payment card in Israeli or foreign currency, which the customer loads in advance up to the card's maximum amount. Each payment is deducted from the card's balance until it is depleted. This type of card includes grocery gift cards, phone cards and cards for use in specific chain stores. These cards can be loaded repeatedly. Some cards are anonymous while others are identifiable.⁴⁸ Prepaid cards are issued by credit card companies and by the Postal Bank, and can be used in any business that accepts the issuer's payment cards. Prepaid cards can be used to make purchases up to the amount loaded on the card at the time, and the card balance is updated after every transaction. Funds can be added to the card in several ways—directly from a bank account, by charging another (deferred, revolving or immediate) payment card, or with cash.

Other non-reloadable prepaid cards include gift cards and virtual anonymous payment cards issued by credit card companies. The latter make it possible to make purchases on the Internet without exposing the buyer's personal information and information on the purchase. They bear the details of an alternative credit card that may be loaded (one time) up to a specific amount, while the details of the payment card used to load the virtual card are stored in a secure and encrypted system. Any balance remaining on the virtual card may be unloaded. Prepaid cards may function as substitutes for cash for customers who do not have a bank account, and can be used for minors under age 14.

From the perspective of a merchant in Israel, when the merchant accepts a deferred debit card, the merchant receives his funds on the date agreed with the acquirer, and when the merchant receives payment through a debit card or prepaid card, the merchant is credited within three business days after the transaction (when the customer is debited).

The three credit card companies that operate in Israel — Isracard, Leumi Card, and Cal (Cartisey Ashrai Le'Israel) — issue five local and international brands: Visa, MasterCard, American Express, Diners, and Isracard. The companies issue and settle the cards under licenses from the relevant international organizations. Activity in this sector has expanded markedly in recent years, affected by several factors: the issuance of payment cards by nonbank entities (typically customer

⁴⁸ Some cards can be used to withdraw cash from an ATM.

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clubs); financing and credit companies have expanded the range of available services through instruments that allow the card holder to determine the amount and date of the payment in accordance with their needs and ability; the simplicity and convenience of using these cards when purchasing from merchants; and the growing number of e-commerce sites.

In recent years, there has been an increase in the number of payment cards. The number of (active and inactive) payment cards that allow cash withdrawals increased by 4.4 percent in 2017, from 9.7 million cards to 10.1 million cards. Since 2011, the number of cards has increased by 45 percent. In 2017, the number of debit cards was 1,140,000, reflecting an increase of 18.2 percent from 2016 (967,000 debit cards in that year) and 162 percent since 2011 (437,000 debit cards in that year). The number of transactions in and outside Israel using debit cards issued in Israel increased by 6.2 percent this year, and by 108 percent since 2008.

The number of active cards⁴⁹ that were valid at the end of the year increased from 7.9 million at end 2016 to about 8.2⁵⁰ million cards at end 2016 (an increase of 3.8 percent).

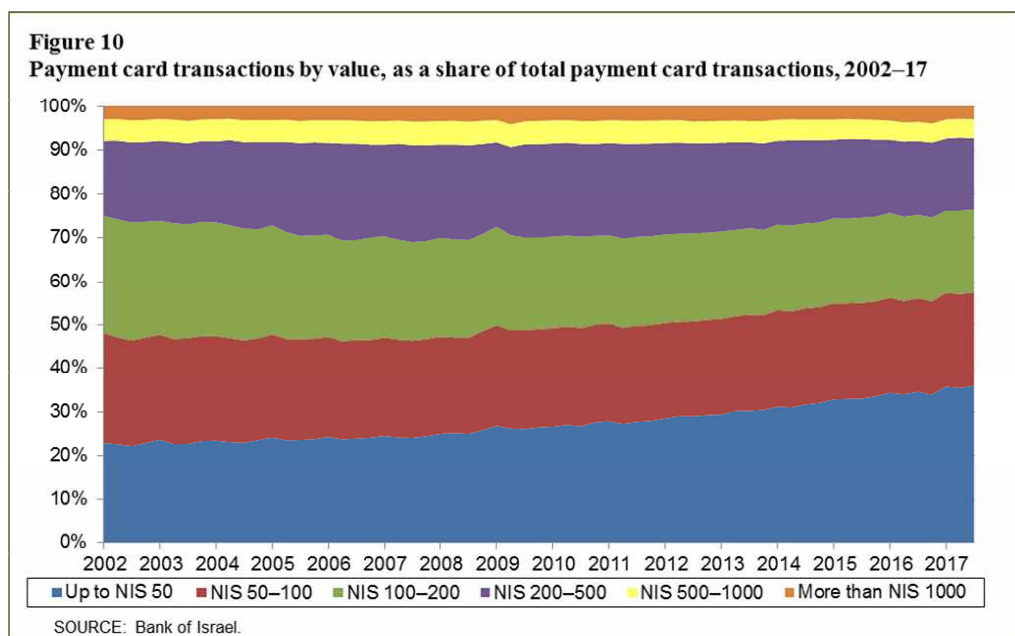
The total value of payment card transactions is rising steadily, and there is a tendency to use payment cards for micropayments as well—such as in vending machines, public transportation, and photo booths. Between 2016 and 2017, the total value of payment card transactions in Israel increased by 4.9 percent, from NIS 259 billion to NIS 272 billion.⁵¹ The majority of transactions performed between 2014 and 2017 (about 70 percent) were in amounts less than NIS 200, and this figure may indicate that this means of payment serves as an alternative to cash when purchasing products and services in the retail sector.

⁴⁹ Cards that were used to make at least one transaction in the final quarter of the year.

⁵⁰ Data as of end September 2017.

⁵¹ Data for 2017 are based on an annual estimate based on the first nine months of the year..

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As noted in Chapter 1, efforts have begun in Israel to ensure that the market is compatible with the use of smart payment cards, which are cards that comply with EMV, an advanced security standard,⁵² since such cards offer added benefits: First, a PIN must be entered into the merchant's terminal, which reduces the use of stolen or lost cards. Thus, the transition to smart debit cards will reduce potential fraud and increase the trust of customers and card companies. Second, the transition will align the local market with internationally accepted norms, expanding the ability to use Israeli cards to make payments abroad, and will also facilitate an expansion of the infrastructure required for payments using contactless technology.

3. Advanced electronic means of payment

This section offers a review of innovations in means of payment and their related infrastructure, where use in the Israeli market is in its infancy and/or whose development attracts global interest and are being studied by various actors in the financial system in Israel.

In recent years there has been a significant increase in electronic commerce (or e-commerce) transactions due to expanding Internet access, technological developments in Israel and worldwide, and social media advertising. It is now possible to purchase many products and services without leaving one's home, even if the supplier is located overseas or if they operate a

⁵² EMV—Europay, MasterCard, and Visa—a collection of specifications developed by the international credit card companies to provide a secure, uniform format for payment using payment cards in card-present transactions.

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virtual store and never meet their customers face to face. E-commerce currently encompasses all types of transactions, including private, retail, and wholesale transactions, as well as domestic and international transactions.

Developments in online payments in Israel also make it possible to pay online for a broad range of government and public services, such as taxes, traffic fines, police fines, driving license renewal fees, passports and laissez-passer documents, electricity and water bills, and municipal taxes. Banks in Israel also permit their customers to perform transactions on the Internet and via dedicated smartphone applications. After customers are issued a confidential PIN, they may monitor their bank account and safely transfer funds and perform payments, although in most cases these transactions are limited to maximum amount. Since the Internet makes it possible to perform transactions outside the conventional business hours of bank branches, banks offering such options increase the efficiency of their customer services and save customers time waiting in a branch to be served.

At the same time, there is also a considerable momentum in new developments in the field of means of payment, and innovative payment solutions now offer secure and available access on new devices and channels (such as mobile payment terminals)⁵³ and other options that improve payment efficiency and security. Among recent developments, people have begun to perform a variety of financial transactions on smartphones, including salary payments to temporary or foreign employees, payments to taxis and for parking, confirmation of transactions to companies and private individuals, purchase and sale of securities (via remote access to the bank's securities system), accessing information, transfer of funds among individuals, and cash withdrawals from ATMs without the use of an ATM card.

3.1 Payments via contactless technology

Near Field Communication (NFC) technology creates a radio connection between two devices that are held in proximity to each other, and allows payments to be made conveniently and rapidly, circumventing malfunctions of payment terminals. NFC technology can be embedded in any

⁵³ Various products are available in Israel and other countries, to transform smartphones into mobile credit terminals. These products contain a compact device that connects to the smartphone and to a dedicated app and makes it possible to receive payments from a customer via payment cards.

broadcasting device (payment card, mobile phone, SIM card, smartwatch, smartpatch, etc.) although it is currently embedded mainly in smartphones and payment cards.

To execute a transaction via a smartphone, the user must access a mobile wallet application and hold the smartphone in proximity to a designated NFC-supported reader. In Israel, a very small percentage of businesses have active readers, and therefore payment cards supporting NFC also support execution of transactions through magnetic strips.

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

3.2 Digital wallets

The accelerated use of e-commerce in recent years has created the need for new options for money transfers and payments that offer greater speed, security, and availability. The e-wallet (or digital wallet) meets this need. It allows the use of a PC or smartphone to make online purchases, for example, pay bills, and transfer money between individuals. It also allows the user to hold funds in a virtual/digital account, to which funds are transferred from a current account, a payment card, or a prepaid card. The e-wallet also allows users to store the information necessary to perform an online payment, such as the details of the means of payment and the details of the e-wallet holder (such as address, ID number, telephone number). Leaders in the development of digital wallets are banking corporations, credit card companies, entrepreneurs and private companies as well as ICT companies worldwide.

3.3 International foreign currency transfers

The transfer of foreign currency abroad is executed through the banking corporations and the Postal Bank, as well as through currency service providers located nationwide.⁵⁴ These payments are carried out via various payment systems/communication infrastructures, such as SWIFT, GMT (Global Money Transfers),⁵⁵ Western Union, MoneyGram, etc. In some cases, the payment is

⁵⁴ 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; and discounting of checks, bills of exchange and promissory notes.

⁵⁵ SWIFT – Society for Worldwide Interbank Financial Telecommunication; GMT – Global Money Transfers.

made directly to an overseas currency service provider who has an agreement with a currency service provider in Israel. These transfers of funds make it possible to deposit cash at a location in Israel and to withdraw it in cash overseas.

Apparently, most of the foreign currency transfers made by foreign workers are also conducted through the Postal Bank or currency service providers, primarily because these institutions do not require the sender to open an account for such services.

3.4 Virtual currencies

A **virtual currency** is a digital expression of a monetary value that can be used in e-commerce as a means of exchange or value unit, but does not constitute the legal tender of any country. Virtual currency is not issued or backed by any country, and its use is based on internal agreements among its users.

Digital currencies include virtual currency and electronic money that is the legal tender of a country.

In February 2014, the Bank of Israel issued a joint statement with the Capital Market, Insurance and Savings Division at the Ministry of Finance, the Israel Tax Authority, the Israel Securities Authority, and the Israel Money Laundering and Terror Financing Prohibition Authority, which directed the public's attention to the major risks inherent in decentralized virtual currencies such as Bitcoin: they are not issued or backed by any central bank; they may be transferred anonymously while evading financial entities that are subject to anti-money laundering and terror financing regimes; their unique features are liable to present fertile ground for fraudulent activities such as Ponzi schemes; the value of virtual currencies is subject to high volatility; they are typically stored on a computer or smartphone, which makes them susceptible to theft; exchange services may be subject to information security failures and regulatory uncertainty; trade in virtual currencies is not supervised by any government authority; and the parties to a transaction remain anonymous and may exploit this fact for criminal motives. In view of this situation, the aforementioned agencies recommended to the public that is considering the use of or investment in virtual currencies to understand the risks and demonstrate a high degree of awareness and caution. These agencies published their recommendation in February 2014, joining other

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regulators that published similar warnings to the public, including regulators in the United States, Canada, and the EU.⁵⁶

The Bank of Israel continues to conduct an in-depth study of the issues related to virtual currencies and blockchain technology, and monitor the state of research on this topic in and outside Israel.

Box 2: Study on “Use of Means of Payment in Israel”

In accordance with the recommendation of the interim report of the Mendelson Committee, the Payment and Settlement systems Department at the BOI established an internal team in January 2016 to study and review the most rapid retail payment systems in the world and the needs of the Israeli market in terms of a rapid retail payment system, and to conduct a survey on “use of means of payment in Israel.”

The team mapped seven stakeholders that have different needs with respect to an immediate payment settlement system: the BOI, government ministries and agencies; banks and the Postal Bank; credit card companies; private entrepreneurs; retail payment systems; merchants; and private customers. The team also prepared a survey on “use of means of payment in Israel” in order to understand and identify the public’s needs and conditions in which the various means of payment are used, identify the various uses of means of payment by transaction type and amount, and collect information on the public’s readiness to transition to the use of advanced digital means of payment. This online survey was conducted in August 2016 on a random sample of 901 individuals between the ages of 18 and 75, representing various population sectors and groups.

Following are details of the main findings of the survey:

1. **Cash and deferred debit cards** are the two most widely known and convenient means of payment.
2. **Cash** is the main means of payment that people use on a daily basis.
3. Use of **digital wallets** is limited in Israel. Digital wallets are considered a less convenient means of payment.

⁵⁶ The warning appears at:

<http://www.boi.org.il/en/NewsAndPublications/PressReleases/Pages/19-02-2014-BitCoin.aspx>

4. Preferred means of payment by **transaction type**:

- a. Purchases in supermarket and chain stores, convenience stores, apparel and shoes—the main means of payment used are **deferred debt cards** (68 percent) and **cash** (23 percent);
- b. Rent—main means of payment are **checks** (45 percent) and **cash** (18 percent);
- c. Online shopping from overseas—the main means of payment are **deferred debit cards** (64 percent) and **payment apps** (14 percent);
- d. Parking fees—main means of payment are **cash** (37 percent) and **payment apps**⁵⁷ (28 percent);
- e. Payments to individuals (P2P)—main means of payment are **cash** (44 percent) and **bank transfers** (39 percent);

5. Preferred means of payment by **transaction amount**:

- a. Transactions between NIS 1-20 – preferred means of payment is cash (93 percent);
- b. **As the transaction amount increases, preference for use of cash declines**, such that only 4 percent of the respondents preferred to use cash for transactions between NIS 10,000 and NIS 50,000;
- c. Transactions between NIS 250 and NIS 500 – preference for deferred debit cards (60 percent);
- d. Transactions above NIS 50,000 – preference for bank transfers (31 percent) and checks (22 percent).

6. **Infrastructure for rapid settlement of payments**:

- a. Respondents expressed high interest in the system (25 percent of all respondents);
- b. The main factor that generates interest in the system is its perceived convenience;
- c. The main barrier to trial use of the system is perceived lack of security;
- d. Fees for use of the system significantly reduce interest in using it.

Following the survey, the team mapped the various alternatives and strategies for

⁵⁷ Most apps are based on payment cards.

promoting immediate payments, and proposed the adoption of a global approach that believes that it is possible to promote immediate payment by establishing a new, special-purpose Faster Payment System for rapid settlement of retail payment orders or by improving and upgrading existing retail payment systems.

Consequently, a Public Consultation document was published on this issue, inviting the public to address the establishment and operations of an infrastructure for the settlement of immediate payments in Israel.

Chapter 3: Institutional Aspects

1. The Regulatory Environment

A firm statutory foundation is essential for the Bank of Israel's regulatory activity and the operations of the various payment systems in Israel. Following are several laws and agreements that regulate the operations 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 grants the Bank of Israel 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 regulate the operations of the payment systems in Israel and to minimize the risks related to them. The law addresses 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 event of a bankruptcy by a system participant. In addition, the law confers upon the Bank of Israel the authority to classify payment systems as controlled systems, to introduce regulations concerning such controlled systems, and to oversee them. The law determines under what conditions the payment system will be subject to oversight authority, which obligations apply to the operator of such a regulated system, and what oversight tools are available to the Bank of Israel.

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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 concerning the settlement of transactions carried out with payment cards. Among other things, this chapter prohibits the provision of settlement services without a license granted by the Governor of the Bank of Israel. Companies that receive a settlement license will be subject to oversight of the Bank of Israel.

The Securities Clearing House and the Maof Clearing House are subsidiaries of the Tel Aviv Stock Exchange Ltd. (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 regulator of the payment and settlement systems, the Bank of Israel signed a **memorandum of understanding with the Israel Securities Authority** in order to arrange the cooperation between the two entities with respect to regulation 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 decisions of the Clearing House Committee, which includes representatives of the banking corporations, the Postal Bank, and the Bank of Israel.

The **Prohibition on Money Laundering Law, 5760–2000**, was enacted 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 issued a directive on the prohibition on money laundering, which imposes obligations on the banking corporations with regard to the identification of clients, retention of records and reporting to the Israel Money Laundering and Terrorism Financing Prohibition Authority. In early 2005, the **Prohibition of the Financing of Terrorism Law, 5765–2005**, went into effect, and changes were concurrently introduced into the guidelines to the Israeli banking system so that they include means for preventing terror financing. Additional steps to this end were taken in November 2006, when the Knesset approved regulations that deal with the prohibition of financing terrorism. Israel continually examines new ways of fighting money laundering and the financing of terrorism and also reconsiders (or revises) existing measures as circumstances change, to provide solutions that address the growing degree of sophistication of criminals in this area. Steps include changes in legislation and the revision of regulations in order to expand the requirements related to risk

management (including special requirements with respect to the use of payment cards, designed to prevent 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 provide.

On February 2, 2014, an amendment to the **Prohibition on Money Laundering (The Banking Corporations' Requirements regarding Identification, Reporting, and Record-Keeping for the Prevention of Money Laundering and the Financing of Terrorism) Order, 5761–2001** was published in *Reshumot*, after it was approved by the Knesset Constitution, Law and Justice Committee on October 29, 2013. The amendment to the Order included new directives related to the prohibition of money laundering and terrorism financing. To illustrate, requirements were added with respect to the inspection and recording of the names of parties involved in international transfers, the “know your customer” obligation was defined in the law together with additional related directives and requirements, the requirement to retain documents for an extended period was added at the demand of the Supervisor of the Banks, and reference to the list of at-risk countries published by the head of the Money Laundering and Terrorism Financing Prohibition Authority pursuant to FATF⁵⁸ publications was added. The amendment also addresses the definition of an “irregular activity” that requires reporting to the Authority, as stated in Section 1. This definition was amended to the following: “activity that, according to the information possessed by the banking corporation, is suspected of being related to activity prohibited under the Prohibition of Money Laundering Law or the Prohibition of Terrorism Financing Law.” The Order went into effect on August 2, 2014.

On May 12, 2014, the Knesset Constitution, Law and Justice Committee approved the amendment to the **Prohibition on Money Laundering (Obligations of Identification, Reporting, and Record-Keeping by Currency Service Providers) Order, 5762–2002**. The amendment includes new directives that apply to currency service providers, as they are defined in the Prohibition of Money Laundering Law, 5760–2000. Among other things, a “Know Your Customer” obligation was imposed for regular customers, obligations were imposed related to foreign public persons, an

⁵⁸ Financial Action Task Force.

obligation was imposed to authenticate the identifying details of service recipients, various exemptions were defined that allow the provision of currency services without face-to-face identification under specific circumstances, obligations were imposed related to the prohibition of terrorism financing, an obligation was imposed for currency service providers whose annual turnover exceeds NIS 3 million to establish a computerized database, and the minimum reporting requirements to the Prohibition of Money Laundering and Terrorism Financing Authority were revised. The Order went into effect on March 30, 2015.

On July 30, 2014, the Knesset plenum approved the Second and Third Readings of the **proposed Prohibition of Money Laundering Law (Amendment No. 13)(Business Service Providers), 5774–2014**, which concerns the application of an anti-money laundering and terrorism financing regime to providers of business services (attorneys and accountants). The amendment was designed to prevent abuse of business service providers who perform financial activities for their customers where such activities are done for the purpose of money laundering or terrorism financing. The amendment was drafted according to international standards in this field, including an obligation to impose said regime on these sectors. The directives will come into effect when an order enacted by the Minister of Justice comes into effect.

Amendment to the Prohibition of Money Laundering Law, 5760–2000, published on August 7, 2014, and **the Prohibition of Money Laundering (Obligations of Identification and Record-Keeping by Business Service Providers to Prevent Money Laundering and Terror Financing) Order, 5775–2014**, published on December 2, 2014, impose obligations related to the prohibition of money laundering and terrorism financing on attorneys and accountants who render certain business services to their customers, as set forth in the law.

On February 1, 2016, **the Electronic Check Clearing Law, 5775–2015**, was enacted and implementation of the law was completed on November 21, 2017. The complete implementation of the Electronic Clearing Law allows paper-based checks to be converted into digital records that will function as legal evidence, and may be retrieved at any time as necessary without the need to retain the physical check. The Electronic Clearing Law has very significant implications for the settlement process. Physical checks will be truncated at the bank where the check is presented for payment, where the checks will be photographed, and image files of the checks will be sent to the paying bank, eliminating the need to continue to retain the physical checks for years as was the

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case until now. In addition to the changes in the deposit process, the return of checks also changed. When a check is returned, the customer may: electronically request that the bank redeposit the check, if no impediment exists; request to receive from the bank a document known as “printout of digital check” that can be used as a legal substitute for the check itself, or independently print a “printout of digital check” from the website of the bank that administers the customer’s account.

On January 31, 2017, the Increasing Competition and Reducing Centralization in the Banking Market in Israel (Legislative Amendments) Law 5777–2017 was published in *Reshumot*. The law is designed to introduce amendments and addenda to the Banking (Licensing) Law and the Banking (Service to the Customer) Law in order to implement the main recommendations of the Committee to Increase Competition in Common Banking and Financial Services (the Strum Committee).⁵⁹

A subcommittee, headed by the Bank of Israel, whose members include representatives of the Antitrust Authority, the Ministry of Justice, the Ministry of Finance, and the Capital Market Authority, developed two supplementary legal memorandums—one concerning aspects of licensing and regulation, and the second on the material directives and consumer protections in the field of payment services. In July 2017, the **Payment Services Legislative Memorandum, 5777–2017**, concerning the material directives and consumer protection, was published for public comments. This legislative memorandum proposes to replace the Payment Cards Law, 5746–1981, with a comprehensive law that is consistent with the technological developments in the field. The legislative memorandum is based on European regulation, according to the principles defined by the committee. The legislative memorandum seeks to regulate two main contractual systems: (1) the contractual system between a payment service provider (issuer of a means of payment or administrator of a payment account) and a payer; (2) the contractual system between a payment service provider (acquirer or administrator of a payment account) and a beneficiary (payment recipient). Furthermore, the legislative memorandum sets out to define general directives concerning the execution of payment orders and arrangements regarding related liability. A draft of the legislative memorandum concerning aspects of licensing and regulation of

⁵⁹ See Box 1, section 1.3, Chapter 1.

payment services providers will be published for public comments by the Ministry of Finance in the future.

On August 7, 2017, the Bank of Israel published a draft of Banking Rules (Terms of Acquirer Hosting) 5777–2017.⁶⁰ These rules are designed to regulate the status and operations of hosted acquirers including the terms of hosting.

On March 12, 2018, the Knesset Plenary approved the Reduction of the Use of Cash Law, 5778–2018. The bill was placed on the government's desk according to a 2014 resolution to adopt the recommendations of the Committee to Examine Reducing the Use of Cash in Israel's Economy. The law aims to reduce the scope of Israel's black market, combat money laundering, and allow the use of advanced and efficient means of payment. Legislative work commenced in 2015, a first reading of the legislative memorandum was approved by the Knesset on March 8, 2018, and second and third readings were approved on March 12, 2018. The law determines that parties may not give or receive cash payments or non-negotiable checks over certain amounts. In addition, the use of the payment is prohibited by check, with the name of the beneficiary not explicitly stated on it. According to the law, both parties to a prohibited transaction will be subject to monetary fines and sanctions.

In addition to the aforesaid legislative amendments, the Bank of Israel has signed several agreements and memorandums of understanding with entities that are involved in the payment and settlement systems in Israel — the banking corporations, Masav, and the TASE Clearing Houses. These agreements include the **Zahav System Rules** and the **Bank Clearing House Rules**, a violation of which may cause malfunctions in the payment systems or affect their stability. The Zahav System Rules formalize the rules and arrangements for the operations of the Zahav system and the obligations of all its participants. These rules apply to all participants, and are binding on them based on their signature on the participation agreements. The rules are in effect from the date the system began operations (July 30, 2007), and are subject to ongoing revisions that the Bank of Israel manages and disseminates in revised editions that are published from time to time. The functional, technical, and operational information that appears in the rules and its appendices is confidential, and system participants and parties acting on their behalf may use such information only for the purpose of their activities in the system. **The Bank Clearing House Rules (Checks**

⁶⁰ <http://www.boi.org.il/he/BankingSupervision/DraftsFromTheSupervisorOfBanks/DocLib/11093.pdf>

and Masav) regulate the relationship between the banks, the Check Clearing House, and Masav. Changes in the Clearing House regulations are introduced by resolutions adopted by a majority of the Clearing House Committee members. The regulations and the appendices thereof defined the conditions for the structures of various settlement drafts and the forms used in the settlement process.

2. Financial Intermediaries

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

Banking Corporations – There are 18 banking corporations operating in Israel. They can be classified into three types:⁶¹ banks, foreign banks, and joint service companies (Shva and Masav). 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.⁶²

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

Credit Card Companies – In Israel, there are three companies that operate credit cards and issue five domestic and international brands.⁶³ The companies issue both bank and nonbank payment cards. In addition, they offer customers a variety of credit solutions.

⁶¹ The Banking Supervision Department uses an additional category called “financial institutions,” which includes only one institution: “Hasach”—an education savings fund.

⁶² Masav and Shva are also subject to oversight by the Payment Systems Oversight Division, under the Payment Systems Law.

⁶³ The companies are Leumicard, Isracard, and Cal—Cartisey Ashrai Le’Israel (Israel Credit Cards), and the brands are 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.

Banks in the Palestinian Authority – The members of the Banks' Clearing House include 12 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.

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, thereby supporting 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, to reduce the probability of a crisis in the foreign exchange market in Israel, and to 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 in respect of the operations of the various government ministries and auxiliary units, the calculation of interest due to interest-bearing activity in their accounts, and the issue of daily bank statements and balance confirmations.

In addition, the Bank of Israel serves as the banker for banking corporations. In this capacity, 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 surplus funds held by the banks, which are deposited at their initiative. The banks' use their current accounts at the Bank of Israel to manage their intraday and overnight liquidity. In addition, the Bank of Israel provides loans to the banks in daily auctions, as well as overnight loans and settlement services for shekel-dollar transactions.

Issuing currency⁶⁴ and regulating and managing the cash system in the economy – in order to ensure a regular supply of cash to the economy, in accordance with supply and demand.

Supervising and regulating the banking system – This is in view of the critical functions 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 primary function of the Banking Supervision Department is to protect the public interest by ensuring the stability and resilience of the banking system; ensuring fair relations between the banks and their customers, including the promotion of competition and efficiency in the banking system; securing the financial assets deposited by the public with the banks; and ensuring the continuity of the banking services rendered to the public. These functions are interlaced and are essential in establishing the public's trust in the banking system.

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 action to reduce the risks inherent in settlement. The Accounting, Payment and Settlement systems Division comprises of two departments: Accounting Department and the Payment and Settlement Systems Department.

The Payment and Settlement Systems Division is in charge of maintaining the safety, reliability, and efficiency of the payment and settlement systems, and to this end it works simultaneously in three channels:

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. As part of these operations, the Clearing House Management Unit continually monitors the operations in the systems and their users in order to identify malfunctions in advance; it resolves operating, technical and business failures of the systems or by participants; provides support to participants,

⁶⁴ Banknotes, coins, commemorative coins and special coins.

and monitors and controls shekel settlements performed by the CLS in the Zahav system. These activities require electronic links to financial institutions in Israel and overseas, which are provided by various communication interfaces and applications, including Shva, Kasefet and SWIFT.

3.2.2 Payment systems oversight

The recognition of the importance of the payment and settlement systems and the magnitude of the risks to which they are exposed has motivated central banks worldwide — including the Bank of Israel — to create systems that oversee the operations of such systems.

The Payment Systems Law establishes the Bank of Israel's authority to oversee the payment systems. It specifies, among other things, the conditions and criteria for declaring a payment system to be a controlled system or a designated controlled system that is subject to oversight authority; the tools available to the Bank of Israel in order to implement its authority, and the obligations that apply to the operator of the system. According to the Law, the Bank of Israel has the power to demand information from the payment systems and dictate changes in their modes of operation. In 2008, the Bank of Israel 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 “Credits, Debits, and Transfer of Payments” system operated by Masav, and the “Payment Card Services” and “Automated Teller Machines” systems operated by Shva to be controlled systems.

The primary function of payment systems oversight is to regulate the operations of the payment and settlement 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 operations of the payment systems and the adoption of measures to eliminate or control them. In addition, the Payment Systems Oversight Unit examines payment systems' compliance with the international principles for oversight of financial market infrastructures (PFMI).⁶⁵ These principles cover a wide range of issues, including general organizational issues, such as legal foundation and corporate governance; risk management—

⁶⁵ The Principles for Financial Market Infrastructures were published in 2012 and can be found at <http://www.bis.org/publ/cpss101a.pdf>.

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credit risks, settlement risks, liquidity risks, business risks and operating risks; operation of the system in a failure situation; accessibility of the system; and efficiency and transparency.⁶⁶

3.2.3 Implementing improvements and promoting reforms in the payment systems in Israel

The Payment Systems Policy Unit at the Payment and Settlement systems Department at the Bank of Israel works to define strategy and policy outlines in the area of payment and settlement systems, and take steps to improve the stability and efficiency of the payment system in Israel by (1) expanding the use of advanced and safe electronic means of payment by the entire population, and defining guidelines for encouraging their use; reducing the use of paper-based means of payment and promoting the use of electronic alternatives; and the reinforcement of the supporting legal framework; (2) determining and enforcing rules for the operations of the payment systems; (3) initiating forward-looking reforms to promote the payment and settlement systems and means of payment.

4. Public and Private Entities Involved in Payment and Settlement

The Council for Payment and Settlement Systems was established in 2009 as an advisory body that convenes twice a year and constitutes a forum for collaboration to promote the efficiency and stability of the payment systems in Israel; promote initiatives to implement infrastructure for payment systems; promote the use of advanced means of payment; encourage competition among participants; plan the strategy for the payment systems; monitor implementation of reforms; and share information. The Director General of the Bank of Israel heads the Council, and the Council was expanded to adjust the technological and regulatory developments to the market needs in conjunction with all the stakeholders in this field—the financial corporations, the clearing houses, the regulators, the various government ministries, etc.

The **Banks' Clearing House** includes the Paper-based (Checks) Clearing House and the Automated Clearing House (Masav). The clearing house is managed by the Clearing House Committee, headed by the Bank of Israel, and it operates according to the Clearing House Rules, an agreement between its members. These rules regulate its operations and the business and functional ties among the participants, and between the participants and the system operator.

⁶⁶ In addition to the aspects noted, the document extends the areas of responsibility of the regulatory entities (the central bank, financial market oversight entities and other regulatory authorities) when implementing these principles.

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The **Paper-based (Checks) Clearing House** is operated by the Bank of Israel, and mainly handles checks, which are currently presented only electronically. In addition, magnetized payment vouchers are also presented in the Paper-based Clearing House.

Masav (*Hebrew acronym for Banking Clearing Center*) **Ltd.** is a privately owned company that was established in 1982 and operates as a joint service company, pursuant to a license and operating permits issued by the Bank of Israel, and in accordance with an exemption from obtaining approval from the Antitrust Authority for a noncompetitive arrangement. The company provides electronic settlement services of credits and debits, operates the system that manages transitions of members among provident funds and continuing education funds, and offers services for the transfer of information between government entities and the banks.

The **TASE Clearing House** includes the Securities Clearing House, which performs the settlement of trading in securities, and Maof Clearing House Ltd. which performs settlement in the derivatives market. The Tel Aviv Stock Exchange Ltd,—a private company that was established in 1953 by banks and brokers—operates computerized trading systems for all traded securities: shares, convertibles, bonds, *makam*, ETNs, short ETNs, and options.

Shva (*Hebrew acronym for “automated bank services”*) is a private company that operates as a joint services company, in accordance with a license and operating permits issued by the Bank of Israel and in accordance with an exemption from obtaining approval as a cartel from the Antitrust Authority. The company operates in several areas: operation and management of the interbank switching network—the network of ATMs (cash withdrawals); operation and management of the nationwide credit card network—the “Ashrait” system (payment card transactions); settlement interface; and the Bank of Israel tenders network. The company operates two payment systems that have been declared as designated controlled systems—“Payment card services” and “Automated teller machines” 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 supervision of their activity. Since the Payment Systems Law came into

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effect, the ISA has also been responsible for 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 in order to facilitate effective dialogue with government authorities and with the public and private sectors on system-wide issues, with its main goal being to advance the interests of the banking sector. The Association's operations focus 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 in the Coordinating Bureau of Economic Organizations and corresponding international forums. The Association has 15 members, which include the commercial banks and foreign banks.

Chapter 4: The Payment and Settlement Systems and the Communication Systems

1. The Existing Infrastructure

The financial infrastructure in Israel includes: interbank payment and settlement systems, means of payment, and communication systems. Means of payment are reviewed extensively in Chapter 2. This chapter reviews the payment systems and the communication systems.

There are six payment and settlement systems in Israel: (a) Zahav, an RTGS-type system, which functions as the final settler for all the payment and settlement systems in Israel; (b) the Paper-based (checks) Clearing House, which handles checks and vouchers; (c) Masav, an electronic system that transfers interbank shekel transactions that are not final in real time, such as direct debits, salary payments, and tax payments; (d) Shva is a company that collects, approves, and processes all the payment card transactions in Israel, and manages the switching networks for bank ATM cash withdrawals; (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 (CLS). The shekel was added to settlement in the CLS in 2008, and thus financial entities in Israel are able to securely conduct conversion transactions with foreign financial entities.

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

2. The Payment Systems

2.1 The Zahav system

Zahav is an advanced RTGS system that ensures speed and safety to its participants at any moment in time. This type of system operates in most (advanced and developing) economies in the world, and has been operated by the Bank of Israel since July 2007.

Principles of the Zahav system

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Zahav settles payments in a single currency—the New Shekel—in real time and with finality, and functions as the final settler of all the payment systems in Israel. This is an efficient and reliable system that ensures the rapid, safe execution of payments. Settlement is completed within minutes, and after settlement is concluded, the payment cannot be cancelled, and the recipient may use the payment immediately, at no risk. The Zahav system allows the Bank of Israel to examine financial indicators that attest to the state of liquidity in the banks in real time, and therefore assists in maintaining the stability of the system's participants. Among other things, the system considerably reduces the risks involved in the operations of payment systems—both the credit and liquidity risks and participants' interdependence—and significantly reduces the systemic risk. As a result, the system makes it possible to perform transactions safely even during periods of financial uncertainty.

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 codes (Zahav numbers).

The Zahav system settles each payment order separately, and does not set off the debit transactions of the paying bank from its credit transactions. The Zahav system manages payment order in their order of their arrival (First In, First Out—FIFO). However, it also enables a participant to determine the priority for its payment orders, according to their importance and urgency. If the paying bank does not have a sufficient balance in its account at the Bank of Israel, the payment instruction is put in a queue until the balance is sufficient. The transactions in the queue are sorted according to the priority set by the participant, and according to FIFO within each level of priority.

Hours of operation and the transactions in the Zahav system

The Zahav system's hours of operation were adjusted to the banking business day.⁶⁷ On weekdays, the system is open between 7:45 and 18:30, and on Fridays and holiday eves between 7:45 and 14:00. The system supports two types of credit transactions only:

Bilateral transactions: These are orders to debit the account of the presenting participant and to credit the account of another participant. The transactions are conducted between customers of the

⁶⁷ As defined in the Banking (Service to the Customer)(Date of Credits and Debits in Checks) Order, 5752–1992.

banks, between the banks participating in settlement and also between 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 orders are received continuously during the system's hours of operation in real time. When a customer's order is received, the customer's bank branch sends a payment order to the bank's central system, and from there the order is sent directly to the Zahav system at the Bank of Israel. If the paying bank has a sufficient balance in its account with the Bank of Israel, settlement is performed immediately. The system debits the presenting bank's account and credits the account of the receiving bank.

Multilateral transactions: These are orders simultaneously performed involving multiple participants, comprising multiple debits and multiple credits. Such transactions settle the net results from other payment systems (Masav, the Paper-based Clearing House and the TASE) and orders from the Bank of Israel. Orders of this type are settled during the course of the day at predefined intervals — settlement windows — and they receive preference over bilateral payment orders. On ordinary business days there are six settlement windows, of which three are for the TASE Clearing House,⁶⁸ two are for Masav, and one is for the Paper-based Clearing House.

As noted above, in both transaction types, the debit and credit transactions are final and irrevocable.

Intraday management of 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. A bank's liquidity must be sufficient for immediate settlement of all the payment orders reaching the system during the hours of its activity. Activity in the Zahav system is conducted through a settlement account that is defined for each system participant. These accounts comprise a current account—the account in which payments are settled—and intraday credit accounts, while the balance in the settlement account comprises the balances in these two accounts. The intraday credit accounts include interest-free intraday credit that the Bank of Israel makes available to participants, who may use this credit according to their needs for that day's operation, and must repay the credit by that day's closing of the Zahav system's operations. The credit is granted against a participant's deposits at the Bank of Israel (in shekels and in

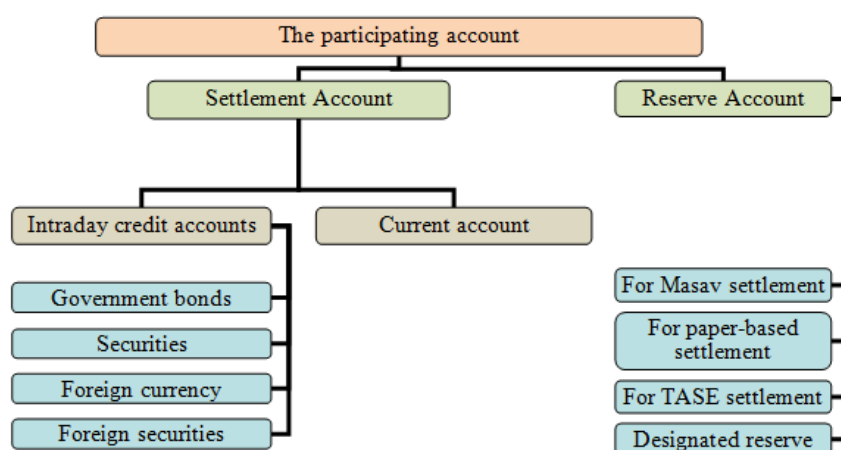
⁶⁸ On Fridays and holiday eves the TASE has two settlement windows.

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dollars) — including government bonds, foreign securities (since 2010), and collateral that is deposited in the Bank of Israel's account at the TASE.

The TASE developed the **ICS (the Intraday Credit System)**, a unique system for the Bank of Israel for managing this collateral. The Bank of Israel manages this system, while the TASE is responsible for its ongoing operations. When a participant wishes to receive intraday credit from the Bank of Israel, against collateral at the TASE,⁶⁹ the participant deposits the collateral in the Bank of Israel's account in the ICS, and is then entitled to receive intraday credit for its account in the Zahav system. Participants 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. The amount of intraday credit is determined according to a "haircut" coefficient. The action is performed in the ICS immediately, and the interface involving the banks, the TASE, and the Zahav system allows participants to view information on their credit lines and their collateral in real time. In other words, the system is updated continuously according to the balances of securities that are used as collateral for the intraday credit. These procedures are governed by an agreement between the Bank of Israel, the TASE, and Zahav system participants.

In addition to its settlement account, each Zahav participant also maintains reserve accounts that provide the liquidity required for multilateral transactions in the Paper-based Clearing House, Masav, and the TASE Clearing Houses.



⁶⁹ Government bonds, according to a list defined by the Bank of Israel and updated from time to time.

Participants in the Zahav system

The participants in the Zahav system include all of the banking corporations in Israel, the Postal Bank, CLS, the clearing houses (Masav, the TASE Clearing Houses and the Paper-based Clearing House), and the Bank of Israel. The 20 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 clearing houses, are permitted to send payment orders for settlement through the Zahav system.

There are two classes of settlement participants: online participants, which are directly connected to the system and can send and receive payment orders; and offline participants, which are not directly connected and must work through an online participant in order to transfer and receive payment orders. As of the end of 2017, there were 18 online participants and 2 offline participants.

2.2 The Banks' Clearing House

The Banks' Clearing House determines the rules for the Paper-based (Checks) Clearing House and for Masav. The Paper-based Clearing House clears paper-based drafts (checks and vouchers) while Masav clears electronic credits and debits.

The Banks' Clearing House is managed by the Clearing House Committee. The Committee has 14 members (half of whom are representatives of the Bank of Israel and half of whom are representatives of the banking system) who are appointed by the Governor of the Bank of Israel or someone authorized by the Governor. The Committee convenes at least once every quarter or more frequently if necessary, to address the issues on the agenda. The Committee publishes an annual report of its activities.

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. The Clearing House Rules govern its operations and the business and functional relations among the participants, and between the participants and the system operator. These rules are published on the Bank of Israel's website, and are updated regularly on the site in accordance with the decisions made by the Clearing House Committee.⁷⁰

⁷⁰ The Clearing House Rules are available at:
<http://www.boi.org.il/en/PaymentSystem/ActiveClearingHousesInIsrael/Pages/MislakaMain.aspx>

2.2.1 Masav

Masav is an electronic system for the clearing of interbank transactions in shekels that are not based on paper documents, such as debit authorization and payments of salaries and taxes. These are sent to Masav by the banking corporations, the Bank of Israel, and the Postal Bank.

The principles of Masav

Masav is an electronic system for the clearing of interbank transactions in shekels that are not based on paper documents. These are sent to Masav by the banking corporations, the Bank of Israel, and the Postal Bank.

Payment orders are received in Masav throughout each business day, for up to six months in advance.

Hours of operation and transactions

Masav performs two types of instructions:

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 banks and organizations (such as standing orders to debit an account).

Debit and credit orders originating with organizations that arrive by the cut-off time⁷¹ are settled at the end of the day of transfer (T) according to the value on that day. Otherwise they are settled on the next day (T+1). Interbank transfers (reconciliations between banks due to orders sent to Masav) are settled in the Zahav system on the following business day (T+1).

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

The participants submit payment orders to Masav in the form of batch files over 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 receiving the files, Masav performs a pre-

⁷¹ The two types of instructions have different cut-off times.

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clearing process (netting), 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. Before the final net sum is sent to the Zahav system, the banks are sent a projected settlement statement, to allow the banks to prepare the liquidity needed for settlement in the Zahav system in advance.

The Zahav system has two settlement windows for Masav: the first, intended for banks' settlement is at the beginning of the business day (at 10:00) and the second, for settlement of the organizations, opens toward the end of the day (at 18:00 on Sunday–Thursday and at 13:30 on Fridays and holiday eves).

Masav participants

As of December 2016, there were 26,382 organizations that participate in Masav, including banking corporations, the Postal Bank, government ministries and public institutions, as well as other settlement organizations such as the credit card companies.

Masav participants are the banking corporations and all are considered direct participants, i.e., they represent themselves.

2.2.2 The Paper-based (Checks) Clearing House

The Paper-based Clearing House settles transactions that are submitted on paper. The transactions presented by banks at the Paper-based Clearing House are for the most part checks, which are now presented and returned only electronically. In addition, magnetic drafts (also known as vouchers) are also presented at the Paper-based Clearing House.

In recent years, the Bank of Israel has promoted several modifications in the processes of the Paper-based Clearing House, including the Electronic Clearing Law and cancellation of the manual settlement session.

Hours of operation and the clearing process in the Paper-based Clearing House

The Paper-based Clearing House operates on every banking business day, including Fridays and holiday eves (with the exception of Purim eve, Independence Day eve, and Tisha B'Av eve), which allows drafts to be handled immediately at the end of the Sabbath or holiday. The list of business days is published on the Bank of Israel's website, and is updated every year.

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Through the business day or at its close (at 18:30), the banking corporations create electronic files that contain information on the drafts. At the end of each day, each bank sends the files to the other clearing house members, and sends a consolidated file to the clearing house, which represents the total credit (debit) to its account against the debits (credits) of other banks. During the night, the clearing house performs netting and creates a multilateral entry of debits and credits of the settlement participants.

This transaction is sent for settlement in the Zahav system on the next morning (T+1), in the Paper-based Clearing House window, which opens at 09:30. This procedure allows the banks' customers to benefit from the difference between the current value of the deposit day (Value on T) and the value on the date the financial settlement between the banks is recorded in the Zahav system, which is the following business day (T+1). As there is a difference of one business day between the value date recorded for the customer and the value date recorded for the bank, the Bank of Israel performs a reconciliation of interest at the end of each calendar month.

The banks may dishonor electronic and manual drafts presented to them, based on the reasons listed in the Rules (such as insufficient funds or errors in the numbers), and may return them on the business day following the date of their deposit, and no later than three business days after the date of deposit. Delays in returning drafts may occur in exceptional circumstances that are defined in the Clearing House Rules.

Participants in the Paper-based Clearing House

As of December 31, 2017, the Paper-based Clearing House has 29 members, which include the banking corporations in Israel, the Postal Bank and the Bank of Israel. Some of them operate in the clearing house directly and the rest are represented by other participants. In the settlement of electronic drafts, nine banks operate as direct participants and 20 are represented (12 of which are located in the Palestinian Authority areas).

The banks operating in the Palestinian Authority are clearing house members, and all are represented by three banking corporations in Israel (Bank Hapoalim, Discount Bank, and Mercantile Discount Bank). The Bank of Israel has two roles in the Paper-based Clearing House—as member and as operator.

2.3 The TASE Clearing Houses

The TASE has two clearing houses: The **Securities Clearing House** settles all the transactions in securities carried out on or off the stock exchange, provides services related to mutual funds and custodial services of securities, and executes payments of dividends, interest, etc. The **Maof Clearing House** settles futures and options traded on the TASE. The results of the net financial settlement of these clearing houses are settled in the Zahav system.

The principles of the TASE Clearing Houses

The TASE Clearing Houses (the TASE Clearing House and the Maof Clearing House) settle all the transactions performed on the TASE and the MTS (a trading arena for primary market makers). In other words, they transfer the securities from the sellers to the buyers, and transfer the payment from the buyers to the sellers. To reduce the risks to which buyers and sellers are subject, the clearing house functions as a central counterparty (CCP) by assuming the risk that one of the parties may default on his obligations in the transaction. All the securities are settled in the clearing house on day T+1, and the funds and securities are transferred between the buyers and sellers at that time (delivery versus payment – DVP), which is the conventional procedure used by advanced clearing houses worldwide. The TASE Clearing Houses also provide custodial services for securities: that is, they record securities in the names of TASE members through registration companies. The TASE Clearing House provides settlement services for securities while the Maof Clearing House provides settlement services for derivatives.

Hours of operations of the TASE Clearing Houses and settlement in the Zahav system

Trading on the TASE takes place on Sunday between 9:45 and 16:25, and Monday to Thursday between 9:45 and 17:25. The TASE Clearing Houses submit two types of payment orders to the Zahav system:

Bilateral orders 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 the clearing houses' activity in the Zahav system at 19:30; and

Multilateral orders, which reflect the net calculation of the banks participating in settlement. Each TASE Clearing House separately calculates the net sum of each bank in the various trading and payment activities, and sends the results to the Zahav system, where the banks' accounts with the Bank of Israel are credited and debited. These orders are settled in three settlement windows:

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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.

The participants in the TASE Clearing Houses

The members of the TASE consist of both banks and nonbanking entities, and any investor can trade on the stock exchange through them. Trading is conducted between TASE members, who submit buy and sell orders on behalf of their customers. As of the end of 2016, the TASE had 24 members: 18 banks, the Bank of Israel, and 5 nonbank members.

Most of the members of the TASE are also members of the Securities Clearing House. The Securities Clearing House has 16 members: the Bank of Israel, 10 banks, and 5 nonbank members. The Maof Clearing House has 8 bank members.

2.4 Credit card companies

The credit card companies in Israel issue payment cards to customers, which are used to pay merchants in exchange for goods or services. In addition, the companies provide merchant acquiring services for payment card transactions. There are three major credit card companies in Israel: Isracard, Leumi Card and Cal (Cartisey Ashrai Le'Israel)—Israel Credit Cards. The companies also issue international credit cards and provide merchant acquiring services for them on the basis of licenses granted by the relevant international organizations.

The significant growth in activity in this area in recent years can be attributed to several factors: payment cards (generally involving customer clubs) are now also being issued by nonbank entities; companies now offer an expanded range of credit and financing services through 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 availability and convenience of using payment cards at businesses and the option of making purchases through the Internet and on the telephone.

2.5 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—the international clearing house for currency exchange. CLS began its commercial operations in September 2002, and the

shekel was included in May 2008. The immediate implication of this step was that the CLS Bank was defined as a participant in the Zahav system. An account for the CLS Bank was opened in the system, and is used to transfer CLS payments.

Principles of CLS

CLS's operations are similar to those of RTGS systems, but instead of operating in a single currency, the CLS system simultaneously carries out settlement and exchange in multiple currencies. The daily activity in the CLS is carried out by settlement members, which provide settlement services within CLS to its customers. A bank that wishes to become a settlement member is required to hold shares in CLS and to meet various operational and financial requirements. In order to include the shekel as a qualified currency, CLS required the appointment of settlement members, as well as liquidity providers, whose function is to assist in the provision of liquidity in shekels if needed.⁷²

The CLS mechanism for the provision of liquidity through liquidity providers is set up in such way that if CLS does not have sufficient liquidity for settling transactions in a particular currency, it can require a liquidity provider to cover the shortfall in that currency, in exchange for a transfer of other currencies to its account. Essentially, this is a commitment by the liquidity provider to perform an overnight swap. It should be noted that since the shekel was included in CLS settlement, the arrangement for the provision of liquidity has not been employed.

It should be emphasized that conversion activity in Israel between the shekel and other currencies settled by the CLS is performed primarily by CLS, which reduces the settlement risks that exist in exchange transactions.

Hours of operation and settlement entries in the Zahav system

According to the arrangement with CLS, its operations in the Zahav system proceed in the following manner: The banks that have transactions with CLS are required to transmit the amount in three time slots during the day (9:00, 10:00, and 11:00), and are required to transmit the full amount no later than the final time slot. From 11:00 onward, CLS returns the amounts to the banks. At the conclusion of CLS's day of operations vis-a-vis the banks (13:00 at the latest), CLS's account in the Zahav system is zeroed out.

⁷² In Israel there are two settlement members and three liquidity providers.

Participants in CLS activities in the Zahav system

The participants in CLS activities in the Zahav system are settlement participants and liquidity providers.

2.6 Shva (Automated Banking Services)

Shva is a private company that was established in 1979 and is owned by Israel's four major banks. The firm operates as a joint services company, as defined in Section 23 of the Banking (Licensing) Law, 5741–1981, pursuant to its operating license and permits granted to it by the Bank of Israel, and in accordance with an exemption from the terms of approval of a noncompetitive arrangement from the Israel Antitrust Authority.⁷³

As a joint services company, Shva is subject to oversight by the Banking Supervision Department at the Bank of Israel. As a controlled payment system operator under the Payment Systems Law, 5768–2008, the company is also overseen by the Payment Systems Oversight Unit.

Shva operates in four main areas:

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

The ATM network is a joint nationwide network of all the banks, which enables a customer from one bank to withdraw cash from another bank's ATM in a secured manner, in a procedure that is identical to a regular withdrawal from an ATM of the customer's own bank.⁷⁴ Shva provides a number of services within the framework of operating the national ATM network: card verification, directing requests for approval, resolution of balance queries, and stand-in services.

Shva operates the ATM switch and carries out interbank switching for all ATM withdrawals by customers who withdraw cash from an ATM in a bank other than the bank that issued the payment card used for the withdrawal.⁷⁵ Communications in the ATM switch are based on a

⁷³ 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>

⁷⁴ 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.

⁷⁵ Neither on-us transactions (withdrawals from a machine belonging to the bank that issued the card) nor tourist transactions pass through Shva's ATM switch.

protocol that Shva developed and which is administered by Shva for the segment between the settling bank and the switch.

2. Operation and management of the “Ashra’it” system — the national credit card network (for payment card transactions)

Shva manages the national communications network for payment cards (“Ashra’it”), to which merchants’ POS terminals are directly connected. The network supports all types of transactions involving payment cards, and most payment cards from around the world — Visa, MasterCard, American Express, JCB, Discover (Diners) and private label cards.

Within the framework of “Ashra’it”, Shva provides several services:

Transaction approval — Shva serves as the switch that directs approval requests for domestic transactions. The company receives requests from POS terminals, identifies the merchant acquirer and issuer, transfers the request to the issuer for approval, and delivers a response to the merchant. In most cases, transactions are approved in real time. Requests for approval of transactions by tourists are transferred to the appropriate merchant acquirer, which transfers the request to the issuing bank through the relevant international organization’s switch (Visa and MasterCard), and the reply is transmitted through Shva to the merchant.

Collecting transactions — Shva collects all the transactions from a merchant in batch files transmitted to Shva, sorts and separates the transmissions by merchant acquirer, conducts tests and data processing for the acquirer⁷⁶ and transfers the transactions to Masav for clearing.

Stand-in services — Shva responds on behalf of the merchant acquirer to requests for approval, in accordance with the specifications of the confirmation tests and permissions that each merchant acquirer defined.

Additional services — Shva manages the parameters and vectors integrated into the POS terminals, which allow merchant acquirers and issuers to manage their risks; the customer club interface, which handles the discounts deducted at payment in accordance with data received from the credit card issuers; the clearing transfers that merchant acquirers transfer at their POSs, and the file of blocked cards and accounts.

Shva manages the settlement interface between the payment card companies according to rules that are defined and agreed upon in advance. The settlement interface concentrates the

⁷⁶ For example: completeness of data, errors, and duplicate transmissions.

activities of each issuer and each enquirer, and upon completing the data processing, the company issues pre-settlement reports that are sent to Masav, from which they are sent to be settled in the Zahav system. The interface administers a central database that is used for queries and supports the administration of a simple accounting control system.

Shva developed a unique protocol for the payment system in Israel (“Ashra’it 96”), based on the requirements of the credit card companies, with the aim of defining, consolidating, and managing operations involving the payment cards of various companies. The merchants’ POS terminals contain software that the manufacturers developed according to the specifications defined by Shva, and the terminals are authorized for use after Shva inspects and verifies that the software conforms to its specifications. In 2014, Shva has adapted the system to EMV standards. Completing this process enhanced the security of transactions using all credit cards and accompanying infrastructure in Israel.

3. Communications for monetary tenders

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

Shva participants

In accordance with the Banking (Licensing) Law, 5741–1981 and the operating license granted by the Supervisor of Banks to Shva, Shva may provide ATM switching services to banking entities only, and only for cash withdrawal services. Merchant acquirers and issuers are permitted to connect to the “Ashra’it” system switch and the clearing interface. The entities that are in fact connected as acquirers and issuers are the three credit card companies (Cal, Leumi Card, and Isracard).

3. Means of Communication

Payment systems transmit and share data through the following communication interfaces and designated applications:

3.1 SWIFT

The Bank of Israel began using SWIFT in 1983 in order to (a) provide banking services in foreign currency to the government (by executing payment orders and receive corresponding payments); (b) provide banking services in foreign currency to the banks (by executing transfers to and from

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overseas against the banks' foreign currency accounts at the Bank of Israel); and (c) send orders and confirmations to foreign entities following the execution of a transaction. Starting in 2007, the year in which the Zahav system began operating, SWIFT has served as the platform for the transfer of data on payment orders and other types of messages 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.

3.2 “Kasefet”

The virtual vault system enables organizations to transmit secure and encrypted information (data files) to each other via the Internet. The system provides multiple layers of data encryption and security. The information that is sent from the source to the destination organization is stored in digital safes with sophisticated access permits and controls. Each safe can be accessed only by a defined group of users who share the safe. On accessing the system, a user sees only the safes that he or she is authorized to access.

The Bank of Israel began using “Kasefet” in 2003 to electronically transfer payment orders from the Foreign Ministry to the Foreign Currency Department at the Bank of Israel. Starting in late 2004, “Kasefet” has been used to transfer most of the information between the banking corporations and the Bank of Israel (including statistical data, confidential documents, and account statements for the banks). With the establishment of the Zahav system, use of “Kasefet” was expanded in order to transfer payments to it from Masav, from the Paper-based Clearing House and from government ministries.

3.3 Shva

Shva manages the communications network between payment card companies and merchants' POS terminals. The network supports most payment cards from around the world and all types of transactions using payment cards.

The network is based on a unique protocol for the payment system in Israel (“Ashra'it”), which Shva developed according to the requirements of the credit card companies, with the aim of defining, consolidating, and managing the work method for the variety of cards issued by various companies. The merchants' POS terminals contain software that was developed according to the specification documents of the “Ashra'it” protocol.