BANK OF ISRAEL

FINANCIAL STABILITY REPORT

Jerusalem, June 2017 • Tammuz 5777

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With thanks to the Bank of Israel Information and Statistics Department for the data used in the report, and to student researchers in the Financial Stability Division of the Bank of Israel Research Department for their work in processing the data; to the economists in the Research Department, the Banking Supervision Department, the Market Operations Department, and Information and Statistics Department, and the Accounting Payment and Settlement Systems Department for their helpful comments; and to members of the Capital Market, Insurance and Savings Division in the Ministry of Finance for their input. The linguistic, translation, layout and design work of the Bank of Israel Publications Unit is also greatly appreciated.

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MAIN REMARKS

The Israeli economy grew rapidly during the past year, thanks to the steep increase in private consumption and against the background of low unemployment. On the financial side, there was substantial expansion both in credit to the business sector—primarily from nonbank sources, a process that was due, among other things, to the decline in yields on corporate bonds—and in credit to households. Although the ratio of household debt to GDP rose somewhat, the ratio of total debt to GDP declined during the past year, primarily due to the decrease in the ratio of government debt to GDP. In the housing market, there was some slowdown in activity: Housing prices stabilized in recent months and this moderated the rate of increase for the last 12 months[1]; the volume of residential housing transactions declined somewhat[2]; the pace of new housing sales declined; the share of investors dropped significantly; and the number and volume of mortgages issued each month continued to contract. However, it should be stressed that housing credit and credit to the construction and real estate industry as a share of total domestic credit to the nonfinancial private sector[3] continued to grow during the reviewed period.

Against the background of these developments, the domestic financial system remained stable. However, it is still considered to be exposed to risk. In the short term, there is a risk to financial institutions and to households from the possibility of a sharp drop in the prices of dwellings and financial assets. Asset prices may decline if the leading economies in the world slip into another recession or if they experience an undermining of their financial stability; or if the geopolitical situation deteriorates and leads to an increase in the risk premium and a resulting increase in the interest rate; or if shocks significantly reduce disposable household income. In the medium term, there is risk to households as a result of the continuing growth in nonhousing credit, which may lead to widespread default if economic conditions deteriorate.

Table 1 summarizes the views regarding the systemic risks to the economy in the short and medium terms and presents their sources and levels, a description, the changes that have occurred during the last six months and the main causes of those changes.

[1] To illustrate, when one compares September 2016 to September 2015 the rate of increase is 8.9 percent and when one compares March 2017 to March 2016 the rate is 4.4 percent.

[2] New and second-hand housing.

[3] Housing credit and credit to the construction and real estate industry include bank balance-sheet credit to the construction and real estate industry, the bonds of that industry, and housing credit to households. This estimate does not include direct loans from the institutional investors or nontradable bonds.

Table 1: Summary of the systemic risks to the economy

Timing for realization of the risk	Source of the risk	Level of risk to the economy	Description of the risk	Change in the risk during the past six months	Main causes of the change	Comments
Short term	Housing market	High	A major decline in housing prices will affect the entire economy but particularly the financial system since it is exposed to the sector to a great extent, by way of both households and companies in the construction and real estate industry.	Unchanged	-	In recent months, there have been indications of some slowdown in activity and in the rate of price increases; if this continues, there will be a reduction in risk.
	Corporate bond market	Intermediate	Corporate bond prices are high due to the high level of liquidity in the markets and due to investors searching for yield. This exposes the financial system to the risk of a reversal in trend and sharp price declines. This is liable to erode the total savings of the public and also reduce private consumption and make it difficult for companies that raise capital by bonds to refinance their debts, a development that would reduce their ability to redeem their debts to the banks.	Increased	Yield spreads have fallen further to new lows; there has been a significant increase in total bond issues and in the net raising of capital (issues less estimated redemptions); and mutual funds have recorded large inflows and have increased their share of holdings in the bond market.	A scenario that will lead to a reversal of the trend in corporate bond prices will also reduce share prices.
Intermediate term	Nonhousing credit (consumer credit)	Intermediate	The continuing increase in consumer credit to households exposes them to the risk of default as the result of deterioration in economic conditions; this realization will harm the financial system to a certain extent. A large part of this credit was provided with a variable interest rate and if interest rates rise and increase the debt burden, households may have to reduce their consumption and the rate of unemployment is liable to rise.	Increased	This type of credit continues to grow at a rapid rate and is expected to continue to grow since competition in the market is expected to increase.	The loans to households create a low level of risk to the banks relative to loans to other sectors due to the wide dispersion of borrowers. In addition, the Committee to Increase Competition in Common Banking and Financial Services has decided that the Authority for the Capital Markets, Insurance and Savings will supervise nonbank credit, which is meant to limit this risk.

A. MAIN DEVELOPMENTS IN THE DOMESTIC FINANCIAL SYSTEM AND ASSESSMENT OF ITS STABILITY[1]

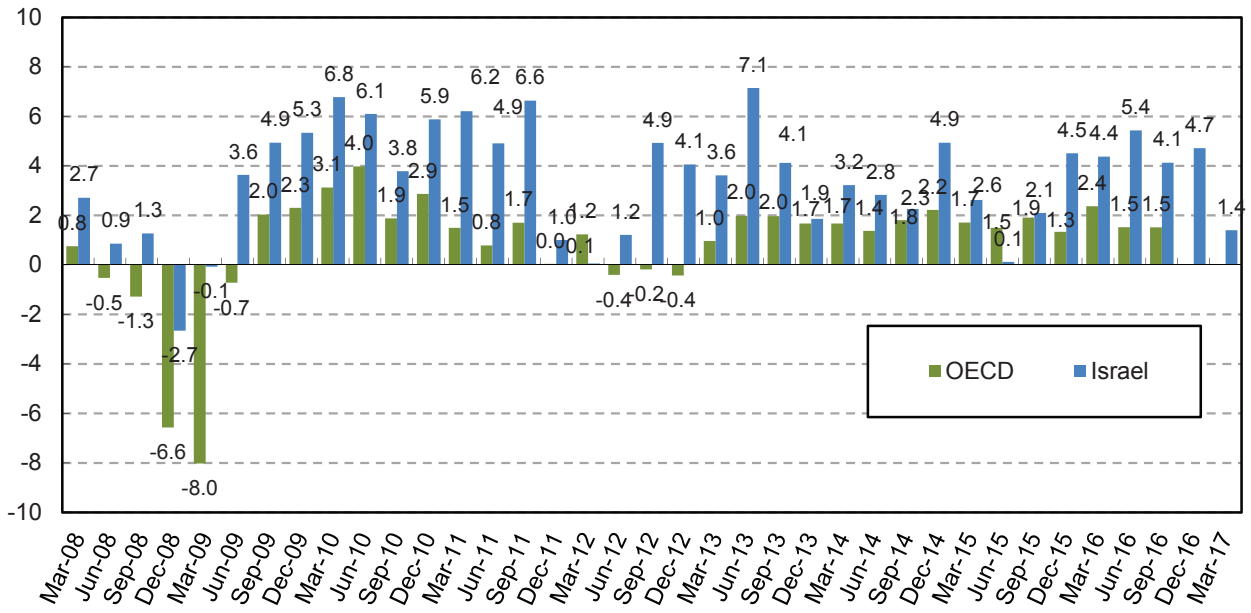
1. Main developments

(a) The macroeconomic situation

In 2016, GDP grew rapidly (Figure 1.1) thanks to the increase in private consumption and despite the slow growth in exports. During the course of the year, the economy benefited from lower prices of consumption goods relative to GDP prices and an increase in the purchasing power of households, which accelerated the rate of increase in domestic demand. The demand for workers continued to grow, industrial investment expanded and real wages increased more than labor productivity. These developments signaled that the economy is approaching its supply constraint. However, while domestic activity is benefiting from positive background conditions, exports grew only slightly, as a result of the only moderate growth in world trade and the continuing appreciation of the shekel in real terms. According to the Research Department's staff forecast, the growth rate in 2017 will return to its average of recent years, around 3 percent. The growth figures for the first quarter of 2017 support this view: Although GDP grew by the low rate of 1.4 percent, if the drop in the import of vehicles is neutralized then growth was

The Israeli economy continues to grow strongly thanks to a rapid increase in private consumption and despite the slow increase in exports.

Figure 1.1
The Quarterly Growth Rate[a] in Israel and Other Advanced Economies[b], March 2008 to March 2017
(percent)



[a] Seasonally adjusted, fixed prices.
[b] Simple average of the growth rates of the 21 wealthiest countries in the OECD: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, South Korea, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, US, and UK.
SOURCE: Based on OECD data.

[1] This report reviews the first half of 2017. The figures are up to date to different degrees in each discussion, in accordance with their availability at the time the report was written.

at a reasonable level. The pace of inflation increased in recent months and is currently in the vicinity of the lower bound of the target range. The foreign currency reserves are high and in May 2017 reached about $107 billion—33 percent of GDP.

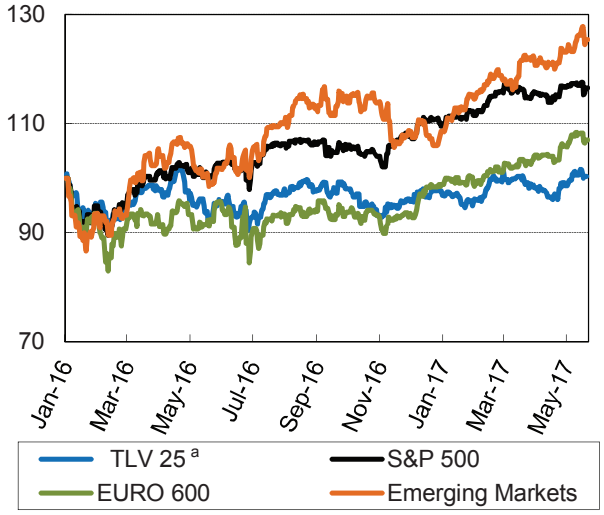
The public debt to GDP ratio declined by 1.9 percent of GDP to 62.2 percent of GDP, continuing the almost uninterrupted decline since 2003.[2] This is a low level relative to the past and relative to the ratios prevailing in most of the advanced economies. The central government deficit was 2.1 percent of GDP in 2016, identical to what it was in 2015 and lower than the deficit ceiling (2.9 percent of GDP).

(b) The financial situation

During the first five months of the year (until May 21st), the share indices of the large companies in Israel underperformed relative to the leading share indices worldwide (Figure 1.2), increasing by 3 percent while the increases in the global indices ranged from 6 percent (the S&P 500) to 15 percent (the Emerging Markets Index). The global capital markets continued to show a strengthening of upward trends, which began after President Trump's election and can be partly attributed to the US president's various plans to stimulate the American economy and to the improvement in growth trends in the US, Europe and other markets. The leading indices in Israel grew at lower rates than the leading indices in Europe, the US and the emerging markets, primarily due to the underperformance of large companies, particularly in the chemical and pharmaceutical industries.[3] In parallel to the rising indices, there has been a downward trend in recent months in the implied volatility of options on the share indices in Israel and other countries (Figure 1.3), an indicator of lower uncertainty in the equity market.

In the first five months of the year, the blue-chip equity indices in Israel underperformed compared with the leading global equity indices.

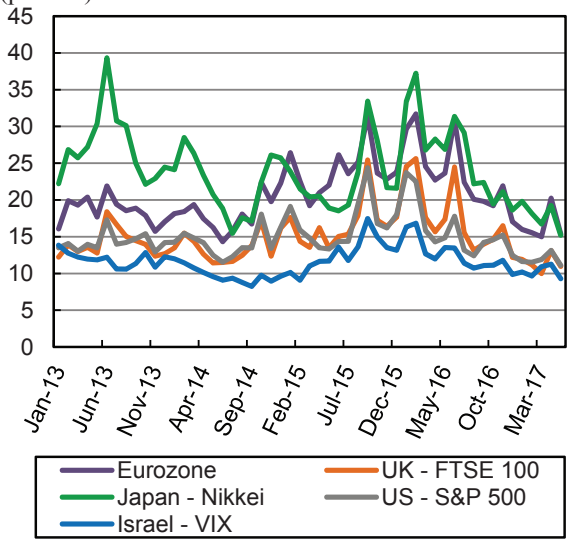
Figure 1.2
Selected Equity Indices in Israel and Abroad, Dollar Value, January 2016 to May 2017
(percent, January 1, 2016=100)



a As of February 12, 2017, the Tel Aviv 35.
SOURCE: Bank of Israel.

In recent months, there has been a downward trend in the implied volatility of options on the equity indices in Israel and abroad.

Figure 1.3
The Implied Volatility Derived from Options on the Equity Indices in Various Countries, Monthly Average, January 2013 to May 2017
(percent)



SOURCE: Bank of Israel.

2 Apart from 2009.

3 In contrast, smaller companies and companies in construction and real estate, banking and technology pulled the leading indices upward.

In recent months, there has been some moderation in housing market activity: Housing prices have stabilized, which has moderated the rate of increase during the past 12 months; the volume of residential housing transactions declined somewhat[4]; the rate of new home sales declined; the share of investors in the market shrunk significantly; and the number and volume of mortgages issued each month continued the downward trend that has been apparent since June 2015. Among the factors that appear to be responsible are the rise in mortgage interest rates following the regulatory measures taken by The Banking Supervision Department, and the tax measures adopted in order to limit the activity of investors, i.e. raising the purchase tax and taxation of a third apartment.[5] However, looking at the 12 months prior to March 2017, prices continued to rise (by 4.4 percent) and record levels were reached in the ratio of housing prices to rents and in the ratio of housing prices to the average wage. The level of activity in the housing market continued to contribute to the fact that housing credit and credit to the construction and real estate industry[6] continued to increase as a share of total domestic credit to the non-financial private sector, and the banks continued to increase their exposure to such credit.

During the past year, total credit to the nonfinancial private sector grew by 5.3 percent[7] as a result of the expansion of credit to households[8] and to the business sector.[9] Credit to the business sector grew at higher rates than in previous years: about 4.8 percent compared to 2.1 percent in 2015 and 1.0 percent in 2014. The growth in this type of credit was primarily due to the rapid increase in nonbank domestic credit[10], with direct loans from institutional investors continuing to increase at a rapid rate[11], and credit obtained by means of bond issues growing significantly. The increase in outstanding bonds constituted about 67 percent of the increase in credit to the business sector in the past year, which followed several years in which total outstanding bonds declined. Credit to households grew, primarily due to housing credit.[12] However, nonhousing credit continued to grow at an even higher rate this year (7.1 percent), a continuation of the trend of the past four years. Although credit to the nonfinancial business sector grew in the past year, the ratio of the sector's debt to GDP declined somewhat and is currently at 68.0 percent (Figure 1.4). In contrast, the ratio of household debt to GDP grew during the past year (March to March) from 40.9 percent to 41.3 percent, with housing and nonhousing debt increasing by similar rates. Nonetheless, these two ratios are low relative to other countries. At the same time, it is worth mentioning that when we break down household debt into its components—housing debt and nonhousing debt—we find that only the ratio of the former to GDP is low relative to other countries.

Figure 1.5 presents the current situation—with regard to prices, firms' balance sheets, macroeconomic data, and more—in domains that may pose a risk to financial stability.[13] The bold black line at 0.5 represents the long-term average; values that are within that line

4 New homes and second-hand homes.

5 At the time of writing, the Supreme Court was discussing petitions that relate to the legislation for taxing owners of multiple apartments.

6 See footnote 4 above.

7 The change in total credit reflects the figures for March 2017 relative to those for March 2016, unless stated otherwise.

8 About 37 percent of total nonfinancial private sector credit.

9 About 63 percent of total nonfinancial private sector credit.

10 In contrast, bank credit grew only moderately during this period. If we break down credit according to industry and focus on balance-sheet credit only, we find that it increased significantly in all industries and that the moderating influence is due to the manufacturing industry, which accounts for about 10 percent of total banking balance-sheet credit.

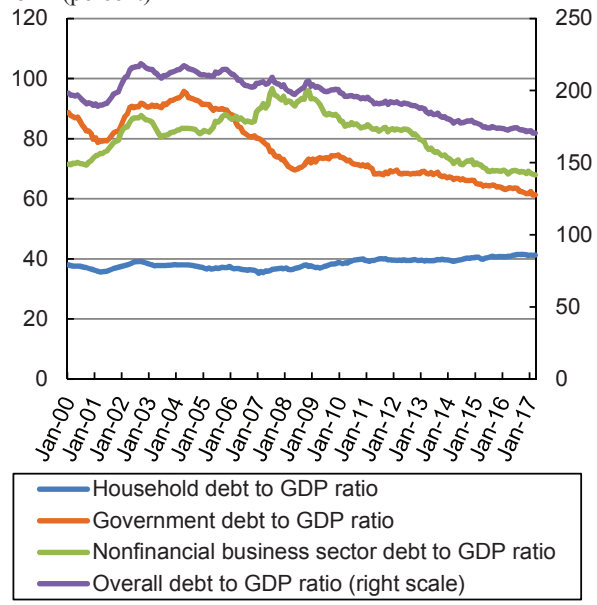
11 Direct loans that are provided by institutional investors are discussed in Box 3 of the Financial Stability Report for June 2014.

12 About 67 percent of total household credit.

13 The indicator of risk to the stability of domestic financial institutions is for September 2016; the indicator for global macroeconomic risk is for December 2016; the indicators of domestic macroeconomic risk and credit risk are for February 2017; and the indicators of risk in the domestic and global markets are for March 2017. The analysis as a whole is based on monthly averages. See H. Zalkinder (2012), "Measuring Stress and Risks to the Financial System in Israel on a Radar Chart", Bank of Israel, Discussion Paper 2012.15.

Despite the increase in the household debt to GDP ratio, the overall debt to GDP ratio declined in the past year, mainly due to a decline in the government debt to GDP ratio.

Figure 1.4
The Ratio Between Overall Debt and Various Components of it and GDP, January 2000 to May 2017 (percent)



SOURCE: Bank of Israel.

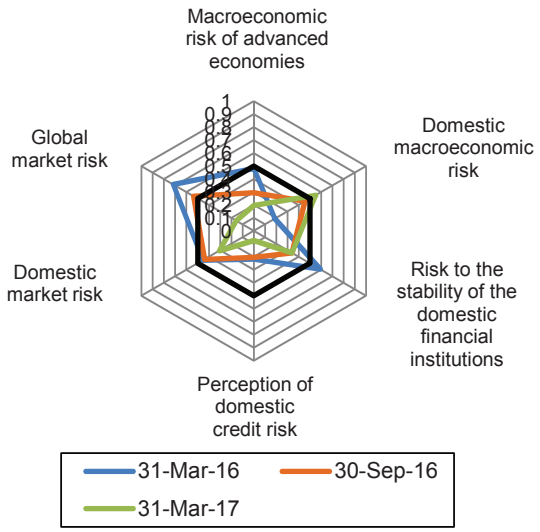
indicate a better-than-average situation and values outside it indicate a less desirable situation.

Most of the indicators show that the current situation is positive relative to the past and only the indicator of the domestic macroeconomic situation points to a slightly less favorable situation. This reflects the small increase in the probability that the rate of economic growth has fallen from its recently high level. The macroeconomic situation in the advanced economies is relatively good, thanks to the drop in unemployment and the continuing improvement in the consumer confidence index and in the business confidence index. The indicators of the financial situation show low volatility and since the domestic equity market has underperformed relative to equity markets abroad, the domestic situation is somewhat less favorable than in other countries.

With regard to the perception of credit risk, this

The perception regarding domestic credit risk continued to decline, as a result of the decline in corporate bond spreads and in the spread between Israeli government bonds and US government bonds.

Figure 1.5
Radar Chart of the Risks to the Israeli Economy



SOURCE: Bank of Israel.

indicator does not measure objective credit risk but rather the manner in which players in the various credit markets perceive it. The perception that credit risk is very low is a result of the narrow gap between the yield on government of Israel bonds and that on US government bonds, and the low spread of corporate bonds in Israel. This is in spite of the slight increase in household risk, a development that reflects the gap between the interest rate on new mortgages and the risk-free interest rate. As mentioned, the measured value is very low, apparently due to the high level of liquidity in the financial markets and because investors are searching for yields in a near-zero interest rate environment, and it may reflect the underpricing of risk.

According to the IMF[14], the risks to global financial stability declined during the reviewed period but

[14] Global Financial Stability Report, April 2017.

nonetheless remain relatively high. In its report, the IMF discusses at length the high level of leverage among firms in the US, which has made certain parts of the corporate sector particularly vulnerable to increases in yields and in spreads. In addition, the IMF included the following within the main risks: the continuing increase in financial risk originating in China, the fact that European banks are still suffering from severe structural problems, and political uncertainty. The latter is related both to the steps that may be taken by the American government—since some of them may have a negative impact on the growth rates of GDP and world trade and therefore also on global financial stability—and the processes occurring in Europe, since they are also liable to have major impact on global stability. Accordingly, the IMF feels that the correct mix of measures is needed in order to preserve the growth momentum without leading to an increase in risk to global financial stability.[15]

2. Evaluation of the stability of the financial system

In 2016, **the banking system** in Israel continued to maintain its resilience and to strengthen its stability, within a positive macroeconomic environment. The economy grew rapidly, the unemployment rate declined, private consumption increased and the interest rate remained low. The banking system and the regulatory measures that were implemented worked to reduce exposure to risk and contributed to the continuing upward trend in the volume and quality of capital, the maintenance of a comfortable level of leverage and of high capital ratios, progress in the implementation of efficiency measures, improvement in the credit portfolio and improvement in the liquidity risk profile among the banks and in the system as a whole.

In recent years, the banks have faced domestic and global challenges, which were the result of, among other things, the increase in retail credit risk, operational risk and risks resulting from changes in the business environment. The latter includes accelerated technological progress and its implications, regulatory uncertainty against the background of multiple legislative changes, and a change in consumer preferences. These developments constitute a challenge to the banks' business model.

A stress scenario that the Banking Supervision Department conducted in 2016 estimated the negative impact that would be absorbed by the banks as a result of two parallel shocks: the first originating in Europe as a result of increased uncertainty as to the continued existence of the EU, and the second resulting from a severe drop in prices in the housing market. The stress test found that although the banking system would suffer large credit losses, it would remain stable. About one-third of the losses originated from the business portfolio (not including construction and real estate); about one-third from the construction and real estate industry and housing credit; about 20 percent from consumer credit; and about 10 percent from exposure to other countries.

The insurance companies continued to maintain their stability. In December 2016, all five of the large companies met the capital requirements for the implementation stage of Solvency II (60 percent of the required capital), and three of them met the full requirements (100 percent of the required capital).

The profits of the five large insurance companies totaled about NIS 1.2 billion in 2016, and their profitability was characterized by high volatility over the course of the year. This was a result of the risk-free interest rate being low during the first half of the year and its rapid rise at the end of the year, as well as fluctuations in the profitability of their investment portfolios.

The various indices of stability indicate that the payment and settlement systems remained stable in 2016. **The Bank of Israel oversees the payment systems**, and in that role it is continuing to advance a series of steps to improve their efficiency, while maintaining their stability.[16]

[15] For further discussion, see Chapter 3.

[16] For further discussion, see Chapter 8.

The non-financial business sector remains financially stable. Thus, its level of leverage is reasonable relative to the past and similar to levels observed in the past year, while the likelihood of bankruptcy remains low. Similarly, it is maintaining a high level of activity[17], as evident from the level of business output. Business credit expanded, and in this context total issues of corporate bonds increased since spreads are low and public demand for them is increasing, both directly and by way of the mutual funds.

The import and sale of new vehicles increased rapidly and the financing of these purchases drew increased attention this year, both due to households' exposure to this sector and as a result of the business sector's exposure.[18] Beginning in 2008, the proportion of vehicles purchased by private customers has increased at the expense of vehicles purchased by corporations and rental companies, which has partly shifted the financing of this activity from business credit to household credit. Households sometimes leverage themselves by way of bank or non-bank loans (including from companies in the industry) in order to finance a purchase. However, the value of the collateral for these loans has been eroding since the prices of second-hand vehicles are in a prolonged decline due to the excess supply in the used vehicles market and because the prices of new vehicles are dropping due to the fall in the rates of the euro and the dollar. Furthermore, if a large number of households and firms that lease vehicles default as a result of changes in economic conditions—such as an increase in the interest rate or in unemployment—lenders will find it difficult to quickly sell the used vehicles that serve as collateral at a reasonable price.

The companies in this sector—leasing companies and importers—will naturally experience losses in the case of an economic slowdown that adversely affects their activity. However, since they are also providing financing, they will suffer further losses if leveraged purchasers default. Moreover, the assets of these companies is primarily composed of vehicles and if their value declines more than expected it will worsen their financial situation, increasing the likelihood of difficulties in repaying debt to lenders, and eroding the value of the collateral pledged to them.

Exposure to this industry in 2016 can be summarized as follows: At least 7 percent of the balance of bank credit to consumers was provided against vehicles[19], about 6 percent of bank credit to the business sector was provided to the vehicle trade industry, and about 20 percent of the credit provided by credit card companies was provided to private customers against an encumbered vehicle.[20] The institutional investors are also exposed to some extent, although their exposure does not constitute a risk to stability since their direct holdings in the shares of these companies (leasing companies and importers) accounts for only about 0.2 percent of their managed assets and their direct loans to these companies account for about 2 percent of their total direct loans. The total exposure of the financial system to the industry in the third quarter of 2016 was NIS 39 billion.[21] However, in our opinion, this does not create a systemic risk: If the risk is realized it will have only a limited effect on the system. Nonetheless, the developments in the industry should continue to be monitored in case the exposure increases in size.

[17] For further discussion, see Chapter 6.

[18] For further discussion, see Chapter 6.

[19] According to the banks' financial statements for the third quarter of 2016. This is in fact an underestimate since it relates only to loans given to households against a lien on a vehicle, and it is possible that these households received credit for similar purposes listed as "Credit for any Purpose".

[20] Not guaranteed by the banks.

[21] See Table 6.1 in Chapter 6.

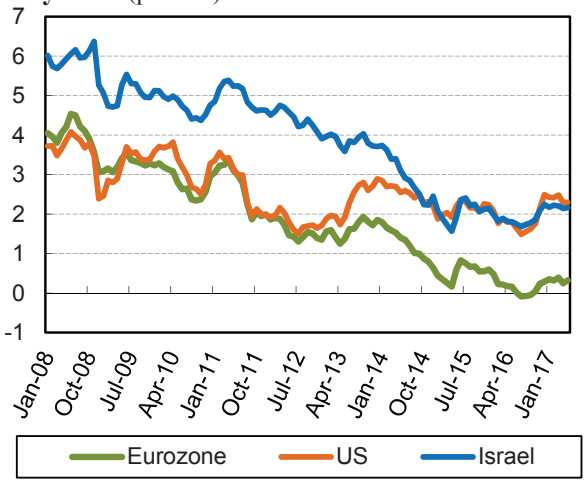
B. THE MAIN DOMESTIC RISKS

The financial system is exposed to risk derived from high asset prices. As in other developed economies, Israel has also experienced a sharp increase in the prices of financial and real assets. This is due to the low interest rates prevailing since 2008—a policy adopted in response to macroeconomic developments—and the decline in the yields on short- and long-term government bonds. As a result, savers in the economy turned to investment alternatives that provide higher yields—shares, corporate bonds and real estate—which of course involve higher risk.

After the Federal Reserve began raising its interest rate in December 2015, investors expected interest rates to increase worldwide, which led to a rise in the yields on government bonds in the developed economies, including Israel, starting in July 2016 (Figure 2.1). Despite the increase in yields, interest rates remained low. At the same time, the yield gap between Israel and the US on long-term unindexed government bonds narrowed and at the end of 2016 it even became negative. This was primarily because the differences in risk were offset by the differences between the two economies in inflation expectations and in the monetary interest rates, with the gap in real interest rates in fact widening from December 2016 onward.

Yields in Israel increased slightly from July, similar to nominal yields in other advanced economies. Despite this, interest rates remain low.

Figure 2.1
Nominal 10-year Interest Rates—Israel ("Shahar"), US and Eurozone, January 2008 to May 2017 (percent)



SOURCE: Bank of Israel.

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Even though the financial system is stable, it is still exposed to risk. In the short term, it is exposed to risk originating in the housing market and also that originating in the corporate bond market, where there is a concern about underpricing. In the medium term, the system is exposed to risk from nonhousing credit, particularly if it continues to grow at particularly high rates over time. These risks are described at length in the following sections.

1. The main short-term domestic risks: the housing market

Housing credit and credit to the construction and real estate industry include balance-sheet bank credit to the construction and real estate industry[1], outstanding bonds of that industry, and housing credit to households. Housing credit to households as a share of total domestic credit to the nonfinancial private sector[2] grew from about 40 percent in 2008 to about 52 percent in 2016 (Figure 2.2).[3] The rate of growth moderated in 2015–16.

The financial system's exposure to the housing market still constitutes a large and significant risk. The banks in particular are highly exposed to mortgages and to the construction and real estate industry, and during the past year this exposure has even increased, to about 45 percent (Figure 2.3), primarily due to housing credit. Mortgages are considered to be low-

1 The banks also provide this industry with non-balance-sheet credit, which is equal in size to the balance-sheet credit to the industry.

2 Minus credit from abroad.

3 This estimate does not include exposure to the construction and real estate industry by way of direct loans from the institutional investors and the industry's nontradable bonds.

risk credit, primarily because of the collateral and the diversification of the portfolio. Therefore, there are lower capital restrictions on mortgages than on credit to construction and real estate companies. In September 2016, the Banking Supervision Department changed the method of measuring the limit on liability in the construction and real estate industry, in recognition of the sale of risk carried out by the banks. The banks recently purchased insurance policies from reinsurers abroad for protection against credit risk arising from Sales Law guarantees, and these policies are eligible for inclusion in the calculation of capital adequacy according to the Basel III recommendations. As a result, it was decided to classify this credit risk mainly in the financial services industry instead of in the construction and real estate industry. The change in the method of measurement allows the banks to increase their supply of credit to the construction and real estate industry.

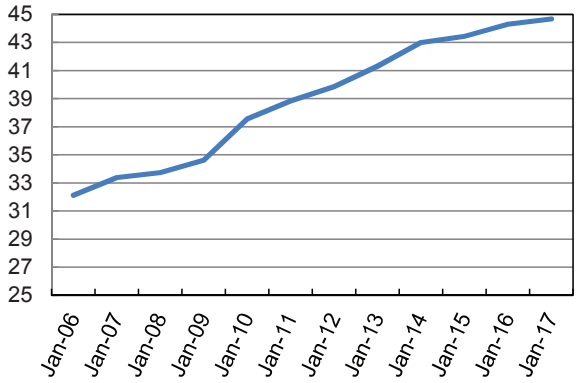
Housing credit and credit to the construction and real estate industry increased as a share of domestic credit to the nonfinancial private sector from 40 percent in 2008 to 52 percent in 2016. The growth rate moderated in 2015-16.

Figure 2.2
Housing Credit and Credit to the Construction and Real Estate Industry as a Share of Total Domestic Credit to the Nonfinancial Private Sector[a], 2000–16 (percent)

[a] Total credit includes housing credit, balance-sheet bank credit to the construction and housing industry, and outstanding bonds of that industry. It does not include direct loans from institutional investors or nontradable bonds.
SOURCE: Bank of Israel.

The banks' exposure to mortgages and to the construction and real estate industry increased further in the past year, to about 45 percent. Most of the increase is a result of an increase in housing credit.

Figure 2.3
Housing Credit and Credit to the Real Estate and Construction Industry as a share of Total Balance-Sheet Bank Credit, January 2001 to January 2017
(percent)



SOURCE: Bank of Israel.

This risk is increasing due to the growing exposure to nonhousing credit[4], since there is a high correlation between it and the aforementioned types of credit. If a shock leads to a sharp increase in the interest rate or to a major reduction in the income of borrowers, it is liable to harm the banks that are exposed to them. If such a scenario also leads to a sharp drop in housing prices, it is liable to become an even larger threat to the banks, due to the loss in value of the collateral they hold and the difficulty in selling multiple assets within a short period of time.

The institutional investors have also increased their exposure to mortgages, both directly and through purchases of mortgage portfolios from the banks. Their exposure to housing credit reached NIS 8.4 billion in March 2017, after a significant increase in the previous year of about NIS 5.4 billion. The institutional investors recently signed several agreements with the banks for the sale of housing loans and for syndicated loans. These agreements allow the banks to free up capital in order to provide additional credit to the economy, they facilitate the entry of new players into the credit

[4] Further discussion appears below.

market, and they provide institutional investors with higher yields relative to risk and greater diversification of savers' investment portfolios. Since this is a new activity, and in view of lessons learned from the global financial crisis, the Banking Supervision Department has distributed a draft directive that regulates this cooperation.

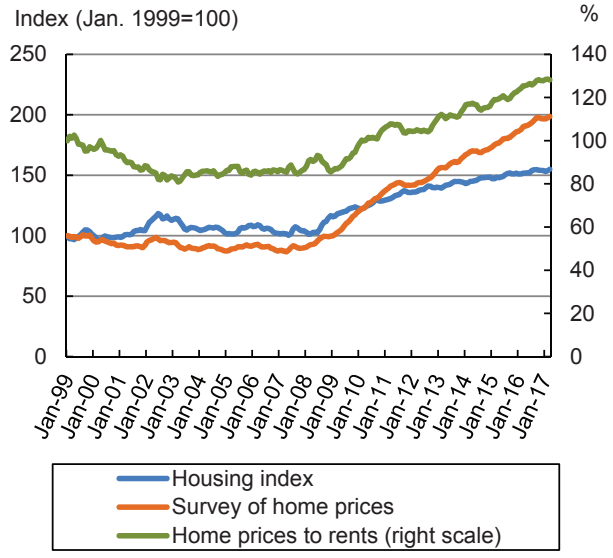
In the meantime, the institutional investors are not significantly exposed to mortgages relative to the total assets that they manage. Moreover, when housing credit shifts from the banks to the institutional investors, it leads directly to a diversification of risk among the entities. However, if in the future this exposure reaches significant levels, the connectedness between the financial entities will increase and it will be more likely that a crisis in one part of the system will turn into a system-wide crisis.

In this context, it is worth mentioning that about 47 percent of total corporate bonds (not including those of the financial sector) and about 37 percent of the bonds issued during the first quarter of 2017 were issued by the construction and real estate industry.[5]

It is common practice to evaluate prices in the housing market in relation to fundamental factors, particularly (1) rent, which reflects the potential revenues from an investment in a dwelling, and (2) wages or income, which reflect the purchasing power of individuals in the economy. These two indices are at record levels. The increase in prices may even be an indicator of overpricing of homes.[6] Nonetheless, in recent months the rate of price increases has moderated, and during the 12 months prior to March 2017 they rose by 4.4 percent (Figure 2.4).[7] Activity in the housing market has also moderated. Thus, as mentioned, total residential housing transactions declined somewhat, the rate of new home sales dropped, the share of investors shrunk significantly and the number and volume of mortgages issued each month continued to fall. The continuing moderation in activity and in the rate of price increases will eventually reduce the level of risk.

While the increase in home prices has moderated in the past five months, homes prices increased by 4.4 percent in the 12 months prior to March 2017, which is greater than the increase in rents. The ratio between the two has therefore remained at peak levels.

Figure 2.4
The Housing Index, the Survey of Home Prices, and the Ratio Between Home Prices and Rents, January 1999 to March 2017



SOURCE: Bank of Israel.

The increase in home prices in recent years occurred simultaneously with the drop in long-term yields (Figure 2.5). On the assumption that real estate and financial assets are alternative investment channels, the return on owning them should be similar, adjusted for differences in risk, liquidity and transaction costs related to holding them. The yield on a dwelling (annual rent divided by price) is continuing to decline—as is the yield on government bonds, but at a slower pace. Although, as a result, the gap between the yield on owning a home and the yield on government bonds

5 Mostly for income-producing real estate.

6 A test using recent data provides evidence of the existence of explosive behavior in the ratio between housing prices and rent, both on the national level and in more than a few of the country's regions (see I. Caspi (2015), "Testing for a Housing Bubble at the National and Regional Level: The Case of Israel", Bank of Israel, Discussion Paper 2015.05).

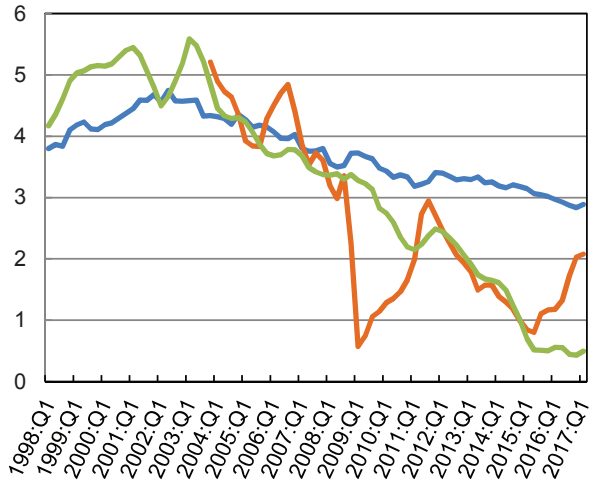
7 New housing and second-hand housing.

has narrowed somewhat, it is still large (2.4 percentage points), which can explain why investment in housing is still attractive. However, as mentioned, during the period being surveyed, the proportion of investors as a share of total purchasers has declined—from about 30 percent in June 2015 to about 16 percent in March 2017 (Figure 2.6)—partly due to taxation measures implemented in recent years.

Between June 2015 and February 2017, there was a noticeable upward trend in the interest rate on mortgages in all tracks. In theory, this interest rate is meant to reflect the cost to the banks in acquiring sources (of a similar character in terms of duration and indexation), the risk inherent in the loan, and the negotiating power of the borrowers, which is a function of the level of competition in the mortgage market. In addition, it reflects the evaluation of risk by the regulator and the resulting capital requirements. In recent years, the Banking Supervision Department has published several directives with the goal of encouraging the banks to internalize the growing risk in the housing market, and two of those directives have apparently influenced the price of mortgages: the requirement to increase the capital allocation against the housing credit portfolio by the beginning of 2017 and the requirement to implement the Basel III recommendations regarding the core capital ratio starting in 2012. Since 2013, the spread between the interest rate on mortgages and the yields on government bonds has widened (Figure 2.7), while it narrowed somewhat since November 2016.

The return on dwellings continues to decline, while the yield on gov't bonds is also declining, althrough at a more moderate rate. However, as a result, the gap between them as narrowed, though it is still significant (2.4 percentage points), which may explain why investment in dwellings remains attractive.

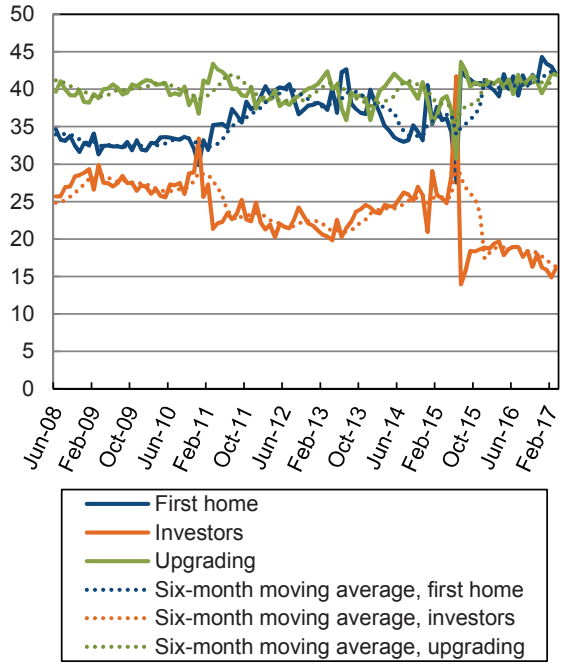
Figure 2.5
The Yield on Renting a Home Compared with the Real 10-Year Yield from the Zero-Curve and the Weighted Interest Rate[a], 1998:Q1–2017:Q1



[a] The weighted interest rate is calculated assuming inflation of 2 percent.
SOURCE: Bank of Israel.

The proportion of investors among all purchasers declined significantly, from 30 percent in June 2015 to about 16 percent in March 2017, in part due to the tax measures imposed in recent years.

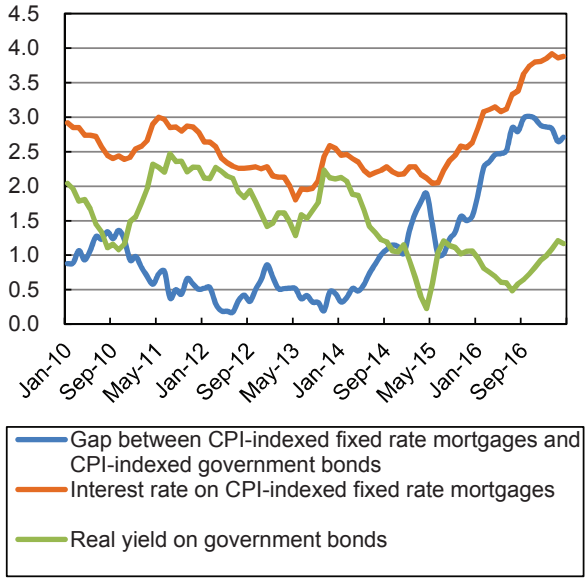
Figure 2.6
Rate of Housing Transactions by Type of Purchaser[a], June 2008 to March 2017 (percent)



[a] The figures for the last four months are based on partial reports.
SOURCE: Based on Israel Tax Authority (Carmen file).

The gap between the interest rate on mortgages and the yield on government bonds widened since 2013—even before the mortgage interest rates began increasing. Since November 2016, the gap has narrowed somewhat.

Figure 2.7
The Interest Rate on CPI-Indexed Fixed Rate Mortgages and the Average Real Yields on Fixed Rate Government Bonds from the Zero Curve[a], January 2010 to April 2017 (percent)



[a] The average yield is calculated as follows: From January 2010 to June 2011, based on the average from the zero curve to 6–8 years; From July 2011 to September 2013, based on the average from the zero curve to 8–11 years; From October 2013 onward, based on the average from the zero curve to 14–16 years.

SOURCE: Bank of Israel.

During the reviewed period, the risks inherent in housing credit increased somewhat. This was manifested in an increase in the average mortgage size and longer average terms for mortgages with a fixed interest rate. The loan-to-value (LTV) ratio and the payment-to-income (PTI) ratio have remained almost unchanged during this period. It therefore appears that the interest rate on mortgages increased as a result of the regulatory measures and the increased risk originating from housing credit. It is worth mentioning that the increase in the interest rate on mortgages has raised the risk premium that the banks charge, and is restraining the accumulation of risk in the system since it is moderating demand in the housing market, even though the monetary interest rate has not changed during the relevant period and has remained at low levels.

2. The main short-term domestic risks: the corporate bond market[8]

The public remained significantly exposed to the prices of corporate bonds, assets that are sensitive to changes in the interest rate. This exposure even increased somewhat in 2016, as a result of both direct holdings[9] and indirect holdings by way of savings held with the institution investors. These savings are expected to expand in coming years, partly as a result of regulatory measures that have been implemented.[10] In February 2017, corporate bonds constituted 14.1 percent of the institutional investors' portfolio.[11] A future increase in the interest rate or some other shock[12] is likely to cause a drop in their prices and will bring about losses in the public's savings.

Another risk is reflected in the upward trend in the total amount of corporate bonds held by the mutual funds. The mutual funds in general are used by households for short- and medium-term household savings, and past experience shows that in a crisis or a period of price declines, they suffer from relatively large redemptions. As a result, the mutual funds tend to sell off assets, thus intensifying the drop in prices.

During the first four months of 2017, the average spread of corporate bonds continued the downward trend that began at the beginning of 2016, particularly among the lower ratings, reaching its lowest level since the end of 2007. The spread narrowed partly because the yields on CPI-indexed government bonds rose

8 For a more detailed analysis of asset prices, see Chapter 6.

9 About 20 percent of the public's asset portfolio is directly invested in bonds in Israel.

10 For example, mandatory pension savings for the self-employed, the savings component of the child allowance, etc. Further details appear in the Bank of Israel Annual Report for 2016, Chapter 4.

11 Another 0.8 percent is invested in ETFs that track bonds.

12 The shocks that can lead to a reduction in asset prices are described in the Main Remarks section.

during this period, but mainly because the yields on corporate bonds declined. The low spreads were due to, among other things, the relatively strong economic activity, the low level of leverage among firms, the fact that firms are using their retained earnings in order to finance activity[13], and that fact that the likelihood of default has remained low relative to the past. However, since spreads have narrowed further during a period in which there was no major change in the aforementioned factors—which implies that the reduction in risk does not fully explain the narrowing of spreads—there may be underpricing of risk, in view of the low interest rate and yield-seeking by investors.[14] Another indication is obtained from a comparison between the spread on corporate bonds in Israel and the US, which shows a steep decline in the gap between them since mid-2016. This is partly a result of the similarity in yields on government bonds. However, it is also a result of the fact that the yields on corporate bonds have themselves dropped more in Israel than in the US. This development raises the concern that in the event of a shock, prices will show large fluctuations, since the mutual funds, as mentioned, hold a large proportion of total corporate bonds. It is worth adding that if the interest rate rises as a result of an improvement in economic activity, government bonds will suffer larger capital losses than corporate bonds and if this is the main scenario it can also explain part of the narrowing of spreads that is not a result of underpricing.

During the past year, there has been an awakening in the equity market as well. Thus, the small-cap index—which does not include the large pharmaceutical companies—rose sharply, there have been initial offerings by six companies in the last six months (following a period of almost a year in which there were none) and there was an inflow of cash into mutual funds that specialize in shares. Nonetheless, the financial ratios, including the P/E and capital ratios, do not indicate that prices have deviated from the levels supported by fundamental factors.

As the public and the financial institutions have increased their demand for corporate bonds and they are currently being traded at low spreads, the firms in the economy have increased the volume of new issues. In 2016, the issues of non-financial corporate bonds (not including bond issues of foreign companies, whether tradable or nontradable) reached their highest level since the crisis in 2008, and the construction and real estate industry continues to play a central role with regard to both issues and outstanding bonds. The pace of issues by foreign companies has also risen in recent months, and unlike in the past the spreads on these bonds are higher than those on similar domestic bonds with the same rating. It may be that this phenomenon is evidence that the market has to some extent internalized the unique risks of these bonds.

The increase in corporate bond prices in recent years was not accompanied by growth in credit to the business sector, although recently the trend has reversed and total business credit has expanded, partly as a result of the high rate of issues. If the pace is maintained, it may raise the level of firms' leverage in the future. On the other hand, at least some of the firms have taken advantage of the low interest rates in the markets in order to refinance their debt at a lower interest rate and thus the threat to the stability of firms as a result of the rapid rise in yields has been reduced.

3. The main domestic risks in the medium-term: nonhousing credit

As the data indicates, the financial situation of households remains stable. However, it is worth mentioning the rapid growth in consumer credit during the last four years.[15] This growth exposes the financial institutions to the risk of default by households. A large part of this debt carries a variable interest rate and an increase in the interest rate will therefore increase the burden of debt and is liable to lead to a decline in

[13] See the Bank of Israel Annual Report for 2015, Chapter 4, particularly Box 4.2.

[14] Since despite the narrowing of spreads on corporate bonds, they still provide excess yield.

[15] Further details can be found in Chapter 7.

private consumption and an increase in unemployment. The major expansion in consumer credit and the risk inherent in it requires the banks and the credit card companies to significantly increase the provision for credit losses of this type.

The bankruptcy process in the case of consumer credit differs from that in the case of housing credit, since most of it is provided without collateral (except for loans to finance a vehicle purchase, whose proportion of credit provided by the credit card companies has recently been declining) and entails long proceedings in the courts and a freeze on assets and bank accounts. In recent years, a reform of the process has been implemented, which is intended to simplify and shorten it. Furthermore, full cooperation from borrowers, including disclosure of all information and property, can be of benefit to them in getting rid of the debt. However, these steps also increase the likelihood that customers will not repay consumer credit.

At the beginning of the year, the Increasing Competition and Reducing Concentration in the Banking Market in Israel Law (Legislative Amendments), 5777–2017, went into effect. It implements the recommendations of the Committee to Increase Competition in Common Banking and Financial Services (the Strum Committee). The committee found that in the retail sectors there are no real alternatives to the banks as a source of credit and recommended a series of measures. The main recommendation—to separate the large banks from the credit card companies, creating competition between them in the provision of financial services[16]—is likely to increase the supply of credit even further and to increase total credit to households and small businesses.[17] In this context, it should be mentioned that during the last 12 months, credit provided by the credit card companies (that is not the responsibility of the banks) has grown by 17.7 percent and most of that increase occurred in the third quarter of 2016. The expansion was apparently the result of the prolonged decline in interest rates, the increasing ease of obtaining a loan due to technological progress and the increase in credit to households provided by the banks by way of credit cards.

The level of leverage among households (total liabilities relative to total assets, both financial and real) rose moderately between 2013 and 2015, partly because credit to households grew by somewhat higher rates than total wage payments (according to health tax data[18]). Although it appears that the leverage ratio of households is not creating risk[19], the fact that wages are growing somewhat slower than this debt is liable to create problems for households if this trend continues and intensifies, since in most cases wages constitute the main source for debt repayment. Moreover, although the increase in credit has supported growth by way of private consumption—the economy's main engine of growth recently—it exposes households to risk that may be realized if their economic situation deteriorates. Since the economy is apparently at full employment, there is downside risk.

16 Further details appear in the Bank of Israel Annual Report for 2016, Box 4.1.

17 The risks inherent in the measures to increase competition in consumer credit are discussed in Box 4.1 in the Bank of Israel Annual Report for 2015.

18 Based on the rate of change in health tax receipts, in annual terms.

19 Empirical research was recently published that found a connection between the rapid expansion of household debt (in which the ratio of this type of debt to GDP cumulatively rises by more than 5 basis points during a period of three years) and its contribution to growth in GDP during the period of expansion, but also between it and the reversal of the trend later on and a decline in growth that exceeds the contribution to growth during the initial period. The dynamic documented in the article also existed in the sample prior to the 1990s (a period in which the ratio between household debt and GDP was at significantly lower levels than during the past decade), and also in developing economies, where the levels of debt are lower than in the advanced economies. See Mian A., A. Sufi and E. Verner, "Household Debt and Business Cycles Worldwide", No. w21581, National Bureau of Economic Research, 2015.

C. THE MAIN RISKS – THE GLOBAL ENVIRONMENT

According to a report issued by the IMF[1], the risks to financial stability have declined during the reviewed period, although they have remained relatively high. The IMF report discussed at length the high level of leverage among companies in the US, which means that at least part of the corporate sector is particularly vulnerable to an increase in yields and spreads. In addition, the main risks described by the IMF include a continuation of the rise in financial risk that is liable to originate from China, the fact that the European banks are still suffering from severe structural problems, and political uncertainty. The latter is related both to the steps taken by the US administration—since some of them are liable to have a negative impact on the growth rates of global GDP and world trade and therefore also on global financial stability—and the processes taking place in Europe, since they are also liable to threaten global stability.

Accordingly, the IMF report stated that a correct mix of policy measures is needed in order to maintain the momentum of growth without increasing risk to global financial stability.

In the IMF's view, the following summarizes the current status of global stability:

- Macroeconomic risk in the short term has declined as growth in advanced economies gains momentum and inflation increases. These developments reduce the likelihood of recession and deflation. They have also contributed to an increase in the markets' forecasts of growth rates and inflation, interest rates and yields in coming years. In this context, it should be mentioned that part of the recovery is a result of two other developments: (a) the US election results and the hope that the new administration will take steps to accelerate growth both in the US and abroad; and (b) the major injection of capital in China. However, both of these developments may in the end disappoint. In particular, there is still no certainty that the expectations regarding the US administration will be realized, and a significant number of the steps that it is planning are in fact expected to have a negative impact on global growth and trade. Moreover, there has recently been deterioration in the macroeconomic variables and a moderation of expectations, which have been reflected in, among other things, a drop in yields. Also, the injection of credit in China cannot be maintained over time due to the high rates of leverage that prevail there and the resulting major financial risks, about which the IMF has also warned. In emphasizing this, the President of China stated that in 2017 the nation will focus on stability more than on the growth target.
- The market and liquidity risks implicit in the financial markets declined from their high levels as asset prices rose, volatility remained very low and credit spreads narrowed. However, it is possible that the financial markets are not fully pricing in these risks, since they are characterized by excess liquidity and a very low interest rate environment. In general, it can be said that the increase in expectations of a global economic recovery have not so far been accompanied by a sharp increase in yields and interest rates and the forecast is that monetary and financial conditions will remain accommodative. However, it should be mentioned that the recent increases in the US markets were primarily fueled by retail investors while sophisticated investors, including institutional investors, hedge funds and stakeholders, reduced their exposure to the US market.
- Credit risk has been reduced as the curves have steepened and share prices have increased. These developments improved the profitability of the insurance companies and the banks, and in any case reduced their credit risk. The expectations that corporate profits will continue to improve—which are based primarily on the expectation that the US will carry out a reform of the corporate income tax—have led to a narrowing of bond spreads. This and the rise in share prices have made it easier for companies to raise capital and thereby reducing the

[1] Global Financial Stability Report, April 2017.

credit risk of nonfinancial companies. Nonetheless, the situation of many companies in the US, China and the rest of the world remains challenging and the IMF report describes this in detail. In addition, it should be mentioned that the credit risk of households has increased somewhat.

- The risk originating from emerging markets remains essentially unchanged at a high level. There has been a decline in the risk originating from (a) commodity and energy exporters (primarily Brazil and Russia) due to the rise in commodity prices; and (b) the need to refinance external debt among some of the emerging economies, since investors in the developed economies are feeling optimistic, primarily as a result of the US election, and this is expected to lead to greater risk-taking. However, the decline in risk was offset by the continuing increase in risk originating in the corporate and banking sectors in China, which are suffering from particularly high levels of leverage—a significant portion of which is composed of shadow credit—and also from problems in financing their foreign currency debt.

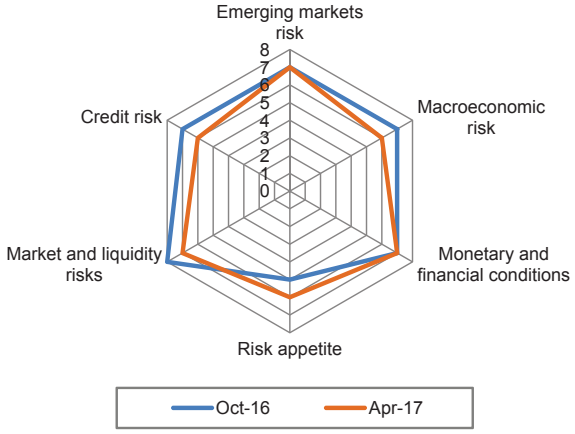
As a result of the aforementioned, the risk appetite has increased, as reflected in both surveys of investors and the positions they take.

The following radar chart summarizes the risks to global financial stability:

As mentioned already in the previous report, the radar chart does not present—and indeed is not able to present—the new risks that threaten financial stability, since they are of a different character. In this context, the IMF report focuses on political risks and the fact that there exists high political uncertainty. In the US following the elections, the markets were priced according to the full realization of promises that would contribute to growth and stability.[2] However, the realization of the new administration's plans for tax reform and investment in infrastructure is expected

According to the IMF, overall risk to global financial stability declined but remained high. There are also additional risks that are not reflected in the radar chart.

Figure 3.1
Radar Chart of the Risks to Global Financial Stability



The figure is divided into two parts. The upper part presents the risks, and the lower part presentes the economic conditions (that affect the risks). The farther a point is from the center, the larger the risk (in the upper part), the risk appetite (in the lower part), and the monetary easing (in the lower part). By way of comparison, the April 2009 report (at the height of the crisis) found all the focal points of risk on the farthest line from the center or the line below it, while risk appetite was at the center (near-zero).

SOURCE: International Monetary Fund.

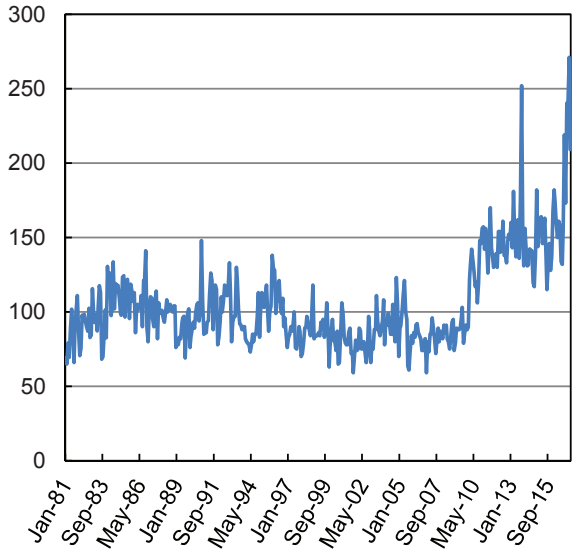
to encounter numerous problems, in view of the high level of political polarization (Figure 3.2). Moreover, the markets have completely ignored the problematic delete promises made during the elections.

In Europe, on the other hand, election results reduced the uncertainty regarding the future of the EU. In the Netherlands the Euroskeptic candidate lost, and in France the independent pro-Europe candidate, Emmanuel Macron, won. However, in both cases, though primarily in France, it is also worth looking at the impressive increase in strength of the Euroskeptic forces and the decline of traditional parties, since this will make it difficult to construct stable coalitions, and because it emphasizes that in many places in the world the public has little confidence in policy makers.

2 The reference here is to promises made during the election campaign.

Political polarization in the US increased to record levels, which increases political uncertainty and is expected to limit the administration's ability to act.

Figure 3.2
Index of Political Uncertainty in the US, 1981–2016



SOURCE: Federal Reserve Bank of the United States.

Further discussion of risks that are liable to affect the Israeli economy[3,4]

1) In our estimation, the uncertainty with regard to policy measures continues to be the main risk to global financial stability. Although concerns have lessened in Europe regarding the rise of populism and Euroskepticism after Mark Rutte and Emanuel Macron won the elections in the Netherlands and France, respectively, in both cases the established parties came out weaker and the Euroskeptic forces came out stronger, and there was less chance of establishing stable coalitions. Moreover, the effect of the Brexit has still not been felt. Thus, in Britain, Prime Minister Theresa May declared snap elections with the goal of winning the confidence of the public and strengthening her ability to manage the difficult processes the country faces. However, the election results are liable to complicate these processes even further and Macron has declared in the past that he supports a tough stance in negotiations for Britain's exit from the EU.

With respect to the US, the markets, as mentioned, expected that the promises that contribute to the economy and to global financial stability would be fulfilled in their entirety and in a timely manner and that other plans would not be implemented, but there is not much chance that these expectations will be fully realized. Moreover, the new administration is in fact trying to promote some of the measures that are expected to become a stumbling block to the growth of world trade and the global economy and are liable to bring about protectionism and trade wars[5], a phenomenon that the IMF warned about in its last report. The high pricing of many assets, and the fact that sophisticated investors are now turning away from the US markets in anticipation of a sell-off, is likely to serve as a catalyst for steep price declines, which in turn are liable to become a stability risk once the political risks are internalized.

2) The risk of departing from highly accommodative monetary policy increased during the reviewed period. Although the process of interest rate hikes in the US, which has so far lasted more than a year, is not having a negative effect on the financial markets, it appears that this is mainly because the central banks of Europe and Japan (the ECB and the BOJ) have continued to buy financial assets during the entire period and have even accelerated their purchases. As a result of this policy, in 2016 the central banks purchased more financial assets than in any year since the crisis and global monetary

[3] All of the risks that we will be describing are expected to influence Israel primarily through the channel of the financial markets and a lessened desire to take financial risks. The Israeli economy and Israeli financial institutions are directly exposed to the concentrations of risk to a very limited extent. However, if there is significant economic deterioration in the destinations for Israel's exports, it can be expected to bring about a drop in demand for those exports and a negative impact to the Israeli economy.

[4] The risks are presented in order of their severity in our estimation, with the first two being the most significant.

[5] The US recently decided to impose a levy of 20 percent on wood imported from Canada and there are extensive discussions of tariffs that will be placed on steel imported from China.

accommodation therefore basically intensified despite the Fed's policy of monetary tightening.

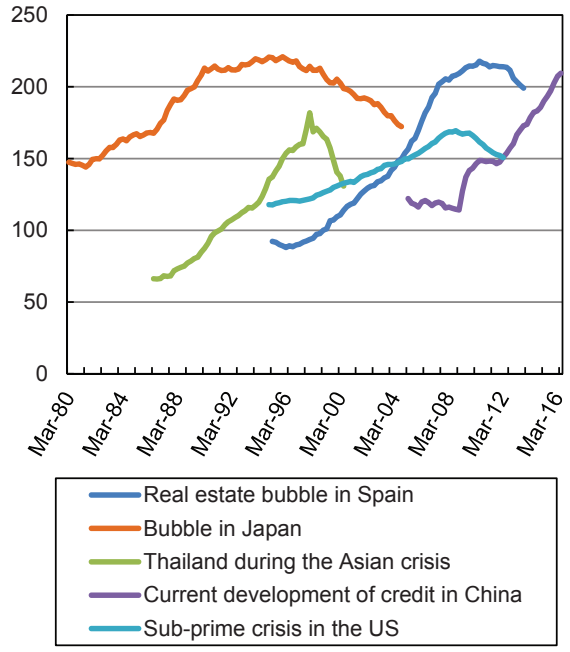
However, as a result of the election results in France, investors expect the normalization of interest rates in Europe starting as early as 2018 (and that the message conveyed in the ECB announcements will change as early as June of this year). If the two large central banks (the Fed and the ECB) tighten monetary policy simultaneously, it is likely to adversely affect the financial markets and may even be accompanied by a widening of spreads. This in turn will make it difficult for the corporate sector in advanced economies—and for the emerging economies in general—to refinance their debt. It should be mentioned that the debt servicing costs of companies in the US have already risen and the coverage ratios are deteriorating (primarily among small companies), processes that the IMF has described at length. However, leaving the interest rates at a low level is also liable to create a stability risk, as we explained in previous reports.

3) The risk to global economic stability originating in China continued to increase during the reviewed period, and constitutes a major risk. China's problematic debt market continues to grow rapidly and has risen to levels that are liable to create a stability risk. The aggregate balance sheet of the Chinese banks has increased to dangerous levels, and is highly exposed to this debt. Moreover, the Chinese banks finance themselves with short-term debt and are therefore very exposed to a sudden increase in yield, such as that which occurred towards the end of 2016.

The problem is concentrated in two types of banks: (a) the mid-sized banks – where the ratio of credit to deposits has grown to levels that are considered problematic from the perspective of stability. They are bridging the problem of sources by issuing CDs, but the yield that some of them pay on those CDs is now greater than the yields on their investments; and (b) small banks – these banks constitute the primary source of credit provided to shadow banking. In the next few months, it is expected that the bank CDs will have a particularly challenging redemption curve, which is

Credit in China as a percentage of GDP and in terms of its growth rate have reached the peak levels seen in other major crises.

Figure 3.3
Development of Credit in China Compared to Major Crises in Other Countries, 1980–2016
(percent of GDP)



SOURCE: International Monetary Fund.

expected to increase the burden on the banking sector. In general, during the last quarter there was a large injection of credit in China (following a very large injection at the beginning of 2016). It was one of the main factors behind the recovery of commodity prices and of global trade and production, and the inevitable scaling back will lead to a slowdown in trade and production and renewed pressure on commodity prices.

The dimensions of the challenge illustrate several points: As mentioned above, the President of China stated that in 2017 China will give priority to stability over the achievement of growth targets; at the end of 2016, attempts were made to initiate monetary tightening and they led to real pressure in the repo market; expectations of monetary tightening continue in the advanced economies and these are liable to lead to a renewed outflow of capital from China and the weakening of the yuan.

Although there is no strong connection between China's financial system and the global financial system, the size of the Chinese system means that any problems it may experience can be expected to affect the global system to a significant extent.

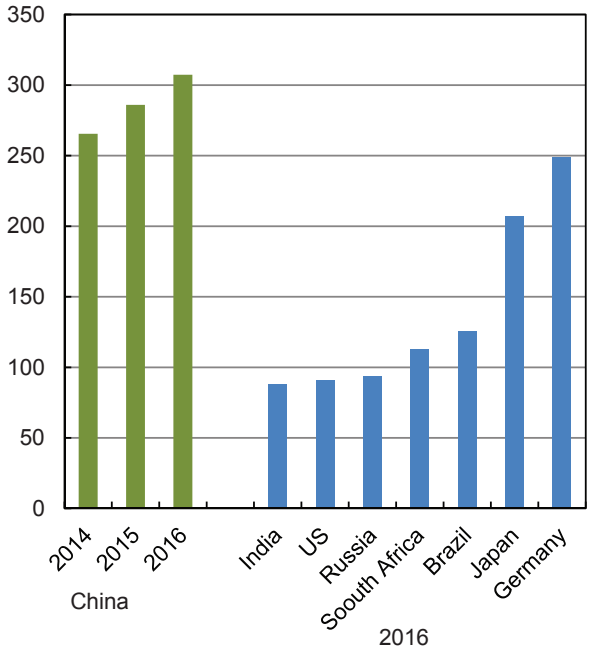
4) The risk arising from the weakness of the European banking system declined during the reviewed period, primarily following the elections in France, the results of which calmed the markets. The index of European bank shares rose by about 50 percent—though it is still about 70 percent lower than its record 2006 level—and spreads have narrowed. The shares of the Italian banks and of Deutsche Bank, which were at the center of the storm in the financial markets last year, rose significantly, which made it easier for them to raise capital. The steepening of the yield curve is also contributing to the improvement in the banks' profitability. In many European countries, comprehensive measures have been taken in order stabilize the system: Banks have increased their capital; some of the governments have injected capital into the weaker banks; and numerous regulatory and supervisory measures have been taken that contribute to the resilience of the system.

At the same time, no solution has been found to the fundamental problems of the European banks, the first of which is the low profitability in about one-third of the system and very high rates of bad debt in some of the countries. The weak banks have no real ability to raise capital; they are unable to create capital buffers that will be sufficient in a time of crisis; and they are having difficulty increasing the volume of their activity. As mentioned, the political risk in Europe has not disappeared and the effects of Brexit are yet to be felt. The weakness of the banking system in Europe therefore still constitutes a stability risk and will hinder the continent's economic recovery.

5) The geopolitical risk did not change significantly during the reviewed period. Israel's yields and CDS indices remained relatively low and the direct threat to Israel from the overflow of conflicts in the region and Palestinian terrorism remain moderate.

The volume of the Chinese banking system's balance sheet is very high by global comparison, which increases concerns over a credit bubble there.

Figure 3.4
The Banking System's Balance Sheet, 2014–16
(percent of GDP)



SOURCE: International Monetary Fund.

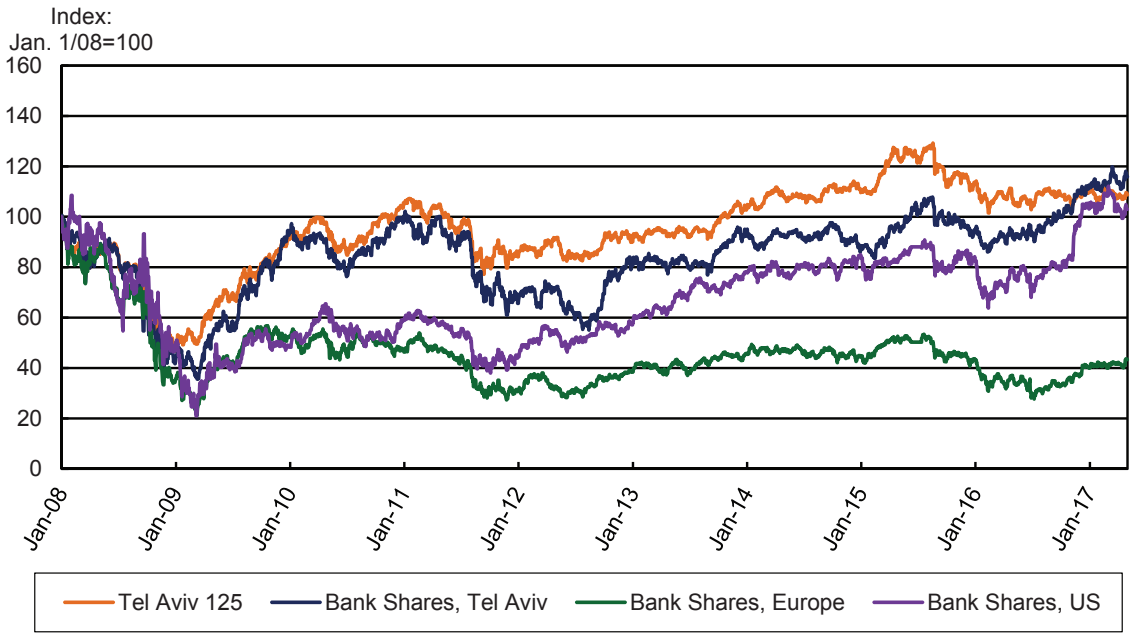
D. THE BANKING SYSTEM

In 2016, the banking system in Israel continued to maintain its resilience and to strengthen its stability in a low interest rate environment and under supportive macroeconomic conditions: The economy grew at a rapid rate; the rate of unemployment remained low, and private consumption expanded. The banking system, the Banking Supervision Department, and regulatory measures implemented in recent years worked to reduce the banks' exposure to risk and contributed to the continuation of an upward trend in the volume and quality of capital, to maintaining an adequate level of leverage and high capital ratios, and to the advancement of processes to increase efficiency. In addition, the credit portfolio quality indices, the concentration of the portfolio by borrower size, and the liquidity risk profile continue to improve. These have helped the banks to increase their dividends to shareholders.

In recent years, the banks have faced both domestic and global challenges, partly due to the increase in the retail credit risk, the risk arising from changes in the business environment, and operational risk. During the reviewed period, the banks continued to increase their credit to the household segment (both housing and nonhousing credit) and to small and micro businesses, while reducing credit to large businesses and their exposure to large borrowers. Thanks to the growth in total credit provided to the public and despite the low interest rate environment in Israel and globally, which is eroding the banks' basic sources of profit, their net interest income increased for the first time in several years.

Among the risks arising from changes in the business environment are rapid technological developments, the regulatory uncertainty as a result of multiple legislative changes, and the change in consumer preferences alongside increasing consumer power. These processes

Figure 4.1
The Tel Aviv 125 Index[a], Bank Shares Index in Israel, Bank Shares Index in Europe, and Bank Shares Index in the US, January 1, 2008 to April 2017[b]



[a] Until February 9, 2017, the Tel Aviv 100 Index.
[b] For nontrading days the previous figure is used.
SOURCE: Based on Tel Aviv Stock Exchange.

constitute a challenge to the banks' business model. The development of digital banking in Israel and globally involves structural risks, including cyber risk. This risk has grown as a result of the increasing sophistication of the attacks and the difficulty in detecting them. In an effort to minimize the exposure to this threat a cyber banking center was created as part of the Cyber Emergency Response Team (CERT). The new center is intended to assist relevant bodies in the sharing of information and intelligence on cyber warnings and events and to help them deal with cyber events targeting the banks. In addition, the banks in Israel are taking various measures to improve their preparedness for the realization of other risks, such as business continuity risk.

At the beginning of 2017, the Knesset passed the Increasing Competition in the Banking System Law, which balances between the need to promote competition in retail activity and the need to preserve the stability of the financial system. The law presents challenges to the two largest banks in that it requires them to relinquish ownership of credit card companies, and presents challenges to the banking system in general in that it encourages new players to enter the industry by removing entry barriers and other regulatory barriers.

1. Capital adequacy and profitability

During 2016, the banks continued to work to achieve capital targets, and capital ratios were increased. The Common Equity Tier 1 capital ratio of the five large banks rose by 1.1 percentage points to 10.7 percent, and all of them met the regulatory capital targets (9 percent for the small and medium-sized banks and 10 percent for the two largest banks, in addition to a capital buffer against housing loans). The banks increased the Common Equity Tier 1 capital ratio while continuing to support the growth of credit to households and small and micro businesses, slowing the growth rate of business credit[1], and implementing efficiency programs. The leverage ratio of the five large banks reached 6.6 percent, and all of the banks have surpassed the required threshold set by the Banking Supervision Department in accordance with the Basel III principles.

The capital ratios rose due to the banks' accumulated profits and the steps they took in order to reduce credit risk assets. The profitability of the five large banks fell somewhat in 2016 relative to the same period in the previous year, but remained similar to the average profitability in the OECD countries (see Figure 4.2). The return on equity was 8.3 percent (as opposed to about 9.1 percent in 2015, but similar to the average in recent years), which is an adequate level, particularly in view of the low domestic interest rate environment and an increase in the banks' capital ratios. Among the measures taken by the banks to reduce credit risk assets are the reduction in credit to large business borrowers, the sale of mortgage portfolios, syndication deals and the purchase of insurance for the portfolio of guarantees to home buyers in accordance with the Sales Law.

2. Credit risk

In 2016, the banks' balance-sheet credit portfolio grew by 3 percent, to NIS 935 billion. Further to the trend of recent years, the banks increased credit to the household sector and to small and micro businesses and reduced credit to large business borrowers. This was the result of a number of factors, including: (1) the banks' efforts to meet the regulatory capital targets by means of reducing the share of credit to large business borrowers and increasing the shares of retail credit and credit to small businesses, since the former receives a weight of 100 percent in the capital requirements while the latter receive lower risk weights; (2) the Banking Supervision Department placed restrictions on the banks and instructed them to reduce the concentration of borrowers in the bank credit portfolio; and (3) large companies have nonbank sources of financing, particularly institutional investors and the capital market. As a result of these factors, the share of credit

[1] This applies primarily to the two large banks, since they are required to meet higher capital targets.

to households has grown in recent years to almost one-half of the bank credit portfolio and the share of credit to small and micro businesses has reached 43 percent of the business credit portfolio.

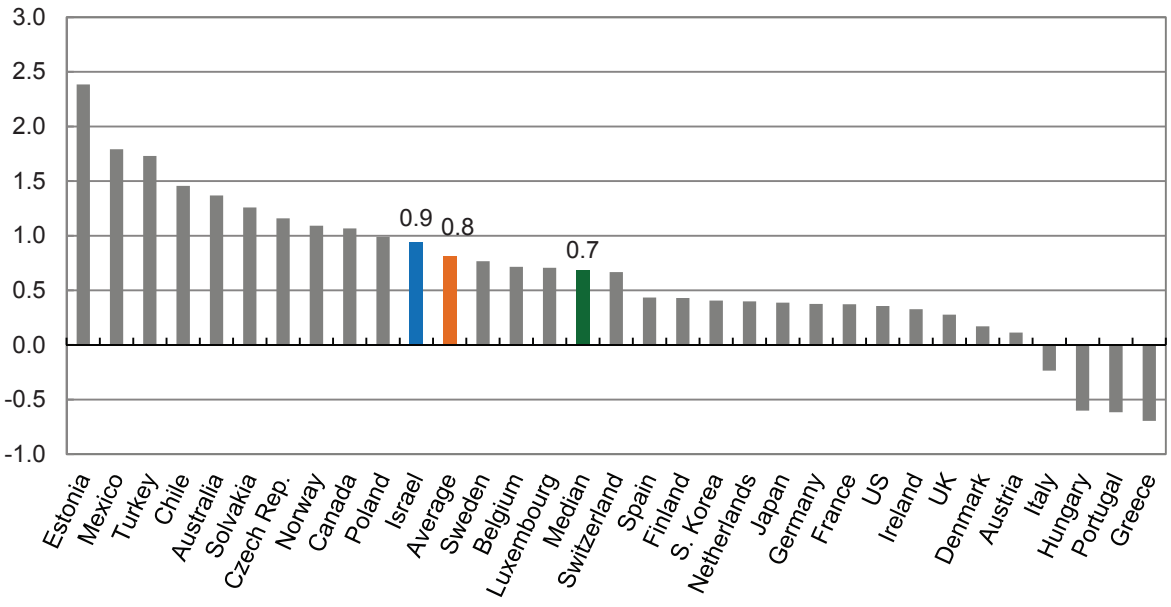
This year, the quality indices of the bank credit portfolio continued to improve, and they are at a high level relative to most advanced economies. Moreover, the concentration of the portfolio by borrower size has continued to decline, and the exposure to large borrower groups has been reduced. Consumer credit is dispersed among a large number of borrowers. Its share of the bank credit portfolio stands at only 16 percent, and the household debt to GDP ratio is low relative to other countries. Nonetheless, the risk inherent in this portfolio increased this year, as reflected in the increased rate of write-offs and the increase in loan loss provisions, which reached 0.8 percent of the consumer credit portfolio this year.

There have been noticeable signs of a slowdown in the mortgage market recently, which are reflected in the moderate rate of growth in housing credit, the drop in the volume of new mortgages and the increase in interest rates on new mortgages. Some of the risk characteristics of housing loans have improved as a result of measures taken by the Banking Supervision Department in recent years, as reflected in the fact that in the stress test carried out this year the losses incurred in housing credit fell somewhat.

In addition, there has been a noticeable improvement in the quality of the portfolio of bank credit to the construction and real estate industry. Thus, the proportion of problematic credit has declined markedly and the losses recorded in the portfolio are of negligible size and even negative. However, since the banks are highly exposed to the industry and since housing prices have been rising in recent years, the

The profitability of the five large banking groups is similar to the average level in the OECD.

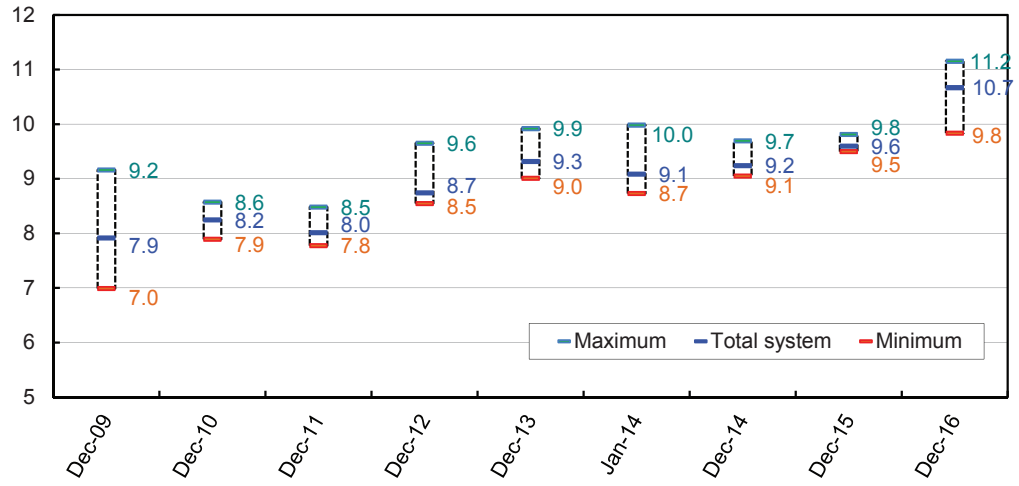
Figure 4.2
The Pre-Tax Return on Assets (ROA) in OECD Countries[a], Average Between 2013 and 2015[b]



[a] Iceland and New Zealand were excluded due to lack of data. Slovenia was execluded due to outlier data.
[b] In Israel, the average between 2014 and 2016. The average and median do not include countries where the yield was negative.
SOURCE: Foreign countries—IMF; Israel—based on published financial statements.

The banks continued to strengthen their capital, and exceeded the regulatory targets.

Figure 4.3
Common Equity Tier 1 / Core Capital Ratio[a], the Five Banking Groups, 2009–16 (percent)



[a] The data up to December 2013 are in Basel II terms (Core Capital ratio), while data from January 2014 onward are in Basel III terms in accordance with the transition directives (Common Equity Tier 1 capital ratio).
SOURCE: Based on published financial statements and reports to the Banking Supervision Department.

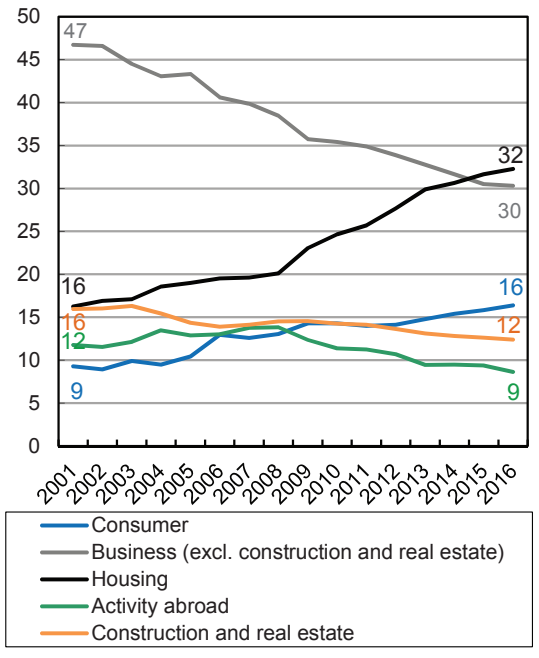
credit to this industry involves a significant risk both to borrowers and to the banking system. Thus, possible shocks to the economy, such as a significant drop in borrowers' income as a result of unemployment, a sharp increase in the interest rate, or a steep decline in housing prices, can be expected to make it difficult for borrowers to repay their mortgage, which will also have a negative impact on the banks. The exposure of the banks to consumer credit, housing credit and credit to the construction and real estate industry, as well as the correlations between these types of credit, continue to constitute the main risk in the credit portfolio of the banking system.

3. Liquidity risk

During the past year, the liquidity of the banks remained at an adequate level. The value of the liquidity coverage ratio (total activity on a consolidated basis) exceeded 100 percent for all of the banks (Figure 4.5), the minimum for the full implementation of the Banking Supervision Department directive that went into effect in January 2017. The improvement in the banks' liquidity was translated into an improvement in

Credit to households as a share of the total credit portfolio increased significantly in recent years, while the share of business credit declined.

Figure 4.4
Distribution of Outstanding Balance-Sheet Credit by Segment, the Five Banking Groups, 2001–16 (percent)



SOURCE: Published financial statements and reports to the Banking Supervision Department.

the liquidity of the system as a whole, and at the end of the year the aggregate value of the coverage ratios stood at about 135 percent (on a consolidated basis, in comparison to 111 percent in December 2015). There was also an improvement in the banks' liquidity risk profile, which was reflected in an increase of about 20 percent in liquid assets as a share of total assets, while net outflow as a share of total liabilities increased more moderately. The structure of the banks' sources remained stable and continued to rely more on retail deposits (58 percent) and less on financial wholesale deposits (22 percent) and non-financial wholesale deposits (20 percent).

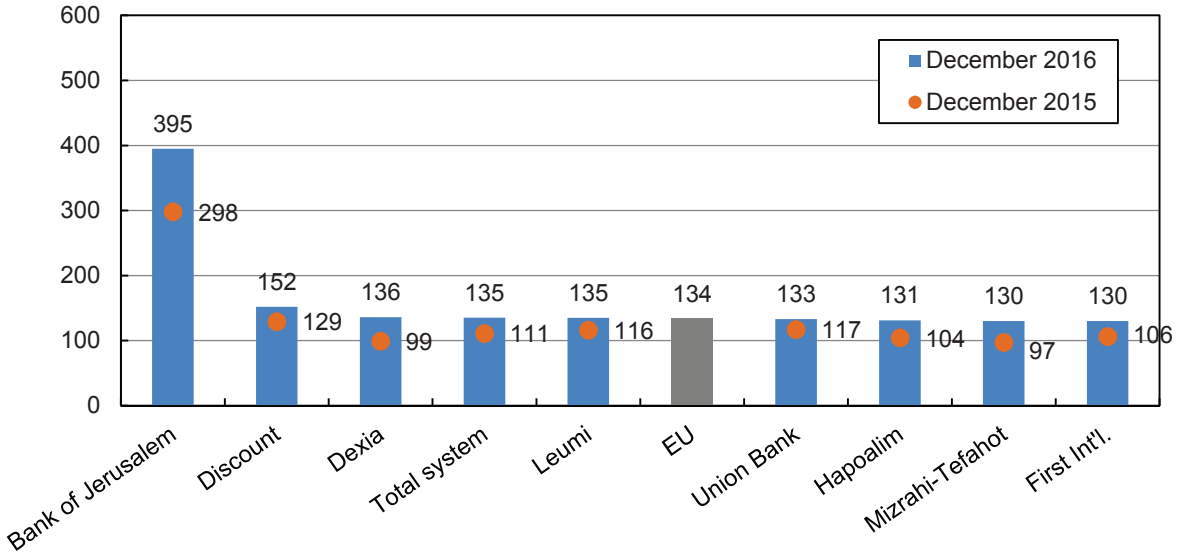
4. Stress tests

The Banking Supervision Department again carried out a stress test on the basis of a uniform scenario with the goal of testing the banking system's resilience to shocks. The scenario included a shock originating in Europe caused by an increase in uncertainty as to the continued existence of the EU, simultaneous with a shock in the domestic housing market leading to a sharp drop in prices. In this scenario, there is a sharp decline in domestic economic activity, which is reflected in a sharp decline in exports and investment and a sharp increase in unemployment. As a result, the CPI declines, the Bank of Israel interest rate remains at its current level and the shekel depreciates against other major currencies apart from the euro. In addition to the contraction in real activity, the shocks have an effect on financial asset prices as well.

In the realization of the stress scenario, the banking system is expected to remain stable and the banks' capital ratios are not expected to fall below the required minimum. Nonetheless, the banks' profitability will be severely affected for a prolonged period and they are expected to absorb large credit losses. The banking system's Common Equity Tier 1 capital ratio declined during the scenario from 10.4 percent in September 2016 to a low of 9.6 percent. The severity of the

The banks continued to improve their liquidity coverage ratios, and all are beyond the threshold for fully meeting the 100-percent requirement imposed by the Banking Supervision Department.

Figure 4.5
Liquidity Coverage Ratio (Total Activity)[a], All Banks in the System and EU[b], December 2015 and December 2016 (percent)



[a] Calculated on a consolidated basis.
[b] The value represents the average of 218 banks in all EU countries and Norway, and is correct as of June 2016.
SOURCE: EU—European Central Bank; Israel—Based on Reports to the Banking Supervision Department.

scenario's effect varies among the banks, with the capital ratio of the most affected bank declining to a low of 6.6 percent. In the scenario, the system will absorb losses that cumulatively amount to about NIS 6.6 billion, and the return on equity will be negligible in 2017 and negative in 2018 and 2019 (-2.9 percent and -1.3 percent, respectively).

These results reflect the direct negative impact to the system as a result of credit and market risks, but they do not take into account the effect on liquidity, the damage to reputations and feedback effects. On the other hand, it is important to mention that the results do not take into account the actions to be taken by the banks' management in response to the crisis. Further details of the stress test appear in Israel's Banking System – Annual Survey 2016.

E. THE INSURANCE COMPANIES

In December 2016, all of the insurance companies met the capital requirements for repayment capacity during the interim period (60 percent of capital required for repayment capacity according to Solvency II). The insurance companies' profitability was characterized by high volatility during the course of the year, which was the result of the rapid increase in the risk-free interest rate at the end of the year from its low level in the first half of the year, fluctuations in the profitability of the insurance companies' investment portfolio and the change in provisions following the recommendations of the Winograd Committee.

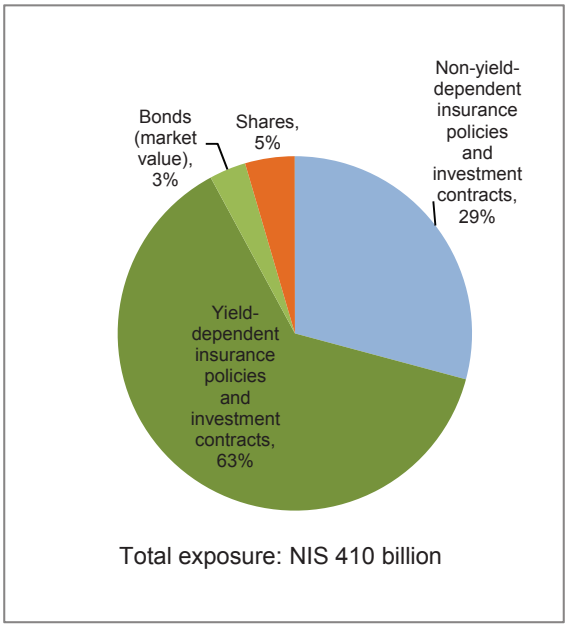
1. The resilience of the insurance companies

The stability of the insurance companies is important to that of the financial system and the economy as a whole. The effect is conveyed by way of several channels, some of which are more important and others less so. The following surveys three of them:

- The ability to repay liabilities to members and beneficiaries: The liabilities of the five large insurance companies due to insurance contracts and due to yield-dependent investment contracts and contracts that are not yield-dependent stood at NIS 378 billion at the end of 2016 (Figure 5.1).
- Tradable bonds and shares: The bonds of the holding companies of the insurance companies reached a market value of NIS 13.7 billion (about 4.5 percent of the bond market), and their shares on the Tel Aviv Stock Exchange reached a market value of NIS 18.6 billion (about 3.3 percent of the equity market).
- The connectedness within the financial system: The banks' direct exposure[1] to the insurance companies—According to the banks' reports, the total of their direct loans at the end of 2016 was negligible, at NIS 14.4 million (the loans provided by the banks to the holding companies of the insurance companies totaled NIS 681.5 million), and it can therefore be concluded that the banking system's exposure to them is negligible. Total securities in the banks' nostro portfolio stood at NIS 227 billion, of which about NIS 1.8 billion are of financial institutions in Israel, which include the insurance companies. It can therefore be concluded that the exposure of the banks to securities issued by the insurance companies is low relative to their total portfolio of securities.

The exposure of all sectors of the economy to the insurance companies totaled NIS 410 billion, and is comprised of insurance liabilities and insurance company securities traded on the Stock Exchange.

Figure 5.1
Total Exposure of All Sectors to the Insurance Companies, 2016



SOURCE: Based on the financial statements of the insurance companies and the "Praedicta" database.

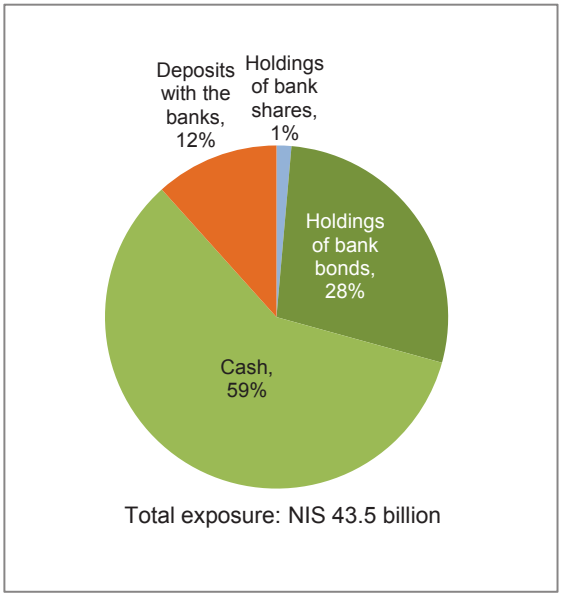
The insurance companies' direct exposure to the banks is reflected in deposits, cash and securities of the banks, and totaled NIS 43.5 billion (Figure 5.2).

The resilience of the insurance companies affects the public's level of confidence in their ability to meet their commitments if an insurance event occurs. This confidence is important in order to moderate the

[1] This channel relates to the banks only, while the previous channels relate to all the sectors.

The insurance companies' exposure to the banks totaled NIS 43.5 billion, and is comprised of insurance companies' cash and deposits at the banks and of bank securities held by the insurance companies.

Figure 5.2
The Insurance Companies' Exposure to the Banks, 2016



SOURCE: Based on the financial statements of the insurance companies, the "Praedicta" database, and the Banking Supervision Department.

adverse effects of insurance events and catastrophic events (such as an earthquake) on the economy.[2]

Since Israel is seeking to strengthen the resilience of the insurance companies and to adopt a number of international standards, it has adopted the Solvency II regime, a directive approved by the European Parliament in 2009. This document includes a comprehensive examination of the risks to which the insurance companies are exposed, as well as instructions related to the manner in which they are managed and measured. These instructions primarily stipulate that the capital of the insurance companies be measured on an economic basis, which better reflects its value. The instructions consist of three layers: a quantitative layer that is based on repayment capacity; a qualitative layer that deals with internal control procedures for risk management, corporate governance and the process for evaluating risk and repayment capacity; and a layer regarding disclosure and market discipline.

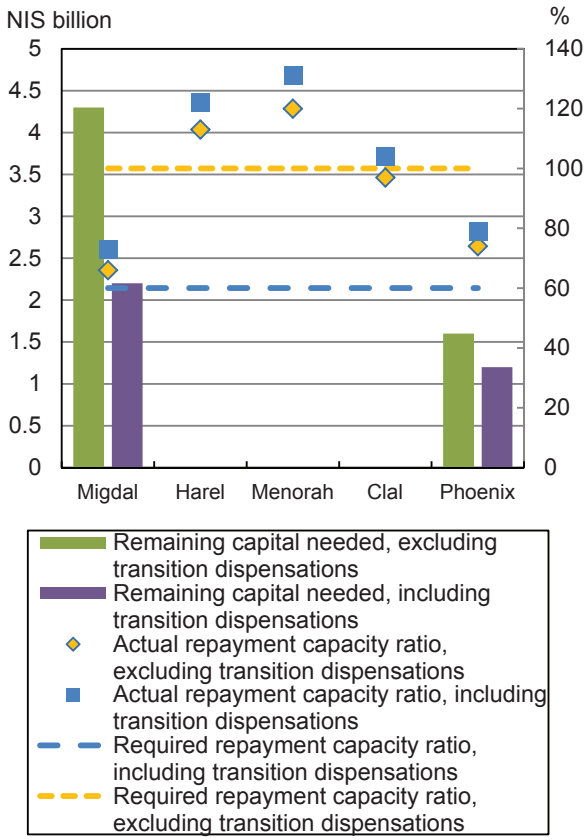
Although the implementation of Solvency II's capital regime makes it difficult for some of the insurance companies to pay dividends, as can be seen from global trends, it is nonetheless necessary in order to strengthen their stability and that of the domestic financial system. In order to balance between the needs of the insurance companies and the systemic need, instructions for implementation were published in February 2017 that are less stringent than the draft, and these were submitted to the Knesset Finance Committee. In the Committee's discussion that took place in May 2017, it was decided that the insurance companies would also receive an extension of the implementation period, and as a result they must fully meet the capital requirements only by December 2024. Essentially, during the implementation—and even more so at its conclusion—customers will benefit from safer insurance policies.

The financial statements of the five large insurance companies published at the end of 2016 show that in December 2016 all of the insurance companies met the capital requirements for repayment capacity during the implementation period for the adoption of Solvency II (60 percent of the full requirement stated in the document) (Figure 5.3). Three of them have 100 percent of the required capital (the shortfall of Clal is not significant) and two (Migdal and Phoenix) together have a shortfall of NIS 3.4 billion. However, Phoenix stated in its 2016 financial statements that after adjustments and raising of capital it does not have a significant deficit. The five large insurance companies raised about NIS 1.7 billion in 2016 as composite capital in order to meet the capital requirements within the constraints imposed on the maximum rate of secondary capital.

[2] Additional discussion of the importance of the insurance companies' stability to the financial system appears in the Financial Stability Report for the second half of 2016 and in the sources cited there.

All five of the large insurance companies meet the capital requirements of the dispensations for the transition to Solvency II, and three already meet the full requirements.

Figure 5.3
The Remaining Capital Needed to Meet the Solvency II Requirements, and the Repayment Capacity Ratio, 2016



SOURCE: Based on the financial statements of the insurance companies.

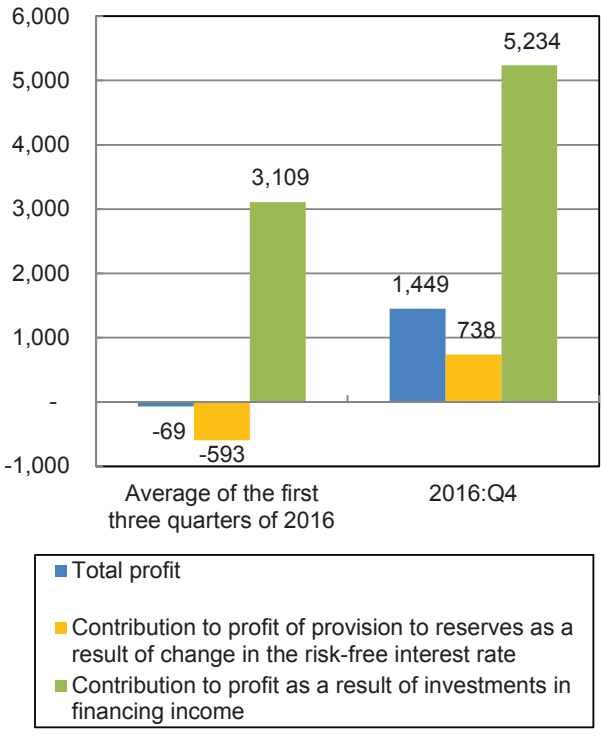
2. The financial statements for 2016

The total profit of the five large insurance companies totaled about NIS 1.2 billion in 2016, compared with NIS 958 million in 2015 and about NIS 1.8 billion in 2014. The overall return on equity was 6.8 percent (7.3 percent according to a simple average of the companies).

The insurance companies' profits were particularly volatile during the year. During the last quarter, they totaled about NIS 1.4 billion while during the first three quarters there was an accumulated loss of about NIS 200 million. The variation in profitability was primarily due to the implementation of regulatory decisions (including decisions by the Winograd Committee), changes in the risk-free interest rate, and changes in other market conditions (Figure 5.4). The risk-free interest rate fell during the first three quarters, increasing the current value of liabilities, but it increased the value of the insurance companies'

The insurance companies' profitability varied greatly during the year, due to changes in the risk-free interest rate and in the prices of shares and bonds they hold. These factors improved in the fourth quarter, and profits in the quarter totaled about NIS 1.4 billion, while there was a cumulative loss in the first three quarters of about NIS 200 million.

Figure 5.4
The Effect of the Risk-Free Interest Rate and Other Market Conditions on the Profitability of the Insurance Companies, 2016:Q4 and the first three quarters of the year (NIS million)



SOURCE: Based on the financial statements of the insurance companies.

assets to a lesser extent, since they usually have shorter durations and therefore tend to be less sensitive to the risk-free interest rate. Therefore, the drop in the risk-free interest rate forced the companies to record large provisions, which reduced their profits. However, in the fourth quarter, the risk-free interest rate rose, having the opposite effect, and total profit rose both in that quarter and for 2016 as a whole.

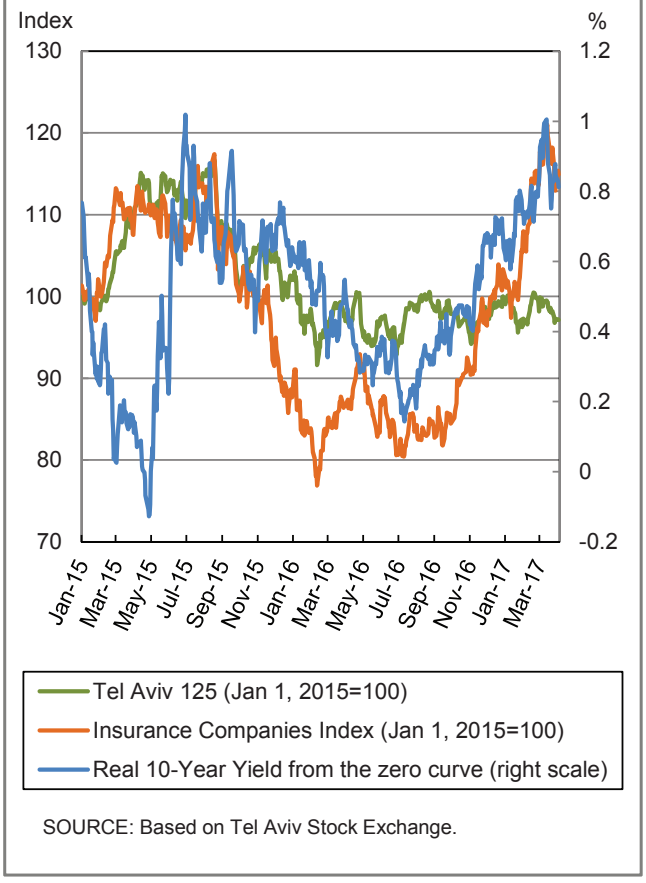
In addition, price rises in the markets led to profits on investments in the fourth quarter. Essentially, during the fourth quarter the insurance companies benefited from an optimal and relatively rare situation—an increase in the risk-free interest rate simultaneous with rising equity and bond prices. Since the high volatility in the profits of the insurance companies was the result of, among other things, changes in the risk-free interest rate simultaneous with changes in other market conditions, it illustrated their dependence on market conditions. The connection between market conditions and the volatility in the absolute profits of the insurance companies is expected to strengthen with the increasing capital requirements that are being imposed on them.

3. Performance of the shares of the holding companies of the insurance companies as an indicator of their situation

The risk-free interest rate has, as mentioned, affected the profitability of the insurance companies and, as is shown in Figure 5.5, this was reflected in the performance of the companies' shares. Between October 2015 and the end of June 2016, the Insurance Companies Index fell by 19 percent while the Tel Aviv 125 Index[3] fell by about 7 percent. The real return derived from the zero curve for 10 years[4] fell from about 1 percent in July 2015 to a low of 0.14 percent in July 2016. Starting in July 2016, the return derived from the zero curve rose and in parallel, i.e. from the beginning of July 2016 to the beginning of April 2017, the Insurance Companies Index increased by about 42 percent while the Tel Aviv 125 Index increased by 3.4 percent. It can be assumed that the change in the trend of the Tel Aviv Stock Exchange influenced the share prices of the insurance companies since they are part of that market and because their profits are dependent on the performance of the stock market as a whole. Similarly, the changes that occurred in the process of implementing Solvency II and other regulatory changes also contributed to the sharp fluctuations in the share prices of the insurance companies.

The share prices of the insurance companies were very consistent with changes in the risk-free interest rate.

Figure 5.5
The Tel Aviv 125 Index and the Insurance Companies Index Compred with the Real Yield, January 2015 to March 2017



SOURCE: Based on Tel Aviv Stock Exchange.

[3] The Tel Aviv 125 index was launched on February 12, 2017 as the successor to the Tel Aviv 100 index. The data prior to that date are extrapolated to reflect the return of the Tel Aviv 125 index.

[4] In order to capitalize expected cash flow, the insurance companies use the risk-free interest rate from the zero curves that match the timing of the cash flow. This analysis presents the real zero curve for 10 years (whose behavior is similar to that of zero curves for longer periods).

F. THE BUSINESS SECTOR AND ASSET PRICES

1. Overall assessment

Business output grew by 4.3 percent during 2016, and the trend of rapid growth continued during the first quarter of 2017.[1] Credit to the business sector grew by 5.1 percent in 2016 to NIS 846 billion, and the ratio of business sector debt to its output remained similar to that in the previous year, at 95 percent.

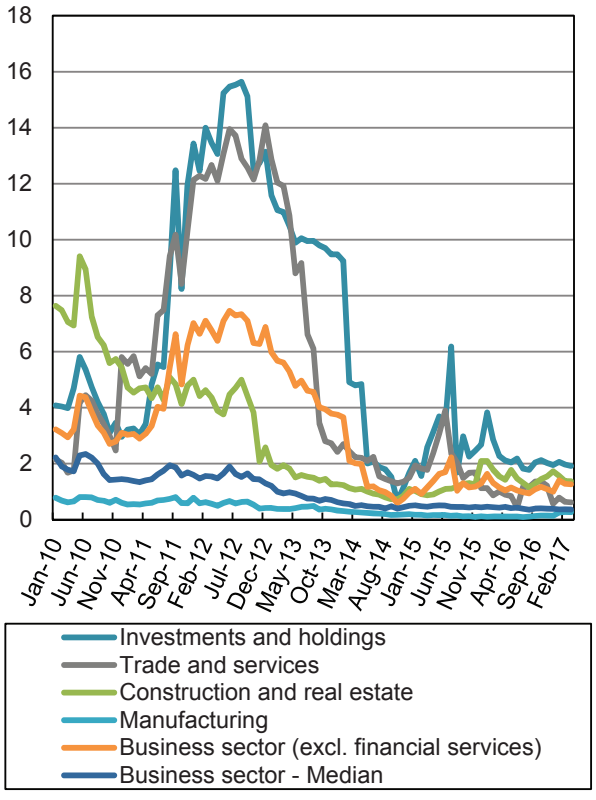
The general indicators show financial stability in the business sector. Thus, the EDF[2] indicator remained low in all the industries (Figure 6.1) and the Stress Index[3] in the market did not reflect any unusual events. As can be seen in the final quarter of 2016, the financial ratios of public companies remained basically unchanged and point to relative stability. Nonetheless, attention should be paid the construction and real estate industry and in particular the construction companies (Figure 6.2).[4] These companies are generally characterized by high leverage, and if a drop in demand in the housing and commercial real estate market occurs, they may find it difficult to service their debt. Due to the accounting requirement to value assets according to their fair value, a fall in asset prices in the residential and commercial real estate market is automatically translated into an increase in leverage. It is worth mentioning that these companies operate, at least partially, outside of Israel and are therefore less exposed to what is going on in the domestic market.

2. Sources for the financing of activity

In the first quarter of 2017, bank credit increased slightly. At the same time, the upward trend in domestic nonbank credit intensified, and it grew by 2.3 percent (9.3 percent in annual terms). The main increase occurred in loans from institutional investors although, similar to the situation in the past year, there was acceleration in capital raised via bond issues during the last quarter of 2016 and the first few months of 2017, against the background of low interest rates in the markets. Total credit to the business sector increased, partly because companies are interested in raising capital while interest rates are low and they are using that capital for investment purposes, among other things, at least according to the published data for

The estimated default frequency remained low in all industries.

Figure 6.1
Estimated Default Frequency (EDF) in Selected Industries, Weighted Average, 2010 to March 2017 (percent)



SOURCE: Bank of Israel.

[1] Although the official figure is only 0.6 percent, this is the result of vehicle purchases that were shifted to the end of 2016 as a result of the amendment of the Green Taxation law. The figure adjusted for the drop in vehicle purchases in fact indicates an acceleration in the first quarter of 2017.

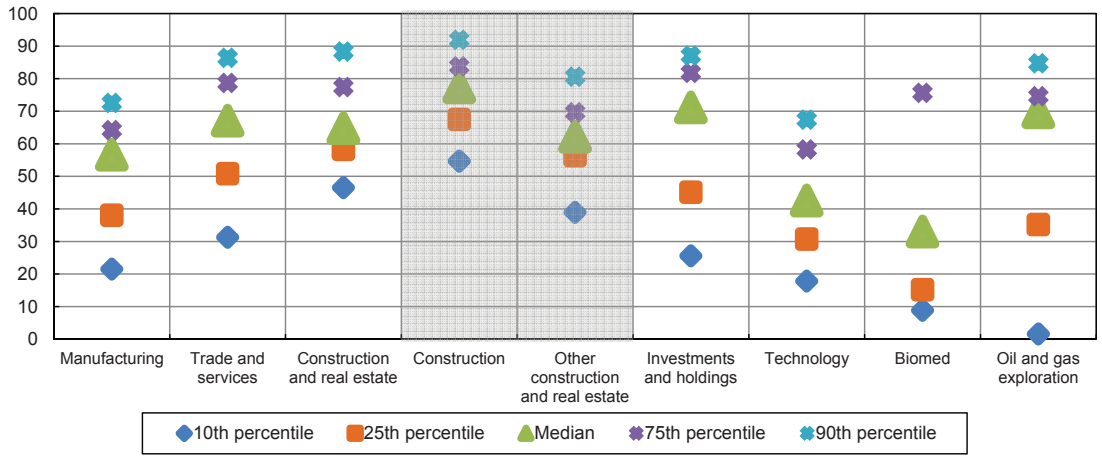
[2] Expected Default Frequency. Moody's-KMV calculates the EDF using a structural model for bond pricing. The main components of the model include the company's medium-term leveraging, its past profits, and investors' confidence in its future profits, which are reflected in the share's volatility.

[3] See Y. Saadon and M. Graham (2013), "A Composite Index for Tracking Financial Markets in Israel", and also Chapter 6 of the Financial Stability Report for the first half of 2016.

[4] We identified the construction companies according to their categorization within the "Construction of Structures and Buildings" category in the CBS classification of 2011. These companies construct both residential and commercial buildings.

Leverage in the construction industry is greater than in the other industries.

Figure 6.2
Distribution of Leverage by Industry[a], 2016:Q4 (percent)



[a] Excluding the financial services industry. The construction and real estate industry is divided into construction and real estate, and the companies in the construction field were identified by their attribution to the "construction of structures and buildings" industry in the Central Bureau of Statistics classification.

SOURCE: Bank of Israel.

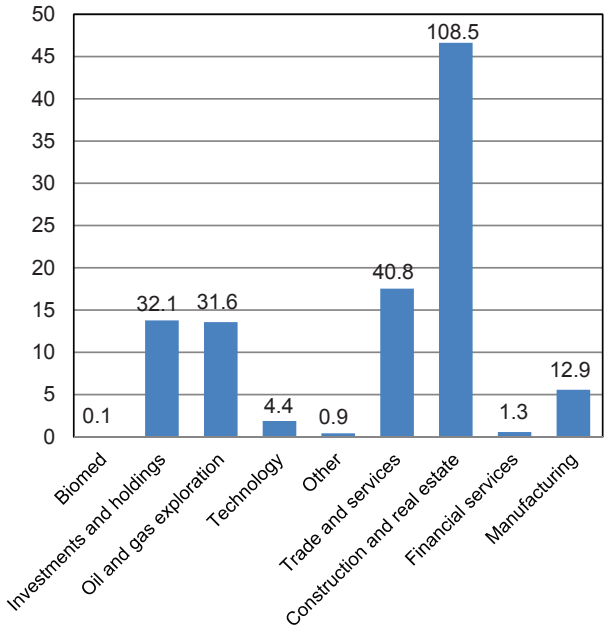
public companies (further details appear in the Bank of Israel Annual Report for 2016, Chapter 4).

Between December and April, the nonfinancial business sector (i.e., not including banks and insurance companies) issued a total of NIS 24.4 billion in bonds, and the estimated net capital raised (issues less estimated redemptions) during this period reached about NIS 11.6 billion. Most of this amount was raised by companies in the construction and real estate industry, and their share of total bonds of the nonfinancial business sector is currently close to 50 percent[5], while the manufacturing industry's proportion has declined to only 5.5 percent (Figure 6.3), continuing of the trend during the last few years. A large majority of the debt was raised without any collateral, and is rated A- or above. The total debt with a high rating (AA- or above) increased during the last three months from 39 to 43 percent (Figure 6.4).

Following a prolonged period of stagnation in initial offerings on the Tel Aviv Stock Exchange (from 2015 until November 2016 there were only four), the

The highest rate of outstanding bonds belongs to the construction and real estate industry.

Figure 6.3
Outstanding Bonds of the Business Sector[a] by Industry, March 2017 (percent)



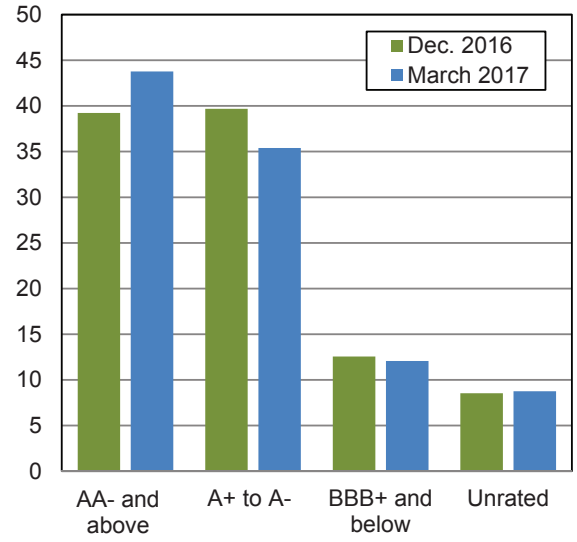
[a] The values above the columns reflect the volume of bonds in billions of shekels.

SOURCE: Bank of Israel.

5 Updated to the end of the first quarter of the year.

There was a marked increase in outstanding bonds rated AA- or higher.

Figure 6.4
Outstanding Bonds of the Business Sector by Rating, Dec. 2016 and March 2017 (percent)



SOURCE: Bank of Israel.

market reawakened between December and April. Six companies issued shares, of which five were Israeli. A total of NIS 752 million was raised, about 22 percent of the total capital raised during that period. It appears that, in accordance with evidence in the literature, one of the reasons for the reawakening in the market is that the shares of small companies reached relatively high price levels (see Section e below). Another possible reason is that in February 2017 the Israel Securities Authority granted a regulatory exemption to small companies, which allows them to publish financial reports only twice a year. This move reduces the costs imposed on small companies that are already traded on the stock exchange, and it is also likely to encourage additional companies to be listed for trading.

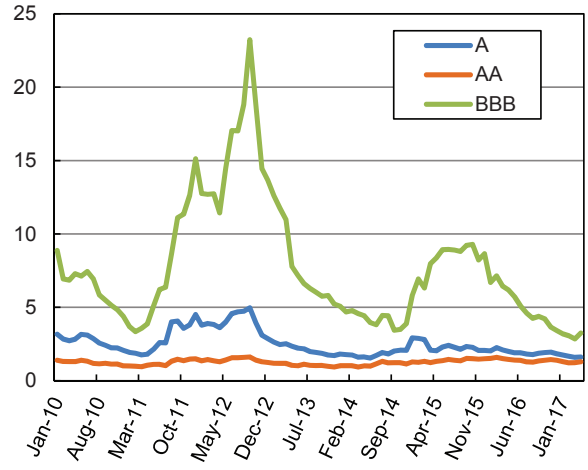
During the reviewed period, the Knesset approved the Payment Ethics Law, which requires the State and its institutions to pay vendors within 45 days of receiving an invoice and no later than end-of-month plus 30 days. The Law is meant to solve one of the problems that small and medium-size businesses have to contend with—the extended payment terms in Israel.[6] The delay of payment is a major problem for these businesses that do not have the ability or financial resilience to wait long periods for payment. Therefore, they are forced to seek alternative sources of finance until they receive payment, in a situation where bank credit to small and medium-sized businesses is more expensive than credit to large ones. However, since the government is the largest buyer in the economy, the law will directly affect the entire business sector.

3. The prices of corporate bonds

In parallel with the reawakening in the bond market, the spreads between corporate bond yields and government bond yields narrowed to levels last observed at the end of 2007 (Figure 6.5). This phenomenon cut across industries and ratings, although it is worth dwelling on the spread of bonds rated BBB, which in March reached (on average) the lowest level recorded since there have been bonds with this rating (Figure 6.6). In addition, the gap between the spread on these bonds

Corporate bond spreads are around the lowest level they have ever been.

Figure 6.5
The Weighted Average of Corporate Bond Spreads, January 2010 to April 2017 (percent)

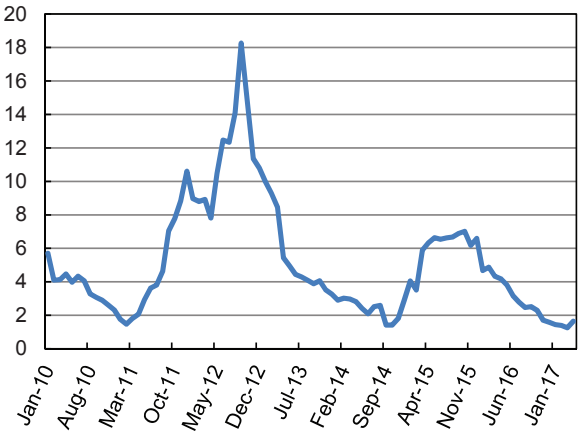


SOURCE: Bank of Israel.

[6] According to a report by the Knesset Research and Information Center ("Description and Analysis of Payment Terms in Israel and Europe"), in the first quarter of 2016 it took 99 days to be paid, 92 of which were by agreement and 7 of which were in arrears. The number of days by agreement in Israel is larger than in any country in the EU.

The gap between the spreads on A-rated corporate bonds and the spreads on BBB-rated corporate bonds is also close to the lowest level it has ever been.

Figure 6.6
The Gap Between the Spreads on A-Rated Corporate Bonds and the Spreads on BBB-Rated Corporated Bonds, January 2010 to March 2017 (percent)



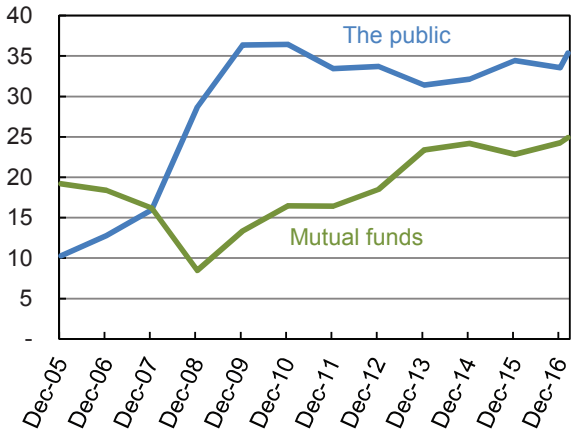
SOURCE: Bank of Israel.

and that of bonds with an A rating is at a very low level, as is the gap between the spread on A-rated bonds and that on AA-rated bonds. In other words, the spreads only partially reflect the differentiation between levels of risk as they are captured by the various ratings. As a result of the low spreads, most of the debt that is to be redeemed during the coming year and for which a yield can be calculated—NIS 31.1 billion out of NIS 32.7 billion—is traded at a yield of up to 8 percent.

The reawakening in the corporate bond market in parallel to the narrowing of spreads is evidence that investors are increasing their demand for this asset, and the proportion of corporate bonds held by the public during this period has risen. From mid-2016 until February 2017 the proportion of corporate bonds held directly by the public or by means of mutual funds rose from 57.4 percent to 60.3 percent, while the proportion held by the institutional investors fell from 41.2 percent to 38.7 percent (Figure 6.7). ETFs[7] that invest in corporate bonds as a share of total ETFs held

The public and the mutual funds recently increased their share of outstanding corporate bonds.

Figure 6.7
The Rate of Outstanding Corporate Bond Holdings by the Public[a] and by Mutual Funds, 2005 to Feb. 2017 (percent)



[a] The portion directly held by the public is equal to the difference between total holdings and the holdings of the various financial institutions.
SOURCE: Bank of Israel.

by the public reached 21.3 percent in February 2017, a figure that has been rising since the end of 2014, when it stood at only 13.3 percent.

The low spreads in the corporate bond market raise the question of whether or not this is the result of underpricing of the risk inherent in the activity of the issuing companies. It appears that the spreads are justified since the business sector is characterized by a high level of profitability and activity, the companies are enjoying financial stability (as can be seen from the level of their financial ratios), the likelihood of default is low (as can be seen from the EDF figures) and there is a high level of liquidity in the markets, which facilities the refinancing of debt. However, there is evidence that challenges these conclusions. First, spreads have fallen further and reached record lows in parallel to the major expansion in the volume of bond issues and the net raising of debt capital. Mutual funds have recorded significant inflows and an increase in their share of the bond market. Second, spreads reached record lows, primarily in the lower ratings, reaching

[7] An absolute majority of the amount is invested in long positions. Short positions constitute a tiny proportion (about 0.25 percent), which has remained unchanged for a long period.

the lowest levels ever observed in those ratings in March. The low spreads contributed to the high liquidity that has existed in the markets in recent years as a result of the accommodative monetary policy, and if this liquidity dries up all at once (for example, due to an increased perception of risk or a deterioration in economic conditions), it is liable to initiate a rapid increase in spreads and lead to financial difficulties for corporations. The risk implicit in a sudden trend reversal is amplified by the fact that mutual funds are increasing their share of total corporate bonds, since in times of crisis households that save through them tend to redeem their savings all at once, thereby increasing the volatility in the market in a way that is liable to intensify the shock.

In order to obtain another perspective on whether spreads are at reasonable levels, we compared the spreads of corporate bonds between Israel and the US with similar ratings[8] (Figure 6.8).

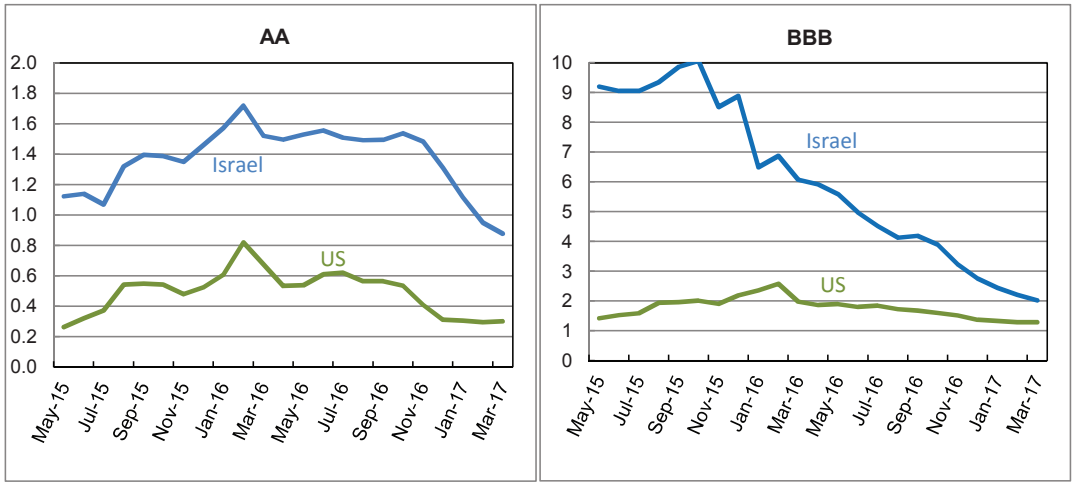
The graphs indicate that although spreads in Israel are larger in the two ratings[9], the spreads of corporate bonds in Israel, particularly in the BBB rating, have fallen sharply in recent months, while in the US there has not been such a large decline. This dynamic reinforces what was stated above, and to some extent raises the concern that the perception of credit risk among investors in corporate bonds in Israel is lower than the risks implicit in them.

4. Bonds of foreign companies

The volume of bonds issued by foreign companies in Israel was more moderate during the first three quarters of 2016, but during the past seven months (September 2016 to April 2017) they have raised NIS 6.2 billion, of which NIS 2.2 billion were raised during the last three months of 2016 and the rest during the first three months of 2017. Two companies that had not previously raised capital in Israel accounted for 30

The spread on corporate bonds rated AA and BBB in Israel narrowed significantly compared with the spread on equivalent bonds in the US.

Figure 6.8
The Spread on AA and BBB-Rated Corporate Bonds in Israel and in the US , May 2015 to March 2017
(percent)



SOURCE: Bank of Israel.

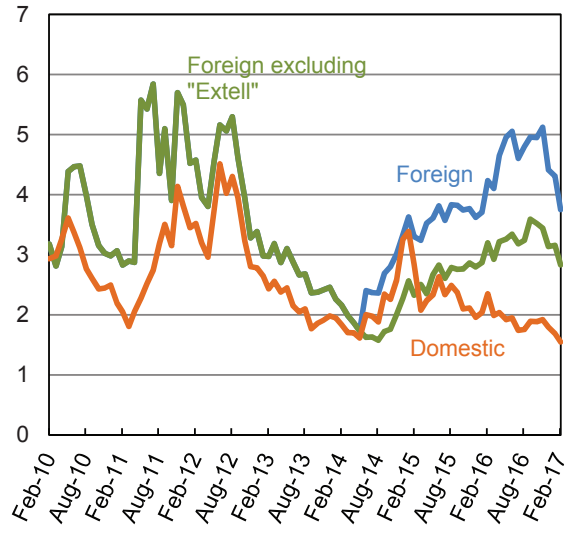
8 Although the ratings scales differ between the two countries, the difference is negligible when calculating the spread in yields using the yield on government bonds in that country as a benchmark for the risk-free interest rate.

9 In addition to the differences in the perception of risk, the differences in spreads can also be a result of other factors, such as duration, liquidity, depth of the market and structure of the markets. However, since these are not expected to change over time and thus influence spreads, we assume that the changes in spreads are the result of changes in investors' perceptions of the risk.

percent of the total capital raised in 2017. The bonds issued by foreign companies in 2017 constitute about one-tenth of the bonds issued by the business sector in the first quarter of the year, and about one-quarter of those issued in the same period by the construction and real estate industry. Outstanding bonds of foreign companies totaled NIS 22 billion at the end of the first quarter of the year, which is about 10 percent of the business sector's total bonds (not including insurance companies and banks). We previously held the view that the unique risks of these bonds are not priced in and that spreads are identical within the rating groups.[10] However, since the risks related to the foreign real estate company "Extell" were realized (in early 2015), there has been a differentiation in spreads within those rating groups (Figure 6.9).

The spreads on bonds of foreign construction companies are higher than their domestic counterparts, which may signify that the market has internalized the greater risk of the foreign companies.

Figure 6.9
The Spreads of Bonds Rated A- and Above in the Construction and Housing Industry, 2010 to Feb. 2017 (percent)



SOURCE: Bank of Israel.

5. Share prices and reform of the indices

(a) Prices

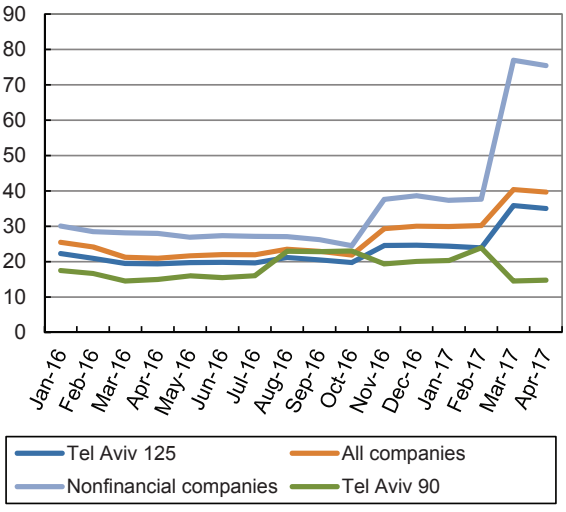
From November 2016 until March 2017, the TA 125 index rose by only 2 percent, which was less than the leading indices in Europe, the US and the emerging markets. A break-down of the changes in shares prices by size of company shows that the shares of small companies (such as those in the SME 60 and the Yeter indices) rose while the shares of large companies fell. A breakdown by industry shows that construction and real estate, the banks and the technology industry pulled the indices upward while the biomed companies and the chemical and pharmaceutical companies pulled it downward. The sharp price declines were the result of difficulties experienced by the pharmaceutical companies, primarily Teva, which account for a significant proportion of the leading indices. The P/E ratio of all companies traded on the TASE rose sharply following the release of the financial statements for the third quarter of 2016, although this increase was not observed among companies included in the TA 90, an index that does not include the largest companies (Figure 6.10). Indeed, the large rise in the P/E ratio was a result of the significant losses recorded by several of the large companies (ICL, Israel Corporation, Perrigo and Opko) due to their recognition of losses and write-offs in this quarter. Therefore, the high level of the P/E ratio is apparently not evidence of overpricing of the market value of public companies but is the result of temporary events among several of the large companies.

Share prices apparently have not deviated significantly from their fundamental values, and this is based on a number of criteria: the equity market showed moderate price increases; P/E ratios are at a reasonable level relative to the past; activity in the business sector is stable amid financial stability; a designated test does not support the possibility of a bubble in the equity market (Graham and Caspi, 2016); and the co-movement of the equity market, an indicator of the systemic extent

[10] See the Financial Stability Report for the second half of 2014.

The P/E Ratio increased due to losses recorded by a number of large companies.

Figure 6.10
The Aggregate P/E Ratio, Jan. 2016 to April 2017
(percent)



SOURCE: Bank of Israel.

of events, does not exhibit outlying values.[11]

(b) Reform of the indices

During the reviewed period, the implementation of a reform of the indices began. The main changes include an increase in the number of shares in the main indices; foreign companies will no longer be included in the indices; the launch of new indices; raising the proportion of the public's holdings used as the threshold for inclusion in the indices; and gradually reducing or increasing the weight of shares in the indices. The reform is meant to achieve several goals, including a reduction in volatility and an improvement in the diversification of the indices in order to better reflect the state of the Israeli economy; creation of new investment instruments; the improvement of liquidity and tradability of shares; reduction in the influence of controlling shareholders; and the prevention of large shocks to the indices. As part of the reform, the TA 25 and TA 100, the main share indices, became the TA 35 and TA 125, respectively.

[11] Further details appear in Figure 3 of Chapter 1 of the Financial Stability Report for the first half of 2016.

Box 1

Financial stability of vehicle market activity and financing

In recent years, there has been a consistent increase in new vehicle sales in Israel. According to the Association of Vehicle Importers, there were 286,728 new private vehicles sold in Israel in 2016, more than 12 percent higher than in 2015. The robust activity in the vehicle market—and the concern that the large supply will lower vehicle prices significantly, since for the most part, vehicles serve as collateral against credit to the companies operating in the market—have attracted increasing attention to the leverage and the sources of credit of these companies and to the extent to which the financial system is exposed to them.

There are two main types of players in the vehicle industry in Israel: the importing companies, mostly privately owned, and the leasing and rental companies, mostly publicly traded. The vehicle importers market new vehicles to both households and the leasing companies, and provide consumer credit mainly by spreading out the payments for a new vehicle. Some of them do so through captive financing arms (subsidiary companies that offer financing for vehicle purchases from the parent company). The leasing companies provide vehicle fleets to the business sector, private leasing services, and rental services in Israel and abroad, and sell vehicles at the end of their use period in the rental and leasing fleets. In recent years, the companies have been expanding the field of transactions known as "zero kilometer", in which they purchase vehicles wholesale from the importers, and then sell them as first-hand vehicles at a lower price and with higher financing rates, either through "regular" financing (on a payment plan) or through financial leasing.[1] Against the background of the low interest rate environment, the vehicle companies enable a longer period of payments, and entitlement to additional credit beyond that provided by the banks and/or credit card companies.

Since the large vehicle importers are mostly under private ownership and do not publish financial statements to the public, it is difficult to estimate the scope of their leverage or to outline the sources of financing for their operations. However, it is possible to obtain a rough estimate by looking at the two publicly traded importers, since they are two of the five largest companies in the field. At the end of the third quarter of 2016, the total assets of these two companies alone totaled about NIS 5.9 billion, while their total liabilities were about NIS 4.1 billion, for a leverage rate of about 70 percent. Among the four large publicly-traded leasing companies, total assets were about NIS 17.5 billion, while total liabilities were about NIS 15.2 billion[2], for a leverage rate of 87 percent[3], while public companies in the business sector (excluding banks and insurance companies) had a leverage rate of 63 percent. However, it should be noted that in the financial services, an industry similar to the leasing companies in terms of operations, leverage was 94 percent.

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1 In these leasing transactions, the customer makes a pre-determined monthly payment for the vehicle. During the lease period, the vehicle remains the property of the leasing company, since it serves as collateral for the monthly payments. At the end of the period, the customer is permitted to (a) purchase the vehicle for a pre-determined price, (b) return the vehicle to the company, or (c) continue the arrangement with the company and replace the current vehicle with a new one.

2 About 28 percent of total liabilities are long-term bonds, and about 22 percent are loans from banking corporations.

3 And the variance is low: the leverage rate ranges from 85.6 percent to 88.2 percent.

There is a unique risk of exposure to the vehicle industry as a result of the possibility of a decline in the value of vehicles encumbered as collateral to the entities financing the companies that operate in this industry, and that such a decline will exceed the forecast estimates. Vehicles are the main encumbered assets of the companies, and if the used car market becomes flooded, most of their collateral may lose its value beyond the forecasts. The vehicle trading companies are also directly exposed to the risk inherent in a decline in the value of collateral, through exposure to households and to the leasing companies. Such a scenario may lead to borrowers returning the vehicles used as collateral to the merchants with a much lower actual value, thereby leading to large losses on the part of the importers and the leasing companies. While the companies record the encumbered vehicles at a reduced value (lower than their price list cost), and also reduce their value when they encumber them to the financing entity, there is a risk that the value of the vehicles will decline beyond the forecast.

Table 1
The financial system's exposure to the vehicle industry (NIS million)[a]

	Type of exposure	2015Q3	2016Q3
Banks	Outstanding business credit to the vehicle trade industry	22,924	24,855
	As a share of outstanding business credit	5.86%	6.16%
	Outstanding consumer credit in vehicle encumbrances	n/a	9,542
	As a share of outstanding nonhousing credit	n/a	7.12%
Credit card companies	Outstanding consumer credit in vehicle encumbrances	1,637	1,932
	As a share of outstanding credit to private customers	22%	20.2%
Institutional investors	Holdings of vehicle importers	507	685
	Holdings of leasing companies	1,190	1,523
	Outstanding direct loans to the vehicle industry	674	1,168
	Exposure as a share of total managed assets	0.2%	0.26%
	Exposure as a share of total risk assets[b]	0.35%	0.46%
Total exposure of the financial system		-	39,705

[a] Amounts in NIS million.

[b] Risk assets—managed assets minus the government bonds portfolio.

SOURCE: Bank of Israel.

In addition to this risk, the financial system is also directly exposed to the risk of default of the vehicle trading companies. If the economy is hit by an extreme recession and unemployment, the firms and households leasing vehicles may default, thereby leading to heavy losses to the leasing companies and importers. Moreover, if the interest rate in the economy increases and impairs households' repayment abilities[4], they may default and lead to heavy losses to the importers.

4 We assume that at least some of the credit is issued at variable-rate interest.

The financial system is also exposed to the vehicle market through a number of channels. First, the banks are exposed to this market through the consumer credit they provide to households. The outstanding balance-sheet credit the banks provided against encumbered vehicles was about NIS 9.5 billion in the third quarter of 2016, 7.1 percent of outstanding consumer credit provided to households. The amount provided by credit card companies was NIS 1.9 billion, about 20 percent of the outstanding consumer credit they provided.[5] In addition, the banks are exposed to importers and the leasing and rental companies through loans, and balance-sheet credit to the vehicle trade industry was almost NIS 25 billion, 6.3 percent of outstanding credit to the business sector.[6]

The institutional investors are also exposed to the vehicle industry, through direct holdings of the securities of the companies active in the field and direct loans they provide to those companies. Their total direct holdings in the large leasing companies were about NIS 1.5 billion at the end of the third quarter of 2016, while total direct holdings in importers were about NIS 700 million. These amounts together comprise about 0.17 percent of total institutional investors' holdings, while in the same period in 2015, they accounted for 0.14 percent of holdings. The volume of loans provided by the institutional investors to the companies in the vehicle industry is NIS 1.2 billion, about 1.8 percent of their total loans, while in 2015, the amount was NIS 674 million, about 1.3 percent of total loans.[7]

The foregoing survey indicates that the financial system is increasingly exposed to the vehicle industry and its offshoots, and that the current exposure is not negligible in terms of its volume (about NIS 40 billion). However, since it accounts for a small share of the system's total assets, the systemic risk is not large. With that, it should be noted that the exposure accounts for a small share of the total assets of the banking system and of the institutional investors, but a significant share of the outstanding credit of the credit card companies.

5 While it is possible that some of the credit for vehicle purchases was issued within the "all-purpose credit" framework and not against the encumbrance of a vehicle, in such a case the risks to this credit are identical to the other credit risks to households, and do not include the additional risk of a decline in the value of the collateral.

6 This is an underestimation of the banks' exposure to the companies in this field. Credit to the financial leasing companies is included in the "financial services" industry, and since this industry obviously includes companies in other financial areas, it is not possible to include it in exposure to the vehicle industry.

7 In order to make these calculations, we added the direct loans issued against encumbrance of vehicles and the loans where the names of the loans indicate that they were issued to companies in the field. Here, too, we have an underestimation, since some of the loans also have a generic name that does not indicate the identity of the borrower.

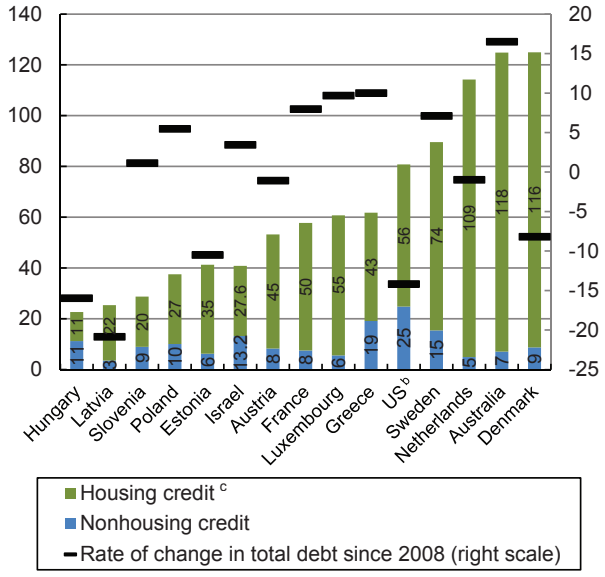
G. THE HOUSHOLD SECTOR

1. Changes in household debt

Total household debt stood at about NIS 510.6 billion in March 2017. This followed an increase of about 5.8 percent during the preceding 12 months, which was similar to the trend in previous years (Table 7.1). The household debt to GDP ratio was 40.7 percent at the end of 2015, which is low compared with other advanced economies (Figure 7.1), though it is trending upward (Table 7.1). The total is composed of total housing debt and total nonhousing debt, and the ratio of the former to GDP is low relative to other countries while the ratio of the latter is not. Since 2008, the ratio of housing debt to GDP has shown a moderate upward trend as a result of the increase in home prices, while the ratio of nonhousing debt to GDP began to increase only in 2013, having declined at the beginning of the decade (Figure 7.2). It is worth mentioning that, in contrast to mortgages, few macroprudential restrictions have been placed on nonhousing bank credit (consisting mainly of directives regarding provisions for credit losses), and it is managed mainly according to risk appetite and the banks' own risk evaluation models.

Even though Israel's household debt to GDP ratio is low compared with other countries, the ratio of nonhousing debt to GDP is not low.

Figure 7.1
International Comparison[a] of Household Debt to GDP Ratios, 2015 (percent)



[a] We selected countries with available data in the OECD database.
[b] US data were added to the OECD database this year. The Fed's database shows that student loans constitute 7.5 percent of GDP in the US.
[c] Housing credit includes credit for residential purposes secured by a residential dwelling and credit for any purpose secured by a residential dwelling.
SOURCE: Bank of Israel and OECD data.

Nonhousing credit[1] continued to grow at a rapid rate (Table 7.1). In March 2017, it totaled about NIS 165 billion and constituted about 32.6 percent of total credit to households.[2] The banks provide most of this type of credit (81 percent in March 2017) although in recent years financial institutions and credit card companies have significantly expanded their activity in this area (Figure 7.3).

The growth in credit provided by credit card companies is supported by the ongoing decline in interest rates[3], and the increasing ease of obtaining a loan due to technological advances.[4] Most of the credit from credit card companies is not backed by collateral, and essentially only loans for vehicle purchases have any collateral behind them.[5] Figure 7.4 presents the change in total loans and in car loans that are provided to households.

1 Total credit is equal to debt less the banks' provisions for doubtful debts. The data in Table 7.1 include the provisions for doubtful debts.

2 In addition, unsupervised nonbank entities that provide credit have come into being in recent years, but they are not required to report on their volume of credit.

3 The average interest rate charged by credit card companies fell from about 11 percent in 2010 to about 8 percent in 2016, although there is a large degree of variation between them: in 2016, the average interest rate charged by the three companies (Leumicard, Isracard and Cal) ranged from 6.3 to 11.1 percent. It is worth mentioning that the average interest rate is influenced by the breakdown of the loans. To illustrate, the average interest rate declines in periods when car loans account for a larger share, since they are provided against collateral and bear a relatively low rate of interest.

4 To illustrate, close to half of the consumer loans provided by Cal in 2016 were by means of an app.

5 Leumicard reports that these loans constitute about one-third of the credit to individuals (households). In the other companies, the share is much lower, at around 10 percent.

Table 7.1

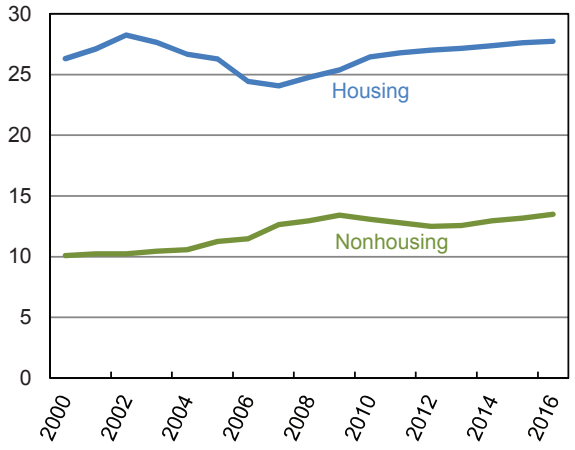
Balance of Household Debt, 2013–17

	Rate of Change				NIS billion
	2013	2014	2015	2016	March-17
Total household debt	7.2%	5.9%	6.5%	6.2%	510.6
By source:					
Banks	8.6%	6.5%	7.6%	5.3%	457.5
of which: housing	9.1%	7.1%	8.5%	5.2%	323.3
nonhousing	7.4%	5.0%	5.5%	5.6%	134.1
Institutional investors	13.8%	14.9%	30.6%	53.2%	18.6
of which: housing	12.0%	-3.6%	18.5%	131.3%	8.4
nonhousing	15.0%	26.1%	36.2%	21.5%	10.1
Credit card companies	9.2%	18.9%	18.6%	19.4%	16.0
Government -directed credit	-10.0%	-11.2%	-26.0%	-10.9%	14.2
By use:					
Housing	7.2%	5.1%	6.3%	5.5%	343.0
Nonhousing	7.2%	7.5%	7.2%	7.6%	167.6
Household debt to GDP ratio, change in percentage points	0.2	0.6	0.5	0.4	41.3

SOURCE: Bank of Israel.

The household debt to GDP ratio has been increasing since 2008, as a result of the increase in home prices. The nonhousing debt to GDP ratio has increased in the past four years.

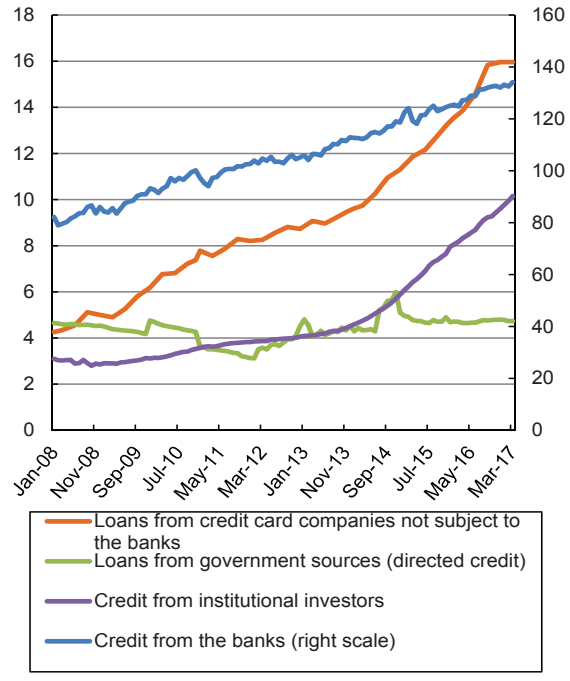
Figure 7.2
Housing Debt and Nonhousing Debt As A Share of GDP, 2000–16 (percent)



SOURCE: Bank of Israel.

The banks continue to provide most of the nonhousing credit to households, even though institutional investors and credit card companies have been rapidly expanding such credit in recent years.

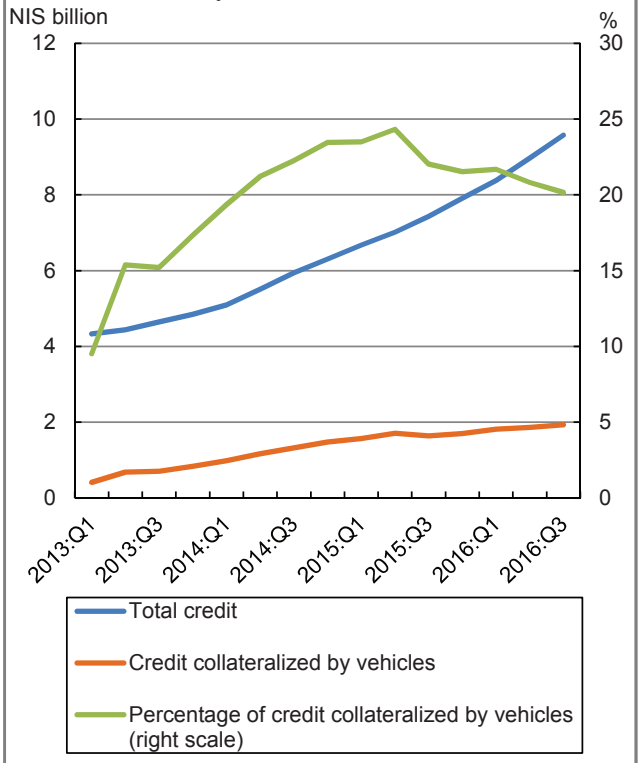
Figure 7.3
The Development of Nonhousing Credit by Sources, January 2008 to March 2017 (NIS billion)



SOURCE: Bank of Israel.

Most credit from the credit card companies is not backed by collateral, and vehicle purchase loans (loans collateralized by vehicles) as a share of total consumer credit provided by the credit card companies has recently been declining.

Figure 7.4
Loans Granted by Credit Card Companies to Households: Total Credit and Credit Collateralized by Vehicles, 2013:Q1–2016:Q3

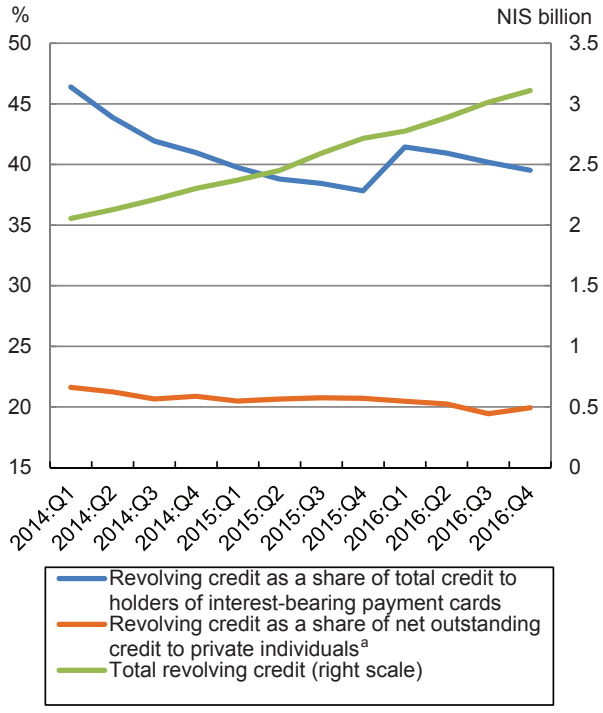


SOURCE: Bank of Israel.

In this context, it is important to mention that the credit card companies also provide "revolving" credit (Figure 7.5). Revolving credit cards[6] give users a measure of control over their monthly repayment. They receive a line of credit and decide on the maximum size of the monthly repayment; the rest of the debt is rolled over into subsequent months and bears interest. In general, the interest rate is relatively high, and also exceeds the interest rate on loans from the banks or on other types of loans from the credit card companies. It should be mentioned that this system can cause households to

The volume of revolving credit increased by about 36 percent between 2014 and 2016.

Figure 7.5
Revolving Credit From Credit Card Companies, 2014:Q1–2016:Q4



[a] Outstanding credit to private individuals includes credit to people who do not hold a credit card, and credit to those holding a card with or without an interest facility.

SOURCE: Bank of Israel.

accumulate debt (up to the limit of the credit line), as in the case of overdrafts at the banks. Total revolving credit grew by about 36 percent from 2014 to 2016. Although it still accounts for a small share of total nonhousing credit (about 2 percent), it represents a relatively large proportion (20 percent) of the total household debt to the credit card companies (which is not under the responsibility of the banks).

Housing credit continued to increase, though at a more moderate rate (Table 7.1). The average monthly volume of new mortgages has been slowing since mid-2015 and this trend intensified starting in mid-2016 and continued in 2017. At the same time, the interest rates on mortgages on all tracks have risen (although in March–April 2017 some of them fell to some extent).

6 Among the most common cards of this type in Israel are Leumicard's Multi, Isracard's More and Cal's CalChoice.

Table 7.2
Characteristics of New Mortgages, Monthly Average

	2015	2016	Past 12 months[a]
Volume of new morthgages, NIS billion	5.40	4.89	4.66
Weighted real interest rate, percent	0.97	1.49	1.77
Interest rates on the various mortgage tracks:			
CPI-indexed variable rate, percent	2.08	3.00	3.34
CPI-indexed fixed rate, percent	2.31	3.34	3.62
Unindexed variable rate, percent	1.39	1.87	2.09
Unindexed fixed rate, percent	3.28	3.93	4.21
Average mortgage size, NIS thousand	583	661	667
Weighted average term to repayment, years	20.1	21.5	21.6
Percentage of mortgages for investment dwellings	15.7	13.9	13.7
Estimated average LTV ratio, percent	52.4	51.2	50.5
Estimated average PTI ratio, percent	25.1	25.6	25.7

[a] From May 2016 to April 2017, except for the figures on average mortgage size and percentage of mortgages for investment dwellings, which are from April 2016 to March 2017.
SOURCE: Bank of Israel.

This leads to the conclusion that the reduction in the supply of mortgages by the banks played a more dominant role in the slowdown in the volume of new mortgages than changes in demand.

An examination of the factors that may explain the changes in the supply of mortgages shows that mortgages have become more expensive primarily because the Banking Supervision Department has changed the regulatory requirements that apply to them in order to induce the banks to internalize the increasing risks in the housing and mortgage markets, and because the construction and real estate industry's proportion of the banks' credit portfolio has increased. The relevant directive was published in September 2014 and specified that the banks are to increase their core capital ratios by an amount that reflects 1 percent of the total housing credit portfolio by the beginning of 2017. In addition, all of the banks were required to reach a core capital ratio of 9 percent by the beginning of 2015 and the two largest banks—Leumi and Hapoalim—were required to attain a ratio of 10 percent by the beginning of 2017, in accordance with the Basel III recommendations. The aforementioned requirements made it difficult for the banks to continue expanding their mortgage portfolios, and this was especially the case for the two largest banks (since they were required to attain an even more stringent core capital ratio) and for Mizrahi-Tefahot since its share of the mortgage market reached 38.4 percent at the end of 2016. It should be emphasized that the risks in the mortgage market are primarily the result of the aggregate amount of credit provided to the construction and real estate industry, by way of both loans to contractors and mortgages to households. The overall rate of the banks' exposure to the industry and to housing credit provided to households continues to climb, to about 44.7 percent in January 2017, although its rate of increase has slowed during the last three years. In contrast, there has been no growth in individuals' risk, which is based on the characteristics of the households that take out mortgages (see the discussion below). Furthermore, there is no upward trend in the cost of capital raised by the banks by means of deposits and bonds.

The difficulty experienced by the banks in increasing their mortgages was partly reflected in their cooperation with the institutional investors, whereby they sold mortgage portfolios to the institutional investors or provided loans jointly with them.[7] The Commissioner of Capital Markets has prohibited the institutional investors from purchasing mortgages with an LTV rate of more than 60 percent from the banks, in order to minimize risk, and the Supervisor of Banks has for the same reason limited the share of the mortgage portfolio that the banks can sell to the institutional investors.[8] The banks and the institutional investors have exploited about one-half of the potential for cooperation that these limitations allow for. This cooperation has an effect on risk. In particular, the sale of mortgage portfolios reduces the risk to which the banks are exposed, to the extent that they do not re-channel the freed-up funds to new mortgages (which is supported by the fact that the rate of increase in the monthly volume of new mortgages has slowed recently). The involvement of the institutional investors in credit to households leads to greater diversification of risk among the players, i.e., the banks and the institutional investors. Moreover, the allocation of the freed-up funds to segments that do not obtain financing from the institutional investors, such as small and medium-size businesses, may increase the sources of finance for their activity and contribute to growth.

7 Bank Mizrahi-Tefahot sold existing mortgages totaling about NIS 770 million to Menorah Mivtahim, and totaling about NIS 1.85 billion to Migdal; Bank Hapoalim sold existing mortgages totaling about NIS 700 million to Harel Insurance; and Bank Leumi sold existing mortgages totaling about NIS 1.6 billion to Menorah Mivtahim. In addition, Bank Leumi and Harel Insurance signed an agreement to cooperate in providing new mortgages totaling about NIS 4 billion in 2016–17, and part of this amount has already been realized.

8 The Supervisor of Banks has decided that the banks can sell only 6 percent of the mortgage portfolios with an LTV limited to 60 percent, and 10 percent of the portfolios with an unrestricted LTV.

Box 2

Balance sheet of households' assets and liabilities

In recent years credit to households has grown by a more rapid rate than that of GDP or wages, which raises questions about the financial stability of households and about the systemic risks derived from that sector should this development continue. Responding to these questions generally involves, among other things, tracking the balance sheet of households' assets and liabilities, and examining the extent of household leverage, as the balance sheet presents the real and financial assets through which the households are to cover their liabilities.[1]

Table 1
Balance sheet of household assets and liabiltieis in Israel, 2015
(NIS billion, current prices, ends of month)

Real assets	NIS billion (share of total assets)		Annual rate of change	Liabilities and net worth of households	NIS billion (share of total assets)		Annual rate of change
Real estate[a]	3,189	(52%)	8%	Mortgages	321	(5%)	6%
Vehicles	109	(2%)	5%	Consumer credit	153	(3%)	7%
Total real assets	3,298	(54%)	8%	Total liabilities	475	(8%)	7%
Financial assets	NIS billion (share of total assets)		Annual rate of change				
Cash and deposits	559	(9%)	11%				
Securities, excluding stocks	250	(4%)	1%				
Stocks	399	(7%)	-4%				
Mutal funds	216	(4%)	-15%				
Insurance reserves[b]	1,243	(20%)	7%				
Various payables/ receivables	136	(2%)	-0%				
Total financial assets	2,803	(46%)	3%	Equity[c]	5,626	(92%)	6%
Total assets	6,100	(100%)	6%	Liabilities and equity	6,100	(100%)	6%

[a] Real estate values as of June 2016.

[b] Includes life insurance, provident funds, and pension funds.

[c] Net value - total assets less total liabilities.

SOURCE: Based on Central Bureau of Statistics.

[1] The data on value of financial assets are taken from the National Balance Sheet compiled by the Central Bureau of Statistics. This balance sheet includes data up to 2015 and therefore the balance sheet here is updated to that year. Data on household liabilities and the value of real estate are calculated by the Bank of Israel using Banking Supervision Department and Central Bureau of Statistics data; data on the value of vehicles are taken from the Central Bureau of Statistics.

Balance sheet data indicate that the value of households' real estate is more than half the total value of assets. This situation developed after about a decade of consistent increases in real estate prices. The value of households' real estate thus represents two processes: (a) households that owned a home before the steep increase in prices accumulated profits "on paper", and (b) households that purchased homes in recent years, after the majority of the increase, became exposed to the risk deriving from a decline in home prices. The balance of mortgage debt represents more than two-thirds of total household debt, and mortgage payments take up a marked share of their income—about a quarter, on average (Table 7.1). If a recession or an increase in unemployment adversely affects their revenue, it is liable to cause some of them to have to reduce consumption in order to meet their debt repayments, and this process will have an impact on the overall economy (see Box 4.1 of the Bank of Israel Annual Report for 2015).

In 2015, the value of real assets owned by households increased by approximately 8 percent, while the value of financial assets increased by only about 3 percent. The value of financial assets increased mainly as a result of an increase in the value of cash and deposits and of insurance reserves against the background of a decline in the value of stocks and mutual funds. The value of liabilities increased by a rate slightly lower than the value of total assets, and the ratio of liabilities to assets increased slightly—from 7.7 percent in 2014 to 7.8 percent in 2015—but it remains markedly lower than the parallel figure in other economies. To illustrate, in 2016 the ratio was 14 percent in the US, about 13 percent in the eurozone, about 12.5 percent in New Zealand, and about 16.1 percent in Singapore. It should be noted that the ratio in the US, eurozone, and New Zealand declined between 2014 and 2016. The low level of the ratio in Israel reflects, among other things, the increase in real estate prices in recent years, though it should be noted that if real estate prices would decline by 20 percent, for example, the ratio of liabilities to assets would only increase to 8.7 percent. The ratio of debt to financial assets increased from 16.4 percent in 2014 to 16.9 percent in 2015, and it, too, is low in comparison to the parallel figure in other countries (in 2016 the ratio was 20 percent in the US, 31.3 percent in the eurozone, 27.2 percent in New Zealand, and 29.2 percent in Singapore).[2] The ratio of mortgage debt to the real estate value declined slightly, from 10.3 percent in 2014 to 10.1 percent in 2015, as home prices continued to rise steeply that year as well. (For comparison, in 2016 the ratio was 42 percent in the US, 24 percent in the UK, 16 percent in the eurozone, 18.9 percent in New Zealand, and 27.1 percent in Singapore.) However, in this case as well, a decline of 20 percent in the value of the real estate held by households would only increase the ratio to 12.6 percent.

As indicated by international comparisons, the financial state of the household sector in Israel is much stronger than in other advanced economies. However, it is important to remember that all the indicators reviewed above refer to the household sector in aggregate, and as wealth and debt are not distributed evenly among individuals, the good state of the overall sector does not necessarily prove that people in all socioeconomic levels of the population are benefitting from financial stability.

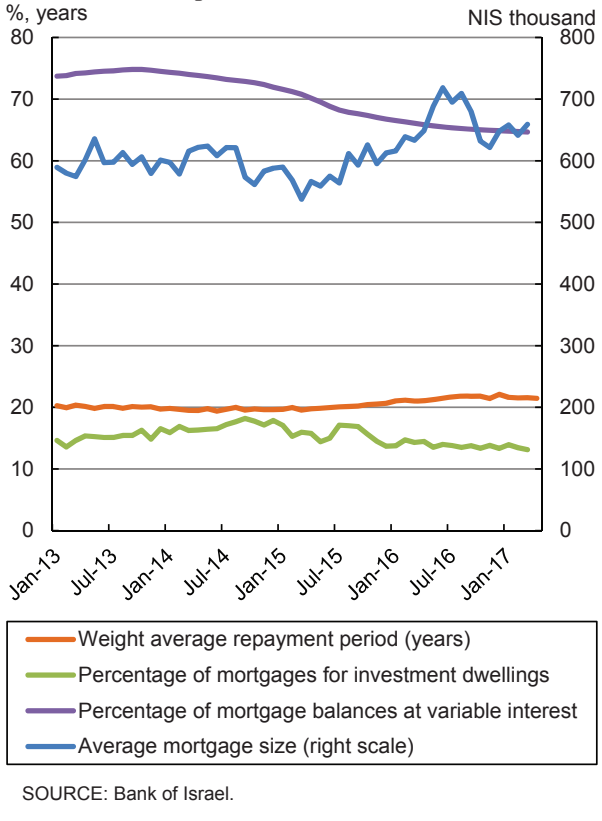
[2] Any international comparison is liable to be inaccurate due to differences in definitions and characteristics of each economy. To illustrate, in the "Insurance reserves" item—the item that includes defined contribution pension funds—Israel has a large share in financial assets, while in many European countries government-funded defined benefit plans are still common.

2. The household debt risk indices

Although housing prices have been rising for about a decade, the average size of a mortgage has grown at a more moderate rate and growth only picked up in the second half of 2015 (Figure 7.6). It is reasonable to assume that the average mortgage grew only moderately as a result of the macroprudential policy measures, since these limited the LTV rate to 75 percent for first-time buyers, 70 percent for existing home owners, and only 50 percent for investors.[9] The drop in the share of mortgages provided to investors—a process that also started in the second half of 2015—apparently contributed to the increase in the size of the average mortgage since mortgages to investors are for the most part characterized by relatively low rates of leverage and therefore also a relatively small average size. In this context, it is worth mentioning that the size of the average mortgage does not accurately reflect the average mortgage taken by borrowers, but rather is an estimate obtained by dividing the total volume of mortgages provided during the month by the number of mortgage transactions carried out that month. The method of calculation can create biases when the number of transactions changes over time.[10]

The level of risk from housing credit has not changed in the past half-year.

Figure 7.6
Development of the Mortgage Risk Indices, January 2013 to March-April 2017



SOURCE: Bank of Israel.

As mentioned, the proportion of mortgages obtained to finance an investment home has been declining since the second half of 2015, following the measures introduced by the Ministry of Finance, which make housing purchases for investment purposes more expensive. However, from a risk point of view, investors in fact constitute a preferred group of borrowers. This is because the mortgages provided to them are characterized by a lower LTV ratio, since on average investors are an older and more well-off population than residential purchasers—in particular the young couples among them.[11]

The weighted average time to maturity has been characterized by an upward trend in recent years, apparently due to the Banking Supervision Department's limitations on the Payment to Income (PTI) ratio, and as a result of the increase in the size

[9] Directive of the Supervisor of Banks from October 2012.

[10] When a mortgage is issued in several payments, the transaction is only recorded on the first payment, alongside its amount. With the rest of the payments, only the amounts are recorded. Therefore, in the months when there was a significant increase (decrease) in the number of transactions the results are biased downward (upward). The number of transactions indeed rose sharply between mid-2014 and mid-2015 and this should have biased the estimated average mortgage downward. In contrast, from mid-2015 onward there has been a significant decline in the number of transactions and therefore it may be that the increase in the estimated average mortgage is partly the result of both the upward bias and the correction of the bias from the previous period.

[11] In 2015, the average age of investors was 51.8, while the average age in the general population of salaried heads of household was 41.2. In 2014, the monthly average gross income from labor reached NIS 28.9 thousand per household among salaried investors and NIS 12.4 thousand among the general population. Moreover, there is evidence that employment stability is also greater among investors. Thus, it was found that the proportion of individuals that did not change jobs between 2006 and 2014 was 27 percent among salaried investors and only 18 percent among all salaried households (Ben Naim, 2017, "Investment Home Buyers in 2015–16—Characteristics and Trends", Ministry of Finance).

of the average mortgage. Time to maturity increased for all interest rate tracks (fixed rate, variable rate, and CPI-indexed and unindexed).

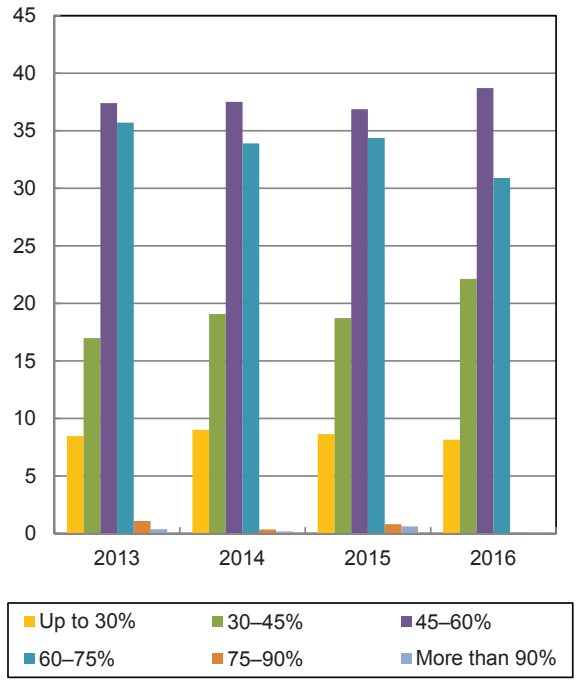
The decline in total variable-rate mortgage components in recent years due to the restrictions[12] imposed by the Banking Supervision Department on their proportion of a mortgage led to some reduction in the level of risk inheret in mortgages. However, the monthly repayment of these loans is liable to grow since the interest rate in the economy is at an historic low and it is therefore reasonable to assume that it will rise in the future. This risk is also inherent in fixed-rate mortgages that are indexed to the CPI, since the interest rate and inflation in general move in the same direction. Therefore, it may occur that mortgage repayments will increase among variable-rate mortgage borrowers and in parallel among holders of CPI-indexed fixed-rate mortgages. However, an inflationary surprise that erodes the real wage is liable to have a negative impact on holders of mortgages with indexed interest to a greater extent.

The distribution of the estimated LTV and PTI rates in recent years does not indicate an increase in the risk of borrowers (Figures 7.7 and 7.8). Since 2013, the proportion of mortgages with an LTV of more than 60 percent has fallen significantly, as has the proportion of households in which PTI exceeds 30 percent.

Very few households are having trouble paying back their mortgages (Figure 7.9), thanks to the combination of a low interest rate and a relatively long period of growth, which has been characterized by very low unemployment and a continual increase both in the number of employed persons in the economy and in the level of wages. The banks, which are the main source of financing for the purchase of real estate by households, report a drop in total problematic debt and such debt as a proportion of housing loans. But the reverse is true with respect to nonhousing credit (Figure 7.10). The

Since 2013, the percentage of mortgages with an LTV of more than 60 percent has declined markedly.

Figure 7.7
Distribution of the Estimated LTV of New Mortgages, Monthly Averages, 2013–16 (percent)



SOURCE: Bank of Israel.

situation is similar for the credit card companies. Thus, as a result of the expansion in credit to households, problematic debt as a proportion of total debt that is not guaranteed by the banks has risen from an average of about 2.9 percent in 2013 to an average of about 3.6 percent during the first three quarters of 2016 (Figure 7.11).[13] As a result, the loan loss provisions have increased (Figure 7.12) and in 2016 there was a sharp increase among all of the companies.

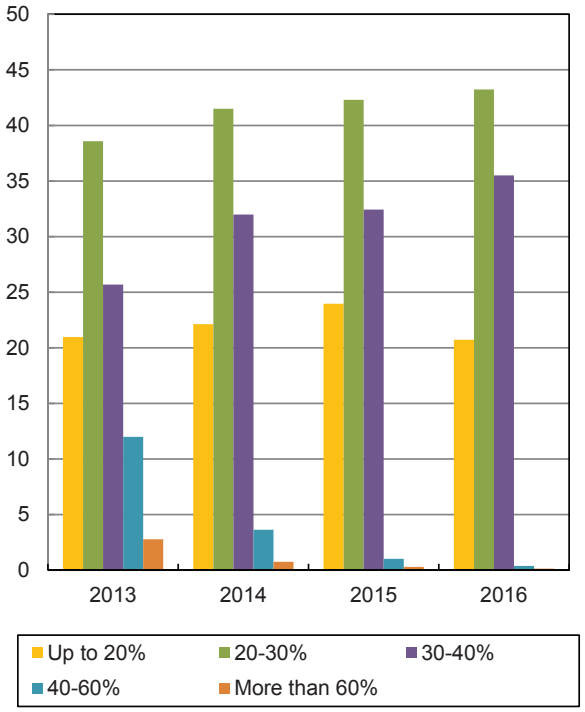
The examinations carried out by the Banking Supervision Department revealed that the risk inherent in the banks' consumer credit portfolio had grown.

[12] Total variable-rate mortgages include (a) mortgages linked to the prime interest rate, for which the interest rate can change every month, and (b) mortgages for which the interest rate changes every five years. Therefore, a change in the interest rate involves a different degree of risk for each mortgage component.

[13] It is reasonable to assume that the rapid expansion of credit from the credit card companies has been accompanied by an increase in the level of risk as a result of the entry of riskier borrowers, such as borrowers with lower incomes than in the past.

The rate of households with a PTI of more than 30 percent has declined since 2013.

Figure 7.8
Distribution of the Estimated PTI of New Mortgages, Monthly Averages, 2013–16 (percent)



SOURCE: Bank of Israel.

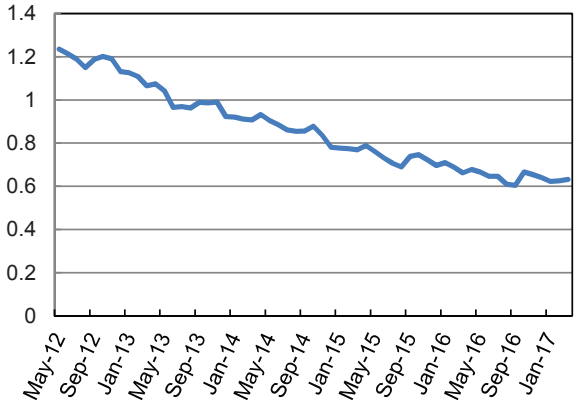
The increase was primarily the result of two recent developments: first, the proportion of new loans that are used for current consumption has increased; and second, the time to maturity of consumer loans has lengthened to beyond five years (about 60 percent of the new loans in 2015 were for five years or more).[14]

Following the expansion of nonhousing credit, and in view of its inherent risk, the banks and credit card companies significantly increased the corresponding loan loss provisions (Figure 7.12). In addition, the banks modified their financial statements for 2014 after the Supervisor of Banks published a directive

[14] Further discussion appears in Israel's Banking System – Annual Survey 2016, Box 1.1.

The rate of households with difficulties repaying their mortgages has declined in recent years, and is very low.

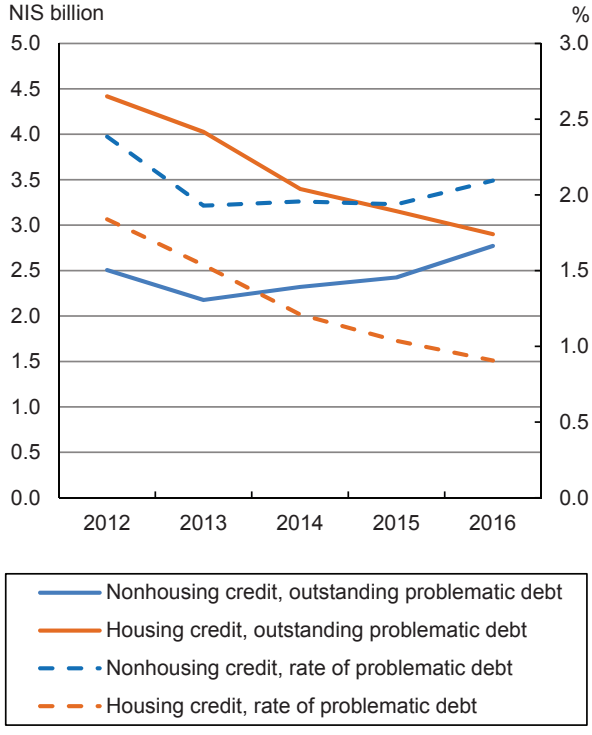
Figure 7.9
Housing Loans: Rate of Repayments in Arrears More than 90 Days, May 2012 to March 2017
(percent)



SOURCE: Bank of Israel.

There is an apparent decline in problematic housing debts and an increase in problematic nonhousing debts to banks.

Figure 7.10
Problematic Debts in Housing and Nonhousing Credit, Household Segment, Year-End Data, 2012–16

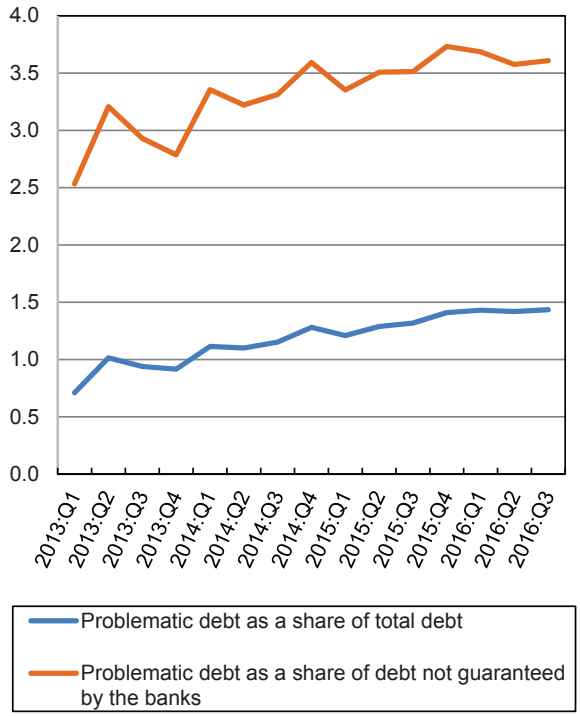


SOURCE: Bank of Israel.

requiring that they increase the group allowance for nonhousing credit loss to a rate of at least 0.75 percent of total non-problematic credit to individuals.[15]

The expansion of consumer credit by the credit card companies has been accompanied by an increase in the rate of problematic debts.

Figure 7.11
The Rate of Problematic Debts at the Credit Card Companies, 2013:Q1–2016:Q3 (percent)



SOURCE: Bank of Israel.

The provision for nonhousing credit losses is increasing in size due to the growth in the number of borrowers and because credit providers expect greater difficulty in collection. Nonhousing credit is for the most part provided without collateral[16] and the bankruptcy process for individuals in these cases differs from the parallel process for housing credit, and often involves prolonged legal proceedings and steps to freeze assets and bank accounts. In this context, it is important to mention that in recent years a reform has been carried out that is meant to simplify and shorten the bankruptcy process. The reform limits the process to 4.5 years and in certain cases even to 3 years. In addition, full cooperation from the debtors, including the disclosure of all information and property, can help them get rid of their debt. The reform is expected to become law with the passing of the Default and Economic Rehabilitation Law.[17]

[15] This directive had an effect on the banks primarily in 2014, while its effect was marginal in 2015–16.

[16] Excluding, as mentioned, car loans, whose proportion of total consumer credit from the credit card companies has been declining recently (see Figure 7.4). The trend among the banks cannot be evaluated since until 2016 there is no data on these loans.

[17] The proposed Default and Economic Rehabilitation Law was approved on first reading in 2016 and the Knesset Constitution, Law and Justice Committee is now discussing it in order to prepare it for second and third reading.

H. THE PAYMENT AND SETTLEMENT SYSTEM

1. Background

Israel's payment array is made up of several payment and settlement systems: (a) Zahav (an RTGS[1] system), operated by the Bank of Israel, which serves as the final settlement for the entire payment and settlement system in Israel; (b) the Paper-based Clearing House, which is also operated by the Bank of Israel and which deals with checks, manual drafts and settlement vouchers; (c) the "Credits, Debits and Payment Transfers" system, operated by Masav (acronym for Bank Settlement Center in Hebrew), which is an electronic system for interbank transfers in shekels, such as standing orders, salary payments, tax payments, etc.; (d) the Payment card Services system, which is operated by Shva (acronym for Automated Bank Services in Hebrew), which handles the confirmation, gathering and processing of transactions carried out using payment cards in Israel; (e) the Automated Bank Machines systems, also operated by Shva, which handles the network switches of ATM machines; (f) the TASE clearinghouses (the Securities Clearinghouse and the Maof[2] Clearinghouse) which settle the results of trading on the TASE; and (g) the international clearinghouse for foreign exchange transactions (CLS[3]), which provides multi-currency settlement services through a mechanism that ensures payment in one currency against payment in another. The shekel joined CLS in 2008 and transactions can be settled against 18 major currencies.

2. Activity to reduce risk to the financial market infrastructures and the promotion of competition in the payment and settlement system

The following is a description of the main measures implemented by the Bank of Israel, in its function as the central bank and the overseer of the payment and settlement systems, to reduce the risks to the payment systems and to promote competition within them.

- **Publishing of oversight directives for controlled and designated controlled payment systems in Israel**

As part of its function as overseer of the payment systems, the Bank of Israel issues directives to the controlled and designated-controlled payment systems in Israel. These directives establish standards, requirements and rules with the goal of ensuring the stability of the systems and their efficient and smooth functioning. The directives are based on, among other things, the Principles for Financial Market Infrastructures (PFMI), which were formulated by the Bank for International Settlements (BIS).

In December 2016, five initial directives were published[4], which focus on the following issues: the adoption of the PFMI principles, information and reporting, information and reporting in an emergency, the legal basis of the systems and settlement finality.

- **Cyber risk**

Cyber threats differ from other types of risk in terms of of detection, preparedness and recovery. Since the effect of cyber events are felt almost immediately in the payment systems, the system operators must be prepared for them and must take the actions necessary to protect business continuity. Cyber threats are characterized by, among other things, the potential to cause extensive damage and increasing sophistication, which makes them difficult to detect. The realization of these threats is liable to disrupt the proper functioning and secure activity of the payment system and may lead to, among other things, the exposure of information, the erasure and disruption of data, loss of public confidence and the destabilization of the system.

In June 2016, the BIS published guidance on cyber

1 Real Time Gross Settlement.

2 "Maof"—"Futures and Financial Instruments"—a segment that includes futures and options derivatives.

3 Continuous Linked Settlement.

4 The directives are available in Hebrew at http://www.boi.org.il/he/PaymentSystem/Pages/oversight_matash.aspx

resilience for financial market infrastructures.[5] The document is meant to provide guidelines to the payment systems in dealing with cyber threats and improving their ability to recover from their realization. The Payment Systems Oversight Unit is currently assessing the guide and its suitability to Israel.

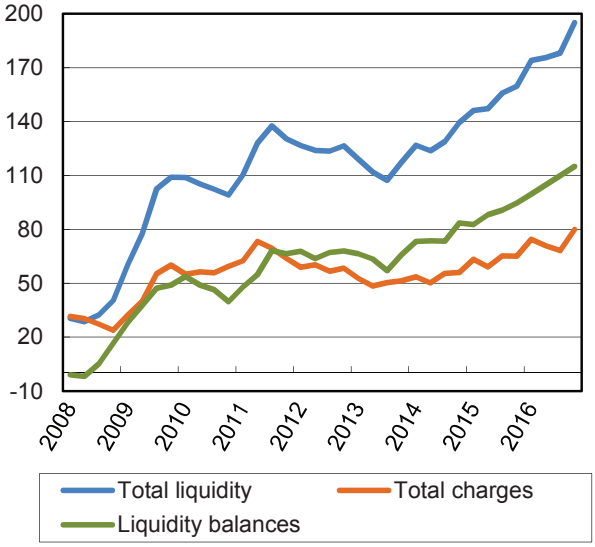
- **Monitoring the stability of the Zahav (RTGS) system**

The Zahav system has systemic importance for the Israeli economy and it is therefore important to ensure its stability by monitoring the risks inherent in it, which include liquidity risk, credit risk and legal, systemic and operational risk. The Bank of Israel evaluates its stability using various indices, including liquidity balances in the system, its availability and concentration. Liquidity balances in the Zahav system[6] reflect a situation in which there is a surplus of liquidity in the current account and in the line of credit that the Bank of Israel makes available to participants against collateral. This surplus enables the participants to transfer payments independently of the credits that will be transferred to their account. High liquidity balances therefore reduce the liquidity risk in the system. The liquidity balances in the Zahav system are high and are characterized by an upward trend. The trend began in mid-2008, with the shift from monetary loans to monetary deposits (Figure 8.1).

The Zahav system has had a high level of availability[7] since the start of its operations. This high level is evidence of, among other things, the stability of the system and its ability to ensure business continuity. The availability of the system in 2016 stood at 99.97 percent, which is similar to its level in the previous year (99.98 percent). The accepted rates of availability for RTGS systems in advanced economies ranges from 99.7 to 99.9 percent.

There are high liquidity balances in the Zahav system, and they are showing an upward trend.

Figure 8.1
The Zahav System—Total Liquidity Relative to Total Charges[a], 2008–16 (daily average per quarter, NIS billion)



[a] The liquidity balances are equal to total liquidity in the Zahav system minus total interbank charges.

SOURCE: Bank of Israel.

The level of concentration of participants in the Zahav system reflects the volume of interbank activity of the five most active participants; an increased level of concentration raises the systemic risk inherent in the Zahav system. The ratio of financial concentration in the Zahav system stood at 80.9 percent in 2016, which represents an increase of 0.8 percent[8] relative to the previous year (Table 8.1). The level of concentration in Israel is high relative to other countries (Figure 8.2).

5 Guidance on Cyber Resilience for Financial Market Infrastructures.

6 The liquidity balance (the total liquidity in the Zahav system less the total interbank charges) is calculated on the basis of daily averages.

7 In order to estimate the level of availability, the number of hours that the system was available during the year is divided by the total hours of activity that year.

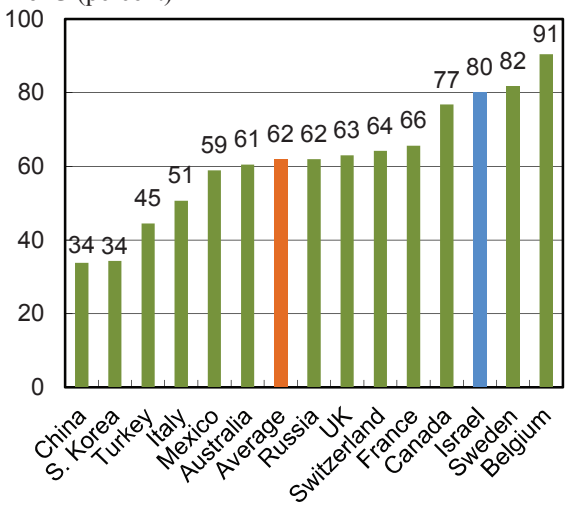
8 The ratio of concentration in 2016 was affected by the merger of the PAGI Bank and U-Bank with First International Bank of Israel, and of the Arab Israel Bank with Bank Leumi.

Table 8.1
Concentration Ratio in the Zahav System, in amount terms, 2008–16 (percent)

	Concentration ratio	Annual change
2008	79.2	-
2009	76.6	-3.3
2010	77.6	1.2
2011	80.8	4.1
2012	81.6	1
2013	82.7	1.4
2014	83.1	0.4
2015	80.2	-3.5
2016	80.9	0.8

The RTGS system in Israel is characterized by a high level of liquidity relative to similar systems in other countries.

Figure 8.2
The Concentration Ratio (in amount terms) in RTGS Systems in Various Countries, 2015 (percent)



[a] In 2016, the concentration ratio in the RTGS system in Israel was about 81%.

SOURCE: Bank for International Settlements (BIS).

- **Strengthening the stability of the Masav system**

In 2016, the Bank Clearinghouse Committee decided to establish a standing subcommittee for the Masav system, with the goal of creating a platform for the system operator and the representatives of the participants that will provide an optimal solution to issues related to the system's operation. The Committee's activity will ensure that technological solutions will be optimally implemented for the benefit of all participants and will thereby strengthen the efficiency and stability of the system.

- **Strengthening and improving the efficiency of the Paper-based Clearing House's activity**

1. Publication of the Electronic Check Clearing Law, 5776–2016[9]

The Electronic Check Clearing Law, 5776–2016 was published in *Reshumot*[10] on February 10, 2016, as a result of the efforts led by the Bank of Israel in recent years. The law makes it possible to shift from physical settlement of checks to electronic settlement. Thus, it is possible to stop the checks at the bank at which they are presented for redemption and instead to send scanned files to the bank on which they are drawn.[11]

The Electronic Check Clearing Law results in a more efficient and secure settlement process, since it switches from manual processes to electronic ones, gets rid of the need to physically visit the branches by expanding the use of advanced electronic services (bank apps for the deposit of checks) and reduces the costs of depositing.

[9] http://www.boi.org.il/en/NewsAndPublications/PressReleases/Pages/02-02-2016-DigitalCheque.aspx

[10] *Reshumot* is the gazette of record for the State of Israel, in which official records and laws are published.

[11] The transition is being carried out in two stages: The first began on November 8, 2016 and facilitated interbank settlement of checks deposited by means of a cellular phone. The second stage will begin in the third quarter of 2017 and will enable the electronic settlement of check deposits of any type.

2. Publishing of Electronic Settlement of Checks (Storing of Checks) Rules, 5776–2016

On August 9, 2016, the Electronic Settlement of Checks (Storing of Checks) Rules, 5776–2016 were published. The rules were formulated by Dr. Karnit Flug, the Governor of the Bank of Israel, with the approval of the Internal Security Minister, and following consultations with the Minister of Justice and the approval of the Knesset Finance Committee. The rules specify how and for how long checks are to be stored, taking into account their amount, among other things.

3. Cancelation of the manual settlement session

During 2016, it was decided to implement two solutions in order to reduce risk related to the settlement of manual drafts by shifting to electronic settlement.

Starting in January 2017, the RTGS system has been settling the issuances of corporate securities only electronically. This process reduces the risk in settlement and facilitates the finality of financial settlement before depositing the securities with the TASE.

During May 2017, activities that had been settled manually in the Paper-based Clearing House were switched to electronic settlement in the Masav system. These transactions include the return of checks, a request for compensation in the case of a missing document and the settlement of optical coupons and promissory notes.

Following the implementation of these solutions, the manual settlement session was cancelled.

- **Reforms of the payment system**

The Bank of Israel is responsible for ensuring the stability and efficiency of the payment systems, and has therefore played a part in advancing a series of steps that are meant to open the payment services market to competition. These steps were adopted while maintaining the stability of the payment systems. The following are the main reforms carried out in 2016.

1. Publishing of conditions for access to controlled payment systems

On July 31, 2016, the Bank of Israel published conditions for access to the controlled payment systems.[12] The conditions were set forth so as to ensure the stability of the systems and prevent a situation in which the systems and their participants are exposed to unacceptable risk. The conditions for access are objective, risk-based and transparent to the public, and they provide fair and open access for participation in the payment systems without harming their stability.

This constitutes a significant step toward opening up the payment systems to new participants and to the promotion of competition in the payment systems in Israel. Primarily it enables nonbank entities to participate directly or indirectly while maintaining the stability of the systems and their security.

2. Publishing the "Principles for Regulation of Payment Services"

On October 5th 2016, the Committee for Promoting the Use of Advanced Means of Payment published the "Principles for Regulation of Payment Services".[13] The Statement of Principles was written by the Subcommittee for Regulation of Payment Services and was based on the European Directive for Payment Services (PSD), with the necessary modifications for the domestic market. The document will serve as a basis for the legislative memo on this subject.

The process of regulating payment services is a significant component in the promotion of competition in this market, since it will enable nonbank entities to enter the market, to manage accounts for their customers and to provide them with payment services, including the issuing of means of payment, the settlement of payment transactions and the execution of payment transfers. The regulations will

[12] http://www.boi.org.il/en/NewsAndPublications/PressReleases/Pages/31-07-2016.aspx

[13] http://www.boi.org.il/en/NewsAndPublications/PressReleases/Pages/5-10-16.aspx

also establish uniform consumer protection[14], will strengthen the public's confidence in the suppliers of payment services and advanced means of payment, and will encourage technological and business innovation while maintaining the stability and proper functioning of the payment systems.

3. Publishing of Principles and Complementary Steps in the Development and Use of a Protocol for Payment Card Transactions

On July 18th 2016, the Bank of Israel published the Principles and Complementary Steps in the Development and Use of a Protocol for Payment Card Transactions.[15] This document was formulated as part of the discussions of the Payment Card Committee established following the recommendations of the Report on the Payment Card Transaction Chain. These principles set out the interests of the various players in the market and enable them to operate in the various segments of the payment card market, while maintaining a balance between business needs and systemic considerations, the goal of which is to protect the stability and security of the system (such as business continuity, reduced risk of fraud and information security, etc.).

4. Change in ownership of Shva

In January 2017, the Knesset passed the Increasing Competition and Reducing Concentration in the Banking System Law (Legislative Amendments), 5777–2017 (herein: the Strum Law). The Strum Law is based on the work of the Committee to Increase Competition in Common Banking and Financial Services, a committee that the Ministry of Finance and the Bank of Israel created in June 2015 and that was headed by Dror Strum.

In September 2016, the Committee published a final report that contained a number of recommendations. The main one—to require the large banks to sell off the credit card companies within three years—was approved and passed as part of the Strum Law. The law also includes a change in the structure of ownership of Shva (currently owned by the five large banks); a change in the definition of a "payment system"; and a change in Paragraph 23 of the Banking (Licensing) Law, 5741–1981, which will permit a joint service company that is a controlled payment system to provide services to anyone.

The Strum Law is expected to significantly change the structure of the market since it allows new players to enter the market and increases competition while maintaining the stability and security of the payment systems.

[14] In other words, protection that will apply to all payment services and all of their providers.

[15] http://www.boi.org.il/he/PaymentSystem/LawsAndRegulations/Pages/Default.aspx. The protocol embodies the business and technical logic behind payment card transactions.

Main indicators of the stability of the financial system in Israel, 2011 to November 2016
(percent)

	2013	2014	2015	2016	2017	Updated to
A. The global environment						
Global real GDP growth rate	3.4	3.5	3.4	3.1		31/12/2016
World trade growth rate	3.7	3.7	2.7	2.2		31/12/2016
Emerging Markets Bond Index (EMBI) spread[a] (periodic average)	3.2	3.3	4.2	4.1	3.3	31/05/2017
Chicago Board Options Exchange VIX index (periodic average)	14.2	14.2	16.7	15.8	11.8	31/05/2017
B. The domestic environment						
Government debt to GDP ratio (end of period)	65.7	64.8	62.6	60.5	60.2	31/03/2017
Net external debt to GDP ratio (end of period)	-26.8	-35.0	-39.7	-40.6		31/12/2016
Total private credit to GDP ratio (end of period)	113.5	112.5	111.1	111.2	110.4	31/03/2017
Business sector credit to business sector product ratio (end of period)	99.0	97.6	94.9	94.7	93.4	31/03/2017
Debt burden on households—the ratio of credit to households to disposable private income (end of period)	58.8	59.4	60.7	60.8		31/12/2016
Israel's sovereign risk premium (5-year CDS spread—periodic average)	1.2	0.88	0.73	0.79		
The differential between yields on 10-year shekel-denominated government bonds and 10-year US Treasury Notes (periodic average)	1.5	0.4	-0.1	0.0	-0.21	31/05/2017
The corporate bond market spread—total bonds excluding financial corporate bonds (periodic average)	4.4	3.2	4.0	3.5	2.4	30/09/2016
C. Financial Assets						
Risk indices (periodic average)						
Implied volatility:						
of the exchange rate	11.5	10.8	10.3	6.5	6.7	21/03/2017
of the Tel Aviv 25 index	17.5	15.7	20.0	21.2	17.3	09/02/2017
Actual volatility:						
of the exchange rate	6.2	5.3	8.1	5.8	5.4	31/05/2017
of the General Shares Index	8.9	9.1	13.1	12.8	9.6	31/05/2017
Prices and yields (annual terms)						
Rate of change of the shekel vis-à-vis the dollar (during the period)	-7.0	12.0	0.3	-1.5	-7.4	31/05/2017
Rate of change in the effective exchange rate (during the period)	-7.6	3.3	-7.3	-4.8	-4.5	31/05/2017
Rate of change in the General Shares Index (during the period)	15.3	11.5	6.8	-11.1	0.3	31/05/2017
Yield to maturity on unindexed 5-year government bonds (periodic average)	2.5	1.7	1.0	0.9	1.1	31/05/2017
D. Resilience of the financial system						
The banking system[b] (end of period)						
Total core capital to risk components ratio[c]	14.7	14.2	13.9	14.7		31/12/2016
Core Tier 1 capital to risk components ratio[c]	9.7	9.6	9.9	10.9		31/12/2016
Ratio of annual loan loss provision to total balance-sheet credit to the public (multiplied by 100)	0.25	0.15	0.12	0.10	0.19	31/03/2017
Insurance companies (end of period)						
Initial capital as a share of total assets	5.7	5.6	5.4	4.5		30/09/2016
Risk assets as a share of nostro assets	42.6	44.0	45.4	43.9		31/10/2016
Provident funds[d] (end of period)						
Liquid accounts as a share of total liabilities	68.6	70.0	69.6	72.6		31/12/2016
Ratio of liquid assets to liquid liabilities	33.8	38.1	38.2	35.1		31/12/2016
E. Market liquidity						
Total trading volume in the markets[e] (periodic average, NIS billion)	4.7	4.7	4.7	4.2	4.4	31/05/2017
Spread between highest and lowest NIS/$ exchange rate quote (periodic average)	0.32	0.36	0.66	0.44	0.39	31/05/2017

a. The spread between the yield on emerging market government bonds and the yield on US Treasury bills.
b. The five major banking groups.
c. Until 2009, according to Basel I definitions; Between 2009 and 2013, according to Basel II definitions; From 2014, according to Basel III definitions.
d. Including main provident funds for severance and advanced study funds.
e. Including trading volume of makam, government bonds, corporate bonds and shares.
SOURCE: Based on data from the International Monetary Fund, the Capital Markets, Insurance and Savings Division of the Ministry of Finance, and the Tel Aviv Stock Exchange.