



BANK OF ISRAEL

**FINANCIAL STABILITY
REPORT**

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MAIN REMARKS

The domestic financial system remained stable in recent months, against the background of accommodative monetary policy in Israel and globally, and despite the gyrations in the financial markets. Since the interest rate environment has been very low for a long time—a policy that is necessary in view of macroeconomic developments—and since it is having a prolonged effect on asset prices, the financial institutions and households are exposed to a risk from the possibility that home and financial asset prices may decline. Such a decline may take place as a result of the major global economies falling into an additional recession or suffering from a deterioration of their financial stability, particularly if contagion spreads to the Israeli economy through a negative impact on exports and/or financial asset prices. It may also come as a result of an increase in Israel’s risk premium due to a worsening

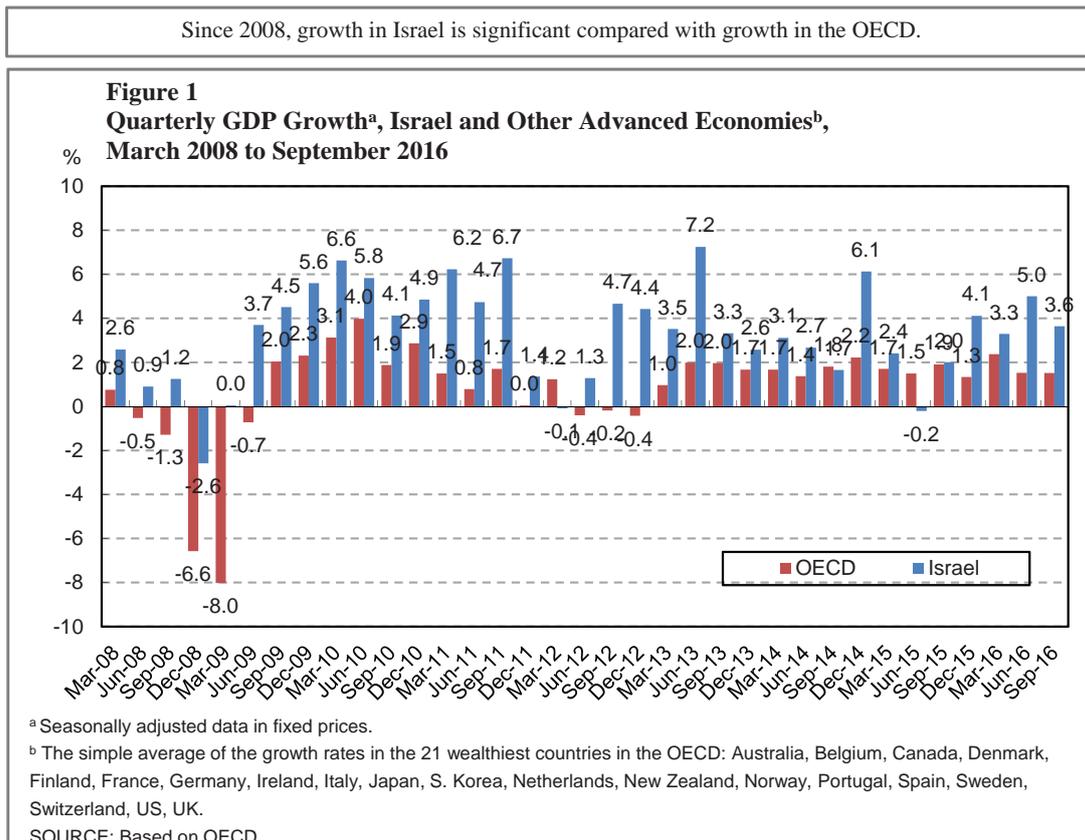
of its geopolitical situation, or from shocks that could lead to a significant decline in households’ disposable income.

1. MAIN DEVELOPMENTS IN THE DOMESTIC FINANCIAL SYSTEM AND ASSESSMENT OF ITS STABILITY¹

a. Main developments

a.1 The macroeconomic situation

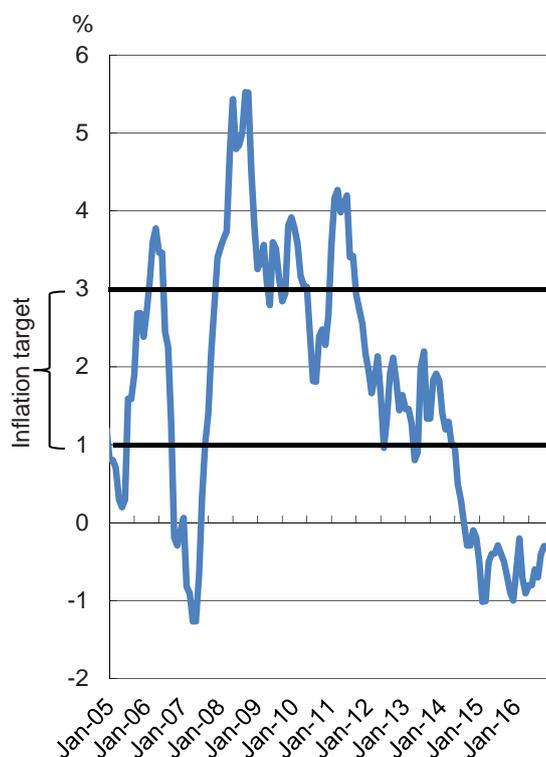
In the first half of 2016, there was an impression of a contradiction in the economy: Labor market data indicated strong performance, including low unemployment, an increase in the number of available jobs, an increase in nominal and real wages, and high health tax revenues. In contrast, the first estimate of growth figures for the first quarter was near-zero.



¹ This report reviews the second half of 2016. The figures are up-to-date to differing extents in each discussion, in accordance with their availability at the time the report was written.

In recent months, there has been a marked upward trend in inflation, but it remains at a very low level.

Figure 2
Inflation in the Past 12 Months,
January 2005 to November 2016



SOURCE: Bank of Israel.

However, data that became available in the following months reconciled the contradiction, as they showed that growth was also significant. First quarter growth was revised to 3.2 percent in annual terms (Figure 1), and significant growth was recorded later in the year, so that estimated annual growth for 2016 is 3.8 percent. Growth is based on high domestic demand—including strong private consumption—and on residential and nonresidential fixed capital formation.

In 2016, a deficit of NIS 25.9 billion was recorded in the government’s activity, which is equal to 2.1 percent of GDP.

In mid-2016, an upward trend began to be noticeable in inflation—which increased from -0.9 percent in April to -0.2 percent (Figure 2)—and a similar increase was

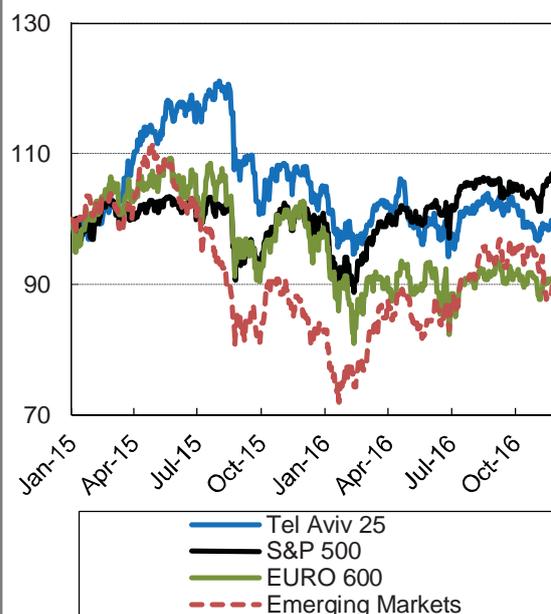
recorded in inflation expectations. Similar trends were noticeable in the G4 economies.²

a.2 The financial situation

The developments of the past few months were reflected in similar movements in the stock markets in Israel and globally. From July to September, the indices in Israel were characterized by moderate increases, with a tendency toward declines thereafter, and their December levels were similar to their levels at the beginning of the period (July). There were similar trends on the leading global indices, except

The developments in recent months were reflected in similar movements in the Israeli and global stock markets.

Figure 3
Selected Israeli and Global Stock Indices,
January 2015 to November 2016
(dollar values, Index: January 1, 2015 = 100)



SOURCE: Bank of Israel.

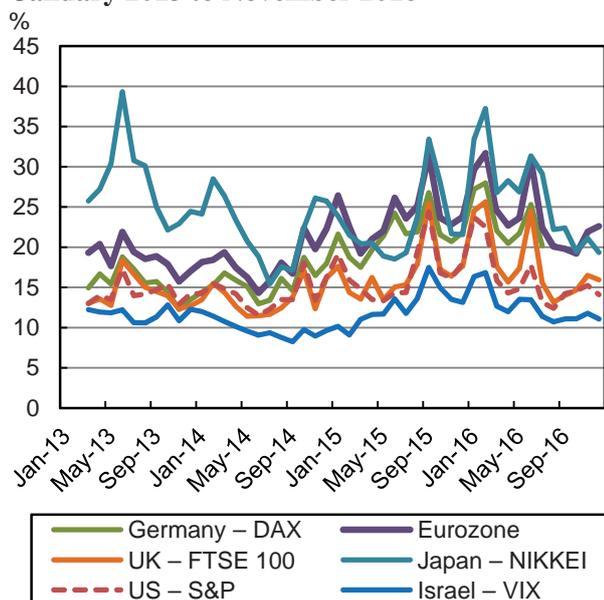
for the emerging markets stock index, which remained relatively stable throughout the period (Figure 3).

² The US, the UK, Japan, and the eurozone.

Despite the declines in the indices, a downward trend has been observed in recent months in the implied volatility of options on the Israeli and global stock indices (Figure 4)—an indication of increased certainty in the stock market.

In recent months there has been a downward trend in the implied volatility of options on the Israeli and global stock indices.

Figure 4
The Implied Volatility Derived from Options on the Stock Indices in Various Countries^a, January 2013 to November 2016



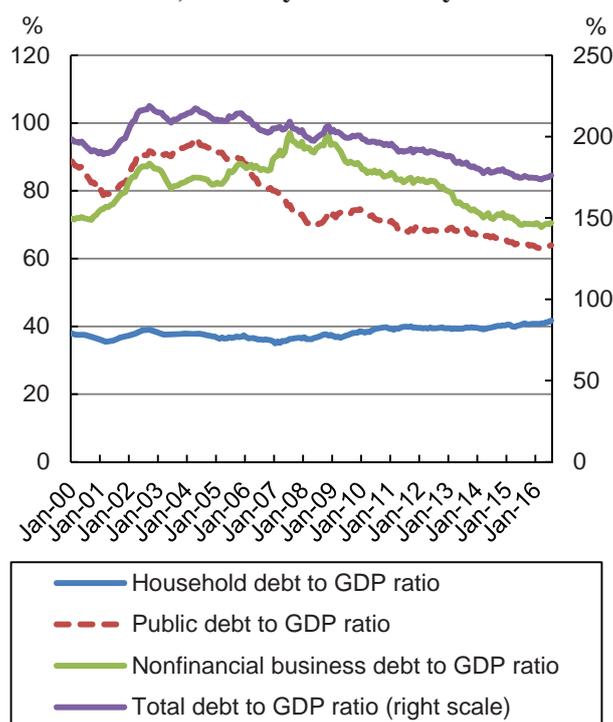
^a Monthly average.
SOURCE: Bank of Israel.

This trend developed despite the fact that the UK decided to leave the eurozone—a step that became known as “Brexit”. The Brexit decision was surprising, and raised concerns about stability in the eurozone in general and in the UK in particular. However, even though the stock indices showed a sharp decline in the immediate term, they returned to their pre-decision levels soon afterward.

The results of the US presidential elections led within a short time to a stronger dollar and sharp increases in stock prices. It is still too early to discuss the main

In recent years, there has been some increase in the household debt to GDP ratio, resulting from the rapid expansion of both housing and consumer credit. However, public sector and nonfinancial business sector debt have declined in parallel, and the overall debt to GDP ratio is in a downward trend.

Figure 5a
The Ratios of Total Debt, Public Debt, Nonfinancial Business Debt and Household Debt to GDP, January 2000 to July 2016



SOURCE: Bank of Israel.

steps the President-elect proposed during his election campaign or to assess their effects on the American or global economies, and it is unclear which of them will be implemented or when. However, an analysis of the expected implications shows that the proposed policies may negatively affect some of the emerging markets, both due to lower American demand for their exports, and because if the dollar strengthens, it could make it more difficult for companies in those economies to recycle their dollar debt—a development that constitutes a significant risk to stability.

The housing market continues to reflect robust activity, although at a slightly lower level in recent months than

in the past. Prices increased by about 8.1 percent in the 12 months preceding November 2016, the volume of transactions remained high at about 8,500 per month, and the volume of mortgages taken out each month declined. However, despite the decline in activity, the ratio between the price of a dwelling and rentals and the ratio between home prices and average income reached record levels. The robust activity in the housing market continued to contribute to the increased exposure to the housing market on the part of financial institutions, mainly the banks.

There was a change in trends in the credit market in recent months, with the balance of business credit increasing by about 4.2 percent in annual terms, after only a minimal increase of just 2.8 percent per year in 2015, and after declining in the previous three years. Bank credit to the nonfinancial business sector increased by 4.1 percent, and domestic nonbank credit increased by about 5.5 percent.³ In parallel, the rapid increase in credit to households continued. Housing credit increased by about 6.5 percent, and nonhousing credit increased by about 5.8 percent. Total wage payments (according to health tax figures⁴) increased at a similar rate—6–7 percent in annual and nominal terms in recent months.

In recent years, following the decline in interest rates, there was some increase in the household debt to GDP ratio, resulting from rapid increases in both housing credit and consumer credit. These increases are increasingly significant in view of the fact that in recent quarters, private consumption has been the main growth engine for the entire economy. While the increase in private consumption relies mainly on increased income from labor and just slightly on increased credit, if there is a decline in the rate

of increase of credit to households⁵, it may also be reflected in growth rates. However, it should be noted that during the reviewed period, there was a decline in the leverage of the nonfinancial business sector and of the public sector, and the debt to GDP ratio is therefore in a downward trend (Figure 5a). Moreover, leverage in Israel is not high when compared globally (Figure 5b).

The Financial Stability Report recently published by the International Monetary Fund (IMF)⁶ separated between long-term and short-term risks. The IMF's assessment was that the former continued to increase, mainly due to the increase in global political risk and due to the further delay in the return to monetary normalization. In contrast, there were fewer immediate risks, for the first time in a long time, as a result of the decline in risks from the Chinese economy and the fact that the global financial sector showed strength, overcoming the shocks that took place in 2016, including the high volatility in the Chinese financial markets, the interest rate increase in the US, and Brexit. However, IMF economists emphasized that in all cases, dealing with the challenge has only been pushed off to a later date.

The fiscal report⁷ published by the IMF mentions another significant risk factor: Global debt increased to record levels. The report mainly discusses the rapid growth of corporate debt in emerging markets, chiefly China, and the increase in fiscal debt levels in the advanced economies. The report's authors believe that there is a correlation between the high debts in the nonfinancial private sector—mainly between the situation in which these debts are increasing in the emerging and advanced economies simultaneously, as is currently happening—and financial crises. Moreover,

³ Credit balances reflect data to October 2016, relative to October 2015 figures, unless otherwise indicated.

⁴ Based on the rate of change in health tax receipts, in annual terms.

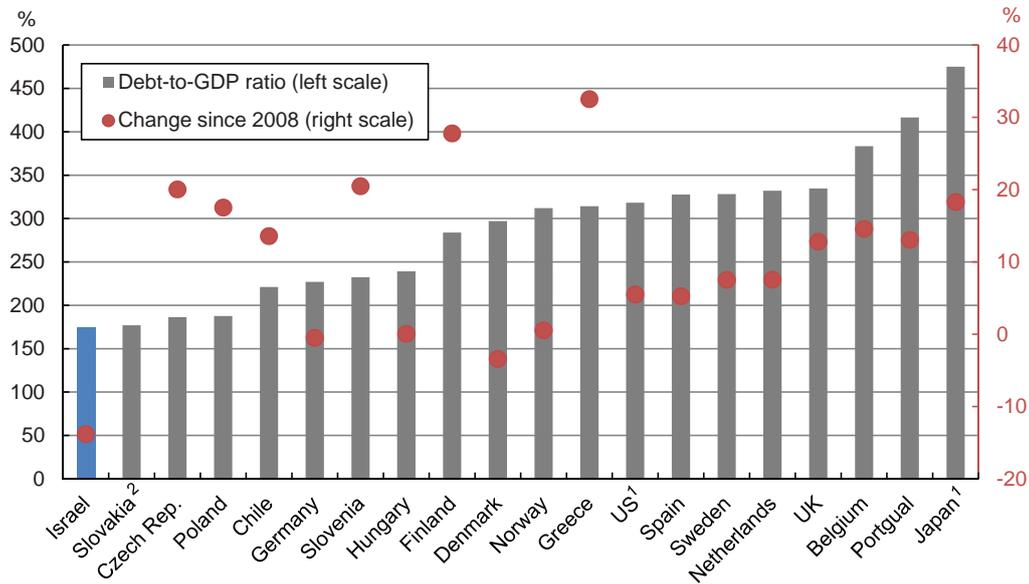
⁵ A number of factors may lead to a decline in the growth rate of this credit, including an increase in interest rates, possible negative impact to household income, negative impact to financial institutions' ability to continue supporting growth of credit to the public due to a change in their risk appetite, a change in the institutions' ability to raise sources, and a change in their preferences (they may prefer to provide credit to certain sectors instead of others).

⁶ *Global Financial Stability Report*, October 2016.

⁷ *Fiscal Monitor*, October 2016.

The private and public debt-to-GDP ratio in Israel is low by international comparison, as is its rate of increase.

Figure 5b
International Comparison of Private and Public Debt-to-GDP Ratios, 2015



¹ The figures for Japan and the US are as of 2014.

² The rate of change since 2008 for Slovakia was not examined due to lack of data.

policy makers currently have only a limited ability to deal with crises, since the low growth and near-zero inflation make it very difficult to reduce leverage, and because fiscal debts are high and monetary policy tools are close to being exhausted.

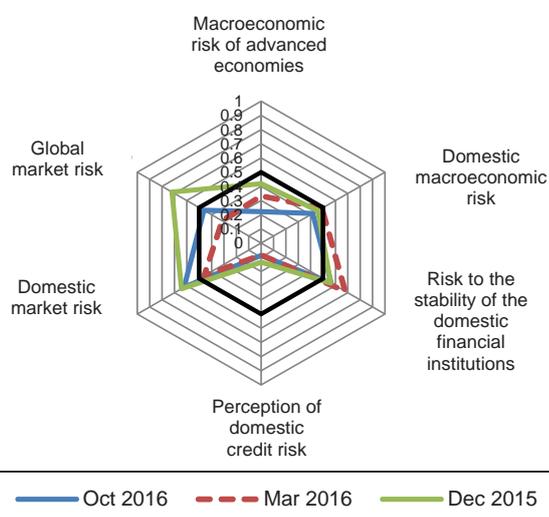
Figure 6 shows the existing situation—in terms of prices, company balance sheets, macroeconomic figures, and more—in economic areas that may create risks to the financial system. The long-term average is 0.5 (the bold black line in the Figure). The values more distant than it from the center indicate a more serious situation than the long-term average, while the values closer to the center indicate a better situation than the average.⁸

The indicator of domestic market risk remained slightly higher than average, mainly because the volatility indices are high. In contrast, the macroeconomic situation in the advanced economies improved during the reviewed period, thanks to an increase in the consumer confidence and business confidence indices and some improvement in trade. The macroeconomic risk in Israel remains lower than the long-term average. The credit risk concept does not reflect the objective credit risk, but rather how it is perceived by the various players in the credit market. Credit risk is perceived as low both because there is a small differential between the yield on Israel government bonds and the yield on US Treasury bills, and because corporate bonds are characterized by a narrow spread. However, the decline in the yield differential offset the slight increase in household risk, a development that is reflected in the gap between the interest rate on news mortgages and the risk-free interest rate.

⁸ See Zalkinder, H. (2012), “Measuring Stress and Risks to the Financial System in Israel on a Radar Chart,” Bank of Israel, Discussion Paper 2012.15

Domestic market risk remains high, and the perception regarding domestic credit risk remains low.

Figure 6
Radar Chart of the Risks to the Israeli Economy



SOURCE: Bank of Israel.

b. Assessing the stability of the system

In the first three quarters of 2016, the banking system continued to maintain its robustness and to strengthen its stability, against the background of moderate global growth, lack of clarity regarding the state of the European economies, and the low interest rate in the economy. The system reduced its exposure to the realization of risks it faced, which was reflected in the continued trend of capital accumulation and strengthening, a suitable level of leverage, maintaining a suitable level of profitability, continuation of the downward trend in concentration in the credit portfolio and exposure to large borrowers, low rates of impaired debt, and improved liquidity in the banks and in the system as a whole. During the reviewed period, the banks continued to expand credit to the household sector (housing and nonhousing credit) and to the small and medium business sector, while at the same time reducing credit to large corporations. The continued increase in the bank's exposure to housing credit and to credit to the construction and real estate industry, the existing correlations between these types of credit,

and the large segment of the banking credit portfolio they constitute (44 percent), all continue to constitute a main focus of risk to borrowers and to the banking system.

In the first three quarters of 2016, the five large insurance companies recorded a negligible total cumulative profit of NIS 87 million. The total cumulative profit reflects a near-zero yield on equity, which constitutes a continuation of the low yield from the parallel quarters in the previous year (2.3 percent) and a contrast to the average yield between 2009 and 2015 (almost 14 percent). The weak results were a result of moderate profits from investments, and from a significant provision for insurance reserves—mainly due to the decline in the risk-free yield curve in the economy.

In June 2016, the Banking Supervision Department announced that it would allow institutional investors to increase their holdings of bank shares to 7.5 percent.⁹ The decision was made with the aim of improving the tradability of bank shares, and after examining the parallel regulations in other countries.

Even though the financial system is stable, it is exposed to the risk derived from high home prices and to the risk of a sharp decline in the prices of financial assets. The housing market is a prudential risk to the financial system since the system is exposed to this market to a large extent, through mortgages and business credit to the construction and real estate industry. Moreover, the continued sharp increase in home prices increases the risk in a sharp turnaround of the trend, whatever the circumstances may be. This risk will increase should prices continue to climb. A sharp decline in the prices of financial assets may have a negative effect on those holding such assets, mainly the insurance companies through their nostro investments, and lenders who have obtained financial assets as collateral.

⁹ The increase in holdings is contingent on a case-by-case approval by the Governor of the Bank of Israel.

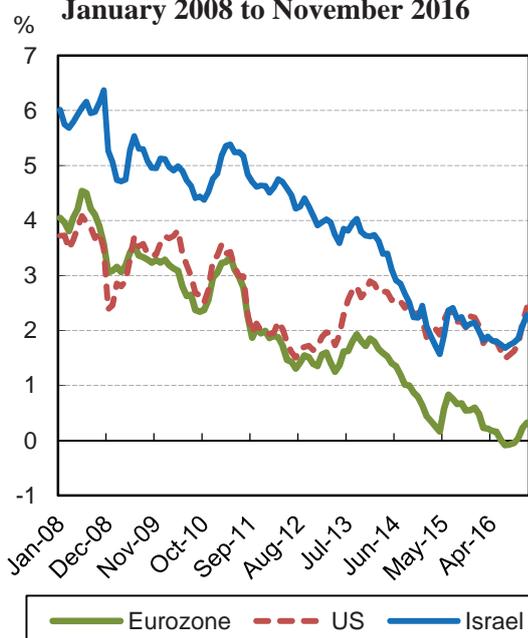
2. MAIN DOMESTIC RISKS TO THE STABILITY OF THE FINANCIAL SYSTEM

a. The Main Domestic Risks

The financial system is exposed to the risk derived from high asset prices. Similar to other advanced economies, Israel has also experienced low interest rates in recent years—a necessary policy in view of macroeconomic developments—and there has been a decline in the yields on short-term and long-term government bonds (Figure 7). As a result, savers in the economy looked for investment alternatives with higher yields—stocks, corporate bonds, and dwellings—which are by their nature characterized by higher risk. For its part, this development led to a rapid increase in recent years in home and financial assets prices in Israel.

Yields in Israel increased slightly in recent months, similar to yields in other advanced economies.

Figure 7
Nominal 10-Year Yields in Israel,
the US and the Eurozone,
January 2008 to November 2016



SOURCE: Bank of Israel.

The constant increase in home prices, as well as their high level, alongside the high level of asset prices, expose the financial system to the risk of a turnaround in the trend and a sharp decline in prices, whether as a result of an increase in the interest rate or due to other shocks. Even though households and the business sector in Israel are characterized by relatively low leverage, and even though limits were imposed on mortgages, a decline in asset prices may cause losses to private investors, banks, and the saving public through the institutional investors. A sharp decline in prices may reduce the value of assets in the economy and roll over to reduced economic activity and consumption, which may negatively impact the entire Israeli economy. Such an impact may make it difficult for mortgage borrowers to meet their repayments or to sell their assets in order to overcome their repayment difficulties.

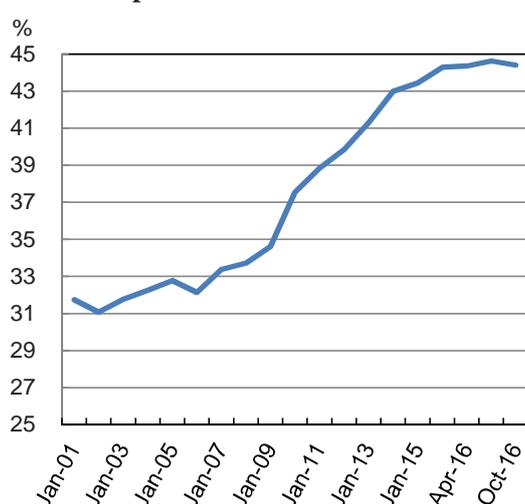
a.1 The main domestic risks: The housing market

The financial system's exposure to the housing market remains the main and most significant risk, because the banks are very exposed to mortgages and to the construction and real estate industry. However, in recent months, that exposure has moderated (Figure 8). The risk is stronger in view of the exposure to nonhousing consumer credit, since there is a high correlation between the risks derived from the types of credit being discussed. If a shock leads to a sharp increase in the interest rates or to a significant negative impact to borrower's income, it may have a negative effect on the banks exposed to them. If such a scenario also leads to a sharp decline in home prices, it may have a significant effect on the stability of the banks, due to the negative impact on collateral they hold and due to the difficulty in realizing many assets within a short time.

In this context, it should be mentioned that the stress scenario conducted by the Banking Supervision Department in 2015 estimated the negative impact the banks would absorb as a result of a serious deterioration in Israel's geopolitical state. The test found that this

The housing market remains the most significant risk to the financial system, because the banks are highly exposed to mortgages and to the construction and real estate industry.

Figure 8
Housing Credit and Credit to Construction and Real Estate as a Share of Total Balance-Sheet Bank Credit, January 2001 to September 2016



SOURCE: Bank of Israel.

would be expected to cause the banks high losses, but there is no concern over their stability. Forty percent of losses would come from housing credit and credit to the construction and real estate industry, due to the negative impact to the labor market, the decline in home prices, and the rising costs of raw materials used in construction.¹⁰

In parallel to the banks, institutional investors also increased their exposure to mortgages, both directly and through the purchase of mortgage portfolios from the banks. Their exposure to housing credit reached NIS 5.6 billion in September 2016, with a significant increase—about NIS 2.5 billion—in the preceding half-year. In the meantime, this exposure is not significant relative to the volume of assets managed by the institutional investors. Moreover,

when housing credit moves from the banks to the institutional investors, it leads directly to the spread of risk among the entities. However, if the exposure reaches significant dimensions, the interconnectedness between the financial entities will increase, which will increase the likelihood that a crisis in part of the system will become a system-wide crisis. Moreover, while the sale of mortgage portfolios from the banks to the institutional investors improves the banks' ability to continue providing new mortgages to the public, it thereby further increases exposure to the housing market—of all financial institutions. In this context, it should be mentioned that about 31 percent of the stock of corporate bonds, and about 28 percent of bonds issued during 2016, are attributed to the construction and real estate industry.

Home prices in Israel continue to increase (Figure 9), and in the 12 months ending in November 2016, they increased by 8.1 percent. It is common to assess pricing in the housing market by examining prices in relation to fundamental factors, particularly in relation to (1) rent, a figure that reflects potential returns on the investment in a dwelling, and (2) wage or income, figures that reflect the purchasing power of individuals in the economy. Compared to the past, these two indices are at peak highs.

The increase in home prices in recent years took place in tandem with the decline in long-term yields and the interest rate on mortgages (Figure 10). Assuming that real estate and a financial asset serve as alternative investment channels, the yield on owning them must be similar, in accordance with the differences in risk and in liquidity of the asset. The yield on a dwelling (annual rent divided by price) continues to decline, falling below 3 percent for the first time. In parallel, the yield on government bonds continued to decline more rapidly. As a result, the gap between the yield on holding a dwelling and the yield on government bonds increased, which emphasizes the worthwhileness of investment in dwellings. These are true even though the interest rate on mortgages increased, because it remains significantly lower than the yield on a dwelling.

¹⁰ Details appear in the Banking Supervision Department's Annual Survey of Israel's Banking System for 2015.

Home prices increased more rapidly than rents, and the ratio between them reached a record high.

Figure 9
The Housing Index, The Survey of Home Prices, and the Ratio between Home Prices and Rents, January 1994 to August 2016

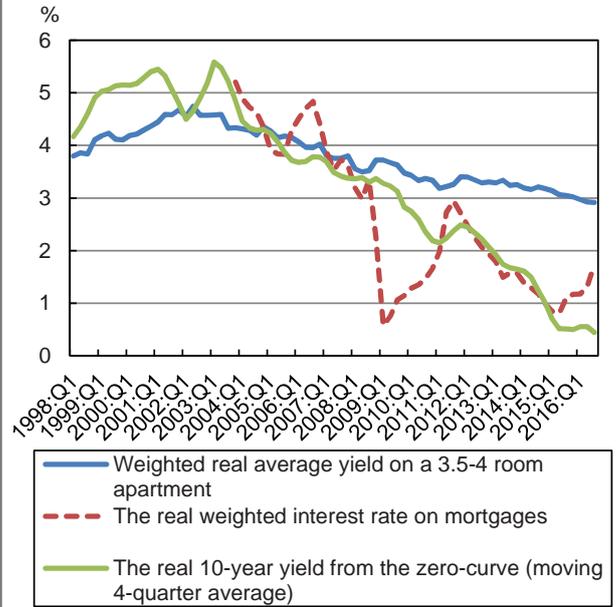


SOURCE: Bank of Israel.

For about a year, there has been a marked upward trend in the interest rate on mortgages (Figure 10). In general, this interest rate reflects the cost that banks pay in order to raise sources (with a similar character in terms of duration and indexation), the risk inherent in the loan, and the borrowers' bargaining power—a function of the level of competition in the mortgage market. However, in recent years, the Banking Supervision Department has acted so that the banks internalize mortgage risks, and it has done so through a series of macroprudential measures. Among other things, the Banking Supervision Department set out that the banks must increase their loan loss provisions, and that in addition to meeting Tier 1 capital ratios, they would have to gradually increase their Tier 1 capital by a rate reflecting 1 percent of the balance of the housing credit portfolio by January 1, 2017. It seems that these

The increase in home prices in recent years took place in tandem with the decline in long-term yields and in the weighted interest rate on mortgages.

Figure 10
The Yield on Renting a Home Compared with the Real 10-Year Yield from the Zero-Curve and the Weighted Interest Rate^a, 1998:Q1–2016:Q3



^a The weighted interest rate is calculated assuming inflation of 2 percent.

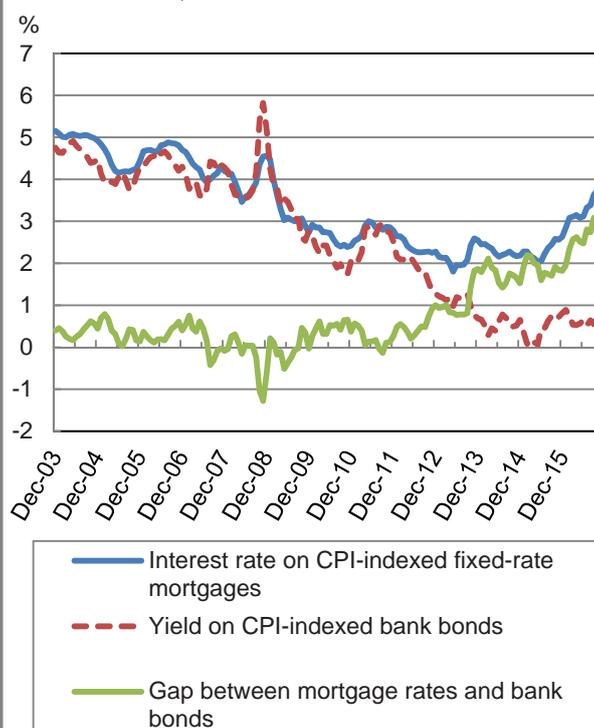
SOURCE: Bank of Israel.

regulatory measures may explain some of the increase in the interest rate on mortgages. The gap between this interest rate and the yield on bank bonds increased even before the interest rate increases began, but the decline in yields on bank bonds partly offset the gap until the middle of 2015 (Figure 11).

Figure 11 also shows that even though the Bank of Israel interest rate has been at an all-time low since March 2015, the cost of sources the banks raise on the capital market increased in recent months. In parallel, the risks inherent in housing credit increased—because home prices continued to climb—which was reflected in the increase in the average mortgage and in the term to repayment (which were accompanied by a slight

The gap between mortgage interest rates and the yield on bank bonds widened even before the mortgage rates began to increase, but the decline in the yield on bank bonds partly hid the gap.

Figure 11
The Interest Rate on CPI-Indexed Fixed Rate Mortgages and the Yield on CPI-Indexed Bank Bonds, December 2003 to October 2016



SOURCE: Bank of Israel.

decline in the monthly repayment rates).¹¹ Even so, since the mortgage market is highly competitive, very low mortgage interest rate spreads were created.

a.2 The main domestic risks: Financial asset prices¹²

The public remained significantly exposed to the prices of financial assets that are sensitive to changes in the interest rate, and that exposure even increased slightly—both due to direct holdings of assets¹³ and due to indirect holdings through savings with institutional

¹¹ The classic risk indices—the average levels of the LTV ratio and the PTI rate—do not reflect a significant increase in risk.

¹² A broad analysis of asset prices appears in Chapter 6.

¹³ About 14 percent of the public's asset portfolio is invested directly in shares, and about 20 percent is invested in bonds.

investors. In July 2016, corporate bonds constituted 13.5 percent of the total portfolio of the institutional investors, with shares constituting 7.6 percent of that portfolio.¹⁴ A future increase in the interest rate may lead to a decline in financial asset prices, thereby negatively impacting the public's savings.

Since the mutual funds generally serve households for their short- and medium-term savings, it is reasonable to assume that in a crisis or during significant price declines, they will suffer from relatively large redemptions, and will therefore tend to sell off assets and deepen the price declines. The mutual funds hold 22.9 percent of the balance of tradable corporate bonds—similar to the rate in previous years, but higher than the rate between 2008 and 2012. Since this is a significant rate of holdings, if the mutual funds sell off bonds under stress conditions, they may have a significant effect on bond prices, lower the value of long-term savings portfolios managed by the other institutional investors, and lead to a decline in the value of the entire portfolio.

The average corporate bond spread resumed its decline in the second half of the year. Spreads are currently below but close to the average of the past three years, and there is variance between the various industries and ratings. Some of the low spreads are a result of the fact that the level of economic activity is high, corporate leverage is low and companies are using their accumulated profits to finance their activities¹⁵, their P/E ratios are lower than the average of the past few years, and the likelihood of bankruptcy remains relatively low. However, since the spreads showed a further decline during a period when there was no significant change in the aforementioned factors, it seems that the repricing of risks is continuing, against the background of the low interest rate and the search for yields among investors. Furthermore, since the mutual funds hold a large segment of corporate bonds,

¹⁴ A further 2.8 percent is invested in ETNs that mimic shares and bonds.

¹⁵ See the Bank of Israel Annual Report for 2015, Chapter 4, particularly Box 4.2.

there is a concern that the prices will show a high level of volatility in the event of a shock.

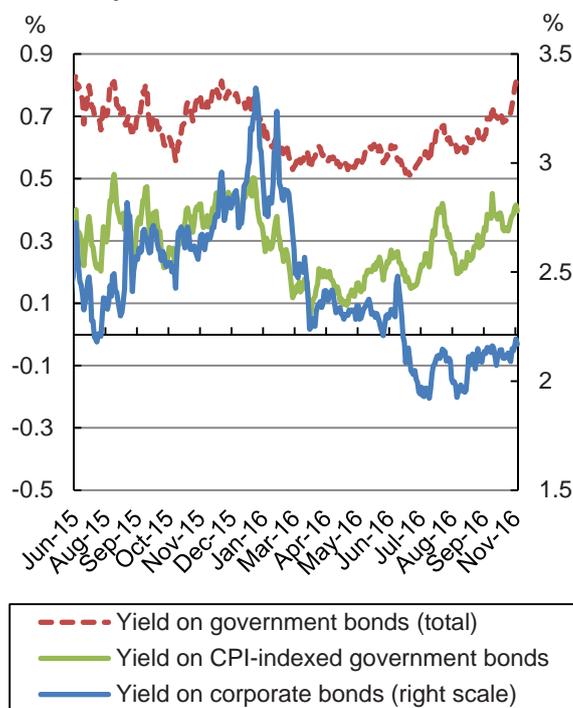
In September, total issuances of nonfinancial corporate bonds (tradable and nontradable) reached a two-year high of NIS 5.7 billion. Since the beginning of the year, issuances in this sector totaled NIS 38.69 billion. Net capital raised has been high during 2016, and in the past few months, there was even a further increase. About 48 percent of issuances in those months in the nonfinancial sector belong to companies from the real estate industry, and the estimate of net capital raised by companies from that industry since the beginning of the year—NIS 3.98 billion—is higher than the estimate in other industries. Bonds (excluding issuances by foreign companies) rated BBB or lower constituted an average of 19.8 percent of total issuances since 2016, compared with 18 percent in 2015. However, the spreads on low-rated bonds declined significantly since the beginning of the year, to 4.5 percent at the beginning of September. Foreign companies comprise a declining share of issuances, and since 2016, they have issued about NIS 3.7 billion in bonds.

The development of an asset price bubble is generally accompanied by an increase in credit, while the increase in corporate bond prices that has taken place in recent years has not been accompanied by an increase in credit to the business sector. Moreover, many companies have taken advantage of the low interest rates in the markets in order to recycle their debts at a lower interest rate than that at which the debt was originally issued, thereby lowering the concern of a negative impact to their stability due to a rapid increase in yields, for instance as a result of an increase in the risk premium of the economy.

Since the results of the US presidential elections were announced, there has been a significant increase in yields on government and corporate bonds, similar to global developments (Figure 12). However, it is still too early to discern the resulting effects.

Since the US elections, there has been a significant increase in yields on government and corporate bonds in Israel, with similar developments globally.

Figure 12
Yield on Government Bonds Compared with the Yield on Corporate Bonds, January 2015 to November 2016



SOURCE: Bank of Israel.

b. The Global Environment

The Financial Stability Report recently published by the International Monetary Fund (IMF)¹⁶ separated between long-term and short-term risks. The IMF's assessment was that the former continued to increase, mainly due to the increase in global political risk and due to the further delay in the return to monetary normalization. In contrast, there were fewer immediate risks as a result of the decline in risks from China and the fact that the global financial sector showed strength, overcoming the shocks that took place in 2016, including the crisis in the Chinese financial markets, the interest rate increase in the US, and

¹⁶ *Global Financial Stability Report*, October 2016.

Brexit. However, IMF economists emphasized that in all cases, a solution has not been found to the problems, and dealing with them has only been pushed off to a later date.

The fiscal report¹⁷ published by the IMF mentions another significant risk factor: Global debt increased to record levels. The report mainly discusses the rapid growth of corporate debt in emerging markets, chiefly China, and the increase in fiscal debt levels in the advanced economies. The report's authors believe that there is a correlation between the high debts in the nonfinancial private sector—mainly between the situation in which these debts are increasing in the emerging and advanced economies simultaneously, as is currently happening—and financial crises. Moreover, policy makers currently have only a limited ability to deal with crises, since the low growth and near-zero inflation make it very difficult to reduce leverage, and because fiscal debts are high and monetary policy tools are close to being exhausted. It is therefore not surprising that the IMF chose the title, “Debt: Use It Wisely” as the title of the report.

According to the IMF's assessment, this is the current risk situation:

- Credit risks continued to increase because the banks in Europe and China have encountered a problematic situation, and because the insurance companies, pension funds and banks are having difficulty maintaining their profit models when nominal growth is low. The uncertainty regarding the situation at Deutsche Bank and the storm surrounding the state of the Italian banks are very significant contributory factors to this risk. Additionally, the risk concerning corporate sector leverage has also increased. Companies in the emerging markets are characterized by particularly high leverage because of the easy terms of credit that have been prevalent in the past few years, with debt servicing costing next to nothing. It is therefore necessary to reduce leverage, and the process will

be complex. However, the household credit risk continued to decline because the leverage in that sector continued to decline.

- The immediate risk from the emerging markets declined despite the slight worsening in their macroeconomic data. The improvement was mainly a result of the fact that commodity and energy prices increased, benefitting Russia and Brazil—economies that had encountered serious crises. It was also a result of the fact that capital continued to flow into the emerging economies despite the crises that occurred during the year, in contrast to the situation that developed during previous crises. There was also a decline in the immediate risk from the corporate sector in China, however this does not attest to a solution to the problems, as stated, but only to a delay in dealing with them.
- The macroeconomic conditions in the advanced economies remained virtually unchanged, as the slight worsening in those conditions and in economic uncertainty were offset by a decline in yields on government debt.
- Monetary and financial conditions improved, mainly because the central banks adopted further monetary easing in response to the slowdown in the pace of growth and the decline in inflation. In Europe and Japan, the central banks increased their use of unconventional monetary measures, including negative interest rates¹⁸, the purchase of a variety of financial assets, and loans with very easy terms to the banking system. The central banks in some of the emerging economies continued to lower their interest rates, while the Federal Reserve pushed off the expected interest rate increases despite the increase in December and the relatively hawkish declaration that accompanied it.
- The market and liquidity risks also remained virtually unchanged, remaining very high, mainly due to the increase in financial exposure of market players and due to the high prices of assets, which led

¹⁷ *Fiscal Monitor*, October 2016.

¹⁸ Even though yields increased in the past month, government bonds, which are valued at more than \$10 trillion, are still traded at negative yields.

some companies to reduce their buyback programs. The high correlation between the behavior of the various financial assets contributes to the risk, but the decline in volatility moderated that risk.

As a result of the foregoing, the appetite for taking risks increased. This helped the markets to respond with relative moderation to the UK decision to leave the European Union, and contributed to the fact that the risk in the emerging markets declined despite the high level of uncertainty in the global economy and in the financial markets.

The following radar chart sums up the risks to global financial stability. It does not reflect one of the most important risks—the risk resulting from the fact that in many places around the world, the public does not have confidence in policymakers. This lack of confidence contributes to the strengthening of populist forces in many countries. It has already led to the Brexit vote, and to the fact that euroskeptic parties

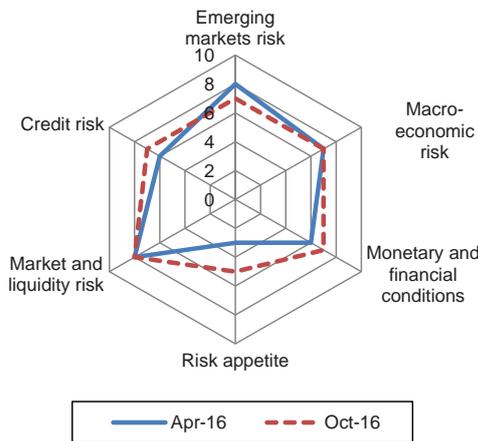
won local elections in various countries in Europe, and it may lead to other political surprises that could increase economic instability in many of the advanced economies. These processes are increasingly being taken into account: The IMF noted that uncertainty regarding policy measures is a main risk, and the last fund managers’ survey published by the Bank of America in November put two political risks at the top of the list of risks—the dissolution of the eurozone, and the possibility that the Republican candidate would win the US presidential elections.

While the realization of the second risk led to a relatively sharp decline in the global stock markets and in yields on US government bonds, and this reaction was in line with the forecasters’ assessments, the declines were rapidly replaced by sharp increases in shares and in bond yields in the US and globally, accompanied by a strengthening of the US dollar. In other words, the markets completely ignored the risks that everyone had been indicating to that point.

While real-economic explanations can be given for such behavior, since the accommodative budgetary policy (and particularly tax reductions) declared by the President-elect is expected to benefit companies and negatively impact government bond prices, it seems that the behavior is also largely the result of the fact that, as a result of quantitative easing, the surplus liquidity in the markets is increasing each month, which may skew the allocation of sources and investors’ risk concept. More generally, it can be said that while it is still too early to discuss the major steps the President-elect proposed during the election campaign or to assess their effects on the US and global economy, and while it is unclear which of them will be implemented or when, there is concern that any reasonable scenario will negatively impact the emerging markets, both due to the harm to international trade and to American demand for their exports, and because the strengthening dollar will negatively impact the ability of companies in those economies to recycle their dollar debt, which constitutes a risk to stability.

Prudential risks remained relatively high, but the readiness to take financial risks increased.

Figure 13
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 presents 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 illustration, 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.

Since the results of the US presidential election became known, the risk from euroskeptic forces has also increased, and in the coming months they are expected to challenge many important countries in Europe. In particular, Germany, France and the Netherlands will hold elections, and nonestablishment parties have a relatively good chance of winning them. In Italy, there was a referendum on the authority of the Senate, and the results led to the resignation of prime minister Matteo Renzi. The markets' reaction to the results of the referendum contradicted assessments: stock markets around the world strengthened, as did the euro. The establishment of a technocratic government in Italy calmed the markets further. However, there is a material risk that early elections may be held, and that the Five Stars party—a euroskeptic party that supports holding a referendum on leaving the eurozone—may win.

A broader discussion on the risks that may have an effect on the Israeli economy^{19,20}:

The risks resulting from the uncertainty regarding policy measures became, in our estimation, the main risk to global financial stability. Global political uncertainty has increased in the past few months, and there is a high risk that populist forces will continue strengthening, mainly—but not only—in Europe. In the UK, voters made the surprising decision to leave the European Union, which led to a high level of volatility in the global markets and to the sale of risk assets. Many believe that the rapid recovery of the markets is a tangible sign of their robustness. Moreover, many also draw encouragement from the fact that the British economy is not thus far showing any signs of material negative effects (other than the marked depreciation

of the pound, but this could also help British exports to compete). However, even so, it seems that the calm is too early, and the discussions on the British exit from the union—a process that will begin in the coming months—are expected to create significant shocks to the British, European and global economies, *inter alia* because they will be uncompromising in nature. Yet, while a softer agreement will moderate the direct effects on the economy, it will pave the way for other countries where euroskeptic voices are gaining strength—chiefly Italy—to demand many easements in their debts and perhaps to leave the eurozone as well. Such a development may ultimately lead to the dissolution of the entire eurozone. In the US there is also a tremendous amount of political polarization and material uncertainty regarding the expected policy measures and their timing. Market optimism may therefore be quickly replaced by renewed concerns and sharp declines. The relatively sharp increase in yields in recent weeks is also a weight on the economy and on the financial markets. The effects on Israel are discussed in the chapter dealing with the main domestic risks.

The concern that very accommodative monetary policy will fail, and will lead to the loss of trust in the central banks, is a main concern due to the difficulties that may result from it. Even though many nonconventional policies have been adopted since the outbreak of the global financial crisis, the global economy is in a delicate state even eight years later—the pace of growth is moderate and large parts of the public feel that they are not reaping the benefits. These were the main pretext for the loss of trust in the old elites and the strengthening of populist forces around the world, but the loss of trust in the central banks and of their credibility could create an even more serious risk. The likelihood this risk will be realized is not high in our estimation due to a variety of tools available to the central banks. However, since its realization could destabilize the financial and money markets, and since the increasing concerns are sufficient to bring about an increase in volatility and risks in the markets, we must include it among the major risks. The transmission

¹⁹ All of the risks described are expected to have an effect on Israel, mainly through the financial markets and a decline in the desire to take financial risks. The Israeli economy and Israeli financial institutions are directly exposed to the foci of these risks to a very small extent. But if there is a significant economic worsening in the destination countries for Israeli exports, it is expected to lead to a decline in demand for those exports and to a negative impact on the Israeli economy.

²⁰ The risks in this list are arranged by the extent of their seriousness in our estimation, with the first two being the most major.

channels to Israel are discussed in the chapter dealing with the main domestic risks.

The risk inherent in the weakness of the banking system worsened during the reviewed period. The risk is derived from the poor condition of the global banking system, mainly from the situation of the banks in China and the state of the banking system in Europe, since the latter has not recovered almost at all since the global financial crisis.

In July, the results of the stress tests conducted in Europe were published, and they (again) did not succeed in calming the markets. There are two main sources of concern: (1) the Italian banks, which have a particularly high rate of problematic debts and a poor capital structure, and (2) some of the German banks, chiefly Deutsche Bank, where capital adequacy is not sufficient, and where there is a high level of connectedness between them and the global banking system, which constitutes a systemic risk.²¹ In general, the banking system in Europe suffers from many problems:

Capital adequacy is low, and there is a high rate of problematic debt. The Italian banking system is, as stated, at the focus of attention, but there are serious problems in other countries as well. For instance, the banks in Portugal and Greece were not even examined through stress tests, but they are in even worse shape, and the banks in Spain also have a high rate of problematic debts.

Profitability is very low due to the negative interest rates prevailing in Europe.

The high fines imposed by the US authorities are endangering the stability of the banks.

The regulators are demanding that capital be confined and that problematic debts (for which it is difficult to find a buyer) be sold.

²¹ A report published by the IMF in June found that Deutsche Bank is the bank with the most significant contribution to global systemic risk, due to its high level of connectedness.

A possible solution will require the injection of capital into the banks on the continent and the closure of a few of them, as the US did during the global financial crisis. However, the Europeans are refusing to discuss solutions that will put the cost of rescuing the banking system on the taxpayers, which adds to the pressure on the banking system.

The Chinese banks are very highly leveraged (with the leverage continuing to increase at a higher rate than GDP growth). Even though their exposure to the world is relatively low, they also pose a systemic risk, because a large portion of credit in China is issued through shadow banking—a system over which supervision is not sufficiently tight—and is allocated to government entities with zero profitability, and because there is a high level of interconnectedness between the Chinese banks, they are huge, and China is very important to the global economy.

The collapse of a large bank in Europe or China, or even increasing concern over such a collapse, could completely paralyze the money markets, negatively impact the fragile recovery, and even cause a deep financial crisis.

The risk to global economic stability from China and from the emerging markets in general declined in the reviewed period, but it remains high. The decline in immediate risk is mainly a result of the fact that the increase in commodity and energy prices calmed concerns regarding Russia and Brazil, that the pace of capital flight from China slowed²², and that better economic data were published in China. In the second quarter, the flow of capital to the emerging markets resumed—because investors looked for yields due to the negative interest rates prevailing in Europe—and this flow increased, surprisingly, after the UK decision to leave the European Union. These developments

²² Although there were arguments that the capital flight did not stop but only changed its nature. We are now not talking only about the flight of foreign exchange (which can be quantified by the size of foreign exchange reserves and the balance of trade and investments), but also about the flight of capital through other avenues, such as the flight of yuan to Hong Kong and from there to tax shelters.

made it much easier for companies in the emerging economies to recycle their debts but, as stated, it does not reflect a solution to the fundamental problems—the problematic debt market in China and the high level of corporate sector leverage in the emerging economies in general. As proof of this, the default rate on risky bonds in the emerging economies increased in 2015 to the highest rate since the global financial crisis, and increased further during 2016. In addition, since the beginning of 2016, ratings have been lowered at a very high rate.

The volume of corporate debt in the emerging economies reached higher rates in recent years than in the past, and a significant portion of it belongs to foreign investors. Since financing costs are low due to the near-zero interest rates prevailing around the world, there was a rapid and continued increase in the leverage rate in emerging economies—reaching about 75 percent of GDP, a very high rate for emerging economies—and in their exposure to foreign exchange. While leverage is expected to decline this year, for the first time in a few years, it remains high. The fact that the dollar strengthened recently—alongside the interest rate increase in the US, higher projections of increases in 2017, and the resulting increase in yields—may make it difficult for domestic companies to meet their debt payments. The main channels of effect on Israel are discussed in the chapter dealing with the main domestic risks.

The geopolitical risk has not changed materially during the reviewed period. Israel's yields and CDS indices remained relatively low, and the direct threat to Israel from spillover of conflicts in the region and from Palestinian terrorism remains moderate.

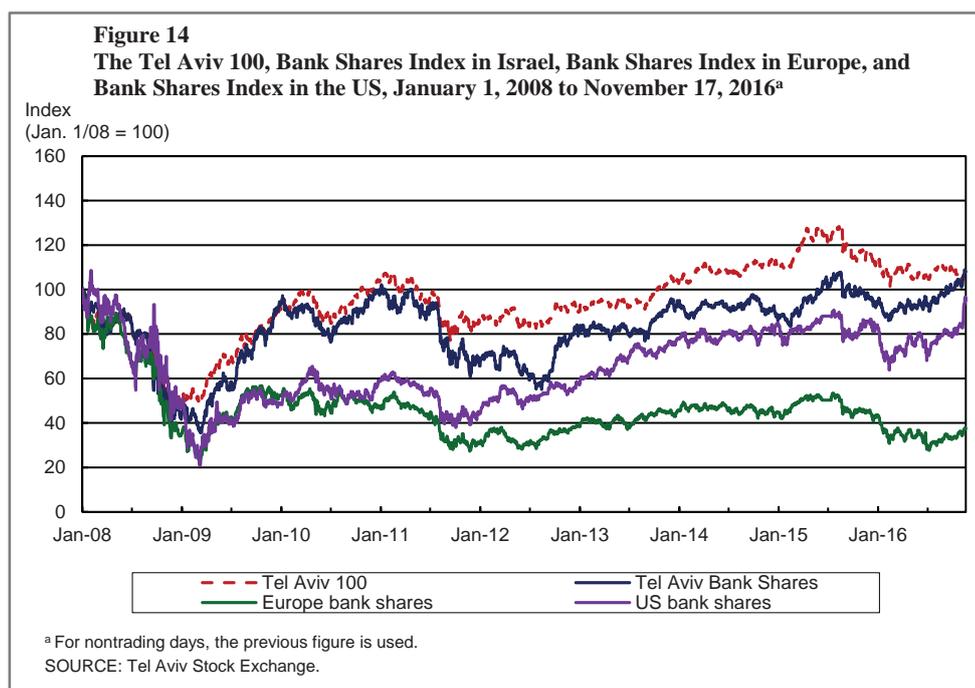
The risk from low interest rates increases as long as the period in which they remain at near-zero levels continues. While global yields increased recently—as a result of the increase in the US interest rates, higher forecasts of interest rate increases in 2017, and the Republican victory in the US presidential election—they remain close to their historically low levels in

almost all economies, and are expected to remain there for a considerable time. As a result, there are increasing risks in the financial markets due to underpricing of risks, deterioration of the profitability models of the banks and insurance companies, and increasing actuarial deficits that are very difficult to solve in the pension funds.

3. THE BANKING SYSTEM

In the first three quarters of 2016, the banking system continued to maintain its robustness and strengthen its stability, against the background of moderate growth in Israel and globally, the lack of clarity concerning the state of the European economies, and the low interest rates. The system reduced its exposure to the realization of the risks it faces, which was reflected in the continued trend of accumulating and strengthening capital, a suitable level of leverage, maintaining a suitable profit level, the continuation of the downward trend in concentration in the credit portfolio and exposure to large borrowers, the low rate of impaired debt, and improved liquidity in the banks and in the system as a whole. During the reviewed period, the banks continued to expand credit to the household sector (housing and nonhousing) and to the small and medium business sector, while reducing credit to large corporations. The continued increase in the banks' exposure to housing credit and to credit to the construction and real estate industry, the existing correlations between these types of credit, and the large segment of the total banking credit portfolio for which they account (44 percent), all remain a main focus of risk for borrowers and for the banking system.

Since 2008, the Israeli banking system has significantly reduced its exposure to foreign countries and financial institutions, in view of the increasing volatility in the international markets and developments in the European banking system. While this exposure is not negligible, it also does not endanger the stability of the system. In the past year, the banks have prepared for negative scenarios in the markets and for a worsening



in the global economy accompanied by increased volatility in the global markets. The banking system is prepared for increased cyber risks in Israel and abroad, and continues to work toward reducing exposure to compliance risk and to conduct risk in cross-border banking activity. These pose a challenge to the banking system, particularly in view of the increased supervision and enforcement over financial entities in Israel and abroad.

In August 2016, the government approved the law to increase competition in the banking system. This bill is based on the recommendations of the Committee to Increase Competition in Common Banking and Financial Services²³ (the Strum Committee), and is a further element in a series of consumer and structural measures being advanced by the Bank of Israel and the Banking Supervision Department. The proposal balances the need to advance competition in retail

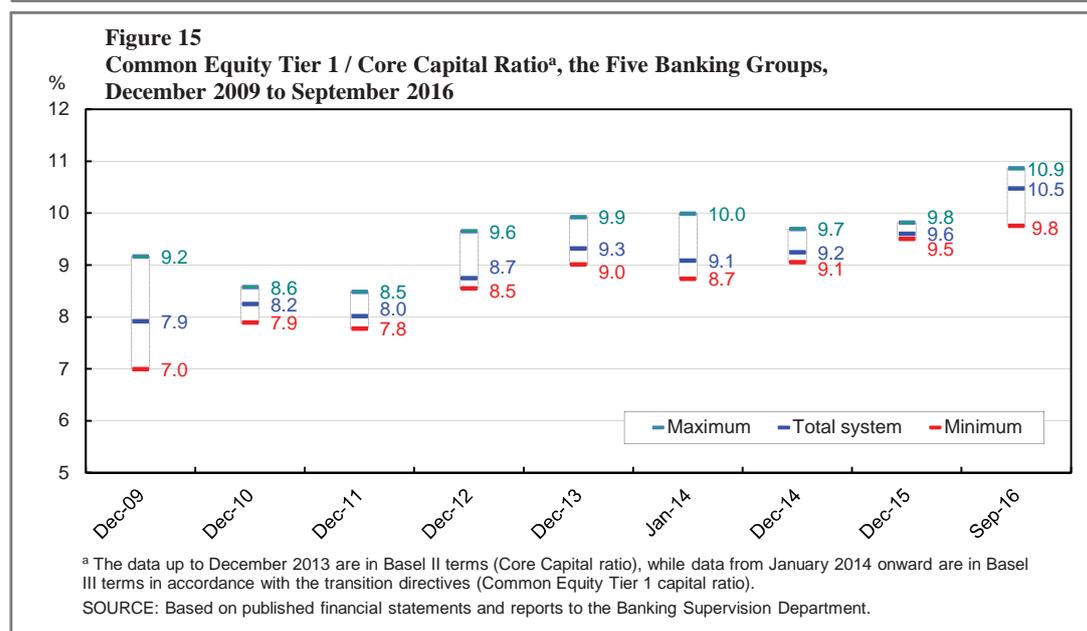
activity segments and the need to maintain the stability of the financial system in Israel. The main points of the proposal include separating two credit card companies from the two largest banks while providing protection to the nascent separated companies; reducing barriers to the entry of new players to the payment systems; encouraging the institutional investors to become active in credit to retail customers; improving customers' access to financial information concerning them and providing them with the ability to obtain value proposals from additional entities; removing technological barriers to enable new banks to enter the market; and increasing competition in the credit field (such as creating a second lien on an asset).

a. Capital adequacy and profitability

The banks met the regulatory capital targets, and are continuing to increase capital. This process is taking place while the banking system continues to support growth in the economy, and is expected to continue while the banks implement the streamlining plans they were required to present to the Banking Supervision Department. The leverage (according to Basel III) of the banking system is suitable and high by international comparison.

²³ The Committee was headed by Mr. Dror Strum, and included members from the Ministry of Finance, the Bank of Israel, the Ministry of Justice, the Israel Anti-Trust Authority, and representatives of the public. The Committee's letter of appointment defined its mandate: Examining the possibility of the entry of new players to competition over the supply of common banking services, including the possibility of separating the credit card companies from the banks, and examining complementary measures to remove barriers and advance competition.

The banks reached the regulatory capital targets and are continuing to increase capital.



The Tier 1 common equity ratio of the five banking groups increased by about 0.9 percentage points during the reviewed period, reaching 10.5 percent. The banks achieved the regulatory capital target set by the Banking Supervision Department (9 percent for the small and medium banks and 10 percent for the two large banks, in addition to a capital buffer in respect of mortgages). The increase in the capital ratio took place thanks to profits accumulated by the banks and thanks to the processes they adopted to reduce credit risk assets (see below). Some of the banks distributed dividends. The banks maintained a suitable level of profitability, and the return on equity was about 9.8 percent in annual terms, mainly due to the effects of one-time factors, including the sale of Visa Europe Ltd. The low interest rate environment in Israel and globally is eroding the banks' basic sources of profit, which is reflected in the fact that the financial spread has been low in recent years. In an attempt to deal with the challenge posed by the erosion, the banks realized assets, mainly bonds and shares in the portfolio available for sale.

The stability in risk assets was maintained in parallel to the banks' increase of credit to households and small and medium businesses, and was affected by the

processes adopted by the banks to reduce credit risk assets. These measures included reducing credit to large business borrowers, selling mortgage portfolios, syndication transactions, and the purchase of insurance for the home purchase guarantees portfolio based on the Sales Law. The leverage ratio of the five banking groups reached 6.6 percent, and all banks in the system have already met the leverage ratio targets set by the Banking Supervision Department in accordance with the Basel III principles. During the reviewed period, a number of banks issued CoCo (Contingent Convertible) bonds, capital instruments that the Basel principles allow to be included in Tier 2 capital.²⁴

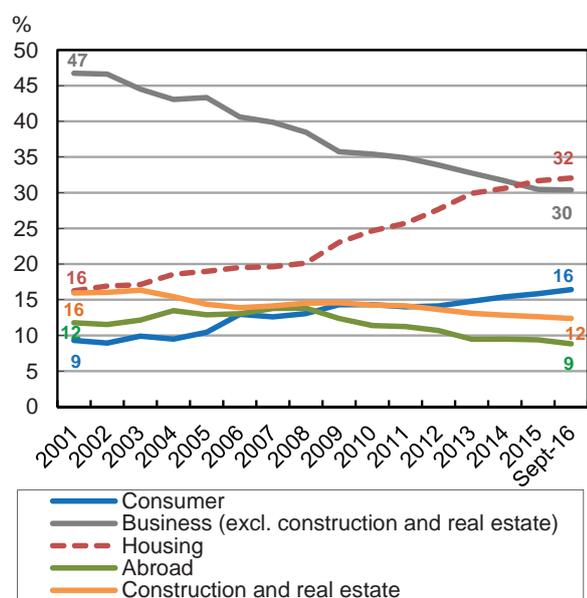
b. Credit risk

The outstanding balance-sheet credit of the five banking groups increased by 4 percent—slightly higher than the GDP growth rate—to NIS 940 billion. This expansion came from housing credit (60 percent) and nonhousing consumer credit (9 percent), both of which continued to increase, although housing credit increased at a more moderate rate than in previous years.

²⁴ A broader discussion appears in Box 2.1 of the Annual Review of Israel's Banking System for 2015.

The banks have continued to increase credit to households (consumer and housing credit) and its share of the credit portfolio has increased significantly in the past decade.

Figure 16
Distribution of Outstanding Balance-Sheet Credit, the Five Banking Groups, 2001 to September 2016



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

In addition, the banks increased credit to businesses (3 percent) following four years of slowdown. The business credit portfolio was affected by the continued expansionary trend in credit to the small business and medium business segments, and by the continued trend of decline in outstanding credit to large borrowers. Moreover, the improvement in the quality indices of the credit portfolio continued, and the banks have noticeably continued to reduce borrower concentration in the credit portfolio by borrower size.

Total credit to the construction and real estate industry increased moderately—by about 1 percent in annual terms—because the construction item expanded (6 percent) while the real estate item contracted. This credit, together with housing credit, reached 44 percent of the banking credit portfolio. The banks' exposure to housing credit and credit to the construction and real estate industry continues to be a main risk focus

for borrowers and for the banking system, due to developments in the housing market and the size of the portfolio in the banks' balance sheets. In order to reduce the risk, the banks continued to adopt measures to reduce exposure to these types of credit. They sold part of the housing credit portfolios to other financial institutions and purchased insurance policies for the sales guarantee portfolio from reinsurers. The Banking Supervision Department acted so that the policy purchases would be recognized as credit protection that reduces exposure to the construction and real estate industry, thereby allowing the banks to further increase the supply of credit to this industry and to finance important projects without increasing their exposure to risk.

The lively activity in the housing market continued during the first nine months of the year, as reflected in the fact that the volume of new mortgages taken out reached a high monthly average of NIS 5.1 billion per month. The risk characteristics reflected in the LTV and PTI rates remained virtually unchanged, but there was an increase in the average interest rate on mortgages in all interest and indexation segments, as well as in the average mortgage loan amount and in the average term to repayment.

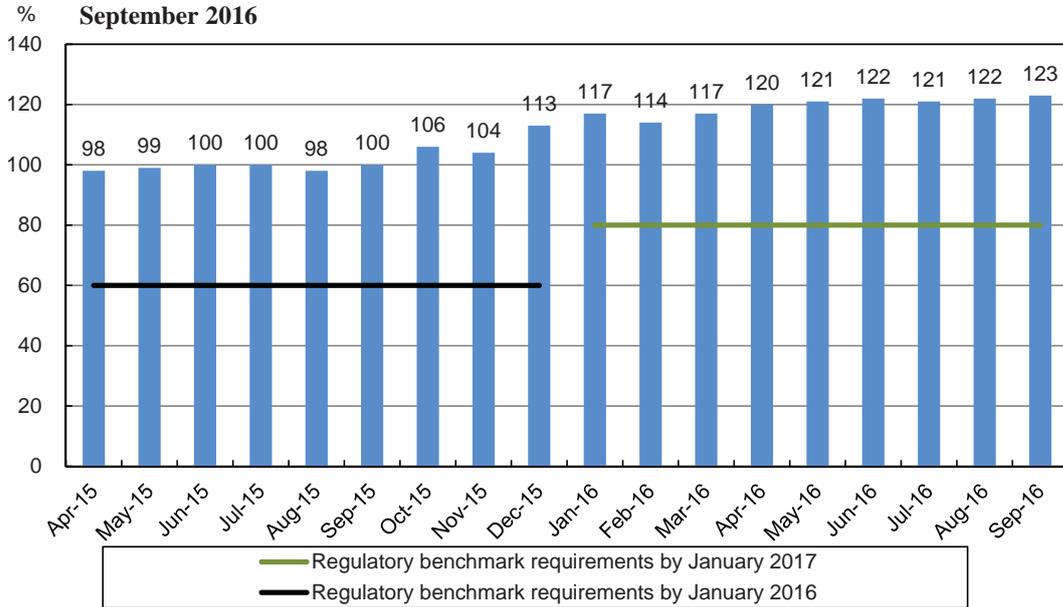
c. Liquidity risk

The banks' liquidity continued to increase, in accordance with the outline set by the Banking Supervision Department and the Bank of Israel, and the trend of improvement in the value of the liquidity coverage ratio (LCR) continued this year.²⁵ The LCR value (total activity on a bank basis) exceeded 100 percent—the minimum requirement for full implementation of the Banking Supervision Department's directive, which was set for January 2017—in each of the banks. The improvement in the banks' liquidity was translated into improved liquidity of the entire system, and the cumulative value of the coverage ratio was about 123 percent at the end of the

²⁵ On a bank basis.

Similar to the past year and a half, most banks improved their liquidity and increased their liquidity coverage ratio this year as well, on the way to full implementation of Banking Supervision Department directives on the matter.

Figure 17
Liquidity Coverage Ratio (Total Activity), Total Banking System^a, April 2015 to September 2016

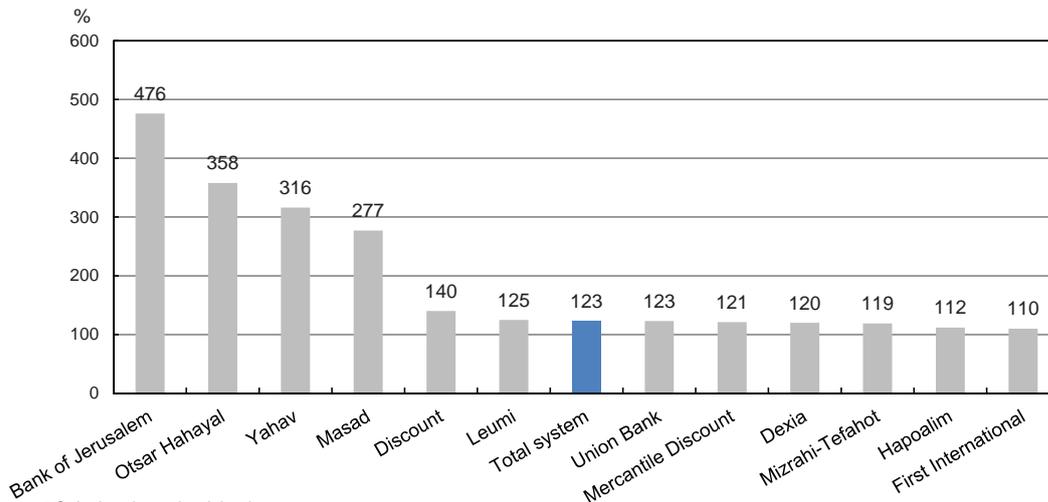


^a Calculated on a bank basis.

SOURCE: Based on Reports to the Banking Supervision Department.

The value of the liquidity coverage ratio exceeded 100 percent in each of the banks—the minimum requirement for full implementation of the Banking Supervision Department directives, which was set for January 2017.

Figure 18
Liquidity Coverage Ratio (Total Activity), All Banks in the System^a, September 2016



^a Calculated on a bank basis.

SOURCE: Based on Reports to the Banking Supervision Department.

third quarter (compared with 113 percent in December 2015). The structure of sources was impaired slightly during the reviewed period due to the increase in the rate of demand deposits. However, it remains stable, and continues to be based mainly on retail deposits and less on financial and other wholesale financing.

4. INSURANCE COMPANIES²⁶

In recent years, there has been increasing recognition that as part of maintaining the stability of the financial system, it is important to maintain the stability of the insurance companies. In parallel, there was an increase in the systemic importance of the life insurance segment in the advanced economies²⁷, and Israel is no exception to this. The volume of assets managed by the institutional investors, chiefly the large insurance companies²⁸, more than doubled over the past decade. Moreover, the large insurance companies may contribute to systemic risk because, among other things, there are cross-holdings between them and the banks²⁹, and because there is a large overlap between the assets held by the various institutional entities—chiefly the large insurance companies—as well as between the assets held by the institutional entities and the assets held by the banks.^{30,31}

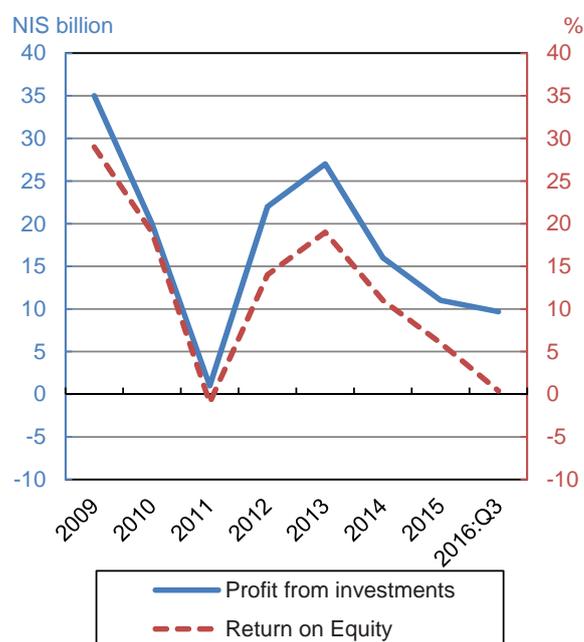
In the first three quarters of 2016, the five large insurance companies recorded a negligible total aggregate profit of NIS 87 million, while profit in the

same period of the previous year totaled about NIS 373 million. The total aggregate profit reflects a near-zero return on equity³², further to the low yield in the same quarters of the previous year (2.3 percent) and contrary to the average yield of almost 14 percent between 2009 and 2015 (see Figure 19). The weak results were derived from moderate profits from investments, and from a significant provision for insurance reserves—the aggregate value of which is approaching NIS 2 billion—mainly due to the decline in the risk-free yield curve in the economy.

The decline in yields leads to an increase in the capitalized value of the companies' future liabilities, and the companies are therefore required to record a loss against them. This recording supports their

In the first three quarters of the year, the downward trend in the return on equity of the five large insurance companies continued.

Figure 19
The Profit from Investments and the Return on Equity of the Five Large Insurance Companies, 2009–16



SOURCE: Financial statements of the insurance companies.

²⁶ The figures and analyses in this chapter are as of the end of November 2016, unless noted otherwise.

²⁷ See IMF (2016), “The Insurance Sector: Trends and Systemic Risk Implications”, in Global Financial Stability Report (April).

²⁸ In this survey, we focus on the five large insurance companies (by asset value): Harel, Migdal, Phoenix, Clal, and Menorah. All of these companies are active in all main areas of insurance.

²⁹ It is worth noting that cross-holdings are limited by legislation, by Banking Supervision Department directives, and by regulations from the Capital Market, Insurance and Savings Authority.

³⁰ See Chapter 4 of the Bank of Israel Annual Report for 2012.

³¹ A discussion of the systemic risk from the large insurance companies appears in Acharya, V. (2015), “Are Insurance Firms Systemically Important?” Presentation at the Stockholm Institute for Financial Research, 15 August; Bank of England (2015), “Insurance and Financial Stability”, *Quarterly Bulletin*, 55(3): 242–258.

³² The yield on equity is equal to the ratio between the total profit of the companies and their equity.

stability since it improves the consistency between the value of their assets—a figure which is positively affected by the decline in yields—and the value of their liabilities.³³ It is worth noting that the risk-free yield curve increased in the third quarter of 2016, which partly offset the provisions for insurance reserves made in the first two quarters of the year. Following the US elections, there was a further increase in the yields on Israeli government bonds which, if it persists, is expected to enable the fourth-quarter release of another part of the amount set aside for reserves.

In parallel, the insurance companies were required to increase reserves in the “compulsory auto” and “indebtedness” segments, since following the recommendations of the Winograd Commission, a change was made to the National Insurance Institute Regulations concerning the interest rate for the discounting of annual benefits.

In the first three quarters of 2016, one insurance company recognized significant revaluation profits as a result of the revaluation of real estate for self-use, further to the recognition by two other insurance companies of this type of profits in the second half of 2015. It should be noted that while such revaluation profits are not expected to be realized in the foreseeable future, they do have an effect on the companies’ equity and are recognized for the purpose of dividend distribution. If unrealized profits of this type are distributed to shareholders, it could increase the risk to the insurance companies.

All of the large insurance companies raised secondary and tertiary capital in the first three quarters of 2016—with the aggregate value higher than NIS 1.45 billion—in order to meet the new solvency regime.³⁴ This regime is based on Solvency II, and sets out that the insurance companies’ capital will be measured on an economic basis that better reflects the capital

available to absorb unexpected losses, and that the capital requirement shall be based on all known risks to which the companies are exposed.³⁵ Israel will apply the disclosure requirements of the new regime during the course of 2017, according to the directives of the Commissioner of Capital Markets. While all the large insurance companies currently enjoy a significant capital surplus relative to required capital, two of them—Migdal and Phoenix—published indications that when Solvency II takes effect, they will suffer from a lack of capital totaling about NIS 2.2 billion for Migdal and about NIS 1 billion for Phoenix.³⁶ The publication is based on the IQIS5 test that was submitted to the Commissioner of Insurance in August 2016 with adjustments to secondary capital raised in 2016. The decision to apply a risk-based capital regime on the insurance companies, in accordance with the prevailing global trend, carried great importance and is expected to contribute to ensuring their stability. However, the required capital adjustments may place a burden on some of the large insurance companies in the short-to-medium term.

The insurance companies are exposed through their investment activity to market risk derived from the specific nature of the assets. In profit-sharing policies issued since 1991, the profits and the risk are passed on directly to the insured clients, and the insurance companies benefit from management fees for managing the investment. These management fees include variable management fees to which the companies are entitled in respect of profit-sharing policies issued between 1991 and 2003. During the first three quarters of 2016, the five large insurance companies earned variable management fees of NIS 391 million in aggregate total.

The companies’ nostro portfolio is comprised of assets that are not set against profit-sharing policies,

³³ Increasing the reserves against the background of the low interest rate is discussed in the June 2015 Financial Stability Report.

³⁴ Four of the large companies also distributed dividends in parallel, but the aggregate total of the dividends was just NIS 182 million.

³⁵ A broad discussion of Solvency II appears in the June and December 2015 Financial Stability Reports.

³⁶ Taking into account the transition directive for the shares scenario; without taking into account this directive, the lack of capital in the two companies is even higher.

including guaranteed-yield policies issued up to 1991, and the companies maintain it at a relatively low risk level. While the proportion of risk assets in the nostro portfolio has increased in recent years, 56 percent of the aggregate portfolio is still invested in government bonds in Israel, deposits, cash and cash equivalents as of the end of October 2016, compared with 29 percent of the assets of profit-sharing policies. Almost one-third of the insurance companies' nostro portfolio is invested in "Hetz" designated bonds—nontradable bonds that the government issued for guaranteed-yield programs, bearing higher interest than the rate guaranteed in those programs.³⁷

On August 1, 2016, two small, new pension funds were chosen to serve as the default funds for workers who have not chosen another pension fund. These funds offer, both for such workers and for those who choose to move to them, significantly lower management fees than the average in the pension market—about 1.31 percent and about 1.49 percent of regular deposits, depending on the fund, and around zero percent of accumulated savings. At the same time, the average management fees at the existing funds were 3.17 percent of deposits and 0.28 percent of accumulated savings at the end of 2015. The reform concerning the default fund and the amendment made at the end of 2015 that sets out that inactive accounts of pension fund members will be consolidated into their active pension fund, are expected to increase competition between the pension funds. This, in turn, is expected to negatively impact the profitability of the large insurance companies, since they hold the vast majority of this market (more than 95 percent).

The management fees earned by the five large companies from the pension funds they hold totaled about NIS 750 million in the first half of 2016. Based on that, it can be concluded that, had it not been for the change, management fees during 2016 would have reached about NIS 1.5 billion. Pension fund

management fees during the first half of the year constituted an average of about 5.2 percent of deposits in the five large companies—almost four times the management fees in the default fund that offers the lowest fee (1.31 percent). A simple calculation shows that a decline of one percentage point in management fees from deposits³⁸ is expected to lower the aggregate management fees the five largest insurance companies receive from pension fund members by about NIS 300 million.³⁹ Such a decline will delete almost 1.1 percent of their recognized equity (almost 1.4 percent of equity according to the accounting rules). If a stress scenario takes place in which management fees in the large pension funds decline to 1.31 percent, it will delete about NIS 1.1 billion from the profits of the large companies, and almost 4 percent of their recognized equity (about 5 percent of equity according to the accounting rules). However, it is important to remember that these sensitivity tests do not take into account the companies' ability to adjust their expenses, particularly their sales expenses, to the lower management fees.

The relatively weak results presented by the insurance companies, together with the concerns of the effects of the regulatory measures in the insurance and long-term savings industries, led to a sharp decline in the market value of the insurance companies in the past year. The aggregate market cap of the five large companies declined by 29 percent from the end of August 2015 to the end of August 2016, with the decline ranging between 12 percent (Phoneix) and 42 percent (Migdal). As a result of the decline in the companies' market value, the ratio between the aggregate market cap and their accounting equity declines, to a low of 56 percent at the end of August 2016. Between September and November, insurance company shares recovered, with the aggregate market cap of the five large companies increasing by about 20 percent, so

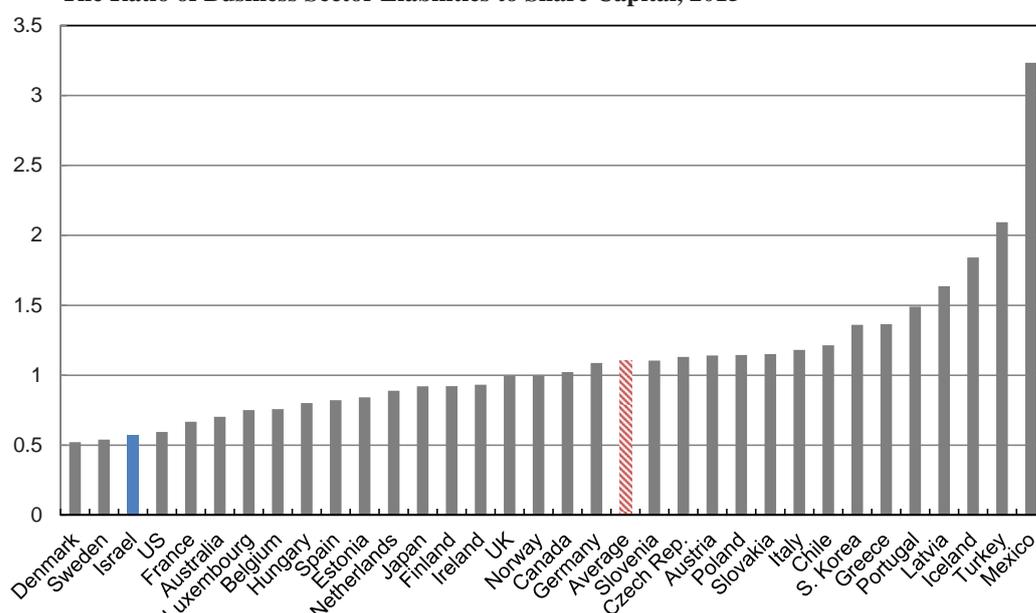
³⁸ This decline is the equivalent of about 0.1 percentage points in management fees from accumulated savings.

³⁹ The calculations here and below were made on the simplifying assumption that no change is expected in net deposits in the pension funds.

³⁷ A broad discussion of the insurance companies' asset portfolio and their investment risks appears in the June 2015 Financial Stability Report.

Compared to the rest of the world, Israel has a low ratio of nonfinancial business sector liabilities to share capital.

Figure 20
The Ratio of Business Sector Liabilities to Share Capital, 2015^a



^a The figures for Israel and Mexico are for 2014.
SOURCE: OECD.

that at the end of November it constituted about 65 percent of their accounting equity. Compared to the sharp decline in the insurance companies' value since August 2015, the establishment of the default pension funds generated a relatively moderate response in the market: a decline of 2.1 percent in the insurance shares and convertibles index (compared with a decline of 0.1 percent in the Tel Aviv 100 index) in the three days following the declaration of the winners in the tender (August 2–4, 2016).⁴⁰ The shares of all of the large insurance companies declined during that period. The decline in the share of Menorah, a company where the pension fund comprises a relatively large share of its revenue, was relatively sharp, but beyond that, a clear connection cannot be identified between the strength of the reaction of the company's share and the extent to which their pension funds contribute to income or profitability.

⁴⁰ The cumulative negative abnormal return of the insurance index, relative to the Tel Aviv 100, was about one standard deviation during this period. Therefore, it is not significantly different from zero, assuming normal distribution and no serial correlation in the residuals.

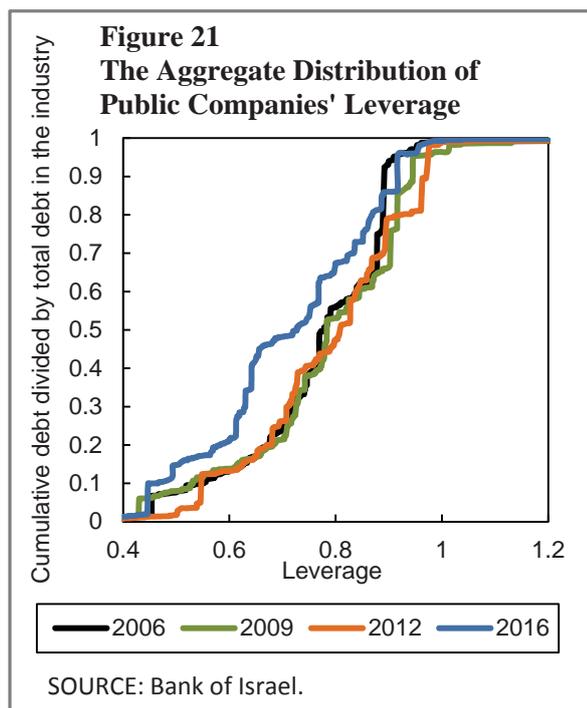
5. THE NONFINANCIAL BUSINESS SECTOR

a. The robustness of the business sector

Data on real activity generally showed that growth continued in the reviewed half-year. The Research Department's assessment is that GDP grew by 3.5 percent in 2016, and that in the coming years, the economy will continue to grow by about 3 percent per year, or slightly more than that. The Companies Survey for the third quarter of 2016 indicates a positive and statistically significant balance in the total business sector, and based on initial data from the Companies Survey for the fourth quarter, it can be assessed that business sector output increased in that quarter at a similar pace to the previous quarters. According to various assessments, the real aspect is expected to create positive effects on the financial robustness of the business sector.

In terms of the financial aspects of the nonfinancial public companies, an examination of the leverage ratio

For the most part, leverage has declined throughout the distribution over the years.



according to the ratio between liabilities and assets⁴¹ finds that its median and average reached historic lows, with the median at 60.2 percent and the average at 57.8 percent⁴², while they averaged 64.4 percent and 61.4 percent, respectively, between 2006 and 2015 (Figure 23). An examination of the leverage ratio according to the ratio between total liabilities and share capital (based on National Accounts data), finds that it is low by international comparison⁴³ (Figure 20).

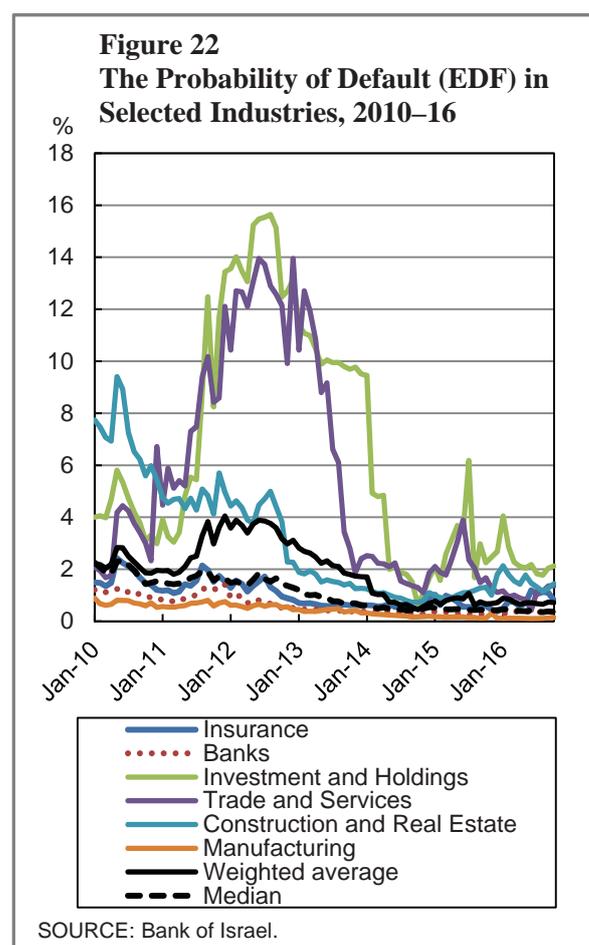
However, focusing on the central indices may sometimes blur risks on the sides. We therefore examined the entire distribution of leverage—its range and its edges. For this purpose, we sorted the nonfinancial public

⁴¹ The figure includes total liabilities—to banks, bondholders, suppliers, and so forth. These are taken from the financial statements of all the nonfinancial public companies published in the first half of 2016, unless otherwise noted.

⁴² The weighted average by level of liabilities.

⁴³ The OECD bases its calculations on National Accounts data, and therefore includes all companies in the economy, and not just public companies. Since small businesses are less leveraged than public companies, this calculation generates lower values. The OECD also bases its calculations on financial assets and liabilities only.

The probability of default in public companies remained historically low.



companies in Israel by level of leverage (lowest to highest), and examined the aggregate leverage relative to total debt in the industry.⁴⁴ Figure 21 shows the results in selected years. The distribution of leverage rates shows that on the right side, which reflects higher risk, there are no significant outlier phenomena. In addition, the improvement in the level of leverage—meaning the decline in the media and average—is observed generally through the distribution: For the most part it moves leftward over the years.

⁴⁴ Rapidly drawing close to 1 generally shows a low distribution around the central indices. In such a case, they tell most of the story, and vice-versa.

The likelihood of default in the public companies, according to the EDF indicator⁴⁵, remained historically low and with no significant changes (Figure 22). The average value of the indicator ranged during the reviewed quarter between 0.1 percent in the manufacturing industry and 1.8 percent in the investment and holdings industry. The average P/E ratio of the public companies included in the Tel Aviv 100 remained stable in the second half of the year (about 17, similar to the average in the past four years).

Table 1⁴⁶ shows various financial ratios in selected industries, as well as the real connections between the public companies included in those industries. Where the financial ratios improved (worsened) compared to the average of the past decade, they are colored in green (red). The manufacturing and quarrying industry is responsible for about 10 percent of business sector output, and about 16 percent of credit in the economy, and it shows improvement compared to the previous decade. Construction and real estate activity generally show an improved picture compared to the past. In the information and communication industry there

is a general worsening compared to the past, but the industry constitutes a small portion of credit, even though it constitutes a relatively large part of economic activity.

In places where the current ratio declined in 2015 to a value lower than the long-term average, the ratio remains higher than 1. The rapid ratio in 2015 is generally lower than the long-term average, but in all industries other than real estate, it is close to 1 or above it. In the real estate industry the rapid ratio is low, which is characteristic of the industry since inventory in the industry is not liquid.⁴⁷

The real estate industry by its very nature requires special attention. This industry is responsible for about one-third of the corporate bond market and about 15 percent of debt to banks (compared with 25 percent and 15 percent, respectively, in 2010). Since this industry has in recent years enjoyed rapid price increases, it is very exposed to a change in price trends. The median leverage rate in this industry⁴⁸ continued to decline, and reached 66 percent (the lowest level in the past

Table 1
The financial ratios (median) of selected industries and their share of the financial and real systems, year-end 2015

Industry	Weight in business sector product	Public companies as a share of the industry's business sector product	Industry's share of credit	Connectedness (NIS billion)	Leverage			Current ratio			Rapid ratio			Cumulative coverage ratio			Cash coverage ratio			EDF	Spread (percentage points)
					Year-end 2015	4-year average	10-year average	Year-end 2015	4-year average	10-year average	Year-end 2015	4-year average	10-year average	Year-end 2015	4-year average	10-year average	Year-end 2015	4-year average	10-year average		
Manufacturing and mining	19%	51%	16%	28	0.48	0.50	0.51	1.90	1.87	1.88	1.33	1.31	1.32	3.35	2.37	1.90	3.46	2.65	1.92	0.31	2.86
Construction	8%	8%	24%	29	0.78	0.80	0.80	1.19	1.16	1.16	0.41	0.42	0.45	2.70	2.46	1.99	0.81	0.89	0.37	0.89	2.65
Real estate activity	4%	51%	10%	4	0.66	0.68	0.70	0.90	0.82	0.84	0.56	0.54	0.59	2.66	2.38	1.97	1.41	1.05	0.70	0.42	2.39
Commerce and hospitality	16%	12%	17%	40	0.65	0.65	0.66	1.32	1.30	1.40	0.98	0.93	1.02	1.85	1.83	2.11	2.85	2.06	1.68	0.38	2.09
Information and communication	14%	34%	3%	23	0.55	0.57	0.54	1.35	1.41	1.74	1.29	1.36	1.69	1.17	2.44	2.65	2.72	3.00	2.25	0.64	1.70
Services	21%	4%	5%	36	0.50	0.52	0.53	1.73	1.88	2.01	1.71	1.76	1.90	0.16	0.55	0.63	0.01	0.40	0.65	0.43	1.88

⁴⁵ Expected Default Frequency. Moody's KMV calculates the EDF through a structural bond pricing model. The main components of the model include: the company's medium-term leverage, past profits, and investors' confidence in its future profits—which are reflected in the share's volatility. The Figure includes more companies that figures published in the past, leading to certain differences between the various publications.

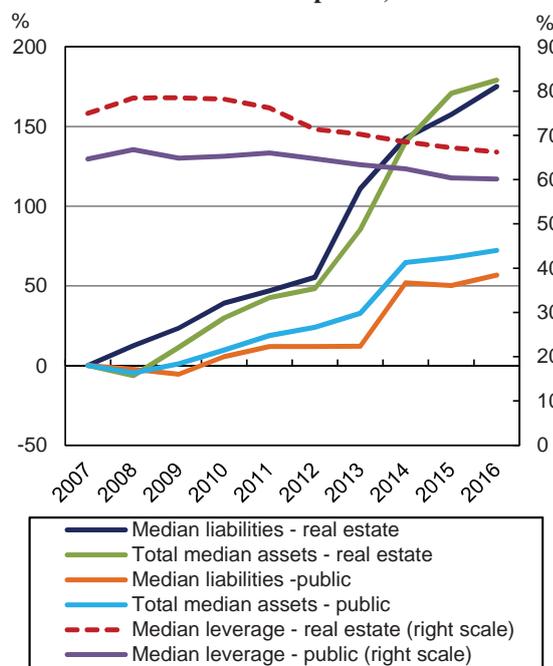
⁴⁶ Further explanations of the table appear in the June 2014 Financial Stability Report, page 47. It is important to note that the table in this report is based on the Central Bureau of Statistics industrial classification.

⁴⁷ The current ratio and the rapid ratio provide an indication of the company's ability to repay its short-term liabilities through its liquid assets. These ratios are obtained after the value of current assets or the value of current assets minus the value of inventory, respectively, are divided by liabilities. A ratio larger than 1 shows such an ability, but it is desirable that there be some remainder in case of losses and so forth.

⁴⁸ This industry is comprised mainly of two types of activity: construction, and activity in real estate (income-generating real estate). Each of these types of activity has different characteristics, but they are included in the same category.

The assets and liabilities of public real estate companies reached median values 179 and 175 percent higher, respectively, than their 2007 values. The parallel increases in all public companies were 72 and 57 percent, respectively.

Figure 23
Median Leverage and Change in its Components, Real Estate and Other Public Companies, 2007–16



SOURCE: Bank of Israel.

decade⁴⁹). An examination of the variables that feed the leverage formula—liabilities and total assets—shows that the public companies in the real estate field have median liabilities that are 175 percent higher than in 2007, and media assets that are 179 percent higher than in 2007.⁵⁰ This is compared with 57 percent and 72 percent, respectively, among all public companies including the real estate companies (Figure 23). Since the index of home prices has almost doubled in the past decade, and in view of the transition to IFRS rules—a method that strengthens the connection

⁴⁹ The decline in the levels of leverage was characteristic of the entire distribution (the distribution as a whole moved leftward, similar to the picture obtained in Figure 21), and an examination of its ends did not reveal exceptional findings in either the real estate companies or in public companies as a whole.

⁵⁰ The median liabilities in the construction industry increased by 121 percent, and median assets increased by 155 percent. In the real estate activity industry, they increased by 241 percent and 284 percent, respectively.

between asset values in the financial statements and changes in their market prices—it is possible that the increase in liabilities is mostly a result of an increase in the volume of liabilities taken on (which are not expected to change due to a decline in home prices), while the increase in real estate prices had an effect on the value of assets in the industry⁵¹, alongside the material increase in assets. The increase in liabilities provides some indication of the material increase in assets, and the cumulative revaluation is a result of the increase in real estate prices (the median cumulative revaluation in the past decade is positive, about NIS 45 million, and the average is about NIS 167 million per company). This fact emphasizes even more the real estate industry's exposure to a change in home price trends. It is expected that a change in trend will be accompanied by a decline in the volume of activity, and we will therefore see, in such a case, an increase in leverage levels as a result of the decline in the value of assets (the denominator) without a parallel decline in liabilities. Thus, we will see a worsening of real estate companies' other financial ratios.

When breaking real estate down into real estate activity (an industry with total liabilities of about NIS 280 billion) and construction (an industry with total liabilities of about NIS 80 billion), we find that the real estate activity industry is less leveraged than the construction industry. Median leverage of the real estate activity industry is 62.3 percent, while it is 80 percent for the construction industry.⁵²

Credit to the business sector and its quality

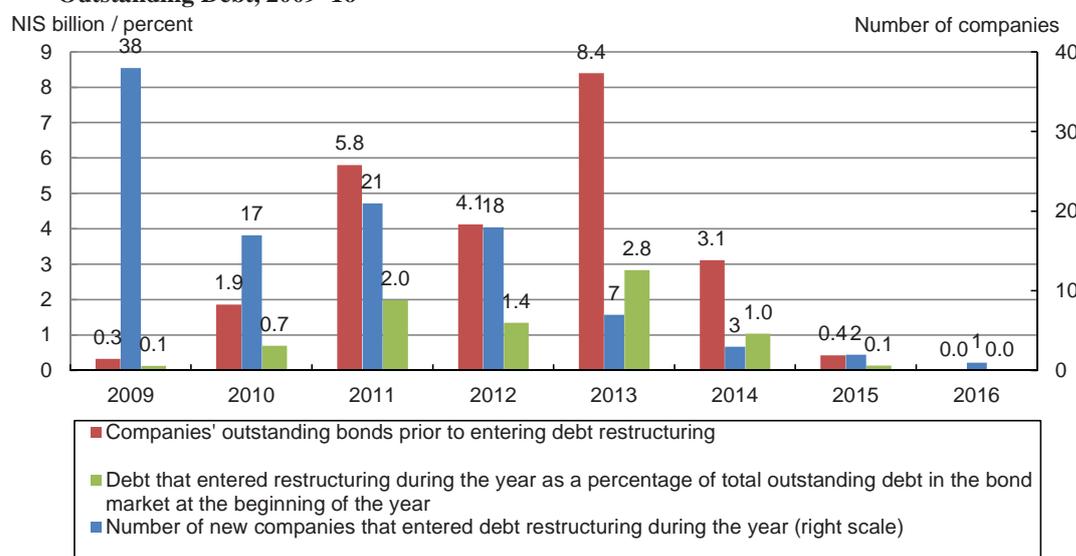
Total business sector debt increased by NIS 11 billion in the third quarter, to NIS 841 billion in September. This increase was mostly the result of net issuances of tradable bonds in Israel.

⁵¹ See, for instance, the analysis in the Financial Stability Report for the first half of 2015.

⁵² The median values of liabilities increased 3.5 times in the past decade, while media assets increased 4.8 times. The parallel values for real estate activity companies increased by 3.6 times and 4.8 times, respectively.

In 2016, one company entered debt restructuring.

Figure 24
The Number of Companies that Entered Debt Restructuring for the First Time, and Outstanding Debt, 2009–16^a



^a 2016 data are as of the end of November.

SOURCE: Tel Aviv Stock Exchange.

A total of about NIS 24 billion in corporate bonds were issued by the business sector (including foreign, tradable and nontradable) between July and November.⁵³ The composition of issuances by rating from the start of the year until November is similar to the composition in 2015. A breakdown by industries shows that 46 percent of bonds issued by the business sector in 2016 (until November) belong to the real estate industries, compared with 58 percent in 2015. During this period, foreign companies issued tradable and nontradable bonds totaling NIS 4 billion (NIS 3.2 billion of which are tradable bonds from the real estate industry, compared with NIS 5.5 billion in 2015 as a whole).

In 2016 (until November) one company entered debt settlement proceedings for the first time (Figure 24). Between December 2016 and October 2017, repayments of corporate bonds totaling about NIS 51

billion are expected. Of that total, about NIS 39 billion are in tradable bonds with a yield below 8 percent, and about NIS 11 billion are in bonds that are not classified into yield groups for technical reasons.

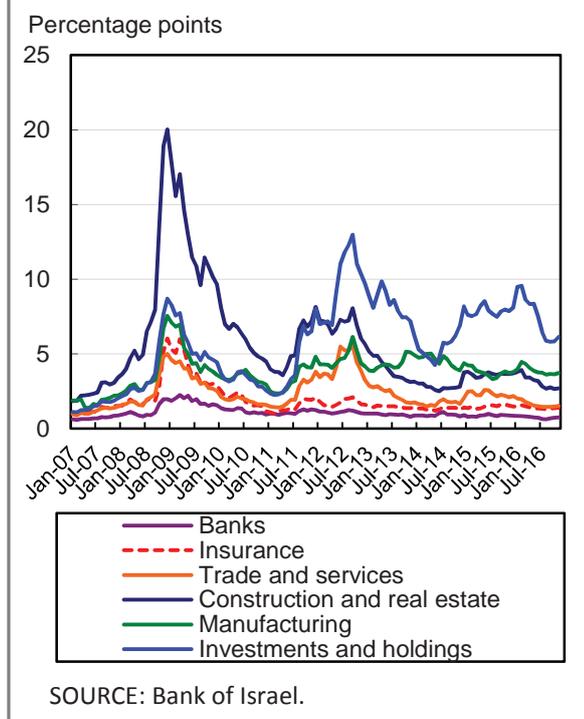
Bonds (including those of financial companies) that traded at a yield of less than 8 percent increased their proportion by about 3 percentage points in the second half of the year, to 96 percent. At the same time, the composition by rating remained stable, and 97 percent of corporate bonds are rated A- or higher. There were no significant changes in the industry composition, with real estate and banks remaining responsible for the majority of corporate bond debt.

The average corporate bond yields and spreads, viewed by rating group and by industry, were lower in the second half of 2016 than the average in the first half and in the past three years (as of the end of November; Figure 25). Viewed daily, the spreads were generally within the range that had characterized them in the past three years. In contrast, the spreads of bank bonds declined to the lowest level since the financial

⁵³ The volume of issuances of all segments (including banks and insurance companies) was NIS 57.5 billion in the first 11 months of 2016, while the total for all of 2015 was NIS 51.6 billion. The amount for 2016 is the highest amount since 2007.

The average yields and spreads of corporate bonds in all industries was lower in the second half of 2016 than it was in the first half.

Figure 25
The Weighted Average Spreads,
January 2007 to November 2016



crisis. However, the spreads in other industries remain higher than the lowest levels recorded in the past decade, mainly prior to the financial crisis. The spreads declined in the US bond markets as well. As noted in the Financial Stability Report for the first half of 2016, the low spreads can be explained by the level of activity in the economy, which remains positive, the low probability of default, the low level of the P/E ratios, and other reasons. While these improvements support a decline in spreads, it seems that the decline is also affected by the fact that the interest rate and yield environment in Israel and globally has been low for a considerable time, through lower pricing of risk.

From the US elections until the end of the surveyed period, yields in the government bond markets in Israel and the US increased, and the interest rate in the US was raised (alongside expectations that it will be raised

at least twice more in the coming year). The picture presented in the previous paragraph is in line with a very low yield environment globally and in Israel, but if the changes in that environment continue, they could have an effect on the pricing of risk and on the yields required of bonds and shares.

6. FINANCIAL ASSET PRICES

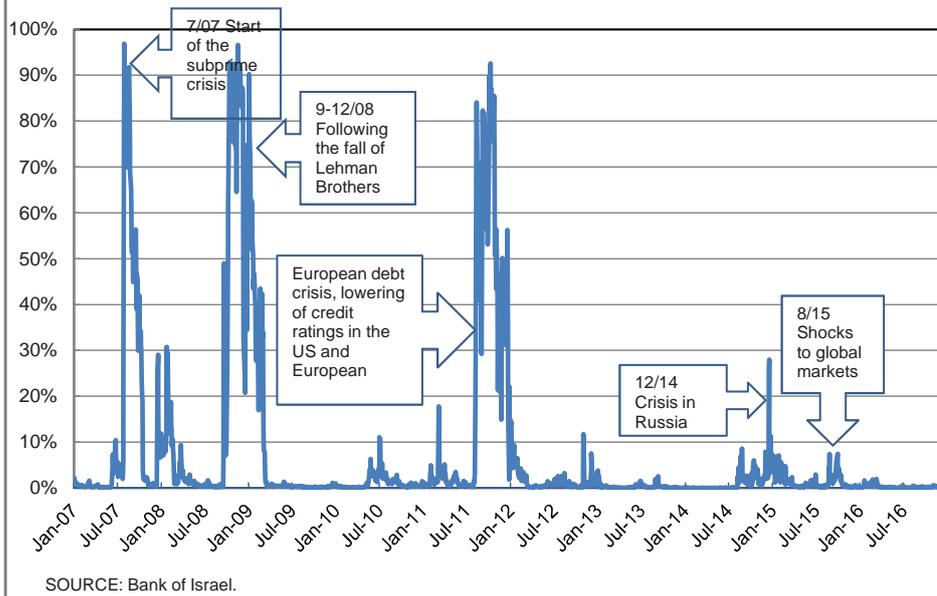
a. Developments in asset prices

The following analysis relates to the period from June 1, 2016 to November 30, 2016. During this period, there were no exceptional events in the domestic stock market. In total, there were price increases and a reduction in the risk indices. The Tel Aviv 100 index increased by 4.3 percent, the S&P 500 increased by 4.8 percent, and the Europe Stoxx 600 increased by 3.7 percent. The Tel Aviv 75 was prominent in comparison, increasing by 14 percent. The domestic VIX index declined from an average of 13.5 in June to an average of 11.7 in November. Risk indices on the S&P 500 declined from 17.8 to 15.2, and on the Europe STOXX 600 they declined from 30.9 to 21.9. The Israeli VIX index is generally low by international comparison. In the environment of the US presidential elections, share prices there declined, but the declines were replaced with increases within a short time. The domestic stock market maintained relative stability. In contrast, government bond prices declined, and the assessment of investments houses was that this was a result of uncertainty concerning the expected policy of the president-elect. The US bond market had a marked effect on the domestic bond market as well, where prices declined.

The stress index shows that the past year was characterized by relative quiet in the capital markets (Figure 26; the index was last revised on December

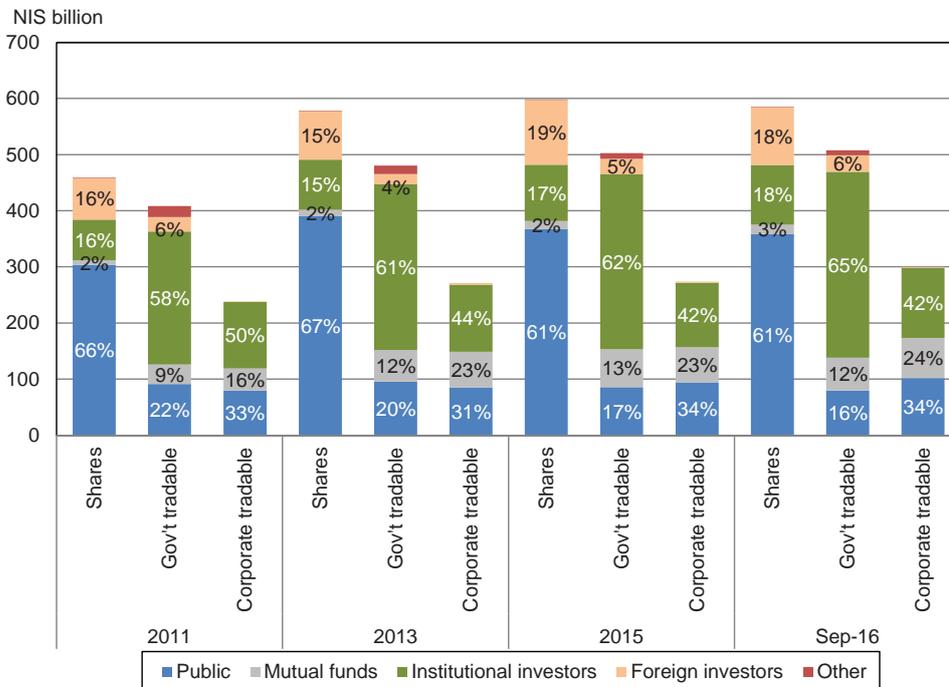
The past year was characterized by relative quiet in the capital markets.

Figure 26
Stress Index, 2007–16



The distribution of holdings among the institutional investors, the public, the mutual funds and others is relatively stable.

Figure 27
Composition of Holdings in the Capital market, 2011–16



12, 2016).⁵⁴ The Brexit decision in the UK, which took place at the end of the previous half, and the US elections were also barely reflected in the index (with values ranging around half a percent).

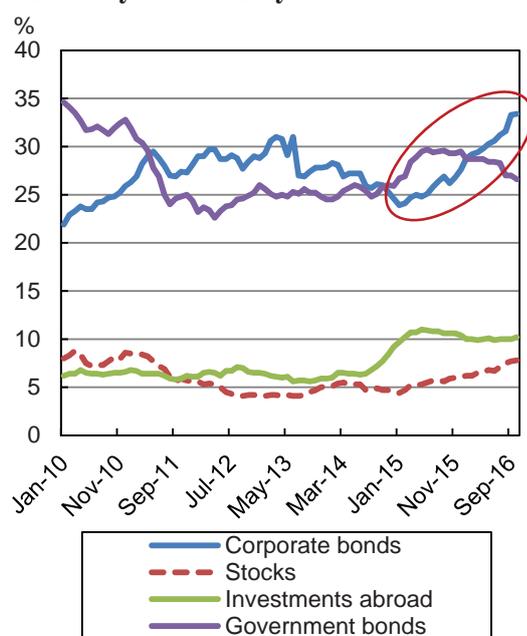
b. Exposure to asset prices

The interest rate and yield environment in Israel and globally remained very low in the reviewed half. The low yields of solid assets—government bonds and others—incentivize the search for higher yields. However, even though the interest rate environment

has been low for a long time, during the reviewed period—as in previous periods—there was relative stability in how holdings are divided among the institutional investors, the public, the mutual funds and others (Figure 27). With that, it seems that demand for assets that have the potential to generate a higher yield increased: The public increased demand for mutual funds specializing in the domestic stock markets.⁵⁵ From January 2010 to October 2016, the mutual funds increased their rate of holdings of corporate bonds from 23.9 percent to 33.4 percent, and of stocks from 4.4 percent to 7.8 percent (Figure 28).

The mutual funds increased their holdings of corporate bonds and stocks.

Figure 28
Composition of Mutual Fund Assets,
January 2010 to July 2016



SOURCE: Bank of Israel.

⁵⁴ See Sa'adon, Y. and M. Graham (2013), "A Composite Index for Tracking Financial Markets in Israel", Discussion Papers Series 2013.01, Bank of Israel Research Department. This index is based on many series from the capital markets. It assesses the likelihood that the capital markets are undergoing a crisis identical in intensity to the crises of 1998 and 2002, and measures the intensity of the shocks that took place **in the past**. In the index shown here, we replaced three of the series included in the original index—the two series of standard deviations in bonds and the bond liquidity series. Here, these series are based on the relevant bond indices, and not on an independent calculation using all bond series.

7. THE HOUSEHOLD SECTOR

Household debt in Israel continued to increase rapidly in 2016—by about 6.5 percent after increasing by about 7 percent per year in the two previous years. In September 2016, household debt was NIS 501.5 billion. However, the household debt to GDP ratio increased in 2016 by just half a percentage point, to about 41 percent, further to the very moderate increases in the ratio since 2006. As Figure 29 shows, the ratio is also low compared to other advanced economies.⁵⁶

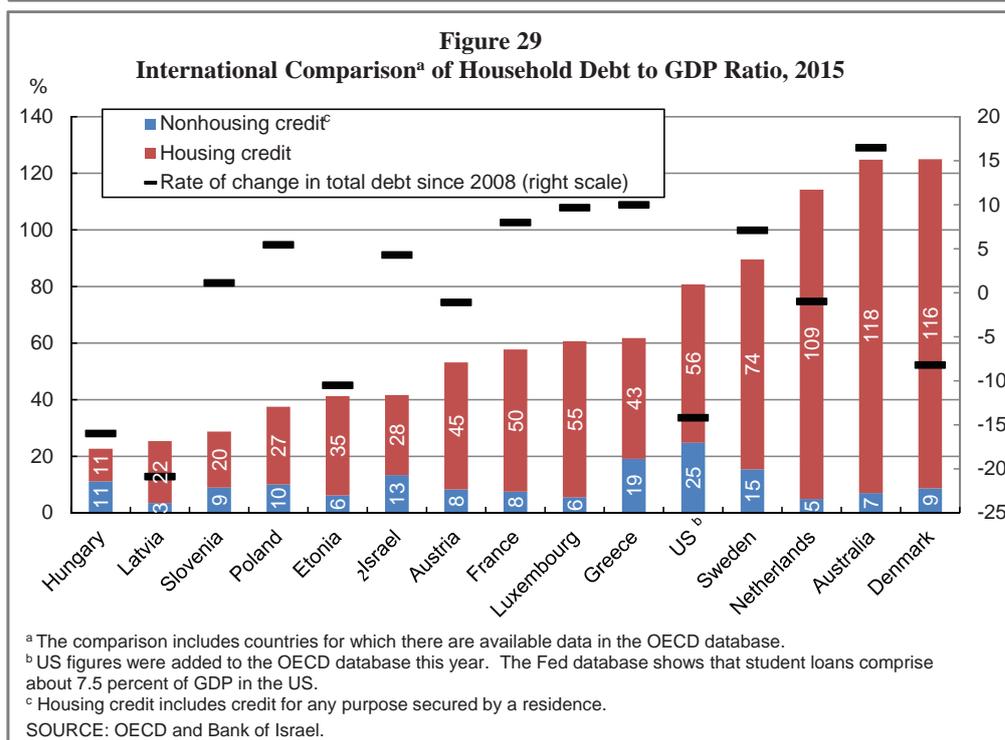
Nonhousing debt continued to increase rapidly. In the first three quarters of 2016, it increased at an annual rate of 7.6 percent, mainly because the increase of debt to institutional entities and credit card companies accelerated in recent months.

Housing debt continued to increase in the first three quarters of the year, at an annual rate of 5.8 percent (compared with 6.3 percent in 2015 and 5.3 percent in 2014), to NIS 337 billion at the end of September. The banks remain the almost sole source of housing credit, providing 95 percent of it. While, housing credit from institutional entities has been growing rapidly in

⁵⁵ And lowered its exposure to ETNs that mimic stock indices abroad.

⁵⁶ However, the ratio between nonhousing debt and GDP is not low by international comparison (see the June 2016 Financial Stability Report).

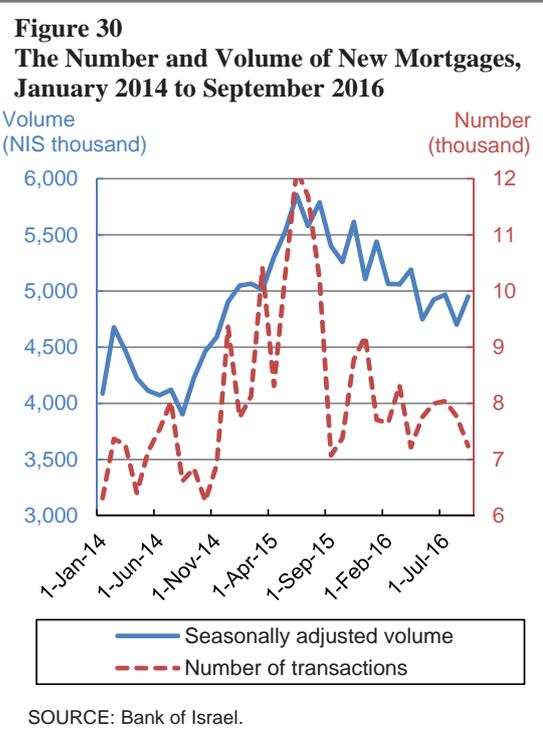
Even though Israel's household debt to GDP ratio is low by international comparison, the ratio of nonhousing debt to GDP is not low.



recent years, it is still low (about NIS 5.6 billion in September).⁵⁷

Since the summer of 2015, there has been a marked decline in the volume of mortgages issued (seasonally adjusted data), since the tax on investment homes increased at that time⁵⁸, but the volume of mortgages remains historically high (Figure 30). In the past 12 months, the rate of mortgages issued for the purchase of investment homes also declined. In parallel, in recent months the purchase of first homes as a share of new transactions, and the share of mortgages for

Since the summer of 2015 there has been a marked decline in the number and volume of new mortgages, but the two parameters remain high.



⁵⁷ About 90 percent of this credit was issued by 5 major institutional entities. In recent months, the banks have been expanding the sale of mortgages to institutional entities. In June 2016, a particularly prominent month, two institutional entities purchased large-scale mortgage portfolios, and these transactions contributed to the increase in outstanding housing loans from the institutional entities. More details appear in the chapter dealing with the main risks.

⁵⁸ Prior to the increase, in June 2015, there was a sharp increase in investors as a share of total home buyers. More details appear in the chapter dealing with households in the December 2015 Financial Stability Report.

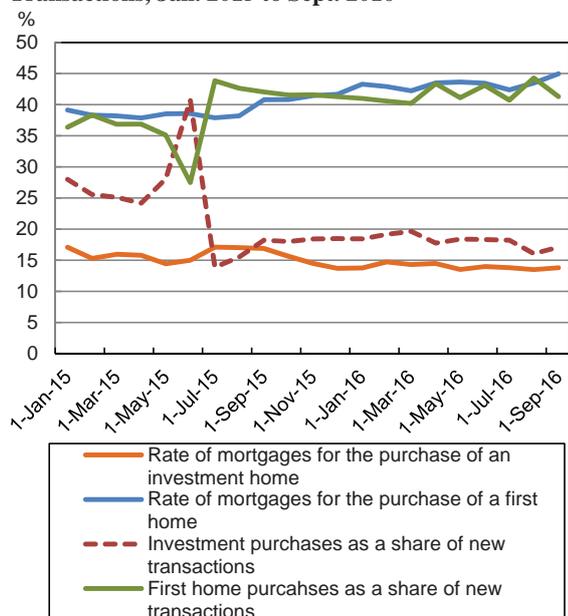
Table 2
Change in the mortgage interest rate and average term to repayment, Oct. 2015 to Sept. 2016

	Date	CPI-indexed variable interest	CPI-indexed fixed interest	Unindexed variable interest	Unindexed fixed interest
Distribution of mortgages	Oct-15	14.7	19.2	34.9	30.1
	Sep-16	14.3	14.0	38.1	32.7
	Change (percent)	-0.4	-5.2	3.2	2.6
Interest rate on mortgages	Oct-15	2.4	2.6	1.4	3.5
	Sep-16	3.5	3.7	2.1	4.3
	Change (percentage points)	1.1	1.2	0.7	0.8
Term to repayment	Oct-15	25.7	15.9	23.9	16.8
	Sep-16	26.2	17.6	24.9	18.1
	Change (years)	0.5	1.7	1.0	1.3

the purchase of a first home, increased (Figure 31). Investors are considered less risky borrowers than first-time home buyers, since the loan-to-value (LTV) ratio among investors is significantly lower than the average. The estimated average LTV ratio when taking out a mortgage was 52.1 percent in the past 12 months,

From the beginning of 2015 until September 2016, there was a slight decline in the rate of mortgages for the purchase of investment homds, with a parallel increase in the rate of mortgages for the purchase of a first home.

Figure 31
The Rate of Investors and of Those Purchasing a First Home in the Mortgage Market, and in the Number of Transactions, Jan. 2015 to Sept. 2016



SOURCE: Bank of Israel.

while the parallel estimate among investors during the same period was 43.7 percent.⁵⁹

In the past 12 months there was a significant increase in the interest rate on mortgages in all tracks (Table 2). The rate on CPI-indexed mortgages increased more than on mortgages in the other tracks. The interest rate on CPI-indexed fixed-rate (variable-rate) mortgages increased by 1.2 (1.1) percentage points within a year. The increase in mortgage interest rate can be explained, inter alia, by the increase in the cost of sources raised by the banks on the capital market and the macroprudential restrictions imposed on mortgages in recent years.⁶⁰ In parallel, there was an increase in the risks derived from housing credit, which was reflected in an increase in the average mortgage and in the term to repayment of the mortgages.

In particular, in view of the increase in home prices, in the average mortgage and in the interest rate on mortgages, the average term to repayment also increased since July 2015. Following five years in which the average term to repayment was about 19.8 years, it increased to 21.8 years (as of October 2016). The increase was recorded in all interest rate tracks,

⁵⁹ While a loan to an individual investor is less risky than that of a first-time home buyer, there is a higher likelihood among investors to sell the dwelling within a short time if home prices decline.

⁶⁰ More details appear in "Israel's Banking System: Annual Survey" for 2015, and in this report in the chapter dealing with the main risks.

and is particularly prominent in the CPI-indexed fixed-rate track.

Since home prices continued to increase and investors reduced their share of the mortgage market⁶¹, in the past 12 months the estimated size of the average mortgage increased by 10 percent, from NIS 625,000 in October 2015 to about NIS 680,000 in September 2016. The distribution of mortgages by interest rate and indexation shows an increase in the prime-indexed track and in the unindexed fixed-rate track (Table 2).

To provide a clear explanation, let us compare two average households. One took out a mortgage in September 2016, and the other took one out in October 2015. The increase in the mortgage interest rate and in the size of the average mortgage increases the first household's yearly payment by NIS 5,900 on the interest component of the mortgage, which is the equivalent of more than one-third of the average mortgage repayment. This increase in cost took place even though there was no change in the Bank of Israel interest rate, and even though this interest rate has a direct impact on the interest rate in the unindexed variable-rate track. Since loans in that track constitute about 38 percent of the mortgage amounts (on average as of September 2016), they could create a risk in case the Bank of Israel interest rate increases.

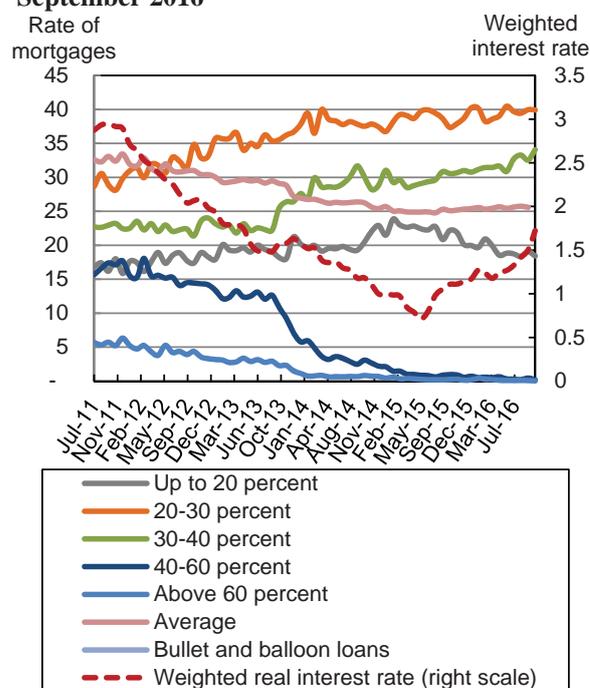
The increase in the interest rate on new mortgage loans has not so far led to an increase in the estimated payment to income (PTI) ratio, apparently because households chose to extend the term to repayment.⁶² However, if the interest rate on mortgages continues to increase, home prices continue to climb, and household income does not change significantly, the PTI ratio will increase, which could weaken the financial stability of households. If this scenario is accompanied by an increase in the Bank of Israel interest rate, the risk

⁶¹ The average size of mortgages taken out by investors is lower than that of mortgages taken out by those purchasing a sole or replacement dwelling.

⁶² When individual data on borrowers for the relevant years are obtained, we will be able to examine whether there was a change in the distribution of borrowers' income.

While the estimated average PTI rate has not changed in the past two years, its distribution shows an increase in the share of groups where it is 20-30 percent and 30-40 percent and a decline in the share of groups where it is lower than 20 percent and higher than 40 percent.

Figure 32
Distribution of New Mortgages by PTI and Weighted Real Interest Rate, July 2011 to September 2016



SOURCE: Bank of Israel.

of borrower default will increase, particularly if they belong to the lower deciles, because those borrowers are more exposed to unemployment and to the unindexed variable interest rate (which accounts for a higher proportion of their loans).⁶³

Alongside this, the estimated LTV and PTI ratios remained low in the first two quarters of the year, and narrowed even more in recent months. The estimated average LTV rate remained unchanged, and declined to a historic low of 50.68 percent in August. Further to the trend that developed in recent years, the estimated average PTI rate remained low, at 25.6 percent in August. However, the distribution (Figure 32) shows

⁶³ See the discussion in the chapter dealing with households in the June 2015 Financial Stability Report.

an increase in the proportions of groups where the PTI rate is 20-30 percent and 30-40 percent, against a decline in the proportion of groups where it is lower than 20 percent. This development also can partly explain the increase in mortgage interest rates.

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

	2012	2013	2014	2015	2016	Updated to
A. The global environment						
Global real GDP growth rate	3.5	3.3	3.4	3.2		31/12/2016
World trade growth rate	2.8	3.5	3.8	2.6		31/12/2016
Emerging Markets Bond Index (EMBI) spread ^a (periodic average)	3.4	3.2	3.3	4.2	4.1	09/01/2017
Chicago Board Options Exchange VIX index (periodic average)	17.8	14.2	14.2	16.7	15.8	09/01/2017
B. The domestic environment						
Government debt to GDP ratio (end of period)	67.0	65.7	64.8	62.6	61.1	30/09/2016
Net external debt to GDP ratio (end of period)	-25.2	-26.8	-35.0	-39.7	-38.9	30/09/2016
Total private credit to GDP ratio (end of period)	118.6	113.4	112.1	110.7	111.0	31/10/2016
Business sector credit to business sector product ratio (end of period)	106.8	99.0	97.0	94.3	94.2	31/10/2016
Debt burden on households—the ratio of credit to households to disposable private income (end of period)	58.0	58.7	59.4	60.7		
Israel's sovereign risk premium (5-year CDS spread—periodic average)	1.7	1.20	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)	2.6	1.5	0.4	-0.1	0.03	09/01/2017
The corporate bond market spread—total bonds excluding financial corporate bonds (periodic average)	6.6	4.4	3.2	4.0	3.6	30/09/2016
C. Financial Assets						
Risk indices (periodic average)						
Implied volatility:						
of the exchange rate	10.8	11.5	10.8	11.0	9.6	
of the Tel Aviv 25 index	25.3	17.5	15.7	20.0	21.6	
Actual volatility:						
of the exchange rate	6.6	6.2	5.3	8.1	5.8	09/01/2017
of the General Shares Index	11.7	8.9	9.1	13.1	12.8	09/01/2017
Prices and yields (annual terms)						
Rate of change of the shekel vis-à-vis the dollar (during the period)	-2.3	-7.0	12.0	0.3	-1.5	09/01/2017
Rate of change in the effective exchange rate (during the period)	-0.7	-7.6	3.3	-7.3	-4.8	09/01/2017
Rate of change in the General Shares Index (during the period)	4.6	15.3	11.5	6.8	-11.1	09/01/2017
Yield to maturity on unindexed 5-year government bonds (periodic average)	3.2	2.5	1.7	1.0	0.9	09/01/2017
D. Resilience of the financial system						
The banking system^b (end of period)						
Total core capital to risk components ratio ^c	14.9	14.7	14.2	13.9	14.5	30/09/2016
Core Tier 1 capital to risk components ratio ^c	9.1	9.7	9.6	9.9	10.5	30/09/2016
Ratio of annual loan loss provision to total balance-sheet credit to the public (multiplied by 100)	0.41	0.25	0.15	0.12	0.01	30/09/2016
Insurance companies (end of period)						
Initial capital as a share of total assets	5.6	5.7	5.6	5.4	4.5	30/09/2016
Risk assets as a share of nostro assets	41.5	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	66.9	68.6	70.0	69.6	71.5	30/09/2016
Ratio of liquid assets to liquid liabilities	30.6	33.8	38.1	38.2	34.0	30/09/2016
E. Market liquidity						
Total trading volume in the markets ^e (periodic average, NIS billion)	4.4	4.7	4.7	4.7	4.2	09/01/2017
Spread between highest and lowest NIS/\$ exchange rate quote (periodic average)	0.34	0.32	0.36	0.66	0.44	09/01/2017

^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.