Chapter 4
The Financial System and its Stability

- In 2012, prices increased in domestic financial markets, against the background of the slowdown in the rate of growth of the economy and forecasts of continued slowdown in 2013.
- Resolute policy measures adopted in Europe in 2012 to deal with the debt crisis there led to a decline in risk assessments and to increased liquidity in global financial markets, and resulted in yields declining to historic lows in most advanced economies. These developments contributed to price increases in global markets, despite the deterioration in global real economic conditions.
- The increases in Israeli security prices were supported by increases in global market prices and by the Bank of Israel's interest rate reductions over the course of the year. Price increases on the domestic stock market were lower, and trading volume declines were sharper and deeper than those abroad, due in part to the effect of geopolitical risk in the region.
- In the first 3 quarters of 2012, capital ratios of domestic financial institutions—banks and insurance companies—improved. Improved capital ratios, along with regulatory steps taken during the year, strengthen the resilience of the financial institutions.
- In the credit market, the relatively rapid increase of credit to households continued in 2012, deriving mostly from an increase in housing credit. Credit to the business sector was unchanged, with a continued decline in the ratio of business sector debt to GDP.
- In the corporate bond market, the process of reducing liabilities through numerous debt restructuring deals and through asset sales continued, and was particularly prominent among holding companies.
- The situation of leveraged business groups deteriorated in 2012, and some of them faced difficulties in repaying their debts. It appears that concern of a possible system-wide impact resulting from contagion among the various companies in any given borrower group, declined during the year. This was reflected in a decline in the correlations between returns of the various companies in the business group.
- In 2012 and the beginning of 2013, the Supervisor of Banks imposed additional macroprudential measures in the mortgage market, against the background of renewed increase in home prices along with an increase in the rate of granting mortgages.

1. MAIN DEVELOPMENTS IN THE DOMESTIC FINANCIAL SYSTEM IN 2012 AND AN ASSESSMENT OF ITS STABILITY

a. Main developments

The financial system continued to be affected by the European debt crisis through both financial and real channels of influence.

In 2012, the domestic financial system continued to be affected by the European debt crisis, which remained a shock to the global financial system. There were both financial and real channels of influence. The financial channel included the effect of foreign financial market asset prices on domestic asset prices and on domestic financial institutions. The financial institutions were affected through the prices of financial assets held in their nostro portfolios (on their own behalf), and indirectly through the effect on the business activity and quality of their borrowers. The real channel included the effect of the decline of global demand on exports and private consumption, and through them, again, on the quality of the financial institutions' credit portfolios. Likewise, the domestic financial system was affected by domestic risk factors, primarily the increase in regional geopolitical uncertainty.

The steps taken by authorities abroad to deal with the crisis served to lower risk assessnebts in the global financial system.

In the first quarter of the year, there was a temporary lull in the debt crisis in Europe, and global markets responded with sharp price increases, as the European Central Bank (ECB) carried out a large injection of liquidity into banks there. However, beginning in April, the crisis again became more severe, against the background of the deterioration in fiscal conditions in Greece, concern over the stability of banks in Spain, and concern over the possibility of some countries leaving the eurozone. In this period, the cost of raising funds, and the risk premiums of countries facing economic difficulties, increased to record levels, and stock prices in global markets declined. Since August, there has been some improvement in global markets, following a series of measures announced by authorities in Europe and which indicated their commitment to resolving the crisis and maintaining the eurozone intact. Among the steps taken were: the ECB declared its intention to do whatever necessary to maintain the eurozone intact; the ECB prepared a new program to purchase, on the secondary market, bonds of governments of the countries in crisis (OMT[1]); authorities in Europe announced a plan for tighter integration of financial regulation in EU countries, including centralized banking supervision though an entity to be established by the ECB. The US Federal Reserve also announced, in September, a third program of monetary accommodation, and this contributed to increased market confidence.

For the full year, rates on global markets rose despite forecasts that indicated moderate growth.

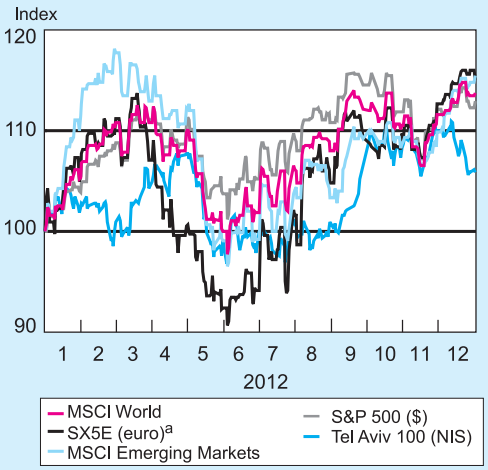
As a result of the injection of liquidity into global financial markets, as well as the decline in the assessments of risk following the steps taken, stock prices on global markets increased, credit spreads contracted, and financial market volatility indices declined sharply. This, despite data on global real activity which continued to indicate moderate growth—and in Europe even a slide into recession—and despite growth forecasts for 2013 which were revised downward in the second half of the year. Toward the end of the year, uncertainty in the global financial system increased again,

1 Outright Monetary Transactions.

due to concern over the "fiscal cliff" in the US and its effect on growth in the US and worldwide. At the beginning of 2013, a partial and temporary solution was found for this concern.

The trends in domestic financial markets were generally similar: For the full year, the prices of government and private bonds increased at relatively high rates of 8 percent and 10 percent, respectively, and stock prices increased by 7 percent. The price increases on longer term bonds in Israel were particularly prominent—the effect of price increases on similar debt worldwide and as a result of the interest rate reductions by the Bank of Israel. Stock market returns lagged behind those of most equity markets worldwide (Figure 4.1), among other things against the background of the increase in regional geopolitical risk, and against the background of the effects of specific reforms, such as those in the cellular phone market. Evidence of the increased geopolitical risk can be seen in the increased average spreads in the CDS market and in the increased yield differential between Israeli government bonds and those of other advanced economies, primarily in the first half of the year (Figure 4.2). Trading volumes in the domestic stock market declined sharply, and by greater rates than those observed in other developed markets, continuing the declines from 2011. The stock market underperformance, along with the trading volume declines, were reflected in net withdrawals from equity mutual funds, as well as a sharp decline in the volume of stock offerings, which had already been low (see Table 4.1).

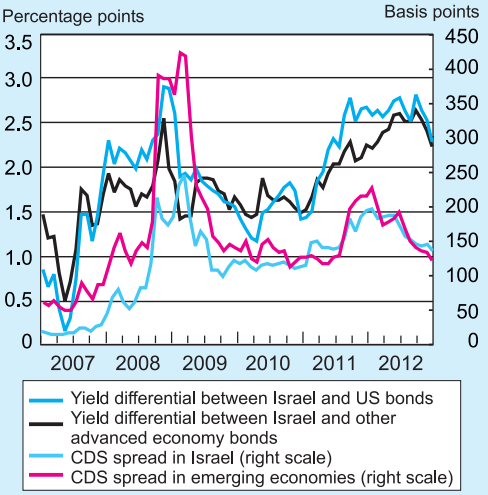
Figure 4.1
Share Price Indices in Israel and Worldwide, 2012
(Dec. 31, 2011=100)



a SX5E is an index of the 50 leading shares in the EMU member countries.
SOURCE: Based on Bloomberg.

Domestic securities markets also rose, but the rise in the local stock market was lower than those on global markets.

Figure 4.2
CDS Spreads in Israel and Emerging Economies, and Government Bond Yield Differentials Between Israel, the US, and Other Advanced Economies*, 2007-12



* The 5-year CDS spread and the spread between unindexed Israeli government 10-year shekel bonds and US government dollar bonds and the bonds with similar terms of the other advanced economies: Japan, Belgium, Canada,Austria, France, Sweden, Netherlands, Germany, Denmark, the US, Switzerland, Finland, the UK.
SOURCE: Based on Bloomberg.

Table 4.1
Main Stability Indicators of Israel's Financial System, 2009–12

(percent)

	2009	2010	2011	2012
A. The global environment				
Real growth of global GDP	-0.5	5.1	3.8	3.2
Increase in world trade[a]	-10.4	12.5	5.8	2.1
Emerging Markets Bond Index (EMBI) spread (yearly average)	4.6	2.8	3.0	3.2
VIX (volatility index) of Chicago Board Options Exchange (yearly average)	31.5	22.5	24.2	17.8
B. The domestic environment				
Government debt to GDP ratio (year-end)	77.8	74.4	72.4	71.3
Net external debt to GDP ratio (year-end)[b]	-26.4	-23.5	-24.5	-28.2
Private credit to GDP ratio (year-end)	136.9	135.7	131.4	125.1
Business sector credit to product ratio (year-end)	132.0	129.6	124.0	115.9
Household credit to disposable income ratio (year-end)	59.4	61.5	61.5	60.6
Israel's risk premium (5-year CDS spreads, yearly average)	1.58	1.18	1.58	1.69
Yield gap between 10-year government shekel notes and 10-year US Treasury securities (yearly average)	1.83	1.50	2.21	2.61
Private bond market spread—total bonds excluding financial company bonds (yearly average)	6.93	3.80	3.98	6.03
C. Financial assets				
Risk indices (period average)				
Implied volatility of:				
Exchange rate	13.5	8.5	10.3	9.7
Tel Aviv 25 share price index	32.7	23.9	25.7	24.2
Actual standard deviation of:				
Exchange rate	10.7	6.4	9.2	6.6
General share price index	19.0	13.8	18.7	11.7
Prices and yields (in annual terms)				
Change in shekel/dollar exchange rate (during the year)	-0.7	-6.0	7.7	-2.3
Change in the effective exchange rate (during the year)	2.5	-7.0	4.8	-0.8
Change in general share price index (during the year)	78.7	12.6	-22.1	4.6
Yield to maturity of 5-year unindexed government bonds (yearly average)	3.9	3.8	4.2	3.2

Table 4.1 (continued)
Main Stability Indicators of Israel's Financial System, 2009–12

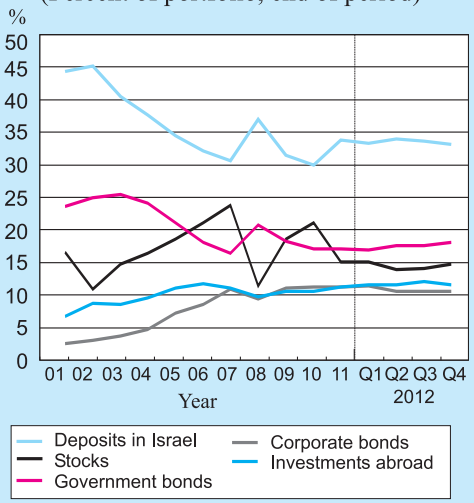
(percent)

	2009	2010	2011	2012
D. Resilience of the financial system				
The banking system[c] (year-end)[b]				
Capital adequacy ratio	13.6	14.0	14.0	14.6
Core Tier 1 capital ratio	8.3	8.5	8.4	8.9
Ratio of annual credit loss allowance to total balance sheet credit	0.75	0.41	0.39	0.42
Insurance companies (year-end)[b]				
Core capital/assets ratio	5.8	6.0	5.7	5.5
Share of risk assets in total assets	49.4	53.5	52.2	52.2
Provident funds[d] (year-end)				
Share of liquid accounts in total liabilities	58.4	59.6	63.8	66.9
Ratio of liquid assets to liquid liabilities	28.7	28.3	29.0	30.6
Market liquidity				
Change in total daily trading turnover in the markets (year over year)	-6.0	-2.8	9.9	0.2
Bid-ask spread in shekel/dollar market (annual average)	0.57	0.31	0.46	0.35

[a] Data for 2012 are updated to the end of June.
[b] Data for 2012 are updated to the end of September.
[c] The five major banking groups.
[d] Including main provident funds for severance pay and advanced training funds.
SOURCE: Based on IMF, Ministry of Finance Capital Markets Division, and the Tel Aviv Stock Exchange.

The value of the public's assets portfolio increased in 2012 by 7.3 percent, primarily due to gains on financial market indices. The increased risk until August was reflected by changes in the composition of the public's portfolio—the share of deposits and government bonds increased, at the expense of riskier assets in the portfolio, such as stocks and corporate bonds (Figure 4.3). The Bank of Israel's continued reductions of the interest rate in the second half of the year, along with a decline in risks in financial markets, reversed, or moderated, that trend toward the end of the year. The share of investments abroad continued to increase moderately, as some of the

Figure 4.3
Public's Assets Portfolio, 2001-12
(Percent of portfolio, end of period)

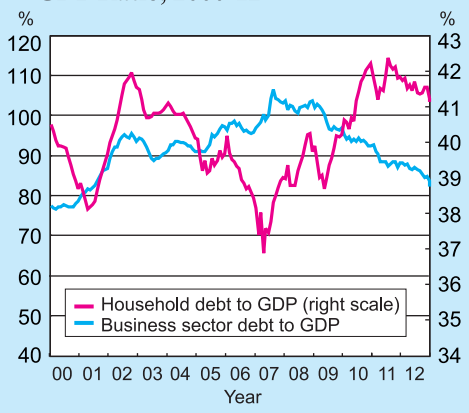


SOURCE: Bank of Israel.

The pension savings institutions continued to increase the rate of investment in shares abroad while lowering the rate of shares traded in Israel within their portfolios.

pension savings institutions continued to increase the rate of investment abroad as part of a strategy to increase diversification and liquidity in their portfolios. It is notable that most pension savings entities increased their share of investment in equities abroad (through ETFs) and reduced their share of investment in domestic equities.

Figure 4.4
Private Non-Financial Sector Debt to GDP Ratio, 2000-12



SOURCE: Bank of Israel.

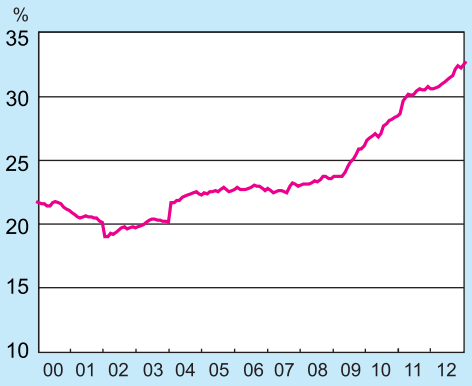
In the credit market, the relatively rapid increase of credit to households continued, while total credit to the business sector was unchanged.

In the credit market, the relatively rapid increase of credit to households, mostly housing credit, continued in 2012. Credit to the business sector was unchanged (Figure 4.4). Despite the rapid increase in household credit, the credit to households/GDP ratio declined in 2012 and is low compared with other countries. The standstill in business credit reflects increased risk—which led to some decline in the supply of bank credit and to the primary market for bond issuances only being accessible to top-tier companies—alongside some decline in demand for credit.

Bank credit to the business sector declined in light of the increase in risk, and in light of bank activities to increase capital and their preference to increase credit for mortgages.

The decline in the supply of bank credit is attributed to stricter underwriting terms, as it was assessed that risk levels increased and as banks moved to increase their core capital adequacy ratio in accordance with the outline set by the Supervisor of Banks to implement the Basel III framework. At the same time, banks continued to increase the proportion of mortgages in the bank credit portfolio. This tendency, which accelerated in the beginning of 2009, was affected by the fact that the capital allocation that the banks were required to make for mortgages was lower than the allocation for business credit, in line with accepted norms worldwide based on Basel requirements (Figure 4.5).

Figure 4.5
Mortgages as a Share of Banking Credit Portfolio to the Private Non-Financial Sector, 2000-12



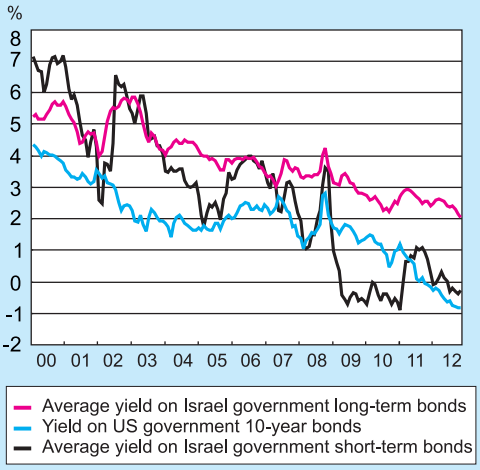
SOURCE: Bank of Israel.

In the corporate bond market, the numerous debt restructuring proceedings and the process of reducing liabilities through the sale of assets continued.

In the corporate bond market, the numerous debt restructuring proceedings continued with both small and large borrowers, including some of the leveraged business groups. From the beginning of 2009 until the end of 2012, bonds worth about NIS 26 billion par value were entered into such proceedings (an average of NIS 6.5 billion per year), reflecting problematic debts at an average rate of about 2.5

percent per year.[2] Alongside the debt restructuring proceedings, there is also a process of reducing liabilities through the sale of assets. This is particularly prominent among holding companies.[3] These processes are gradually clearing the bond market of the problematic debts that were issued during the economic boom, and are expected to turn it into a less vulnerable source of financing for the business sector.

Figure 4.6
Real Yields in Israel and the US, 2000-12
(monthly averages)



The real short-term yield on Israeli government bonds: the average yields of CPI-indexed government bonds with a term to maturity of 1-2 years. The real long-term yield on Israeli government bonds: the average yields of indexed government bonds with a term to maturity exceeding 10 years.
SOURCE: Based on Bloomberg.

Real short and long-term yields reached historic lows.

The real yields to maturity on long-term government bonds reached historic lows after declining during 2012, continuing their decline since 2003 (Figure 4.6). Real short term yields to maturity declined and returned to negative levels beginning in the second half of the year. The continued decline in real long-term yields in 2012 is related to continued decline worldwide in long term yields, which reached historic lows and are expected to remain at low levels over the next few years due to the depth of the crisis and the desire of central banks worldwide to support activity. Two other factors supported the continued decline of government bond yields: the increase in the rate of private savings in Israel, which increased the demand for financial assets, and the increase in demand for low-risk assets against the background of considerable uncertainty. The decline in yields occurred despite the increase in 2012 in the average risk premium on investment in Israeli government bonds, which can be attributed mainly to an increase in regional geopolitical risk. The relatively large budget deficit in 2012—which became clearer in the second half of the year—and the uncertainty regarding the 2013 budget, have not contributed significantly so far to an increase in the risk premium demanded for investment in government

[2] This ratio is the annual average of the value of the debt which was subject to restructuring proceedings divided by the average outstanding debt balance during that time frame—about NIS 260 billion par value. This ratio is higher than the weight of banks' allowances out of total balance sheet credit to the business sector—which during the past two years has been about 1.96 percent. In this regard, it is important to note that it is hard to find a credible indicator for comparing problematic debts at banks with problematic debts in the bond market, due to the different characteristics of the instruments. The comparison is intended only to present an indication of relative size, as some of the debt that enters restructuring proceedings will be repaid, and the rate of allowances at banks is higher than the rate of write-offs.

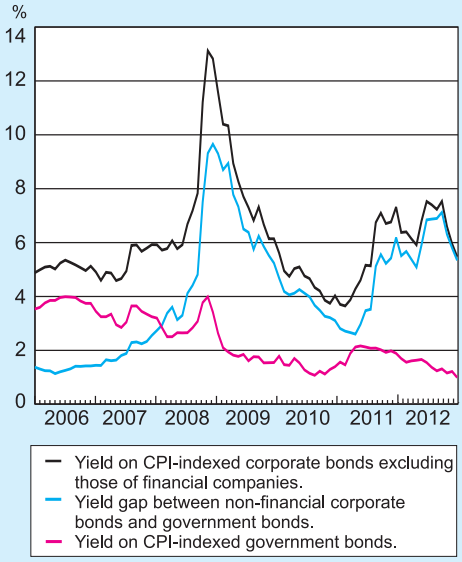
[3] This process leads to a shrinking of business pyramids, and was taking place even before the adoption of the Concentration Committee's recommendations in the matter.

The private sector's costs of raising capital in the bond market increased due to the increase in the risk premium.

bonds, apparently because the market has assessed that the deviation in the deficit is only temporary.

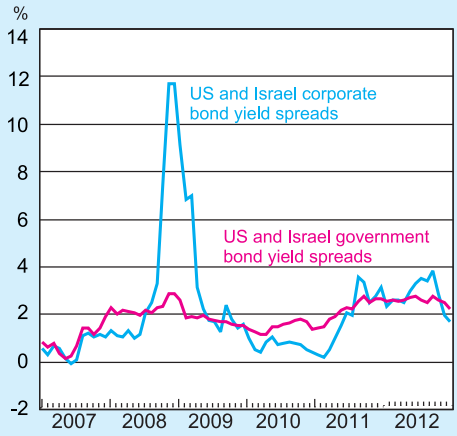
The real yield on government bonds serves as a benchmark for the private sector's costs of raising capital, and its decline supports a reduction in those costs. However, the cost of raising capital in the private sector is also affected by changes in the risk premium that lenders are demanding in the corporate bond market[4], and even though the trend in this premium was mixed during the year, it increased over the full year of 2012 to an average of 6 percent, compared with 4 percent in 2011[5] (Figure 4.7). The increase in the risk premium was greater than the reduction in real yields on government bonds, so that the business sector's costs of raising capital on the bond market increased in 2012 for all rating levels. Most of the increase in the risk premium can be attributed to domestic risk factors in the corporate bond market, as can be seen in the increase in the gap between bond yields for Israeli companies in the domestic market and bond yields of American companies traded in the US (Figure 4.8). This increase was much greater than the increase in the yield gaps between Israel government bonds and US government bonds. A similar increase took place during the 2008 crisis, although at much sharper rates.

Figure 4.7
Yields on Non-Financial Corporate Bonds and CPI-Indexed Government Bonds and the Gap Between Them, 2006-12
(percent, monthly averages)



SOURCE: Bank of Israel.

Figure 4.8
The Yield Spread Between Israeli Bonds and US Bonds*, 2007-12



* A-rated Israeli corporate bonds. BBB-rated US corporate bonds.
SOURCE: Federal Reserve Bank of St. Louis and Bank of Israel.

[4] This premium is measured by the gap between the yield to maturity on corporate bonds and the yield to maturity on Israel government bonds of similar duration.

[5] The premium was calculated for all bonds in the private sector, excluding bonds of financial companies.

b. Assessment of the financial system's stability and the risks to which it is exposed

In 2012, the domestic financial system continued to display considerable resilience to the challenging global environment and the geopolitical instability in the region, including Operation Pillar of Defense in November. The relatively good state of the economy contributed to that resilience, after having grown in recent years due to credible macroeconomic policy and comprehensive and close supervision of the financial institutions, which create stable background conditions for business sector activity.

One of the tools for analyzing the risks in the financial system is a Radar Chart.[6] This chart shows, over time, the risk levels of the various components of the financial system, and of the real situation in Israel and abroad (Figure 4.9).

According to the radar diagram, there has been an improvement in the financial markets in Israel and abroad without a parallel improvement in real activity.

The chart indicates that there has been an improvement, both in Israel and abroad, in the financial markets, without a parallel improvement in real activity. We can see that the risk level in the financial markets in Israel and abroad declined significantly during 2012, even as the risk level abroad declined to a much greater extent, apparently against the background of the massive involvement of the authorities in handling the debt crisis, which greatly reduced the level of volatility in the markets and contributed to increases in stock prices. In contrast, the risks to the real economy in Israel became more severe during the year, while remaining unchanged abroad—at a higher level than in Israel. Domestic credit risk—which is measured, among other ways, by spreads between corporate and government bonds and by differentials between domestic and foreign government bonds—also remained unchanged, at a relatively high level and similar to its 2009 level, which was the result of an increase in the government's risk premium relative to 2009, which was partially offset by a decline in the risk premium in the corporate bond market. The risk to the stability of the financial institutions declined against the background of an improvement in their core capital ratio.

[6] Zalkinder, Hanan, (2012), "Measuring Stress and Risks to the Financial System in Israel on a Radar Chart". Each of the vertexes in the Radar Chart represents a different source of risk to the financial system, and each one of them is calculated by weighting a number of variables:

The global macro risk vertex: growth, unemployment, the Consumer Confidence Index, the Business Safety Index, and imports in the G7 countries.

The domestic macro risk vertex: The Bank of Israel's Composite State-of-the-Economy Index.

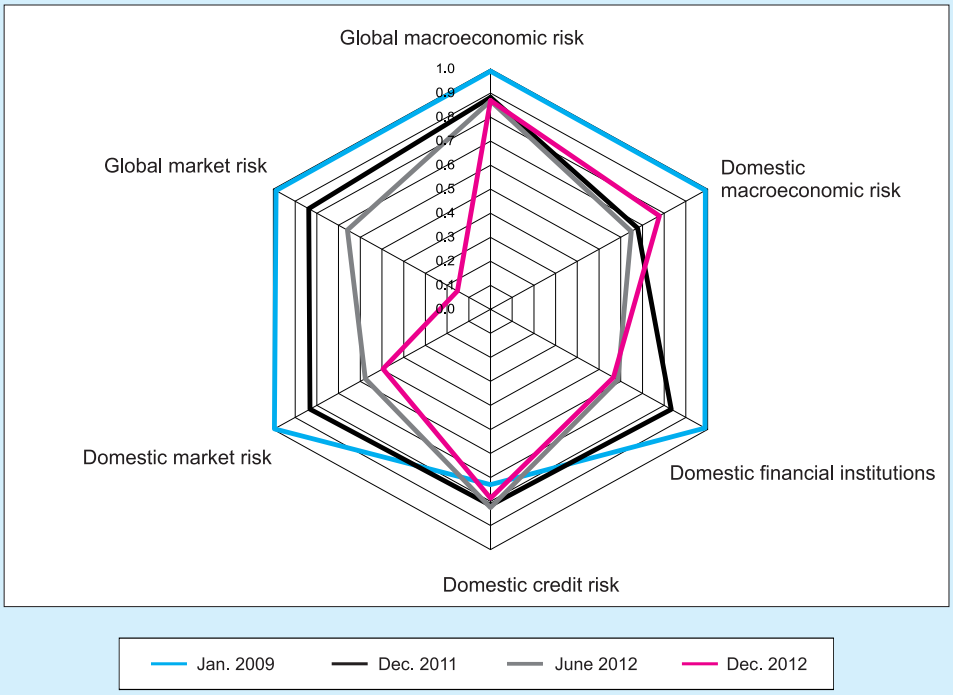
The global financial risk vertex: The VIX index, the MSCI index of shares in advanced economy countries, the MSCI index of shares in the G7 countries, the Ted Spread (the spread between inter-bank interest rates and the yield on short-term American bonds), and the MSCI index of shares of the large banks in advanced economy countries.

The domestic market risk vertex: The Tel Aviv 25 index, the standard deviation inherent in options on the Tel Aviv 25 index, the standard deviation of unlinked long-term government bonds and the standard deviation inherent in foreign currency options.

The domestic credit risk vertex: Corporate long-term bond spreads, the spread between index-linked fixed interest mortgage rates and the yields on index-linked government bonds, and the spread between index-linked Israel government bond yields and indexed American government bonds (five years).

The domestic financial institutions vertex: The Tel Aviv Bank index, the spread on bank bonds, the yield-to-capital of the banks, and the Tier-1 capital adequacy ratio.

Figure 4.9
Risks to Financial Stability as Shown on a Radar Chart, 2009-12



SOURCE: Bank of Israel.

An evaluation of the stability of the domestic financial system, and of the main risks to which it is exposed, is below:

1. Financial institutions

During 2012, the banks showed an improvement in their capital ratios, but their credit risk grew.

During 2012, financial institutions in Israel (banks and insurance companies) improved their capital ratios. Banks' credit risk increased in 2012, as did their exposure to the real estate, construction and mortgages sector, which reached about 40 percent of their risk assets. With that, the banks' profitability was similar to their long term average and capital ratios continued to improve, despite the slowdown in the economy and the crisis in Europe. The improvement in capital ratios was the result of avoiding a distribution of accumulated profits as dividends, and from a decline which occurred in business credit. The increase of the banks' capital ratios contributes to their resilience, and with the completion of the process of increasing capital it will also contribute to their ability to provide credit during recession phases in the business cycle. The demand to increase the capital is part of the outline formulated by the Banking Supervision Department to increase

banks' core capital and align it with international standards in accordance with Basel III. (More information is contained in the section dealing with banks.)

During 2012, insurance companies showed a high level of profitability and an improvement in their ratio of recognized capital to required capital.

In the first three quarters of 2012, insurance companies showed a high level of profitability and an improvement in their ratio of recognized capital to required capital, due to price increases in the financial markets in Israel and abroad. At the end of the third quarter, the capital ratios of the insurance companies were higher than those required by the Supervisor of Insurance as part of the readiness for the implementation of Solvency II. **The new directive** issued by the Capital Markets Division at the Ministry of Finance, which came into effect at the beginning of 2013, **prohibits insurance companies from selling life insurance with a guaranteed conversion coefficient[7], and is expected to contribute to the long-term stability of the insurance companies,** since it will prevent their exposure to the risk of lengthening life expectancies. However, the change may negatively impact the uniqueness of the insurance companies' pension products and make it more difficult for them to compete with other pension savings instruments, particularly because the management fees in the insurance sector are higher than in other savings instruments. (More information is contained in the section dealing with insurance.)

Most pension savings by the public are administered through Defined Contribution plans, where the members bear the market risks.

Pension savings by the public are mostly administered through Defined Contribution (DC) plans, where the members bear the market risks. As a result, market shocks are not expected to have a significant effect on the stability of the institutions managing the public's pension savings, other than through an effect on the management fees that they collect.[8] However, in extreme cases, such a shock may have large budgetary ramifications, as experience shows that when a very large loss is suffered in a pension savings portfolio, pressure is created for government involvement, as took place in 2008, when the government had to create a safety net for savers near retirement age.

Long-term savings institutions continued to increase their rates of investment abroad.

Since 2008, as part of the lessons learned from the crisis, long-term savings institutions have increased their rates of investment abroad. At the end of 2012, these shares reached an average of 15.9 percent of assets managed, compared with 15 percent at the end of 2011 and just 9.3 percent at the end of 2007. Investments are primarily through equity ETFs and mutual funds, and are mostly unhedged against exchange rate risks. Long-term savings institutions tend to minimize their direct investments in foreign government bonds, as well as in corporate bonds abroad. **The diversification of part of the institutional portfolio abroad is very important, primarily against the background of geopolitical risks in the region as well as the size of the managing institutions compared with the size of the domestic market (see Box 4.2). Increasing the rate of investment abroad increases the exposure of institutional entities to exchange rate risk, but these risks can be protected against.**

[7] These are plans for which the conversion ratio between savings size to annuity is set when entering the plan.

[8] Exceptions to this rule are the veteran pension funds, since they are hybrids ensuring a yield while enjoying some level of government backing, as well as guaranteed-yield insurance policies.

2. Credit risk

Credit risk in the financial system remained high in 2012, and was reflected in, among other things, wide average differentials between Israel government bonds and corresponding US securities, and of spreads between Israeli government and corporate bonds. The economy's credit risk is also examined in view of additional parameters:

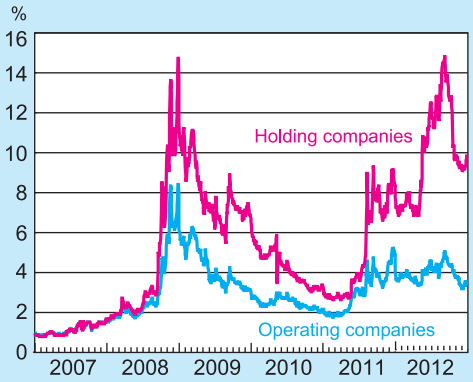
Total credit to the business sector remained unchanged in 2012.

- **Supply of credit to the business sector.** Credit to the business sector was unchanged in 2012, with a further decline in the ratio of business sector credit to GDP, a decline which has continued since 2008. This reflects some worsening of the business sector's funding constraints, particularly for companies in the real estate industry and the investment and holding companies industry, along with a decline in demand for credit. An additional deterioration in risks, and with that in future financing difficulties, is liable to make an increase in the economy's growth rate more difficult. (For elaboration, see the section on credit.)
- **Risks in the corporate bond market.** The level of risk in the corporate bond market remained high in 2012. It was reflected in increased average spreads in the market, numerous debt restructuring proceedings and expectations of many more to come; expectations of large scale redemptions of bonds, particularly those trading at a high yield which makes rollovers difficult; liquidity constraints among large and leveraged business groups; and the availability of the primary market to top-tier firms only. In the final quarter of the year, however, the risks in this market ebbed gradually: spreads narrowed and, in December, the issues market opened up to firms rated A as well.

The condition of some of the business groups worsened in 2012, and some are finding it difficult to meet their obligations.

- **Large business groups.** The "bullish" years in the corporate bond market (2005–07) were also the years of accelerated expansion of large business groups which increased their control of leveraged business pyramids by issuing bonds. The condition of some of these groups has worsened in the past two years; some are finding it difficult to meet their obligations. This, against the background of impairment in the groups' profitability due to the growth slowdown in the economy, the social protest, and specific reforms such as that in the cellular phone market. As a result—and due, too, to the bond market crisis—the groups' ability to continue rolling over the massive debts that they had issued during the boom years was negatively impacted. Market developments thus far, however, indicate that a decline in the risk derived from a systemic effect of contagion between business groups' constituent firms has diminished because the public has learned to distinguish among the various firms in the group on the basis of their financial strength. Accordingly, and in contrast to the situation in 2008, the increase in yields in 2012 was not across the board; it focused mainly on troubled companies within business groups and did not automatically project onto the other companies in the group (Figure 4.10). This was contributed to by, among other things, the tightening of corporate governance and control over transfers of funds among companies belonging to business groups.

Figure 4.10
Bond Spreads Between Business Group Holding Companies and Business Group Operating Companies, Excluding Financial Companies, 2007-12



SOURCE: Bank of Israel.

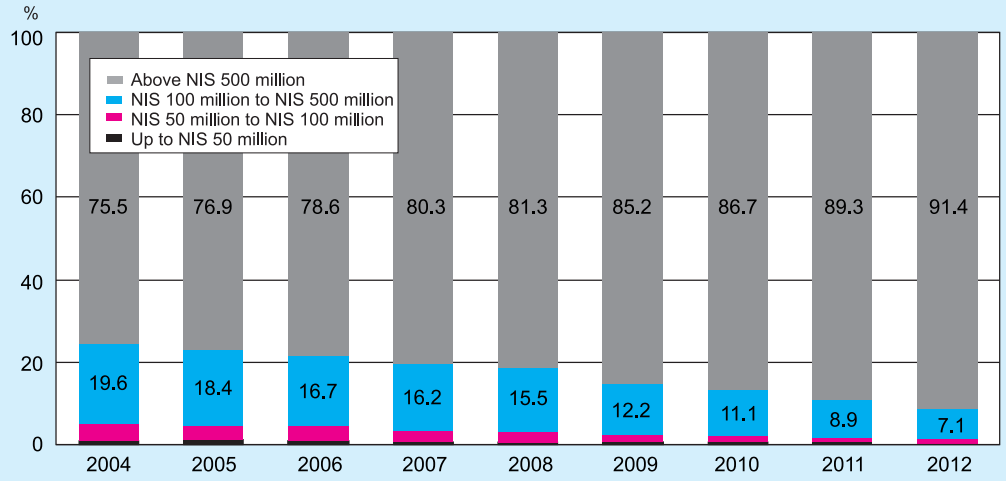
Direct loans from institutional entities to the business sector continued to grow at an accelerated pace.

• **The pace of direct lending by institutional investors to businesses has been accelerating since the beginning of 2009;** by the end of 2012, such lending accounted for 21 percent of total institutional investor credit to the business sector, compared with about 7 percent at the end of 2008. **Since transparency in this credit channel is low and diversification is relatively low compared with the alternative of investing in bonds, the rapid development in this field requires tighter regulation and control.** Consequently, at the beginning of 2013 the Supervisor of Insurance appointed a committee to set rules for direct institutional lending to businesses. (For elaboration, see the section on credit.)

The market for bank and nonbank credit is highly concentrated, and there is a risk of contagion between them.

- **Credit concentration and risks of contagion between markets.** The market for bank and nonbank credit to the business sector is highly concentrated and carries the risk of inter-market contagion because the large borrowers from nonbank creditors are generally also large borrowers from banks. One of the factors in the acute concentration in Israel's credit market is the development of large business groups—they hold many companies and thus hold a large share of both bank and nonbank credit. In recent years, the imposition of several limitations on the exposure of banks and nonbank entities to borrower groups, along with additional measures adopted by supervisory bodies, contributed to reducing the systemic risk occasioned by lending to large business groups. Another measure that may help to reduce credit concentration is the implementation of a recommendation by the Committee to Increase Competitiveness in the Economy to constrain the large groups' activities by limiting the permissible number of levels in the business pyramid. The trends of diverting bank credit to households at the expense of the business sector and to increase lending to small and medium enterprises at the expense of large ones also contribute to reducing the banks' exposure to credit concentration risk. (For elaboration, see the section on the banks.) In the corporate bond market, in contrast, concentration has been steadily rising in recent years; at the end of 2012, about 91 percent of outstanding debt in this market had been issued by borrowers whose debt in the market exceeded NIS 500 million (Figure 4.11)

Figure 4.11
Distribution of Bond Balances by Size of Borrowers' Debt*, 2004-12



* The picture is similar when Israel Electric Corporation bonds are deducted.
SOURCE: Bank of Israel.

3. Low interest rate risk

Short term and long term interest rates are low in financial markets worldwide, and they impact on domestic interest rates, because the domestic economy is small and open with free capital flows. Low interest rates support economic activity in the short term, but the low interest rates around the world likely contain the risk of unwanted developments in the longer term. **If these low interest rates persist for long—due to a continuation of the crisis—they may distort the allocation of resources and encourage excessive risk-taking in real investment and in management of the public's assets portfolio.** So far these risks have not come about in the Israeli economy. (See the discussion in Chapter 3, and Financial Stability Review (2012), Bank of Canada, p. 32.)

4. Home prices and banks' exposure to the real estate industry

Mortgages were taken out at an accelerated pace in 2012.

Home prices renewed their increase in 2012—although at a more moderate pace—continuing the rapid increase from 2008 to the middle of 2011. In addition to the upturn in prices, new mortgage lending volume and the purchase of homes for investment increased again. The combination of continued increases in home prices and mortgage lending raised concern of increased risks inherent in the bank credit portfolio, since their realization would negatively impact banks' capital ratios and profits. Another concern raised was the increased burden of households' debt repayment if interest rates increase, or in a case of overleveraging in order to purchase a home (see the discussion in the section on credit). Against this background, the Bank of Israel took several measures to moderate these undesired developments in the mortgage lending market. (For elaboration, see the section on macroprudential policy.)

c. Macroprudential policy in Israel

Macroprudential policy focuses on relationships between financial institutions, markets, the financial infrastructure, and the overall economy—in order to reduce systemic financial risk and prevent financial crises which bear high macroeconomic costs.[9] One of the important roles of this policy is to limit the structure of incentives to take on excess risks. The need to promote such a policy is one of the lessons learned worldwide from the crisis of 2008, and serves as one of the Bank of Israel's central targets for the coming years.

In order to implement a macroprudential framework in Israel's economy, and against the background of the increased risks and the developments in global markets, a joint professional team to identify systemic risks was established. The team consists of representatives from the Ministry of Finance, the Israel Securities Authority, and the Bank of Israel. In 2012, the Team examined the economy's direct exposure to Europe. The examination indicates that the economy does not have a large amount of financial or real exposure to Portugal, Ireland, Italy, Greece, and Spain, but it has a significant amount of direct exposure to Europe in general, particularly the exposure of the banking system and of real activity, due to Europe's large share of Israel's exports.

The IMF's FSAP delegation recommended establishing a financial stability committee consisting of all the regulators.

In November 2011, an IMF delegation visited Israel to assess the stability of its financial system (FSAP).[10] Within the framework of the visit, stress tests were conducted for banks in Israel, based on severe macroeconomic scenarios.[11] In each scenario examined, the capital adequacy ratio remained above the minimum required at each of the five major banking groups. Its final report includes a recommendation to establish a financial stability committee, consisting of all the regulators, in order to improve both the coordination between regulators and the effectiveness of microprudential and macroprudential policy. This recommendation highlights the importance of institutionalizing the method in which authorities collaborate on systemic financial stability, and many advanced economies have already moved forward in this direction.[12] Such a committee has not yet been established in Israel, and efforts should be made to do so. The report also included a recommendation to strengthen the crisis management framework, in particular to strengthen the legislation intended to deal with a failure at a financial institution, and to sharpen the description of emergency situations in which financial institutions will receive assistance with liquidity.

In 2012 and in the beginning of 2013, macroprudential steps were taken in Israel which were intended to deal with the increasing risk in the housing market.

In 2012, and in the beginning of 2013, macroprudential steps were taken in Israel which were intended to support financial stability and to deal with the development of systemic risk in the housing market in light of the increases in home prices and

[9] An expanded discussion on the topic of macroprudential policy can be found in Section 2 of Chapter 4 of the Bank of Israel Annual Report 2011.

[10] The FSAP (Financial Stability Assessment Program) delegation visited Israel in November 2011 and published its final reports in April 2012.

[11] Details appear in the IMF publication at www.imf.org.

[12] For example, the US, EU, and the UK.

the continued growth of housing credit. The steps were also intended to prevent overleveraging of households when purchasing homes—which would be liable to negatively impact their ability to repay the loans in the future, and to ensure adequate reserves in respect of the risks in the banking system's housing credit portfolio. In this framework, in October 2012, the Supervisor of Banks issued a new directive imposing a limit on the loan to value ratio (LTV) of new mortgages. Under the new directive, a bank shall not approve a housing loan (mortgage) for an amount greater than 70 percent of the value of the home, except for a loan granted to purchase a first home, in which case the mortgage may reach 75 percent of the value of the home. Additionally, a bank shall not approve a loan for the purchase of a home for investment purposes with an LTV of over 50 percent. The Supervisor imposed a stricter LTV limitation on purchasers of homes for investment because when negative turnarounds occur in the market, purchasers of investment homes tend to sell the property as soon as possible, and this tendency deepens market declines. Also, there is concern that buyers of homes for investment purposes prod prices higher which negatively impact home buyers in general.

In February 2013, against the background of the continued accelerated increase in credit for housing, the Supervisor of Banks issued a draft directive intended to increase the capital cushions and capital allocation in light of the increased risks in the housing credit portfolio. The guideline includes a requirement to increase the group allowance for doubtful debts in the housing credit portfolio to a minimum of 0.35 percent of total credit for housing, and a requirement for a greater capital allocation on new mortgages in accordance with the LTV ratio: a risk weighting of 50 percent on mortgages with an LTV of 45–60 percent (in place of 35 percent previously) and 75 percent on new mortgages with an LTV of greater than 60 percent (in place of 35 percent or 100 percent, depending on the circumstances, previously). At the same time, the Supervisor of Banks eased the collateral requirements of the Sales Law after transferring a home to the actual resident, because a relatively low risk level is inherent in those collaterals and in order to allow the increase of supply of bank credit to the construction and real estate industry.

Macroprudential steps were taken to deal with the rapid price increases in the housing market in other countries as well.

Home prices increased rapidly in other countries as well—and they took macroprudential steps in recent years to deal with the concern of a negative impact on financial stability as a result of developments in the real estate industry. For example, in Singapore, credit limitations were imposed in 2011 on purchasers of second homes as investments, and in 2012 a maximum LTV of 60 percent for private purchasers, and of 50 percent for companies, was imposed. Sweden imposed, in 2010, an LTV limit of 85 percent on mortgages. In March 2010, banks in Norway received a guideline under which the loan-to-income ratio may not exceed 30 percent. In Hong Kong, a maximum LTV of 40–60 percent, in accordance with the value of the property, was imposed. Switzerland, in 2012, decided on a series of steps in the housing sector, including: establishing that mortgage borrowers will need to supply at least 10 percent of the value of the property from their own capital; establishing limitations on the

term to maturity of the mortgage; establishing that if the bank grants a mortgage with an LTV greater than 80 percent, it will need to allocate a greater amount of capital; and various limits on nonresidents purchasing homes were set. In Australia, too, instructions limiting residential real estate investment by nonresidents were imposed in 2010. Among other things, it was set that when the purchaser leaves the country, he must sell the property.

Box 4.1

Factors which affected the trading volume decline in TASE-traded stocks

Introduction

Since the beginning of 2010, there has been a decline of about 44 percent in trading volume in the domestic stock exchange, and in the second half of 2012 it reached a 6-year low. The capital market plays a central role in the efficient allocation of capital in the economy. One of the main conditions necessary for the functioning of the market and investors' confidence in it is the existence of a high level of liquidity, since that allows investors to trade stocks at any given moment based on new information reaching the market. Trading volume in the market is among the main factors affecting liquidity levels. Furthermore, low trading volume deters investors from investing in the stock market, which may make it more difficult for companies to raise funds on the market. In light of this, there is great importance in analyzing the factors that influenced the sharp decline in trading volume in the stock market.[1]

In recent years, and especially in the past year, there has been wide public discussion of this issue. Among the arguments that were raised were: (1) The decline in trading volume is a global phenomenon and not unique to the domestic market; (2) Foreign investors exited the stock exchange: (a) Israel's reclassification in the MSCI indices—from emerging market to developed market—led to a net exit of foreign investors from the stock market, and (b) the decline in volume was affected by the increase in the country's perceived risk level, and this decreased the Tel Aviv Stock Exchange (TASE)'s attractiveness to foreign investors; (3) Changes in economic and financial regulations, some of which were perceived as a change of the rules of the game in the economy, led to an exit by investors—both domestic and foreign—from the stock market, and to a decline in the number of public companies.

In this box, we examine these arguments through an international comparison, and long term analysis of trading volume.

1. International comparison

The decline in trading volume in recent years is not unique to the domestic stock market, and was observed in most stock exchanges around the world. In order to check whether the decline was

[1] This is in contrast to corporate bond market volume, which actually increased over this time period.

sharper than the decline recorded in other stock exchanges, we examined the development of trading volumes, normalized for market capitalization, in the Tel Aviv Stock Exchange (TASE) and in 3 comparison groups: stock exchanges in emerging market economies, stock exchanges in advanced economy countries, and stock exchanges with similar market capitalizations to the TASE's.[2] When analyzing the development of the long term trend of the TASE's normalized volume since 2003, measured by a HP filter[3], we find that the turnaround from increase to decrease occurred at the end of 2009. Similar behavior was observed in the comparison groups as well, excluding the advanced economy group, in which the turnaround occurred slightly earlier (in the middle of 2009). Therefore, we will focus on a comparative analysis of the period beginning in December 2009. Table 1 presents the rate of change in trading volume[4], in market capitalization, and trading volume normalized for market capitalization for the period of December 2009 through December 2012, in TASE and in the comparison groups. The table data indicate that trading volume in the TASE declined more sharply than all comparison groups, and in particular compared to the group of similar exchanges. A similar finding can be seen when normalizing the trading volumes to market capitalization, though the differences are more moderate. This is because during the period reviewed, the market cap of the TASE declined, while the market cap in all the comparison groups actually increased.

Since, compared with other stock exchanges, trading volumes in the TASE declined more sharply over the past 3 years, one can conclude that in addition to global factors, impacting primarily on foreign investors and on trading volume of dual-listed shares, domestic factors also contributed to the decline.

Table 1
Rate of Change in Trading Volume and Market Capitalization on the Tel Aviv Stock Exchange and in Comparison Groups, December 2009 to December 2012

(percent)

	Tel Aviv Stock Exchange	Global Average	Average in Emerging Markets	Average in Developed Markets	Average in Similar Stock Exchanges
Trading Volume	-44	-18	-12	-33	-1
Trading Volume Normalized to Market Capitalization	-35	-26	-30	-29	-12
Market Capitalization	-14	12	14	5	31

SOURCE: Based on World Federation of Exchanges.

[2] In this group, we included stock markets with total market capitalization of $50–550 billion, and removed from the sample exchanges in countries whose per capita GDP is unusual compared with Israel's. The group includes: Colombia, Peru, Mexico, Chile, Malaysia, Thailand, Turkey, Ireland, Iran, Poland and Austria.

[3] HP filter (Hodrick-Prescott filter) is a mathematical tool which allows for smooth estimation of the long-term trend factor of a time series. (See, Hodrick, R. and Prescott, E. (1997), "Postwar US Business Cycles: An Empirical Investigation", Journal of Money, Credit and Banking.)

[4] In US dollar terms.

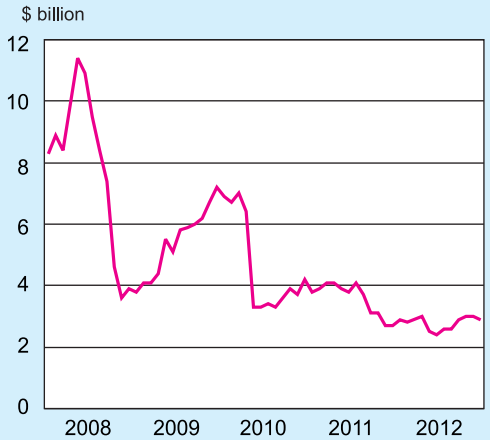
2. Foreign investors' exit from the stock exchange

Empirical studies have shown that in small exchanges, foreign investors act more frequently than domestic investors.[5] In addition, foreign investors contribute to the level of heterogeneity of the market, since they manage international portfolios and thus are driven sometimes by different motives than domestic investors. Various theoretical models indicate that the trading volume is influenced by the various players' behavior patterns and their composition, in particular their level of heterogeneity.[6] Therefore, one can conclude that a decline in the share of foreign investors can contribute to a decline in trading volume.

The share of foreign investors in stock market holdings has indeed been declining since the height of the financial crisis at the end of 2008 (30 percent). One line of reasoning regarding the cause is that there was an increase in **Israel sovereign risk against the background of the geopolitical developments in the region**. Figure 4.2 in this chapter presents the development of Israel's CDS premium compared with the average premiums of developing and advanced economies. The figure indicates that in the beginning of 2009, Israel's CDS premium began to converge, from below, to the average premium of developing markets. This development indicates a change in the perception of Israel's relative risk—from an economy which is less risky than developing markets to an economy with a similar level of risk. Although it cannot be established whether this development derived from an increase in Israel's risk or from a decline in risk of developing markets, one can presume that it contributed somewhat to the exit of foreign investors from the TASE.

International investment funds were among the foreign investors whose exit from the TASE was especially correlated with the decline in trading volume—in the middle of 2010 there was a decline of 53 percent in their TASE equity holdings (Figure 1). Since international investment funds are the most active foreign investors, their exit from the TASE apparently influenced trading volumes markedly.

Figure 1
Value of International Investment Fund Holdings in TASE Equities, 2008-12



Around May 2010, two central events occurred that can explain the rapid exit of international funds from the TASE: the deterioration in the debt crisis in Europe and Israel's reclassification on MSCI's indices. Data regarding international investment funds' activity[7] indicate that over the course of those months there were in fact considerable realizations in all emerging markets,

5 See, for example, Chan and Covrig, (2009), "Why Foreign Investors Trade More Frequently", Working Paper.
6 See, for example, Jiang Wang, (1994), "A Model of Combative Stock Trading Volume", Journal of Political Economy.
7 Based on JP Morgan data.

against the background of **the worsening of the debt crisis in Europe**, though several months later the funds returned to investing large sums in those economies, but not in Israel. Thus, the response of the funds to the deterioration of the debt crisis in Europe does not explain why their TASE holdings stabilized at low levels.

In May 2010, Israel was reclassified as a developed market, from emerging market, by MSCI, whose indices serve as benchmarks for many international investment funds. In theory, this move should have increased the attractiveness of the TASE, but in effect it actually led to a decline in international investment funds' holdings. An explanation of this apparently can be found in the fact that with the reclassification, MSCI decided to include Israel in a new index, made up of developed markets in Europe and the Middle East, and not in the existing European index. In light of Israel's low weighting in the new index[8], funds tracking the European index did not have an incentive to switch to the new index. As a result[9], as can be seen from the data, developed market funds did not enter the TASE in place of emerging market funds which exited Israel's stock market following the reclassification. It is important to emphasize that naturally, the process of foreign funds exiting the exchange was accompanied by a temporary increase in the volume of stocks composing the index.

3. The impact of regulation

One of the widespread claims in the public discussion is that changes in economic and financial regulation contributed to the decline in trading volume. There are three main possible channels of influence according to this claim:

(1) It was claimed that **the increase of capital gains taxes** in the beginning of 2012 led to a reallocation of investments from the stock exchange to channels that were not affected by the increase of taxes. However, an analysis of the composition of the public's asset portfolio does not show evidence of funds being redirected from the stock market to alternative channels. Likewise, participants who were not affected by the change in taxes (institutional investors and foreign residents) were not found to have increased their relative share in stock holdings. It can thus be concluded that the change in taxation did not affect trading volume.

(2) Tightening regulation of public companies: Over recent years, there have been several legislative changes aimed at increasing transparency and tightening supervision on public companies, in order to protect investors.[10] In this context, it was claimed that the tighter regulation puts a burden on companies and thus serves as a negative incentive for new issues and a positive incentive for delisting companies. This led to a decline in the number of public companies—by about 16 percent between 2008 and 2012, and thus also to a decline in trading volume. However, a decline in the

[8] Israel's weighting in the Emerging Markets index was about 2.5 percent, while its weighting in the new index is about 0.85 percent. Reiss and Mevorach (2008) examined the possible effects of the switch on the volume of foreign investment in Israeli shares, but they could not have predicted the problem created by the reclassification to the new Europe and Middle East index.

[9] Apparently also as a result of Israel's relatively low weighting in the general Developed Markets index—less than one-half percent.

[10] Among the major changes: A change in accounting standards, administrative enforcement, Amendment 16 to the Companies Law—an amendment which deals with approving transactions between the firm and its controller, and Amendment 20 to the Companies Law—which imposes limitations on executive salaries at public companies.

number of companies during a bear market is not unique to the domestic stock market nor to the current time. Hence, in order to support the claim we need to examine if the observed decline is unusual compared with the rest of the world and in historical terms. An international comparison indicates that in only about 12 percent of stock exchanges was there a sharper decline in the number of companies during this period, while in similar exchanges the number of companies increased by about 20 percent, on average. (For comparison, even if no company would have been delisted in 2008–12, all the new issues on the TASE would only have resulted in a total increase of less than 7 percent in the number of companies.) Some claim that the decline in the number of companies derived partly from the fact that in an international comparison, the number of public companies in Israel is large, relative to the size of the economy, about the 80th percentile in the ratio of number of public companies to GDP. Nevertheless, an analysis of the data indicates that the decline in the number of public companies in Israel was even sharper than that in countries in which this ratio is higher than in Israel (about 2 percent, on average). Historical comparison indicates that even though in past bear market periods there were also declines in the number of public companies in the TASE[11], one cannot ignore the fact that their number today is at a 13-year low. It can therefore be concluded that tighter regulation was among the factors which contributed to a decline in the number of companies, and thus to the decline in trading volume.

(3) Wide-ranging reforms in the economy: In recent years, some industries underwent comprehensive reforms. Chief among the reforms were those in the communications industry, which increased the competition in this industry, and in the insurance industry. Since in the near term the reforms negatively impacted the profits of the companies in those industries, it was claimed that they contributed to the decline in trading volume in shares of those companies. However, conducting a statistical analysis of the data, and examining the share of trading volume in those industries in total stock market volume, shows that the share in the period after the main reforms began[12] is not significantly different from the share in the period before the main reforms began. Therefore, we do not find support for the claim that reforms in certain industries contributed to a decline in trading volume.

In summary, the analysis presented in this box indicates that in addition to global factors, which influenced the sharp decline in trading volume in TASE-listed shares, there were also domestic factors. The main domestic factors include the exit of foreign investors from the stock market, primarily the exit of international investment funds—these processes were affected, apparently, by Israel's reclassification among MSCI indices and by the increase in the perception of Israel's relative risk. Likewise, the sharp decline in the number of public companies, compared with other countries and over time, supports the argument that the tightening of capital market regulation had some contribution to the decline in trading volume. In contrast, changes in economic regulation of specific industries did not affect trading volumes.

[11] For example, from 2000–03, against the background of the economic crisis in Israel, there was a decline by a similar rate in the number of firms.

[12] January 2012 in the insurance industry, and January 2011 in the communications industry.

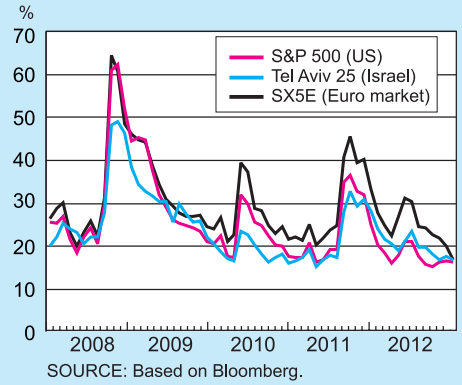
2. ASSET PRICES AND CREDIT

a. Stock prices

Share prices in Israel rose by lower rates than on other markets, with considerable variance between various industries.

The Tel Aviv 100 Index increased by 7 percent in 2012, primarily in the 3rd quarter of the year—a lower rate of increase than on other stock markets worldwide, as the extent of risk declined worldwide as well as in Israel (Figure 4.12). There was considerable variance this year in prices across various industries. For example, while bank stock prices rose by 25 percent this year, share prices in the trade and services industry, which was negatively impacted this year by the reforms in the cellular industry, declined by 11 percent. The proportion of stocks (in Israel and abroad) in the public's financial assets portfolio increased slightly in 2012—to 21.7 percent from 21.5 percent—with an increase in the proportion of foreign shares and a decline in the proportion of shares in Israel. The decline in the proportion of stocks in Israel derives primarily from the relative decline of shares compared with other components of the asset portfolio—which increased at greater rates in 2012—while the increased proportion of foreign shares derived from increased investment abroad (mainly by institutional investors) and by share price increases on global markets. The decline in exposure to domestic shares is also seen in net investment in equity mutual funds—in 2012, it was about negative NIS 1 billion, meaning there were net withdrawals, while there was net new investment of NIS 20 billion for mutual funds as a whole. New stock issuance volume also declined this year, to a low of NIS 2.9 billion. The trough in new stock offerings has lasted for several years, and is apparently related to the relatively low prices at which companies are trading, as well as to the low cost of debt financing, which tends to bias funding sources from funding through share capital to funding via bonds. This development may lead to increased leveraging of companies.

Figure 4.12
VIX Indices of Stock Market Risk, 2008-12



SOURCE: Based on Bloomberg.

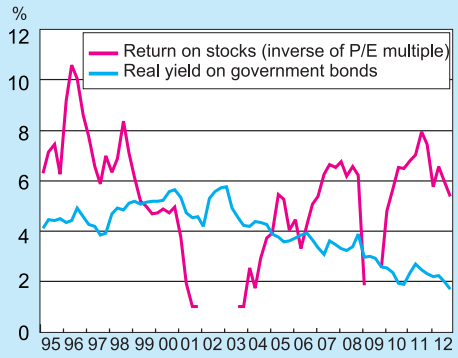
The projected price/earnings ratio[13] increased in parallel with the trailing price/earnings ratio.[14] The excess return on shares remained stable during 2012, and is near its historic high. It thus appears that it reflects the inherent risk in holding stocks. The excess return is

[13] The ratio is calculated using the market value of companies included in the index, divided by the expected income of those companies over the coming 4 quarters. The expected income of the companies is taken from the Bloomberg database, and they are calculated as the average of forecasters' projections reported in the database.

[14] The net income multiple of the company is calculated by the market value divided by its net income over the preceding 4 quarters. In order to calculate the aggregate ratio, the market value of all the companies in the index is divided by their aggregate net income over the preceding 4 quarters.

reflected in the gap between the real return on equity holdings[15] and the real return on 10-year government bonds[16] (Figure 4.13).

Figure 4.13
Return on Stocks Compared to Real Yield on 10-Year Government Bonds, 1995-2012



SOURCE: Bank of Israel.

b. Credit to the non-financial private sector and the corporate bond market

Outstanding credit to the non-financial private sector[17] in December 2012 totaled NIS 1.2 trillion, an increase of 1.8 percent compared with the end of 2011 (Table 4.2). The increase reflects stability in credit to the business sector and continued expansion in credit to households.

Table 4.2
Distribution of Non-Financial Private Sector Credit by Type of Lender, 2008–12

	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012
	Year-end balances[a], NIS billion, current prices					Rate of change compared to previous year (percent)				
Private non-financial sector debt (1+2)	**1,033**	**1,049**	**1,105**	**1,146**	**1,167**	**5.3**	**1.5**	**5.4**	**3.7**	**1.8**
Of which: Bank credit[b]	645	647	700	723	741	8.9	0.3	8.2	3.3	2.6
1. Business sector debt	**743**	**737**	**764**	**782**	**782**	**4.2**	**-0.9**	**3.7**	**2.3**	**0.1**
Bank credit[b]	410	387	409	405	401	7.8	-5.5	5.5	-0.8	-1.1
Corporate bonds and non-bank credit	205	218	225	235	244	-1.8	6.4	3.3	4.1	3.8
Of which: Direct loans from institutions	10	13	16	23	32	-3.3	34.6	23.9	44.4	37.9
Credit from abroad	128	131	130	142	138	3.5	2.2	-0.8	9.1	-2.5
2. Household debt	**289**	**312**	**341**	**364**	**384**	**8.1**	**7.8**	**9.2**	**7.0**	**5.5**
Bank credit	235	259	291	318	341	10.9	10.3	12.3	9.1	7.3
Housing credit	194	209	234	252	269	8.3	7.8	11.7	7.8	6.9
Non-housing credit	95	103	107	112	115	7.9	7.9	4.2	5.2	2.2

[a] Bank credit data before allowances for credit losses; tradable bonds data at par value plus accrued interest.

[b] Excluding bonds issued by the business sector and purchased by the banks. This balance appears under the corporate bonds and non-bank credit item.

SOURCE: Bank of Israel.

[15] The real return on equity holdings is the ratio of net income to market value. This ratio represents the inverse of the price/earnings ratio. The inverse of the price/earnings ratio provides an indication of the required return on a stock, since in a stable situation, where the company's profits are set, the ratio represents the real long term return on the stock holding.

[16] The excess return on shares over the return on a risk-free asset represents the risk premium demanded for holding the asset. In periods when stock prices are not disconnected from the state of the economy, it has been observed that the excess return in this market is positive and represents the risk deriving from investment in it. A decline which is not normal in the required premium indicates a contradiction between the inherent risk in holding the asset and the return derived from investment in it.

[17] Bank credit and non-bank credit to the business sector (excluding banks and insurance companies) and to households.

(1) Credit to the business sector

Total credit to the business sector remained unchanged in2 012, and its share of GDP continued to decline.

Outstanding credit to the non-financial business sector totaled NIS 782 billion at the end of December 2012 and remained unchanged compared with the end of 2011. The lack of growth in credit to the business sector reflects a decrease in bank credit and credit from abroad, concurrent with continued rapid expansion in direct loans extended by institutional investors to the business sector. The decline in bank credit was focused mainly in credit to holding companies, while credit to the commerce industries actually increased.

The ratio between credit to the business sector and GDP continued to decline in 2012, from 89.7 percent of GDP to 83.9 percent. This followed a continual downturn since mid-2007, when this ratio peaked at 106.9 percent (Figure 4.14). The decline in the credit-GDP ratio since 2007 occurred mainly in the area of bank credit, and the ratio of non-bank credit to GDP fell much less. The decline in the ratio of bank credit to GDP derives inter alia from the shift in bank credit towards households, concurrent with an increase in the proportion of mortgages in the bank loan portfolio. The ratio between credit to the business sector and GDP in Israel is low compared with other countries (Figure 4.15), despite the high leverage rates of certain industries in the business sector (Figure 4.16). This may be connected with the fact that leverage among high-tech companies, which account for a large proportion of GDP, is generally low.

Particularly notable is the decline in the leverage rates of real estate companies since the recession. However, these rates among holding companies and large borrowers in the bond market remained high and practically unchanged in the last two years, despite the fall in their outstanding debt in the bond market. This is because of the concurrent decline in the value of their assets.

Given the stability in credit to the business sector and the decline in the credit-GDP ratio, the question may be asked as to whether the decline reflects a constraint based on credit supply or on demand. The answer to this question is important, because if a lack of expansion in credit reflects problems on the supply side, this could have undesirable effects on growth, especially in a period of slower growth, since the business sector's credit requirements can sometimes actually increase in such a period.

The lack of expansion in credit to the business sector in 2012 appears to reflect mainly a tightening of the supply of credit due to the higher risks involved, but also a drop in demand for credit.

The lack of expansion in credit to the business sector in 2012 appears to reflect mainly a tightening of the supply of credit due to the higher risks involved. To a lesser extent, it reflects a drop in demand for credit resulting from the reduced demand for

Figure 4.14
Business Sector Credit to GDP Ratio*, 1999-2012

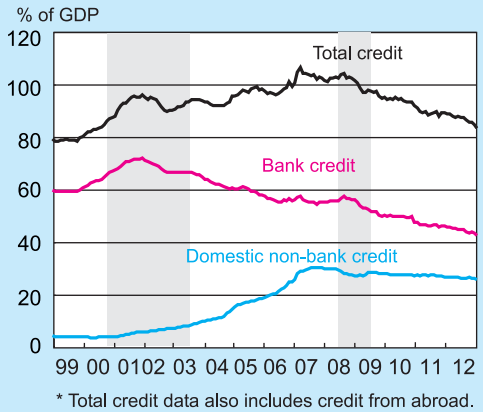
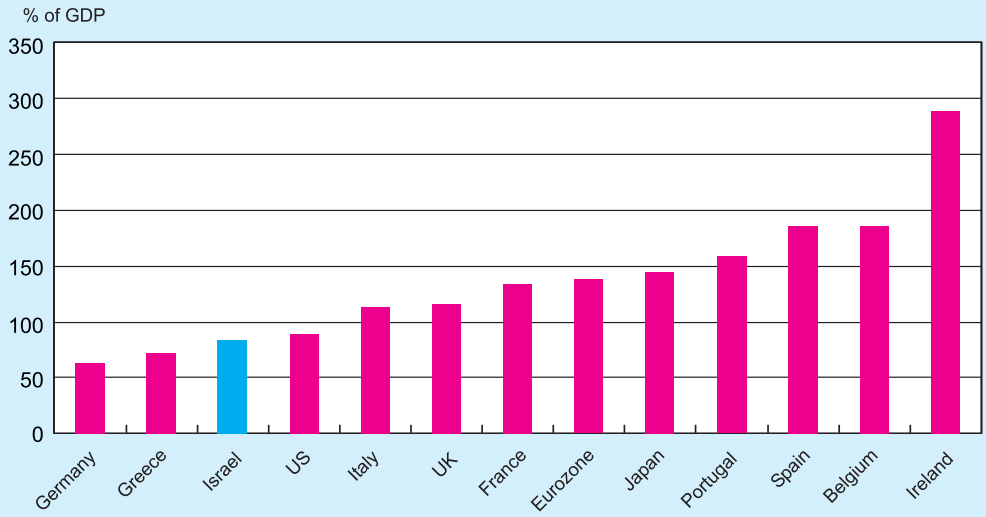
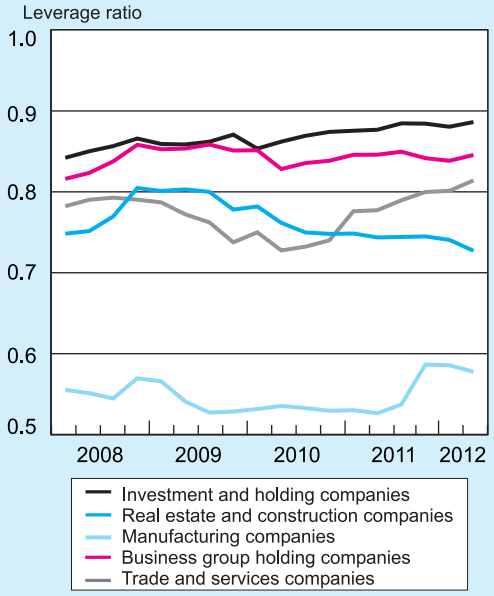


Figure 4.15
Non-Financial Business Sector Debt to GDP Ratio, End of 2012



SOURCE: Debt ratios in foreign countries: estimates from the Global Financial Stability Report, IMF, October 2012.
Israeli debt ratio: Bank of Israel.

Figure 4.16
Weighted Leverage of Public Companies in Israel, by Industry[a], 2008-September 2012
(quarterly data)



[a] Leverage: total debts divided by total assets.
SOURCE: Bank of Israel.

investment, in view of the high level of uncertainty and the expectation of continued slow growth in 2013. This assumption is substantiated by surveys showing a continued increase in financing difficulties that have been reported, especially among large companies in the economy, although the difficulties reported are less severe than in recession periods such as 2008 or 2001–2003.

The increase in financing difficulties in 2012 appears to be connected with the stricter terms imposed on underwriting due to the increased risks in the bank credit portfolio, as well as the requirement for the banks to increase their capital ratios in the coming years in line with the worldwide trend. The relatively high level of risk in the corporate bond market—reflected in the higher level of average spreads in the market

during 2012—exacerbated the problem of raising sources. As a result, throughout almost the entire year the primary market was only available for bond issues by large, high-rated companies.

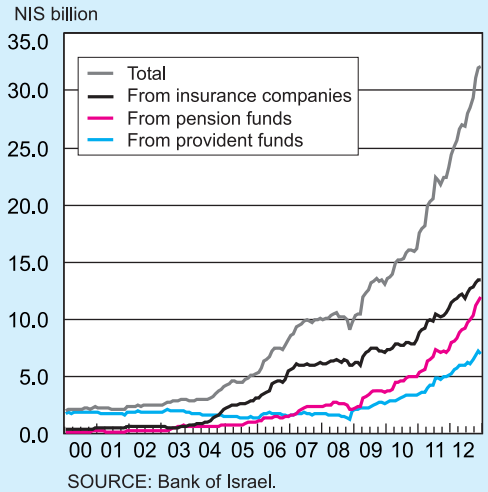
The difficulty in raising debt was particularly apparent among part of the leveraged business groups. These groups face large volumes of bond refinancing and have to finance redemptions mainly by realizing assets and by reaching debt restructuring deals. The real estate industry, which is a highly leveraged industry, also suffered from debt rollover problems in 2012. This is evident from the fact that the proportion of real estate companies among companies entering into a debt restructuring proceeding remained high in 2012, although it did fall in comparison with previous years. The problem is also evident from the fact that because of industry-specific restrictions, some of the banks are no longer able to increase the supply of credit to the real estate industry without recording an additional allowance for credit losses.

Nevertheless, the real estate industry was notable for a large decline in yields during 2012, and the average yield in the second half of the year reached a level similar to the average yield in the non-financial business sector. This came after several years when the level of yields among companies in the industry was much higher than the average. The fall in yields made it possible for real estate companies to increase their debt issues, and their share in the private sector's issues in the bond market reached 26 percent, compared with 20 percent in the previous two years. Some 20 percent of the amount raised by companies from the real estate industry was issued by those that mainly operate abroad. Despite the increase in real estate companies' debt issues, net borrowing (issues minus redemptions) in the industry was negative. In 2012 as well, bonds were issued by large, high-rated companies, and the financing problems of small and medium-sized companies in the industry remained unresolved.

Unlike other channels for credit to the business sector, direct loans from institutional entities expanded rapidly during recent years.

Unlike other channels for credit for the business sector, direct loans from institutional investors expanded rapidly during recent years. The balance of these loans rose by 38 percent to NIS 32 billion in 2012, following very rapid rates of growth in the previous years (Figure 4.17). This credit channel enables the institutional investors to extend loans to the business sector in a relatively fast track and at a low level of transparency, without the Hodek Committee's directives applying to these loans. At the same time, such loans make it possible to diversify credit risks among the banks

Figure 4.17
Loans from Institutions to the Business Sector, 2000-12
(end-of-month data)



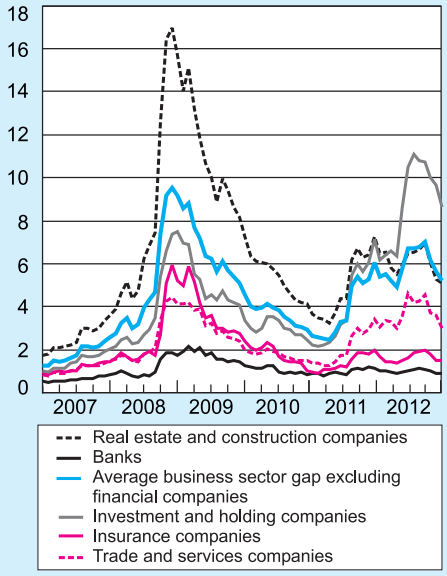
SOURCE: Bank of Israel.

and the institutional investors while increasing the supply of credit to bodies that do not wish—or are unable—to resort to the capital market as a source for raising credit. An additional channel of credit becomes all the more important at the present time, when the banks are curbing the supply of credit due to the requirement to increase their capital ratios. By means of the direct loans, the banks can share portfolios of new loans with the institutional investors or sell them existing loans, and thereby free sources for new credit. In view of the rapid development of this credit channel, its regulatory coverage must be intensified and adapted to the existing standards applying to bank credit. The supervision over it must be increased as well, in order to prevent it becoming a channel for the development of inferior quality credit.

(2) The corporate bond market

Corporate bond market developments were not uniform in 2012—spreads in the market contracted until April, widened during May–September, and contracted again in the final quarter of the year (Figure 4.18). The development of bond market spreads was affected by changes in the assessment of the risks inherent in the global macroeconomic environment, against the background of a vulnerable corporate bond market due to the large proportion of problem debts that had arisen as a result of the rapid expansion of this market during the years 2005–07.[18] The problems encountered in the market were apparent from the numerous debt restructuring proceedings, large-scale redemptions of bonds trading at a high yield that made it difficult to rollover, and liquidity difficulties experienced by large, leveraged business groups.

Figure 4.18
Yield Gap Between Corporate Bonds[a] and CPI-Indexed Government Bonds, by Industry, 2007-12
(percent, monthly averages)



[a] Bonds traded on Tel Aviv Stock Exchange, excluding convertible bonds, structured bonds and bonds issued byforeign companies.
SOURCE: Bank of Israel.

Although spreads contracted to a considerable extent in the last quarter of the year, the average level of spreads in 2012 was significantly higher than that prevailing in 2011 (about 6 percent compared with about 4 percent)[19], ruling out the possibility of any large flow of issues. This was despite the growth in refinancing requirements

[18] See Chapter 4 in the Bank of Israel Report for 2009.
[19] The yield spread between corporate bonds, excluding bonds of financial companies, and government bonds with a similar duration.

resulting from the increased volume of redemptions during the year. Only toward the end of December, when margins reached an average of 5 percent, did the flow of issues increase to a major extent. The volume of bond issues by the non-financial private sector in 2012 reached NIS 28 billion, slightly more than the average for the previous two years (Figure 4.3). However, the issue volume excluding the IEC's bond offerings, which were mostly backed by State guarantees, reached only NIS 20 billion. Net borrowing in the corporate bond market (issues[20] minus redemptions) totaled only NIS 3 billion compared with NIS 8 billion in 2011.

The high spreads in the corporate bond market made the primary market available only for issues by large companies with high ratings.

In 2012, as in 2011, there was a clear preference for issues of top tier companies. The proportion of issues rated AA- and above continued to rise, to 65 percent of issues, compared with 62 percent in 2011 and 44 percent in 2010. Concurrently, the proportion of unrated issues declined from 7 percent of total issues in 2011 to only 4 percent in 2012. The large proportion of high-rated issues reflects the primary market's selectivity and the fact that during nearly all of 2012, it was only available to top tier companies.

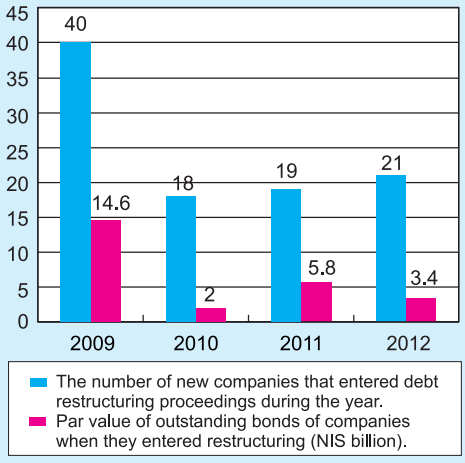
The contraction of spreads in the corporate bond market in the last quarter of the year was prompted by the burgeoning level of demand for by mutual funds for corporate bonds, with net investment of NIS 6.3 billion in those bonds in the final quarter. Concurrently, the proportion of the bonds in the funds' portfolio rose from 28.5 percent at the end of 2011 to 31 percent at the end of 2012. As a result, and due to the fact that all long-term saving institutions reduced their rate of holding in corporate bonds during 2012, mutual funds' share of the corporate bond market continued to rise, reaching 15 percent of the inventory of bonds at the end of 2012 compared with 13.4 percent at the end of 2011 and just 6.3 percent at the end of 2008. The mutual funds' increased share of the corporate bond market, at the expense of long-term saving bodies, could increase the market's volatility during a crisis period.

Debt restructuring proceedings continued to weigh down the corporate bond market in 2012.

As stated, debt restructuring proceedings continued to weigh down the corporate bond market in 2012, and 21 new companies entered into such proceedings during the year. The value of these companies' debt, prior to the restructuring proceedings, was NIS 3.4 billion (Figure 4.19).

A considerable number of the companies that entered into debt restructuring proceedings in 2012

Figure 4.19
Companies that Entered Debt Restructuring Proceedings, 2009-12



SOURCE: Bank of Israel.

[20] Including Israel Electric Corporation's issues.

were relatively small companies, whose outstanding debt prior to rescheduling was less than NIS 100 million. While most of the companies that entered into debt restructuring proceedings in previous years were from the real estate industry, in 2012, a third were real estate companies and the rest were from the technology, trade and services, and investment industries.

The crisis in the corporate bond market in 2008, the cumulative effect of several consecutive years in which dozens of companies entered debt restructuring proceedings (especially when in certain years large companies with massive debts were involved), and expectations of numerous debt restructuring proceedings in the future, all led to an increase in the assessment of the risk in the market. This increase was reflected by the spreads demanded in the market, which were much higher than those required before the recession of 2008—approximately 5 percent at the end of 2012, compared with 1 percent in 2006, when spreads were at their lowest.

The number of new companies entering debt restructuring proceedings in 2012 was smaller than might have been expected at the end of 2011 given the state of the primary market and the value of the debt that needed to be refinanced and which was trading at a high yield. This resulted from the use of alternative sources for financing redemptions, principally the realization of assets.

Table 4.3
Gross Security Issues by the Business Sector, by Type of Security[a], 2008–12

	NIS billion, yearly aggregate				
	2008	2009	2010	2011	2012
1. Total capital raised (2+3)	33.3	57.8	58.5	49.4	52.5
Of which: Via tradable securities	28.0	46.6	54.9	43.9	46.7
2. Capital raised for working capital (a+b)	27.0	49.4	53.4	44.0	41.4
a. Non-financial private sector	15.4	31.6	35.2	30.6	30.5
Shares and convertibles	5.8	6.1	12.2	5.0	2.9
Tradable bonds	5.9	19.3	19.8	20.1	22.3
Non-tradable bonds	3.6	6.2	3.2	5.5	5.3
b. Capital raised by banks and insurance companies	11.6	17.8	18.2	13.4	10.8
Stocks and convertible securities	0.8	0.6	0.2	0.0	0.0
Tradable bonds	9.9	12.8	17.7	13.4	10.3
Non-tradable bonds	0.9	4.4	0.3	0.0	0.5
3. Financial instruments	6.4	8.4	5.2	5.4	11.1
Equity ETFs[b]	-1.4	7.9	5.1	2.1	4.2
Bond ETFs[b]	8.1	2.2	0.5	-1.1	1.5
Structured bonds	0.8	0.2	0.8	0.0	0.0
CDs[b]	-1.2	-2.0	-1.2	4.4	5.5

[a] Excluding issues to subsidiaries, foreign companies and issues abroad by dual-listed companies.
[b] Net issues (issues minus redemptions and excluding issues to subsidiaries).
SOURCE: Based on Tel Aviv Stock Exchange.

(3) Credit to households

Credit to households continued to expand in 2012, but this debt as a share of GDP declined.

Outstanding credit to households continued to expand in 2012 and at the end of the year reached NIS 384 billion, an increase of 5.5 percent compared with the end of 2011. The most rapidly growing component of this credit was mortgages, the balance of which increased by 6.9 percent and whose share in total households' debt reached 70 percent. Non-housing credit to households grew by only 2.2 percent in 2012.

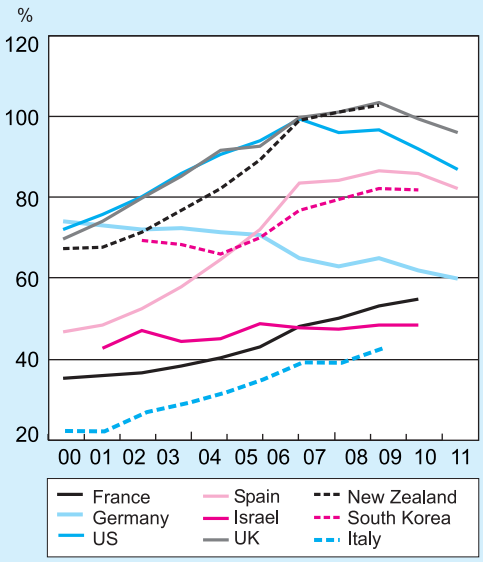
The mortgage market in Israel is less risky than in other economies, but the high share of mortgages in the banks' portfolios increases the risk in the banking credit portfolio.

Despite the relatively rapid growth in mortgages, the ratio of households' debt to GDP increased only moderately during recent years and declined in 2012. In December, this ratio reached 41.2 percent compared with 41.8 percent at the end of 2011 and 39.2 percent at the end of 2007. The ratio was considerably lower than in other advanced economies, in particular those that experienced a recession in the housing market during recent years (Figure 4.20). The average LTV ratio in Israel is also lower than usual worldwide and in 2012 amounted to only 55 percent (Figure 4.21). Another factor contributing to the reduced mortgage market risk of the banks in Israel is that the mortgages are generally recourse loans, in addition to the bank's pledge on the borrower's apartment. Nevertheless, the large proportion of mortgages in the banks' assets (25 percent) together with their high exposure to commercial real estate (16 percent) and the fact that part of this is connected with residential construction, prompted the Bank of Israel to take additional measures in 2012 in order to moderate the growth in credit for mortgages. (See the section on macroprudential policy for details).

Unindexed variable-rate mortgages constitute 30 percent of the overall mortgage balance.

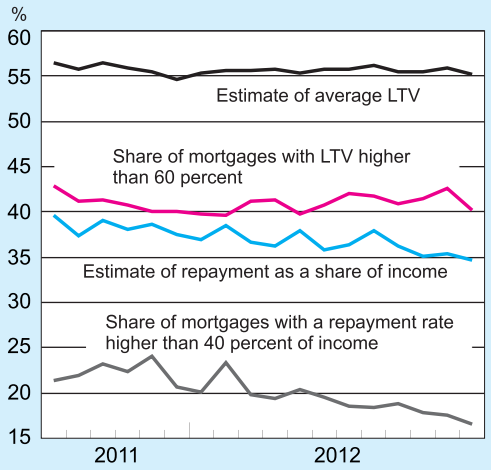
Another risk factor in the mortgage market is the relatively large proportion of floating-rate mortgages and especially unindexed mortgages, because a change in the interest rate on these loans is closely correlated with changes in the Bank of Israel interest rate. Since August 2011, the proportion of unindexed floating-rate mortgages has increased again after declining for two and a half years, and at the end of 2012, reached 33.4 percent of the total amount of mortgage loans taken during the year. At the end of 2012, the balance of these mortgages amounted to NIS 73.1 billion, and accounted for 30 percent of the overall balance of mortgages from the banks. During recent years, borrowers in the unindexed floating-rate local currency track have benefited from an interest

Figure 4.20
Household Debt to GDP Ratio[a], 2000-11



[a] For the purpose of this comparison, and similar to other countries, data for Israel include the debt of business individuals.
SOURCE: OECD data.

Figure 4.21
Repayment as a Share of Income and the LTV on Mortgages out of Total New Mortgages Granted, July 2011 to December 2012



SOURCE: Bank of Israel.

Interest on unindexed variable-rate mortgages are closely linked to changes in the Bank of Israel interest rate, exposing borrowers in this track to the risk of a rapid increase in interest payments.

rate considerably lower than that in the other indexation tracks, but at the price of exposure to the risk of a rapid increase in the interest rate in the future. This is particularly important in view of the low interest rates currently prevailing in the economy and the assessment that at some stage, these rates will rise concurrent with increases in worldwide interest rates. In order to examine this risk, we estimated the increase in interest repayments under a number of scenarios. Under a scenario in which the interest rate rises by 2.5 percentage points, interest repayments on unindexed floating-rate mortgages will increase by NIS 1.5 billion a year. A rise in the interest rate to its average level in 2006 (6.2 percent), meaning its level prior to the global crisis, will have the effect of increasing interest repayments by NIS 2.3 billion a year. This increase is centered among the relatively small population of those taking floating-rate mortgages, and could therefore increase the risk associated with these borrowers.

An additional effect of an interest-rate hike is from the perspective of the single household. In the case of an average mortgage of NIS 550,000, if the interest rate rises by rates similar to those mentioned above, it will lead to an annual increase of NIS 4,000 in the interest repayments on the unindexed shekel part of a mortgage, an amount equivalent to 4 percent of the average wage in the economy. In view of the fact that the debt-income ratio on new mortgages currently amounts to 35 percent, this is a substantial increase.

Another characteristic of the mortgage market in Israel is the absence of a mortgage securitization market. Because of the absence of such a market, the banks sell hardly any mortgage portfolios to institutional investors. While this prevents the banks from freeing sources for the purpose of extending new credit, it also serves as an incentive for banks to check the borrower's repayment ability over the entire period of the debt, even at higher interest rates, leading to conservative underwriting which contributes to the stability of the banks. Although the development of a securitization market is highly important, this should be dependent on a requirement to retain part of the securitized debts in the banks' books as proposed in the draft Securitization Law, which is in the process of approval. This would retain, to a large extent, the banks' incentive to underwrite the securitized portfolio in a suitable manner.

3. FINANCIAL INSTITUTIONS

a. The banks[21]

(1) Financial intermediation and developments in the macroeconomic environment in 2012

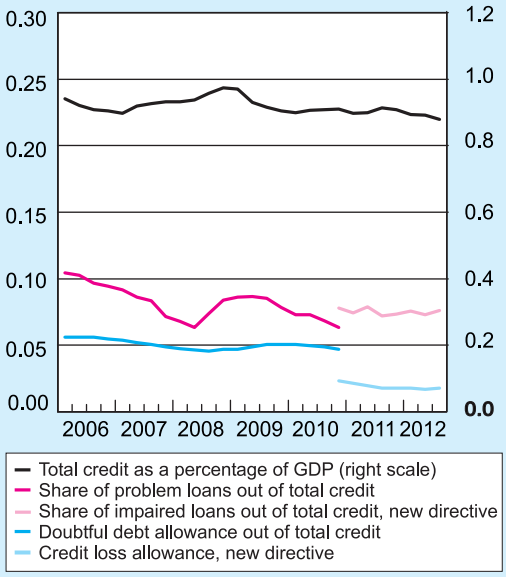
The bank's capital adequacy increased during 2012.

The banks' capital adequacy increased considerably during 2012, against the background of a requirement imposed by the Supervisor of Banks in March 2012. All banks were required to increase their core capital ratio to 9 percent by the beginning of 2015, and the two largest banks were required to increase it further, in order to reach a core capital ratio of 10 percent by the beginning of 2017. The capital adequacy ratio was raised by means of a minor increase, of less than 1 percent, in risk assets[22], and via an increase of 10 percent in shareholders' equity resulting from retained earnings. Stock issues by the banks' will provide them with greater flexibility in adhering to the required capital ratios, enabling them to choose between an increase in risk assets and an increase in dividend distribution.

The banks' profitability declined slightly, possibly due to the change in the composition of credit.

Concurrently, the banks' profitability declined slightly and reached a level similar to that in the years 2009–10 (Table 4.4). This may have resulted from a change in the composition of bank credit,[23] namely an increase in the proportion of credit to private individuals, principally mortgages, and an increase in the smaller sized credit segment at the expense of larger sized credit (see Table 4.5). However, assuming that households and small businesses are dispersed among the entire population and all sectors of the economy, it is reasonable to estimate that the decline in profitability together with the decline in the rates of bank leverage were accompanied by a decrease in

Figure 4.22
Share of Doubtful Debt, Credit Loss and Problem Loan Allowances in Total Bank Credit, and Total Bank Credit as a Percentage of GDP, the Five Major Banking Groups, 2006-12



SOURCE: Bank of Israel.

[21] The analysis in this section is based partly on data from published financial reports for the first three quarters of 2012.
[22] September 2012 compared with September 2011; data for the five largest banks.
[23] This aspect is discussed later.

the risks to which the banks are exposed.[24] Nevertheless, this was not reflected by a decrease in the allowance for credit losses or in the ratio of impaired debts to total credit: These actually rose slightly during the year, mainly due to the increased level of risk in the business sector. In other words, the reduced exposure to the business sector was offset by an increase in that sector's risks, and was thereby scarcely apparent from the level of allowances (Figure 4.22).

Table 4.4
Bank Performance Indices[a,b], 2008–12

	2008	2009	2010[e]	2011	2012 Q1	2012 Q2	2012 Q3
				(percent)			
Profitability							
Return on Equity[c]	0.4	8.2	9.3	9.8	9.2	7.8	8.9
Activity							
Credit to the public as a share of total assets	69.3	66.2	69.1	67.0	67.8	67.3	66.7
Credit to private individuals as a share of total credit	50.2	52.2	53.7	54.3	55.0	55.6	56.6
Operating efficiency							
Operating expenses to total assets[c]	2.5	2.4	2.5	2.4	2.4	2.4	2.5
Assets per position (index, at fixed prices)	121.1	127.7	132.8	148.5	148.6	152.1	154.5
Risk							
Impaired debt as a share of total credit[d]	8.4	7.8	6.3				
			(7.8)	7.3	7.6	7.3	7.6
Credit loss allowance out of total credit[d]	4.7	5.1	4.7				
			(2.3)	1.8	1.8	1.7	1.8
Allowance for credit losses[f]	5,175	5,273	3,102	3,172	3,023	3,222	3,444
Capital adequacy							
Capital adequacy ratio[d,g]	11.2	13.6	14.2				
			(13.9)	14.0	14.3	14.4	14.6
Tier 1 capital ratio[d,g]	7.1	8.9	8.7				
			(8.3)	8.4	8.6	8.7	8.9

[a] Data for the five major banking groups.
[b] In 2011, the definitions of some of the items were changed. In those items, the data for 2010 appears both before and after the change in definitions, with the latter in brackets.
[c] Quarterly non-aggregate data, in annual terms.
[d] As of 2011, the data appears before deducting allowances for credit losses and before deducting collateral that may be deducted for the purpose of the borrower's indebtedness and that of a borrowers' group.
[e] The numbers in parentheses reflect 2010 data after the correction required pursuant to the "Measurement and Disclosure of Impaired Debts, Credit Risk and Credit Loss Allowances" directive issued by the Supervisor of Banks at the end of 2007.
[f] Aggregate quarterly data in annual terms.
[g] Up to 2008, this ratio was calculated according to the Basel I rules. Since 2009, the calculation is according to Basel II rules.
SOURCE: Financial reports to the public and Annual Surveys of the Banking System in Israel.

[24] The banks are still exposed to systemic risk even though households and small businesses are dispersed among all sectors of the economy.

(2) Increasing the competition in the banking system

The Team to Examined Increasing Competitiveness in the Banking System recommended a series of steps in its interim report.

The Team to Examine Increasing Competitiveness in the Banking System published its interim report in July 2012. The team reviewed the competitive aspects in the financial system and developments in the credit market, and recommended a series of measures for increasing the competition in the banking system. As a result of the team's review, a large part of its recommendations were aimed at promoting competition in the retail segment (households and small businesses). This is because the segment's needs are not met by non-bank credit providers, which focus on large businesses. The team's recommendations were divided into three layers: (1) Measures aimed at increasing the number of credit providers in the economy: expanding non-bank credit suppliers' activity in the area of retail credit; advancing the regulatory infrastructure required for the activity of an Internet bank; encouraging foreign banks to enter into retail activity in Israel; establishing the regulatory infrastructure that will enable a credit union to operate, and expanding the activity of the Postal Bank. (2) Measures aimed at increasing the competition for the retail segment among the existing banks by removing information barriers and by increasing transparency and fairness: The team identified three barriers to competition, which are related to the costs incurred by customers when switching banks and to the information asymmetry between the banks and their customers, and formulated proposals for the removal of these barriers. (3) Complementary measures: abolition of certain commission fees and supervision of other fees, increasing the transparency regarding the fees which customers are charged for securities activity and requiring the banks to re-price some of their services in this area, the adoption of special measures for facilitating the banking activity of small businesses and prescribing a mechanism for ensuring that benefits and discounts for customers are maintained throughout the entire period of a loan or deposit.

(3) The banking system's stability—risks

In 2012, credit risk provisions were stable, in parallel with an increase in the level of credit risk in the market.

The banks' credit risk exposure remained unchanged during the first three quarters of 2012, and this was apparent from the allowance in respect of credit risk (Figure 4.22). Problem loans as a ratio of total credit and the allowance for credit losses were at a level similar to that measured during 2011. This was despite indicators showing an increased level of credit risk in the economy, and the fact that such an increase might be expected to lead to a growth in the risk inherent in the bank credit portfolio. The indicators of growth in credit risk include the expansion of the spreads between corporate bonds and government bonds for the same terms.

The concentration of credit by size declined in 2011.

Credit risk is dependent inter alia on the extent of the concentration of credit, which is measured by means of various indices, including the distribution of credit by principal industries and by loan size. Table 4.5 presents the development of these indices over selected years. This development indicates a decline in credit concentration during 2011. With respect to the distribution of credit by loan size, the proportion of credit to

small borrowers (up to NIS 2 million) increased between 2009 and 2011[25] even though it declined from 2009 to 2010. The proportion of credit to the largest borrowers (over NIS 200 million) fell during 2011 although its level remained above that in 2009. The proportion of borrowers with credit of between NIS 20–200 million also fell. It should be noted that this phenomenon is not connected with the volume of mortgages since it still exists when these are excluded from the data. (This is because the amount of credit in most mortgages is relatively low).[26]

There was a slight decline in the concentration of credit by industry in 2012.

As regards the distribution of credit by principal industries, this remained practically unchanged in 2012. The exposure to credit for the real estate industry and for mortgages continued to increase,[27] and account for 40 percent of outstanding bank credit. In addition, a slight increase in the allocation of credit to manufacturing is apparent, as well as to electricity and water, at the expense of the other principal industries. This change in the allocation of credit led to a slight decline in the Herfindahl Index of credit concentration, continuing the downtrend notable in recent years, which occurred mainly due to a decline in the largest credit segment—credit to the trade and services industry—as well as a decline in credit for the financial services industry. The decline in the index is indicative of increased diversification of the credit portfolio.

Credit loss provisions in the trades and services sector increased in 2012.

In order to complete the picture, the risk which the banks attribute to the different industries needs to be understood. An examination of the credit which a bank grants to a single industry—credit that is limited under regulatory directives—shows that the ratio of credit to the construction industry to total credit granted by the banks fell slightly during the year (see Footnote 2 to Table 4.5). At the same time, the rate of allowances for credit losses in the construction industry declined, apparently against the background of the substantial increase recorded in 2011. However, the allowance for credit losses in the trade and services industry rose to a considerable extent, concurrent with a large increase in the proportion of credit loss allowances for financial services. These developments conform to the expansion of the spread between bonds from the trade and services industry and government bonds, and to the contraction of the spreads between bonds from the real estate and construction industry and government bonds (Figure 4.18).

The banks' exposure to peripheral European countries, including banks and financial institutions in those countries, remained low and continued to decline during the year.

[25] Since the data on which this analysis is based exist only at the annual level, the most recent figure is from 2011.

[26] During 2012 over 80 percent of mortgages were at amounts of up to two million shekels. Over 70 percent of the mortgages were used to finance the purchase of properties with a value of up to two million shekels, and another ten percent financed properties with a value of up to three million shekels at an LTV ratio of less than 60 percent.

[27] The growth in credit derived from a substantial increase in credit for mortgages and from a slight decrease in credit to the construction industry.

Table 4.5
Concentration of Credit[a] by Loan Size and Industry in Selected Years

Distribution of credit by size	2007	2009	2010	2011
NIS thousand		Percent		
0 – 2,000	29.9	34	32.4	35.5
2,000 – 20,000	11.0	10.6	10.3	10.2
20,000 – 200,000	30.9	27.7	27.1	26.1
More than 200,000	28.3	27.6	30.2	28.3
Distribution of credit by industry[b,c]	2007	2010	2011	2012:Q3
		Percent		
Agriculture	1.21	1.13	1.17	1.16
Manufacturing	21.56	18.71	18.42	18.99
Construction	26.39	30.58	31.55	31.10
Electricity and Water	1.38	1.76	2.25	2.90
Transport and Communications	6.57	7.09	7.18	6.68
Trade and Services	42.86	40.7	39.43	38.99
Financial Services as a portion of the trade and services industry	44.3	43.2	39.8	38.0
Herfindahl Index of concentration of credit by industry	0.304	0.299	0.295	0.29
Credit to households as a percentage of total bank credit	34.4	38.9	40.04	41.05
Distribution of credit loss allowance by industry[d]	2007	2010	2011	2012:Q3
		Percent		
Agriculture	1.48	1.16	1.26	1.17
Manufacturing	23.65	16.82	23.24	19.99
Construction	38.84	42.92	38.41	29.90
Electricity and Water	0.37	0.23	0.61	0.26
Transport and Communications	10.07	6.63	4.02	5.55
Trade and Services	32.49	32.24	32.46	43.14
Financial Services as a portion of the trade and services industry	14.5	34.2	31.1	40.5

[a] Balance sheet and off balance sheet bank credit, loan activity in Israel, consolidated balance, including the financial services industry and public and community services.
[b] The distribution is based on total credit to sectors of the economy, excluding credit to private individuals, as opposed to the manner in which the Banking Supervision Department calculates the distribution for the purpose of industry-specific limitations.
[c] As of 2011, credit to the various industries appears before credit loss allowance deductions and before the effect of collateral that may be deducted for the purpose of borrower's or borrowing group's liability.
[d] As of 2011, the definition of "allowance for credit losses" has changed.
SOURCE: The banks' financial reports to the public.

b. The insurance companies

During the first three quarters of 2012, the insurance companies recorded an aggregate profit due to profits from investments.

In 2012, as in previous years, the insurance companies' performance was considerably affected by capital market returns. During the first three quarters of 2012, the insurance companies recorded an aggregate profit of NIS 1.9 billion, compared with an aggregate loss of NIS 560 million in the same period of 2011. The insurance companies' switch from a loss to a profit is attributed almost entirely to their earnings from investments deriving from the gains in the markets during the

first and third quarters of 2012: In the first three quarters of the year, the companies recorded earnings from their investments of NIS 17.8 billion compared with a loss of NIS 3.5 billion in the same period of 2011. Despite the gains in the markets, the insurance companies were unable to charge variable management fees in respect of profit-sharing policies because of the losses that had accrued in them. But since the companies managed to cover most of the losses from real investments accrued to insurees, they will likely be able to once again charge these fees for the fourth quarter of 2012.

The recognized equity capital of insurance companies—and the ratio between the companies' recognized capital to required capital—increased, while the ratio of Tier 1 capital to insurance companies assets declined.

The insurance companies' aggregate profit for the first three quarters of 2012 led to an increase in their recognized equity capital compared with the end of 2011. The growth in recognized equity capital led to an increase in the ratio of recognized capital to required capital in four out of the five largest insurance companies,[28],[29] so that their aggregate ratio rose from 114 percent at the end of 2011 to 121 percent at the end of the third quarter of 2012. However, the ratio of Tier 1 capital to the five largest insurance companies' nostro asset portfolio (excluding profit-sharing policies, in which the investment risk is imposed on the insurees) fell and reached 10.8 percent at the end of the third quarter of 2012 (compared with 11 percent at the end of the third quarter of 2011). Similarly, the companies' ratio of Tier 1 capital to total assets (solo) fell and amounted to 4.8 percent at the end of the third quarter of 2012, compared with 5.0 percent at the end of the third quarter of 2011.

At the end of the third quarter of 2012, most of the insurance companies' nostro portfolio was invested in government bonds, cash and cash equivalents, and in bank deposits.

The composition of the insurance companies' investment portfolio remained stable in 2012. At the end of the third quarter of 2012 and as in the previous two years, 60 percent of the investments in the insurance companies' nostro portfolio were in government bonds (almost entirely Israel Government bonds), cash and cash equivalents, and deposits at banks. Even excluding the guaranteed-yield plans (which are notable for a large proportion of government bonds) from the companies' nostro portfolio, a high ratio (43 percent) of their investments at the end of the third quarter of 2012 were in these asset types. The insurance companies' holding rates of corporate bonds and equities[30] at the end of the third quarter were similar to those at the end of 2011, at 19 percent and 4 percent of their nostro assets respectively.

Two major regulatory changes were made in the area of insurance and pension saving in 2012:

(1) In February 2012 the Knesset Finance Committee approved an amendment to the Financial Services Regulations (Provident Funds) (Management Fees), 5772-2012. The following table compares the current maximum annual management fees in the provident funds and in new life insurance policies[31] with those before initial application of the amendment:

28 Migdal, Harel, Clal, Phoenix and Menorah.

29 Each of the five insurance companies ended the third quarter of 2012 with a capital surplus of over NIS 300 million in excess of the minimum capital requirements

30 Directly in shares, equity ETFs, and options for shares in Israel and abroad.

31 The changes will not apply to life insurance policies that were valid before the beginning of 2013.

Table 4.6
Maximum Management Fees by Savings Track

Maximum management fees by savings track	Life Insurance		Provident Funds	
	From deposits	From accumulated balance	From deposits	From accumulated balance
	0%	2%		
	Or			
The current situation	11% (from deposits, on average over 12 years of savings	1%	0%	2%
The situation according to the new amendment				
From 2013	4%	1.1%	4%	1.1%
From 2014	4%	1.05%	4%	1.05%

The average management fees in the provident funds and managers' insurance are expected to decline due to a change in the maximum management fee ceiling. The harm to companies will be moderated if minimum management fees are set for provident funds.

In 2012 the insurance companies charged average management fees of 1.2 percent of the accumulated balance and 4.72 percent of current deposits in life insurance policies sold since 2004. However, averages can be misleading because of the lack of uniformity in terms for savers: Savers belonging to large, strong organizations usually benefit from low management fees, while small savers with low bargaining power pay much higher management fees. Even if on average the reduction in management fees appears insubstantial, it could therefore be significant for part of the smaller savers.

At the end of October 2012, the Commissioner of Insurance submitted to the Knesset Finance Committee draft regulations for determining minimum management fees in the provident funds. The regulations specify new minimum management fees of nine shekels, which could be relevant for small provident funds in which sums amounting to a few thousand shekels are managed. Concurrently, the proposed regulations enable savers in provident funds with an accrual of less than NIS 5,000 to withdraw the money without paying tax during 2013.

The restriction on management fees in provident funds and life insurance plans is likely to harm the insurance companies because of its impact on their profitability and on the competition in the area. If the Finance Committee approves the Commissioner's recommendation however, the specification of minimum management fees in provident funds with a low accrual and the encouragement of savers to close these funds (whose operation involves losses for the managing companies), can be expected to reduce the damage caused to the companies.

(2) In November 2012 the Commissioner of Insurance published a position paper on "Revision of the Demographic Assumptions in Pension Funds and in Life Insurance Policies".[32] A large proportion of life insurance policies contain a guaranteed conversion

[32] See http://ozar.mof.gov.il/hon/2011/pension/memos/t2012-80b.pdf. A draft of the position paper was published in July 2012.

coefficient. (The annuity is determined by dividing the amount saved by the conversion coefficient). This means that a saver who deposits money in such a plan knows right from the date of the deposit the conversion coefficient of the monthly annuity which he will receive from retirement and until the end of his life. The insurance companies are faced with the risk of increased life expectancy, which implies the payment of a monthly annuity for longer periods than that implied by the conversion coefficient promised to savers. The position paper in question makes an upward adjustment in the assumptions of life expectancy and the probability that savers will withdrew their money as an annuity. These revisions have made it necessary to increase the reserves which the insurance companies are required to hold against annuity liabilities in life insurance policies that include a guaranteed conversion coefficient. In addition to the position paper, the Commissioner of Insurance issued a circular entitled "Annuity Coefficients Implying an Assurance of Life Expectancy".[33] The circular prohibits the insurance companies from selling life insurance policies that include a guaranteed conversion coefficient for savers below 60 years of age, with effect from 2013.

Following a revision of assumptions concerning life expectancy, the insurance companies were required to increase their reserves against insurance policies that include a guaranteed conversion coefficient. In addition, as of the beginning of 2013, they will be prohibited from selling this type of life insurance policy.

Due to the requirement to increase the reserves against policies that include a guaranteed conversion coefficient, the insurance companies had to record losses. These reduced the companies' earnings obtained from the gains in the capital market, and thereby reduced their equity capital as well. Apart from that, the prohibition on marketing policies with a guaranteed conversion coefficient could impair the companies' ability to compete in the area of pension saving with the provident funds and especially the pension funds, and force them to reduce the management fees in life insurance, which could harm their future profits.[34]

The increase in reserves and the prohibition against ensuring a conversion coefficient may harm the companies' profitability, but they are expected to support the companies' stability.

The proposed regulatory changes are nevertheless expected to contribute to the stability of the insurance companies. This is because these changes address the need to cope with increased life expectancy, a risk against which the companies have not allocated an adequate safety buffer until now, and due to the prohibition on selling policies with a guaranteed conversion coefficient, a measure which transfers the risk from the insurance companies to the insurees.

In the past, most of the money in profit-sharing insurance plans was withdrawn as a lump sum, and only 6 percent was withdrawn as an annuity. Life expectancy risk at the insurance companies was therefore relatively minor. Under Amendment 3 to the Supervision of Financial Service Law (Provident Funds) of 2008 however, money deposited in insurance plans from 2008 onward can no longer be withdrawn as a lump sum, but rather only as an annuity (unless the saver has a minimum annuity as prescribed in the law). As a result, the life expectancy risk facing the insurance

[33] See: http://ozar.mof.gov.il/hon/2001/insurance/memos/2012-1-5.pdf. A draft of the circular was published in July 2012.

[34] Average management fees in life insurance in 2012 amounted to 1.2 percent of the accumulated balance and 4.72 percent of current deposits. This compares with average management fees of 0.33 percent of the accumulated balance and 3.8 percent of current deposits in the pension funds, and average management fees of 0.81 percent of the accumulated balance and no management fees from current deposits in the provident funds in that year.

companies increased. In addition, due to increased life expectancy, the coefficients that were assured in the past make cash withdrawal by means of an annuity more attractive, and savers are aware of this. Hence, there is a growing tendency to withdraw cash as an annuity—a process whose continuation might have undermined the future stability of the insurance companies. Moreover, during recent years it transpired that the increase in life expectancy was more rapid than that projected in the Finance Ministry's initial forecasts. This led to the revision of mortality tables, and highlighted the risk inherent in a guaranteed conversion coefficient in the absence of good forecasting ability with respect to life expectancy. It should be noted that the insurance companies are unable to hedge life expectancy risk in the same manner as they hedge against catastrophe risks, because the market lacks suitable reinsurance products.

To conclude, despite the harm to the insurance companies' profitability in the short run and possibly in the longer run as well, the requirement to increase their reserves and the prohibition on assuring a conversion coefficient are expected to lead to an improvement in the companies' financial stability.

Box 4.2
"An Inescapable Network of Mutuality": The Similarity Between Investments of Institutional Investors, and its Consequences

Managing the public's money has posed a real challenge in recent years, both because of the weakness in global market activity and the uncertainty regarding those markets' complete recovery, and because of the decline of activity in the domestic capital market. Thus, it is important to examine the investment strategy of the entities managing the public's long-term savings (pension funds, provident funds, and insurance companies). The discussion takes on added importance in light of the large and growing weight of defined contribution (DC) plans—about 50 percent in Israel—as savers in those plans bear the investment risk because their pension rights are generally set at the point of retirement in accordance with the accumulated assets and their return; and also in light of the increased weight of institutional investors in the domestic portfolio management industry.[1]

Along with the accelerated growth in assets under management, the investment institutions focus most of their investments in the domestic capital market, which has a very limited supply of products, few initial public offerings, low liquidity, and a concentrated ownership structure of issuing companies, both public and private. The range of supply in an asset market reduces the probability of a similar choice of portfolio composition—that is, the specific assets included and the weight of each one—because investors are heterogeneous in their expectations and in the way they analyze the data. In the Israeli market, the supply is low, as noted, so that the probability of similarity in portfolio composition is greater. Furthermore, as

[1] The combined assets managed by provident funds (including advanced training funds), pension funds and profit-participating life insurance plans, relative to GDP, is about 99 percent as of the end of 2011. The growth rate, estimated at over 10 percent per year, is more rapid than the rate of GDP growth.

a result of joint ownership there is considerable interdependence among managed assets. This situation significantly increases the chances of simultaneous movement and concurrent sales of assets when exposed to a specific shock. Thus, even if specific risks are diversified enough in each savings plan separately, the similarity between the investment portfolios of institutional investors is liable to cause those risks to become systemic risks (Wagner, 2011). The realization of these risks during a time of crisis is liable to significantly negatively impact markets and financial institutions as a whole—through a steep erosion of asset prices—and in real activity, through a marked decline in the level of private consumption. In extreme cases, it may even lead to government intervention.

In order to support our assessment regarding the lack of variance in diversification of the financial portfolios managed by institutional investors in Israel, we used micro (asset level) data of all the assets they held as of the second quarter of 2011.[2] These figures indicate that the share of the financial assets at the focus of the discussion, particularly the equity and corporate bond components, is about 28 percent (NIS 237 billion) of the total investment portfolio of the entities. The other assets under management are divided mainly between government bonds (about 45 percent) and foreign securities (about 12 percent).

A preliminary analysis of the composition of the investment portfolios, with reference to regulatory limitations in Israel[3], indicates that when aggregating the assets held in portfolios by issuing corporation and/or by group of issuing corporations (business group), the clear majority of portfolios falls within the range of values permitted by supervision regulations and even further from the level set by law. Although compliance with regulatory limitations ensures an appropriate level of diversification in the portfolio of each entity, to understand the potential for a systemic negative impact, the level of similarity in diversification among the various entities must be examined. Accordingly, we calculated the level of similarity between the stock and bond portfolios using a similarity index (Blocher, 2011).[4] This index receives a value between 0 and 1, with 1 being completely identical portfolio compositions, and 0 being complete dissimilarity. We tested the similarity between the 15 largest investment institutions by assets, examining it by several possible groupings. First, we examined the level of similarity between two different asset managers by the share of a single financial asset out of total financial assets managed at each of the portfolios. We then grouped the assets by their issuing company (single corporation). In the next stage we grouped the issuing companies' assets by belonging to business groups (corporate groups). At every aggregation level the similarity between asset portfolios of every possible pair of managers was examined.

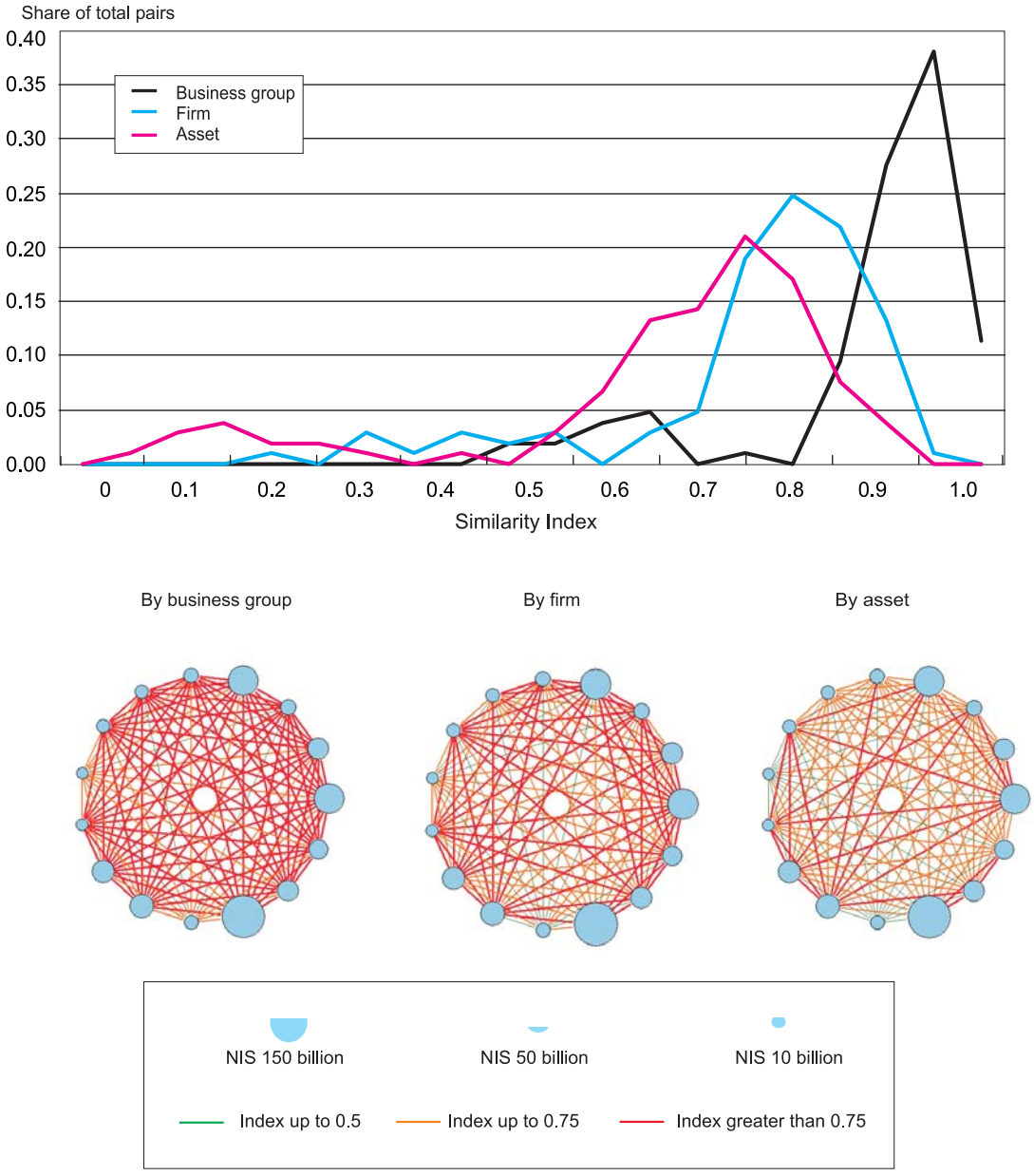
The results are presented in the two sections of Figure 1. It can be seen that with the switch from one aggregation level to another the distribution shifts to the right, toward the larger values. This finding is evidence that when aggregating securities held by the investment entities by company, and later by business group, the investment portfolios of the various entities become more similar to each other. Thus, for example, at the level of the individual asset, the median of the distribution is 0.7, at the level of

[2] The data used were taken from the Predicta system.

[3] The limitations on institutional investors' investments appear in chapter 3 of the financial services supervision directives: http://ozar.mof.gov.il/hon/2001/mosdiym/memos/tt2011-17092New.pdf.

[4] If there are x assets in the market (stocks and bonds), and every entity holds in its portfolio a certain amount of assets, then the asset portfolio can be descried as a vector with x sides. The similarity index is essentially the cosine of the angles between 2 vectors of 2 entities (portfolios).

Figure 1
The Level of Similarity Between Managed Portfolios, Second Quarter 2011
(Similarity Between Every Possible Pair of Entities Among the 15 Largest Institutions, by Various Levels of Aggregation)



The upper section of the figure presents the distribution of the similarity index among the 15 largest institutional investors by various aggregation levels (by asset, by firm, and by business group). The bottom section presents the link between the various institutions in the form of a network. Each circle represents an institution, and the size of the circle reflects the size of the institution, relative to the others. The line between each pair indicates the level of similarity, and the color indicates the connections-green is an index of up to 0.5, orange is an index of up to 0.75, and red is an index greater than 0.75.

SOURCE: Based on the “Predicta" system.

company it is 0.77, and after a switch to aggregating by business group, it is 0.9.[5] In other words, the switch to observation at the level of business group indicates that there is very much similarity in the manner in which asset managers distribute their investments. When examining in a more detailed manner the assets with the highest share in large asset managers' portfolios, we find that those assets are from the same 5 business groups. The total exposure of institutions to these groups is 40.3 percent (NIS 77.6 billion) out of their total exposure to high risk assets—stocks and corporate bonds. In a finding similar to that of the distribution test, the network of similarity (the lower section of the figure) shows that an increase in the level of aggregation increases the level of similarity between the managed portfolios.

The above analysis provides evidence of the existence of considerable similarity between stock and corporate bond portfolios of institutional investors in Israel. We emphasize that when examining the composition of the overall portfolio, the similarity is even greater, due to the substantial exposure to Israeli government bonds. The high level of similarity, observed even at the individual asset level, indicates that the source of the result is the limited supply of assets in the domestic market. With that, we cannot eliminate the possibility of "herd behavior" among institutional investors when choosing investment strategies, similar to findings in other countries.[6] Behind this phenomenon is the desire to not stand out by underperforming relative to other investors, which can lead to withdrawals by savers in favor of other investment managers. In any case, the effect of the concentration in the economy markedly amplifies the level of similarity.

In light of what has been noted above, it appears that the current asset portfolio profile, against the background of the existing system's features, creates significant exposure to risk. Thus, creating some variation between managed portfolios and reducing the similarity between them is likely to increase the financial system's resilience.[7] In order to achieve this target, at least one of these channels should be used: First, continue and accelerate the dealing with the concentration, in accordance with the path proposed by the Committee to Examine Increasing Competitiveness in the Economy—a gradual dissolution of the complex ownership structures is likely to lead to a de facto increase in the supply of assets and reduce the mutual dependence between them.[8] Second, increasing the exposure to abroad of institutional investors—at the expense of their exposure to the domestic market, where the supply of financial products is relatively limited—is likely to aid in creating more variation between institutional investors' portfolios. Likewise, given greater investment alternatives, institutional investors will considerably increase their negotiating power vis-à-vis the large borrowers in the economy, and thus improve the quality of the managed portfolio. Finally, to reduce risks and provide protection to all savers, efforts should be made to update the existing limitations on the exposure rates to corporate groups and placing those limitations near the actual exposure rates. The reason is that most institutions do not approach the existing limitations at all, and thus there is

[5] When examining the similarity index at the level of investment management firm as well (not by level of managing company, as we have done), similar values are seen. This is unrelated to the type of savings (provident fund, pension fund, or life insurance).

[6] See, for example, Raddatz, et al, (2011), Grinblatt, et al., (1995), and Lakonishok, et al., (1992).

[7] The importance of the variation in the financial system was clearly emphasized after the recent crisis (Lavi Schiffenbauer, "Investment risk in the pension savings portfolio—approaches, features, and lessons from the crisis", Working Paper, Ministry of Finance Capital Markets, Insurance, and Savings Department, December 2011).

[8] It should be noted that as opposed to the crisis period of 2008, in which the level of synchronization between all assets in the domestic market (both of business groups as well as assets which do not belong to such groups) was high. Recently, the dependence has declined to some extent.

still potential to increase the level of similarity and with it, overall risk. Moreover, it should be emphasized that the existing limitations were put in place in order to lead to appropriate diversification of the specific risk of each investment entity individually, but they do not take into account the systemic risk and its various consequences that derive from the similarity between managed portfolios.

Blocher, J. (2011), "Contagious Capital: A Network Analysis of Interconnected Intermediaries", Working Paper, Vanderbilt University.

Grinblatt, M., S. Titman and R. Wermers (1995), "Momentum investment strategies, portfolio performance, and herding: a study of mutual fund behaviour", *American Economic Review* 85(5), pp. 1088-1105.

Lakonishok, J., A. Shleifer, and R. W. Vishny (1992), "The impact of institutional trading on stock prices", *Journal of Financial Economics*, 32(1), pp.23-43.

Raddatz, C., Schmukler S. L. (2011), "Deconstructing Herding: Evidence from Pension Fund Investment Behavior", Policy Research Working Paper 5700, World Bank.

Wagner, W.B. (2011), "Systemic liquidation risk and the diversity-diversification trade-off", Journal of Finance, 66(4), pp.1141-1175.

4. PAYMENT AND SETTLEMENT SYSTEMS

Payment and settlement systems are critical parts of the economic and financial infrastructure of modern economies, and their efficient operation contributes to the development and financial stability of the economies. Unreliable payment systems are liable to exposure their users to risk, and even to transfer risk from one financial market to another, possibly resulting in systemic risk. Thus, one of the Bank's functions, defined in the Bank of Israel Law, 5770–2010, is to regulate the economy's payment and settlement systems, in order to ensure their efficiency and stability.

The Bank of Israel operates 2 payment systems—the Zahav (RTGS, Real Time Gross Settlement) system, which provides final settlement for all the interbank payment and settlement systems in Israel, and the Paper-based Clearing House, which clears drafts (checks, and paper based debits and credits). An additional payment system is Masav (Automated Clearing House), which is managed by a joint services company owned by the five major banks. Masav is an electronic system, which clears non-paper-based interbank transactions in shekels. The transactions, which are not final in real time, include account debit authorizations, salaries and tax payments, and payments to suppliers.

The decline in real activity in the economy was reflected in a decline in the amounts settled through the Zahav system.

In 2012, there was a decline in real activity in the economy, which was seen in the amounts settled through the Zahav system. The volume of activity in the Tel Aviv Stock Exchange clearing houses declined by 7.5 percent (excluding guarantees) in

2012, the volume of foreign exchange conversion transactions via CLS[35], in which the shekel was one of the sides, increased by 14 percent, total interbank activity (direct credits) through the Zahav system decline by 8 percent, and overall financial activity through the Zahav system declined by about 10 percent.

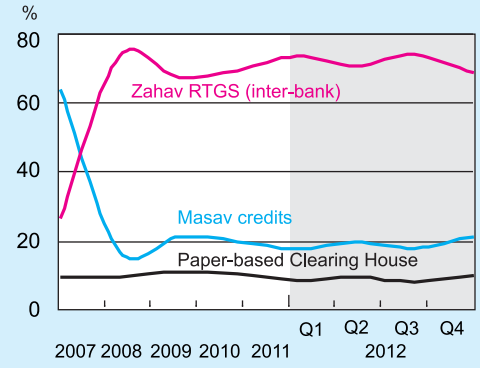
The Bank of Israel continues to act to improve the efficiency of the payment systems.

In 2012, the Bank of Israel continued to work to improve the efficiency of the payment systems. Within this framework, the Bank of Israel took steps to support the use of advanced, lower-risk, electronic payment methods: an advanced check clearing house system based on new technology infrastructure came into operation, and other actions were taken to reduce manual clearing. The Bank of Israel is also working to reduce the value of payments transferred in individual transactions through Masav, in order to reduce the settlement risk in Masav and Zahav.

The Bank of Israel continues to act to increase the stability of the payment systems, and began exercising supervision on the controlled payment systems.

The share of interbank settlement through Zahav was 70.6 percent in 2012, 20.1 percent of credits were through Masav[36], and 9.63 percent in checks (Figure 4.23). To the extent that the share of interbank settlement through Zahav increases, at the expense of reduced credits cleared though Masav and the amount settled through the paper-based clearing house, the risks in those systems will contract.

Figure 4.23
The Distribution of Settlement System Activity, 2007-12



SOURCE: Bank of Israel Masav.

In parallel with activities carried out to improve the efficiency of the payment systems, the Bank of Israel continued to work this year, too, to increase the stability of the payment systems. Among other things, oversight on the controlled payment systems, and implementation of the recommendations in an IMF (International Monetary Fund) report on reducing the risk in the Zahav system. The stability of the financial infrastructure in Israel will continue to strengthen as the existing payment systems will advance and improve in meeting principles accepted worldwide to reduce risks.

The FSAP (Financial Sector Assessment Program) report, which was presented in the first quarter of 2012, examined the financial stability of the Israeli economy, including the Zahav system and the TASE clearing houses. The report notes that these systems meet most international standards, the legislative and operational infrastructure—including that of business continuity—meet international requirements, and that the systems are stable and meet participants' needs.

[35] CLS—Continuous Linked Settlement—is an international clearing house for foreign exchange transactions.

[36] The Zahav system only allows settlement of credits—self debiting and crediting the beneficiary—and thus debits cannot be diverted to Zahav. These will continue to be settled through Masav.

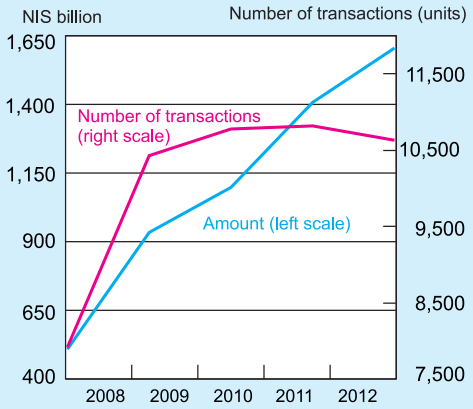
The main findings from the FSAP report related to the Zahav system refer primarily to aspects related to the legislative basis of the system and aspects related to the business continuity of the Zahav system. The recommendations on legislative issues focus on the need to protect the other payment systems operating in Israel which finalize their settlement through the Zahav system.

The inclusion of the shekel in CLS settlement in May 2008 also contributed to the stability of the financial system, and this was seen that same year, primarily during the financial crisis: despite the uncertainty of that time, financial entities in Israel were able to continue and conduct conversion transactions with confidence, through CLS, with foreign financial entities.

Most of the shekel conversions against foreign currency is done through the CLS bank.

CLS settles more than 50 percent of the international market, and provides settlement services for 17 currencies. Transactions conducted in Israel through CLS are primarily converting shekels into foreign currencies. In 2012, domestic currency activity vis-à-vis CLS was around NIS 1.6 trillion, an increase compared with the previous year (Figure 4.24).

Figure 4.24
CLS Shekel Activity in the Zahav System, 2008-12



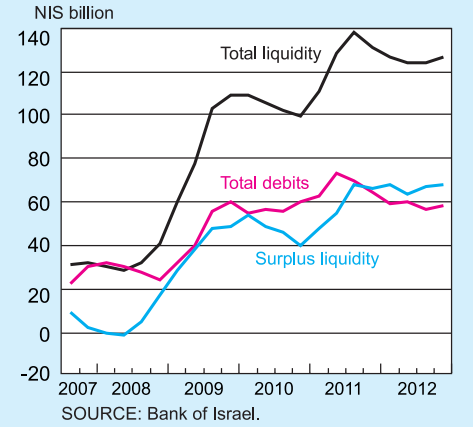
SOURCE: Bank of Israel.

Most of the shekel conversions against foreign currency is done through the CLS bank.

As part of assessing the stability of the Zahav system, various indicators are examined, including liquidity surpluses in the system, their availability, and their concentration.

Surplus liquidity in the Zahav system reflects a situation of surplus liquidity in the current accounts and credit line provided by the Bank of Israel to the network of participants, against collateral. This surplus allows participants to make payments even if their accounts will not be credited. Liquidity surpluses in the Zahav system[37] (daily average) increased in 2012 to NIS 67 billion, compared with NIS 59 billion in the previous year (Figure 4.25). The high liquidity surpluses reduce liquidity risk in the system.

Figure 4.25
Total Debits, Liquidity, and Surplus Liquidity in Zahav, 2007-12
(daily average per quarter)



SOURCE: Bank of Israel.

[37] Liquidity surpluses are calculated based on daily averages: total liquidity in the Zahav system minus total inter-bank debits.

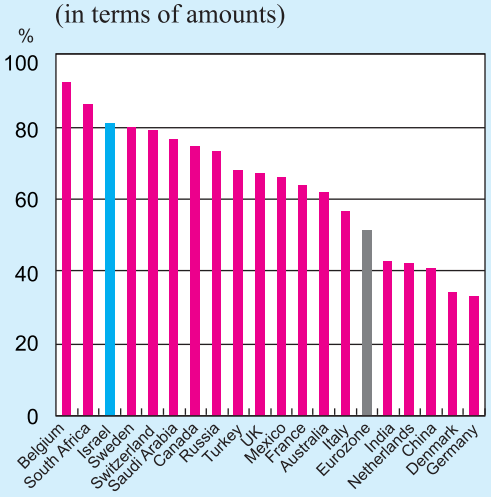
The availability of the Zahav system[38] has been maintained since it began operations. The high level of availability indicates the system's stability and business continuity ability. In 2012, the Zahav system's availability was 99.89 percent, the same as its level in 2011. The availability of the system is similar to that of RTGS systems around the world.

The availability of the Zahav system is high, and its rate is similar to the acceptable rates in similar systems around the world.

In order to assess the systemic risk in the Zahav system, the level of concentration among Zahav participants is examined. The concentration level reflects the volume of inter-bank activity of the five most active participants[39] (in currency terms). The greater the concentration is, the greater the systemic risk in the system. In the Zahav system, the concentration ratio is 81.55 percent, an increase of 1 percent from the previous year (Table 4.7). In global terms, the concentration level in Israel is relatively high (Figure 4.26).

The concentration level in the Zahav system is relatively high in global terms.

Figure 4.26
Concentration Ratio in RTGS-Type Systems Around the World, 2011
(in terms of amounts)



SOURCE: Bank for International Settlements (BIS).

Table 4.7
Concentration in the Zahav RTGS 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

SOURCE: Bank of Israel.

[38] The level of availability is computed by the number of hours the system was available divided by the total number of hours the system operated during the year.

[39] It should be noted that the level of banks' activity in the Zahav system and their size are not necessarily directly proportional.