BANK OF ISRAEL

STATISTICAL BULLETIN

2018

July 2019

Should there be updates to this publication, they will be published on the Bank of Israel's website:
www.bankisrael.org.il

Translation and design: Publications Unit, Bank of Israel

March 14, 2018

Statistical Bulletin—2018

Introduction

The Statistical Bulletin provides the public with easy, clear and friendly access to the main data and aggregates regarding financial activity in Israel. The data and aggregates in this publication have been compiled and calculated by the Bank of Israel, mostly by the Information and Statistics Department, as part of the management of information and statistics on economic activity. The information produced is used by the Bank in fulfilling its roles in accordance with the Bank of Israel Law, and helps in decision-making, economic research, and reporting to the public and to international organizations. The publication also includes explanations of the main terms and of the methodological frameworks developed at the bank, which are adapted to accepted and updated international standards.

The first part surveys the main developments of four main issues in Israel's financial statistics in 2018: The public's financial assets portfolio, nonfinancial private sector debt, the economy's activity vis-à-vis abroad, and foreign exchange activity of the main sectors. The main developments and long-term trends in the most important data in each issue area are presented through graphs, together with short text descriptions. Tables of selected indicators, a "zoom-in" focus on prominent phenomena in 2018, and definitions explaining the main terms in each topic are found at the end of each section.

The second part presents two papers on statistical methodology and the economic information used at the Bank of Israel. These papers deal with the anonymization process of itemized data, and with the measurement of external debt vis-à-vis abroad.

The publication can be accessed on the Bank of Israel website as well, in Hebrew and in English. For readers' ease, the online version has the surveys, the papers and main data compiled in separate downloadable files (Excel and PDF).

Dr. Eyal Rozen

Director of the Information and Statistics Department

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Part One

Main developments in four main areas of financial statistics in Israel in 2018

a. The Public's Financial Assets Portfolio

b. Nonfinancial Private Sector Debt

c. Economic Activity Vis-à-Vis Abroad

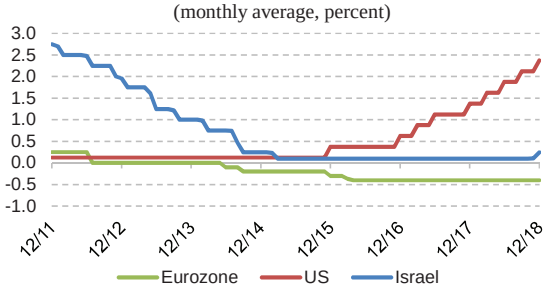
d. Foreign Exchange Activity of the Main Sectors

Financial background conditions in 2018

There were a number of main financial background conditions underlying the developments of the public's financial assets portfolio, debt of the nonfinancial private sector, economic activity vis-à-vis abroad, and activity in main segments of the foreign exchange market in 2018.

In 2018, the Bank of Israel interest rate was raised, and the increase in the federal funds rate[a] continued. The ECB Deposit Rate remained negative.

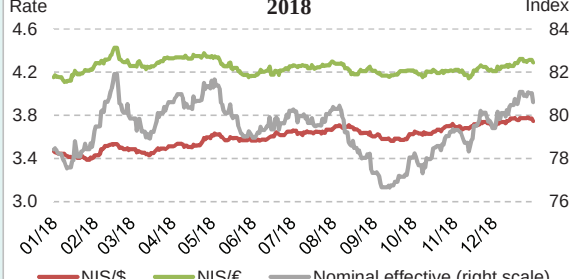
Central Bank Interest Rates, 2011–2018 (monthly average, percent)



[a] Mid-range interest rate.

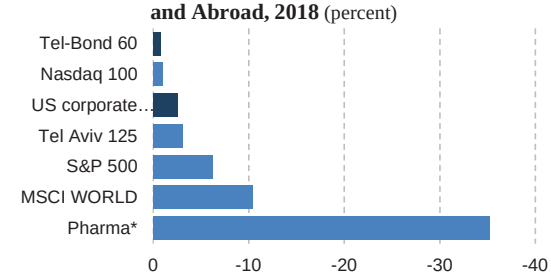
The shekel weakened against the dollar, the euro, and in terms of the nominal effective exchange rate, after appreciating in the past two years.

NIS/$, NIS/€, and Nominal Effective Exchange Rates, 2018



Overall in 2018, the main equity and bond indices in Israel and abroad declined, mainly in the fourth quarter of the year.

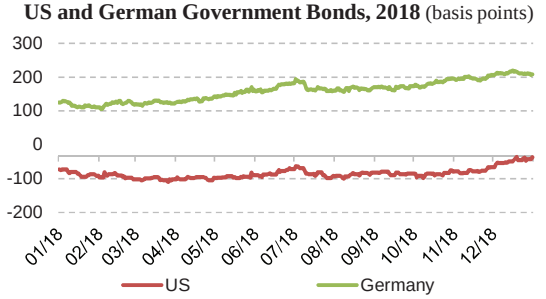
Changes in the Main Equity and Bond Indices in Israel and Abroad, 2018 (percent)



* An index calculated by the Bank of Israel, used to estimate prices changes in the shares of pharmaceutical companies traded in Tel Aviv.

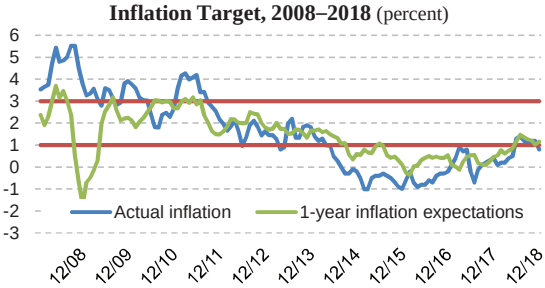
The gap between 10-year Israel government bonds and the equivalent US Treasury bills narrowed, while the positive gap with German government bonds widened.

The Gaps between 10-Year Israel Government Bonds and US and German Government Bonds, 2018 (basis points)



In 2018, inflation and one-year inflation expectations increased to around the lower bound of the target range.

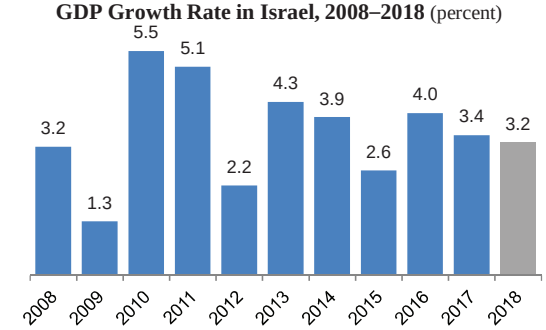
Actual Inflation[a], Inflation Expectations[b], and the Inflation Target, 2008–2018 (percent)



[a] In the past 12 months.
[b] 1-year expectations derived from the capital market.

The Central Bureau of Statistics annual growth estimate for 2018 is 3.2 percent[a]

GDP Growth Rate in Israel, 2008–2018 (percent)



[a] The official figure was published after this publication was closed.

SOURCE: Based on Central Bureau of Statistics and Bloomberg.

A. THE PUBLIC'S FINANCIAL ASSETS PORTFOLIO

The public's financial asset portfolio[1] continued to increase in 2018, but at a lower rate than in 2017. During the year, the upward trend in the portion of the portfolio managed by institutional investors continued, in conjunction with a decline in the portion of the portfolio managed directly by the public.[2]

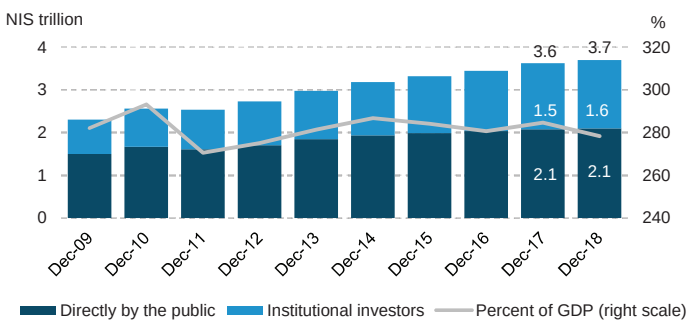
The increase in the portfolio was mainly due to the investments abroad, cash, and deposits components. The balance of investments abroad increased despite the decline in share prices, as a result of net investments and the depreciation of the shekel. Institutional investors' rate of exposure to foreign assets increased in all institutions. The balance of equities traded in Israel declined during the year, due to the sharp declines in equity prices that were prevalent in the last month of the year, most of which were corrected by price increases at the beginning of 2019.

1. TOTAL ASSET PORTFOLIO

In 2018, the increase in the asset portfolio continued, but at a lower rate than in 2017.

The public's financial asset portfolio increased by about 2.1 percent in 2018 (about NIS 76 billion), to about NIS 3.7 trillion, a lower rate of growth than in recent years. The moderate increase in the balance of the portfolio (relative to the increase in GDP) led to a decline in the asset portfolio as a share of GDP to about 278.4 percent.

Figure 1.1
The Public's Financial Asset Portfolio, 2009–18



SOURCE: Bank of Israel calculations.

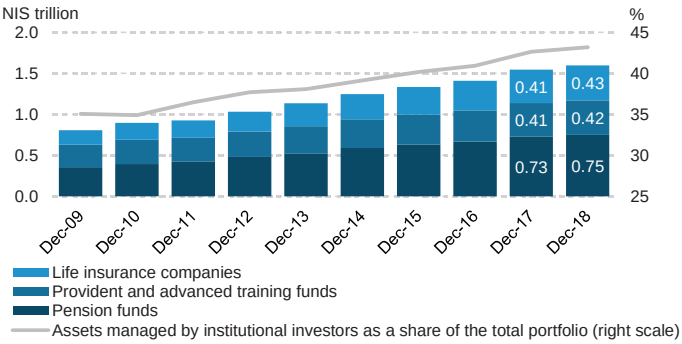
[1] See Data Sources and Main Terms at the end of the chapter.

[2] In this chapter, any reference to "directly by the public" includes data on assets held through mutual funds and portfolio managers.

The upward trend in the portion of the portfolio managed by institutional investors continued.

In 2018, the balance of assets managed by institutional investors increased by about NIS 53 billion (3.4 percent), while the balance of assets managed directly by the public increased by only about NIS 23 billion (1.1 percent). Therefore, the percentage of the portfolio managed by the institutional investors increased by about 0.6 percentage points, to about 43.2 percent of the total portfolio.

Figure 1.2
Balance of Institutional Investors' Asset Portfolio and its Share of the Total Portfolio, 2009–18



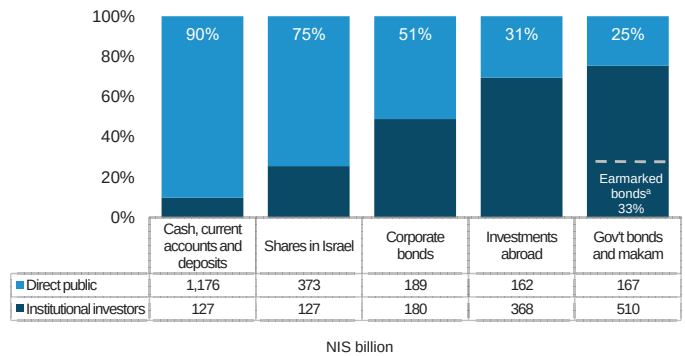
SOURCE: Bank of Israel calculations.

The background to the increase in the total portfolio managed by the institutional investors is long-term reforms—mainly the imposition of compulsory pensions for salaried employees, which began in 2008, the opening of provident funds for investment, and the "Savings for Every Child" program, which began in 2015.

There is a marked difference in the mix of assets in the portfolio, between the public's direct holdings.

The deposits and shares in Israel components are mainly held directly by the public, while holdings through institutional investors are mainly in government bonds, *makam*, and investments abroad.[3] About 33 percent of the government bonds and *makam* component is in earmarked bonds issued solely for the institutional investors.

Figure 1.3
Distribution of Holdings by Asset, December 2017



[a] Excluding assistance to the old pension funds.

SOURCE: Bank of Israel calculations.

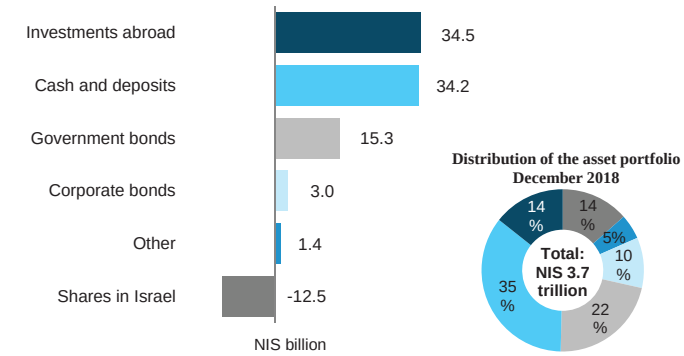
The differences in the composition of holdings reflect structural differences[4], such as access to international markets, the advantage of scale, and investment channel, among other things.

3 See Main Terms at the end of the chapter.
4 See Main Terms at the end of the chapter.

The main change in the asset portfolio was concentrated in the investments abroad and cash and deposits components.

The balance of investments abroad increased by about NIS 34 billion (7 percent), to about NIS 530 billion at the end of the year (14 percent of the total portfolio). The balance of holdings in cash and deposits also increased by about NIS 34 billion (2.7 percent), to about NIS 1,303 billion (35 percent of the portfolio).

Figure 1.4
Composition of the Change in the Asset Portfolio, 2018



SOURCE: Bank of Israel calculations.

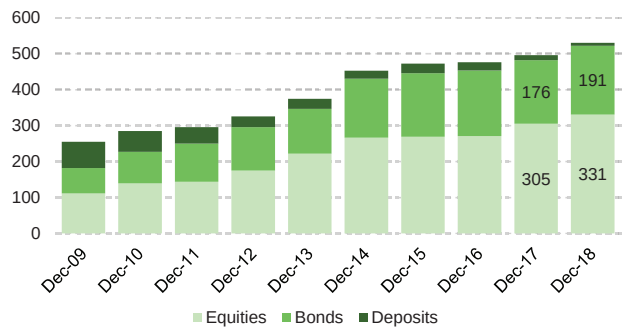
In contrast, the balance of holdings in shares traded in Israel declined by about NIS 13 billion (2.4 percent), mainly in the last month of the year, to about NIS 500 billion (14 percent of the portfolio).

2. INVESTMENTS ABROAD

The upward trend in the balance of holdings of shares and bonds abroad continued in 2018.

The balance of the public's shares abroad increased by about NIS 26 billion (about 8.4 percent) in 2018, to about NIS 331 billion, constituting 62 percent of total investments abroad. This increase was due to the depreciation of the shekel and to net investments, which were partly offset by declines in the prices of shares abroad. The balance of bonds abroad increased by about NIS 15 billion (8.2 percent), to about NIS 191 billion at the end of the year.

Figure 1.5
Balance of Investments Abroad by Investment Instrument, 2009–18
(NIS billion)

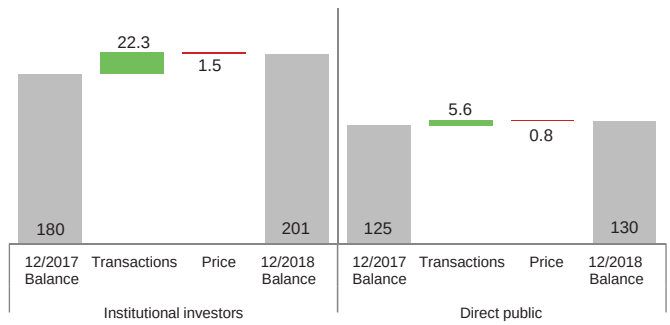


SOURCE: Bank of Israel calculations.

The increase in the balance of holdings of tradable shares abroad was characteristic of both the public's direct holdings, and holdings of the institutional investors.

Net investments[5] of about NIS 22 billion by the institutional investors, and of about NIS 6 billion directly by the public, contributed to the increase in the balance of holdings of shares abroad, to about NIS 201 billion and about NIS 130 billion, respectively.

Figure 1.6
Causes of Change[a] in the Balance of Equities Abroad, 2017 (NIS billion)



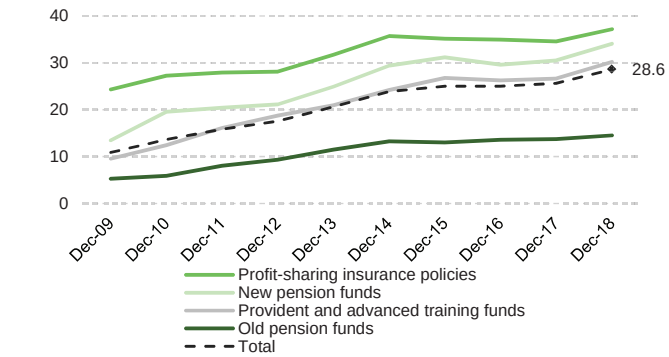
[a] The change in price includes the change in the exchange rate and other adjustments.
SOURCE: Bank of Israel calculations.

The increase in the balance of shares held by the institutional investors contributed to an increase in their exposure[6] to foreign assets.

The rate of institutional investors' exposure to foreign assets increased by about 3 percentage points in 2018, to about 28.6 percent, following stability since 2015.

The highest rate of exposure to foreign assets is among "profit-sharing" insurance companies—about 37 percent—while the lowest rate is among the old pension funds, about 15 percent.

Figure 1.7
Institutional Investors' Exposure Rates to Foreign Assets, by Type of Holder, 2009–18 (percent)



SOURCE: Bank of Israel calculations.

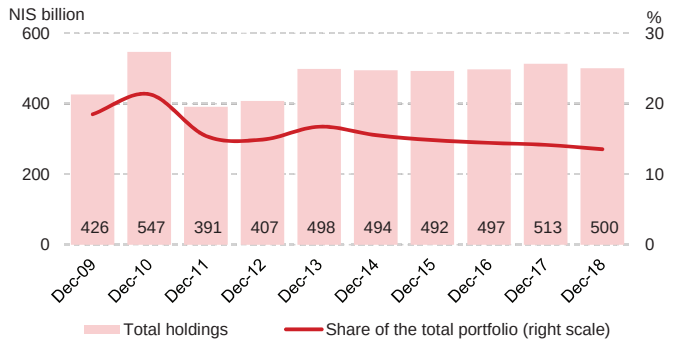
5 Estimated.
6 See Main Terms at the end of the chapter.

3. SHARES TRADED IN ISRAEL

The balance of shares traded in Israel declined: Net investments were offset, and even overtaken, by price declines.

The equity indices on the Tel Aviv Stock Exchange declined in 2018. In contrast, the public made net investments[5] of about NIS 5.5 billion in shares. This combination led to a decline of about NIS 13 billion (2.4 percent) in the balance of shares traded in Israel, to about NIS 500 billion at the end of the year.

Figure 1.8
Balance of the Public's Holdings of Shares Traded in Israel and its Share of the Total Portfolio, 2009–18



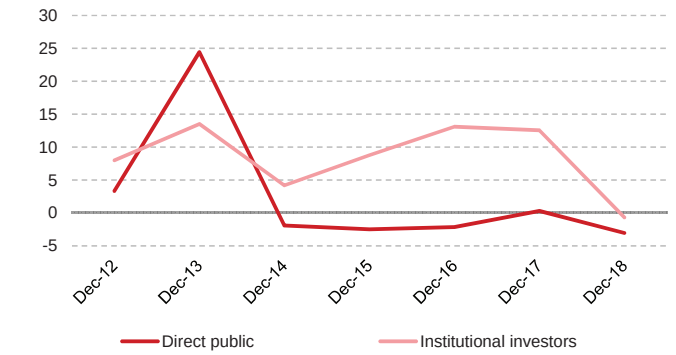
SOURCE: Bank of Israel calculations.

Since 2013, the balance of the public's holdings in shares in Israel has remained almost unchanged, and its proportion of the total portfolio declined from 17 percent to 14 percent as a result of the increase in the balance of the asset portfolio.

The balance of shares traded in Israel declined in 2018, both that of shares held by institutional investors, and that of shares held directly by the public.

The balance of shares held by the institutional investors declined by about 0.7 percent (about NIS 1 billion), to about NIS 128 billion. Likewise, the balance of shares held directly by the public continued to decline, by about 3 percent (about NIS 12 billion), to about NIS 373 billion.

Figure 1.9
Growth Rate of the Portfolio of Shares Traded in Israel, 2012–18 (percent)



SOURCE: Bank of Israel calculations.

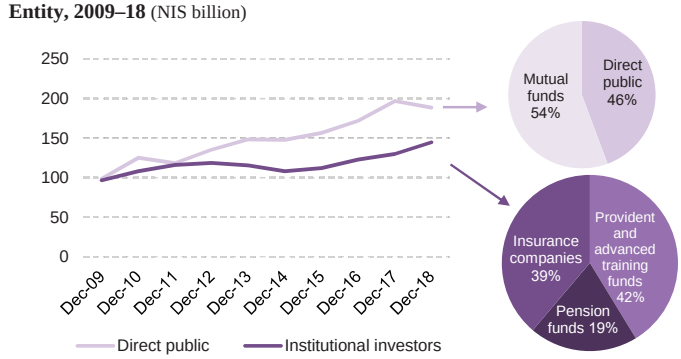
Since 2014, the growth rate of the balance of shares held in Israel directly by the public has been lower than the growth rate of the balance held by the institutional investors, and in most years it has even been negative.

4. TRADABLE CORPORATE BONDS IN ISRAEL

The increase in holdings of tradable corporate bonds in the asset portfolio continued in 2018.

The balance of tradable bonds held by institutional investors increased during the year by about NIS 15 billion (11.5 percent), to about NIS 145 billion at the end of the year. The composition of holdings among the institutional investors did not change significantly in recent years. In contrast, the balance of tradable bonds held directly by the public declined by about NIS 8 billion (4.2 percent) to about NIS 189 billion at the end of the year.

Figure 1.10
Distribution of Tradable Corporate Bond Holdings in Israel, by Managing Entity, 2009–18 (NIS billion)



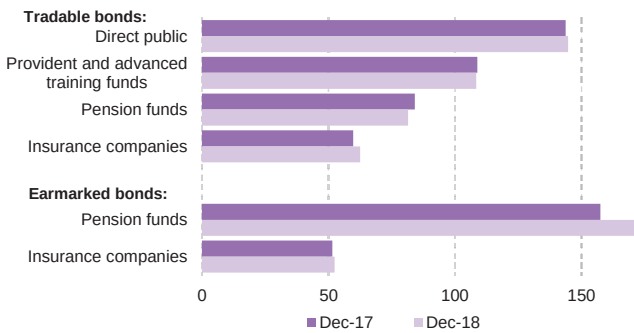
SOURCE: Bank of Israel calculations.

5. GOVERNMENT BONDS

There was no significant change in the public's holdings of tradable government bonds. The increase in holdings of earmarked bonds continued.

The balance of the public's direct holdings of government bonds increased by only about NIS 1 billion (1 percent) in 2018, to about NIS 145 billion. Among institutional investors, the main change was an increase in holdings of earmarked bonds by about NIS 14 billion (8.6 percent), in view of the increase in pension savings.

Figure 1.11
Government Bonds by Type of Holder, 2018 Compared with 2017 (NIS billion)



SOURCE: Bank of Israel calculations.

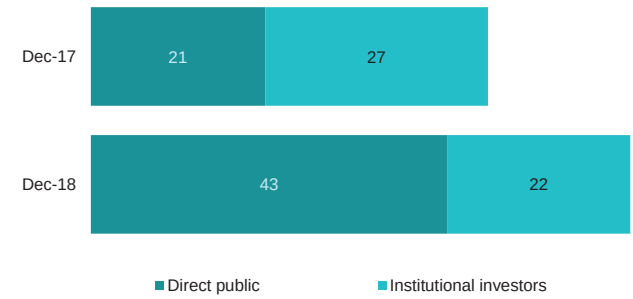
6. MAKAM

The balance of the public's holdings of *makam* increased in 2018.

The balance of *makam* held by the public (directly and through the institutional investors) increased by about NIS 17 billion in 2018, following a downward trend in recent years.

The source for the change was an increase in the volume of *makam* issuances by the Bank of Israel, and of the volume of *makam* certificates purchased directly by the public—particularly through mutual funds, in view of the regulatory change[7] regarding ETNs in the last quarter of the year.

Figure 1.12
***Makam* by Type of Holder, 2018 Compared with 2017**
(NIS billion)



SOURCE: Bank of Israel calculations.

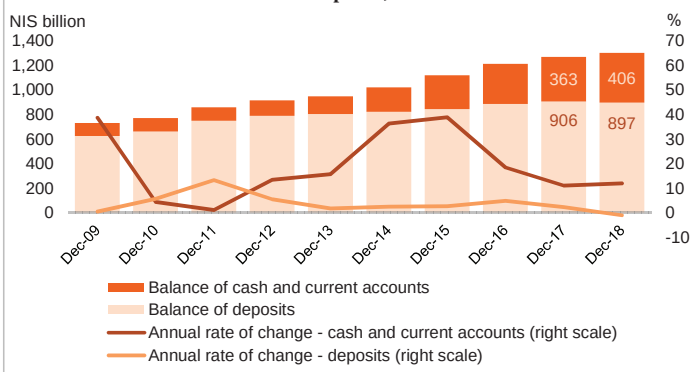
7. CASH AND DEPOSITS

The rate of increase of cash and current accounts stabilized in 2018, following a downward trend in recent years.

The balance of cash and current accounts increased by only about 12 percent (NIS 43 billion), similar to the rate of increase in the previous year. In contrast, the balance of deposits declined by about 1 percent.

The balance of cash and deposits held by the public increased by about NIS 34 billion (2.7 percent), to NIS 1,303 billion at the end of the year. About 90 percent of the balance is held directly by the public.

Figure 1.13
Balance of the Public's Cash and Deposits, 2009–18



SOURCE: Bank of Israel calculations.

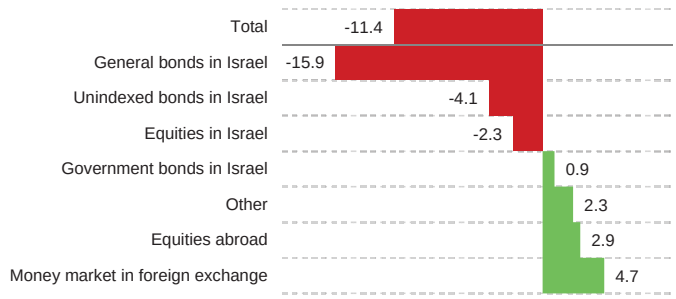
[7] For more information, see "Zoom In" on mutual funds following the reform to make ETNs into ETFs at the end of the chapter.

8. MUTUAL FUNDS – EXCLUDING ETFs

There were net deposits in mutual funds in 2018, mainly in funds specializing in "general bonds in Israel".

There were deposits of about NIS 15.9 billion in funds specializing in "General bonds in Israel", and of about NIS 4.1 billion in "Unindexed bonds in Israel". In contrast, there were net accumulations of about NIS 2.9 billion in funds specializing in shares abroad, and about NIS 4.7 billion in funds specializing in foreign currency money market funds.

Figure 1.14
Net New Investment in Mutual Funds[a], by Specialization, 2018
(NIS billion)



[a] Excluding ETFs.
SOURCE: Bank of Israel calculations.

ZOOM-IN 

MUTUAL FUNDS FOLLOWING THE REFORM TURNING ETNs INTO ETFs[1]

During the fourth quarter of 2018, the Israel Securities Authority implemented a reform in the area of ETNs, the main part of which was turning them into "ETF" type mutual funds (Amendment 28).

The objectives of the reform are:

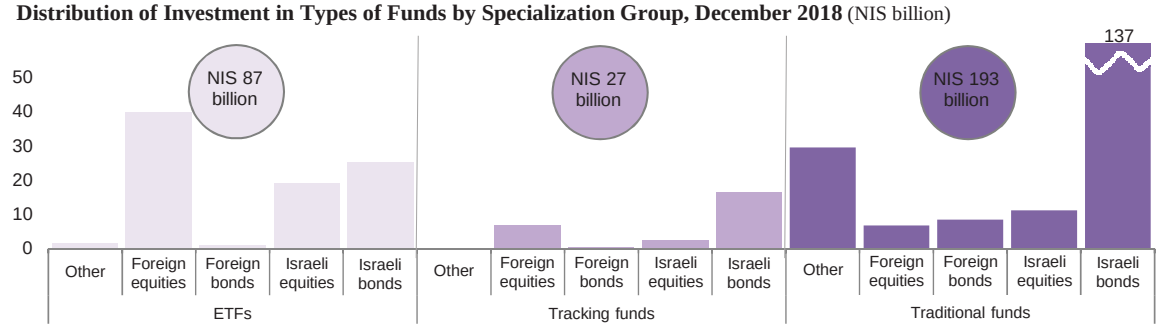
- **Closing the regulatory gap between instruments and regulating the area of ETNs in a supervised manner.** Before the reform, if there was a default, ETN investors would become part of the company's creditors, similar to investors in bonds.
- **Reducing the systemic risks in the activity of ETN companies.** Before the reform, in a situation where obligations (yield or right to convert) were not met, there was a built-in credit risk, according to the conversion formula detailed in the prospectus.

The reform created three main instruments in the world of mutual funds: a traditional fund, an index fund, and an exchange-traded fund. In a traditional fund, the fund manager works actively to select assets in accordance with the fund's investment policy. In an index fund and in an exchange-traded fund, the fund manager works to achieve returns that are as close as possible to the base asset, by purchasing assets in accordance with the base asset—**passive** investment. In a traditional fund and in an index fund, the buying and selling of units is done only with the fund manager, while in exchange-traded funds, they are done in open trading on the stock exchange.

[1] For more information on the reform planned to increase the stability of ETNs, see Box 4 of the Financial Stability Report for the first half of 2014 https://www.boi.org.il/en/NewsAndPublications/RegularPublications/Research%20Department%20Publications/Financial%20Stability%20Report/financial%20stability%20report2014.pdf; and Box 4 of the Financial Stability Report for the second half of 2018, "The Risks Implicit in the Growth of Passive Investment". https://www.boi.org.il/en/NewsAndPublications/RegularPublications/Research%20Department%20Publications/Financial%20Stability%20Report/FSR201802e.pdf

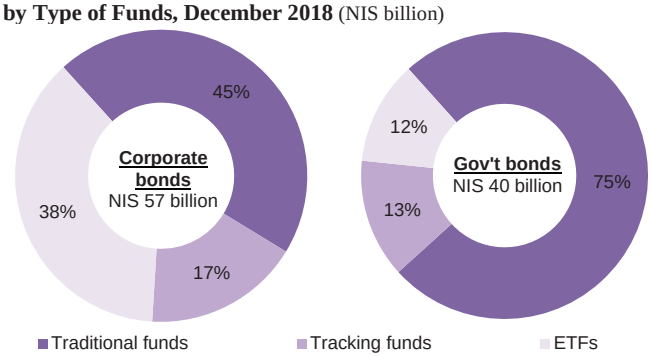
The groups specializing in Israeli bonds are prominent among traditional funds, while the groups specializing in foreign

Figure 1.15
Distribution of Investment in Types of Funds by Specialization Group, December 2018 (NIS billion)



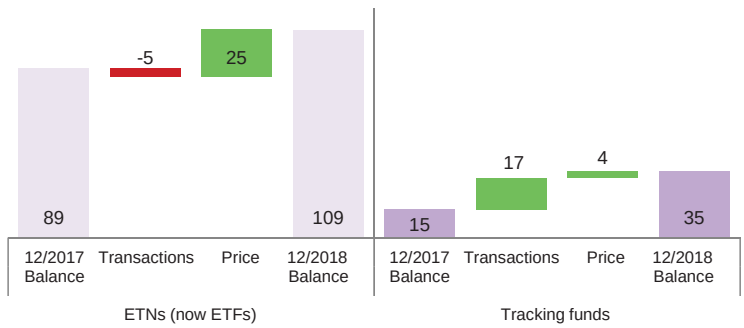
Traditional funds are prominent among those investing in government bonds, while their share of investment in corporate bonds is similar to the total of other funds.

Figure 1.16
Distribution of Mutual Funds' Holdings of Selected Groups of Bonds in Israel by Type of Funds, December 2018 (NIS billion)



There were net redemptions from ETNs (now called ETFs) in the past five years, while there were net deposits in tracking funds.

Figure 1.17
Total Factors of Change in the Tracking Funds and ETNs[a], December 2013–September 2018 (NIS billion)



[a] Excluding Certificates of Deposit (CODs).

SOURCE: Bank of Israel.

Main indicators in the public's asset portfolio (percent)							
		2013	**2014**	**2015**	**2016**	**2017**	**2018**
The public's asset portfolio							
Volume of the portfolio	Value of the public's asset portfolio (NIS billion)	**2.98**	**3.18**	**3.32**	**3.44**	**3.62**	**3.70**
	The asset portfolio as a percentage of GDP	281.4	286.7	284.2	280.6	284.7	278.4
Risks and liquidity	Tradable assets	52.9	52.8	50.4	49.0	48.9	49.0
	Risk assets[a]	42.2	41.8	41.7	41.7	42.5	42.5
	Assets abroad[b]	12.6	14.2	14.2	13.8	13.7	14.3
	Foreign exchange assets[c]	18.2	20.8	20.7	20.5	20.2	21.3
	Unindexed assets[d]	68.5	70.0	70.6	71.0	71.3	71.9
	Liquid assets[e]	26.5	28.0	28.4	29.1	29.0	29.5
The portfolio managed directly by the public and through mutual funds							
As a share of the total asset portfolio		**61.0**	**59.9**	**59.1**	**58.1**	**56.1**	**55.7**
Risks and liquidity	Tradable assets	51.8	51.8	48.9	46.4	46.2	46.5
	Risk assets[a]	38.9	37.9	37.6	36.4	37.0	34.9
	Assets abroad[b]	9.3	10.3	10.2	9.5	9.1	8.1
	Foreign exchange assets[c]	17.3	19.6	19.3	18.9	18.2	18.0
	Unindexed assets[d]	84.3	86.1	86.9	88.1	88.7	89.5
	Liquid assets[e]	39.4	41.8	42.3	44.5	45.3	47.1
The portfolio managed by institutional investors[h]							
As a share of the total asset portfolio		**39.0**	**40.1**	**40.9**	**41.9**	**43.9**	**44.3**
Risks and liquidity	Tradable assets	54.6	54.3	52.6	52.6	52.3	52.3
	Risk assets[a]	47.5	47.7	47.6	49.2	49.5	52.1
	Assets abroad[f]	17.7	20.1	20.0	19.8	19.6	22.2
	Foreign exchange assets[g]	19.6	22.5	22.7	22.8	22.8	25.5
	Unindexed assets[d]	43.8	46.0	47.0	47.4	49.0	49.9
	Liquid assets[e]	6.4	7.3	8.4	7.6	8.2	7.5

[a] Total assets excluding government bonds, *makam*, deposits in Israel and abroad, and cash.

[b] Israelis' investments abroad..

[c] Assets indexed to foreign currency + shares abroad.

[d] All assets excluding CPI-indexed assets.

[e] Cash, deposits of up to one year in Israel, and *makam*.

[f] Investment in deposits and Israeli securities abroad, excluding investment in ETNs traded in Israel on foreign indices. This definition differs from the exposure to foreign exchange and the exposure to foreign securities definitions

[g] Holdings of assets denominated in foreign currency and assets indexed to foreign currency, excluding shekel/forex assets.

[h] Investments by institutional investors as a share of the total asset portfolio. Excludes investments in ETNs, structured bonds, certificates of deposit, and mutual funds.

SOURCE: Bank of Israel.

DATA SOURCES AND MAIN TERMS

The Bank of Israel Information and Statistics Department manages a database of balances in the public's financial asset portfolio. This system records and processes data and information from various sources, through which the balance of the public's financial assets portfolio is calculated according to various breakdowns. The sources of data in the system are: the Tel Aviv Stock Exchange; banking system reports to the Banking Supervision Department; institutional investors' reports to the Ministry of Finance and to the Bank of Israel; direct reports from large Israeli corporations to the Bank of Israel on their activity vis-à-vis nonresidents; reports by banks and other financial intermediaries to the Bank of Israel regarding nonresidents' holdings of Israeli financial assets; and the Ministry of Finance.

The public's financial asset portfolio includes the assets of households and of the business sector (financial and nonfinancial firms). The portfolio does not include the government's assets or those of the Bank of Israel, nonresidents, or the banks. Management of the asset portfolio can be divided into two types, which differ in how they are managed.

- **The asset portfolio directly managed directly by the public**—The stock of financial assets, including cash and deposits, tradable and nontradable securities, and index products, held directly by the public and by portfolio managers or mutual funds.
- **The asset portfolio managed by institutional investors on behalf of the public**—The public's long-term savings managed by the institutional investors. These institutions include the provident funds and severance funds, advanced training funds, old and new pension funds, and life insurance policies managed by the insurance companies (excluding the insurance companies' nostro portfolio, which they manage on their own behalf). The public's savings in these channels are invested in tradable and nontradable securities and in other instruments, according to the investment guidelines of each entity.

The composition of the public's financial assets portfolio reflects the decisions of the public and of the institutional investors, mainly according to considerations of yield, risk and liquidity, based on their expectations of future developments in the capital and money markets. The division of the asset portfolio into two—assets managed directly by the public and assets managed by the institutional investors on behalf of the public—reflects a number of structural differences, including: (1) Control—The public has full and ongoing control over the size of investment and the composition of assets held directly by it, compared with only partial and infrequent influence on the composition of assets held by the institutional investors; (2) Range—In general, the public directly holds assets for a short-to-medium term, while the institutional investors hold assets for a longer term, which affects the liquidity and risk profiles of the assets; (3) Expertise—The institutional investors specialize in the management of financial assets and in regularly monitoring and analyzing a broad range of information on the assets, the issuing entities, and the relevant

environment in Israel and abroad. In contrast, only some of the portfolio held directly by the public is managed by experts; (4) The institutional investors have the advantage of scale.

- **Exposure to foreign assets**[1]—The monetary amount at risk in the case of a decline in the value of assets issued by nonresidents (mostly assets held abroad). Investment in foreign assets and in foreign economies creates exposure to crises that may erupt in those economies and to other changes that have a negative impact on the value of the securities.
- **Investments abroad**—The balance of assets invested outside of Israel. This definition includes holdings of securities issued abroad by Israeli companies, and does not include holdings of foreign assets in Israel.
- **Cash and current accounts**—Cash is calculated as the total money (banknotes and coins) issued by the Bank of Israel and in circulation, minus cash in the hands of the banks. This item may also include cash in the hands of nonresidents, but the assumption is that this latter amount is low. Current accounts are demand deposits in shekels (excluding nonresidents' current accounts in shekels).
- **Deposits**—Funds of Israeli customers at banks, which generate yields and can be withdrawn at points in time depending on the type of plan. The deposits are categorized as follows: (1) Savings plans—plans that are structured for the customer's needs, by various ranges and indexations; (2) Self-renewing Overnight Deposit (SRO)—a deposit that enables deposits and withdrawals every business day subject to the restriction that the principal amount shall not be less than the amount set by the bank; (3) Fixed-term deposit—allows for the withdrawal of the deposit after a preset period. Such a deposit generally has a yield of fixed-rate interest; (4) CPI-indexed deposit; (5) Foreign exchange-indexed deposit; (6) Foreign currency deposit—a foreign exchange deposit by Israelis in Israeli banks. This can be managed as a current account or as a deposit.
- **Mutual funds**—A financial instrument, the objective of which is to jointly invest in securities and generate joint profits from such holdings and transactions. Each fund is comprised of units, each of which grants an equal right to the fund's assets and profits. Units can be bought and sold through the fund manager, and for certain types of fund, through continuous trading on the stock exchange. The Israeli Securities Authority has set out a list of relevant classifications, from which a fund manager selects the most appropriate classification for each fund under his management, considering the fund's investment policy. The classification titles[2] characterize the type of fund and the nature of investment in it, and help the investor understand its investment channels. The classification titles are divided into three levels—overall, main, and secondary titles. The overall title reflects the investment channels or methods of managing the investments in the fund, for instance equities, bonds, or money market. The main title reflects the specialization of the fund, such as an equity fund in Israel or a government bond fund. The secondary title reflects the specific investment channel upon which the fund focuses, for instance, Tel Aviv 35 Index.

[1] For further details of the definitions, terms and explanations, see "Measuring Institutional Investors' Exposure to Foreign Exchange and to Foreign Assets" in Chapter 2 of the Statistical Bulletin for 2016.

[2] For more information on definitions, see the Israel Securities Authority (in Hebrew): http://www.isa.gov.il/%D7%92%D7%95%D7%A4%D7%99%D7%9D%20%D7%9E%D7%A4%D7%95%D7%A7%D7%97%D7%99%D7%9D/Mutual_Funds/Principles%20and%20rules%20for%20determining%20the%20classification%20where%20the%20Fund/2414/ Pages/default.aspx

B. NONFINANCIAL PRIVATE SECTOR DEBT

The outstanding debt of the nonfinancial private sector[1] continued to increase in 2018, by about 6 percent—significantly higher than in the previous year (2.9 percent). This increase was mainly due to a quantitative increase in the debt of both the business sector and households, and partly due to the shekel's depreciation against the dollar, which increased the shekel value of the debt denominated in and indexed to foreign currency.

The business sector debt to GDP ratio increased this year, while the household debt to GDP ratio remained virtually unchanged.

The business sector's outstanding debt increased at a higher rate than in the previous year (6.8 percent compared with 1.5 percent). The growth rates of both debt to banks and debt to nonbank entities increased this year.

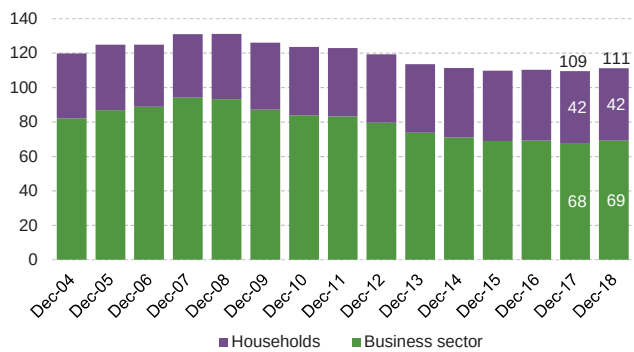
The increase in outstanding household debt continued this year, but at a lower rate than the previous year (4.9 percent compared with 5.2 percent), continuing the slowdown in growth that began in 2015. The decline in the growth rate of nonhousing debt was prominent, a result of the decline in debt to banks and moderation of the growth of debt to nonbank entities.

1. NONFINANCIAL PRIVATE SECTOR (BUSINESS AND HOUSEHOLD) DEBT

The private sector debt to GDP ratio increased in 2018, most of which took place in the business sector debt to GDP ratio.

The business sector debt to GDP ratio increased in 2018 by about 1.5 percentage points, to about 69 percent at the end of the year. The household debt to GDP ratio remained virtually unchanged at about 42 percent. Both of these ratios are low by international comparison.[2]

Figure 2.1
Outstanding Nonfinancial Private Sector Debt, 2004–18 (percent of GDP)



SOURCE: Bank of Israel and Central Bureau of Statistics.

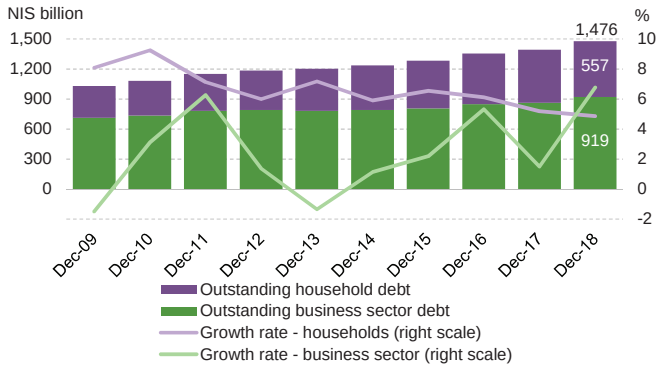
[1] This section deals with the debt of the nonfinancial business sector to the main lenders (banks, institutional investors and nonresidents), and does not include debt to other lenders (such as private credit companies). For further details, see the explanation in Main Terms at the end of the section. Data on the debt to banks are based on monthly balance-sheet data and not on data from the annual financial statements, since the statements for 2018 have not yet been published.

[2] For more information, see "Zoom In" at the end of this section.

The increase in the outstanding private sector debt, both business sector debt and household debt, continued.

Outstanding private sector debt increased by about NIS 84 billion (6 percent), to about NIS 1.5 trillion. Outstanding business sector debt increased by a higher rate than in the previous year (6.8 percent compared with 1.5 percent), and at a higher rate than household debt. The increase in household debt continued, but at a lower rate than in the previous year (4.9 percent compared with 5.2 percent), continuing the slowdown that began in 2015.

Figure 2.2
Annual Growth Rate of Outstanding Nonfinancial Private Sector Debt, 2009–18

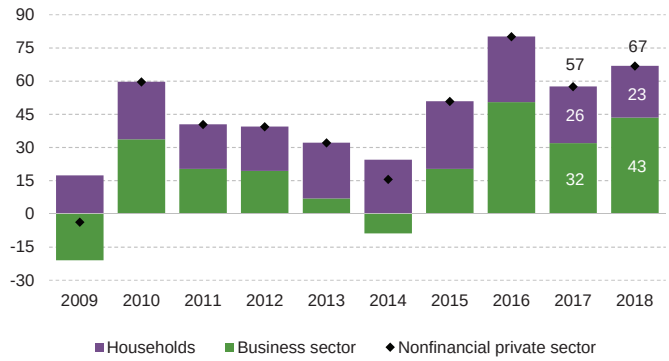


SOURCE: Bank of Israel.

The increase in outstanding private sector debt was mainly due to a net quantitative increase[3] in both borrower sectors.

The net quantitative increase of business sector debt totaled about NIS 43 billion—higher than that of households (NIS 23 billion). The net quantitative increase of business sector debt was higher this year than in the previous year, while that of households was lower than in the previous year.

Figure 2.3
Estimated Annual Net Quantitative Change in Nonfinancial Private Sector Debt, 2009–18 (NIS billion)



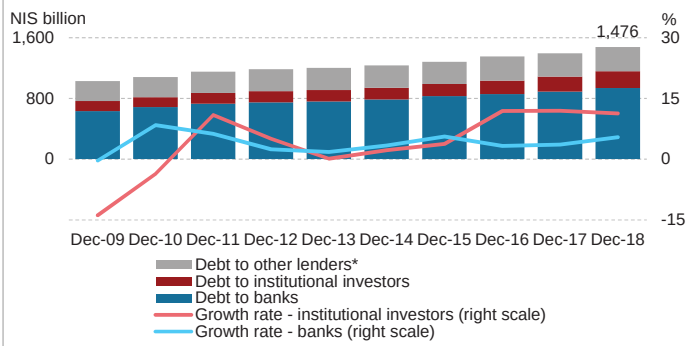
SOURCE: Bank of Israel.

[3] See the Main Terms at the end of the section.

The growth rate of private sector debt to institutional investors remained higher than that of its debt to the banks. However, outstanding debt to the institutional investors is low.

Outstanding private sector debt to the banks and to institutional investors continued to increase this year, to about NIS 1.2 trillion. About 63 percent of total private sector debt is to the banks, and about 15 percent is to institutional investors.

Figure 2.4
Outstanding Nonfinancial Private Sector Debt by Lenders and Growth Rates, 2009–18



* Other lenders: Nonresidents, credit card companies, earmarked credit from the government, and households and others.

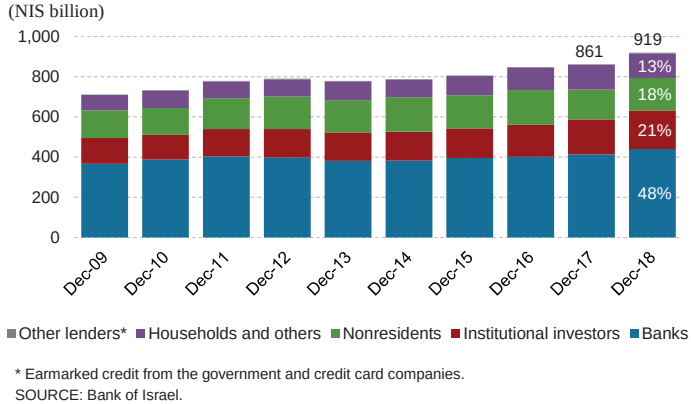
SOURCE: Bank of Israel.

2. NONFINANCIAL BUSINESS SECTOR[4] DEBT

The upward trend in business sector debt continued in 2018 to all lenders, mainly in debt to the banks and institutional investors.

The balance of business sector debt increased by about NIS 58 billion, to about NIS 919 billion. Half of the increase was in debt to banks, which accounts for about 48 percent of total business sector debt. The increase in business sector debt to the institutional investors continued (about NIS 18 billion), to about NIS 192 billion. Debt to nonresidents increase by about 9 percent (about NIS 13 billion), to about NIS 162 billion.

Figure 2.5
Outstanding Nonfinancial Business Sector Debt by Lender, 2009–18
(NIS billion)



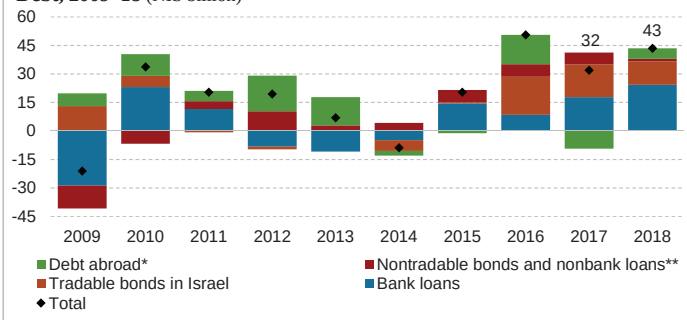
* Earmarked credit from the government and credit card companies.

SOURCE: Bank of Israel.

[4] Any place where the term "business sector" appears, it refers to the nonfinancial business sector (excluding banks and insurance companies).

The increase in outstanding business sector debt was mainly a result of a net quantitative increase in bank loans and in tradable bonds in Israel. The net quantitative increase of total debt came to about NIS 43 billion, of which about NIS 24 billion was in bank loans—continuing the quantitative growth in this channel from previous years. There was also net quantitative growth in nonbank debt, both in tradable bonds in Israel and in loans from nonresidents.

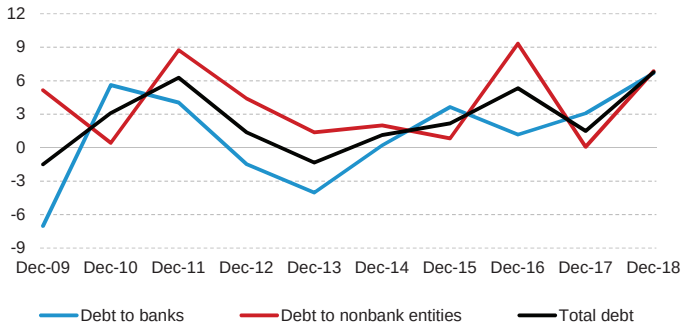
Figure 2.6
Estimated Net Yearly Quantitative Change in Nonfinancial Business Sector Debt, 2009–18 (NIS billion)



* Total Israeli bonds abroad and loans from nonresidents.
** Including direct loans from institutional investors.
SOURCE: Bank of Israel.

The growth rates of both debt to the banks and debt to nonbank entities increased this year.
Debt to nonbank entities increased by a significant rate of about 6.8 percent, following a near-zero growth rate in the previous year. The growth rate of debt to banks also increased, to about 6.7 percent compared with about 3.1 percent in the previous year.

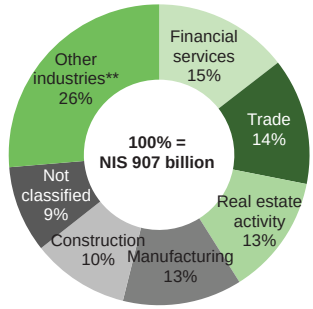
Figure 2.7
Annual Growth Rate of Nonfinancial Business Sector Debt, 2009–18 (percent)



SOURCE: Bank of Israel.

About one-quarter of business sector debt is concentrated in the real estate activities and construction industries. Most of the debt of companies in these industries was provided through bank loans. The debt of the financial services industry accounts for about 15 percent of total business sector debt, while the debt of the trade industry accounts for about 14 percent. The debt of the manufacturing industry accounts for about 13 percent.

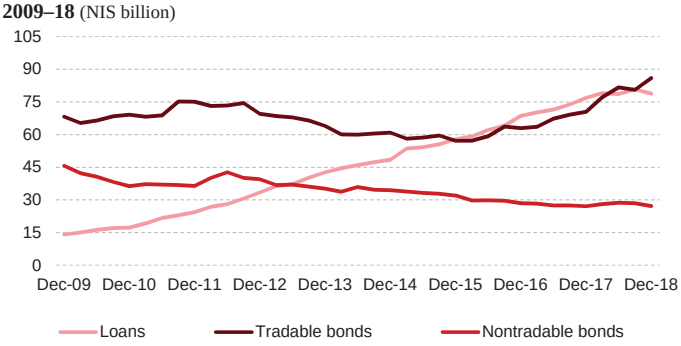
Figure 2.8
Distribution of Nonfinancial Business Sector Debt by Industry*, Sept. 2018



* According to Central Bureau of 2011 Statistics industry classification.
** Other industries: Combination of industries where each industry's share of total business sector debt is less than 5 percent .
SOURCE: Bank of Israel, Central Bureau of Statistics.

The increase in business sector debt to the institutional investors continued, mainly through tradable bonds. Outstanding business sector debt to the institutional investors increased by about 10 percent (about NIS 18 billion), to about NIS 192 billion. Debt through tradable bonds increased by about NIS 15 billion to about NIS 86 billion. The balance of direct loans increased by about NIS 2 billion to about NIS 79 billion. Outstanding debt through nontradable bonds remained virtually unchanged at about NIS 27 billion.

Figure 2.9
Nonfinancial Business Sector Debt to Institutional Investors, by Instrument, 2009–18 (NIS billion)

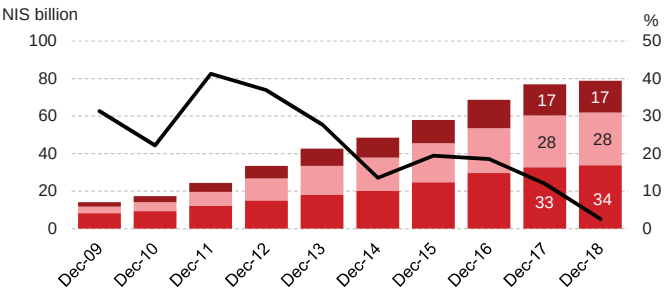


SOURCE: Based on reports from the institutional investors.

The moderation in the growth rate of outstanding direct loans taken by the business sector from institutional investors continued.

Outstanding business sector loans from all institutional investors combined increased by only about 2.6 percent, compared with a growth rate of about 12 percent in the previous year. In the division by type of institutional investor, the insurance companies remained prominent at about 43 percent of total loans.

Figure 2.10
Outstanding Direct Loans to the Nonfinancial Business Sector by Institutional Investors, by Type of Institution, and Yearly Growth Rate, 2009–18



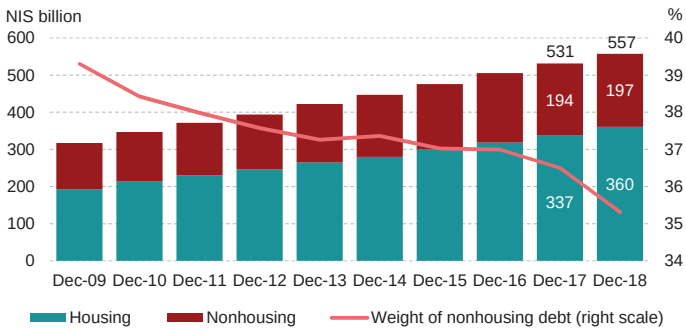
SOURCE: Based on reports from the institutional investors.

3. HOUSEHOLD DEBT

The increase in outstanding household debt, both housing and nonhousing, continued in 2018.

During the year, outstanding household debt increased by about NIS 26 billion (4.9 percent), to about NIS 557 billion. Housing debt increased by about NIS 23 billion, to about NIS 360 billion. Nonhousing debt increased by only about NIS 3 billion, and its share of total debt continued to decline (by about 1.2 percentage points) to about 35 percent.

Figure 2.11
Outstanding Household Housing and Nonhousing Debt, and Nonhousing Debt as a Share of Total Debt, 2009–18

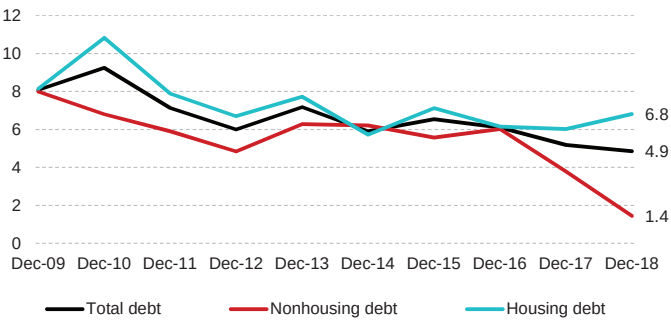


SOURCE: Based on reports from the institutional investors.

The decline in the growth rate of nonhousing debt, which began at the end of 2016, continued.

The growth rate of nonhousing debt declined by about 4.6 percentage points, to about 1.4 percent. The growth rate of housing debt increased by about 0.8 percentage points, to about 6.8 percent.

Figure 2.12
Annual Growth Rate of Household Debt, Housing and Nonhousing, 2009–18
(percent)

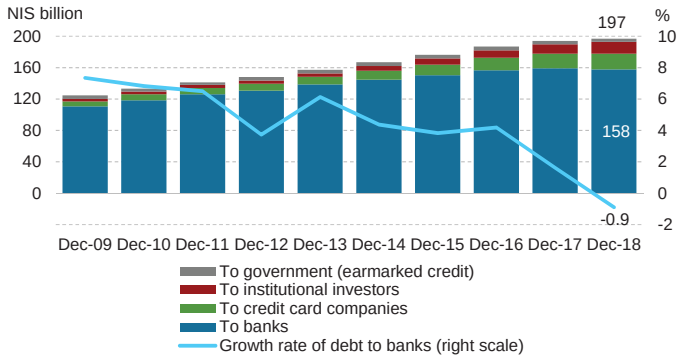


SOURCE: Bank of Israel.

Households' nonhousing debt to the banks declined this year.

The decline in nonhousing debt to the banks came to about NIS 1 billion, continuing the downward trend in its growth rate that began at the end of 2016. Even so, the banks remain the main lenders to households. Outstanding nonhousing debt to the banks totaled about NIS 158 billion at the end of the year, accounting for about 80 percent of total nonhousing debt. In contrast, outstanding nonhousing debt to other lenders increased by about NIS 4 billion, mostly (about NIS 3 billion) to institutional investors.

Figure 2.13
Households' Nonhousing Debt by Lender, and Growth Rate of Nonhousing Debt to Banks, 2009–18

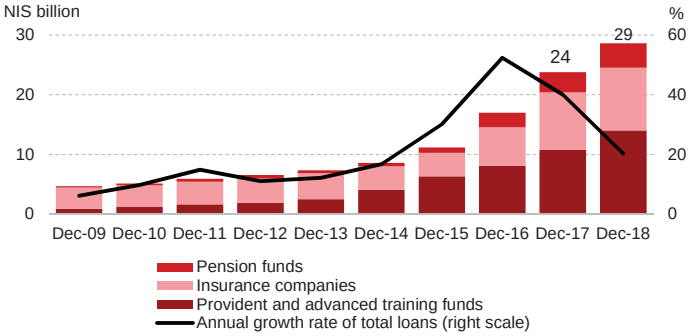


SOURCE: Bank of Israel.

The increase in the balance of institutional investors' loans to households continued, although at a lower rate than in recent years.

Total household debt to institutional investors increase by about 20 percent in 2018, a lower increase than in recent years. Outstanding debt to these lenders increased by about NIS 5 billion to about NIS 29 billion—about 5 percent of total household debt. The increase was mainly concentrated in loans from the provident and advanced training funds.

Figure 2.14
Outstanding Loans to Households by Institutional Investors, by Type of Institution, and Yearly Growth Rate, 2009–18



SOURCE: Based on reports from the institutional investors.

ZOOM-IN

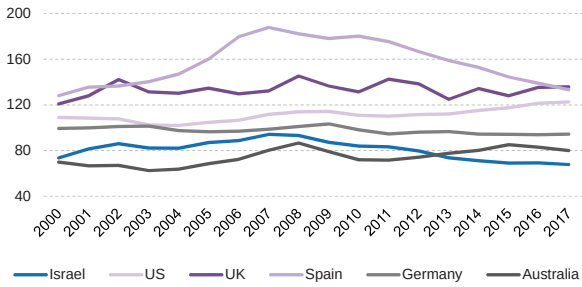
OUTSTANDING NONFINANCIAL PRIVATE SECTOR DEBT—INTERNATIONAL COMPARISON[1]

The nonfinancial business sector's share of total nonfinancial private sector debt ranges between 60 and 80 percent in most of the selected countries. In Israel it is 62 percent.

Figure 2.15
Distribution of Outstanding Nonfinancial Private Sector Debt by Borrower Segment (percent)

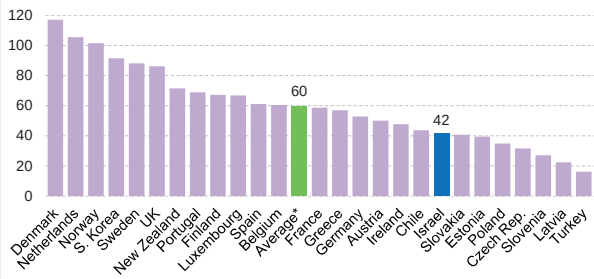
Nonfinancial business sector debt as a share of GDP in Israel is low compared to other countries over the years.

Figure 2.16
Nonfinancial Business Sector Debt as a Share of GDP, 2000–17 (percent)



Household debt as a share of GDP in Israel is lower than the average of selected countries.

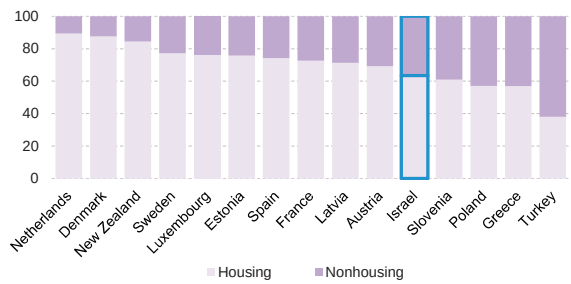
Figure 2.17
Household Debt as a Share of GDP, 2017 (percent)



* Simple average of the countries presented in the figure.

Housing debt as a share of total household debt in Israel is low by international comparison, at about 64 percent.

Figure 2.18
Distribution of Outstanding Housing and Nonhousing Household Debt, 2017 (percent)



[1] The countries were selected according to data availability.
The business sector in the Israeli data in these figures includes the financial services industry.
SOURCE: Israeli data—Bank of Israel estimates and calculations; Data on other countries—Based on OECD data.

Main indicators of private sector debt							
	2012	2013	2014	2015	2016	2017	2018
Nonfinancial business sector debt							
Outstanding debt (NIS billion, end of period)	790	779	788	806	848	861	919
Estimated net quantitative change (NIS billion, yearly cumulative)	19	7	-9	20	50	32	43
Percentage of nonbank debt (end of period)	50	51	52	51	53	52	52
Percentage of tradable debt (end of period)	23	23	24	23	24	25	25
Business sector debt to GDP ratio (end of period)	80	74	71	69	69	68	69
Household debt							
Total household debt (NIS billion, end of period)	394	422	447	476	505	531	557
Estimated net quantitative change, net credit taken out (NIS billion, yearly cumulative)	20	25	24	31	30	26	23
Percentage of housing debt (end of period)	62	63	63	63	63	64	65
Total new mortgages taken out (NIS billion, yearly cumulative)	47	52	52	65	59	53	60
Household debt to GDP ratio (end of period)	40	40	40	41	41	42	42

SOURCE: Bank of Israel.

DATA SOURCES AND MAIN TERMS[1]

The Bank of Israel Information and Statistics Department manages a database of activity in the credit market. The Department gathers data and information from reports and other sources, processes them into an overall consistent dataset, and calculates the economy's credit aggregates by various segmentations. The data sources are reports from the banking system to the Banking Supervision Department; quarterly financial statements by the credit card companies; reports from institutional investors to the Ministry of Finance and the Bank of Israel; the Tel Aviv Stock Exchange; direct reports from large Israeli corporations to the Bank of Israel regarding their activity vis-à-vis nonresidents; reports by the banks and other financial intermediaries to the Bank of Israel regarding nonresidents' holdings of Israeli financial assets; and the Ministry of Finance.

The nonfinancial private sector is comprised of the business sector (Israeli commercial firms that are not banks or insurance companies) and households. This section focuses on the nonfinancial private sector's debt to the main lenders (banks, institutional investors and nonresidents), and does not include debt to other lenders (such as private credit companies). The assessment is that the volume of other lenders' activity is small relative to that of the main lenders, and they are not currently included in the aggregates due to a lack of data. Gathering such data is expected to increase after data collection by the Capital Market, Insurance and Savings Authority, which is responsible for granting licenses to credit providers under the Supervision of Financial Services Law (Regulated Financial Services), 5776–2016, is completed, and after the credit data register is established and activated by the Bank of Israel in accordance with the Credit Data Law, 5776–2016.

Outstanding debt shows the stock of credit (positions, stocks) from the point of view of the borrower at a given point in time. The value of the debt does not depend on the market value of the bond or the value of the loans in the lenders' books. Therefore, outstanding bonds are presented at adjusted par value and outstanding loans are presented before deduction of loan loss provisions in the lenders' books (such as doubtful or problematic debt provisions in the banks' balance sheets).

Estimated net quantitative change, quantitative increase/decrease of debt, is the change in outstanding debt, which shows economic activity in the credit market. The change in outstanding debt is influenced by net debt issuance (new credit raised, such as taking a loan or issuing bonds, minus repaid credit, such as repaid loans or repayment of bonds), by payment and accumulation of interest, by price changes (such as a change in the Consumer Price Index for CPI-indexed debt), and by other factors. Since direct data on each of these components is absent, an "estimated net

[1] For more details on the definitions, terms and explanations, see "The Credit Data System in Israel" in the second part of the Statistical Bulletin for 2015.

quantitative change" is calculated from data on outstanding debt. The estimated quantitative change during a given period is calculated as the difference between outstanding debt at the end of the period and the outstanding debt at its beginning, minus relevant price changes. Since the estimated net quantitative change is derived from balances, it includes other effects on the balance beyond net debt raised, such as interest accumulations/payments. In this chapter, we do not relate separately to net debt raised.

Housing loans from the banks, as reported to the banks by customers, are defined as loans that fulfill one of the following conditions (provided that they were not issued for business purposes): the loan is intended for the purchase, leasing, construction, expansion or renovation of a residential dwelling; for the purchase of a plot for the construction of a residential dwelling or for the purchase of rights to a residential dwelling in return for key money; or to finance the early repayment of a loan described in the first two conditions, in whole or in part.

Nonhousing loans from the banks, as reported to the banks by customers, are defined as loans from the banks to private individuals (including overdrafts) and to private Israeli non-profit organizations, the purpose of which is not housing. These also include loans with a dwelling as collateral that are not for residential purposes (all-purpose loans).

C. ECONOMIC ACTIVITY VIS-À-VIS ABROAD

Israel's surplus of assets over liabilities vis-à-vis abroad declined in 2018, for the first time in 8 years. The economy's negative external debt also declined this year, after continually increasing in recent years—due to an increase in outstanding liabilities in debt instruments and a decline in assets in debt instrument.

Israel's balance of liabilities to abroad increased during the year, continuing the increase from the previous year. The increase was due to the flow of nonresidents' direct investments in the economy, mainly in shares.

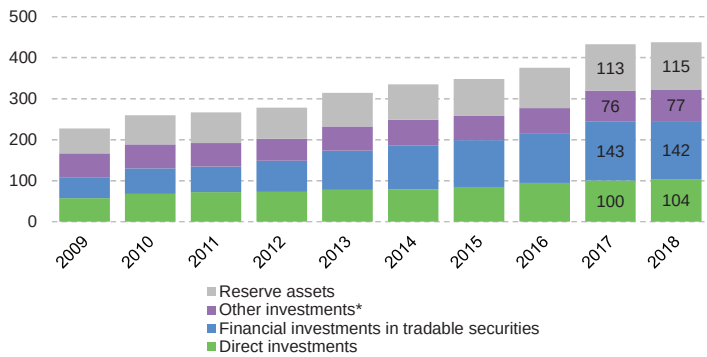
Israel's balance of assets abroad increased more moderately this year than last, and was concentrated in the balance of Israelis' direct investments abroad as a result of the net flow of investments. Israelis' financial investments abroad, which were concentrated in shares, were more than offset by price declines in those investments.

1. ISRAELIS' ASSETS ABROAD—INVESTMENTS ABROAD BY ISRAELIS

The increase in the balance of Israelis' assets abroad continued in 2017, mainly as a result of the increase in direct investments abroad by Israelis.

The balance of Israelis' assets abroad increased by about $5.3 billion (1.2 percent), to $438 billion, a result of increases of about $3.3 billion (3.3 percent) in the balance of direct investments, about $2.3 billion (2 percent) in the balance of reserve assets, and about $0.9 billion (1.2 percent) in the balance of other investments. In contrast, the balance of financial investments declined by about $1.2 billion (0.9 percent).

Figure 3.1
Balance of Israel's Assets Abroad, 2009–18 ($ billion)

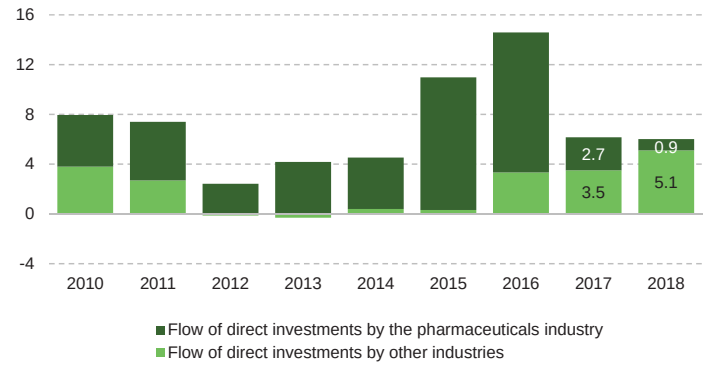


* The balance of other investments includes the balance of derivative instruments.
SOURCE: Bank of Israel.

The flow of Israelis' direct investments abroad continued in 2018, and the decline in direct investments by companies in the pharmaceuticals industry continued.

Net direct investment abroad by Israelis totaled $6 billion, mostly in shares. Direct investments by the pharmaceuticals industry totaled only about $0.9 billion during the year, significantly less than the average of the previous eight years ($5.5 billion).

Figure 3.2
Flow of Israelis' Net Direct Investments Abroad, 2010–18 ($ billion)

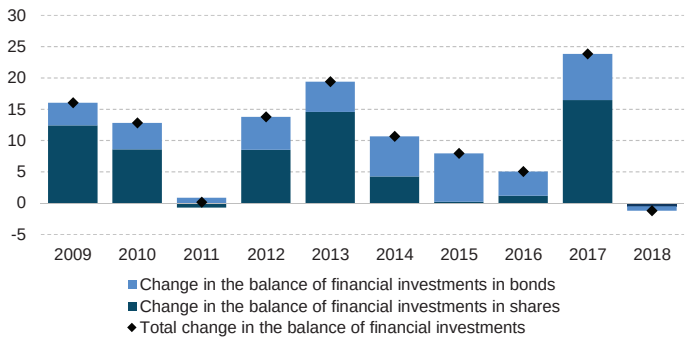


SOURCE: Bank of Israel.

The balance of financial investments abroad by Israelis declined slightly in 2018.

The balance of financial investments abroad by Israelis in bonds and shares declined by about $1.2 billion, in contrast with an increase of about $7.4 billion in the balance of investments in bonds and about $16.4 billion in the balance of investments in shares in the previous year.

Figure 3.3
Change in the Balance of Israelis' Financial Investments Abroad by Instrument, 2009–18 ($ billion)

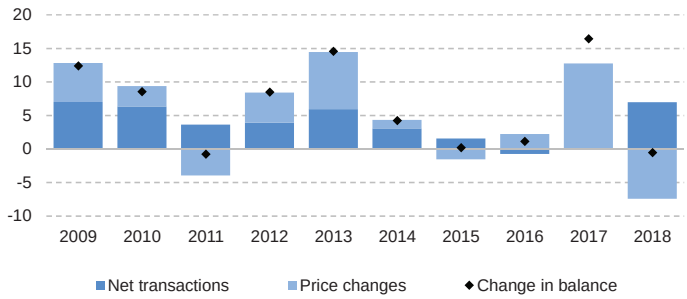


SOURCE: Bank of Israel.

The relative stability in the balance of financial investments in foreign shares by Israelis reflected an offsetting of a high flow of investment by significant price declines.

Net financial investments in foreign shares totaled about $7 billion in 2018—the largest flow of investments in the past decade. These investments were more than offset by sharp declines in the prices of foreign shares held by Israelis, which lowered the balance of investments by about $7.4 billion.

Figure 3.4
The Effect[a] of Net Transactions and Price Changes on the Balance of Israelis' Financial Investments in Shares Abroad, 2009–18 ($ billion)

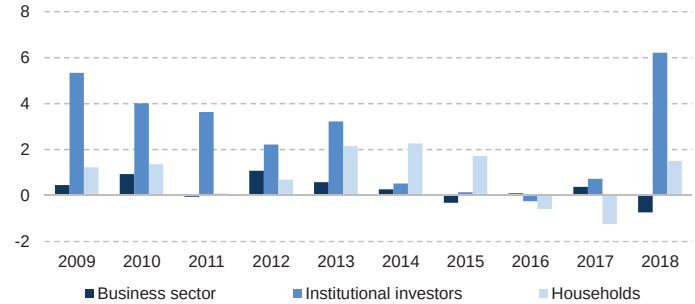


[a] The causes of change in the balance presented in the figure do not include exchagne rate differentials and other adjustments.
SOURCE: Bank of Israel.

The main investors in foreign share capital were the institutional investors.

Institutional investors' financial investments in foreign share capital totaled about $6.2 billion in 2018–the largest volume of net investment in recent years. The volume of net financial investment by households totaled about $1.5 billion during the year, after net realizations in the previous two years.

Figure 3.5
Net Flow of Israelis' Financial Investments[a] in Foreign Share Capital by Sector, 2009–18 ($ billion)

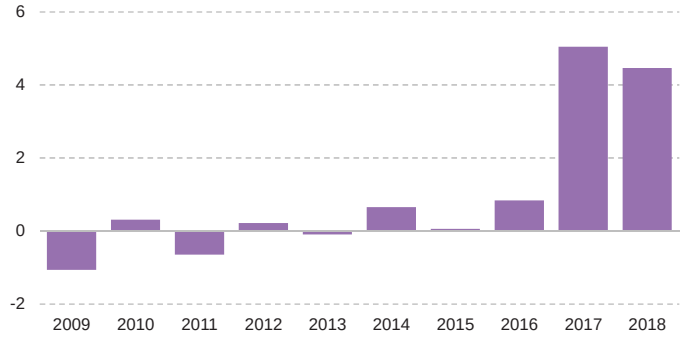


[a] Excluding the banking sector, whose investments in foreign equities are near zero throughout the displayed period.
SOURCE: Bank of Israel.

The balance of other investments abroad by Israelis increased in 2018, mainly due to the flow of financial loans[1], most of which were issued by a group of companies in the computer production and programming industry, similar to the previous year.

The financial loans issued by Israelis to nonresidents in 2018 totaled about $4.5 billion—higher than the average of the previous 8 years ($0.8 billion).

Figure 3.6
Financial Loans Issued by Israelis to Nonresidents, 2009–18 ($ billion)

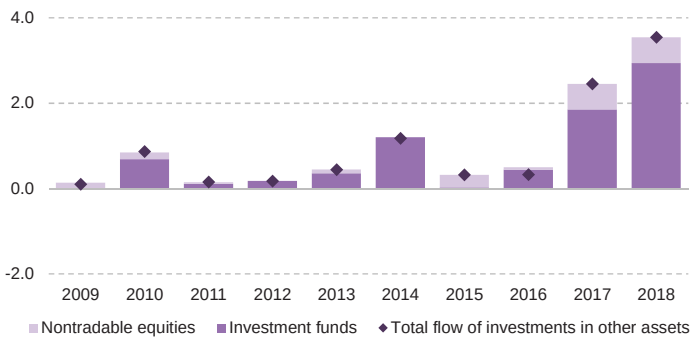


SOURCE: Bank of Israel.

The increase in the balance of other investments was also due to the flow of Israelis' investments in other assets abroad, which was concentrated in investment funds, similar to the previous two years.

The flow of investments in other assets totaled about $3.5 billion in 2018, significantly higher than in previous years. Most of the investments were in investment funds abroad, and were made by institutional investors.

Figure 3.7
The Flow of Israelis' Investments in Other Assets Abroad, 2009–18
($ billion)



SOURCE: Bank of Israel.

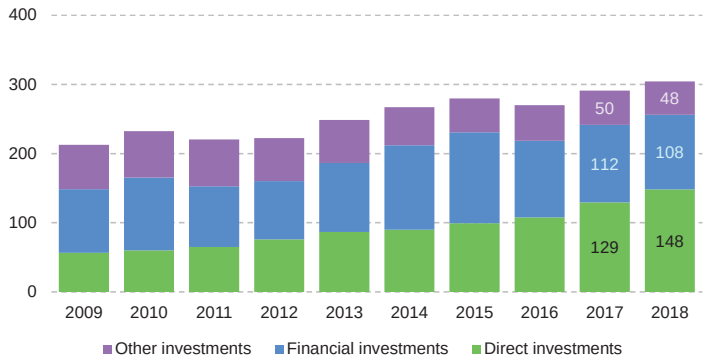
[1] See the list of main terms at the end of this Section.

2. ISRAELIS' LIABILITIES TO ABROAD—NONRESIDENTS' INVESTMENTS IN ISRAEL

In 2018, the balance of Israelis' liabilities to abroad increased, due to an increase in the balance of direct investments in Israel by nonresidents.

The balance of Israelis' liabilities to abroad increased by about $13.3 billion (4.6 percent), to $304 billion, due to an increase of about $18.9 billion (14.6 percent) in the balance of direct investments. In contrast, the balance of financial investments declined by about $4.2 billion (3.7 percent), and the balance of other investments declined by about $1.4 billion (2.8 percent).

Figure 3.8
Israel's Outstanding Liabilities to Abroad, 2009–18 ($ billion)

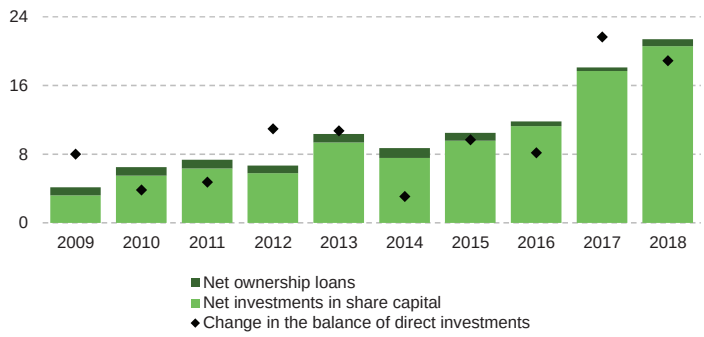


SOURCE: Bank of Israel.

The increase in the balance of direct investments was mainly the result of the net flow of direct investments in share capital.

Net direct investments totaled about $21.8 billion in 2018, continuing the upward trend of recent years. The flow of investments was concentrated in share capital, and about half was invested in the capital of three large Israeli companies.

Figure 3.9
The Effect of Net Transactions on the Balance of Nonresidents' Direct Investments in Israel, 2009–18 ($ billion)

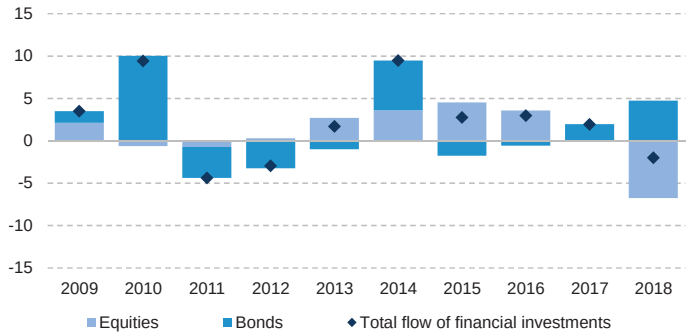


SOURCE: Bank of Israel.

The decline in the balance of financial investments was due to net realizations of Israeli shares, which were mostly offset by net investments in bonds.

Net realizations of shares by nonresidents during the year totaled about $6.8 billion, in contrast with net investments in Israeli shares in the previous five years averaging $2.9 billion. These realizations were partly offset by net investments in Israeli bonds totaling about $4.7 billion, mainly in government bonds, as a result of an issuance abroad totaling $2 billion in January 2018.

Figure 3.10
The Flow of Nonresidents' Financial Investments in Israel by Instrument, 2009–18 ($ billion)

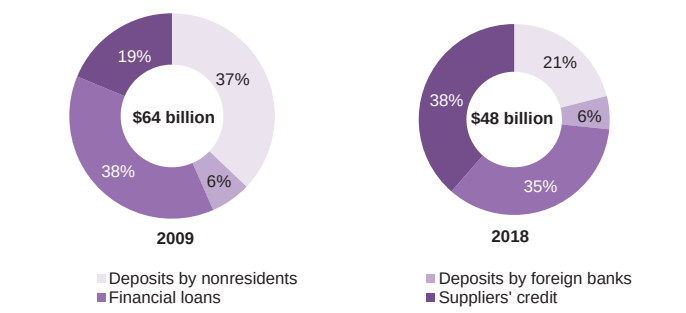


SOURCE: Bank of Israel.

The balance of nonresidents' other investments in Israel declined in 2018, further to the declines of the past decade.

Most of the decline during this period has been concentrated in nonresidents' foreign currency deposits in Israel, the balance of which was about $24 billion in 2009, and just $10 billion in 2018.

Figure 3.11
Composition of the Balance of Nonresidents' Other Investments in Israel, 2009 and 2018

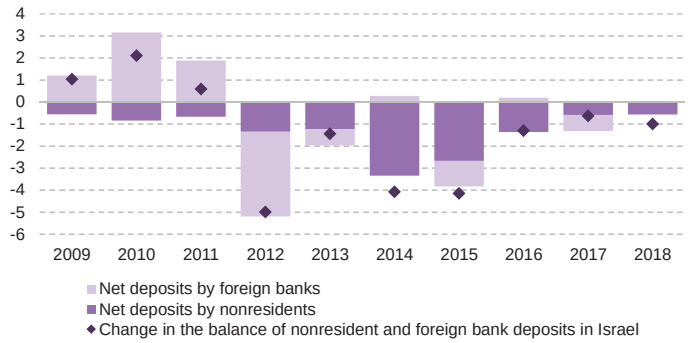


SOURCE: Bank of Israel.

The balance of deposits by nonresidents and foreign banks in Israel declined in 2018 as a result of net withdrawals, further to the previous six years.

Net withdrawals totaled about $0.6 billion in 2018, and were concentrated in nonresidents deposits (excluding banks). This was further to the trend of net withdrawals by nonresidents in the past decade.

Figure 3.12
The Flow of Net Deposits by Nonresidents and Foreign Banks in Israel, 2009–18 ($ billion)

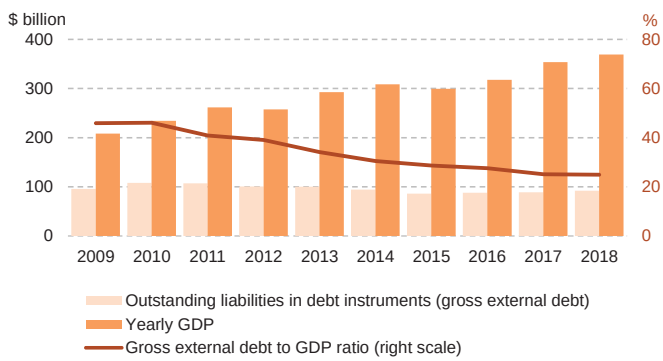


SOURCE: Based on reports from the banks.

The gross external debt[2] to GDP ratio did not change significantly in 2018.

The rate of growth of Israel's gross external debt totaled about 3.9 percent in 2017. In parallel, GDP grew by about 4.5 percent in dollar terms. As a result, the external debt to GDP ratio declined by 0.1 percentage points, remaining at about 25 percent at the end of the year.

Figure 3.13
Gross External Debt and External Debt to GDP Ratio, 2009–18



SOURCE: Based on Central Bureau of Statistics data.

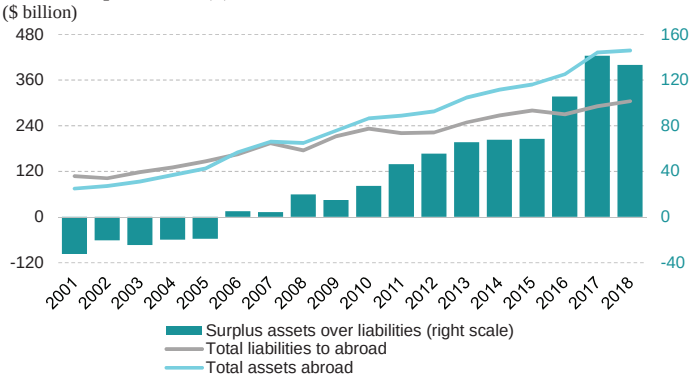
[2] For further details on definitions, explanations and calculations regarding external debt, see "Measuring the Country's External Debt" in Part Two of the Statistical Bulletin for 2017.

3. SURPLUS ASSETS OVER LIABILITIES

In 2018, Israel's surplus of assets over liabilities vis-à-vis abroad declined, after significant increases in the previous two years.

Israel's surplus of assets over liabilities vis-à-vis abroad declined by about $8 billion (5.7 percent), to $133 billion (36.1 percent of GDP), because the increase in the value of gross liabilities ($13 billion, 4.6 percent) was higher than the increase in the balance of gross assets ($5 billion, 1.2 percent).

Figure 3.14
Israel's Surplus Assets (+) over Liabilities vis-a-vis Abroad, 2001–18
($ billion)

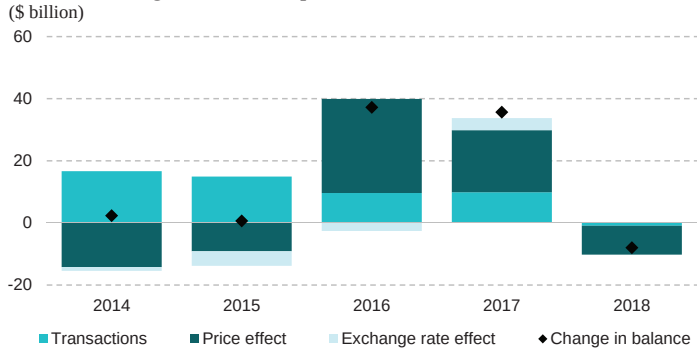


SOURCE: Bank of Israel.

The decline in the surplus of assets over liabilities was mainly due to decline sin the prices of foreign shares held by Israelis. Net transactions had a negligible effect.

The net effect of price changes lowered the surplus of assets over liabilities by about $9.3 billion. The net effect of transactions lowered the surplus of assets by just $0.9 billion. This is contrary to the previous four years, when the net effect of transactions increased the surplus of assets over liabilities by an average of about $12.8 billion.

Figure 3.15
Sources of Change in Israel's Surplus of Assets over Liabilities[a], 2014–18
($ billion)

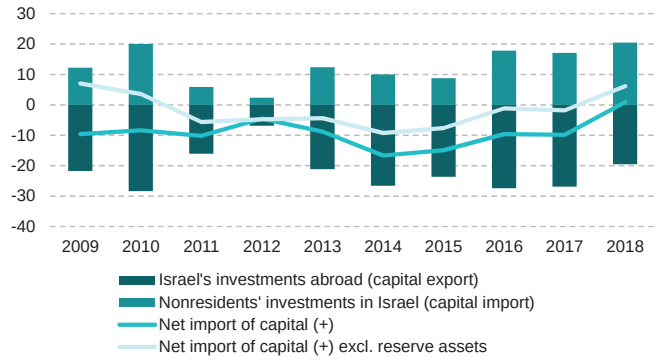


[a] The sources of change do not include other adjustments.
SOURCE: Bank of Israel.

The negligible volume of net transactions reflected an offsetting between nonresidents' investments in Israel ($20.5 billion) and investments abroad by Israelis ($19.6 billion).

Net capital transactions (excluding reserve assets) to and from Israel resulted in a net import of capital totaling $6 billion in 2018. This is contrary to previous years, when there was a net export of capital.

Figure 3.16
Nonresidents' Investments in Israel and Israelis' Investments Abroad, 2009–18 ($ billion)

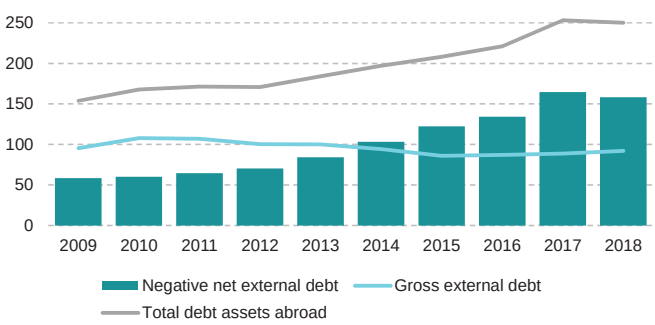


SOURCE: Bank of Israel.

The surplus of assets over liabilities in debt instruments also declined in 2018, contrary to the continued increase in recent years.

In 2018, the balance of assets in debt instruments declined (by $3 billion, 1.2 percent), mainly due to withdrawals from deposits abroad. In parallel, Israel's gross external debt to abroad increased (by $3.4 billion, 3.9 percent), mainly due to the net flow of investments in Israeli bonds. As a result, the surplus of assets over liabilities vis-à-vis abroad in debt instruments alone (negative net external debt) declined by about $6.4 billion (3.9 percent), to $158 billion at the end of the year.

Figure 3.17
Negative External Debt[a], 2009–18 ($ billion)



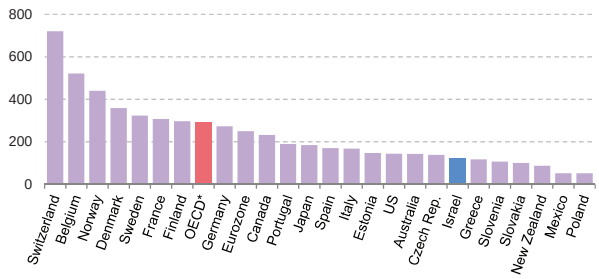
[a] Surplus assets over liabilities in debt instruments only. Positive values = debts owed to Israel from abroad.
SOURCE: Bank of Israel.

ZOOM-IN

INTERNATIONAL COMPARISONS

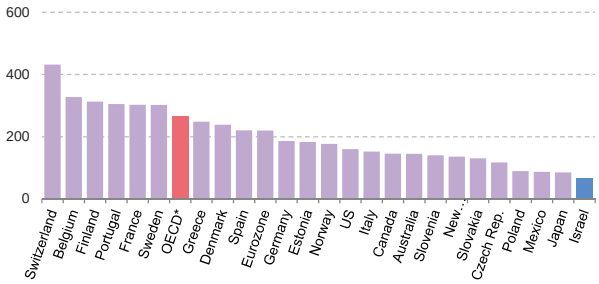
The assets to GDP ratio in Israel was 123 percent in 2017, lower than the OECD average of 291 percent.

Figure 3.18
International Comparison of Assets to GDP Ratios, 2017 (percent)



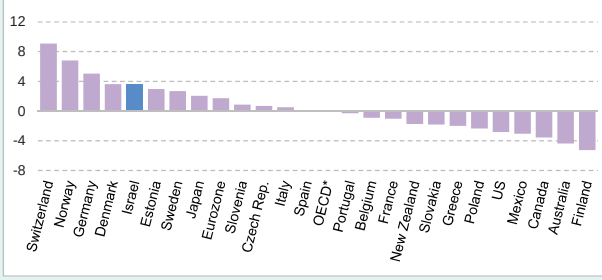
The liabilities to GDP ratio in Israel was 85 percent in 2017, lower than the OECD average of 302 percent.

Figure 3.19
International Comparison of Liabilities to GDP Ratios, 2017 (percent)



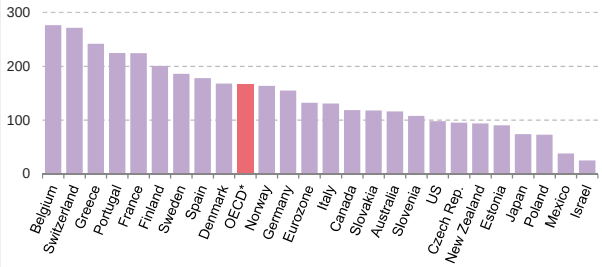
The net import of capital relative to GDP in Israel averaged about 4 percent between 2010 and 2017, higher than the average ratio in the OECD, which was about zero.

Figure 3.20
International Comparison of the Net Import/Export of Capital Relative to GDP, 2010–17 Average (percent)



The gross external debt to GDP ratio in Israel is lower than in other OECD countries, at 25 percent in 2017.

Figure 3.21
International Comparison of the Gross External Debt to GDP Ratio, 2017 (percent)



* The OECD average was calculated as a simple average, and does not include data for Luxembourg, which is a statistical outlier.
SOURCE: Bank of Israel.

Main indicators of activity vis-à-vis abroad						
$ billion		Balance to the end of 2017	Transactions	Price changes	Exchange rate differentials and other adjustmens	Balance to the end of 2018
Israel's Assets		**432.2**	**19.5**	**-9.3**	**-5.0**	**437.5**
of which:	Debt instruments*	253.3	1.6	-2.4	-2.2	250.3
Direct investments abroad		**100.3**	**6.0**	**-0.8**	**-1.9**	**103.6**
of which:	Share capital and land	86.1	7.3	-0.8	-1.9	90.8
	Owners' loans	14.1	-1.3	0.0	0.0	12.8
Financial investments		**143.0**	**7.2**	**-8.4**	**-0.1**	**141.8**
of which:	Share capital	78.2	7.0	-7.4	-0.1	77.7
	Bonds	64.8	0.2	-0.9	0.0	64.1
Other investments abroad		**76.4**	**1.0**	**1.2**	**-0.5**	**78.2**
of which:	Deposits by Israelis (including banks)	18.8	-5.4	-0.1	0.2	13.5
	Loans	17.0	4.5	0.0	-0.2	21.2
	Customer credit	25.6	-1.6	0.0	-0.5	23.5
	Other assets	15.1	3.5	1.4	0.0	20.0
Reserve assets		**113.0**	**5.3**	**-1.3**	**-1.7**	**115.3**
Derivative instruments		-0.5	0.1	0.0	-0.9	-1.4
Israel's Liabilities		**291.0**	**20.5**	**0.1**	**-7.2**	**304.3**
of which:	Debt instruments	88.6	6.2	0.0	-2.8	92.1
Direct investments		**129.1**	**21.8**	**-2.7**	**-0.1**	**148.0**
of which:	Share capital and land	121.3	20.6	-2.7	-0.1	139.4
	Owners' loans	7.8	0.8	0.0	0.0	8.6
Financial investments		**112.2**	**-2.0**	**2.8**	**-5.0**	**108.0**
of which:	Share capital	81.1	-6.8	2.8	-4.3	72.8
	Bonds	31.1	4.7	0.0	-0.7	35.2
Other investments		49.7	0.7	0.0	-2.1	48.3
of which:	Depsits by nonresidents and foreign banks	13.9	-0.6	0.0	-0.4	12.9
	Loans	17.0	0.5	0.0	-0.7	16.8
	Suppliers' credit	18.8	0.8	0.0	-0.9	18.6
Net Liabilities**		**-141.2**	**0.9**	**9.3**	**-2.2**	**-133.2**
of which:	Net debt instruments	-164.6	4.6	2.4	-0.6	-158.2

* Debt instruments: Owners' loans, bonds, deposits, loans, commercial credit, and reserve assets.

** Net liabilities: Liabilities minus assets.

DATA SOURCES AND MAIN TERMS

The Bank of Israel Information and Statistics Department manages a database of economic activity vis-à-vis abroad. The Department gathers data and information from various sources. Most of the data are received from direct reports[1] by companies and individuals to the Bank of Israel pursuant to the Bank of Israel Order (see "Information on the Development of the Foreign Exchange Market in Israel, 5770–2010). The companies that are required to report are any Israeli company with a balance of direct investments in foreign companies totaling $20 million or more, and any Israeli company in which foreign direct investors hold $40 million or more. In addition, companies and individuals with financial assets abroad totaling $20 million or more also report. Additional data used to measure economic activity vis-à-vis abroad are obtained from reports by the institutional investors, the Bank of Israel Accounting Division, and reports from the Israel Securities Authority, the Ministry of Finance, and domestic banks.

Direct investment[1]—Investment by nonresidents in Israeli companies or investment by Israelis in foreign companies is defined as a direct investment when it involves holdings of more than 10 percent of the company's capital (tradable and nontradable). Direct investment includes stock purchases, accumulated profits (undistributed profits), owners' loans, and investment in real estate.
Financial investment—Transactions between Israelis and nonresidents, involving debt instruments (including government bonds) or company stock where holdings are of less than 10 percent of the company's capital, excluding investment that is included in reserve assets. This category reflects activity in the Israeli stock market or foreign stock markets.
Direct and financial investments are part of capital flows between Israel and the rest of the world, which are recorded in the financial account of Israel's balance of payments. The distinction between direct investment and financial investment reflects the difference in the investor's motive and purpose. Direct investment generally reflects globalization of real economic activity, meaning the geographic diversification of development, production and marketing of goods and services and the establishment of multinational corporations. In contrast, financial investment generally reflects globalization of financial activity—management of the securities portfolio with geographic diversification, in an attempt to improve the yield to risk ratio of the portfolio as a whole.
The flows of direct and financial investment by foreign residents in the Israeli economy create a liability of the economy toward abroad, while the flows of direct and financial investments abroad

[1] For further details on definitions, explanations and calculations, see Bank of Israel, "Measuring direct investment as a part of the International Investment Position", *Statistical Bulletin* 2016, Part 2.

by Israelis create Israeli assets vis-à-vis abroad.

Other investments—Investments abroad by Israelis or investments in Israel by nonresidents in other instruments: deposits, financial loans (that are not owners' loans or bonds), customer/supplier credit. Other investments abroad by Israelis also include investments in other assets (financial derivatives, mutual funds, index funds, and so forth).

Reserve assets—Foreign exchange balances of the central bank, the State's gold reserves, reserves at international organizations such as the International Monetary Fund, and Special Drawing Rights (SDRs)

Special Drawing Rights (SDRs)—Withdrawal rights allocated by the IMF in international currency, which is calculated according to the average of the currencies of IMF member countries, for the purpose of covering liabilities and balance of payments deficits.

Changes in the composition of the asset portfolio vis-à-vis abroad—As part of the analysis of developments in Israel's asset portfolio abroad, it is common to examine the composition of the portfolio (the rate of investment in capital assets vs. debt assets) and changes in it. Debt assets are considered more secure, since the debt must be repaid even during a crisis. In contrast, capital assets lose some of their value during a crisis, and the economy loses capital it has invested abroad as a result.

Capital assets—Direct and financial investments in shares.

Debt assets—Owners' loans, bonds, direct credit, deposits, and financial loans.

D. FOREIGN EXCHANGE ACTIVITY OF THE MAIN SECTORS

In 2018, the shekel weakened against the dollar in parallel with the significant strengthening of the dollar against the major currencies. Most of the shekel's depreciation was in the first half of the year and in the fourth quarter. In terms of the nominal effective exchange rate, which represents the currencies of Israel's main trading partners, the shekel weakened by a more moderate rate, mainly from September onward.

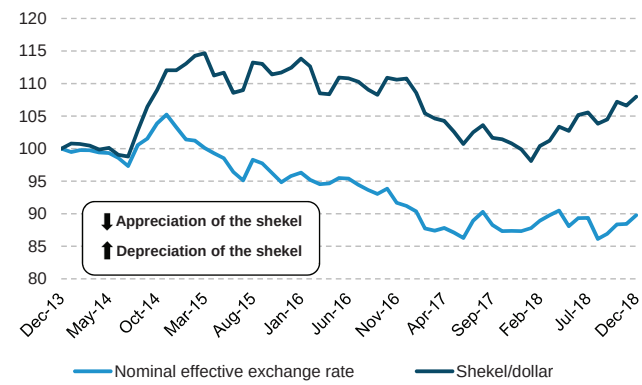
In 2018, there was a particularly prominent transition to net foreign exchange purchases by of significant volume by institutional investors and the financial sector, against continued foreign exchange sales by nonresidents. The activity of all the sectors in foreign exchange trading expanded, mainly in the second half of the year. The business sector continued to make net foreign exchange purchases, combining increased net purchases by importers and lower net sales by exporters.

1. BACKGROUND: THE EXCHANGE RATES AND RISK

The shekel weakened by 8.1 percent against the dollar in 2018, compared with appreciation of 11.1 percent in the previous two years. The shekel also weakened against the nominal effective exchange rate, mainly in the fourth quarter of the year.[1]

The shekel declined by 2.8 percent against the currencies of Israel's major trading partners (which are weighted to obtain the nominal effective exchange rate), compared with appreciation of 4.4 percent in 2016 and 4.2 percent in 2017.

Figure 4.1
Shekel/Dollar and Nominal Effective Exchange Rate Indices, 2014–18



SOURCE: Bank of Israel.

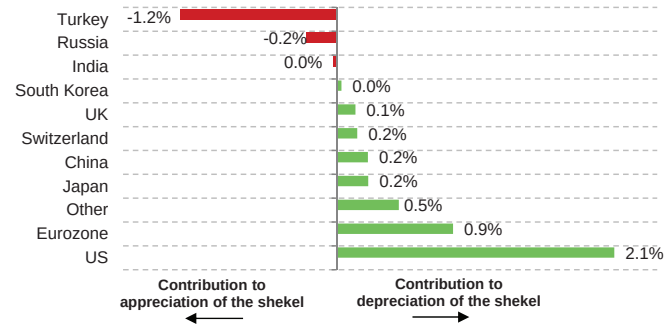
[1] For an explanation of the nominal effective exchange rate, see Main Terms at the end of this section.

The shekel weakened against most currencies in the basket that comprises the nominal effective exchange rate.

The main contributing factors to the depreciation against the nominal effective exchange rate were the weakening of the shekel against the dollar, which contributed 2.1 percentage points to the depreciation, and against the euro, which contributed 0.6 percentage points.

In contrast, the shekel strengthened by about 23 percent against the Turkish lira during the year, which offset 1.2 percentage points from the depreciation against the nominal effective exchange rate.

Figure 4.2
Contribution of the Change in the Various Currencies[a] to the Change in the Nominal Effective Exchange Rate, 2018
(Depreciation of 2.8 percent)



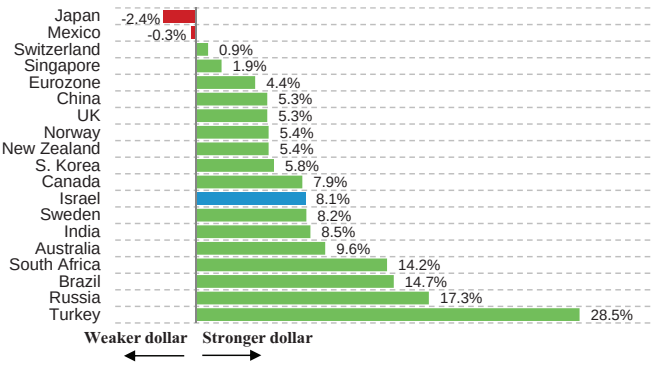
[a] The nine currencies with the highest weight in Israel's trade are specified in the Figure. The others are listed in "Other".
SOURCE: Bank of Israel.

The weakening of the shekel against the dollar in 2018 mainly reflected the strengthening of the dollar worldwide.

The dollar strengthened against the major global currencies, including by 4.4 percent against the euro, 5.3 percent against the pound sterling, and 0.9 percent against the Swiss franc. The strengthening of the dollar by about 28.5 percent against the Turkish lira was prominent.

In contrast, the dollar weakened by 2.4 percent against the Japanese yen.

Figure 4.3
Change in the US Dollar Relative to Selected Currencies[a], 2018

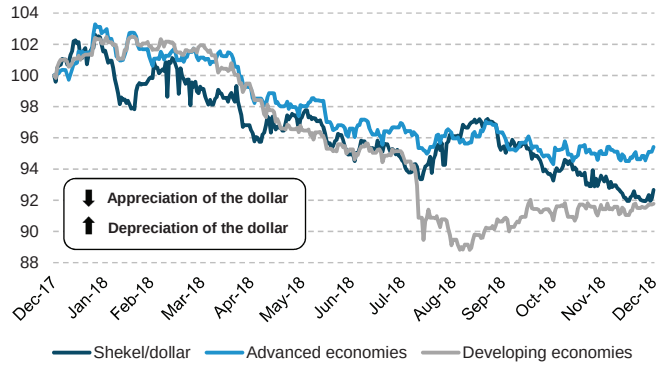


[a] Representative rates except for Norway and New Zealand, which are calculated according to end-of-day data.
SOURCE: Bank of Israel.

The shekel's depreciation against the dollar was similar to the depreciation of the currencies of developing economies[2] against the dollar.

The dollar strengthened by about 8.3 percent against the currencies of developing economies, in contrast with a weakening of about 6 percent against them in 2017. Against currencies of advanced economies[3], the dollar strengthened by a lower rate, about 4.6 percent, after having weakened by about 11 percent in 2017.

Figure 4.4
Cumulative Change vis-a-vis the Dollar, 2018 (index)



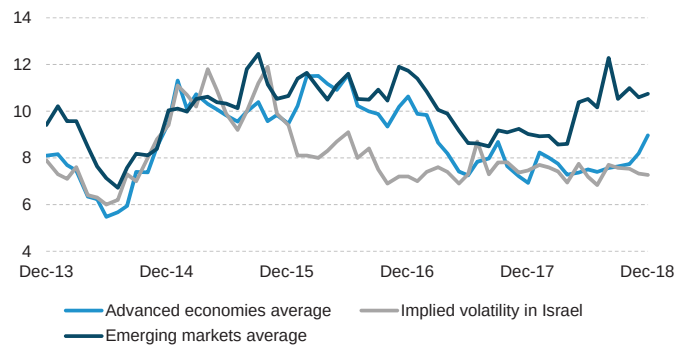
SOURCE: Bank of Israel.

The implied volatility[4] of options on the shekel exchange rate and currencies of the advanced economies[5] remained low this year.

The implied volatility of options on the shekel exchange rates was 7.3 percent at the end of 2018, similar to the rate at the end of 2017, reflecting expectations of low volatility.

In contrast, the expected volatility in the emerging markets increased in 2018[6].

Figure 4.5
International Comparison of Average Implied Volatility in Foreign Exchange Options, 2014–2018 (Weekly data, percent)



SOURCE: Bank of Israel.

[2] The developing economies that were included: China, Taiwan, Hong Kong, Ukraine, Malaysia, India, Mexico, Russia, Brazil, and Turkey.

[3] The advanced economies that were included: Sweden, Canada, Japan, UK, Australia, Switzerland, Singapore, South Korea, and the eurozone.

[4] For an explanation of implied volatility in options, see Main Terms at the end of this section.

[5] The advanced economies that were included: Australia, Canada, Japan, UK, Switzerland, and the eurozone.

[6] The emerging markets that were included: Mexico, South Korea, Philippines, Poland, Chile, South Africa, Thailand, Hungary, Turkey, and Singapore.

2. FOREIGN EXCHANGE ACTIVITY OF THE MAIN SECTORS[7]

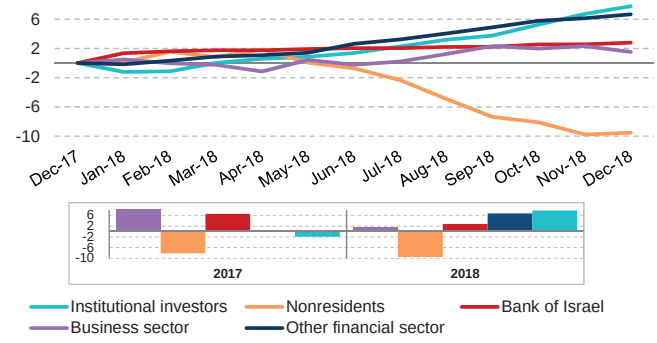
The main segments of the foreign exchange market in 2018 featured net foreign exchange purchases (shekel sales) by institutional investors and the other financial segment[8] against net foreign exchange sales (shekel purchases) by nonresidents.

The institutional investors made net purchases of foreign exchange totaling $7.8 billion, compared with foreign exchange sales of about $2 billion in 2017.

The other financial segment, which made negligible net purchases of foreign exchange in 2017, purchased a more significant volume of $6.7 billion in foreign exchange in 2018.

In contrast, foreign exchange sales by nonresidents totaled $9.5 billion, similar to previous years.

Figure 4.6
Estimated Net Cumulative Foreign Exchange Transactions of the Main Sectors, 2018 ($ billion)



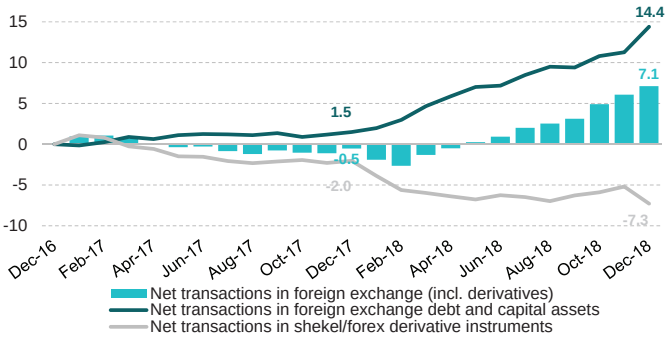
SOURCE: Bank of Israel.

2.1 Institutional investors

Institutional investors' investments in foreign exchange assets totaled $7.7 billion in 2018.

The volume of net investments in foreign exchange capital assets and debt assets by the institutional investors totaled about $12.9 billion in 2018, and was spread throughout the year. In order to minimize their exposure to foreign exchange, the institutional investors made net sales of foreign exchange through derivative instruments totaling about $5.3 billion, mainly in the first half and fourth quarter of the year.

Figure 4.7
Institutional Investors' Net Cumulative Transactions in Foreign Exchange Assets vs. Change in Shekel/Forex Derivatives, 2017–18 ($ billion)



SOURCE: Bank of Israel.

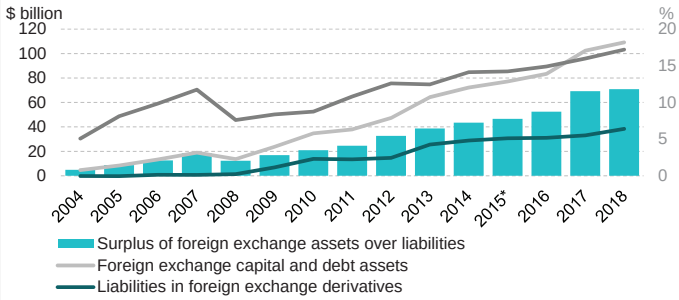
[7] For further details regarding definitions, terms, and explanations, see "Database on Shekel/Forex Market Activity" in Chapter 2 of this publication.

[8] The financial companies excluding the banking system and excluding the institutional investors.

The increase in institutional investors' investments in foreign exchange assets was reflected in an increase of about 1.2 percentage points in their rate of exposure to foreign exchange, to a rate of 17.2 percent of their assets.

The balance of institutional investors' capital and debt assets in foreign exchange increased by about $6.8 billion, to $109.1 billion, mainly through their investments in shares abroad. Institutional investors' surplus of assets over liabilities in foreign exchange increased in 2018, to about $71 billion.

Figure 4.8
Institutional Investors' Surplus of Foreign Exchange Assets (+) Over Liabilities and Exposure to Foreign Exchange, 2004–18



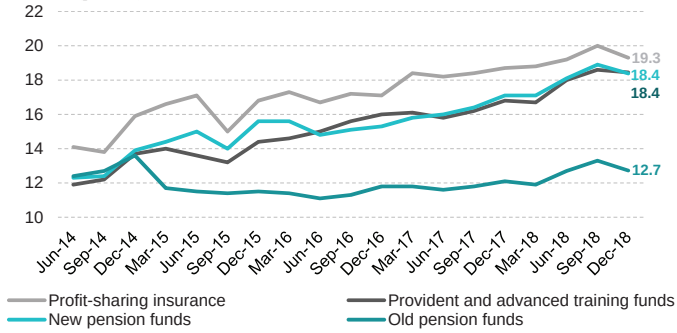
* In January 2015 some of the reporting entities adopted a different calculation method for the forex derivatives item, which makes it impossible to compare the balance at the end of January 2015 to the balances for previous periods.

SOURCE: Based on reports from the institutional investors.

The increase in exposure to foreign exchange was a feature of all institutional investors.

The insurance companies had the highest rate of exposure to foreign exchange—about 19 percent at the end of the year (an increase of 0.6 percentage points from the beginning of the year). The new pension funds and the provide and advanced training funds had exposure rates of about 18 percent, and the old pension funds maintained the lowest exposure rate to foreign exchange—about 13 percent.

Figure 4.9
Institutional Investors' Exposure to Foreign Exchange, by Type of Investor, 2014–18 (percent)



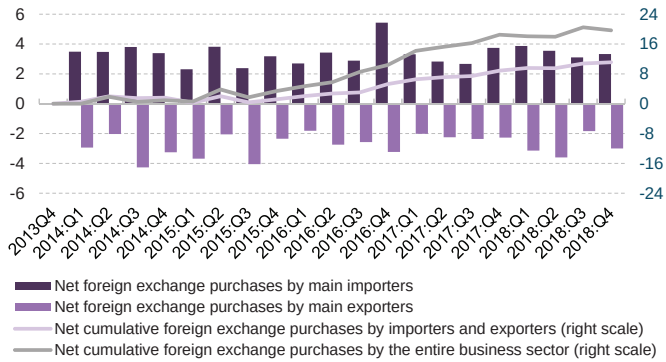
SOURCE: Bank of Israel.

2.2 The business sector

The business sector made net purchases of foreign exchange in 2018, further to its activity in 2017.

Net foreign exchange purchases by the main import companies totaled about $13.8 billion in 2018, due to the continued increase of goods and services imports. In the second half of the year, there was a marked decline in foreign exchange sales by the main export companies, due to the decline in goods exports. Their foreign exchange sales totaled about $11.6 billion in 2018.

Figure 4.10
Cumulative Foreign Exchange Purchases (+) by the Large Import and Export Companies, 2014–18 ($ billion)



SOURCE: Bank of Israel.

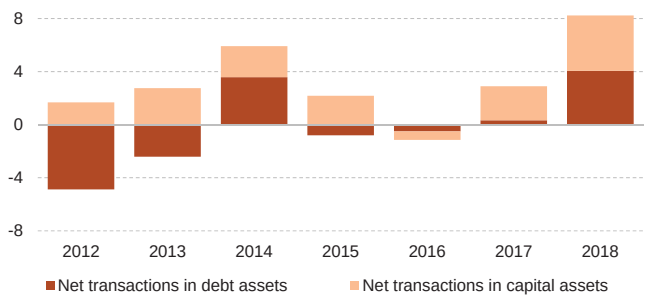
2.3 Nonresidents

Nonresidents' purchases of shekels were reflected in the purchases of shekel assets on the stock exchange. Nonresidents' estimated net investments in capital and debt assets totaled about $8.2 billion in 2018.

Investments in debt assets[9] totaled $4.1 billion in 2018. Of that, investments totaling $1.6 billion in government bonds and $1.5 billion in *makam* were most prominent.

Investments in capital assets[10] totaled $4.2 billion in 2018, of which about

Figure 4.11
Estimate[a] of Nonresidents' Net Transactions in Shekel Assets, 2012–18 ($ billion)



[a] Based on reported transaction data and on an estimate based on balance differentials.
SOURCE: Bank of Israel.

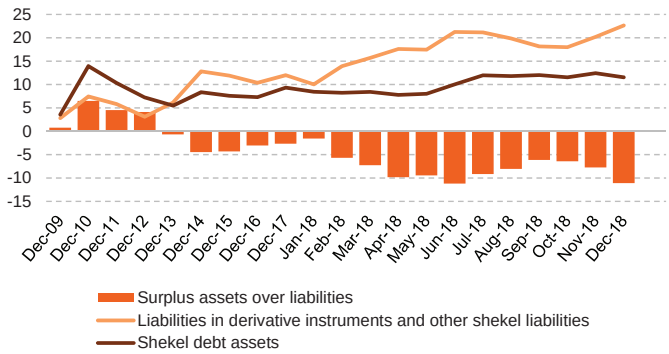
9 Debt assets: bonds, *makam*, deposits, and financial loans.
10 Capital assets: direct investments and financial investments in shares.

The surplus of nonresidents' shekel assets over liabilities declined during the year, to -$11.1 billion, which means an increase in their exposure to an appreciation of the shekel.[11]

Nonresidents increased their short-term shekel debt assets during 2018, to $11.5 billion.

In parallel, nonresidents increased their shekel liabilities through derivative instruments[12] to $22.6 billion.

Figure 4.12
Nonresidents' Surplus Shekel Assets (+) over Liabilities in Debt and Derivative Instruments, 2009–2018 ($ billion)



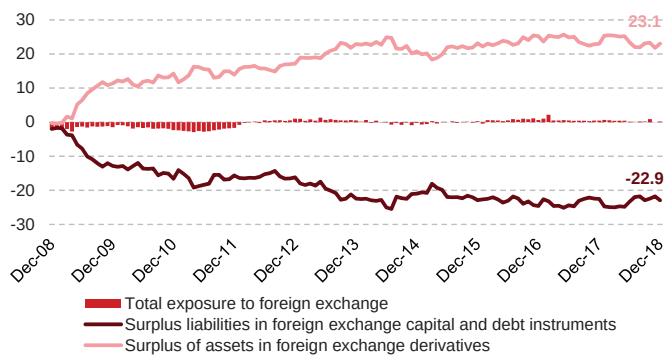
SOURCE: Bank of Israel.

2.4 The banking system[13]

The banking system maintain near zero exposure to foreign exchange.

The banking system's balance of assets in foreign exchange derivative instruments remained stable, at $23.1 billion at the end of 2018. The system's surplus of liabilities in foreign exchange capital and debt assets also remained stable, at $22.9 billion.

Figure 4.13
Banks' Surplus Foreign Exchange Assets (+) over Liabilities and Total Exposure to Foreign Exchange, 2008–18 ($ billion)



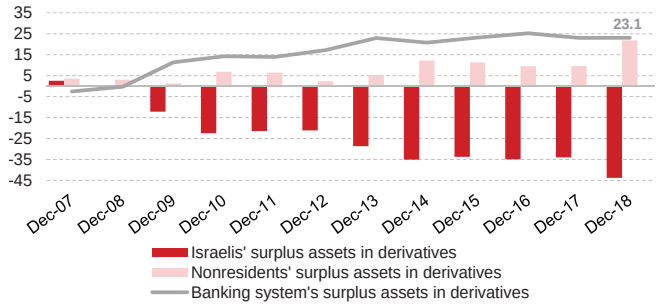
SOURCE: Bank of Israel.

[11] For an explanation, see the list of main terms at the end of this section.
[12] Derivative instruments: futures and options transactions.
[13] The domestic banking corporations.

The banking system's surplus of assets in foreign exchange derivative instruments is due to the banks' activity vis-à-vis Israelis and nonresidents.

Israelis, mainly the institutional investors and the other financial segment, increased their surplus liabilities in foreign exchange derivative instruments (meaning they will pay foreign exchange in the future) to $43.8 billion. In contrast, nonresidents significantly increased their surplus assets in foreign exchange derivative instruments (increased their surplus shekel liabilities, meaning they will receive foreign exchange in the future) to $21.8 billion.

Figure 4.14
The Banking System's Surplus Foreign Exchange Assets (+) over Liabilities in Derivative Assets Compared with Counter-Sectors, 2008–18
($ billion)



SOURCE: Bank of Israel.

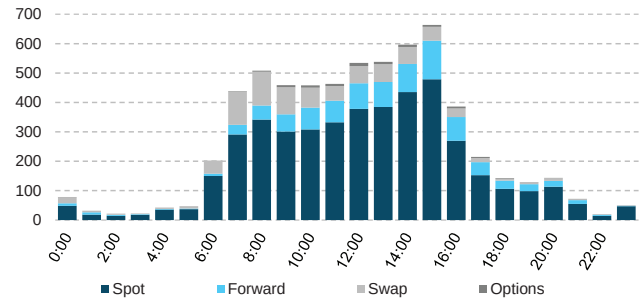
ZOOM IN

AN UP-CLOSE LOOK AT

THE VOLUME OF FOREIGN EXCHANGE TRANSACTIONS

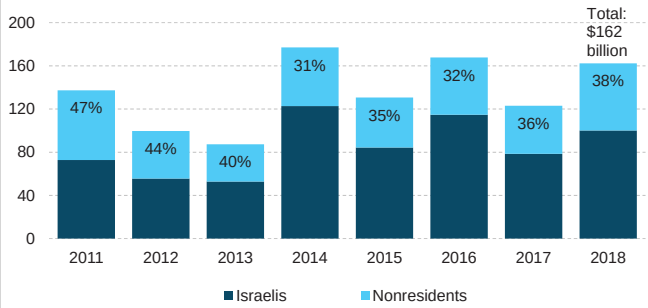
In 2018, most transactions were made between 12:00 and 15:00 Israel time.

Figure 4.15
Daily Average Number of Transactions by Instrument and Time of Execution, 2018



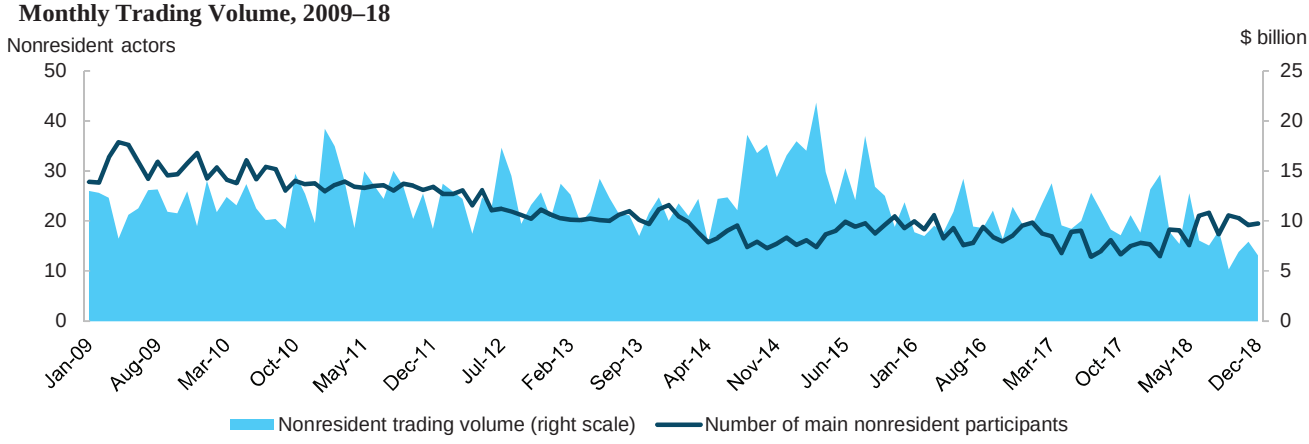
In 2018, nonresidents accounted for 38 percent of total foreign exchange trading volume.

Figure 4.16
Nonresidents' Share of Total Foreign Exchange Trading Volume, 2018
(monthly average)



In 2018, nonresidents trading volume declines, and the number of nonresident participants increased, which is typical of a concentrated open market.

Figure 4.17
Nonresidents' Trading Volume and Number of Nonresident Participants Accounting for More than 80 Percent of Monthly Trading Volume, 2009–18



SOURCE: Based reports by the banks.

Main indicators in the foreign exchange market

	Level[a]					Change				
	2014	2015	2016	2017	2018	2014	2015	2016	2017	2018
Actual volatility of the shekel/dollar exchange rate (moving 20-day average)[b]	9.4%	5.1%	7.2%	4.8%	4.9%	5.9	-4.3	2.1	-2.4	0.1
Implied volatility of shekel/forex OTC options[b]	9.4%	9.4%	7.2%	7.5%	7.1%	1.5	-0.3	-2.2	0.3	-0.4
Shekel/dollar representative exchange rate	3.89	3.90	3.85	3.47	3.75	12.0%	0.3%	-1.5%	-9.8%	8.1%
Shekel/euro exchange rate	4.73	4.25	4.04	4.15	4.29	-1.2%	-10.1%	-4.8%	2.6%	3.4%
Dollar/euro exchange rate	1.22	1.09	1.05	1.20	1.15	-11.8%	-10.4%	-3.3%	14.1%	-4.4%
Yen/dollar exchange rate	119.49	120.41	117.00	112.55	109.87	13.8%	0.8%	-2.8%	-3.8%	-2.4%
Nominal effective exchange rate (January 1, 2010 = 100)	92.75	86.02	81.89	78.40	80.61	3.3%	-7.3%	-4.8%	-4.3%	2.8%
Average daily trading volume - conversions, swaps and OTC options ($ million)	6,375	6,382	7,277	6,636	7,956	45.1%	0.1%	14.0%	-8.8%	19.9%
Nonresidents' share of trading volume[b]	30.5%	35.4%	31.7%	36.2%	38.3%	-9.0	5.1	-3.7	4.5	2.1
Nonresidents' exposure to the exchange rate ($ billion)	-4.5	-4.3	-2.9	-2.8	-5.8					
Institutional investors' exposure to the exchange rate ($ billion)	43.4	46.5	52.4	69.2	72.5					
The banking system's exposure to the exchange rate ($ billion)	-0.2	0.3	0.8	0.5	0.2					
Foreign exchange purchases by institutional investors ($ billion)						3.6	3.7[c]	1.6	-2.2	7.8
Foreign exchange purchases by main exporters ($ billion)						-12.5	-13.8	-10.4	-8.9	-11.6
Foreign exchange purchases by main importers ($ billion)						14.1	11.9	13.9	12.5	13.8

[a] Level at the end of the period.

[b] The changes shown in the right-hand panel are in percentage points.

[c] In January 2015, some of the reporting entities adopted a different method of calculation for the forex derivatives item, which makes it impossible to calculate the net transactions in foreign exchange assets (forex purchases) for that month. Forex purchases for 2015 therefore do not include that month.

SOURCE: Bank of Israel.

DATA SOURCES AND MAIN TERMS

The Bank of Israel Information and Statistics Department manages a database of activity in the foreign exchange market. The Department gathers data and information on a daily basis from financial intermediaries in Israel and abroad regarding shekel-forex transactions, and processes them into a detailed a high-quality dataset that provides a broad picture of the foreign exchange market. The data are received from domestic banking corporations, domestic financial institutions, and foreign banks. In addition, this section makes use of reports by the institutional investors to the Ministry of Finance and the Bank of Israel, reports from the banking system to the Banking Supervision Department, and reports from banks and other financial intermediaries to the Bank of Israel regarding nonresidents' holdings of Israeli financial assets.

Exposure to the exchange rate and derivatives

- **Exposure to the exchange rate** (or exposure to foreign exchange) is the monetary amount at risk in a case of changes in the shekel exchange rate vis-à-vis foreign currencies. In terms of Israelis and the various sectors in the Israeli economy, this amount is estimated in this chapter by the surplus of their foreign exchange assets over foreign exchange liabilities (denominated in and indexed to foreign exchange). In terms of nonresidents, this amount is estimated by calculating the surplus of their shekel assets over shekel liabilities. An Israeli is exposed to appreciation of the shekel when he holds a surplus of foreign exchange assets (positive), and is exposed to a depreciation of the shekel when he holds surplus foreign exchange liabilities (negative asset surplus). Nonresidents' exposure works in the opposite direction.
- Foreign exchange assets include: **balance-sheet assets** such as cash and deposits in foreign currency and foreign currency government and corporate bonds (generally foreign), and **off-balance-sheet assets,** meaning the open balance in transactions in derivative financial instruments (hereinafter: DFIs) for the purchase of foreign exchange against shekels, such as forward transactions and options (tradable and nontradable). Similarly, foreign exchange liabilities include: balance-sheet liabilities such as foreign exchange loans, and off-balance-sheet liabilities, meaning the open balance in DFI transactions for the sale of foreign exchange against shekels. Nonresidents' assets and liabilities in shekels are defined similarly.
- Many Israelis, led by institutional investors, hold foreign assets as part of an investment policy of diversification of their asset portfolio and its risks. Such holdings, of foreign assets only, expose them to appreciation of the shekel. In order to minimize this exposure, they sell foreign exchange in DFI transactions (referred to as "hedging"). Exporters and importers are exposed to changes in the exchange rate due to their commercial activity—in opposite directions—and protect themselves through DFI transactions. Other Israelis, such as financial companies, may manage exposure to the shekel exchange rate with the intention of profiting from changes in the rate, by purchasing and selling foreign exchange against shekels in the present (spot) and in the future through DFI transactions. The nonresidents sector

is comprised of various companies and individuals with activity in shekels and a similar variety of motives.

- **Implied volatility in foreign exchange options** represents the expected volatility in the exchange rate. Assuming that the options market is efficient and that actors in the market price the options based on the Black-Scholes model, the implied volatility should include all the relevant information regarding future volatility of the exchange rate. It therefore serves as a market estimate of exchange rate volatility during the period remaining until the options expire.
- **The nominal effective exchange rate**[1]: An index that reflects the relative price of the shekel vis-à-vis a basket of currencies. The weight of each currency in the index reflects its importance in Israel's foreign trade. The index is calculated as the geometric average of the shekel's exchange rate against 26 currencies representing the 33 countries that are Israel's major trading partners.

[1] For more information on effective exchange rates, see: http://www.boi.org.il/en/Markets/ExchangeRates/Pages/efectinf.aspx

Part Two

Papers on statistical methodology and economic data, and their implementation at the Bank of Israel

1. Dataset on Foreign Exchange Market Activity

2. Regular Reports by the Bank of Israel to International Institutions

DATASET ON FOREIGN EXCHANGE MARKET ACTIVITY

Vered Tayar* and Amir Khatib*

Abstract

The Bank of Israel monitors and analyzes activity in the foreign exchange market on an ongoing basis. The Information and Statistics Department manages a database of foreign exchange transactions divided by segment and instrument. The transaction data, which are collected on a daily basis, are processed into trading turnover, conversions, and exposures to foreign exchange. The data make it possible to monitor developments in sectors that operate in the foreign exchange market, and help the Bank of Israel make policy decisions. Some of the information and data that the Department produces for decision makers from the database are published on the Bank of Israel's website, and are available for use by economists and analysts that monitor financial activity in the economy.

This paper outlines the various indices in the database and the methodological framework of the main aggregates calculated from it. It also samples how the data are used, including international comparisons.

* Information and Statistics Department, Bank of Israel.

1. BACKGROUND AND PURPOSE OF THE PAPER

The foreign exchange market is considered the largest and most sophisticated in the world, where the intersection between supply of and demand for foreign exchange sets the exchange rates between various currencies. Foreign exchange trading is done mainly through banks and financial entities, and is conducted continuously.

Globalization has contributed greatly to the expanded use of foreign exchange in international trade and the flow of capital between countries, which has increased the need to monitor activity in this market. The Bank of Israel monitors the foreign exchange market, analyzes events in that market, and sometimes even acts in the market as a participant. The Bank also publishes representative exchange rates of the shekel against foreign currencies.

In order to improve the Bank of Israel's capabilities to monitor and analyze developments in the Israeli foreign exchange market, the Information and Statistics Department manages an itemized database on activity in the market. The Department gathers data and information on shekel/forex transactions on a daily basis from financial intermediaries in Israel and abroad, and processes that data into a detailed database that provides a broad and high-quality view of the activity of the various segments in this market.

This paper outlines the various indices in the database and the methodological framework of the main aggregates calculated from it. It also samples how the data are used, including international comparisons.

2. DATA FRAMEWORK AND DEFINITIONS

The transactions included in the database are transactions in which the shekel is involved and which are traded over the counter (OTC).[1] The database includes a number of main indices—financial instruments, base assets, time, and sectors—that help the Bank of Israel define activity in the shekel/foreign exchange market and set its policy accordingly.

The following is a list of the main indices:

2.1 Financial instruments through which transactions are made

2.1.1 Conversions and futures transactions – Instruments that guarantee the purchase or sale of a base asset at a price agreed to in advance (ordinary transaction or differential transaction).

[1] Currency traded directly between two parties, and not through a proper currency exchange.

- Example: On the day the transaction is made, Company A undertakes to purchase 400 shekels from Company B in exchange for 100 dollars (the exchange rate is determined when the transaction is made). The monetary accounting will be done up to two days from the time the transaction is made (Spot), or within a period of more than two days after the transaction is made (Forward).

2.1.2 Swap transactions – Exchanging quantities of base assets at various times and in various directions that offset each other.[2]

- Example: On the day the transaction is made, Company A purchases 100 dollars for 400 shekels (Spot), and undertakes to purchase 400 shekels for 100 dollars following a period set out in the terms of the transaction (Forward). The exchange rate for both parts of the transaction is set on the day the transaction is made.

2.1.3 Options – The right to purchase or sell a base asset at a future time at a predetermined price.

2.2 The base assets upon which the transactions are based, and the value derived from them

Transactions obtained in the system are based on the following base assets[3]:

2.2.1 Currency – Transactions in which the shekel is involved.
2.2.2 Interest rate – Transactions in which an unindexed yield is involved.
2.2.3 Consumer Price Index

This table outlines the instruments reported in the shekel/foreign exchange market:

Base asset	Immediate conversion	Futures	Swap	Options
Foreign exchange	Spot	Currency Forward	Fx Swap / Currency Swap	Fx Options

2.3 Time

2.3.1 The time a transaction is made – One of the characteristics of the transactions obtained in the system, which enables us to break down the transactions by year, by month, and up to the level of seconds.

2 Excluding some cross-currency swap transactions.
3 This paper focuses on transactions where the base asset is currency.

2.3.2 Transaction range – Derived from the time of its execution and the date of its payment. The transactions can be broken down into ranges—short and long—thereby specifying the activity of market participants.

2.4 The main sectors active in the foreign exchange market in Israel

The activity of the various sectors in the foreign exchange market is not homogenous. The sectoral breakdown of transactions reported to the system enables policymakers to analyze the activity of each sector operating in the market, including changes in its exposures to foreign exchange, thereby better understanding everyone's motivations.

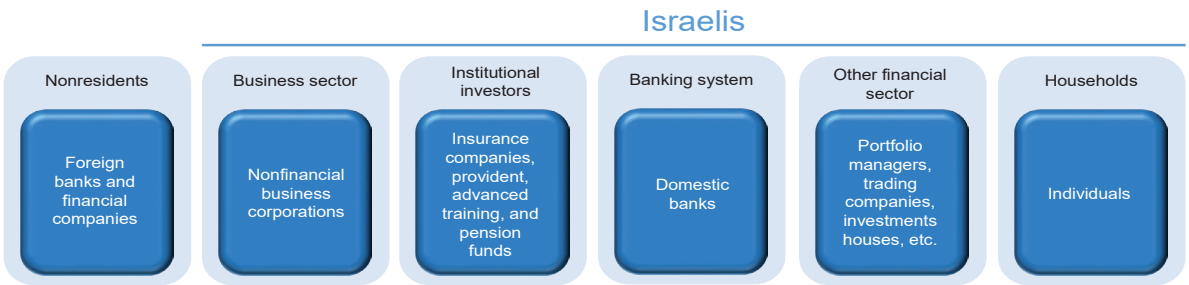
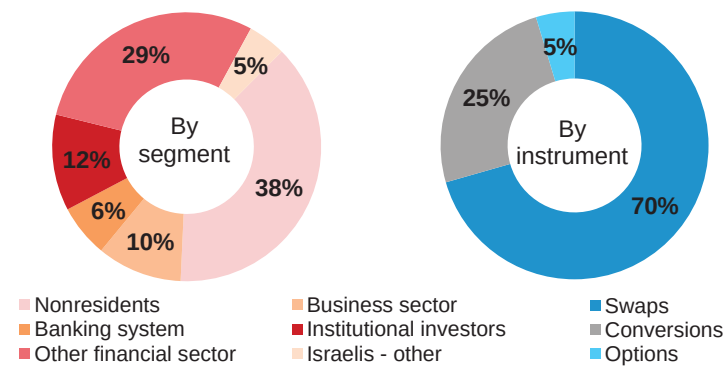


Figure 1 shows the distribution of trading volume according to the system's indices—derivatives and instruments. It shows that in 2018, nonresidents were the dominant sector in activity vis-à-vis the domestic banks (38 percent). In the breakdown according to instruments, swap transactions were the dominant instrument (70 percent).

Figure 1
Domestic Banks' Volume of Activity in the Foreign Exchange Market by Counter-Segment and By Instrument, 2018
(100%=$1,953 billion)



SOURCE: Bank of Israel.

3. SOURCES OF DATA

The domestic banking corporations have been reporting transactions to the data system since 2008. In 2017, the sources for reporting were expanded to include transactions reported by foreign reporting entities.

Currently, after adding the foreign reporting entities, the system makes it possible to obtain a comprehensive picture of activity in the foreign exchange market. Most transactions in which the shekel is involved—such as transactions between institutional investors and nonresidents, and transactions among nonresidents—are included. The reports are obtained based on Bank of Israel orders that regulate the terms of reporting.

3.1 The legal framework

In 2016, the Bank of Israel published an order under the authority of the Bank of Israel Law. This order set out a duty to report on the execution of transactions in foreign exchange derivatives, interest rate derivatives, and derivatives of indices in which the Israeli currency is involved. The order imposes a reporting requirement on various banking corporations and financial entities, both foreign and domestic, that in the past 12 months executed transactions averaging $15 million or more per day.[4] The Bank of Israel website contains a broad explanation of the Order, as well as examples of reporting on transactions and questions and answers concerning the reporting.[5]

Entities reporting to the data system		
12 domestic banking corporations	2 domestic financial institutions	About 40 foreign banks

3.2 Data sources and frequency

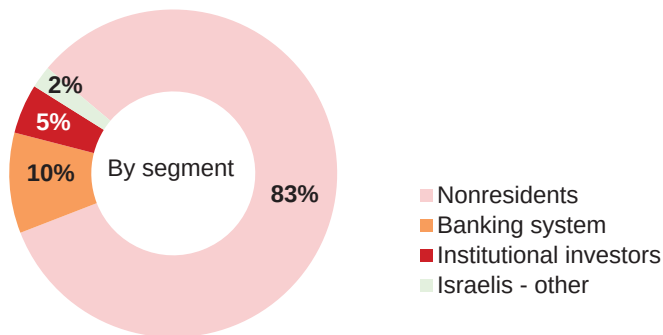
The data are reported at a daily frequency regarding all transactions executed on the previous business day. Since the reporting is received from reporting entities located in various time zones, it was determined that for uniform purposes, the reporting framework for transactions would be according to the Universal Time Continuum (UTC). As such, the daily report includes transactions made between 00:00 and 23:59 UTC on business day (T), and the required information is received on the following business day (T+1).

4 Domestic banking corporations report to the Bank of Israel regardless of the reporting benchmark.
5 https://www.boi.org.il/en/NewsAndPublications/LegislationAndRegulations/Pages/Derivatives.aspx

The addition of data from foreign reporting entities improves our understanding of activity in the shekel/foreign exchange market, as various report types can be produced showing activity from the point of view of the domestic banking corporations only, from the point of view of foreign reporting entities, or of all those reporting to the system. This division makes it possible to separately analyze the activity of domestic entities in the foreign exchange market, and to study the activity between foreign entities. We can also divide nonresidents into main segments.

Figure 2 shows trading volume by foreign reporting only. It shows that about 83 percent of the trading volume of foreign reporting entities was done vis-à-vis nonresidents.

Figure 2
Volume of Foreign Exchange Market Activity of Foreign Reporting Entities by Counter-Segment, 2018
(100%=$2,631 billion)



SOURCE: Bank of Israel.

3.3 Reporting format

The new reporting format was adapted to the international standard formulated by the ISDA[6], the leading organization for advancing the standardization of trading in OTC transactions.

The format consists of 40 reporting fields in three parameters:
a. Details of the reporting entity;
b. Details of the customer;
c. Features of the transaction—time of execution, instrument, expiration date of the contract, price of the transaction, denomination amount, and value of the transaction.

6 The ISDA created a uniform contract for derivatives transactions. For further details: https://www.isda.org

The daily reporting is on new transactions executed on the previous business day. At the end of each month, a report is received on each reporting entity's transactions that have not yet been paid up.

4. MAIN DATA AND REPORTS

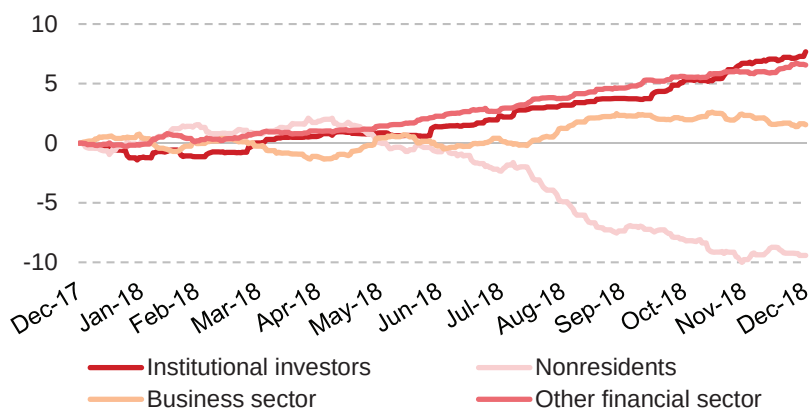
The Information and Statistics Department calculated and processes the received data in various ways to arrive at a reliable and consistent dataset. The data undergo completeness and consistency controls, logical controls, and statistical controls. The system produces reports that are used by policymakers at the Bank of Israel.

The following are the main reports:

4.1 Cumulative foreign exchange purchases by the main segments

A daily report that shows net cumulative foreign exchange purchases (purchases minus sales) of each segment, as the reporting entities report on them to the system. The report presents the segment distribution of expected foreign exchange receipts from each days' conversion and derivative transactions.
Figure 3 shows the cumulative foreign exchange purchases according to reports from the domestic banks only. It shows that over the years, nonresidents are the main sellers of foreign exchange in the Israeli market, meaning net purchasers of shekels. In contrast, the other segments are net purchasers of dollars, meaning they are sellers of shekels.

Figure 3
Estimated Cumulative Foreign Exchange Purchases by the Main Segments, 2018 ($ billion)



SOURCE: Bank of Israel.

With this report, we can estimate the change in various segments' exposure to the exchange rate. Exposure to the exchange rate (or exposure to foreign currency) is the monetary amount at risk in a case of changes to the shekel's exchange rate against foreign currencies. Regarding nonresidents, exposure to the exchange rate is measured by their surplus of shekel assets over shekel liabilities. The balance of nonresidents' exposure to the shekel makes it possible to derive their motivation for acting in the market in response to significant changes in the exchange rate.

4.2 Trading volume

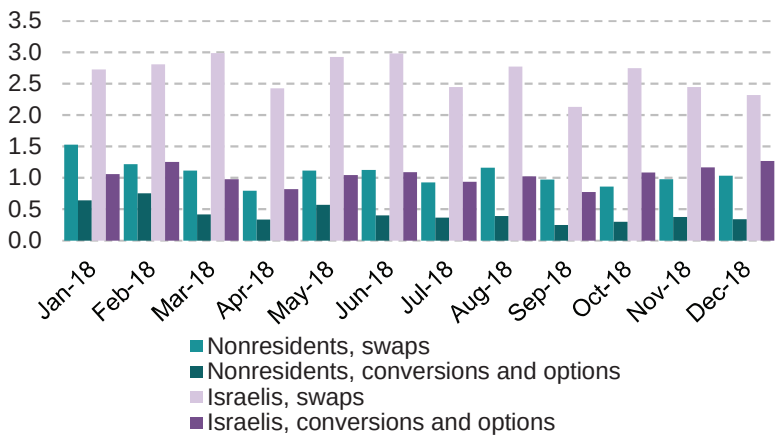
Trading volume represents the volume of activity in the shekel/foreign exchange market, and is an important tool in monitoring market behavior. The trading volume report produced from the system's data includes the gross total of transactions, meaning purchases and sales in absolute value. The volume of transactions is segmented according to the indices surveyed in Section 2—instruments, base assets, time of execution, and sectors.

In order to precisely calculate trading volume, the double counting of transactions must be avoided. Double counting may occur in two situations:

- Transactions between two entities that report to the system;
- Swap transactions—transactions that include the exchange of the same amount twice.

Figure 4 presents trading volume from the point of view of the domestic banking corporations, and shows that most of the trading volume by Israelis is in swap transactions.

Figure 4
Average Daily Trading Volume by Residence and Instrument, 2018 ($ billion)

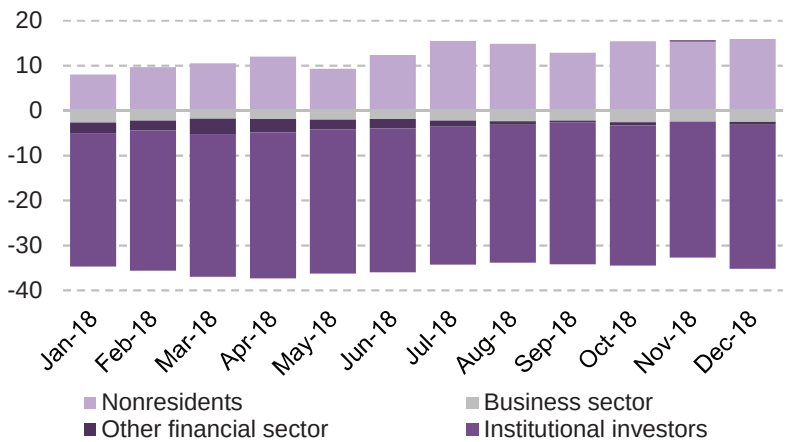


SOURCE: Bank of Israel.

4.3 Swap transactions

Figure 5 presents the capitalized amount of swap transactions that have not yet been paid up, over time by direction and segment.
The figure shows that nonresidents have a positive balance for purchasing foreign exchange in the future (sales of shekels). This balance reflects the nature of nonresidents' investment activity in Israel, mainly through the Tel Aviv Stock Exchange. In order to lower their exposure to the shekel, they undertake to sell shekels in the future at a fixed rate. In contrast, institutional investors invest abroad, and in order to reduce their exposure to foreign exchange, they undertake to sell foreign currency in the future (to buy shekels) at a fixed rate.

Figure 5
Swap Balances by Segment, 2018 ($ billion)

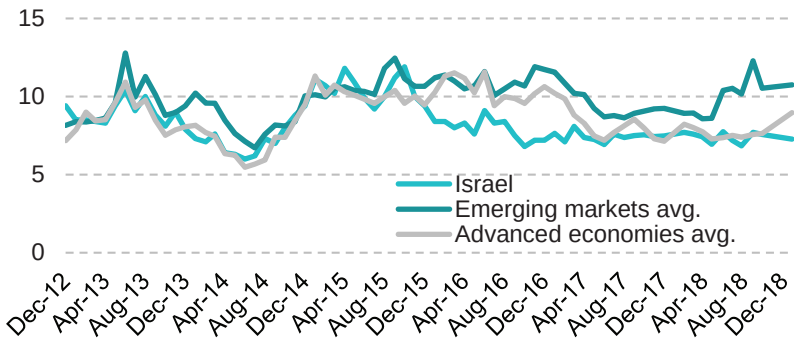


SOURCE: Bank of Israel.

4.4 Implied shekel/dollar volatility

Exchange rate risk is reflected in the volatility of the shekel/dollar exchange rate. The volatility observed in the exchange rate is measured according to the implied volatility of shekel-dollar options, which is calculated through the Black and Scholes formula.
An increase in the standard deviation reflects market expectations of higher volatility in the exchange rate, while a decline in the standard deviation reflects market expectations of stability in the exchange rate.
Figure 6 presents a comparison of the implied volatility in the shekel/dollar market and the standard deviations in developing and advanced economies against the dollar. The figure shows that in recent years, the shekel/dollar exchange rate risk has been lower than the exchange rate risk of other currencies against the dollar.

Figure 6
Implied Volatility of Foreign Exchange Options, 2014–2018
(weekly data, percent)



Emerging markets: Mexico, South Korea, Philippines, Poland, Chile, South Africa, Thailand, Hungary, Turkey, and Singapore.
Advanced economies: Australia, Canada, Japan, UK, Switzerland, and eurozone.
SOURCE: Bank of Israel.

4.5 Intraday reports

The data system also makes it possible to analyze intraday activity on the previous business day, based on the report on the time of the transaction. The intraday analysis is significant particularly on days when there are sharp changes in the exchange rate, in that it makes it possible to trace the dynamic of sectoral activity in the market during the day.
An example of an intraday report is the "heat map", which presents an analysis of the number of transactions by nonresidents. The report shows the days and hours during the week in which foreign exchange activity was more intensive, meaning larger activity volumes. The highest number of transactions are made between Monday and Friday between 3:00 and 5:00 pm Israel time (Figure 7).

Figure 7
Average Daily Number of Transactions by Reporting Entities by Day and Time, 2018

Israel time	Monday	Tuesday	Wednesday	Thursday	Friday
02:00	22	39	41	29	33
03:00	18	20	18	21	26
04:00	15	22	11	9	17
05:00	10	11	7	19	7
06:00	28	20	16	21	15
07:00	58	70	77	52	48
08:00	261	289	270	237	193
09:00	524	478	481	450	378
10:00	532	526	522	444	414
11:00	573	655	667	599	609
12:00	596	517	469	634	429
13:00	577	546	577	563	683
14:00	604	506	570	720	547
15:00	642	803	727	693	618
16:00	664	688	780	698	665
17:00	698	834	661	701	670
18:00	355	385	324	373	303
19:00	184	195	206	267	158
20:00	166	158	216	162	154
21:00	154	130	158	155	155
22:00	158	159	155	169	129
23:00	79	73	75	77	47
00:00	22	15	14	17	2
01:00	10	7	17	14	1

Number of transactions	
0-30	
30-375	
375-834	

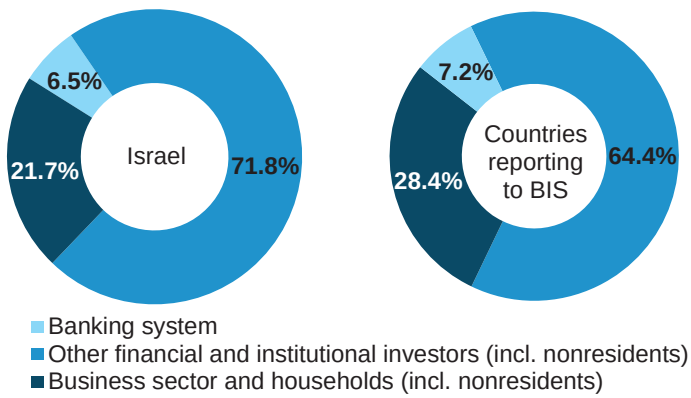
5. INTERNATIONAL COMPARISON

The following is a sample use of the system's data in an international comparison. For the purpose of the comparison, the Bank of International Settlements (BIS) database was used.[7] Similar to other central banks, the Bank of Israel Information and Statistics Department reports to the BIS on foreign exchange activity reported by the domestic banking corporations, among other things. The BIS survey includes detailed statistics on foreign exchange and derivative activity. The survey is conducted every three years, and calculated permanently regarding April.[8] The database contains OTC data on 46 countries including Israel.

It should be noted that the ability compare the domestic foreign exchange market with international markets is limited because of the differing nature of activity between countries.

Figure 8 shows the trading volume reported by the domestic banking corporations, segmented by sectors, and shows that in Israel most transactions in 2016 were conducted with financial institutions that are not domestic banking corporations—unlike in other countries, where most transactions are with domestic banks.

Figure 8
Distribution of Active Segments as a Share of Average Daily Trading Volume, April 2016

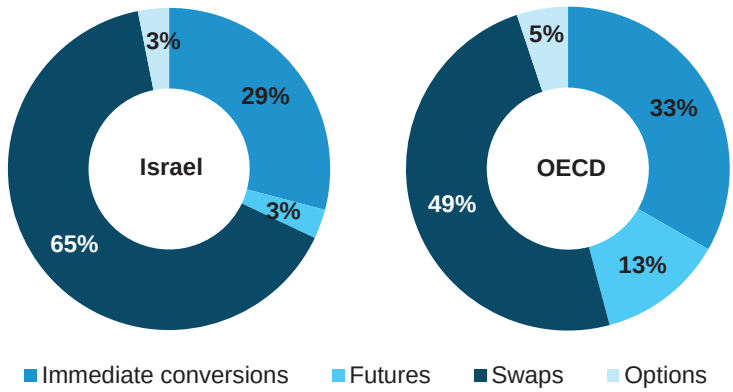


SOURCE: Bank of Israel.

A comparison of trading volume by instrument (Figure 9) shows that there are more swap transactions in Israel than in other OECD countries, on average. In contrast, futures transactions account for a smaller portion of total trading volume.

7 http://www.bis.org/statistics/totcredit.htm?m=6%7C326
8 The most recent available data are for April 2016.

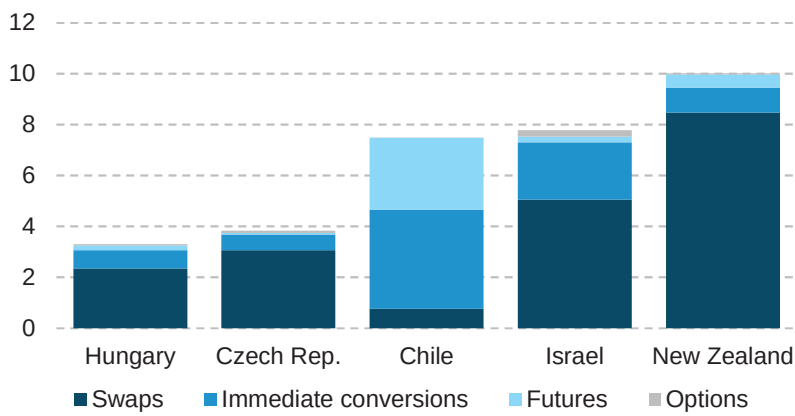
Figure 9
Distribution of Average Daily Trading Volume by Instrument, April 2016



SOURCE: Bank of Israel.

Compared with countries that have a similar average daily trading volume to that of Israel and have a domestic currency, Figure 10 shows that Israel is similar to Hungary, the Czech Republic, and New Zealand, in that most foreign exchange transactions are through FX swaps.

Figure 10
Distribution of Trading Volume by Instrument, International Comparison, April 2016 ($ billion)



SOURCE: Bank of Israel.

REGULAR REPORTS BY THE BANK OF ISRAEL TO INTERNATIONAL INSTITUTIONS

Daniel Rosenman*

Abstract

Reliable up-to-date data are an essential need for managing economic policy, as they make it possible to examine economic developments over time and by international comparison. In order for the data on various countries to be comparable and consistent over time, the international institutions, chiefly the International Monetary Fund, define and develop methodologies for calculation, reporting, and detailed metadata.

The Bank of Israel Information and Statistics Department fulfills in practical terms the central bank's statistical reporting requirements to international institutions. As such, the Department creates and produces the various reports, remains constantly up-to-date on changes in international standards, and adapts its statistical systems to changing informational needs.

This paper presents the variety of reports that the Bank of Israel sends to the international institutions directly and through the Central Bureau of Statistics, and focuses on a number of the reports that provide a significant and useful reporting framework.

* Information and Statistics Department, Bank of Israel.

1. INTRODUCTION

One of the main needs in managing economic policy is the existence of reliable and up-to-date data that can be used to examine economic developments over time and to conduct the appropriate policy. As the economy has become increasingly global and economic ties between countries have become more widespread and complex, monitoring the economic parameters of each country and monitoring them at the international level has become more important. Comparable data on a uniform, high-quality basis make an important contribution to researching and managing economic policy as part of the global economy.

In order for the data on various countries to be comparable and consistent over time, the international institutions, chiefly the International Monetary Fund, define and develop methodologies for calculation and reporting in the various subject areas. In addition to the data themselves, these include detailed metadata, meaning information about the information. The developments in the financial markets, particularly global economic crises, have over the years exposed information gaps and methodological issues that have made it necessary for the international institutions to act constantly to improve the methods underpinning the databases, develop new databases, and adjust the reporting frequency to informational needs. In addition, Israel's accession to the OECD required it to meet the international standards required by the organization in various fields, including statistics.

The main entities the create national statistics in each country are the central bank and the statistics bureau. The division of roles between the bank and the bureau that is common both in Israel and abroad is that the central bank is responsible for the gathering, processing and dissemination of financial and monetary data and for the financial account of the balance of payments, while the bureau is responsible for the collection, processing, and reporting of real and fiscal data.

The Information and Statistics Department fulfills the Bank of Israel's statistical reporting obligations to the international institutions. As part of this, it creates and produces the various reports regarding a range of subject areas, remains constantly up-to-date on changes in international standards, and adapts its statistical systems to changing informational needs.

The aim of this paper it to presents the variety of reports that the Bank of Israel sends to the various international institutions, most of which are also available on the Bank of Israel's website. The paper will provide greater detail on the discussion regarding three reporting frameworks—Monetary and Financial Statistics (MFS); Financial Soundness Indicators (FSI); and the Coordinated Portfolio Investment Survey (CPIS)—including a sampling of international comparisons on these topics.

2. REVIEW OF THE BANK OF ISRAEL'S REPORTS TO THE INTERNATIONAL INSTITUTIONS

The national statistics, in their direct economic aspect[1], deal with a variety of subject areas: the labor market, prices, national accounts, foreign trade and the balance of payments, the financial markets—money and capital markets—the housing market, the public sector, and more.

There are subgroups of data and aggregates for each subject area, which reflect most of the existing information on the topic. The methodical collection of the data makes it possible, among other things, to identify risks at the state level and at the global level, whether financial risks (credit risks, market risks, currency risks, and others) or real risks that reflect a turning point in the business cycle.

The international standards for collecting and reporting information in each subject area, as well as the optimal reporting frequency, have developed over time, and generally involve learning from global experience.

How the information is produced, the selection of series, aggregates and data frameworks that represent each subject area, and learning from accumulated global experience, are discussed constantly in working groups and at periodic conferences that are sponsored by the international institutions, chiefly the OECD, the IMF, and the Bank of International Settlements (BIS). Based on the knowledge and global experience, the IMF develops standards for the development and publication of data in various fields, and a guide for calculating the data is provided for each subject area. The aim of the international calculation and reporting standards is to create a high-quality uniform database for many countries.

Table 1 summarizes the Bank of Israel's reports to the international institutions by subject area. The table lists the name of the report, the topic, and an explanation of the reporting rules, as well as the sources from which the Bank takes the reported information, and the reporting frequency. Most of the reports are intended for the IMF, so the table notes the international institution to which the information is sent only if it is different from the IMF.

The International Monetary Fund launched the initiative to establish data reporting standards in order to increase the data transparency regarding its member countries and to advance the development of statistical systems. The need for data standards was emphasized following the financial crises of the mid 1990s, when information gaps were revealed. As part of the data standards initiatives, the IMF launched the Special Data Dissemination Standard (SDDS) in 1996 to increase the availability of comparable economic and financial data to the public, and to make main data that are important for monitoring systemic risks accessible to decision makers.

In 1997, the International Monetary Fund presented the General Data Dissemination System to provide countries with a system for developing their statistical systems, through which they can

[1] Alongside other social issues with an indirect economic impact and economic relevance, such as demographics, healthcare, education, higher education, and many more.

Table 1: Summary of the reports sent to the international institutions

Sector	Topic	Data	Source of data	Frequency
Financial sector	The banking system	2SR - Banking system balance sheet broken down by instrument, currency, and countersegment (as part of MFS)	Banks' reports to the Banking Supervision Department	Monthly
		Accessibility survey (FAS): Various data on the population's access to financial services, such as number of branches		Yearly
	The central bank (Bank of Israel)	1SR - Bank of Israel balance sheet borken down by instrument, currency, and countersegment (as part of MFS)	Bank of Israel Accounting Unit	Monthly
	Other fianancial corporations	4SR - Assets of the institutional investors: mutual funds, provident funds, advanced training funds, and insurance companies, by instrument, currency and counter segment (as part of MFS)	Institutional investors' reports to the Bank of Israel	Monthly
		7II - Details of assets by asset type, range, and residence of the countersegment. Includes mutual funds. Reported to the OECD.		Quarterly
	Monetary aggregates	5SR - Israel's monetary aggregates: Components of the broad aggregate and the monetary base (as part of MFS).	Bank of Israel Accounting Unit, Banks' reports to the Banking Supervision Department, Tel Aviv Stock Exchange, mutual fund reports, and the Postal Bank	Monthly
	Interest rates and yields	6SR - Interest rates, yields, and share prices (as part of MFS).	Banks' reports to the Banking Supervision Department, Bank of Israel, and Tel Aviv Stock Exchange	Monthly
	Financial soundness (FSI)	Financial soundness indicators of the banking system, institutional investors, the business sector, households, the liquidity market, and the real estate market.	Banks' reports to the Banking Supervision Department, reports by institutional investors, Tel Aviv Stock Excahnge, Central Bureau of Statistics, and financial statements of publicly traded companies.	Quarterly
External sector	Financial account of the balance of payments	Transactions in the financial account of the balance of payments.	Reports by the banks and companies to the Bank of Israel	Quarterly
	International Investment Position (IIP)	Israel's assets and liabilities vis-à-vis abroad, and changes in the balances - net movements, price differentials, exchange rate differentials, and other changes.		
	Foreign exchange reserves	Total end-of-month balance	Bank of Israel	Monthly
		Currency composition of foreign exchange reserves (COFER)		Quarterly
		Geographic composition of the reserves (SEFER)		Yearly
		Composition of reserves by asset (INFER)		Yearly
	External debt	External debt divided by type of asset, broken down by sector and term to repayment	Bank of Israel	Quarterly
	Representative exchange rates	Shekel exchange rate against various currencies and effective exchange rate	Bank of Israel	Daily
	Foreign exchange market	Trading volumes and opening balances of OTC foreign exchange and interest rate derivatives - reported to BIS	Reports by the banks and investment houses to the Bank of Israel	Three times a year
	Tradable securities	Israelis' holdings of foreign tradable securities, and Israeli securities held by nonresidents - CPIS	Reports by the banks and investment houses to the Bank of Israel	Semi-annually
	Direct investments	Nonresidents' direct investments in Israel and Israelis' direct investments abroad - CDIS	Reports by the banks and companies to the Bank of Israel	Annually
		Balances and transactions in Israelis' direct investments abroad and in nonresidents' direct investments in Israel. Reported to the UN Statistics Division.		

In addition, selected series on these topics are reported to the BIS each month. The series include data on debt in the economy—loans and bonds—by various segmentations, share indices, real data, monetary aggregates, interest rates and yields, exchange rates, and more.

disseminate reliable comprehensive data. The dissemination standard relates to selected series on four main sectors: real, fiscal, financial, and foreign. All of the data are made accessible and are published on a page dedicated to the topic on the Central Bureau of Statistics website.[2]
In February 2012, the IMF expanded the dissemination standard (SDDS Plus) in order to deal with information gaps that were uncovered during the Global Financial Crisis of 2008. SDDS Plus includes 9 additional subject areas in the four sectors listed, some of which are currently reported separately, and some of which have new reports: sectoral balance sheets, public sector accounts, public debt, nonbank financial institutions, financial soundness indicators (FSI), bond balances by issuing sector and holding sector, CDIS, CPIS, and COFER (Table 1). Israel is expected to join SDDS Plus in 2019.

3. A CLOSER LOOK AT SOME OF THE REPORTING FRAMEWORKS

3.1 Monetary and Financial Statistics (MFS)

In the years since the Global Financial Crisis of 2008, the leading international institutions (IMF, World Bank, OECD, and others) have done comprehensive, thorough, and methodical work to develop a coordinated and uniform data infrastructure of financial information at monthly frequency that will replace the partial quarterly reporting that had been done beforehand.
The MFS reporting framework includes balance sheet details of three sectors—central bank, banking system and money market funds, and "other financial institutions", which are the institutional investors—as well as reporting on monetary aggregates and various interest rates in the economy.[3]
The reporting requirement is monthly, and includes balance sheet details by asset, currency, and counter-sector. The sectoral information is intended to enable decision makers to examine the effects of economic developments in each sector on the other sectors. Such information makes it possible, for instance, to analyze who holds liquidity in the economy, what sectors are leveraged and to what extent, what is each sector's exposure to the activities of the other sectors, and so forth. Using this information, decision makers can analyze the risks from changes in the financial strength of each of the sectors and their effect on systemic stability, and respond in a timely fashion to developments in order to prevent or minimize contagion that can undermine the stability of the economy as a whole.
The following is a list of the reports as part of the MFS, how they are calculated and their data sources:

Balance sheet of the central bank (Bank of Israel) (ISR report): The processing and production of the Bank of Israel's balance sheet vis-à-vis counter-sectors was completed in 2008. Since then, the balance sheet is sent to the International Monetary Fund on a monthly basis.
Balance sheet of the banking system and money market funds (2SR report – Other Depository Corporation): The Bank of Israel's Banking Supervision Department collects the monthly balance

2 http://cbs.gov.il/reader/imf/dsbbisr_new.htm
3 For more information, see https://data.imf.org/?sk=B83F71E8-61E3-4CF1-8CF3-6d7FE04D0930

sheets of the banks in Israel. These balance sheets are the basis for reporting, but since they do not include a detailed sectoral breakdown, the estimates of each section are sorted and calculated. Money market fund data are taken from the reports published by the companies, which include detailed data on the funds' holdings of various assets.

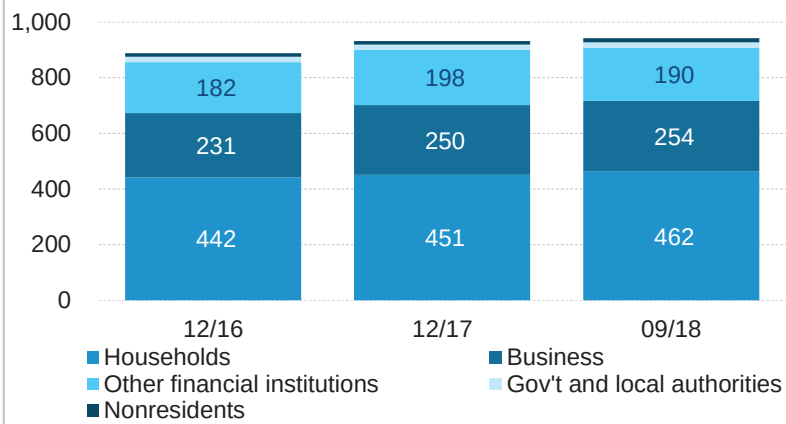
Institutional investors' assets (4SR report): The Ministry of Finance and the Bank of Israel receive a detailed report from the institutional investors on their assets each month. In order to sort the hundreds of sections in the report by sector, comprehensive work is done to adjust the various asset items of the institutional investors to the report items required by the IMF. In some cases, estimates are calculated to overcome a lack of information.

Monetary aggregates (5SR report): A report that comprises Israel's monetary aggregates, particularly the broad monetary aggregate. Information in the report is taken from the 1SR and 2SR reports, and from other sources.[4]

Interest rates and yields (6SR report): A collection of data that includes information on interest rates—the Bank of Israel rate, the interbank rate, the average rate on deposits and various types of credit (late-payment rate, ordinary unindexed rate, indexed and unindexed mortgage rates), and *makam* yields—and the Tel Aviv 125 share price index.

The set of sectoral MFS reports provides insights into the domestic financial system. Figure 1 shows the sectoral distribution of shekel deposits in the domestic banks, and shows the slow increase in the volume of deposits in all sectors in recent years, in view of the low interest rates in the economy.

Figure 1
Shekel Bank Deposits by Depositing Sector, from the 2SR Report (NIS billion)

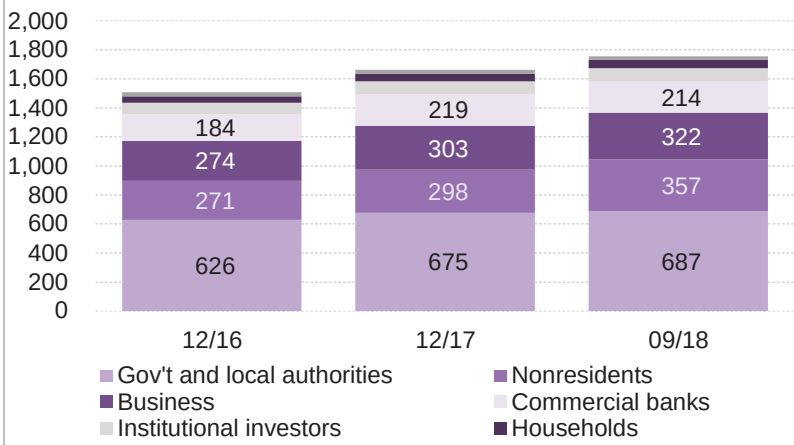


SOURCE: Based on Tel Aviv Stock Exchange, and Central Bureau of Statistics. reports by the banks and the institutional investors to the Bank of Israel.

[4] For more information, see: https://www.boi.org.il/en/NewsAndPublications/RegularPublications/Documents/StatBulletin2015/money%20aggregate_chap%20b-2015.pdf

Figure 2 shows institutional investors' investments by counter-sector, from which we can see that about 40 percent of their investments are vis-à-vis the government of Israel, meaning government debt to the institutional investors, about 20 percent are vis-à-vis abroad, and about 18 percent are vis-à-vis the business sector.

Figure 2
Institutional Investors' Assets vis-a-vis the Various Sectors, from the 4SR Report (NIS billion)



SOURCE: Based on institutional investors' reports to the Bank of Israel.

3.2 Financial Soundness Indicators (FSI)

Due to the tremendous importance of monitoring the financial system and the risks that have systemic influence, the IMF developed Financial Soundness Indicators in 2000, with the aim of supporting macroprudential analysis and assisting informed decision-making based on reliable, up-to-date data that can help evaluate the strength of the financial system. The FSIs are comprised of 40 indicators that are used as measures of the financial strength of the various institutions in a country: financial institutions—banks and institutional investors—as well as businesses and households. The indicators include aggregate information on the institutions, as well as information on the various domestic markets in which the institutions operate.

The IMF developed a broad and in-depth method for calculating the indices, which is detailed in a special guide, and the Information and Statistics Department operates according to the definitions set out in the guide.[5]

The 40 indicators, which are calculated at a quarterly frequency, are divided into two groups—a core set that includes 12 indicators, and a recommended set that includes the

[5] https://www.imf.org/external/pubs/ft/fsi/guide/2006/index.htm

Table 2: Israel's Financial Soundness Indicators, 2016–18 (percent)

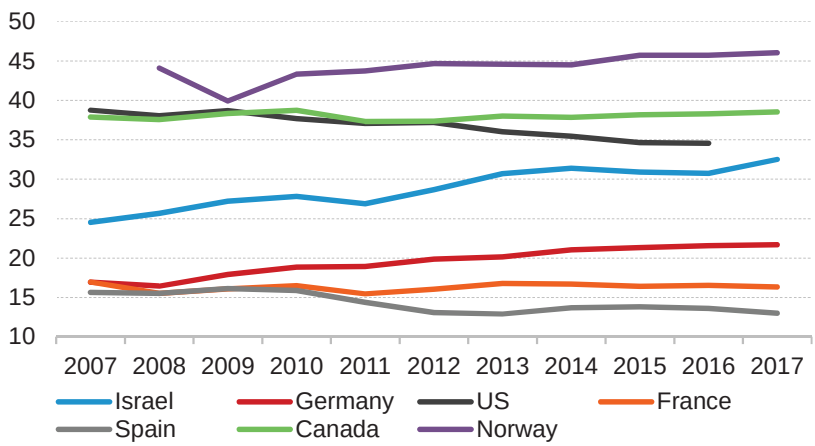
Core set - banking system	2016:Q4	2017:Q4	2018:Q2
Minimum capital ratio	14.7	14.5	14.1
Initial capital ratio for risk components	10.9	11.1	10.9
Ratio of debt for which there is no loan loss provision to capital	2.2	0.8	0.7
Ratio of gross nonperforming debt to total gross credit	1.6	1.3	1.3
Bank credit: Total Israelis	91.7	92.3	92.3
of which: To other financial institutions	4.6	4.6	4.5
To the public sector	3.2	3.2	3.2
To the nonfinancial banking sector	35.8	36.0	36.5
To households	48.1	48.4	48.0
Bank credit: Total nonresidents	8.3	7.7	7.7
Return on assets	1.0	1.0	1.0
Return on equity	13.9	13.8	14.0
Financing profit as a share of total pre-tax income	58.6	61.7	63.2
Ration of nonfinancing expenses to total pre-tax income	67.1	65.5	64.3
Liquid assets as a share of total assets	24.5	24.1	22.8
Ratio of liquid assets to liquid liabilities	135.3	124.8	125.5
Ratio of net foreign exchange position to capital	-65.6	-55.4	-54.2
Recommended set - banking system			
Ratio of equity to assets	7.2	7.4	7.4
Exposure to large borrowers as a share of capital	323.4	312.2	...
Share of credit issued to Israeli residents	83.8	...	84.6
Share of credit issued to advanced economies	15.6	...	14.8
Share of credit issued to developing economies	0.7	...	0.6
Ratio of gross derivatives position to capital, assets side	29.5	26.5	27.7
Ratio of gross derivatives position to capital, liabilities side	30.5	26.7	25.8
Trading income as a share of total pre-tax income	5.3	5.2	...
Manpower and peripheral expenses as a share of total nonfinancing expensces	58.0	57.8	52.8
Gap between the interest on credit and the interest on deposits	3.0	3.1	...
Spread between the highest and lowest interst rates in the interbank market	...	...	...
Ratio of the public's deposits to total gross credit	121.6	121.5	119.2
Foreign exchange credit as a share of total gross credit	11.4	10.3	11.5
Foreign exchange liabilities as a share of total liabilities	25.9	23.3	24.1
Ratio of net position in shares to equity	3.8	5.2	4.5
Recommended set - nonbank financial institutions			
Assets as a share of financial sector assets	30.8	32.6	32.9
Ratio of assets to GDP	140.4	149.8	150.4
Recommended set - business sector			
Ratio of debt to equity	190.5	204.6	198.3
Retun on equity	10.9	1.7	6.7
Ratio of total operating profit to net financing expenses	233.3	38.8	144.7
Exposure to foreign exchange as a share of capital	...	...	...
Number of bankruptcies	...	...	...
Recommended set - households			
Bank credit to private individuals as a share of GDP	41.2	41.8	42.0
Debt servicing as a share of disposable income	...	...	...
Recommended set - liquidity in the markets			
Average BID-ASK spread in the bond market	0.029	0.026	0.029
Turnover rate in the bond market	0.500	0.317	0.401
Recommended set - the real estate market			
Index of owner-occupied home prices	5.7	1.4	−0.5
Index of income-producing real estate prices	...	...	...
Bank housing credit to private individuals as a share of total bank credit	35.4	35.4	35.4
Bank real estate (including income-generating) credit as a share of total bank credit	13.4	14.2	14.6

other 28 indicators. The IMF's goal is that the countries should report at least on the core set. The Bank of Israel calculates 35 indicators, reports on them to the IMF, and publishes them on the Bank's website.[6] Other than the indices themselves, additional data are calculated, including the aggregate balance sheet and profit and loss statement of the banking system. There are also comprehensive and uniform meta-data for all reporting countries, to enable uniform and consistent international comparisons. The information on all countries is available on the IMF's website.[7]

Table 2 presents all the indicators at three time points, and shows improvement in the banking system's financial stability indices in the past two years. This is reflected in a decline in the volume of problematic credit, improved profit margins, and a decline in exposure to large borrowers alongside an increase in credit to the nonbank business sector and to households.

An international comparison of the financial stability indicators shows that the assets of the nonbank financial institutions (institutional investors and mutual funds) as a share of financial sector assets in Israel is in the middle of the range of selected countries, and has been consistently increasing in recent years (Figure 3).[8]

Figure 3
Nonbank Financial Institutions' Assets as a Share of Total Financial Sector Assets, FSI Data, 2007–2017 (percent)



SOURCE: Based on International Monetary Fund.

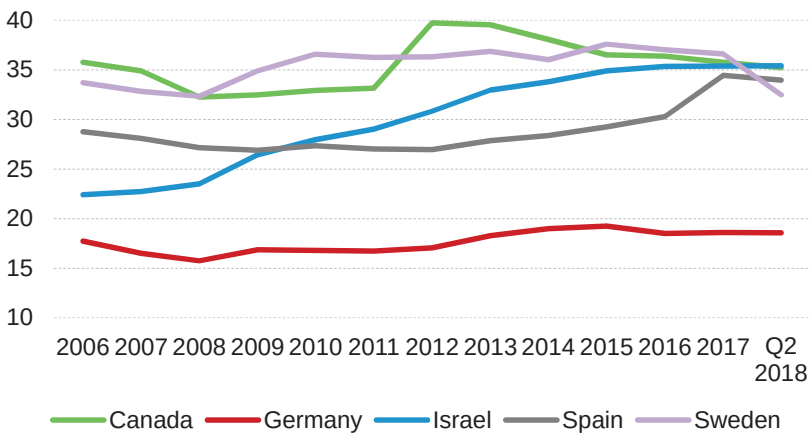
6 The other five indicators are not calculated due to a lack of data.

7 http://data.imf.org/?sk=51B096FA-2CD2-40C2-8D09-0699CC1764DA

8 For an international comparison of the Global Financial Crisis's effects on Israel's relative position, see Rosenman, D. (2014), "Changes in the indicators of the Israeli economy compared to the OECD", Bank of Israel. http://www.boi.org.il/en/Research/Pages/occasional-pp1405.aspx (in Hebrew).

Figure 4 shows, through an international comparison of housing credit to individuals as a share of bank credit, that as a result of developments in the housing market in the past decade, the weight of housing credit in Israel, which was relatively low in 2006, has been increasing consistently, reaching about 35 percent of total credit in the past two years, similar to, and even slightly higher than, the rates in Canada, Switzerland, and Spain. In contrast, the weight of housing credit in Germany is significantly lower.

Figure 4
Bank-Issued Housing Credit as a Share of Total Bank Credit, FSI Data, 2006–2018 (percent)



SOURCE: Based on International Monetary Fund.

3.3 Coordinated Portfolio Investment Survey (CPIS)

The Coordinated Portfolio Investment Survey (CPIS) is a report to the IMF regarding financial investments in securities—both Israeli investments abroad (assets) and nonresidents' investments in the Israeli economy (liabilities). The report contains a number of indices: the State (in which the economy invests and that which invests in Israel); the investment currency; the investing or invested-in sector (financial, nonfinancial business, institutional investors, households, or government); and the type of asset (bonds or shares). Thus, the report makes it possible to monitor a variety of systemic risks derived from exposures to market risks, currency risks, or country risks.

The report is currently semi-annual, and in the near future, it will become part of the SDDS Plus framework to which Israel is expected to move during 2019. The report is submitted about half a year after the end of the half-year to which it relates.

Table 3: Israelis' financial investments abroad

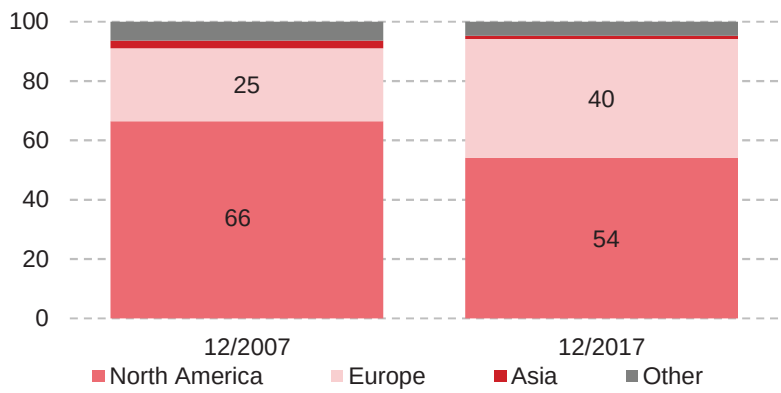
CPIS - Reported Portfolio Investment Assets by Sector of Holder and Economy of Nonresident Issuer, December 2017 (Equity, end-of-period, $ million)

Investment in:	Total	Banks	Other financial institutions	of which:		Nonfinancial companies, households, and non-profit organizations	of which:		
				Insurance companies and pension funds	Other		Nonfinancial business corporations	Households	Non-profit organizations
Australia	80		44	43	1	36	4	32	
Austria	190		176	167	9	14	4	10	
Belgium	38		27	17	10	11	1	10	
Canada	356		275	263	12	81	18	63	
Cayman Islands	123		89	89		34	13	18	3
China, P.R.: Hong Kong	207		191	149	42	16	5	11	
Denmark	13		9	4	5	4	1	3	
Finland	17		13	9	4	4	1	3	
France	3,487	2	2,952	2,894	58	533	217	308	8
Germany	4,369	15	3,634	3,336	298	720	228	473	19
Ireland	2,910		2,579	2,532	47	331	74	226	31
Italy	223		180	152	28	43	4	39	
Japan	501		481	408	73	20	9	11	
Luxembourg	10,350		9,671	9,649	22	679	194	463	22
Netherlands	441	1	301	275	26	139	39	100	
Norway	11		5	1	4	6	2	4	
Singapore	13	1				12	1	11	
Spain	164		123	106	17	41	17	24	
Sweden	117		58	50	8	59	4	55	
Switzerland	543		294	275	19	249	21	224	4
United Kingdom	8,405	4	6,776	6,542	234	1,625	873	743	9
United States	41,971	3	21,467	19,540	1,927	20,501	6,664	13,660	177
Virgin Islands, British	30		16	16		14	6	6	2
Not Specified	3,637		2,050	1,653	397	1,587	949	623	15
World	**78,224**	**26**	**51,424**	**48,176**	**3,248**	**26,774**	**9,354**	**17,130**	**290**

Table 3 presents Israelis' financial investments in foreign shares, divided by investor's sector and the country in which the investment is made.[9]

Figure 5 shows the development over time of the geographic distribution of Israel's total assets abroad in tradable shares, from which we can see that in the past ten years, the geographic distribution of this asset portfolio has increased, while the weight of investments in North America has declined in favor of investments in Europe. At the end of 2017, 54 percent of the portfolio was invested in North America (the vast majority in the US)—a significant decline compared with 2012 when it was 66 percent. At the same time, the weight of investments in Europe increased from about 25 percent in 2012 to about 40 percent at the end of 2017.

Figure 5
Geographic Distribution of Israelis' Financial Investments in Foreign Shares, From CPIS Report, 2007 and 2017 (percent)



SOURCE: Direct reports by individuals, companies, and banks to the Bank of Israel, Bank of Israel data, institutional investors, Israel Securities Authority, and Ministry of Finance.

4. CONCLUSION

This work outlines the reports that the Bank of Israel submits to the international institutions directly or through the Central Bureau of Statistics, and discusses some of them, which serve as a significant reporting framework, in depth.

These reports require a lot of input, through the gathering, processing, and on-going adjustment of data to changing international standards, but they generate great benefit, since they provide policy makers and researchers in Israel and abroad with a very broad set of up-to-date data on a variety of fields of activity—real, fiscal, financial and monetary. These data enable decision makers to monitor the links between the domestic sectors, and those between the Israeli and foreign economies. They also help them obtain important insights from the international comparisons.

[9] For editing purposes, the Table was narrowed to just the countries for which data are higher than 10 million. As such, individual figures may not add up to the total shown. The IMF's database contains data on all of the countries and regions of the world, totaling close to 200.

The reports to the international organizations also provide a benefit to those producing the data and generating the reports: In the course of studying the methodological frameworks for the reports, they increase their proficiency in the economic ties among the various sectors and the relationships among the range of economic subject matter. The international institutions hold regular conferences and seminars that include discussions of methodological issues concerning the data, which enable colleagues from participating countries to learn from each other.

The publication of these reports together on the websites of the international organizations also provides the broad public, researchers, and analysts around the world with easy access to the main economic data on each economy.