בנק ישראל
BANK OF ISRAEL

Financial Stability Report

June 2014

BANK OF ISRAEL

FINANCIAL STABILITY REPORT

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Introduction

The Bank of Israel has begun to publish a periodic Financial Stability Report on the domestic financial system, as is common among central banks in advanced economies. This decision is anchored in the definition of the Bank of Israel's role as per the Bank of Israel Law, 5770–2010.

Even though the domestic financial system has demonstrated impressive resilience both during the global financial crisis of 2008 and following it, Israel, like other countries, must identify the systemic risks faced by the financial system and provide warnings of such risks, and the Financial Stability Report is intended to serve this purpose. Accordingly, the report points out the risks that have been identified in the financial system, and provides the public in Israel and abroad with an update of the state of the system, while acknowledging the importance of transparency and its contribution to increasing awareness of the risks and spurring the handling of those risks.

The focus on systemic risks developing in the financial system—meaning the risks that hold the potential to significantly impact real economic activity—reflects one of the main lessons of the 2008 crisis, since that crisis emphasized the importance of strengthening the financial system's ability to withstand shocks and of moderating the impact of such shocks on economic activity. Following the crisis, central banks around the world began adopting macroprudential policies—policies that are founded on a comprehensive view of the financial system—with the objective of reinforcing systemic financial stability. This policy includes looking at all of the components of the financial system and the interrelationships between them, in addition to tracking and supervising the individual financial institutions. It strives to identify the systemic risks developing in the financial system as early as possible, and to deal with them, to reduce the risk of the development of crises, and to improve the ability to deal with them should they take place.

In the Israeli economy as well, authorities took measures as a result of the crisis, with the objective of identifying systemic risks in the financial system and improving the ability to deal with them when necessary: The authorities supervising the financial system have tightened cooperation with each other, among other things through the establishment of an inter-institutional team to identify systemic risks. Coordination between all of the regulators responsible for the proper functioning of the financial system is essential for the implementation of effective macroprudential policy, and it is likely to improve if a joint financial stability committee is established as recommended by the International Monetary Fund. The use of macroprudential tools to identify and handle systemic risks has also been increased in Israel; the Supervisor of Banks has used these policy tools to reduce the banks' exposure to the rapid increase in the volume of mortgages, and alongside this has used stress tests for banks to assess risks in the banking system. Finally, the Bank of Israel has established a Financial Stability Division within the Research Department, and has begun to publish this periodic Financial Stability Report.

The report now being published includes an outline of the principal risks that the Bank of Israel has identified in the financial system. It contains a survey of the risks in the various segments of the financial system—the banks, the insurance companies, other institutional investors, the financial markets, and the payment and settlement systems—as well as four boxes that deal with the household sector, the business sector, direct loans granted by institutional investors, and the exchange traded notes market.

Dr. Karnit Flug

Governor

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

The domestic financial system continued to demonstrate stability in recent months, despite a challenging global environment and low interest rates in Israel and abroad. The main risk to which the financial system is exposed lies in the housing market, given the banks' high level of exposure to the construction and real estate industry and to mortgages, and due to the sizable proportion of housing in households' asset portfolio. The risk derives from the possibility of a domestic and/or external shock that may lead to a sharp and rapid increase in interest rates and/or to a recession and a negative impact to the income of borrowers, and that would be accompanied by a sharp and rapid turnaround in the housing market. The financial system is also exposed to underpricing of risks in the corporate bond market. This may negatively impact the process of resource allocation in the economy, and in the case of a sharp turnaround in the markets, it may have a negative impact on pension savings, banks exposed to companies that have issued bonds, and the supply of credit in the nonbank market.

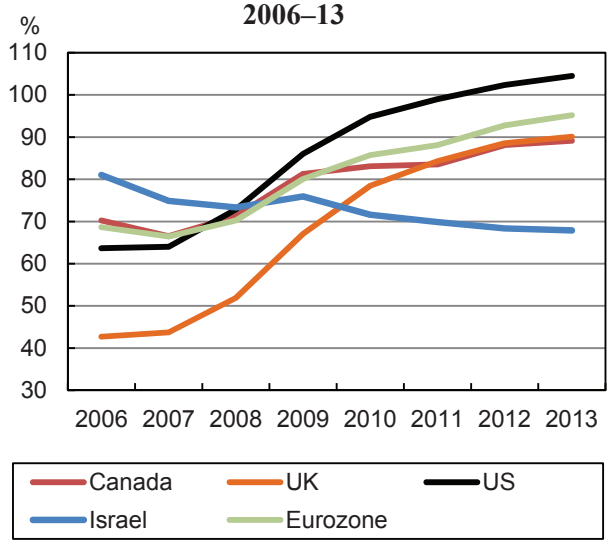
a. Introduction

The domestic financial system operated in the last quarter of 2013 and the beginning of 2014 in a global environment that was challenging, but still more stable—due to the continued, although slow, recovery of the advanced economies from the global financial crisis of 2008. **The economic recovery in the US continued to gain traction**, although in the first quarter of 2014 it was weak due to transitory factors, and the Federal Reserve began tapering the volume of quantitative easing at the end of 2013, on the path to normalizing financial policy in the future.

[1] The data in this report are up-to-date to various dates among the sections, as per the availability of data. The analysis relates to events that took place until the end of June 2014.

The government debt to GDP ratio in Israel has been declining since the crisis, in contrast to the global trend.

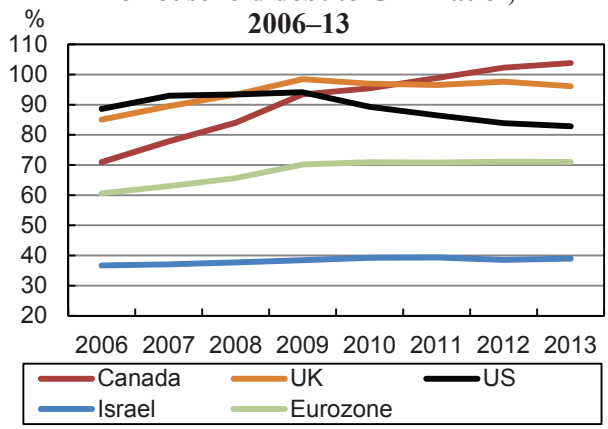
Figure 1a
The government debt to GDP ratio, 2006–13



SOURCE: Global data—International Monetary Fund; data on Israel—Bank of Israel.

The household debt to GDP ratio in Israel increased slightly, and is low by international comparison.

Figure 1b
The household debt to GDP ratio[a], 2006–13



[a] In Israel, debt data on private non-profit organziations are included in the business sector, while in other countries, they are included in household debt, but this amount is very small.

SOURCE:Global GDP data—International Monetary Fund; Global household debt data—Bank for International Settlements (BIS); data on Israel—Bank of Israel.

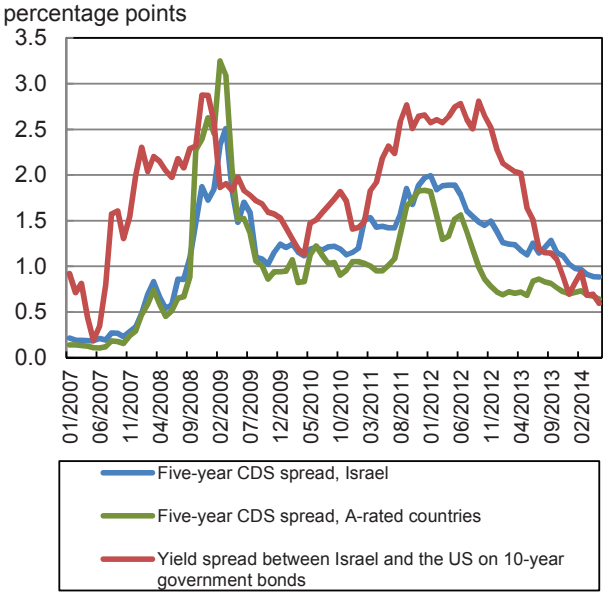
The eurozone also moved to moderately positive growth, following a number of quarters of contraction, and the concern over the dissolution of the eurozone decreased greatly. In addition, measures were taken to strengthen banks' capital and to increase integration of the financial system in the eurozone. With that, some European countries still suffer from a high level of debt, low inflation rates to the point that there is concern of deflation, and high unemployment rates. These led the European Central Bank (ECB) to lower the interest rate in June 2014 and to institute a negative interest rate on bank deposits at the ECB, with the objective of increasing the supply of credit and investments. **Growth weakened in emerging markets, and some of them are exposed to large capital outflows and a reduction in credit in the case of a turnaround in the markets**. This exposure has increased recently as a result of the start of the tapering—gradual reduction of quantitative easing—process in the US, since this process is expected to lead to an increase in interest rates globally in the medium term.

The situation abroad has an effect on the Israeli financial system through the financial and the real channels. The financial channel includes the effect that financial institutions abroad have on the domestic financial institutions, through institutional connections, and the effect that asset prices in the financial markets abroad have on asset prices in the domestic financial markets. These have a direct impact on the financial institutions through asset prices in their nostro asset portfolios, and also have an indirect impact through the profitability of their borrowers. The real channel includes the effect that demand abroad has on exports and on private consumption, and through them on the risk in the credit portfolios of the financial institutions.

Against the background of this global environment, the domestic financial system continued to demonstrate a high level of resilience, due to the fact that the macroeconomic state of the economy is relatively good and that it has enjoyed stable growth in recent years, and due to the continued close supervision of the financial institutions (Table 1 and Table 2). Among the main factors contributing to the resilience of the economy are: the continued decline of the government debt to GDP ratio, while it has increased in a significant number of countries in the world since the crisis (Figure 1a); particularly low debt ratios among households (Figure 1b), which increased only slightly in recent years even though credit to households increased; the current account surplus; and the high level of the foreign exchange reserves. The relative stability of the Israeli economy is reflected in the fact that the CDS spreads have greatly contracted in recent months, *inter alia* due to the relative calm in geopolitical risks, and in the fact that the yield spreads vis-à-vis abroad have contracted, also due to the fiscal policy adopted by the government that has acted to restrain the deficit (Figure 2).

Israel's sovereign risk premium has declined.

Figure 2
5-year CDS spreads and yield spreads between Israel and the US, monthly averages, 2007–14



SOURCE: Bank of Israel.

In order to strengthen the resilience of the financial system, a number of important reforms in the financial system have been enacted since the beginning of the previous decade, including pension reform, the reform

Table 1
Main indicators of the stability of the financial system in Israel, 2010–14
(percent)

	2010	2011	2012	2013	2014	Updated to
A. The global environment						
Global real GDP growth rate	5.1	3.8	3.2	3.0		31/12/2013
Global trade growth rate	12.6	6.0	2.8	2.8		31/12/2013
Emerging Markets Bond Index (EMBI) spread (periodic average)	3.0	3.4	3.4	3.2	3.3	31/05/2014
Chicago Board Options Exchange VIX index (periodic average)	22.5	24.2	17.8	14.2	14.2	31/05/2014
B. The domestic environment						
Government debt to GDP ratio (end of period)	69.9	68.3	66.9	66.1		31/12/2013
Net external debt to GDP ratio (end of period)	-24.7	-25.8	-26.6	-28.5		31/12/2013
Total private credit to GDP ratio (end of period)	127.2	124.4	118.5	112.9	111.7	31/03/2014
Business sector credit to business sector product ratio (end of period)	118.0	115.0	107.9	99.7	98.1	31/03/2014
The debt burden on households—the ratio of credit to households to disposable private income (end of period)	58.2	58.3	57.5	57.3		31/12/2013
Israel's sovereign risk premium (5-year CDS spread—periodic average)	1.18	1.58	1.69	1.20	0.93	31/05/2014
The differential between yields on 10-year shekel-denominated government bonds and 10-year US Treasury Bills (periodic average)	1.50	2.21	2.60	1.45	0.73	31/05/2014
The spread in the corporate bond market—total bonds excluding financial corporate bonds (periodic average)	3.8	4.0	6.0	4.1	3.0	31/05/2014
C. Financial Assets						
Risk indices (periodic average)						
Implied volatility:						
of the exchange rate	8.5	10.3	9.7	8.8	8.2	31/05/2014
of the Tel Aviv 25 index	23.9	25.7	23.9	16.8	15.9	31/05/2014
Actual volatility:						
of the exchange rate	6.4	9.2	6.6	6.2	4.1	31/05/2014
of the general shares index	13.8	18.7	11.7	8.9	9.9	31/05/2014
Prices and yields						
Change of the shekel vis-à-vis the dollar (during the period)	-6.0	7.7	-2.3	-7.0	0.1	31/05/2014
Change in the effective exchange rate (during the period)	-7.0	4.8	-0.8	-7.6	-0.4	31/05/2014
Change in the general shares index (during the period)	12.6	-22.1	4.6	15.3	7.1	31/05/2014
Yield to maturity on unindexed 5-year government bonds (periodic average)	3.8	4.2	3.2	2.5	2.0	31/05/2014
D. Resilience of the financial system						
The banking system[a] (end of period)						
Total core capital to risk components ratio	14.0	14.0	14.9	14.8		31/12/2013
Core Tier 1 capital to risk components ratio	8.5	8.4	9.1	9.8		31/12/2013
Ratio of annual loan loss provision to total balance-sheet credit to the public (multiplied by 100)	0.39	0.39	0.41	0.25		31/12/2013
Insurance companies (end of period)						
Initial capital portion of total assets	6.0	5.7	5.6	5.7		31/12/2013
Risk assets as a share of nostro assets	39.3	40.3	41.5	42.6		31/12/2013
Provident funds[b] (end of period)						
Liquid accounts as a share of total liabilities	59.6	63.8	66.9	68.6	68.3	31/03/2014
Ratio of liquid assets to liquid liabilities	28.3	29.0	30.6	33.8	34.4	31/03/2014
E. Market liquidity						
Total trading volume in the markets[c] (periodic average, NIS billion)	5.0	4.8	4.4	4.6	4.6	31/05/2014
The spread between high and low shekel-dollar quotes (periodic average)	0.31	0.46	0.35	0.32	0.28	31/05/2014

[a] The five major banking groups.

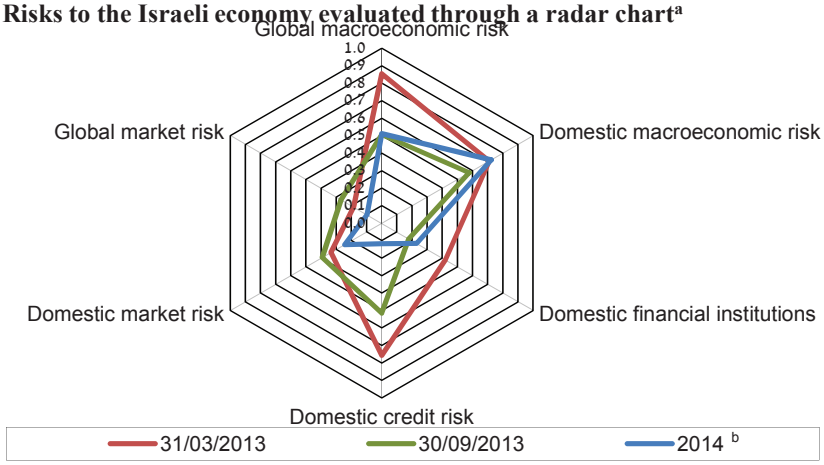
[b] Including main provident funds for severance and advanced study funds.

[c] 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.

The risks in the global and domestic financial systems have declined since the beginning of 2013.

Figure 3
Risks to the Israeli economy evaluated through a radar chart[a]



[a] The risk increases as the number increases.
[b] Data on domestic financial institutions are accurate as of the end of 2013; global macroeconomic data are accurate as of March 2014; domestic macroeconomic data are accurate as of April 2014; and data on domestic credit, domestic markets and global markets are accurate as of May 2014.
SOURCE: Bank of Israel.

Table 2
Participants in the financial system, December 2013

Type of financial institution	Number of active participants[a]	Total assets[c] (NIS billion)	Supervisory regulator
Banks[b]	12	1,324	Supervisor of Banks
Insurance companies	24	384	Commissioner of Capital Market, Insurance and Savings
Old pension funds	18	348	Commissioner of Capital Market, Insurance and Savings
New and general pension funds	13	160	Commissioner of Capital Market, Insurance and Savings
Other provident funds	75	347	Commissioner of Capital Market, Insurance and Savings
Mutual Funds	19	231	Israel Securities Authority

[a] The number of banks shows the number of banking groups, the number of insurance companies and pension funds shows the number of active participants, and the number of provident funds and mutual funds shows the number of management companies.
[b] Including foreign banks operating in Israel.
[c] Data on banks and insurance companies are based on the financial statements. Data on provident, pension and mutual funds are of total assets under management.
SOURCE: Capital Market, Insurance and Savings Division at the Ministry of Finance; the Israel Securities Authority; and Bank of Israel.

that separated the provident funds from the banks, improvements in the settlement system, and more. Legislation has recently been completed concerning a reduction of concentration in the economy and the separation of significant financial entities from significant real entities. The processes by which pension savings entities invest in the corporate bond market have been improved, and recommendations have been made to improve the debt restructuring processes. All of these are expected to continue contributing to the proper operation of the financial system, and to contribute to its stability.

One tool for presenting the risks to the financial system is the radar chart.[2] The chart below relates to the Israeli market and outlines the level of risk over time of the various components of the financial system and of the state of the real economy in Israel and abroad (Figure 3). The chart shows that in the past year, the large gap between the risks reflected in the global financial markets and the real macroeconomic risk narrowed, although the risk reflected by the state of the markets is still lower. It reflects the effect of the large amount of surplus liquidity in the financial system, which supports real activity and the continued increase in share prices, and perhaps also reflects expectations of increased corporate profits later on. The global macroeconomic risks have remained unchanged since September 2013, due to the increased risks in the emerging markets, which offset the slow improvement in the advanced economies. Domestic credit risks, which are reflected in spreads on the corporate bond market and spreads between government bonds in Israel and abroad, continued to decline. This reflects the decline in Israel's risk premium alongside the contraction of spreads in the corporate bond market to the point of concern over underpricing of risks, as will be detailed below. The domestic macroeconomic situation worsened during the first quarter of 2014, as reflected in the Composite State of the Economy Index. The state of the domestic financial institutions continued to improve in 2013, due to the fact that their capital ratios continued to increase.

b. Evaluation of the stability of the domestic financial system and the main risks to which it is exposed

1. The financial institutions

In recent years, the financial institutions in Israel (the banks and insurance companies) have continued improving their capital ratios, corporate governance and risk management.

In 2013, the banking system in Israel maintained its robustness and its stability, and continued to present satisfactory business results, even though the growth rates in Israel and abroad were relatively moderate. The resilience of the banking system is supported by growth in core capital ratios and by strengthening the risk management and corporate governance framework at the banks. This resilience is also reflected in the results of the stress tests carried out by the Banking Supervision Department this year, although these also emphasize the main risk points in the banks: exposure to the construction and real estate industry and housing credit, and the concentration of credit in borrower groups. (More information appears in the section dealing with banks and in the Banking Supervision Department's Annual Survey for 2013.)

The insurance companies showed a high level of profitability and improvement in capital ratios in 2013, as a result of the continued increase in prices in the financial markets in Israel and abroad. The recognized capital of the insurance companies at the end of 2013 was 30 percent higher than the capital required by the regulator. With that, there was a moderate increase in insurance companies' risk assets as a share of total nostro assets. The exposure of the five largest insurance companies to the real estate industry increased moderately, and reached about 8 percent of their nostro assets at the end of 2013. (More information appears in the section dealing with insurance.)

[2] H. Zalkinder (2012), "Measuring stress and risks to the financial system in Israel on a radar chart," Bank of Israel, Discussion Paper No. 2012.15.

The public's pension savings constitutes about 40 percent of the public's monetary assets portfolio, and is managed for the most part in Defined Contribution (DC) plans, in which it is the savers who are the ones who bear the market risks. Therefore, a shock to the markets is not expected to significantly affect the stability of the institutions managing the funds. However, in cases of an extreme shock to the markets, a significant impact can be expected to the value of the public's asset portfolio as a whole, as well as to the value of the public's pension savings. Such a development may negatively impact private consumption and real economic activity, and be reflected in the financial results of the financial institutions. A large shock to the markets may also lead to the withdrawal of liquid funds from the provident funds, which will reinforce the decline in prices. However, this risk has declined significantly since 2008, due to the continued decline in the share of provident funds in public savings, and due to the increase in the share of liquid assets in the portfolios that they manage.[3]

2. The risk from the housing market

Due to the banks' high level of exposure to the construction and real estate industry and to mortgages, and due to the sizable share that housing occupies in the household asset portfolio, the main risk to the financial system derives from the possibility of a domestic and/or external shock that may lead to a sharp and rapid increase in interest rates and/or to a recession with a negative impact to the income of borrowers, either of which would be accompanied by a sharp and rapid turnaround in the housing market. In such a scenario, there would also be a decline in the quality of borrowers, and this could negatively impact the banks' capital ratios and profitability. Such a scenario can also be expected to negatively impact contractors and to further damage the financial results of the banks. (More information appears in the section dealing with the housing market and in the section dealing with the banks.)

3. Evaluation of credit risks in the economy

Credit to the business sector, and pricing in the corporate bond market

- **The supply of credit**: Various indicators from the credit market indicate that the ratio of business sector credit to business sector output continued to decline in recent months, mainly as a result of a decline in demand for credit. (See Chapter 4 of the Bank of Israel Annual Report for 2013.) However, a prolonged decline of this ratio does not support continued growth in the future.
- **The leverage of public corporations**: At the end of 2013, leverage was at a lower level than the long-term average. However, the construction industry is characterized by high leverage over time, which constitutes a risk to the industry. The realization of the risk in the construction industry may have ramifications on the financial system, since this industry accounts for a large portion of GDP and credit in the economy, and a high level of contractual associations with other industries. (See Box 2, "The nonfinancial business sector".)
- **Pricing in the corporate bond market**: Yields in the corporate bond market are very low, and there is increasing concern about underpricing of the risks in this market, as a result of the fact that spreads have continued to narrow, reaching low levels in recent months, similar to those that were observed in the second quarter of 2008. The concern that the yields are reflective of the underpricing of risk in the bond market was supported by the fact that the rapid net new investment in bond mutual funds continued without parallel growth in the supply of bonds—a development that generates downward pressure on yields. Other indicators pointing to an increase in risk in the bond market are the increased weight of unrated or low-rated bond offerings; the rising proportion of offerings by companies in real estate—an industry characterized by relatively

[3] The share of provident funds in the public's asset portfolio declined from 9.1 percent at the end of 2007 to 6.6 percent at the end of 2013. The share of liquid assets out of total liquid liabilities of the provident funds increased from 18.4 percent to 34.4 percent.

high risk; and the increase in the share of mutual funds among bondholders at the expense of long-term savings entities—which is expected to increase volatility in the bond market should there be a turnaround. With that, and contrary to the situation in 2006 and 2007, the narrowing of spreads has thus far not been reflected in a sharp growth in the volume of offerings or in corporate leverage, and since the beginning of 2013, the net volume of bond offerings (offerings minus repayments) is still not high. (More information appears in the section dealing with risks in the corporate bond market.)

- **Debt restructuring in the bond market**: In recent years, the infrastructure has been laid for debt restructuring in the bond market, which makes it possible to clear the bond market of problematic debts. The process of debt restructuring still requires further regulation, and for this purpose a committee has been established that has published an interim report. However, the fact that in the past year there have been a number of large and complex debt restructuring proceedings, and that in some of them, controlling interest was taken from the existing controlling owners, contributes to financial stability, since it makes it possible for the bond market to function even during times of crisis, and increases market discipline.
- **Direct loans from institutional entities to the business sector**: Direct loans from institutional entities to the business sector continue to expand rapidly, and in 2013 and the first quarter of 2014, they were the main financing channel that continued to expand, due to the decline in the utilization of credit from other sources of financing. An examination of many of the characteristics of the loans shows that most of them are given to large borrowers, have a high rating, and are backed by collateral. With that, due to the rapid growth of these loans, supervision and regulation of them, as well as their level of transparency, must continue to be increased, as recommended by the Goldschmidt Committee—the committee assessing how institutional entities invest in direct loans. (See Box 3, "Direct loans granted by institutional entities".)

Credit to households

The rate of expansion of credit to households increased greatly in recent years. Most prominent has been the increase in housing credit, and in 2013, non-housing credit also grew. Even though debt has increased, the ratio between household debt and GDP in Israel has increased only slightly since the crisis, and is significantly lower than in other advanced economies. Household leverage in Israel (the ratio between total liabilities and total assets) is also lower than in other countries. With that, due to the high level of inequality in the distribution of assets in Israel, the three lowest income deciles are characterized by higher than average rates of leverage, and are therefore at higher risk of inability to meet their obligations. (See Box 1, "The household sector".)

4. The risk in the ETF market

The existing structure of the ETF market in Israel does not grant its asset holders rights to the assets of the issuer, and therefore holds a credit risk to holders. The rapid expansion that has taken place in this market in recent years and the high level of concentration in the industry increase the risk in the financial system should the credit risk to ETF-holders be realized, *inter alia* in a case where there is a sharp turnaround in the market and ETF holders seek to redeem them rapidly. A reform currently in the approval process is expected to lower the risks in the market, but it is important that it be implemented rapidly. (See Box 4, "Exchange Traded Funds".)

2. THE MAIN RISKS

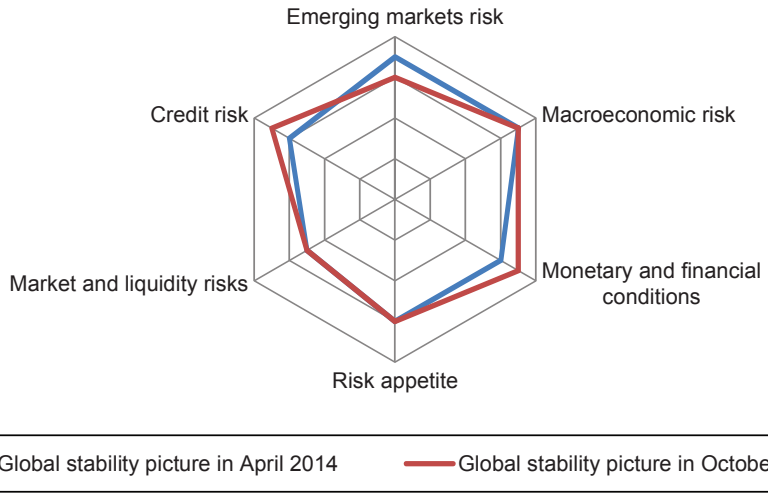
a. The global environment

In its Global Financial Stability Report[4], the IMF summed up the situation with the statement that financial stability has improved in advanced economies and worsened slightly in emerging economies. The

[4] Global Financial Stability Report (April 2014), "Moving from Liquidity- to Growth-driven Markets".

Between October 2013 and April 2014, there was a slight improvement in credit risk as a result of reforms in the banking system, and there was a slight deterioration in emerging markets and in monetary and financial conditions as a result of the start of tapering in the US. The other vertices remained virtually unchanged.

Figure 4
Global financial stability map



The diagrom is divided into two. The upper portion deals with risks, and the lower portion with economic conditions (that influence the risks). The farther a point is from the center, the larger the risk (in the upper portion), the risk appetite and the monetary accomodation (in the lower portion). By way of comparison, the report of April 2009 (at the height of the crisis) found all risk vertices on the most distant line from the center, or the one below it, while the risk appetite was in the center (near zero).

IMF expressed cautious optimism regarding the global economy, and argued that it has recovered from the crisis that broke out in 2008, but it is still in a fragile state. Efforts should therefore be continued to accelerate the growth rate and to stabilize the system. The IMF recommended that the process of controlled exit from the MP+ policy—which is what the IMF calls the unconventional monetary policy adopted as a result of the crisis[5]—be continued, and that accommodative monetary policy be adopted in accordance with the economic situation. While an incautious conduct of the exit from MP+ can be expected to have a negative impact mainly on the emerging economies because they are very dependent on capital inflows from the advanced economies, and because the levels of leverage in the emerging economies have increased significantly in recent years, the advanced economies are also vulnerable to this process, since a rapid increase in yields may negatively impact the ability of economies and companies to service their debts. The IMF's report relates to a new risk—geopolitical risk, mainly the dispute between Russia and Ukraine surrounding the Crimean peninsula. A deterioration of the dispute may lead to reduced trade ties between Europe and Russia, and mainly harm the supply of energy from Russia to Europe which, for its part, would lead to a marked increase in energy prices on the continent and could weigh down on the economy which, between everything else, is having difficulty in

[5] A review of unconventional monetary policy appears in the Bank of Israel's Monetary Policy Report for the second half of 2013.

returning to robust growth. Among the additional risks enumerated by the IMF are: (a) the credit crunch in Europe (mainly in the European periphery countries), which may become more serious because the banks in Europe are required to strengthen their capital structure; (b) impaired bank and corporate balance sheets in Europe; (c) the rapid growth trend of credit in China, mainly shadow credit; and (d) the growth of financial instruments that are very sensitive to changes in liquidity, which may amplify the effect of domestic shocks and distribute them to other economies.

The radar chart in the report (Figure 4) shows that the credit risk declined during the reviewed period as a result of measures adopted by the global banking system, mainly in Europe, and that the risk in the emerging economies increased following the start of the tapering process in the US, since this process led to capital outflows from them and to an increase in the risk of further capital outflows. The monetary and financial conditions worsened as a result of increased yields and the beginning of the exit from MP+, while the macroeconomic risk and market and liquidity risks remained virtually unchanged, because the increase in those risks in the emerging economies offset their decline in the advanced economies.

The main risks to the Israeli economy posed from abroad:

1) The dependence of the economy and global markets on MP+, and the difficulties that may arise during the exit from it, continue to constitute a main risk to the global economy and its stability, and even more so to a small and open economy such as Israel's. The markets are reacting with moderation to the tapering that has been taking place in recent months, completely contrary to the harsh reaction that was seen in mid-2013 when the Federal Reserve first mentioned the possibility of tapering. However, this is a complex and delicate process, and if it is conducted in a manner that is not in line with market expectations or the pace of the economic recovery, it may negatively impact the advanced economies where leverage has increased, and even more so emerging economies that are largely dependent on capital flows from the advanced economies. It is these risks that led the International Monetary Fund to note the challenge posed by the move from growth based on monetary and fiscal accommodation to growth based on normal economic cyclicality, and to warn that the risks to forecasts continue to tend downwards. While the correlation between the markets around the world has declined significantly since the height of the crisis, it is higher than it was prior to the crisis. Therefore, relative to the past, it is still highly likely that domestic crises may spread to other economies. It can therefore be stated that according to the prevailing assessment around the world, the exit from MP+ policy is necessary and positive, but the realization of the risk may negatively impact the Israeli economy both through the capital markets and by harming exports due to the decline in growth and in demand.

2) Despite the significant improvement, Europe continues to pose a challenge to global growth and financial stability. During the reviewed period, concerns that a serious debt crisis would develop in the near future continued to wane, as reflected in the continued decline of the CDS spreads and of bond yields in the European periphery countries, as well as in improvements in their ratings forecasts. Even Greece resumed offerings in the markets. The European Central Bank (ECB) declared a long series of measures intended to encourage the provision of credit and to stimulate the continent's economy, which led to a further decline in the risk of a renewed outbreak of the crisis. However, the threat posed by the debt crisis has not completely passed. The International Monetary Fund emphasized the need to continue improving the balance sheets of the banks and corporations in Europe, and noted that improving the banks' balance sheets would make it difficult to improve the corporations' balance sheets. The low inflation that is prevailing in Europe also indicates low demand, despite the slight improvement in the pace of growth. European demand for imports from Israel is therefore not expected to increase in the near future, and may even decline if the credit crunch worsens.

3) China is another source for concern, although that concern declined slightly in the first half of 2014. Data published in China during the reviewed period strengthen the assessment that the government is determined in continuing the structural change intended to increase private consumption within GDP at the expense of fixed capital formation and exports. According to the accepted assessment around the world, this is a necessary change, and any delay in it will increase the risk of a hard landing in the future. The start of implementation is therefore good news for the global economy. With that, this process is not free of risks. First of all, it is expected to lead to further declines in the pace of growth in China, a pace that is very important for global growth. In addition, the reduction in the volume of credit is expected to lead to difficulties for Chinese companies in rolling over their debt, and we have recently seen that a number of Chinese companies have failed to repay their debts due to the measures adopted by the government to reduce corporate credit in general and shadow credit in particular. According to the prevailing assessment worldwide, the credit market in China is worrying, and even more worrying is the fact that a significant portion of the rapid growth in credit that has taken place in recent years was created by unregulated shadow banking. Moreover, total corporate credit in China is very high compared to the other emerging economies. The prevailing assessment is that the new government will continue making the necessary structural change, and even though it will lead to a decline in the pace of growth it will also lead to more balanced and stable growth in the future. The assessment is also that the government will deal with the credit problem successfully. However, the size of the Chinese economy, the high level of corporate leverage, and the quality of debt and supervision over it, make handling it complex and pose a risk to the Chinese economy and to the global economy as a whole. Direct trade links between China and Israel are not widespread, but a crisis there holds global significance, and will therefore also affect Israel.

4) During the reviewed period, a new risk has emerged—the global geopolitical risk, mainly the dispute between Russia and Ukraine surrounding the Crimean peninsula, and the worsening conflict between Sunni and Shiite Muslims in Iraq.[6] The Russian invasion of the Crimean peninsula, together with the referendum that led to the Russian annexation of the peninsula, encountered bitter condemnation from western countries. But thus far, only limited practical measures have been taken against Russia, with a commensurate limited Russian response. Therefore, the dispute had a minimal effect on the global economy and on the markets. In Iraq as well, the battles have not yet reached oil-rich areas, and have therefore so far had a limited effect on global energy prices. According to the main scenario accepted in the world, these crises will have only a small effect on the global economy and on Israel, but there is a risk that cannot be discounted that the impact will be more significant and will mainly be reflected in an increase in energy prices that will lead to a slowdown in the pace of global growth and will negatively impact the capital markets.

In contrast, the immediate geopolitical risk on the part of Israel's neighbors continues to decline, and is at relatively low levels, as reflected by Israel's CDS spreads, which are at a multi-year low. The prevailing assessment is that there is low likelihood of a deterioration in the near term.

With that, the domestic security risk has recently increased as a result of the increase in uncertainty regarding relations with the Palestinian Authority following the agreement between the PA and Hamas concerning the establishment of a unity government, as well as due to the rise in the level of violence.

6 The International Monetary Fund mentions both a risk that derives from the lack of political stability and from election campaigns in many countries—including Thailand, Brazil and India.

b. The domestic environment

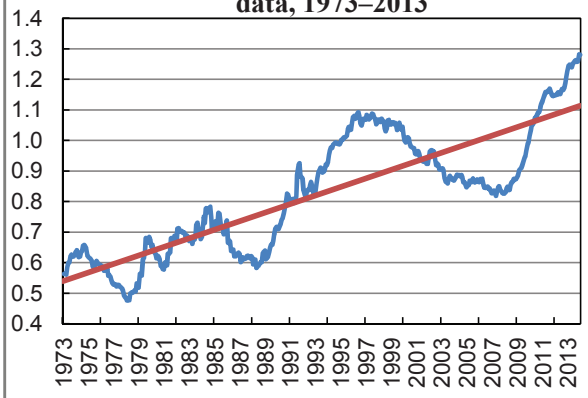
1. The risk from the housing market

Background

Home prices continued to increase at the beginning of 2014 (Figure 5), the seventh consecutive year in which they are increasing. In the most recent cycle (since the beginning of 2008), home prices have increased by about 61 percent in real terms (adjusted for the Consumer Price Index)—three times the real increase in rental prices and more than the growth in household income. According to assessments by various entities in Israel and abroad, home prices in Israel have increased beyond the level derived from long-term balance conditions.

Home prices continued to rise at the start of 2014, for the seventh consecutive year, and the pace of increases is higher than the long-term pace.

Figure 5
Index of real home prices[a], monthly data, 1973–2013



[a] January 2000 = 1.
SOURCE: Bank of Israel.

There are two main factors in the increase in home prices. First, since the beginning of the previous decade, building starts have been at low levels compared to the level derived from the growth in the number of households (Figure 6). This level at first reflected an adjustment of surplus supply that was created in the economy after the wave of immigration from the former Soviet Union wound down, but starting in the middle of the last decade, it created a lack in the supply of homes relative to demographic needs. Second, following the global crisis, there was a sharp decline in short- and long-term real interest rates—in Israel and globally—which led to a decline in the interest rates on mortgages in all tracks, and to a decline in alternative yields for savers. This development, for its part, increased the volume of demand for homes, both for residential purposes and as investments.[7]

The rapid increase in prices has been accompanied by a sharp increase in the volume of home purchases and in the volume of new mortgages. The latter reached NIS 51.7 billion in 2013, and since the beginning of the crisis in 2008, there has been a significant increase in their loan-to-value (LTV) ratio and in the payment-to-income (PTI) ratio.

Risk factors in the housing market

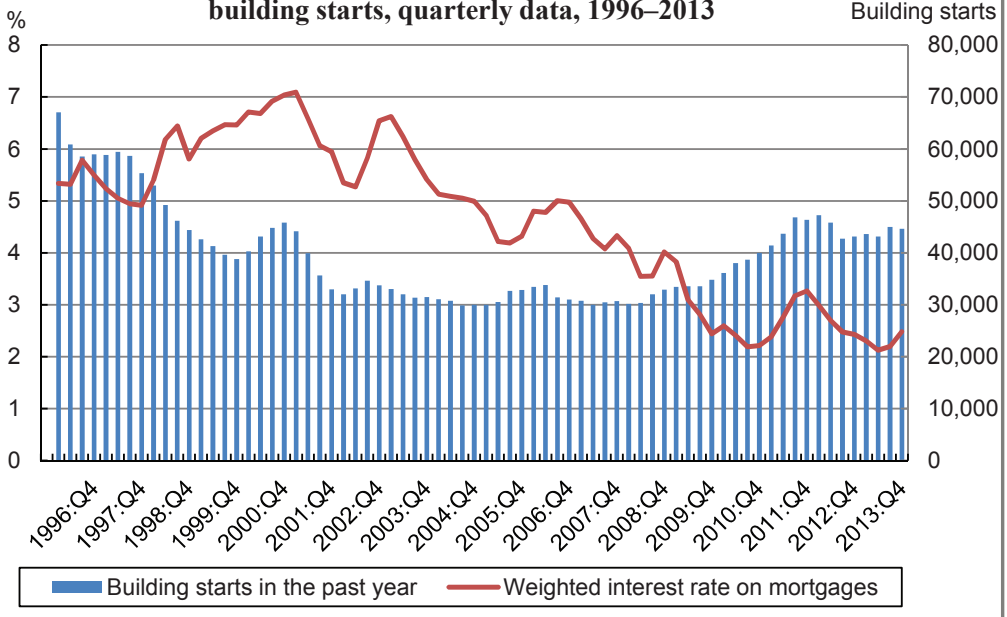
Due to the rapid increase in the volume of mortgages, and the banks' high level of exposure to the construction and real estate industry and to mortgages—which constitute about 43 percent of the bank credit portfolio—the main risk posed to the financial system derives from the possibility of a domestic and/or external shock that may lead to a sharp and rapid increase in interest rates and/or to a recession and a negative impact on borrowers' income, and will be accompanied by a sharp and rapid turnaround in the housing market.

The realization of such a risk will have an impact on the financial system, mainly through the banks. Mortgages

[7] The government recently decided on a number of policy measures (zero VAT for first-time home buyers and target pricing for new homes) with the aim of making it easier to purchase a single home, while granting preferences to this group of purchasers over investors. It is possible that these decisions will work in the short term, until their actual implementation, to reduce the number of transactions in the market and to moderate the increase in prices—as the social protests worked in 2011—but the long-term effect these measures will have on prices levels and on the financial state of players in the housing market is still unclear.

The low number of building starts, as well as the low real interest rates of the past few years, have contributed to an increase in home prices.

Figure 6
The weighted interest rate on mortgages and the number of building starts, quarterly data, 1996–2013



SOURCE: Bank of Israel.

constitute a main component in the banks' balance sheets, and therefore constitute a direct risk to their stability and to financial stability. An increase in risk in the mortgage industry could reduce the banks' capital and the value of the collateral that they hold. The losses to banks could also increase in credit tracks that are connected to housing, such as credit to contractors, since the leverage of the construction industry is relatively high and a sharp increase in interest rates could make it difficult for contractors to meet their obligations. An increase in interest rates may also have ramifications on nonbank credit issued to contractors, and be reflected in an increase in yields in the corporate bond market.[8] Contractors' income from home sales may also be negatively impacted, and with it, the value of the collateral that they can make available to banks.

Moreover, since mortgages are the largest liability on households' balance sheets, if there is a sharp increase in interest rates and/or a sharp decline in prices in the housing market, households will reduce their consumption in order to meet their mortgage payments and/or due to a decline in their sense of prosperity. An increase in interest rates has a large effect on mortgage payments, since variable-rate mortgages constitute a large percentage of the household mortgage portfolio. (See Box 1, "The household sector".) It is possible that some households will have difficulty repaying their mortgages and will be forced to sell their homes—a step that may make price declines worse. Reduced consumption is expected to have an effect on the pace of growth in the economy.

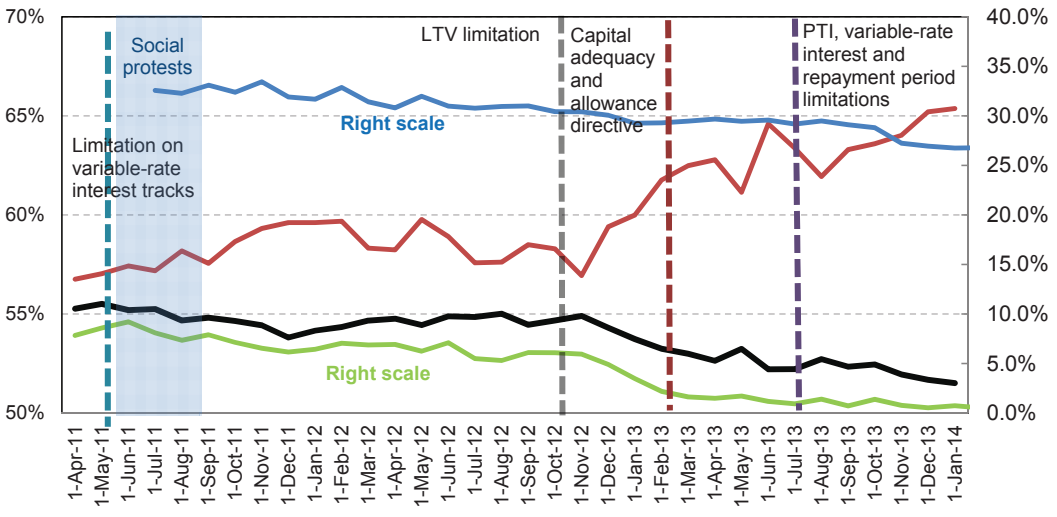
An assessment of the sensitivity of home prices to various shocks using a model[9] finds that a sharp change in short- and long-term interest rates and a sharp change in unemployment have a very significant effect on the

[8] More information appears in Box 2, "The nonfinancial business sector".

[9] The housing model by Nagar and Segal. See W. Nagar and G. Segal (2011), "What explains the development of home prices and rents in Israel, 1999–2010", Bank of Israel Review, 85, pp. 7–59 (in Hebrew).

The limitations imposed in recent years by the Supervisor of Banks on those taking out new mortgages reduced the banks' exposure to credit risk

Figure 7
Distribution of new mortgages by LTV, monthly data, 2011–14



SOURCE: Bank of Israel.

development of home prices. Therefore, a combination of an increase in interest rates and unemployment, together with a decline in prices, is the main risk factor in the housing market.

It should be noted that the International Monetary Fund found that in countries like Israel—meaning markets where there is a lack of housing (supply shortage)—declines in housing prices continue for a shorter time than in countries where there are no supply shortages, and the decline in prices is generally significantly weaker than the strength of the increase that preceded it.[10] Studies indicate that housing price cycles (Figure 5), to the extent that they reflect financial cycles (which are driven by large changes in credit and asset prices), lengthened over the years[11], similar to the situation in the US and other advanced economies.[12]

In view of the risk in the housing market, the Banking Supervision Department tested the direct effects caused to the banks' housing credit portfolio as a result of a price decline of about 20 percent that would be accompanied by an increase of about 4 percentage points in the Bank of Israel interest rate, an increase of about 4 percentage points in the unemployment rate, and a uniform decline of 8 percentage points in real disposable income of borrowers. (This macroeconomic scenario is based on the 2002 recession.) The test was based on a comprehensive database of mortgages at the individual loan level, from which the likelihood of a failure—what portion of those taking out mortgages in the sample could not finance basic expenses (food, clothing, and so forth) after deducting mortgage payments from their disposable income—was derived. In addition, the size of the loss that the bank would

[10] "The housing market in Israel", IMF, Country Report number 14/48 (2014), "Israel: Selected Issues".

[11] The continuation of the increase in housing prices in Israel during the current cycle is, to a large extent, connected with the low interest rate environment and the home supply shortage, and not with an unexpected increase in the number of households, as happened at the beginning of the 1990s.

[12] Borio, C. (2012), "The financial cycle and macroeconomics: What have we learnt?", BIS Working Paper number 395.

absorb after realizing collateral (selling the home, the price of which had declined) or after reaching a debt restructuring arrangement was also calculated. The calculation assumes that in a small number portion of cases, the bank would not manage to reach a debt restructuring settlement with the borrower or to realize the collateral, since during a crisis period, it could be difficult to sell under a foreclosure process all of the homes that served as collateral for failing borrowers.

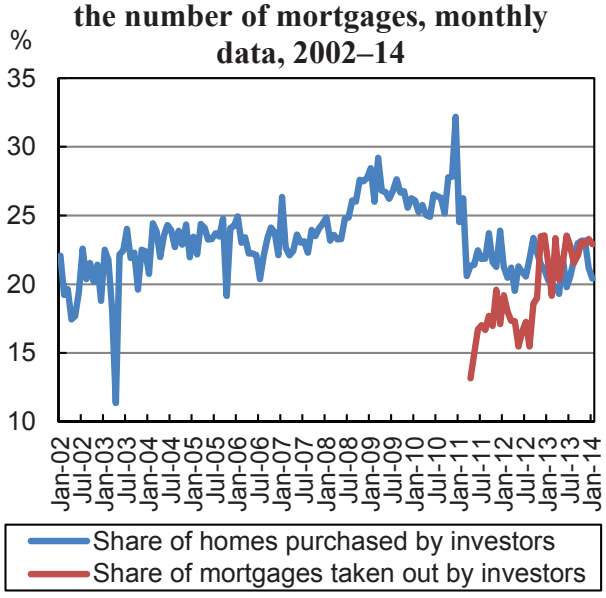
The results of the test showed that 5 percent of those taking out mortgages in the sample would encounter difficulty in repayment due to the realization of the scenario, in addition to the rate of arrears during routine times. Such a situation is expected to have significant social ramifications. With that, it is important to remember that the test is based on certain working assumptions (some of which relate to the expected conduct of banks and of borrowers during a crisis), and these have an effect on the quantitative results of the test. According to the findings, growth in unemployment has more of an effect on the likelihood that mortgage borrowers would fail than an increase in interest rates or a decline in income, and contributes an average of more than half of the failure rate. This is because unemployment greatly reduces the household's income, and thereby its ability to meet its mortgage payments, and because, as opposed to changes in the interest rate, it impacts all types of borrowers without connection to the characteristics of the loan.

In view of these risks, the Supervisor of Banks, as stated, took a series of measures—some of which do not directly concern mortgage borrowers, such as increasing capital adequacy and group allowances for doubtful debt (at the beginning of 2013), and some of which directly concern the borrowers, including (a) limiting variable-rate loans, in mid-2011; (b) limiting the LTV ratio, toward the end of 2012; and (c) limiting the PTI ratio, in mid-2013. These restrictions succeeded in reducing the main risk and lowering the banks' exposure to increases in the interest rate on new mortgages. As Figure 7 shows, there was a decline in the percentage of high risk mortgages (those with an LTV greater than 75 percent).

Another phenomenon that has characterized the housing market in recent years is the increase in the share of investors[13] both among home purchasers and among those taking out mortgages (Figure 8), particularly in view of the increased risk and the decline in yields on other financial assets in the years following the 2008 crisis. The increase in the share of investors has apparently been stopped due to the increase in interest rates in 2011 and various actions such as increasing the purchase tax on those purchasing investment homes, toward the end of 2010, and the restriction imposed by the Supervisor of Banks on the LTV ratio for investors, toward the end of 2012. However, in the context of discussing financial stability, one must ask whether the measures intended to reduce the share of investors among home purchasers contribute to

Since the beginning of 2013, the proportion of investors in both the number of homes purchased and in total new mortgages has stabilized.

Figure 8
Investors as a proportion of the number of homes purchases and the number of mortgages, monthly data, 2002–14



SOURCE: Bank of Israel.

[13] The gross share of investors, meaning without excluding those who have realized their assets.

reducing the banking system's exposure to risk in the housing market. Investors are actually characterized by a better ability to repay—relative to those purchasing a first home, for instance—and a large portion of them don't even take out a loan to purchase a home. Therefore, from this standpoint, there is apparently no justification for reducing their share. In contrast, it is possible that the investors tend to respond more rapidly to changes in the economic environment—such as interest rate increases—and as their share increases, it could worsen the price declines, thereby increasing the risk to the banking system from this market.

In summation, it is important to note that the Bank of Israel Monetary Committee also takes into account the risks from the housing market when it makes its decisions on the level of the interest rate in the economy. Tracking and analyzing the risks, as was done here, provides an input in the process by which the Bank of Israel formulates monetary and macroprudential policy. The measures taken by the Supervisor of Banks with the objective of reducing the risk to the banks from the housing market—including the restrictions on the LTV and PTI ratios—have macroprudential implications, since they act to reduce the risks to banks from the housing market, thereby enabling the Monetary Committee to act by way of interest rate policy to support economic activity.

2. The risks in the corporate bond market

Developments in the corporate bond market between January and May 2014 indicate that the signs of a deviation in prices from the objective economic long-term value are strengthening, similar to the situation in other markets in the world. It seems that there is a prolonged lack of consistency between the main risk components—particularly credit risk and liquidity risk—and the risk inherent in the actual bond spreads, which indicates the potential for the underpricing of the risks. Against this background, a change in pricing of government bonds, an increase in risk in the economy, and/or a turnaround in the interest rate pattern may affect the dynamics in the corporate bond market and lead to a change in the trend of their prices.

The low interest rate environment that is characterizing most of the advanced economies, including Israel, accommodative monetary policy that is intended to support domestic demand and slow down the appreciation of the exchange rate, and increasing uncertainty in the residential real estate market alongside expectations that the authorities will tighten policy that is intended to cool investor activity, are all active in revising investors' expectations regarding the short-term interest rate path, and in increasing the attractiveness of investing in financial assets with high expected yields, particularly in the bond market. Against this background, the brisk demand is being channeled to financial institutions with a short-term investment strategy (mutual funds), and is meeting an expanding supply of corporate bonds with medium-high risk that is reflected in the high percentage of companies from the real estate sector in both total balance and new issues, a decline in the quality of the issues, and an increase in low-quality collateral.[14] This brisk demand provides the liquidity required by the markets and raises the likelihood that the bond market will show a high level of volatility should there be a turnaround in the financial markets. In view of the tremendous importance of the corporate bond market to credit in the economy, its high level of concentration, and the similarity that exists between the institutional bodies from the standpoint of their strategy of exposure to the asset market and to the corporate bond channel in particular[15], the systemic risks are also increasing, which poses a challenge for macroprudential policy.

The basic risk involves developments in the market for

[14] Following the recommendations of the Hodak Committee (The Committee for Establishing Parameters for Institutional Bodies' Investments in Non-Governmental Bonds), there has been a significant increase in the volume of bonds backed by securities in recent years, and as of now, the percentage of backed series (excluding financial institutions) is about 50 percent. In contrast, during the second half of 2013 there was a significant decline in the rate of offerings backed by securities. Most of the liens issued during the last year were relatively weak and were characterized mainly by liens on shares of subsidiary companies and surplus liens from projects. Some of the new offerings were made without collateral and relied on financial covenants only (See the S&P report, February 2014).

[15] However, in recent years, the reduction in the institutional bodies' exposure to the corporate channel has continued.

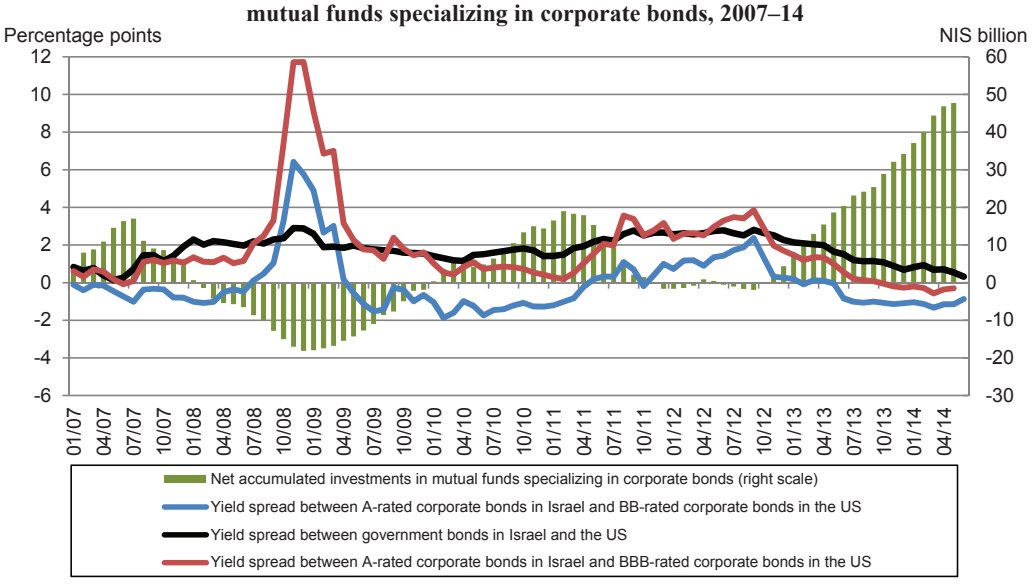
medium- and long-term interest rates on government bonds, a market that has a direct effect on the behavior of yields in the corporate bond market. Yields-to-maturity on government bonds are at a historically low level (as they are around the world), particularly in view of the narrowed differential between US government bonds and Israeli government bonds. This differential has narrowed significantly since May 2013, and in May 2014 it was only about 0.5 percent (Figure 9). This leads to the relatively high likelihood that changes in the level of activity in the American economy will affect the pricing of government bonds. This is in addition to the geopolitical risks that are unique to Israel, risks that—together with other factors—determine Israel's risk premium. A resumption of declines of bond prices in the US may lead to a chain reaction in the corporate bond market in Israel, with a downward revision of the leading corporate bond indices, particularly in view of the fact that the corporate bond differentials between Israel and abroad have narrowed more than the differentials in the government bond market (Figure 9).

Alongside the high prices in the government bond segment, and a certain measure of uncertainty as to the risk premium of the economy, there is also interest rate risk. In view of the expected path of monetary policy in the coming year, the interest rate risk should not be seen as an immediate risk to activity in the corporate bond market. A future increase in the interest rate may make the sources of capital more expensive and make it difficult to refinance debt in the future, and an increase in yields that accompanies an increase in the interest rate may result in capital losses to investors.

Excluding the risk derived from changes in the interest rate level in the markets, the main concern relates to the low corporate bond spreads, which reflect the additional risk required for investment in those bonds relative to investment in government bonds. At the beginning of 2014, the spreads continued narrowing, and their average in May 2014 reached about 2.1 percent (including banks and insurance companies). From a sectoral point of view, the general trend was set by yields on companies from the investment and holdings industry and the real estate industry. The prolonged decline in spreads of real estate companies—

Spreads between Israel and the US in the corporate bond market narrowed more than the spreads in the government bond market

Figure 9
Yield spreads between Israel and the US, and net accumulated investment in mutual funds specializing in corporate bonds, 2007–14



SOURCE: Bank of Israel and Federal Reserve Bank of St. Louis.

an industry with a medium-to-high risk profile—carries tremendous importance, for two reasons. First, these companies constitute a large share both of the new offerings (since the beginning of 2013, they constitute about 40 percent of the gross volume of offerings of the nonfinancial sector) and of the total balance of tradable bonds (the real estate industry constitutes about 30 percent of the balance, while the banking industry constitutes 35 percent; during this period, there was a sharp decline in the volume of offerings by the banks). Second, the real estate industry was the only one to register positive net issuance in 2013. Moreover, a periodic analysis shows that the spreads of corporate bonds issued since the beginning of 2012 are even lower than the average of all tradable bonds, in both absolute terms and in distribution by industry.

Two main risks raise questions as to the quality of pricing of corporate bonds—credit risk and liquidity risk. The common indicators for assessing the credit risk indicate that the general direction of their development is not in line with the dynamics of the spreads: Other than manufacturing, an industry in which the development of its yields is in line with the required level of risk, the risk premium of bonds in the other (nonfinancial) industries deviates from the path of the main risk indices. The decline in spreads in these industries is taking place in parallel with the increase in the probability of default[16], and it is taking place at a more rapid pace than that of the EDF.[17] Moreover, even when using the Altman index of probability of bankruptcy[18]—a model that is not dependent on market parameters—and applying it to the general population of bond-issuing companies, the index indicates a high level of uncertainty regarding the financial state of the companies in the short to medium term. From the standpoint of liquidity risk as well, the decline in spreads during the reviewed period took place while the bid-ask spread—a spread that reflects the price of supplying liquidity—stabilized.[19]

3. THE BANKING SYSTEM, 2013

In 2013, the banking system in Israel continued to maintain its strength and stability, and to present suitable business results against the background of continued moderate growth, the decline in the country's risk, and the improvement in the domestic labor market (Table 3). The resilience of the banking system is supported by growth in Core Tier 1 capital and by the strengthening of the risk management and corporate governance framework at the banks. The main risk to the system is the credit risk. In 2013, there was some improvement from this standpoint, but at the same time, the banks are exposed to lines of activity in credit that contain high risks. The level of concentration in the banking credit portfolio is high, although it has declined in recent years. The level of liquidity in the banking system is high as a result of a stable structure of sources. However, liquidity risk rose this year. The resilience of the banking system is also reflected in the results of stress tests carried out by the Banking Supervision Department this year, even though the tests also emphasize the main risk points at the banks:

16 The probability of default (PD) is based on the frequency of failures during the period between 1983 and 2012, and is calculated according to various rating groups and by the term to maturity (Source: Moody's).

17 The Expected Default Frequency is the probability of bankruptcy within one year, and is derived from the Merton model for evaluating the probability of failure of a company and adjusting for to past bankruptcies. More information appears in Sasi-Brodesky, A. (2013), "Assessing Default Risk of Israeli Companies Using a Structural Model", Israel Economic Review Volume 10, Number 2. A decline in the EDF, a parameter that also includes the accounting aspect (liabilities), indicates a general improvement in the situation (in risk) of corporations. In this context it should be noted that the profitability of corporations in the economy generally increased during the reviewed period, and the coverage ratios of the companies were slightly higher than their long-term average.

18 The Altman index reflects the chance of a company to survive—or alternatively to encounter financial difficulties and to declare bankruptcy—in the range of one-to-two years from the time of the reading. The index measures the financial strength of the company, and is based on five financial ratios: the working capital to assets ratio; the ratio of public assets to other assets; the company's profits before tax and interest; the ratio between the company's debts and its market capitalization; and the ratio between sales and assets. (Altman, E., (1968), "Financial Ratios, Discriminant Analysis and the Prediction of Corporate Bankruptcy", Journal of Finance, v.23, pp. 589–609.)

19 Stabilization in the price of supplying liquidity took place at the low levels.

exposure to the construction and real estate industry and to housing; exposure to leveraged credit; and the concentration of credit in large borrower groups. These risk points may cause significant damage to the banks in the event of the realization of a stress scenario.

Capital adequacy

In recent years, the Banking Supervision Department and the banking system have been working to strengthen capital adequacy, its volume and its quality, and over the past four years, the Core Tier 1 capital ratio in the banking system has increased by 1.5 percentage points (see Figure 10). During the year, the Core Tier 1 capital ratio increased by 0.6 percentage points, to 9.4 percent in December 2013. The increase in the Core Tier 1 capital ratio derived mainly from growth in the banks' accumulated profits—their profitability was 9 percent this year, similar to the long-term average—and from a reduction in business credit, *inter alia* in order to meet Core Tier 1 capital targets according to the following outline: All of the banks are required to reach a Core Tier 1 capital ratio of at least 9.0 percent by January 1, 2015. In addition, the two largest banks are required to reach a Core Tier 1 capital ratio of at least 10 percent by January 1, 2017.

As of January 1, 2014, the banks are implementing the directives that adopt the Basel III recommendations regarding capital adequacy. The transition to implementation of Basel III reduced the Core Tier 1 capital ratio of the five major banking groups by only 0.2 percentage points. Despite striving to reach the capital targets and the effect of the new directives, the banks are close to the capital targets imposed, and are capable of providing credit to the economy alongside the nonbank channel.

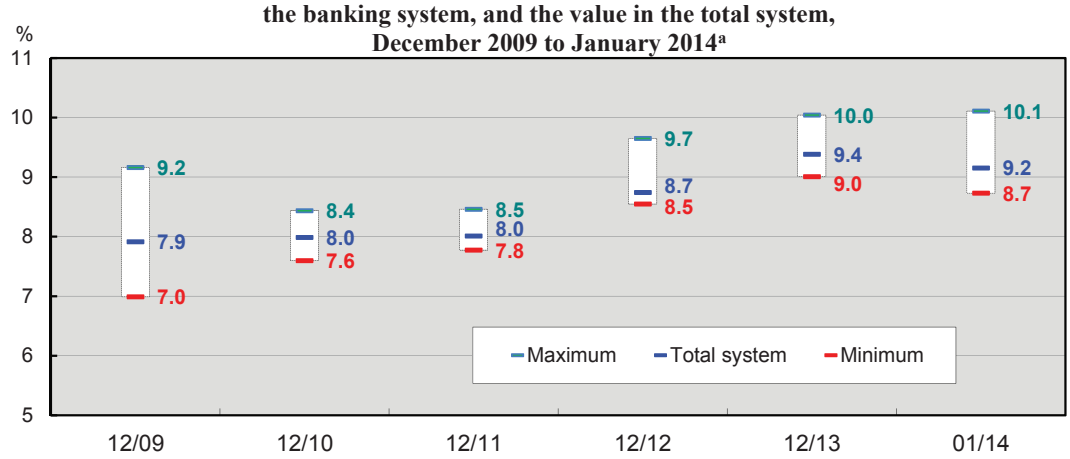
Credit risk

During 2013, there was some decline in the banks' credit risk: The indices of the quality of the credit portfolio improved, and the concentration of the large borrowers continued to decline. However, there are activity points, such as the construction and real estate industry and leveraged credit, that contain a high level of risk.

Balance-sheet bank credit grew in 2013 by just 1.3 percent. During this year, the trends that had characterized the credit portfolio in the previous year continued: the expansion of housing credit by 10 percent, the reduction of credit to the business sector by

The strengthening of the Core Tier 1 Capital ratio in the banking system in recent years.

Figure 10
Development of the Core Tier 1 capital ratio: minimum and maximum values in the banking system, and the value in the total system, December 2009 to January 2014[a]



[a] Data for 2009–13 are in Basel II terms, and data for January 2014 are in Basel III terms, in accordance with transitional directives.

SOURCE: Based on published financial statements and reports to the Banking Supervision Department.

Table 3

Main banking system indices, December 2001 to December 2013

	Ratio of market value to book value[a] (MV/BV)	Average yield spread between bank bonds and government bonds[b]	Ratio of Credit to GDP[c] (percent)	Change in balance-sheet credit to the public[d] (percent)	Loan loss provisions to total credit to the public[d] (percent)	Ratio of liquid assets[e] to liquid liabilities[f]	Ratio of credit[g] to deposits	Capital adequacy ratio (percent)	Core Tier 1 capital ratio (percent)	ROE (percent)
2001	0.91	0.7	111.9	17.9	0.85		0.81	9.4		5.8
2002	0.56	0.8	107.5	-1.1	1.32	0.42	0.83	9.9		2.8
2003	0.85	0.7	105.5	-1.7	1.12	0.41	0.82	10.3		8.4
2004	1.06	0.7	101.1	0.1	0.90	0.41	0.80	10.7		13.2
2005	1.45	0.7	101.7	6.7	0.69	0.42	0.82	10.7		14.5
2006	1.33	0.6	96.5	2.0	0.52	0.38	0.80	10.8		17.3
2007	1.21	0.9	96.8	7.7	0.28	0.29	0.85	11.0		15.6
2008	0.56	2.0	100.3	10.4	0.72	0.27	0.90	11.2		0.3
2009	1.11	1.6	93.7	-1.4	0.75	0.38	0.86	13.7[h]		8.8
								13.6[i]	7.9	
2010	1.06	1.0	93.4	7.2	0.41	0.32	0.91	14.0	8.0	9.8
2011	0.69	1.3	90.8	3.7	0.39	0.37	0.89	14.0	8.0	10.2
2012	0.78	1.0	86.3	2.1	0.41	0.39	0.87	14.9	8.7	7.9
2013	0.84	0.9	82.3	1.1	0.25	0.38	0.87	14.8	9.4	8.7

[a] In calculating the MV/BV ratio, the book value (BV) is calculated with a lag of one quarter after the market value (MV).
[b] Average for December of that year.
[c] Measured using gross credit.
[d] Until December 2010—net credit to the public; from December 2011—gross credit to the public.
[e] Liquid assets include government bonds as well as cash and deposits at the Bank of Israel and at other banks with up to 3 months to maturity.
[f] Liquid liabilities include total deposits with up to 3 months to maturity.
[g] calculated in relation to net credit.
[h] Calculated in accordance with Basel I principles.
[i] Calculated in accordance with Basel II principles.
SOURCE: Based on Central Bureau of Statistics, published financial statements, and reports to the Banking Supervision Department.

2 percent, and the reduction of exposure to borrowers whose major activity is abroad by 11 percent. These changes led to continued growth in credit to the retail sector as a share of the total bank credit portfolio, to 45 percent.

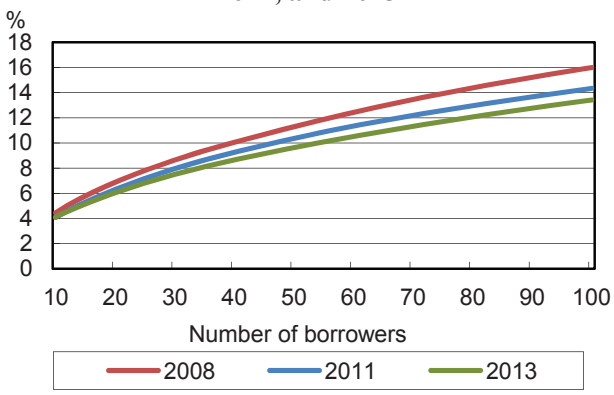
Housing credit continued to grow this year by a high rate, although at a slower pace than in previous years, reaching a total of NIS 248 billion. Housing credit as a share of the bank credit portfolio reached 30 percent in December 2013. In addition to housing credit, the banks are exposed to credit to the construction and real estate industry, which constitutes about 13 percent of the bank credit portfolio. This industry is characterized by a high level of risk, and historically, the credit losses in this industry are high compared to the entire business sector. The joint exposure to the construction and housing industry and to housing credit creates a significant risk point for the banks.

Due to the sharp increase in the volume of the housing credit portfolio and the price increases in the housing market, the Supervisor of Banks has taken measures in the mortgage field in recent years, which have led to an improvement in the risk characteristics of the new mortgages[20] and in the banks' ability to absorb expected and unexpected losses. In addition, the banks slightly reduced their exposure to credit in the construction and real estate industry. With that, the fact that prices in the housing market have continued to rise—against the background of low interest rates and low alternative yields—together with the fact that the credit portfolio is concentrated in the construction, real estate and housing industries, may show that there has been an increase in the risks to the banking system from this portfolio.

The banking system is exposed to a borrower concentration risk (Figure 11). Borrower concentration in the bank credit portfolio is high, *inter alia* because the Israeli economy contains a concentrated controlling ownership structure. In recent years, there has been a

Between 2008 and 2013, credit concentration in the banking system declined.

Figure 11
Credit risk of the 100 largest borrowers[a] out of total credit risk, the five major banking groups, 2008, 2011, and 2013



[a] The largest borrowers do not include banking corporations.
SOURCE: Based on published financial statements and reports to the Banking Supervision Department.

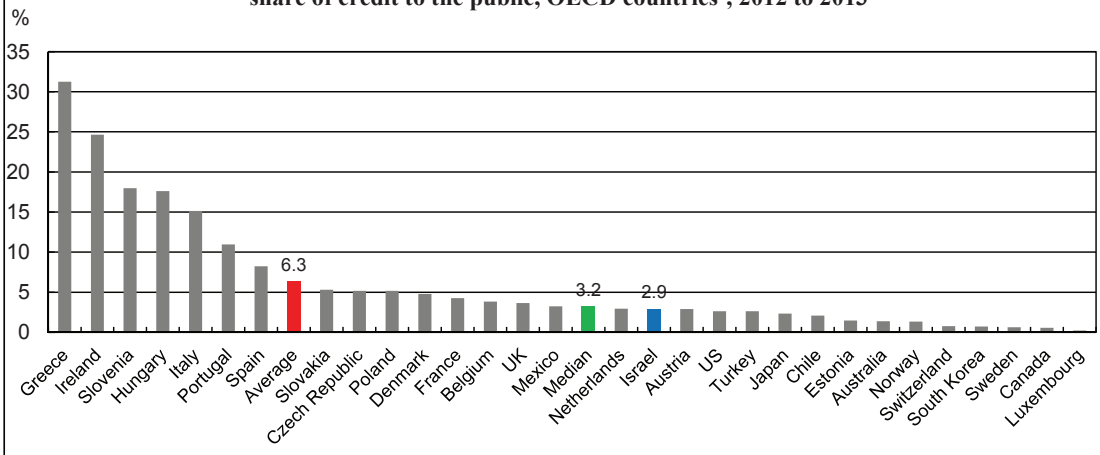
marked improvement in the concentration in the bank credit portfolio. The developments in the bank credit portfolio in 2013 led to an actual reduction of the borrower concentration risk. This reduction derives from the fact that the banks reduced their exposure to large borrowers, as well as from effective restrictions on the extent to which the banking corporation is exposed to a single borrower or to a group of borrowers, and to the banks' efforts to meet the Core Tier 1 capital targets that have been imposed. The Promotion of Competition and Reduction of Concentration Law, enacted in December 2013, is also expected to reduce the banks' exposure to this risk.

Liquidity and market risks

The Israeli banking system continued to be characterized by a relatively high level of liquidity this year, as a result of the mix of high-quality liquid assets and its structure of sources. Most of it is comprised of a stable core of deposits from the public, and a small portion from short-term wholesale funding

[20] There was a decline in the average LTV ratio, in the average PTI ratio, and in the share of variable-rate mortgages.

Figure 12
International comparison of impaired credit and credit in arrears more than 90 days as a share of credit to the public, OECD countries[a], 2012 to 2013[b]



[a] Finland, Germany, New Zealand and Iceland were excluded due to a lack of data.
[b] The data for the UK are accurate as of June 2012. The data for Switzerland are accurate as of December 2012. The data for Japan and South Korea are accurate as of March 2013. The data for Italy, France, Spain and Poland are accurate as of June 2013. The data for Austria, Denmark, Slovenia, Portugal, Greece, Netherlands, the US, Canada, Slovakia, Ireland, Sweden, Turkey, Hungary and the Czech Republic are accurate as of September 2013. The data for Estonia, Luxembourg, Norway, Chile, Australia, Mexico and Israel are accurate as of December 2013.

SOURCE: Foreign countries–International Monetary Fund; Israel–Based on published financial statements.

components. Despite the high level of liquidity, there was some decline this year in the extent of short-term liquidity of up to one month, and an increase in the concentration of depositors. There was also an increase in deposits from institutional investors as a share of total deposits from the public, to a total of 12.6 percent compared with 10.5 percent last year. The Banking Supervision Department, along with the commercial banks, started the implementation process of the Basel III recommendations regarding liquidity in the Israeli banking system. In February 2014, the Supervisor of Banks published draft guidelines for the implementation of a liquidity coverage ratio (LCR)[21] and conducted a quantitative impact study (QIS) concerning the LCR, with the cooperation of the banking corporations.

The banking system is exposed to the risk of interest rate increases and to indexation base risk. The banks are exposed to an increase in interest rates in all indexing segments, and the potential loss as a result of a maximum increase in interest rates is about NIS 1.8

[21] The liquidity coverage ratio was developed by the Basel Committee with the objective of promoting the short-term resilience of the banking corporations' liquidity profile, and shows the quantity of high-quality liquid assets that the banking corporations must hold in order to withstand a significant stress scenario for 30 calendar days. The liquidity coverage ratio is comprised of two components: On the numerator side, the inventory of high-quality liquid assets (HQLA). This inventory is comprised of two levels of assets. Level 1 includes high-quality assets, the holdings of which are unlimited, and level 2 includes assets, the holdings of which are limited to 40 percent of the HQLA inventory. (This level is divided into two sub-levels: 2A and 2B; the volume of holdings of assets in the last level is limited to 15 percent.) On the denominator side, the total net cash outflow, meaning the total expected cash outflow minus the total expected cash inflow in a stress scenario. The total expected cash outflow is calculated by multiplying the balances of various categories or types of balance-sheet and off-balance-sheet liabilities by their expected draw-down or run-off rates. The total expected cash inflow is calculated by multiplying the balances of contractual receivables by the rates they can be expected to obtain in the scenario, to a cumulative maximum threshold of 75 percent of the total projected cash outflow.

billion—3 percent of the fair value of capital. These results show that the level of exposure has increased this year, even though the exposure levels are relatively low. Exposure to the indexation base risk also increased this year to a certain extent, although the potential loss as a result of the maximum change in the exchange rate and in inflation was just NIS 443 million.

Stress tests

The Banking Supervision Department conducted a uniform stress test this year, with the aim of assessing the resiliency of the banks and of the banking system as a whole, in a scenario of a severe domestic recession with serious implications for the housing and real estate industry, as a result of a deterioration in the geopolitical situation. In this scenario, GDP contracts during the year, the business sector is seriously harmed, housing prices decline, and unemployment and interest rates increase.

The realization of the scenario is expected to have a significant effect on the banking system, but does not constitute a risk to its stability. The economic recession is expected to make it difficult for business and individual borrowers to meet their obligations, and the banks will register high losses in the credit portfolio. The concentration in the Israeli credit market is also expected to make these losses more severe. Sharp increases in bond yields, and declines in the stock market, are expected to cause significant losses in the banks' securities portfolio, which in turn will negatively impact profitability and erode capital. This situation could lead to side-effects, with foreign residents, and perhaps even Israelis, withdrawing deposits, investor confidence being harmed, the ratings of the Israeli banks being lowered, and more. The impacts of the side-effects were not measured in this stress test.

The results of the stress-test emphasize the resilience of the banking system, although a significant impact is expected on the banks' profitability. The harm to profitability may be severe and prolonged: a cumulative loss of more than NIS 3 billion, and a return on capital of -2.2 percent in 2014, and -1.8 percent in 2015. The core capital ratio of the banking system as a whole declined in the scenario from 9.3 percent in September 2013 (the beginning of the scenario) to 7.5 percent at the end of the period (the end of 2015), and among the individual banks, it ranged from 6.1 percent to 8.3 percent. These levels attest to the stability of the banking system, and indicate that its capital buffers are sufficient to absorb serious macroeconomic shocks to the Israeli economy. In addition, the test results emphasized the main risk points in the banks, points that are expected to cause significant damage to the banks should the stress scenario be realized—the exposure to the construction and real estate industry and housing credit, the exposure to leveraged credit, and the concentration of large borrowers in the bank credit portfolio. These results support the existing trend of the past few years—the strengthening of core capital. More details on the stress test are published in the Banking Supervision Department's Annual Survey for 2013.

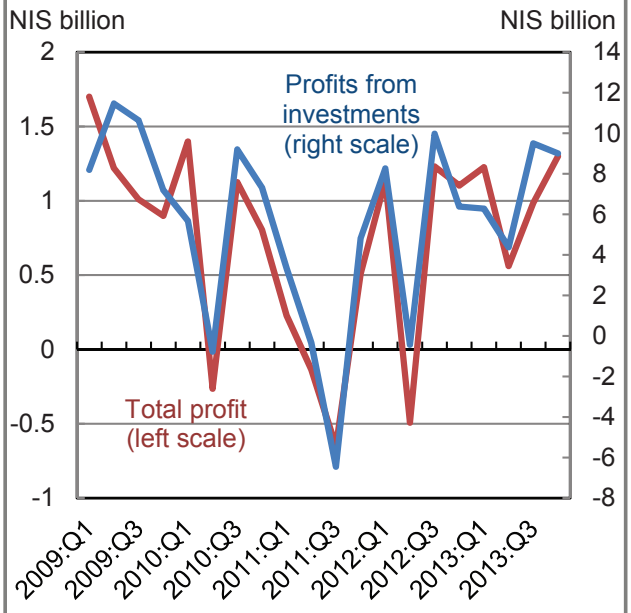
4. THE INSURANCE COMPANIES

In 2013, as in previous years, the insurance companies' performance was affected to a considerable extent by capital market performance. During the year, total aggregate profit of the insurance companies was about NIS 4.1 billion, following total profit of NIS 3 billion in 2012. A factor in the profitability of the insurance companies in 2013 was their profit from investments, which derived from substantial increases in the markets during the year (Figure 13). Another factor in profitability was the fact that the insurance companies were able to resume collecting variable management fees in respect of profit-sharing policies that they marketed until 2004[22], due to the fact that at the end of 2012, they had all covered the cumulative losses in

[22] In respect of the management of assets in profit-sharing policies, the insurance company is entitled to fixed management fees of up to 0.05 percent per month from accumulated assets, and to variable management fees of up to 15 percent from the real yield net of fixed management fees. In case of a loss, the insurance company is not entitled to the variable management fees until the accumulated loss is covered.

As in previous years, profits from investments had a marked effect on the total profit of insurance companies in 2013.

Figure 13
Total profit and profit from investments, quarterly data, 2009–13



SOURCE: Based on financial statements of the insurance companies.

these plans.

The total profit registered by the insurance companies in 2013 led to an increase in their recognized capital relative to the end of 2012. The growth led to an increase in the ratio between recognized capital and aggregate required capital, from 127 percent at the end of 2012 to 130 percent at the end of 2013 (the five largest insurance companies[23], see Figure 14). In parallel, the ratio of Tier 1 capital to their nostro assets[24] reached 11.7 percent in 2013 (compared with 11 percent at the end of 2012).

One of the significant risks to the insurance companies is market risk.[25] As noted, profitability in 2013 reflected profitability from investments, which derives mainly from the behavior of the capital markets in Israel and abroad. A scan of the composition of the insurance companies' nostro investment portfolio (Figure 15) shows that most of their investments are conservative, and that about half of the portfolio is invested in government bonds, mainly in Israel. However, it should be emphasized that the share of risk assets[26] in the nostro portfolio reached about 43 percent—a historically high level. The moderate increase in this proportion during 2013 (from about 42 percent to about 43 percent) derived mainly from an increase in the share of investments in equities[27], from 4.2 percent at the end of 2012 to 5.5 percent in 2013.[28,29] The change in the percentages of investment in the various channels derived mainly from changes in the prices of the securities in 2013. It is worth nothing that the insurance companies are continuing to invest their equity mainly in Israel—at the end of 2013, only 7.3 percent of the investments in the nostro portfolio had been diverted to abroad, compared with 27.7 percent of investments in the profit-sharing plans portfolio.

The insurance companies try to diversify the risks inherent in their capital market exposure by way of exposure to alternative investments, such as real estate and direct loans, but these still comprise a relatively small part of their total assets. Between 2009 and 2013, the insurance companies gradually increased direct investments in real estate as a portion of the total assets in the nostro portfolio, from 2.2 percent in 2009 to 3.3

[23] Migdal, Clal, Harel, Menora, and Phoenix

[24] Excluding profit-sharing policies, plans in which the insured clients bear the investment risk.

[25] Reinsurers of the insurance companies do not provide insurance coverage for the companies' investment risks, but only for the various insurance risks. More on this appears below.

[26] Risk assets are all assets other than government bonds, cash and cash equivalent, and deposits at banks.

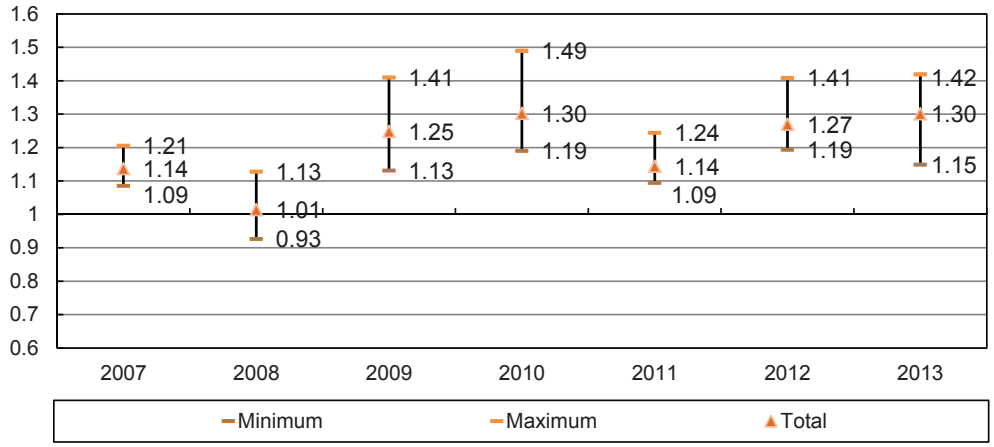
[27] Direct investments in shares and ETFs that invest in shares.

[28] This rate is similar to the rate of stocks in the investment portfolios of the large insurance companies in Europe. Their investments in shares constitute slightly less than 50 percent of their total investments (according to the Financial Stability Review published by the European Central Bank in November 2013).

[29] The rate that the insurance companies invest in shares in Israel is significantly lower than the rate among the public.

The ratio of recognized capital to aggregate required capital in the five major insurance companies was slightly higher in 2013 than in 2012.

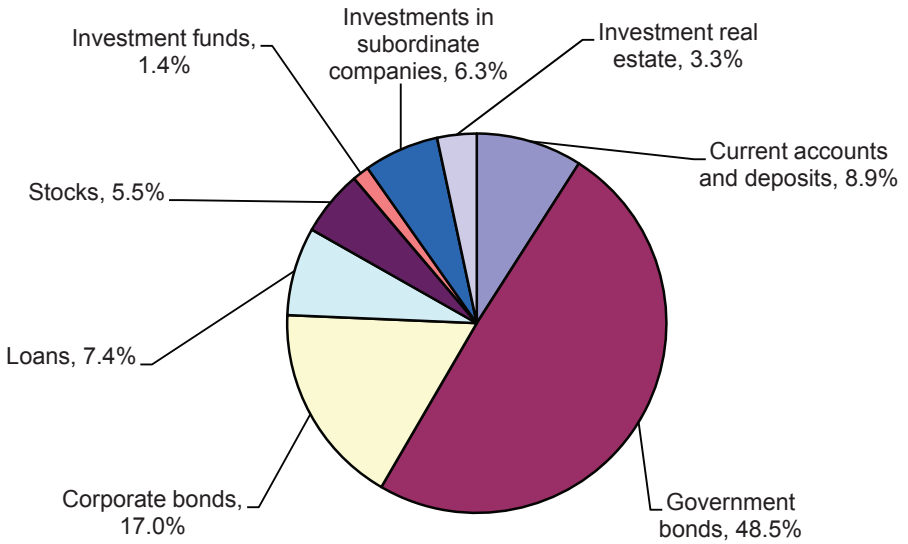
Figure 14
The ratio of recognized capital to required capital: the five major insurance companies[a],



[a] Migdal, Harel, Clal, Menorah, and Phoenix.

Insurance companies' investments are mostly conservative.

Figure 15
Distribution of the insurance companies' nostro portfolio, fourth quarter of 2013



SOURCE: Based on financial statements of the insurance companies.

percent at the end of 2013. One of the reasons for this is that it is a yield anchor, an investment that generates a fixed flow of income from rentals. It is worth noting that these figures refer just to direct investment in real estate, and that the insurance companies are in fact exposed to the industry through debt and capital instruments as well: The total exposure of the five largest insurance companies to the real estate and construction industry increased from 6.1 percent of nostro assets in 2010 to 7.6 percent of nostro assets in 2013. Together with this growth, there was an increase in the variance between the companies in terms of the percentage of the nostro's exposure to real estate and construction. Since the banks have not increased the supply of credit to the real estate industry in recent years, and since concentration in the industry makes it difficult for some of the large companies to expand due to regulatory restrictions, it is expected that the insurance companies will continue expanding their investments in this area.

The share of loans (excluding loans to subsidiary companies) in the insurance companies' nostro portfolio was 7.4 percent at the end of 2013, an increase of about 14 percent compared to the end of 2012. By way of comparison, at the end of 2013, the insurance companies directed 6.5 percent of the investment portfolio of profit-sharing policies to the provision of loans, while the other institutional investors (provident funds, advanced training funds and pension funds) invested just 3 percent of their investment portfolio in this channel.[30] Alternative investment channels may help the insurance companies diversify their investment risks and reduce their direct (and immediate) dependency on capital market results, but it is important to note that they also have risks of their own: They are generally less liquid than investments in stocks or bonds, and in contrast with tradable debt and capital instruments, they are not traded in the market, and are therefore revalued according to fair value through the use of a model that also serves for the revaluation of nontradable corporate bonds.

[30] More information on direct loans appears in Box 3.

In addition to the risk of loss in the nostro portfolio's value due to declines in the markets, the insurance companies are exposed to the risk of loss in the assets of the profit-sharing policies, policies that were sold between 1991 and 2003. Under these policies, insured clients bear the investment risks, but the realization of these risks, as happened for example in the second quarter of 2012, prevents the insurance companies from collecting variable management fees on the policies. About 72 percent of investments of the profit-sharing policies were directed to risk assets at the end of 2013. The positive returns in the markets at the end of 2012 and the beginning of 2013 made it possible for the insurance companies to cover the investment losses of the profit-sharing policies and to resume collecting variable management fees on these policies.

Liquidity risk in the insurance companies is smaller than it is at banks, and that is the result of both the fact that, in contrast to the banks, the duration of their liabilities is longer than that of their assets, and the fact that, in contrast with money deposited in a bank, insured clients cannot immediately obtain most of the money in the insurance companies' nostro, but only as a result of a contingency or on reaching retirement age. The companies' liquidity risk derives mainly from policies that ensure a yield, against which there is no designated bond. These policies comprise just 8.6 percent of their assets. The companies' direct exposure to credit risk is also low since they are investing, as stated, only about 7 percent of nostro assets in the provision of credit.

On the liabilities side, the insurance companies are exposed to insurance risks, including longevity and morbidity risks in life and health insurance policies, and the risks from damage to property in elementary insurance policies. The regulator's concern regarding longevity risk has in the past two years led to significant regulatory changes in the insurance and pension savings field, including (a) a requirement to increase the reserves that the insurance company is required to hold against the pay-out liability in life insurance policies with a guaranteed pay-out coefficient, and (b)

prohibiting the insurance companies from marketing life insurance policies with a guaranteed conversion coefficient for savers aged less than 60, beginning in 2013. These changes are expected to contribute to the stability of the companies, both because they deal with the increase in life expectancy and because the prohibition against marketing policies with a guaranteed conversion coefficient passes the risk from the insurance companies to the insured.

Other insurance risks may appear unexpectedly; these are catastrophic risks—exposure to a risk that a single and heavy-impact event, a stress event such as an earthquake, a plague, war or terrorism, will lead to a high amount of accumulated damage. The realization of a catastrophic risk, alongside the company's liability, may be accompanied by a negative impact on the assets side as a result of the same stress event. The companies protect themselves from the risk of a catastrophic event mainly through reinsurance. In the five largest insurance companies, reinsurers cover more than 97 percent of the volume of damage to elementary insurance business that would be caused by a catastrophic event, so the primary concern related to a catastrophic event is an occurrence that is accompanied by the loss of reinsurers' ability to meet their insurance liabilities. The five largest insurance companies have two main reinsurers: Swiss Re and Munich Re, and the exposure to both of them together is about 36 percent of the total exposure of the five largest insurance companies to the reinsurers. This exposure rate has been in a downward trend since back in 2009, when it was about 50 percent. This reduces concentration in the field as well as the level of group risk to a single reinsurer. Furthermore, the exposure of all of the five largest insurance companies to secondary insurers with a rating of A or higher is greater than 98 percent.

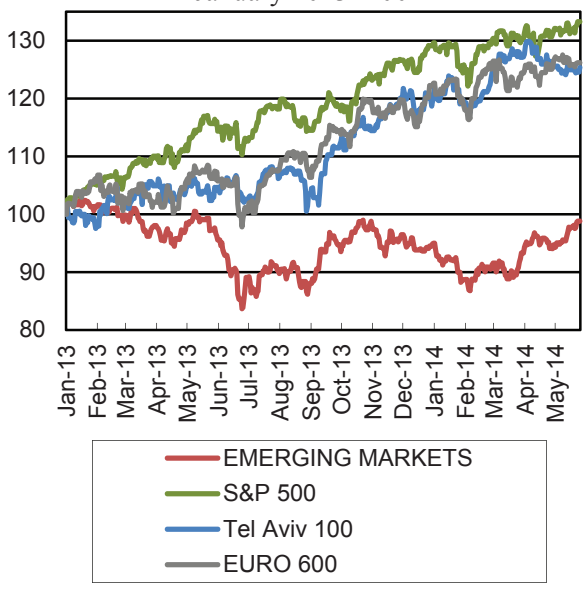
5. THE CAPITAL MARKET AND ASSET PRICES

a. The stock market

In the first five months of 2014, stock prices increased in Israel, similar to stock prices in most of the markets around the world (Figure 16), and further to the positive trend that was recorded during 2013. The Tel Aviv 25 index increased in the first third of 2014 by 4.8 percent, and the general stock index increased by 8.9 percent, in real terms. The positive trends in the stock markets in Israel and globally were supported by the low interest rates, and also reflect optimism regarding the economic recovery in the US and in some European countries.

Stock prices in Israel increased in the first five months of 2014, further to the trend in 2013, and similar to prices in most global markets.

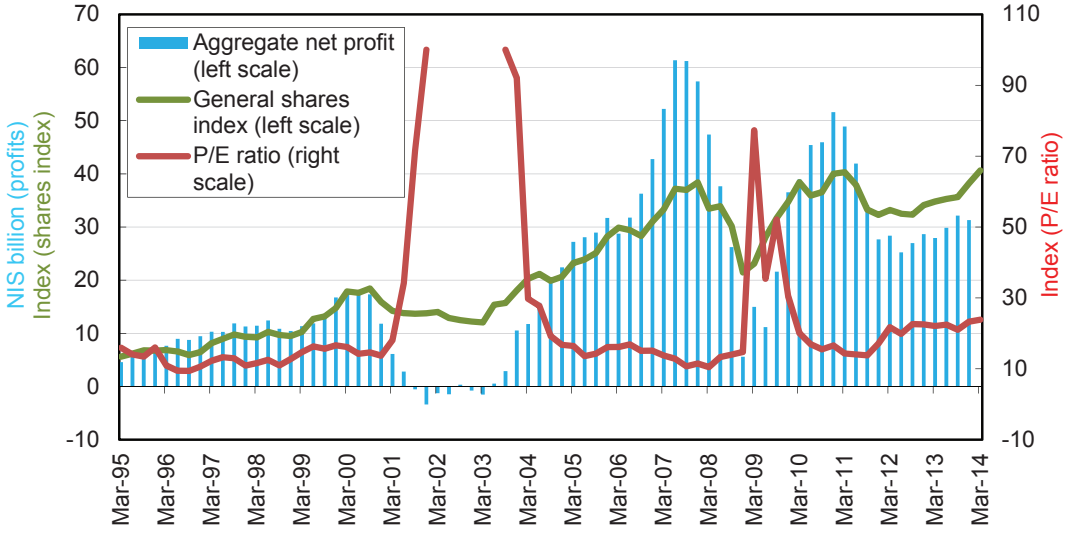
Figure 16
Stock indices in Israel and the world, in dollars, January 2013 to May 2014,
January 2013=100



SOURCE: Based on Bloomberg data.

P/E ratios are above their long-term average.

Figure 17
The P/E ratio of all companies traded on the Stock Exchange, general shares index, and corporate profits: cumulative value in the last four quarters, 1995:Q1–2014:Q1



SOURCE: Based on Tel Aviv Stock Exchange and financial statements.

In parallel with stock prices, trading volumes of stocks also increased during this period, further to their recovery in the second half of 2013.[31] The pace of stock offerings in the primary market also increased compared with the pace seen in 2013.[32] Since stock prices increased in 2013 and the beginning of 2014, stocks as a share of the public's asset portfolio in general, and in the asset portfolio of institutional investors in particular, increased.

The increase in stock prices was supported mainly by the decline in the interest rate levels (long-term, nominal and real)—both in the fourth quarter of 2013 and in the first quarter of 2014—since the decline reduces the yield required on stock holdings.[33] During this period, the net P/E ratio[34] increased to a level higher than its long-term average (Figure 17). An international comparison shows that the P/E ratio of the Tel Aviv 100 index increased in parallel with the rise in the P/E ratios of the main stock indices in the advanced economies and the decline in the ratios of the emerging markets index (MSCI Emerging Markets), and is at the center of the range of ratios of the markets in the advanced economies.[35] In contrast, the increase in share prices took place even though there was a decline during the fourth quarter of 2013 in aggregate profit (over four quarters) of the companies traded on the stock exchange (Figure 17).

[31] More information on stock trading volumes appears in Chapter 4 of the Bank of Israel Annual Report for 2013.

[32] According to stock exchange data.

[33] The yield on holding shares is equal to the ratio between net profit and market capitalization. This ratio, the inverse of the P/E ratio, provides an indication of the required yield on the stock, since in steady state—a situation in which the company's profits are fixed—it presents the real, long-term yield on holding the share.

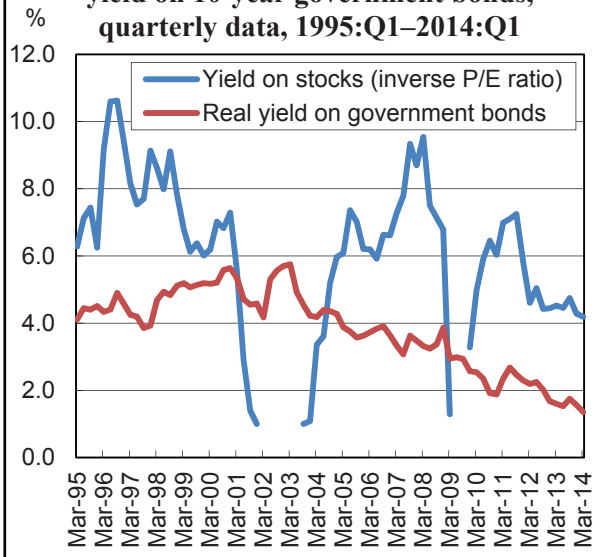
[34] In order to calculate the P/E ratio of a company, its market capitalization is divided by its net profit in the last four quarters. In order to calculate the aggregate P/E ratio, the market capitalization of the companies traded on the stock exchange is totaled, and then divided by their aggregate net profit in the last four quarters. The market capitalization and profits of the companies traded on the stock exchange are normalized to the value of public holdings. The ratio reflects the amount of shekels that investors are prepared to pay for each shekel of profit that the company generates in a year.

[35] See Chapter 4 of the Bank of Israel Annual Report for 2013.

As stated, due to the increase of stock prices, the yield on stock holdings declined in the first quarter of 2014. The real yield on 10-year government bonds declined during this period by a higher rate, such that the surplus yield on stock holdings increased slightly (Figure 18).[36] The surplus yield on stocks vis-à-vis government bonds is in a trend of decline, and its level is higher than in the past. Even if it reflects pricing differences between the assets, the pricing in the stock market is also affected by the low level of interest rates.

The yield on stock holdings declined in the first quarter of 2014 due to the increase in prices, and real yields on 10-year government bonds declined in parallel at a higher rate. The surplus yield on stock holdings therefore increased slightly.

Figure 18
The yield on stocks compared to the real yield on 10-year government bonds, quarterly data, 1995:Q1–2014:Q1



SOURCE: Based on Tel Aviv Stock Exchange and financial statements.

b. The corporate bond market

The corporate bond market is the main alternative to bank credit for the business sector in Israel. The tradable portfolio constitutes about 26 percent of total credit to this sector (with the percentage of bank credit to the sector being about 50 percent). At the end of May, the scope of the (nonfinancial) corporate bond market in Israel was about NIS 202 billion, compared to NIS 209 billion at the beginning of 2013.[37] As of the end of 2013, corporations had raised debt totaling NIS 36.4 billion, and had paid off old series totaling NIS 41 billion. Among the main industries, only the real estate industry had a net issuance of debt, and since September 2013, the total volume of debt issued in that industry, over the previous 12 months, has been higher than that of all other industries combined. Excluding the issuances by companies in the financial sector and by government and foreign companies, the issuance of debt by way of corporate bonds totaled about NIS 27 billion in par value terms—a significant increase compared to previous years. (In 2012, for instance, the total was NIS 18 billion.) Since the beginning of 2014, the pace of issuances has been maintained close to the 2013 monthly average, about NIS 2.5 billion. However, the contraction of profits has not been reflected so far in a sharp increase in the volume of offerings, and the net volume of offerings is not high.

A division by sector indicates that the financial institutions and companies from the real estate and construction industry have continued to be the dominant factors in the corporate bond portfolio balances. However, each of these sectors has a trend of its own: While the weight of the banks has remained almost unchanged[38], the weight of the real estate industry has increased rapidly in recent years, reaching 30 percent of the total volume of corporate bonds. About 50 percent of total offerings in 2013 were

[36] The surplus yield is equal to the gap between the real yield on share holdings and the real yield on 10-year government bonds. The difference between the yield on shares and the yield on a risk-free asset presents the required risk premium on share holdings. During periods when share prices are not disconnected from economic factors in the market, surplus yield in this market will be positive, and will reflect the risk derived from investing in it.

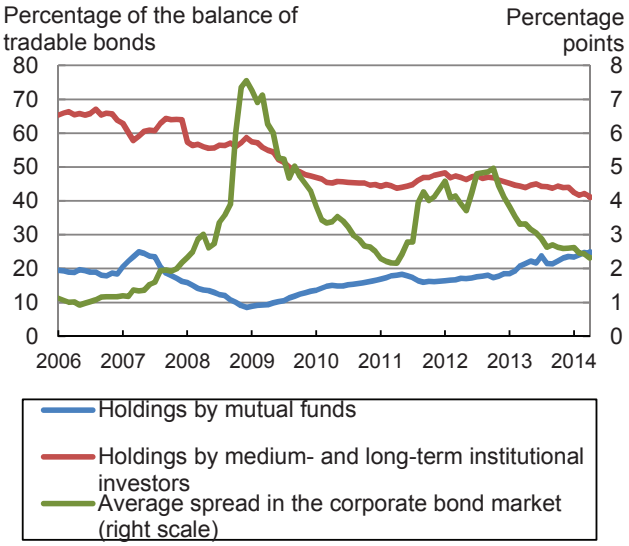
[37] About 90 percent of the bonds that were issued during the reviewed period were tradable.

[38] The volume of money attracted declined in the reviewed period due to regulatory changes, and possibly also due to the low growth of credit.

made by companies in the real estate field. As to the general trend, while in previous years most offerings were characterized by high ratings and were made by large companies, in 2013 the trend was bond offerings by small companies, low-rated or unrated series, and lower quality collateral. These bonds increased as a share of the total supply of corporate bonds from 4.1 percent in 2012 to 15 percent in 2013, with the bonds of companies from the real estate industry increasing in particular.

Alongside the change in the mix of supply in the corporate bond market (which acts to raise risk) and the decline in yield spreads, mutual funds have continued to be very attractive (Figure 19). These—together with the broad public—are among the short-term demand forces that are supporting the corporate bond channel, which may make the channel very volatile. In contrast, the activities of the institutional bodies focusing on long-term investments has a relatively low correlation with the leading bond indices. The increase in mutual funds' demand for corporate bonds has led to a further increase in the share of these entities' bond market holdings—which reached about 21.5 percent of the inventory of tradable bonds, compared to 13.3 percent at the end of 2009—at the expense of long-term savings entities, whose share of investments declined from 15.7 percent in 2012 to 13.5 percent at the end of 2013. Since the beginning of 2014, therefore, the mutual funds specializing in bonds have attracted about NIS 11 billion (net), and about 70 percent of this amount has been directed to corporate bonds—similar to the pace of investments in 2013 when the funds attracted a net total of about NIS 30 billion. In addition, redemption data show that over the next 12 months, corporate bonds totaling NIS 54 billion (in par value terms) will be maturing, of which the companies (excluding financial companies) are expected to pay out about NIS 39 billion.[39] If the net investment in the bond funds continues without a parallel growth in the supply of bonds, it is expected to lead to a continued reduction in yields.

Figure 19
The average spread in the corporate bond market and holdings by mutual funds and medium-and-long-term insititutional investors[a] in tradable corporate bonds, 2006–14



[a] Medium- and long-term institutional investors include provident funds, advanced training funds, pension funds and insurance companies.

SOURCE: Bank of Israel.

6. THE PAYMENT AND SETTLEMENT SYSTEMS

Background

The payment and settlement systems are an essential part of the economic and financial infrastructure of modern economies. The efficient functioning of these systems contributes to the development and financial stability of economies. Payment systems that are not sufficiently reliable may expose their users to risk, and even transfer risks from one economic system to another to the point of developing systemic risk. It is therefore essential to ensure the efficiency and stability of the payment and settlement systems in the economy. Accordingly, the Bank of Israel Law, 5770–2010, sets out that one of the functions of the Bank is to regulate the payment and settlement systems.

[39] In 2013, there was a significant increase in the volume of debt entered into restructuring proceedings (NIS 11.4 billion compared with NIS 3.8 billion in 2012). This volume derives from a small number of companies (10) with high debt balances.

The need to ensure the efficiency and stability of the payment and settlement systems is recognized worldwide. Global recognition of the powerful risks to these systems led the Bank for International Settlements (BIS) and the International Organization of Securities Commissions (IOSCO) to recently formulate twenty-four international principles for all infrastructure operating in the financial market.[40]

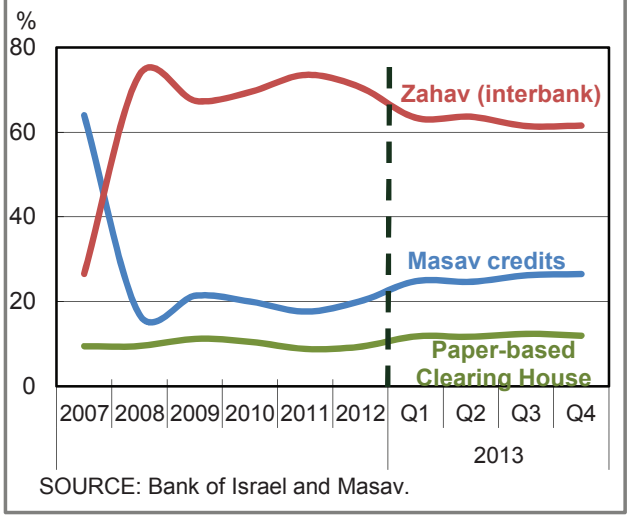
In Israel, there are six payment and settlement systems in operation: (a) the Zahav system[41], which serves as the final settlement for the entire payment and settlement system in Israel; (b) the Paper-based Clearing House for check settlement. This system handles checks and manual vouchers; (c) Masav[42]. This is an electronic system that transmits inter-bank transactions in shekels that are not final in real time, such as direct debit authorizations, salary payments, tax payments, and so forth; (d) Shva.[43] This company collects the transactions made with credit cards in Israel, approves them and processes them, and maintains a network of ATM machines; (e) the Stock Exchange Clearing House (securities clearing house and Maof clearing house), which settle the results of trading on the stock exchange; and (f) Continuous Linked Settlement (CLS).[44] The shekel joined CLS in 2008, and as a result, financial entities in Israel can safely make conversion transactions with foreign financial entities.

Activity in 2013

Total interbank activity in the Zahav system—most of which are interbank transfers—declined by about 27 percent, and total activity in the Zahav system declined as a result by about 10 percent.

An analysis of the distribution of total activity among the settlement systems finds that about 61.5 percent of total activity in 2013 was in interbank settlement in the Zahav system, credits in Masav accounted for about 26.4 percent, and checks accounted for about 12.1 percent (Figure 20).

Figure 20
Distribution of settlement activity, 2007–13



SOURCE: Bank of Israel and Masav.

Figure 20 shows that there was a decline in the Zahav system's share of activity amounts. The decline derives from a decline in the volume of interbank transfers, and from a decline of about 29 percent in the amounts of the conversion transactions in CLS (transactions in which one side is the shekel). As the rate of interbank settlement in Zahav increases at the expense of credit settlement in Masav, and as the amounts settled in the Paper-based Clearing House decline, the risks to these systems decline as well.

In 2013, the Bank of Israel continued acting to improve the efficiency of the payment systems. The Bank took action to encourage the use of advanced electronic means of payment that reduce risk, including action to

40 Principles for Financial Market Infrastructure (PMFI). The document was published in 2012, and appears at http://www.bis.org/publ/cpss101a.pdf. The principles set out standards and requirements in various fields, including in relation to mutual connections and dependence between the payment systems, since these may lead to the wide spread of risks. In addition, the document expands the areas of responsibility of the supervisory bodies (the central bank, supervisors of the financial market, and other supervisory authorities) in implementing the principles concerning regulation, supervision and control over the financial infrastructure.

41 Hebrew acronym for Real Time Gross Settlement (RTGS) system.

42 Hebrew acronym for Automatic Clearing House (ACH).

43 Hebrew acronym for Automatic Bank Services.

44 The international clearinghouse for conversion transactions.

reduce manual settlement and the implementation of an advanced check settlement system based on innovative technology. The aim of these actions was to reduce the risks in the Paper-based Clearing House as well as in the system settling its net transactions—Zahav. The Bank is also acting to reduce the amount of payment transferred by Masav in a single transaction, with the aim of reducing the settlement risks and the liquidity risks both in Masav and in Zahav.

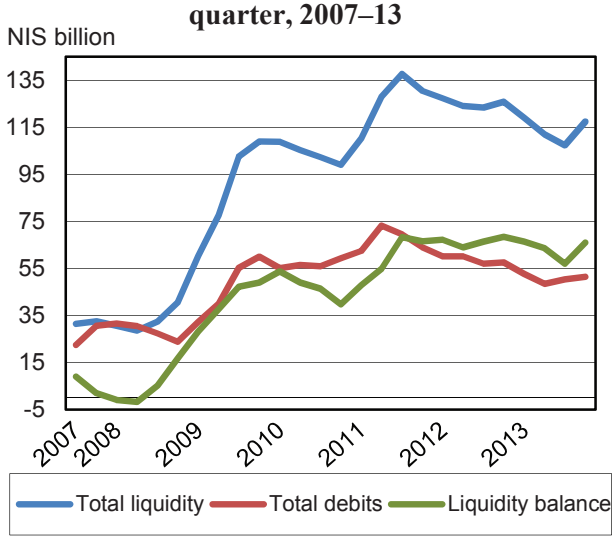
In parallel with the actions taken by the Bank of Israel this year to improve the efficiency of the payment systems, it continued to act to increase their stability. The stability of the financial infrastructure in Israel will continue to grow stronger as the existing payment systems become more advanced and improve their fulfillment of the international risk reduction principles. Accordingly, the Bank of Israel has strengthened its oversight of the payment systems in the economy: Based on the Payment Systems Law, 5768–2008, the Governor declared Masav and Shva as controlled payment systems in July 2013. These retail systems are important to the payment array in Israel since, as outlined above, they provide essential services to the broad public. The declaration makes these systems subject Bank of Israel oversight[45], and supervisory activities vary from one system to another in accordance with the characteristics of the system and the risks identified in its activity. The declaration also provides the systems with various protections, which contribute to the stability and security of the systems, make it possible to use them securely even when one of the participants experiences a crisis or failure, and reduce the systemic risk.

Examining the stability of the Zahav system

Due to the economic importance of the Zahav system, the Bank of Israel conducts an evaluation of its stability through various indices, including the liquidity balance in the system[46], its level of availability and the level of concentration in it.

The liquidity balances in Zahav reflect a situation in which there is surplus liquidity in the current account and in the line of credit that the Bank of Israel makes available to participants against collateral. This surplus makes it possible for participants to make payments even if their accounts are not credited. High liquidity balances therefore reduce the liquidity risk in the system. The liquidity balances in Zahav are high, and are characterized by a moderate upward trend. This trend began in mid-2008 with the outbreak of the global economic crisis (Figure 21).

Figure 21
Total debits, liquidity and liquidity balances in Zahav, daily average per quarter, 2007–13



SOURCE: Bank of Israel.

The availability of the Zahav system has remained at a high level since the beginning of its operation. This high level attests to stability and to business continuity capability. In 2013, the system was available 99.92 percent of the time, similar to its availability in 2012

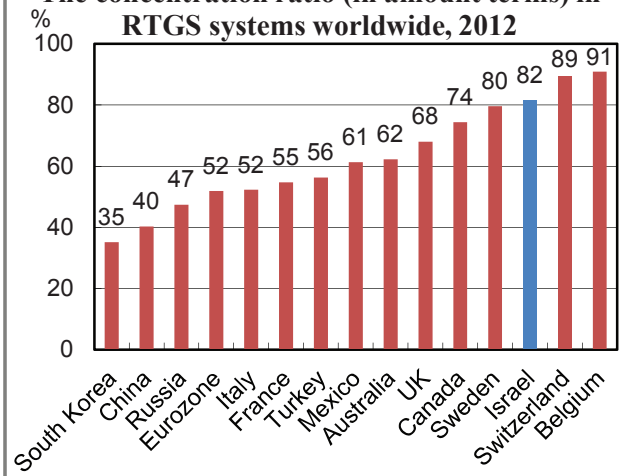
[45] Shva and Masav are also supervised in accordance with the provisions of the Banking (Licensing) Law, 5741–1981.

[46] The liquidity balances are calculated according to daily averages: Total liquidity in the Zahav system minus total interbank charges.

and to the accepted rates in RTGS systems around the world.

The level of concentration of those participating in Zahav provides an estimate of the systemic risk in the system. The level of concentration reflects the volume of interbank activity (in amount terms) of the five most active participants[47], and as it increases, the level of systemic risk increases. The concentration ratio in the Zahav system is 82.7 percent, 1.4 percent higher than the previous year (Table 4). The concentration level in Israel is high compared to the world (Figure 22).

Figure 22
The concentration ratio (in amount terms) in RTGS systems worldwide, 2012



SOURCE: Bank for International Settlements (BIS).

Table 4
Concentration ratio (in amount terms) in the Zahav system, 2008–12 (percent)

	Concentration ratio	Annual change
2008	79.2	-
2009	76.6	-3.3
2010	77.6	1.2
2011	80.8	4.1
2012	81.6	1.0
2013	82.7	1.4

SOURCE: Bank of Israel.

[47] There is not necessarily a parallel between the size of the banks and the volume of their activity in the Zahav system.

BOX 1: THE HOUSEHOLD SECTOR

Background: Development of household debt

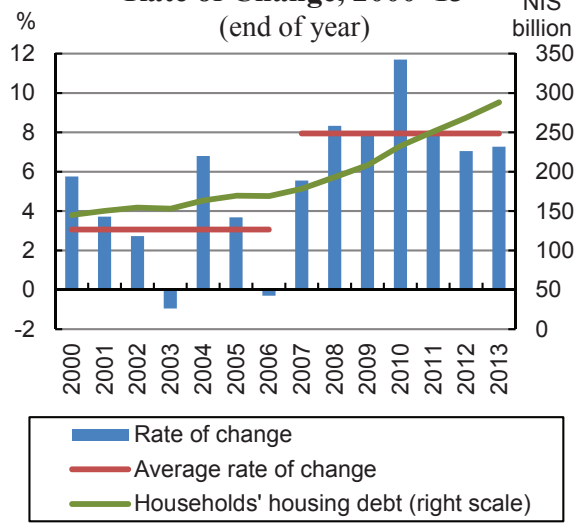
In recent years, the pace of growth of household debt has increased rapidly, reaching NIS 412 billion in 2014, an increase of 55 percent compared to the end of 2007. Nonetheless, since the end of 2007, the ratio between household debt and GDP increased only slightly, while the ratio of debt to disposable income remained virtually unchanged—due to growth in GDP and in disposable income—and both ratios are significantly lower than the parallel data in most of the advanced economies.[1]

Most of the growth in the balance of debt derives from housing credit (Figure 1), which constituted about 70 percent of the balance of household debt in Israel at the end of 2013. In parallel with the rapid increase in household credit, home prices in Israel also increased—by more than 60 percent in real terms since 2008. (More information appears in the section dealing with the risk from the housing market.)[2] This development exposes the lending banks to risk from the household sector—the risk of a sharp and rapid turnaround in the housing market and that housing prices may start to decline, particularly if the turnaround is accompanied by an increase in the interest rates and/or a recession and a decline in borrowers' income.

The banks are almost the only suppliers of household credit (providing about 90 percent of total credit and 92 percent of housing credit), but in recent years, we have also seen a rapid expansion of the housing credit portfolio in some of the institutional bodies (Table 1), which has grown by an average of 22 percent per year in the past three years. In parallel, in 2013 there was an increase of about 7 percent in nonhousing credit[3] from the banks and the institutional bodies.

Since the crisis, the growth rate of households' housing debt has increased.

Figure 1
Households' Housing Debt: Level and Rate of Change, 2000–13
(end of year)



SOURCE: Bank of Israel.

1 The data for Israel are from Bank of Israel calculations, and the data on the other advanced economies are taken from the OECD. As to the data on the debt to GDP ratio, see Figure 1b in the section dealing with main developments.

2 SOURCE: The index of home prices published by the Central Bureau of Statistics.

3 In contrast to 2013, there was virtually no change in nonhousing household credit in the first quarter of 2014.

The balance of households' assets and liabilities

In recent years, recognition has grown around the world of the fact that the balance-sheet approach and national balance-sheet data are important in monitoring financial stability, since an analysis based on the balance-sheet approach may provide interesting insights into financial crises and systemic risks.[4]

Table 1
Households' debt balances, 2010 to March 2014
NIS billion, current prices, period ends

	2010	2011	2012	2013	03/2014
Total household debt[a]	**339.5**	**363.2**	**382.7**	**409.7**	**411.9**
by sources:					
Banks	291.1	317.6	340.5	369	369.2
of which: for housing[b]	200	221.2	242.7	264.3	266.2
of which: not for housing	91.1	96.4	97.9	104.7	103.1
Institutional investors	**5.1**	**5.9**	**6.5**	**7.3**	**7.4**
of which: for housing	1.6	2.1	2.5	2.8	2.8
of which: not for housing	3.6	3.8	4.1	4.5	4.6
Credit card companies[c]	**8.5**	**9**	**9.5**	**10.4**	**10.4**
Total from credit card companies[d]	27.5	27.9	29.3	31.1	31.1
The government - targeted credit[e]	**34.7**	**30.8**	**26.1**	**23**	**22.2**
by use:					
Total housing debt	**232.6**	**250.9**	**268.6**	**287.8**	**288.8**
Total non-housing debt	106.8	112.4	114.1	121.9	120.3

[a] Excluding credit.
[b] Including loans not intended for the purchase of a home but granted against a home as collatera. As of March 2014 about NIS 23 billion.
[c] Credit that is the responsibility of credit card companies. Credit that is the responsibility of, or guaranteed by, banks is included in the banks data.
[d] All household credit that originates with the credit card companies, including credit that is the responsibility of, or guaranteed by, the banks.
[e] Credit directed towards a person eligible for mortgages constitutes most of the amount, with the remainder being credit to students.
SOURCE: Bank of Israel calculations.

The balance sheet of households in Israel for 2012 (Table 2) shows that households have a large surplus of assets over liabilities.[5] An international comparison shows that the ratio of liabilities to assets among households in Israel is lower than the same ratio in other advanced economies. The ratio of total liabilities to total assets among households in Israel was about 8 percent in 2012, while it was 16 percent in the UK and the US.[6] Total assets includes a significant real estate component, which constitutes more than half of the value of total household assets. This component carries a risk that derives from the fact that home prices significantly

[4] This recognition is reflected in may publications, led by a major comprehensive paper written by the International Monetary Fund: Mark Allen, Christoph Rosenberg, Christian Keller, Brad setser, and Nouriel Roubini (2002), "A Balance Sheet Approach to Financial Crisis", International Monetary Fund, WP/02/210.

[5] The data on household liabilities, and on the value of real estate and vehicle assets, are from Bank of Israel calculations. The data on financial assets are from the Central Bureau of Statistics, taken from the National Balance Sheet.

[6] The household balance sheet in the US was taken from the Federal Reserve's website, and the data on the household balance sheet in the UK were taken from the Financial Stability Report published by the Bank of England.

increased in recent years, and households—mainly those that have purchased a home in recent years—are currently exposed to a decline in the value of their assets.

Table 2
Balance of household assets and liabilities in Israel, 2012
NIS billion, current prices, month end

Real assets	NIS billion	Percentage of total assets	Liabilities and net worth of households	NIS billion	Percentage of total liabilities and net worth
Real estate	2,550	52%	Mortgages	269	5%
Vehicles	80	2%	Consumer credit	114	2%
Total real assets	2,630	54%	Total liabilities	383	8%
Financial assets	**NIS billion**	**Percentage of total assets**			
Cash and deposits	509	10%			
Securities, excluding shares	288	6%			
Shares	251	5%			
Mutual funds	157	3%			
Insurance reserves[a]	942	19%			
Various receivables/payables	112	2%			
Total financial assets	2,258	46%	Net worth	4,506	92%
Total assets	4,888	100%	Liabilities and net worth	4,888	100%

[a] Including life insurance, provident funds, pension funds, and advanced training funds.
SOURCE: Bank of Israel estimates.

The ratio of total liabilities to financial assets has been in a upward trend in recent years, but it is significantly lower than the same ratio in other advanced economies. At the end of 2012, the ratio in Israel was 17 percent (compared to 13.8 percent at the end of 2006), while it is 33 percent in the UK, 23 percent in the US (and 41.3 percent in 2006, before the financial crisis[7]). In 2012, the ratio of mortgage debt to real estate assets held by households in Israel was 10.5 percent (compared to 22 percent in the UK and 48 percent in the US). In other words, although households were more leveraged in 2012 than they were in 2006, their leverage is low compared with other advanced economies.[8] An assessment of the ratio of total household liabilities to total household liquid assets[9] (about 30 percent of their total assets), finds that on average households still have a large surplus of liquid assets over liabilities, with a ratio of 35.5 percent at the end of 2012.

7 Flow of Funds Accounts of the United States, Board of Governors of the Federal Reserve System, June 2006.

8 An international comparison of the ratio of household debt to the value of their stocks (direct and indirect holdings) based on data published on the OECD website, shows that the value in Israel is significantly lower than in other countries that were examined, including Denmark, Finland, Germany, Spain, the UK and the US.

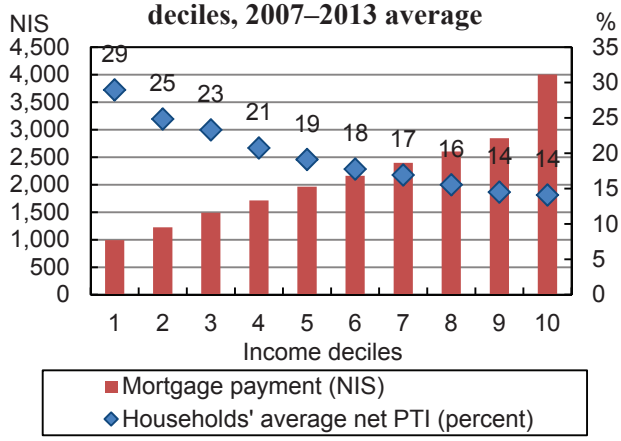
9 Liquid assets held by households include: cash and deposits of up to one year, stocks and other securities, and mutual funds.

An analysis of households at the individual household level

Since there is a high level of inequality in the distribution of income in Israel, it is not enough to look at the average household in order to assess the stability of the household sector. The various income deciles must also be assessed, particularly those that are more exposed to the risk of recession and unemployment. Data on households at the individual level are not currently available, but the household income and expenditure survey, prepared by the Central Bureau of Statistics, provides information on household mortgage debt in the various declines. One of the main indices of borrowers' repayment ability is the payment to income (PTI) ratio. Assessing this ratio by income deciles shows that the PTI ratio[10] (the average between 2007 and 2012) in the three lowest deciles is higher than the average[11] (Figure 2). These deciles are more exposed to unemployment, and the risk is therefore higher that they will not be able to repay their mortgage.

Among households in the lower income deciles, PTI is higher than the average.

Figure 2
Mortgage payments and PTI ratio of households (with mortgages)[a], by income deciles, 2007–2013 average



[a] The PTI data in Figure 2 are different than the data in Figure 7 in the section dealing with the housing risk, since here it is an average of all mortgages (some of which have already been repaid), and in Figure 7, it is the new mortgage flow only.
SOURCE: Based on Central Bureau of Statistics.

The risk to the financial system from the household sector

The banks' exposure to the household sector increased compared to the past, mainly because the volume of household indebtedness is growing in parallel to the increase in the proportion of household credit in the bank credit portfolio.

Studies show that a moderation in real activity has a significant impact on the risk from households, and that an increase in unemployment is one of the main causes of the increased risk of default in this sector, particularly when households allocate a high proportion of their income to mortgage repayments.[12,13] Another

[10] The income in each decile is equal to the average income of all mortgage borrowers in that decile. Likewise, we related only to a PTI ratio lower than 1.

[11]

[12] T. Campbell and J.Dietrich (1983), "The Determinants of Default on Conventional Residential Mortgage", Journal of Finance, 38(5), 1569–1581.

[13] Z. Naor and G. Benita (2013), "Borrower Risk in the Mortgage market: Historical Development and Evaluation in a Number of Scenarios", Bank of Israel. The study found that the proportion of high-risk mortgages out of total mortgages is expected to increase by 11 percentage points in a scenario of moderation in real economic activity (A decline in wage levels and an increase in the unemployment level).

risk factor in the mortgage market concerns the relatively high proportion of mortgages at variable-rate interest, particularly unindexed mortgages, since changes in the interest rates for these mortgages are closely linked to changes in the Bank of Israel interest rate.[14] At the beginning of 2014, the proportion of unindexed mortgages at variable-rate interest reached 36 percent of the total balance of mortgages provided by the banks. In order to assess the exposure of households to variable interest rates, an estimate was made of the increase in interest payments under several scenarios. In the scenario in which the interest rate increases by 2.5 percentage points, interest payments on unindexed variable-rate mortgages would increase by about NIS 2 billion per year. This increase is focused on household that took out variable-rate mortgages, and it could therefore increase the risk of these borrowers.

From the standpoint of the individual household, assuming that it takes out an average-sized mortgage—NIS 600,000—such an increase in the interest rate would lead to an increase of about NIS 5000 per year in the interest payments on the shekel-denominated unindexed variable-rate part of the mortgage, if that part is 35 percent of the mortgage, or an increase of about NIS 11,000 if that part is 75 percent of the mortgage. An increase of this magnitude is the equivalent of 5–11 percent of the average salary, and illustrates the high level of sensitivity of unindexed variable-rate mortgages to an increase in the interest rate. Taking into account that the average PTI on new mortgages is currently about 27 percent of net income, this is a significant increase.[15]

According to the banks' financial statements, the ratio between the balance of credit loss allowances on mortgages and total mortgages was less than 1 percent at the end of 2013. However, according to the stress scenario conducted by the Banking Supervision Department, the likelihood that mortgage borrowers would encounter failure in a case where the stress scenario is realized reached 5 percent. According to the findings, the population that is most sensitive to changes in the interest rate and a decline in income is comprised of households that allocate more than 40 percent of their income to repayment of debt. (More information appears in the section dealing with the housing market.)

The contribution of the measures taken by the Supervisor of Banks to reduce the risk in the housing market

In recent years, the Supervisor of Banks has taken measures with the objective of reducing the risk to banks from the household sector and strengthening the sector's stability. (More information appears in the section dealing with the housing market, and in the Banking Supervision Department's Annual Survey for 2013.) These measures reduced the interest rate risk and the level of leverage among those taking out new mortgages (Table 3).

[14] A comprehensive analysis of a variety of countries around the world assessed the effect of a sharp increase in the interest rate on the ratio between household debt and net household income. The analysis shows that the effect of an interest rate shock on this ratio tends to be larger in countries with a higher proportion of variable-rate mortgages, such as Portugal and Spain, countries were variable-rate mortgages constitute 90 percent of new mortgages. Countries in which the proportion of variable-rate mortgages is similar to Israel, such as Greece or Italy, were not significantly impacted by a shock as the result of an increase in the interest rate. See: Statistics Paper Series, NO 2, ECB, April 2013, "The Eurosystem household finance and consumption survey—result from the first wave".

[15] In addition, there would also be an increase in the interest payments on the CPI-indexed variable-rate mortgages, but this effect is not estimated here.

Table 3
Households' level of leverage and interest rate risk, 2011 and April 2014

	2011[a]	04/2014
Average of total new mortgages (percent)		
PTI[b]	33	26
LTV[c]	56	52
Portion of the mortgage at variable-rate interest	88	57
High-risk mortgages as a share of total new mortgages (percent)		
PTI of more than 40 percent	26	4
LTV of more than 75 percent[d]	10	2

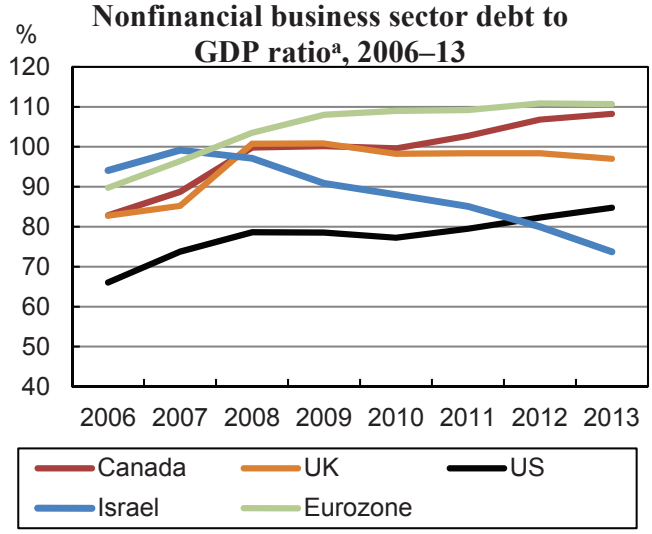
[a] Maximum rate during that year.
[b] Payment to Income ratio.
[c] Loan to Value ratio.
[d] Or unsecured mortgages.
SOURCE: Bank of Israel.

BOX 2: THE NONFINANCIAL BUSINESS SECTOR[1]

The ratio of nonfinancial business sector debt to GDP in Israel has declined since the crisis, and is lower than in other advanced economies.

Nonfinancial business sector debt declined in 2013, to NIS 779 billion.[2] The business sector's debt-to-product ratio is in a downward trend, from a peak of 131 percent in 2007, to 100 percent at the end of 2013, and is lower than its long-term average of 120 percent. The ratio of business sector debt to total GDP is in a prolonged downward trend, and was 69 percent in 2013, markedly lower than the levels in most of the advanced economies (Figure 1). The decline in this ratio since the crisis derives from the fact that business sector debt in Israel increased slowly, while GDP continued to grow more rapidly than in the advanced economies. Various indicators show that the slow growth of business sector debt is mainly due to the slow growth in credit demand by companies. (More information appears in Chapter 4 of the Bank of Israel Annual Report for 2013.)

Figure 1
Nonfinancial business sector debt to GDP ratio[a], 2006–13



[a] In Israel, data on the debts of private non-profit organizations are included in the business sector, while in other countries, they are included in household debt.
SOURCE: GDP data—International Monetary Fund; business sector debt data—Bank for International Settlements (BIS); data on Israel—Bank of Israel.

The leverage[3] of nonfinancial public companies declined slightly in 2013, and is lower than its long-term average. The liquidity ratios of the companies increased in 2013, however their levels are still lower than their long-term average. In parallel, the yield spreads between the bonds of nonfinancial business sector companies and government bonds declined in 2013, and are at historically low levels. (More information appears in Sections 2.b.2 and 5.b.)

The nonfinancial industries may undermine the stability of the financial system through two channels, directly and indirectly: They may have a direct impact on the financial institutions, or they may have an indirect effect through an impact on real economic activity. The direct risk is realized when financial or real difficulties in the industry lead companies in that industry to default, which undermines the stability of the financial bodies that

[1] The discussion in this box focuses on nonfinancial companies, excluding holding and investment companies. The financial companies are not discussed here since they provide credit to the economy, and are therefore discussed in detail in the sections dealing with insurance and the banks, and since they are subject to different—mostly more strict—forms of regulation than the nonfinancial companies. Holding and investment companies are not discussed here because they generally do not have significant activity of their own, and their financial reports include the results of the activities of the companies that they hold. The latter are discussed separately, and using the financial reports of the holding and investment companies may lead to double counting of the held companies.

[2] Not including off-balance-sheet bank credit.

[3] The ratio between the company's total liabilities and its total assets.

provided credit to those businesses. The indirect risk is realized when a slowdown in the activity of a primary industry negatively affects the volume of activity in other industries, or even the volume of activity in the economy as a whole, and therefore the financial system.

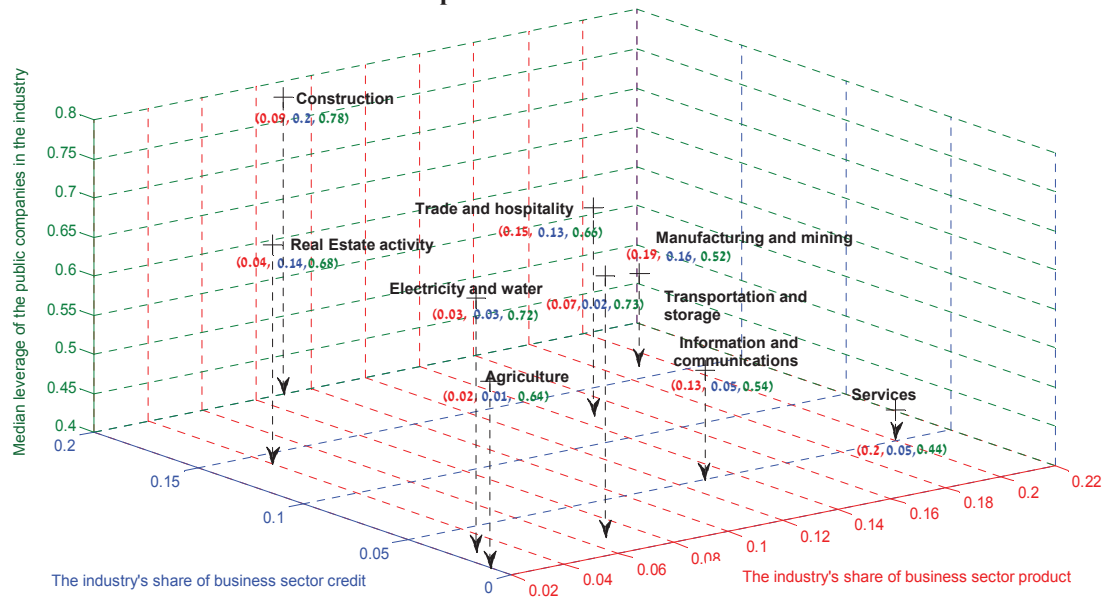
The negative effect of defaults in an industry on the stability of the financial institutions is derived from the industry's proportion of credit in the economy. The negative effect on the volume of real economic activity is derived from the industry's weight in business sector product, as well as from the extent of the industry's connectivity—what segment of its output (in monetary terms) is derived from inputs from other industries. This amount reflects the total damage that an impact to demand from the industry may cause to the industries that provide it with inputs.

The likelihood of the companies included in the industry encountering default and causing the realization of the direct and/or the indirect risk is derived from, among other things, the financial characteristics of these companies, such as their level of leverage.

Accordingly, in Figure 2 we classify the primary industries by their proportion of total credit (bank credit + tradable bonds), their proportion of business sector product, and their median leverage. In Figure 3 below, we outline the level of connectivity of the primary industries.

The construction industry and the trade and hospitality industries are characterized by high leverage along with a high potential to affect the financial system and the real economy.

Figure 2
Median leverage of industries in the economy and their weight in business sector product and in business sector credit

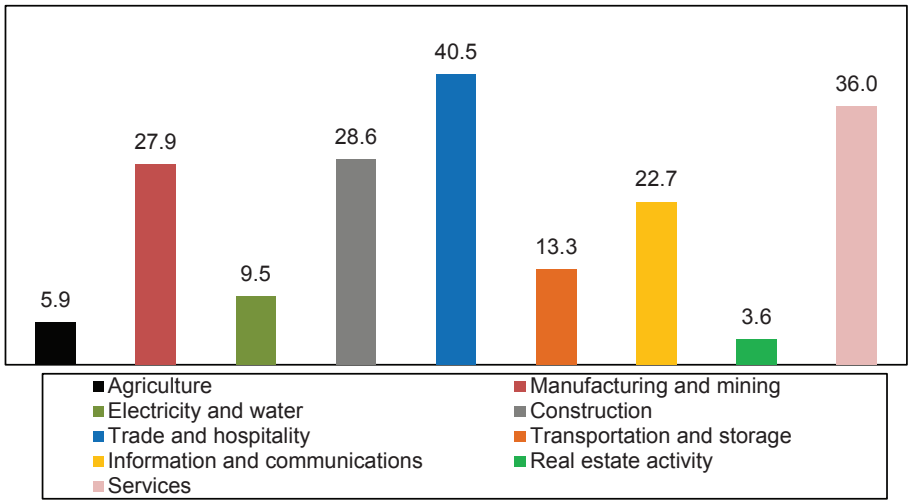


SOURCE: The industry's share of business sector product and of business sector credit—based on Central Bureau of Statistics; Median leverage of the industry—financial statements of the public companies for 2013.

Figures 2 and 3 show that the agriculture industry and the electricity and water industry receive a small proportion of credit and constitute a small portion of business sector product. They are also characterized by low levels of connectivity and of leverage, and therefore do not constitute a systemic risk. Figure 2 shows that the services industry and the information and communications industry are characterized by a high proportion

The trade and hospitality industries have the highest level of connectivity in terms of input.

Figure 3
Industry connectivity in terms of input—direct and indirect purchases from other industries, estimate[a] for end of 2013



[a] The estimate of connectivity is based on data from the input-output tables for 2006, data on various industries' share of business sector product in 2011, and data on business sector product for the end of 2013. Input-output tables are not expected to change significantly over a period of a few years where there are no significant technological changes.

SOURCE: Based on Central Bureau of Statistics.

of business sector product, but by a low proportion of total credit and low leverage. These industries are characterized by a high level of connectivity, and therefore have the potential of causing significant damage to other industries should they encounter difficulties. The level of leverage of the companies does not, therefore, indicate a high likelihood of the realization of the direct or indirect risk in these industries, but to the extent that the risks are realized, they can be expected to have a significant impact on the real economy (both due to their high proportion of business sector product and due to their effect on the industries connected to them), and through it to have an impact on the financial system. In contrast, the construction industry is characterized by a considerable proportion of business sector product, a relatively high level of connectivity, and a high proportion of total credit in the economy, alongside high leverage, which increases the chance of the direct and indirect risks being realized. Similarly, the real estate industry is also characterized by high leverage and a high proportion of credit, but its proportion of business sector product and its level of connectivity are relatively low. The trade and hospitality industries and manufacturing and mining industries are located in

between since they comprise high proportions of business sector product, they have high levels of connectivity (mainly in trade and hospitality) and they constitute a high proportion of credit, but their leverage is not high. As such, there is a medium chance that the risks (direct or indirect) from these industries will be realized, but the realization of the risk in one of these industries is expected to be accompanied by a significant negative impact on both the stability of the financial institutions and on the real economy as a whole. Therefore, the focus below is on an analysis of the financial characteristics that affect the chances that a direct or indirect risk will be realized in the companies included in the manufacturing and mining, construction, real estate, trade and hospitality, information and communications and services industries.

Table 1 below relates to each of the examined industries, and presents—as of the end of 2013—the median leverage ratio, the liquidity ratios (the median of the current ratio and the median of the quick ratio), and the coverage ratios (the median of the interest coverage ratio and the cash coverage ratio).[4] The Table also presents the trends of the accounting ratios in the industry[5], the median EDF and the median yield spread[6] of the industry. The table also includes the data that were presented above regarding the various industries' proportion of business sector product and of business sector credit, and the extent of their connectivity, as well as an estimate of the proportion of the public companies in the industry's total business sector product. Finally, the two final columns summarize the estimation of the risk from the industry and the effect that the realization of that risk would have on the stability of the financial institutions.

An analysis of the data gathered at the industry level shows that while manufacturing and mining constitute a significant part of economic activity and of total credit in the economy, the companies included in these industries enjoy strong financial ratios.[7] Similarly, while the information and communications industry constitutes a significant part of economic activity, it is characterized by strong financial ratios, as well as by a low median yield spread and low median EDF. The business sector product of the public companies constitutes a very small part of total business sector product of the services industry. Therefore, the conclusions regarding the level of risk and stability of the industry that arise from an analysis of the financial ratios of the public companies active in this industry cannot be applied to all companies in the industry. Still, it can be said that in a case of crisis in this industry, a significant impact can be expected on real economic activity,

4 The current ratio is the ratio between the company's current assets and its current liabilities; the quick ratio is the ratio between the company's current assets, minus inventory, and its current liabilities; the interest coverage ratio is the ratio between the company's operating profit and its financing expenses; the cash coverage ratio is the ratio between the cash flow from the company's current operations and its financing expenses.

5 The historical averages, as well as the outline of trends, are based on the public companies that were included in the various industries, as of the end of 2013. Therefore, it is possible that if the calculation is based on the public companies that are actually included in the various industries each year, it will generate different results, since over the years, some of the companies were deleted and the classification of others was changed. The advantage in the calculation that is presented here concerns the fact that it reflects the relative level of risk of the companies currently included in each of the industries being examined, and neutralizes the effects of companies that have been deleted from trading on the Stock Exchange.

6 EDF = Expected Default Frequency—the likelihood of encountering bankruptcy within one year, as obtained from the application of the Merton model for evaluating the likelihood of failure of a company and adjusting it to past bankruptcy events. The yield spread is the spread between the yield on corporate bonds and the yield on government bonds with a similar duration.

7 There is tremendous heterogeneity in the manufacturing industry, which is also reflected in the fact that the various sub-industries have different risk levels. In order to illustrate, the companies in the chemicals and petroleum refining field constitute 6 percent of business sector product, and are characterized by high median leverage and a marked downward trend in the liquidity ratios. As such, their risk is high. In contrast, the companies dealing with food and beverage production constitute 2 percent of business sector product, and are characterized by low leverage and a marked upward trend in the liquidity ratios. As such, their risk is relatively low.

Table 1

Risk analysis of selected industries in the economy and their potential effect on the financial and real systems, end of 2013

Industry	Weight of industry in business sector product	Weight of public companies in the industry's business product	Weight of the industry in credit[a]	Connectivity (NIS billion)	Leverage		Current ratio		Quick ratio		Interest coverage ratio		Cash coverage ratio		Main trends over time	EDF	Spread (percentage points)	Risk assessment	Effect on the stability of financial institutions in the event the risk materializes
					End of 2013	10-year average	End of 2013	10-year average	End of 2013	10-year average	End of 2013	10-year average	End of 2013	10-year average					
Manufacturing and mining	19%	55%	16%	28	0.52	0.56	1.63	1.84	1.20	1.33	2.85	3.43	3.44	2.83	Slight decline in leverage; decline in current ratio	0.41	4.36	Relatively low leverage, median EDF, decline in liquidty - low risk	High weight in GDP, high weight in credit, intermediate connectivity - High direct and indirect effect
Construction	9%	10%	20%	29	0.78	0.81	1.23	1.25	0.44	0.62	3.28	1.68	1.15	0.46	Increase in coverage ratios after their large drop during the global crisis	2.16	3.17	High leverage, low liquidity and cash coverage - high risk	High weight in GDP, very high weight in credit, intermediate connectivity - High direct and indirect effect
Real estate activity	4%	57%	14%	4	0.68	0.73	0.79	0.87	0.62	0.70	2.25	1.44	0.75	0.52	Increase in coverage ratios after their large drop during the global crisis	0.69	2.39	High leverage, very low liquidity and cash coverage - high risk	Low weight in GDP, high weight in credit, low connectivity - High direct effect and low indirect effect
Trade and hospitality	15%	10%	13%	40	0.66	0.70	1.21	1.43	0.82	1.05	3.28	3.23	2.32	2.30	Marked drop in liquidity ratios	0.59	2.44	High leverage, decline in liquidity - high risk	High weight in GDP, high weight in credit, very high connectivity - High direct and indirect effect
Information and communication	13%	28%	5%	23	0.54	0.64	1.47	1.58	1.42	1.48	4.29	4.67	5.23	4.40		0.29	1.24	Leverage is not high, reasonable liquidity ratios, good coverage ratios - low risk	High weight in GDP, low weight in credit, intermediate connectivity - Low direct effect and high indirect effect
Services	20%	1%	5%	36	0.44	0.55	2.48	2.30	2.38	2.27	0.00	0.00	0.00	0.00		0.82	1.97	Low leverage, very low coverage ratios, good liquidity ratios - medium risk	High weight in GDP, low weight in credit, high connectivity - Low direct effect and high indirect effect

[a] Including off-balance-sheet bank credit

SOURCE: Industry's weight in business sector product, weight in credit, and connectivity - Based on Central Bureau of Statistics; Financial ratios - Financial statements of public companies for 2013; EDF - Moody's KMV; Spread - Bank of Israel.

due to its high proportion of business sector product. In contrast, a less significant direct impact can be expected on the financial system, due to the industry's low proportion of business sector credit. The trade and hospitality industries suffer from a relatively high level of leverage and from weak liquidity ratios. In view of its significant proportion of business sector product and of credit, and mainly in view of its high level of connectivity, a negative shock to this industry may significantly harm economic activity. With that, this industry is characterized by a high level of heterogeneity, and it is therefore possible that the negative shock to the industry would affect only some of the companies in the industry, hence moderating the extent to which the shock would directly and/or indirectly affect the financial system. The real estate industry suffers from relatively weak financial ratios (other than the interest coverage ratio). This industry's proportion of product is low, and so is the extent to which it is connected to other industries, but in case of crisis in the industry, it may constitute a risk to the stability of the financial system due to its large proportion of business sector credit.

The construction industry is distinguished by weak financial ratios and pricing ratios. The public companies in the industry suffer from high leverage and weak liquidity compared to other industries, which are also reflected in relatively high yield spreads and a higher likelihood of default than other industries—a likelihood that is derived from the market data of the companies in the industry. In view of the size of this industry, its high level of connectivity, and its high proportion of business sector product, the financial weakness of some of the companies in the industry constitutes a risk. Moreover, a negative shock to the residential construction companies may also lead to a negative impact on households that purchased residential homes the construction of which has not yet been completed. Such negative impact may also affect the financial system, which provides housing credit to households. (More information appears in Box 1.) In view of the potential risk from the construction industry to the stability of the financial system, it is important to shorten the period of formulating and legislating government proposals in the housing area, with the objective of reducing to the minimum possible the uncertainty facing the companies in this industry.

In summation, the ratio of business sector debt to GDP is in a prolonged downward trend in Israel, and in 2013, it reached 69 percent, much lower than the ratio in most advanced economies. The leverage of nonfinancial business sector companies is slightly lower than its long-term average, and the coverage ratios are slightly higher than their long-term averages, while the liquidity ratios of the companies are lower than the long-term averages. An analysis of industry data shows that the construction industry has the highest potential for the realization of a systemic risk, meaning a risk that affects the stability of the financial system.

BOX 3: DIRECT LOANS BY INSTITUTIONAL INVESTORS

1. Background and main developments

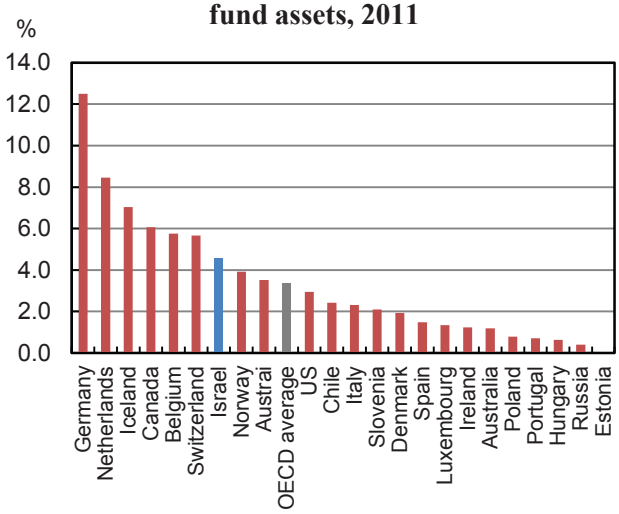
Institutional investors—insurance companies, provident funds and pension funds—are currently among the main participants in the field of credit provision, and are competing with the banking system to provide credit to the business sector. Within a decade, institutional investors have doubled their share of total nonfinancial business sector credit provided—from about 9 percent in 2004 to about 19 percent in January 2014[1]—by increasing the proportion of credit issued through tradable and nontradable bonds and through direct loans.

The volume of direct loans provided by institutional investors to the business sector increased sharply, from about NIS 5 billion (about 1 percent of their investment portfolio) in 2004 to about NIS 45 billion (about 4 percent of the portfolio) in January 2014. An international comparison (of insurance companies and pension funds only) shows that starting in 2011, the proportion of loans in the portfolio exceeded the OECD average (Figure 1).[2]

These developments led to the establishment of a committee on financial institutions' investments in direct loans (the "Goldschmidt Committee"), and in the report that this committee submitted in April 2014 it recommends, among other things, the regulation of the appropriate structure and corporate governance for an institutional body that provides loans, regulation of the institutional investors' participation in syndication transactions[3], improvements in the reporting to the Commissioner of Capital Markets, Insurance and Savings regarding the details of loans, reporting to the public on the volume of loans that have encountered difficulties, and more.

Direct loans as a share of the institutional investors' asset portfolio is higher in Israel than the OECD average.

Figure 1
International comparison[a]: Direct loans provided by institutional investors as a percentage of insurance company and pension fund assets, 2011



[a] Data on provident funds do not appear in OECD data, and are therefore not included in the comparison.
SOURCE: OECD.

This box surveys the main developments in the loans channel and presents quantitative characteristics of the existing loans portfolio.

1 Excluding credit issued to financial institutions.

2 It is worth noting that the proportion of loans in the asset portfolio of the financial institutions abroad is under-evaluated because some of the loans they grant are provided through special funds for the purpose and are therefore not included in the comparison items.

3 A transaction in which a financial body initiates and organizes credit, and a number of bodies finance a portion of the loan.

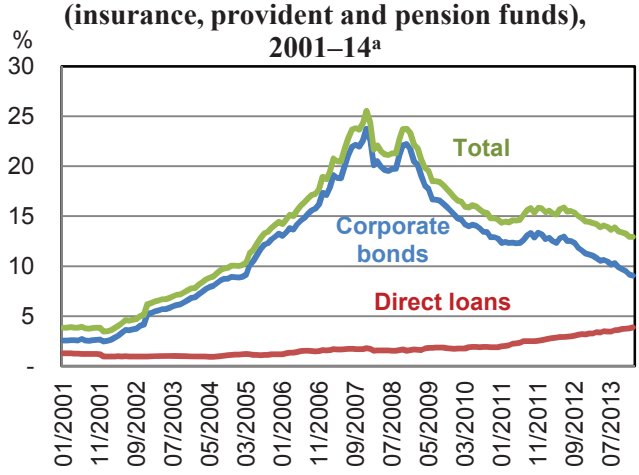
Direct loans as an alternative credit channel

Direct loans as a share of the institutional investors' asset portfolio increased in tandem with the decline in the share of corporate bonds.

The increase in loans from institutional investors derives mainly from the very rapid growth in the volume of assets, which grew from NIS 667 billion at the end of 2008 to NIS 1,158 billion at the beginning of 2014. This forced the institutional investors to seek other long-duration investment alternatives in accordance with the duration of their liabilities, and motivated them to increase the diversification of the risks in their portfolios.

In parallel with the rapid increase in the direct loans channel, there was a decline in the proportion of corporate bonds in the assets portfolio—from 26.5 percent of the portfolio in January 2008 to 13.5 percent in January 2014 (Figure 2).[4]

Figure 2
Credit from institutional investors to the non-financial business sector as a share of the institutonal investors' asset portfolio (insurance, provident and pension funds), 2001–14[a]



[a] Including assets held against yield-guaranteed life insurance policies.
SOURCE: Bank of Israel.

The question is therefore asked why institutional investors are increasing the proportion of loans they are issuing while at the same time reducing their holdings of corporate bonds. It seems that the lenders, meaning the institutional investors, are finding a number of advantages in loans relative to investments in corporate bonds: Providing a loan includes direct negotiation between the borrower and the institutional entity, as part of which the lender can obtain terms that are of specific benefit to it (such as collateral, financial covenants, the interest rate, and so forth), while the terms of bonds are set at the time of issuance, and are not necessarily in line with the needs of the institutional entity; during the loan period, the lender can make independent decisions, in accordance with its economic interest, while bonds are managed collectively and the holders may have differing interests; the lender is not required to report to the public regarding those who receive the loan, while the list of bonds it holds must be published. Discretion is very significant when a company has difficulty paying off its debt, since in that way, the lender is not forced to expose its losses, and prevents damage to its reputation. Institutional investments in corporate bonds are subject to closer regulation since the Committee for Establishing Parameters for Institutional Investors' Investments in Non-Governmental Bonds (the Hodak Committee) published its recommendations. Institutional investors may therefore have motivation to use the direct loan channel in order to benefit from regulatory arbitrage. However, it is worth noting that the Ministry of Finance has published a number of circulars in recent years regulating such loans, and if the Goldschmidt Committee recommendations are implemented, the motivation derived from this aspect will be diminished.

4 It should be emphasized that the changes include the effects of quantity and price.

Similar to lenders, borrowers also have reasons to prefer direct loans over bond issuances, the main two of which are: first, obtaining a loan does not require the publication of prospectuses, while bond issuances do, and second, the lenders know that, in contrast to tradable bonds, the debt in loans generally does not change hands over the duration of the loan, which gives them greater certainty regarding what is expected in a case where they have difficulty repaying their debt. This channel also has advantages over bank credit. In particular, the supply of sources at institutional investors has grown as a result of the rapid growth of their assets, while it has grown to a lesser extent at banks as a result of the increase in core capital. Therefore, it is possible that the price of credit through direct loans is lower than the price of bank credit. Moreover, it is possible that some borrowers can no longer borrow from the banking system due to restrictions on an individual borrower or a group of borrowers, and they need other sources of credit.

In addition, from the standpoint of the economy in general, and financial stability in particular, there are advantages to the development of the direct loans channel. First, the volume of assets of institutional investors has grown rapidly, and the long-term nature of the liabilities of these entities makes it possible for them to provide credit for long-term activity, such as construction and infrastructure. Second, when credit is provided as a direct loan, the institutional body sets the price of the loan in accordance with the extent of its risk. In contrast, in the bond market, the institutional entity views the price of the loan as a given. During periods when there is concern that bond pricing is not consistent with the risk of the bonds there is tremendous importance to an alternative channel, the price of which is not determined only by market forces. This advantage will increase as institutional investors accumulate experience in the granting of credit.

In contrast, there are a number of aspects that may be sources of risk should this channel continue developing at the current pace and become a more central source of credit: While the banks generally provide a borrower with a wide range of services, are in regular contact with the borrower, and hold a large amount of up-to-date information on the borrower's financial state, the institutional body generally acts with the borrower only through the loans, and may therefore be delayed in learning of a worsening of his situation. Furthermore, in a case where the institutional entity purchases a loan granted by a bank, it may create hidden risks for the institutional investor, because there is asymmetry between the banks and the institutional investors regarding information on the quality of loans and borrowers, and because the sale may negatively impact the incentive of banks to properly monitor the loans. All of these—together with the lack of transparency and relative discretion of this channel—show that it is necessary to continue adjusting the regulation and to rapidly implement the conclusions of the Goldschmidt Committee.

2. Quantitative characteristics of the direct loans portfolio

The available sample of direct loans includes NIS 36.1 billion, constituting 97.3 percent of the institutional investors' direct loans portfolio (excluding their nostro account) in the third quarter of 2013. The source of the data on loans is the report on the composition of assets at the individual asset level of companies that manage pension funds, provident funds and profit-sharing life insurance policies of 13 large institutional investors.[5]

[5] The report is published on the website of each management company or controlling corporation, and includes the following loan characteristics: type of collateral, rating, rating agency, duration, type of currency, average interest rate, yield to maturity, par value and fair value. Each corporation encodes the identity of the borrower and attributes all of the borrower's loans to this code.

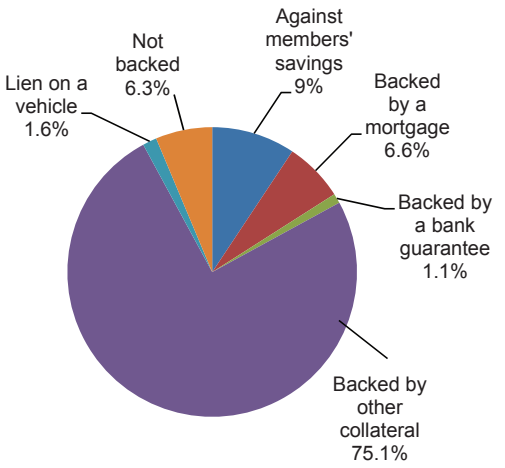
The loans constitute 4.3 percent of the total assets of those entities, and the largest lender among them lends NIS 6.8 billion, 9 percent of its total assets (excluding nostro). The borrowers are generally relatively large—more than 85 percent of the loans are larger than NIS 40 million. By way of comparison, the proportion of large borrowers at the five major banks was only about 40 percent in 2012.[6]

Most of the loans (NIS 34.9 billion, or 96.7 percent) are granted for borrower activity in Israel, and just a small portion (3.3 percent, or NIS 1.2 billion) are granted for activity abroad. The information on the latter is incomplete, so this box focuses on loans granted for activity in Israel.

The loans are reported by type of collateral (Figure 3), and only 6.3 percent of them are not secured. 9.3 percent of the loans were given to households whose savings are with the lending institutions, and the collateral for these loans are the borrowers' pension plans, provident funds or life insurance policies. The loans that are backed by mortgages are for the most part[7] mortgage balances[8] to households, while the rest are issued to the business sector. Most of the loans are secured by collateral belonging to the "others" category (the institutional body decides on the type of collateral regarding each loan, in accordance with the borrower's assets—for instance, stocks, buildings, and so forth). From here on, the term "loans to the business sector" is used to denote the total of all loans other than those granted against the savings of members and insured clients and those backed by mortgages.

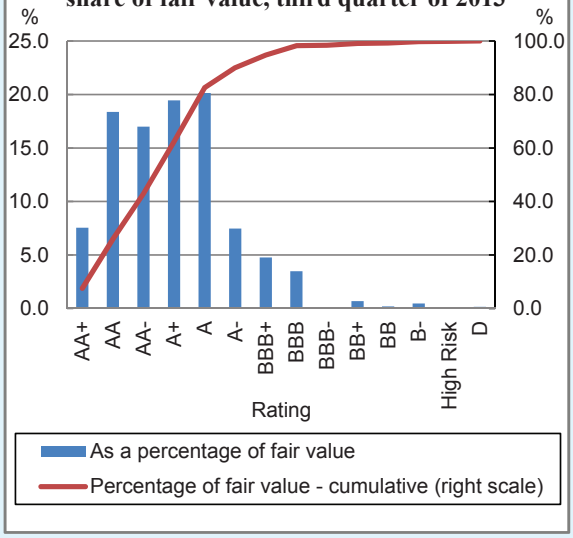
Most loans from institutional investors have collateral, but the collateral's quality is unknown.

Figure 3
Distribution of loans by type of collateral, third quarter 2013



More than 80 percent of rated loans provided by the institutional investors are rated A or higher.

Figure 4
Distribution of loans by rating group, as a share of fair value, third quarter of 2013



6 One of the main reasons for this is that the banks have a widespread network of branches, manpower, and a lot of experience in dealing with credit.

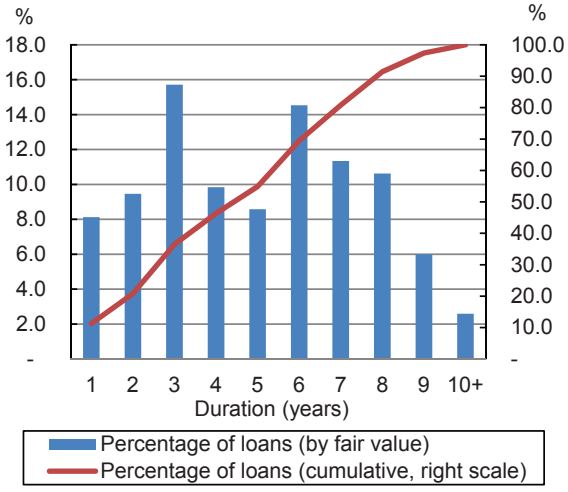
7 An examination carried out by the Bank of Israel showed that about 90 percent of loans in this section are granted to households.

8 Only one institutional body grants new mortgages.

The circular published by the Commissioner of Capital Markets, Insurance and Savings in August 2013 ("Investment Rules Applying to the Institutional Bodies") sets out that an institutional body is permitted to grant a loan provided that the loan is rated as investment grade by an internal or external rating model. Loans that are completely unrated may be provided, but only up to 3 percent of the institutional body's assets and on condition that there is sufficient collateral against the loan. In the available sample, 91 percent of the loans to the business sector are rated, but just 49.7 percent of them are rated by one of the two ratings companies in Israel, "Maalot" or "Midroog", while the rest of them are rated by the institutional body's internal models. As Figure 4 shows, more than 80 percent of the rated loans (NIS 22 billion) are rated A and above. Just 1.6 percent (NIS 0.46 billion) of the loans are lowly rated (BBB- or lower).

Institutional investors provided relatively long-term loans–with an average duration of more than 5 years.

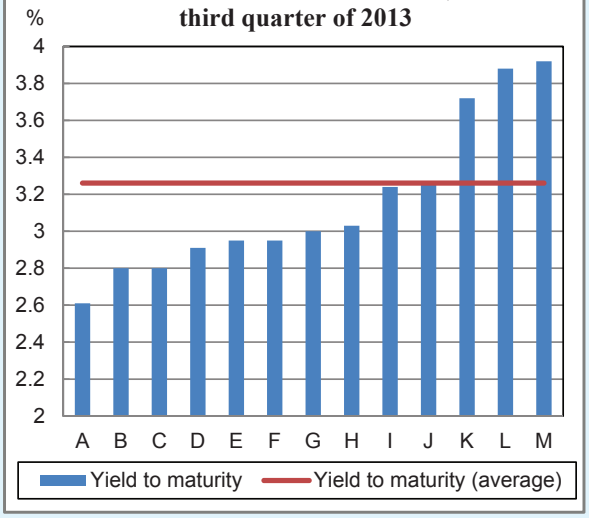
Figure 5
Distribution of loans by duration, as a percentage of fair value, third quarter of 2013



As previously stated, one of the main advantages of institutional investors is in their ability to grant long-term loans, due to the long-term nature of their liabilities. This is prominent when examining the distribution of loans by their duration. As Figure 5 shows, most of the loans actually do have a relatively long duration—for 53.7 percent of the fair value of the loans the duration is more than 5 years, and the average duration of all of the loans is 5.4 years. From this standpoint, there is virtually no variance between the entities. By way of comparison, the duration in the tradable bond market during the same period was 3.7 years.

The yield to maturity of the loan portfolio reflects the measure of risk inherent in it, and three entities have a high level of risk.

Figure 6
Real yield to maturity of the loan portfolio, each of the institutional investors, third quarter of 2013



The real yield to maturity[9] of the loans portfolio reflects the risk inherent in the portfolio, and is derived from the loan characteristics such as duration, collateral, and so forth. Figure 6 presents this figure for each of the institutional investors, and shows that

[9] Even though there are no details regarding the question of whether these are CPI-indexed or unindexed loans, an examination we conducted shows that the vast majority of them are indexed to the CPI, and therefore, the yield to maturity is in real terms.

the value for three of the bodies is higher than for the others. Using a regression to break down the yield to maturity to the characteristics of the loans that may affect it[10] shows, as expected, that the relatively high yield of those bodies derives from the mix of loans with more risky characteristics.

In summation, the findings above show that, in general, the direct loans portfolio of the institutional investors is directed toward large, medium-to-long-term loans with quality ratings and with collateral. The existing regulation, together with the regulation recommended by the Goldschmidt Committee, do moderate the measure of risk in the portfolio due to restrictions on ratings and concentration and due to the significant improvement in corporate governance. Even so, since the direct loan channel is rapidly growing, and in view of its special nature, the transparency of this channel must be increased through regulatory demands to include additional information on loan characteristics in the periodic reports. Increasing transparency toward the public should also be considered, on condition that the increased transparency does not negatively impact the benefit inherent in the channel's discretion.

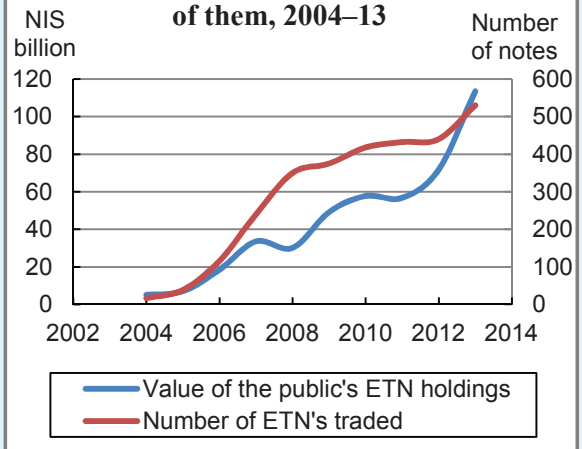
[10] The dependent variable in the regression is the yield to maturity, and the explanatory variables are the duration and dummy variables for the type of collateral and the ratings.

BOX 4: EXCHANGE TRADED NOTES

Exchange traded notes (ETNs) are securities that track the returns of an asset or portfolio of assets, such as stock indices, subject to the terms detailed in their prospectuses. There are a number of advantages to ETNs. First, when a note tracks a certain index, it makes it possible for investors to invest in a large number of assets, thereby diversifying their investment portfolio and its risk, without the cost inherent in separately purchasing each asset and regularly updating the weights of the assets in accordance with changes in the composition of the index. Second, ETNs are tradable securities. Finally, ETNs are passively managed—the manager need only purchase the assets that comprise the index—which makes it possible for the manager to charge investors lower management fees than would be charged on instruments characterized by active management.

The ETN market in Israel is developing very rapidly both in the number of notes, and in the value of the public's holdings.

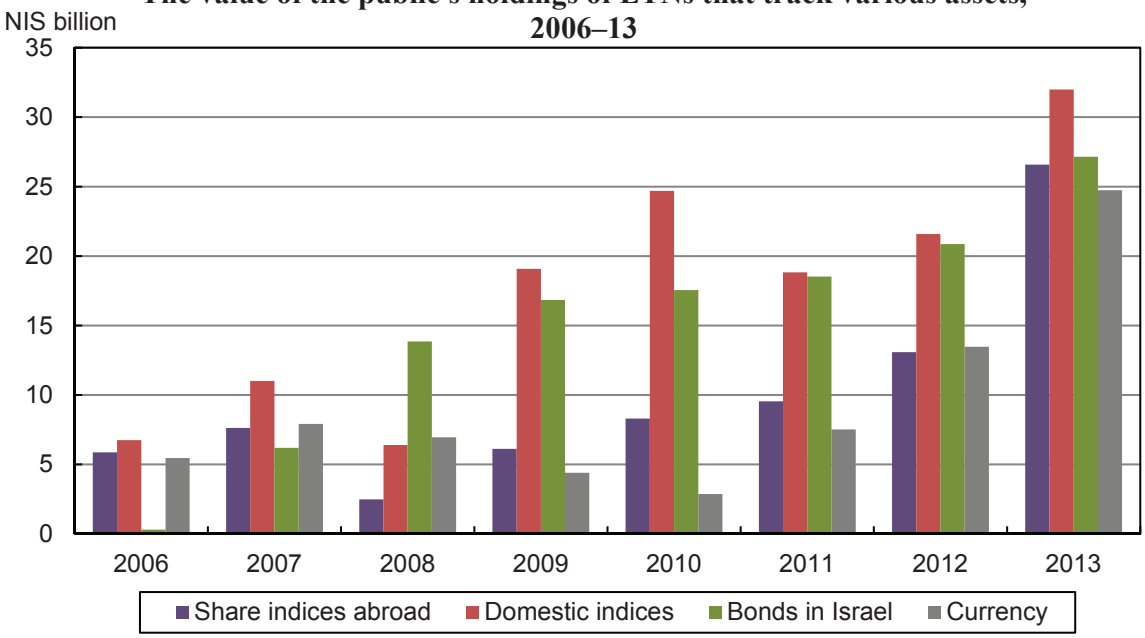
Figure 1
The number of ETNs traded and the value of the public's holdings of them, 2004–13



SOURCE: Bank of Israel.

There has been an upward trend in recent years in the weight of the value of the public's holdings of ETNs that track shares abroad and currencies.

Figure 2
The value of the public's holdings of ETNs that track various assets, 2006–13



SOURCE: Bank of Israel.

The ETN market in Israel has developed very rapidly in recent years, both from the standpoint of the number of notes, and from the standpoint of the market value of the public's holdings of such notes. The number has increased from 17 at the end of 2004 to 530 at the end of 2013, and the value has increased from NIS 1.4 billion (0.09 percent of the public's financial asset portfolio) to NIS 113 billion (4 percent of the portfolio; see Figure 1).[1] This market is characterized by significant volume, even in a worldwide comparison: The number of notes per 100,000 people is 6.52 in Israel, which is higher than that figure in most other markets.

An analysis of the ETN market by their underlying asset shows that in recent years, the share, by market value, of holdings in notes that track domestic indices has declined, while the share, by market value, of holdings in notes that track foreign stock indices abroad and currencies has increased (Figure 2). This trend is consistent with the trend of growth in the proportion of Israelis' investments abroad out of the public's financial assets portfolio.

The risk of ETNs to the stability of the financial system

ETNs belong to a broad group of securities termed "index products". The nature of the agreement between the issuer of the security and the holder varies according to the type of security. By way of illustration, the products that are closest in the world to ETN's—exchange traded funds (ETFs)—are tradable securities that give their holders property rights to the fund's assets (as derived from the relative portion of the units in the holder's possession), but are not required to provide the return of the tracked asset, but only to make their "best effort" to track it. In contrast, ETNs are liability notes that do not provide the holder with any property rights to the assets of the note, but do commit that the issuer of the note will provide the precise return of the tracked asset, or alternatively, the tracked asset itself.

The ETN holder is therefore exposed to a credit risk (hereinafter, "the credit risk to the holder"). This risk may be realized if various risks to the issuer of the note (hereinafter, "the risk to the issuer") are realized, including (a) incomplete coverage of the tracked asset by the note issuer, together with the opening of a gap between the redemption prices of the note (which are basically the note's liabilities) and its net asset value (such a gap is referred to below as "negative redemption price" and this scenario is referred to as "market risk to the issuer"), and (b) a decline in the note's net asset value as a result of a third-party default (hereinafter "credit risk to the issuer"). This scenario may be realized *inter alia* when the note invests its assets with a third party that defaults, and particularly when the note is covered by derivatives of the tracked asset (and not by the tracked asset itself), and the counterparty to the transaction defaults.

The realization of the risks to the issuer of a note may led to the issuer not being able to meet its commitments toward the note's holders—meaning that it may lead to the realization of the credit risk to the holder which, for its part, may cause investors to lose trust in the instrument and to call many notes in for redemption within a short time. Investors' demand to redeem the notes rapidly may negatively impact the stability of the investment houses that manage ETNs, and additionally cause issuers to realize a large volume of the tracked assets which, for its part, may affect the prices of assets in the entire market. The high level of concentration

[1] Including 25 currency notes, the value of the public's holdings of which was NIS 25 billion as of the end of 2013.

in the ETN market may increase the negative effect of the realization of the credit risk to the holder.[2] This risk is of particular relevance to the Israeli market, since there is no legal infrastructure for ETF activity, and therefore—in contrast with global markets—the most common index product in Israel is actually the ETN.

Table 1
The ratio between the value of ETN's traded on the Bank Shares Index and the value of the Bank Shares Index, and the ratio between the trading volume of ETNs traded on the Tel Aviv 25 Index and the Bank Shares Index and the trading volume of the assets included on those indices, at the end of 2013, were high

	General shares and convertibles	Domestic shares and convertibles	Tel Aviv 25	Tel Aviv 100	Tel Aviv Bank Shares	Corporate bonds
Market capitalization ratio[a]	8%	5%	5%	4%	12%	6%
Trading volume ratio	26%	17%	17%	5%	15%	8%

[a] The numerator in the market capitalization ratio of the index (in this note–the calculation index) is calculated based on the value of the assets of the notes that track the calculation index, plus the protion of the value of the assets of the notes that track another index that includes shares that are also included in the calculation index. For instance, the numerator of the market capitalization index of the Bank Shares Index is calculated on the basis of the value of the notes that track the Tel Aviv Bank Shares Index, plus those parts of the value of the notes that track (1) the Tel Aviv 25, (2) the Tel Aviv 100, and (3) the Tel Aviv Financial Index that are attributed to bank shares (by the weight of the bank shares in these indices).

SOURCE: Bank of Israel.

The volume of the negative effect created in the market by the rapid redemption of many notes is derived, among other things, from the market value ratio—the ratio between the value of the public's holdings of ETNs that track a certain index and the market value of the same index[3]—and from the trade volume ratio—the proportion of trading volume of the ETNs that track a certain index in the total trading volume of assets included in that index.

Table 1 details the market value and trade volume ratios of the ETNs that track equity and convertible indices corporate bond indices, as well as similar ratios regarding specific indices, as of the end of 2013.

Under the heading "General shares and convertibles" it can be sees that the ratio between the market value of ETNs tracking share and convertibles indices and the market value of the General Shares and Convertibles Index in Israel is 8 percent, as of the end of 2013.[4] However, the notes where rapid redemption can be expected to directly impact stock exchange prices are those that track indices on the domestic stock exchange. The ratio between the value of these notes and the value of the General Shares and Convertibles Index in Israel appears under the heading "Domestic shares and convertibles", and is just 5 percent. An assessment of the market

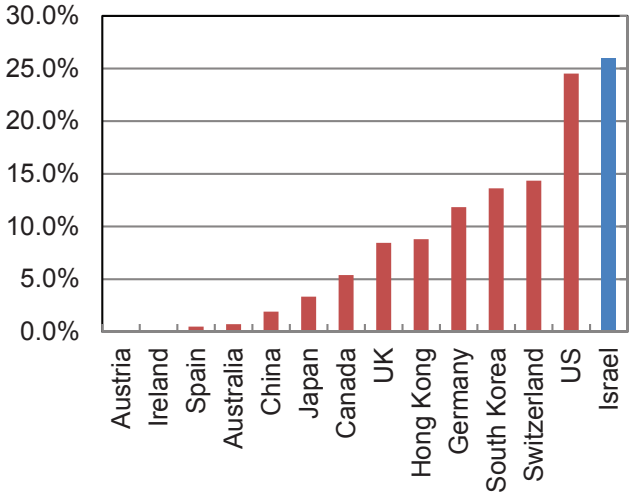
2 There are only four bodies active in the market. The market segment of the three largest bodies in the market (The CR_3 Index) is 0.89, and the Herfindahl-Hirschman Index is 0.28.

3 A high trade volume ratio reflects a situation in which ETN managers are the main players in the market in which the tracked assets are traded. In such a case, there is a concern that if all of the managers rapidly redeem the tracked assets, there will not be sufficient demand of other players in order to absorb the offered assets, which will lead to a further decline in their prices.

4 By way of comparison: In the US—a market in which trade in index products is very common—the ratio is 7 percent, and in Canada it is just 3 percent.

Compared to other countries, at the end of 2013, Israel had a very high ratio betwen the trading volume of products tracking share indices and the trading volume of the shares themselves.

Figure 3
International comparison: The ratio between the trading volume of products tracking share indices and the trading volume of the shares themselves[a], end of 2013



[a] In Israel (in other countries), the most common index product is ETNs (ETFs), and the ratio is calculated between the trading volume of ETNs (ETFs) that track share indices and the trading volume of the shares themselves.

SOURCE: Based on the World Federation of Exchanges website.

value ratios of the notes that track industry indices shows the ratio of notes tracking the Tel Aviv Banks Index to be prominent: In recent years, this ratio has increased consistently, from 6 percent in 2009 to 12 percent in 2013. If the credit risk to the holder is realized in a note that tracks this index, it could lead to all similar notes being redeemed with the redemption of the tracked assets (in this case bank shares), and this scenario for its part could lead to a sharp decline in their prices.

The trade volume ratio of the notes that track the share and convertibles index is 26 percent in Israel, which is very high when compared internationally (Figure 3). The trade volume ratio of the notes that track share and convertibles indices on the domestic stock exchange, and of notes that track the Tel Aviv 25 Index, is 17 percent. The trade volume ratio of the notes that track the Tel Aviv Banks Index is 15 percent, which is significantly higher than the rates calculated on other industry indices.

The proposed Mutual Funds Law (Amendment 21) (Exchange Traded Notes and Exchange Traded Funds), 5772–2012

In the currently prevalent legal situation in Israel, ETN activity is regulated through the Securities Law, which applies mainly a duty of disclosure on the managing bodies, without significant characteristics of supervision, while the activities of other instruments of a similar economic nature, such as index funds, are regulated in the Mutual Funds Law, which also includes many supervisory characteristics. This gap leads to regulatory arbitrage, since it provides an incentive for managers to issue ETNs and to prefer them over mutual funds with a similar economic nature.

In practice, the bodies managing ETNs uphold supervision and control mechanisms that include, among others, ongoing examinations with the aim of finding signs of the existence of a market risk to the issuer, and activities to reduce the credit risk to the issuer. However, the very existence of the mechanisms, and the scope of their activity, are mainly voluntary.

In July 2012, the Israel Securities Authority published a proposed amendment to the Mutual Funds Law. This proposal was intended to move ETN activity in Israel from a disclosure regime to a supervision regime, and to create a legal infrastructure for ETF activity. The proposal also includes provisions concerning the reduction of the systemic risk of ETNs, including (a) each ETN unit would provide its holder with rights to the note's assets, and would reduce the liability component of the note's issuer to the difference between the redemption price of the units issued and the value of the share the holders of those units have in the note's assets, (b) an ETN manager will hold a backing account as a security buffer for the note's liabilities, and will periodically deposit an amount equal to the negative redemption price (should such exist) in the account. The proposal also includes provisions concerning risk management of the note, strengthening the independence and fitness of the trustee, and corporate governance provisions.

The measures in the proposed amendment make a significant contribution to reducing the risks to the issuer and as a result to the reduction of prudential risk. In addition, there is a reasonable likelihood that if the authorities close the regulatory gap between ETNs and alternative instruments, and create the infrastructure for ETF activity, it will reduce the volume of activity in the ETN market and the prudential risk from this market. With that, the proposed amendment does not include provisions that would completely cancel the liability component of ETNs (and basically turn them into ETFs) or alternatively any provision requiring the ETN manager to cover for any ETN that it issues with the tracked assets themselves and not with their derivatives.[5] This means that the prudential risk from ETNs is not inconsiderable.

[5] It is likely that a provision requiring the ETN issuers to cover the ETN with tracked assets themselves would have had a significant negative impact on ETN activity, particularly activity of traded ETNs on foreign indices, on commodities, structured securities, and so forth, since in these cases, coverage with tracked assets themselves would have been very expensive, and sometimes impossible.

In summation, the index products market is developing very rapidly around the world, and this is reflected mainly in the growth of the ETF market.[6] In Israel, there is significant growth of the ETN market, which is reflected by the number of notes, the value of the public's holdings of ETNs, and relatively high market value and trade volume ratios.

From a financial stability standpoint, there is concern that if the credit risk to the holder of an ETN materializes, it could have ramifications on activity in the market, and in extreme cases, on other parts of the financial system. The concern relates mainly to ETNs that track indices in the domestic market, and less to ETNs that track indices on foreign stock markets.

Accordingly, it is proper to advance the amendment to the Mutual Funds Law and to approve it quickly. However, should the market of ETNs that track indices in the local market continue to develop rapidly even after passage of the law, similar to the current situation, it may be necessary to formulate more stringent directives with the objective of reducing the prudential risk from this market.

6 The global value of assets managed by ETFs reached a record of $2.2 trillion at the end of 2013. This figure reflects annual growth of 28 percent.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