



Israel and the Global Crisis 2007-09

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CONTENTS

Chapter 1 *Israel and the Global Crisis: A Summary*

1. Introduction.....	5
2. The Global Crisis	8
3. The Crisis in Israel.....	11
4. Lessons from the Crisis.....	30
5. Afterword	38

Chapter 2 *Development of the Global Crisis*

1. Introduction.....	41
2. The Period prior to the Crisis—Roots of the Crisis.....	42
3. The Period of the Crisis	50

Chapter 3 *Israel's Economy and Economic Policy during the Crisis*

1. The State of the Economy on the Eve of the Crisis	61
2. Economic Events during the Crisis.....	74
3. Financial Markets Policy during the Crisis.....	98
4. Fiscal and Real Policy during the Crisis	130
5. Economic Developments upon Emerging from the Crisis	139
6. Origins of the Resilience of Israel's Economy	144
App. A. Monetary Policy with a Near-Zero Nominal Interest Rate	150
App. B. The Bank of Israel Program for the Government's Handling of the Crisis (March 2009).....	151

Chapter 4 *Lessons from the Crisis*

1. Introduction.....	157
2. Lessons for Financial Stability Policy	161
3. Lessons for Monetary Policy	181
4. Lessons for Fiscal Policy	194
5. General Lessons for the Management of Economic Policy during a Crisis	199

Time Line	203
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Chapter 1: Israel and the Global Crisis: A Summary

1. INTRODUCTION

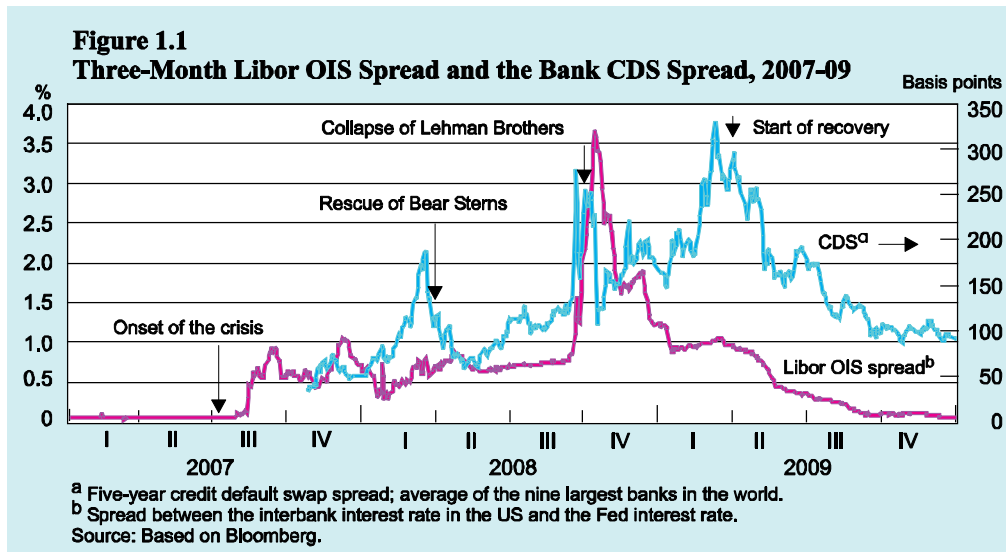
The recent global crisis was the worst since the Great Depression of the 1930s. It began as a financial crisis in the US but spread to additional markets and countries and quickly developed into a global crisis. Financial systems in the developed countries were severely affected by the crisis and parts of them were even paralyzed. A severe liquidity and credit shortage developed and several prominent financial institutions collapsed; it was only the intervention of the authorities that prevented others from doing so as well. In 2009, the GDP of almost all developed countries declined and global GDP fell by about half a percent. Global trade experienced a contraction that was sharper than any other in modern economic history.¹ The intensity of the policy reaction by governments and central banks was unprecedented and it focused on stabilizing the financial system. Although some of the developing countries, particularly China, continued to grow rapidly during the crisis, this was insufficient to stabilize the economies of the developed countries. As a result of the extraordinary policy measures, the crisis was contained and recovery began earlier than expected. Thus, in the second quarter of 2009, some stabilization was evident, and during the second half of that year a slow recovery process began in most countries.

The years prior to the crisis were ones of global economic prosperity, with rapid growth, expansion of global trade and international capital flows and booming financial markets. However, the combination of excessive growth in credit and debt, and flaws in financial systems and their regulation gave rise to several undesirable developments in some developed countries. These gained intensity in an environment of relatively low interest rates, and were particularly evident in the US, which experienced a rapid increase in the prices of assets, particularly real estate, a low rate of saving and a high and increasing rate of leverage among households, and a large and persistent deficit in the current account.

The global crisis can be divided into three main periods: the first started with the onset of the crisis in July 2007 and lasted until September 2008; the second involved the dramatic intensification of the crisis which began with the collapse of the Lehman Brothers investment bank in September and reached its peak at the end of 2008 and the beginning of 2009; and the third saw the stabilization of the global situation and the first signs of its hesitant recovery starting in the second quarter of 2009. These stages

1 B. Eichengreen and K.H. O'Rourke (2009). A Tale of Two Depressions, VOX.

are well illustrated in Figure 1.1 and they also constitute the time framework for the analysis of developments in Israel and world wide throughout this report.



The effects of the global crisis on the Israeli economy and its financial system were severe, though less so than in most other developed countries. Several factors helped mitigate these effects, including the timing of the crisis, which followed five years of rapid growth, and certain features of the economy and of its financial system, among them a conservative banking system that is subject to tight regulation, a conservative mortgage market and the virtual absence of complex assets. These factors helped prevent the development of over-leveraging and a real estate bubble in Israel during the years prior to the crisis.

The financial markets in Israel reacted right at the onset of the crisis in July 2007; however, in the first stage their reaction exhibited a number of changes in direction and the economy was perceived as being relatively immune to the effects of the crisis (see Figure 1.2 and Table 3.1). The situation changed drastically during the last quarter of 2008 with the intensification of the global crisis. Prices of shares and corporate bonds dropped sharply; volatility and risk spreads rose sharply; the cost of credit increased and the raising of capital by the business sector halted almost completely; and the economy's risk premium rose. However, Israel's financial institutions, including the banks, showed resilience relative to the intensity of the crisis; they remained stable and none collapsed.

The main effect of the crisis was in the non-bank credit market which was essentially paralyzed and became the focus of risk for Israel's financial system during the crisis. The interactions between the crisis in this market and large-scale redemptions from

provident funds led to public pressure on the government and to the creation of a government safety net for pension savings, which was not used eventually. The last quarter of 2008 and the first quarter of 2009 constitute the peak of the crisis in Israel as well as in other countries with respect to the actual situation, the fears and uncertainties that existed and the policy response. Although in retrospect the financial system in Israel withstood the storm, there were real fears at the time concerning the stability of some financial institutions and the continued proper functioning of the financial system. The adverse effect on the financial markets in Israel peaked in November 2008, while in other countries this occurred only in March 2009. The recovery of the markets in Israel began towards the end of the first quarter of 2009, along with the recovery in global markets, and gained momentum over time.

The effect of the global crisis on real activity in Israel developed gradually. While the rapid growth of the economy continued during the first half of 2008, there was a turnaround in the second half of the year and the economy slid into recession. GDP growth was negative in the last quarter of 2008 and in the first quarter of 2009. Starting in the second quarter of 2009, with the start of the global recovery, the economy again began to grow with the rate of growth accelerating later in the year. Thus, the economy suffered a significant, though short-lived recession, and its effect was more moderate than in other developed countries and relative to the concerns that prevailed at the height of the crisis.

Economic policy in Israel sought first and foremost to maintain the stability of the financial system and the financial institutions and to ease the liquidity and credit shortage. The policy response was vigorous and contributed both to moderating the effect of the crisis on the economy and the financial system, and to the relatively rapid recovery. Monetary policy played a central role, involving unprecedented monetary expansion during the crisis and the use of unconventional tools for quantitative easing. These included the purchase of government bonds, in addition to the purchase of foreign currency which had begun earlier in order to increase foreign exchange reserves and in view of the appreciation of the shekel. The response of fiscal policy was more restrained, due to the lack of an approved budget, among other things; however, fiscal policy did allow the operation of the tax revenue automatic stabilizers and also focused on the provision of guarantees. The statements by policy makers of their confidence in the resilience of the financial system and their willingness to take additional steps if needed helped to calm the markets. The recovery process presented its own challenges to policy makers due to the need to strike a balance between supporting the recovery and preventing undesirable developments, such as an excessive rise in real estate prices.

During the crisis, the Supervision of Banks focused on strengthening capital adequacy in the banking system and improving its risk management, in line with long-

term processes that it had engaged in prior to the crisis. It also concentrated on closely monitoring the exposure of the banks to developments in Israel and abroad, particularly exposure to foreign assets and large borrowers in Israel, on increasing transparency with regard to their exposure, and on intervening when necessary.

There are numerous lessons to be learned from the crisis which are relevant to policy issues. The process of drawing these lessons and implementing them is still ongoing both in Israel and world wide. The lessons can be divided into two main categories:

- a) Lessons for reducing the risk of a crisis developing, for the early detection of its development, and for reducing vulnerability to a crisis: Emphasis is being placed on the need for macroprudential policy for maintaining financial stability and reducing the risk of a crisis. Such a policy should be based on an integrative view of the financial system and the interrelationships among its various components. In addition, the importance of a high level of capital adequacy is being emphasized alongside the need to improve risk management in all financial institutions and the regulation of those institutions. In particular, there is increasing awareness of the importance of supervision of non-bank entities, instruments and markets.
- b) Lessons for policy and conduct during a crisis and upon emerging from it: Emphasis here is on the need for quick and determined action in order to stabilize systemically important financial institutions, including non-bank entities, and to inject liquidity into the financial system and relevant institutions. This is in addition to the need for a quick and large-scale response by monetary policy, which includes quantitative tools.

This report describes the crisis and the policies implemented during the period 2007–09 and the lessons to be learned, focusing on events in Israel’s financial system and its real economy and the lessons relevant to it. Accordingly, it does not discuss later developments particularly the difficulties in the recovery process that arose during 2010 in view of the debt crises in Europe and their effect on Israel. Chapter 2 briefly describes the global crisis as a basis for understanding developments in Israel. Chapter 3 describes in detail the crisis in Israel and the policies adopted. Chapter 4 presents the lessons of the crisis focusing on those that are relevant to Israel.

2. THE GLOBAL CRISIS

The global crisis began as a financial one in 2007, against a background of falling real estate prices in the US since the end of 2006. During the first half of the year, the difficulties were concentrated in the sub-prime mortgage market. The crisis itself erupted in July 2007, when it became clear that a large number of financial institutions were exposed to these loans through their investments in debt instruments backed by

mortgages. The collapse of real estate prices and with them the prices of these assets caused a major shock to the financial markets, primarily in the developed countries, and also led to the collapse of several major financial institutions. The functioning of the financial system, particularly the inter-bank market, was affected severely and this significantly worsened the credit and liquidity shortage. Against this background, the central banks of the US, the EMU and other developed countries began to inject hundreds of billions of dollars of liquidity into the banking systems. Nonetheless, authorities at this stage did not yet understand the full extent of the problem and therefore the steps taken were limited and did not constitute a broad and coordinated response that would characterize the later stages of the crisis. The rate of growth in the developed countries slowed but the emerging markets continued to grow at a rapid pace.

In March 2008, the crisis moved up a notch with the fall of the Bear Stearns investment bank and its sale. The worsening of the situation and the fears of further deterioration were reflected in the sharp cuts in the Fed rate, in other measures to assist the financial sector and to increase liquidity and in a number of expansionary fiscal measures. At this stage, the effect on Europe was much less severe and the interest rate there was left unchanged. In subsequent months, concerns over a global financial crisis subsided, which was also manifested in monetary policy. In contrast to the rapid pace of interest cuts in previous quarters, the Fed reduced the interest rate only once during the second quarter of 2008 and made no further reductions until September. It did however take further steps to increase liquidity. In response to rising energy and commodity prices, the European Central Bank even raised its interest rate in the third quarter of 2008 for the first time in a year.

In mid-September 2008, there was a dramatic deterioration of the crisis, which marks its transformation into a historical crisis of the order of magnitude now known to us. The deterioration began with the decision of the authorities not to rescue the Lehman Brothers investment bank, in contrast to their involvement in the case of Bear Stearns. As a result, the markets' risk assessment increased considerably, leading to a paralysis of major parts of the financial system in the developed countries, including the money, bond and inter-bank credit markets, and to a large-scale liquidity and credit shortage. Within a short time, some of the largest and most important banks, investment houses and financial institutions in the US and other developed countries either collapsed or were on the brink of collapsing, and only the determined intervention of governments and central banks prevented their collapse. As the financial crisis worsened, so did its effect on real economic activity, which was also concentrated in the developed countries. At this stage, real economic activity in most of the world was affected, including the emerging markets, which were severely affected by the very sharp drop in the volume of global trade.

As the crisis worsened, policy responses intensified. In view of the destructive consequences of the Lehman Brothers collapse, the authorities in the developed economies made it clear that they would not allow any additional collapses of systemically important financial institutions. From this point on, governments and central banks intervened rapidly and on an unprecedented scale in order to rescue or prevent the collapse of some financial institutions and took steps to ensure the continued functioning of the financial system and to restore confidence in it, as well as to ease the liquidity shortage. In particular, immediately after Lehman filed for bankruptcy, the Fed announced an \$85 billion loan to AIG. The determination the authorities demonstrated in saving AIG, and the amount of the resources allocated for the purpose, well reflected the change that had taken place following Lehman's fall in their perception of the severity of the crisis and in their willingness to act.

In the US, the Fed carried out a massive injection by means of, among other things, the purchase of "toxic" assets and the provision of guarantees, and in October 2008 a fund was set up for the purchase of problematic assets from financial institutions (TARP—Troubled Asset Relief Program). In December, the program was expanded to rescue additional sectors and later on was also used to inject funds into the auto industry. Britain, Ireland and other countries, primarily in Europe, took similar actions in order to rescue their banks.

Apart from these measures, central banks adopted expansionary monetary policies during this period that were unprecedented in scope, as reflected in both the cuts in the interest rate and quantitative tools. By December, the Fed had reduced the interest rate to a level of 0–0.25 percent and declared that it would maintain this low rate for an extended period of time. The European Central Bank also responded with an interest rate cut that was more drastic than in the past and many other central banks also reduced their rates of interest. In this context, it is worth mentioning the announcement on October 8th of a coordinated cut in interest rates by the central banks of the US, Europe and other countries. The central banks also continued using quantitative tools to achieve monetary expansion, including the purchase of government bonds, and the Fed agreed to a series of currency swaps, which were designed to relieve a shortage of dollar liquidity in Europe and most other advanced economies. At the same time, fiscal programs were implemented on an unprecedented scale in order to stimulate real economic activity.

Thanks primarily to the determined policy response by governments and central banks world wide, the crisis was shorter and shallower than anticipated. This response succeeded in reducing the panic in the markets and the damage to the financial system and gradually led to a narrowing of spreads and the stabilization of the markets. The crisis reached its peak in the last quarter of 2008 and the beginning of 2009; in March 2009 stock markets world wide began rising and firms began raising capital again.

During the second quarter, the financial crisis eased, and the improvement in financial markets continued throughout the second half of the year, while real activity began to recover in the third quarter and gained momentum in the last quarter of the year. In the developed countries recovery was slow and non-uniform, while in Asia growth was rapid. The recovery was also manifested in the renewal of oil price increases and international capital flows.

Despite the improvement of the situation in the financial system and the renewal of growth world wide, the rate of growth in the advanced countries in the second half of 2009 remained moderate and was lower than that characteristic of an exit from recession. There remained much uncertainty with regard to the recovery's sustainability and the risks to the financial system, particularly in the developed countries. This was due to, among other things, the dependence of growth in these countries on the unprecedented monetary and fiscal intervention and the concerns regarding the long-term implications of the large increase in public debt. In several developed countries, Japan in particular, the fear of deflation continued. The dangers of a large public debt were demonstrated during 2010 in several European countries, in particular Greece. The situation of many banks remained fragile and the bankruptcies of local banks continued in the US.

The central banks in the developed countries continued to maintain low rates of interest during 2009 and also continued their expansionary monetary policies, including the use of quantitative tools. However, towards the end of 2009, the central banks of the US and the EU declared that they were adopting exit strategies and some countries began to reduce their use of unconventional tools. These steps reflected the dilemma of policy makers who feared on the one hand too rapid a retreat from an expansionary monetary policy, which could cut the recovery short and even cause a renewed outbreak of the crisis, and who on the other hand were becoming increasingly aware of the risks of continuing this policy. Therefore, policy makers made increased use of announcements or real measures to emphasize their determination to trim back their intervention when conditions would allow, but avoided an outright and rapid retreat.

3. THE CRISIS IN ISRAEL

a. The situation of the economy prior to the crisis

The global crisis hit Israel after five years of rapid growth, which began with the exit from the previous recession in 2001–03 and which was supported by global economic prosperity, an improvement in the security situation (during most of the period) and growth-oriented macroeconomic policy. These were reflected in many positive developments, some of which reached their peak at the beginning of 2008, just prior to the crisis: a high level of economic activity, very low unemployment, a surplus in the

current account of the balance of payments, a high rate of saving and a large cumulative decline in the ratio of public debt to GDP, a booming capital market, a high level of foreign direct investment, a decline in the economy's risk premium and a rise in its credit rating, high profits in the business sector, and an increase in the resilience of the banking system. In addition, and in contrast to many developed economies, a bubble in real estate prices had not developed in Israel in the years prior to the global financial crisis. Thus, the economy was in a favorable situation prior to the crisis, although this was not enough to spare it altogether.

In the years preceding the crisis, the financial system in Israel underwent some far-reaching transformations, as a result of, among other things, wide-ranging reforms including the "Bachar" reforms² and many others. These processes contributed to the development of new markets, particularly in the area of non-bank credit, which brought about changes in the composition of players in the market, in the structure of the public's asset portfolio and in the financing of the business sector. These processes had important advantages. However, a gap was created between the pace of developments in the markets and the rate of adjustment of the regulation and supervision of the non-bank markets and financial institutions—which now represented a larger share of the financial system. This gap increased the vulnerability of Israel's financial system to the global crisis.

One of the major developments in the capital market during this period of prosperity and which was primarily the result of the abovementioned processes was the rapid growth of the corporate bond market. The share of corporate bonds rose significantly both in the financing of the business sector and in the public's asset portfolio, including long-term saving. The development of the non-bank credit market provided significant advantages; however, it was not accompanied by the development of an appropriate infrastructure within financial institutions for the evaluation and monitoring of credit risk nor by an adequate development of a regulatory infrastructure and institutional restrictions on this credit, which increased the risk of the economy's credit portfolio. Among other things, it was possible in Israel, in contrast to other countries, to issue corporate bonds without there being an appropriate level of corporate governance in the issuing companies, some of which had a low level of transparency. It appears that the risk implicit in these developments was not fully internalized by the market and not appropriately priced. During the crisis, this market experienced a major shock, particularly in the case of bonds for the financing of real estate investments abroad, and

2 The "Bachar" reforms, implemented in 2005, constituted primarily the separation of the provident and mutual funds from the banks.

it became the focus of risk in the Israeli financial system, as well as a major factor in the contraction of sources of financing for the business sector.

The development of the corporate bond market was combined with changes that occurred during that period in the public's asset portfolio, including pension savings. Among other things, there was an increase in the share of negotiable assets, whose values vary with market fluctuations, including corporate bonds, in the household portfolios. It appears that many savers were not sufficiently aware of the changes that had occurred as a result in the level of risk of their savings, particularly in the case of provident funds. Against this background, there were large-scale redemptions of provident funds during the crisis. Due to their major role in the corporate bond market, this situation exacerbated the crisis in that market and was a major factor in the decision to create a "safety net".

Against the background of the major changes undergone by the financial system, the conservatism of the banking system in Israel, which is closely regulated, stood out in particular. The banking system had also undergone changes and faced increasing competition from the non-bank entities and a reduced share in some segments of the financial system. However, during the years of prosperity prior to the crisis, the banks had been forced to make the necessary adjustments to meet the requirements of the Supervision of Banks, which were intended to increase the stability of the system and reduce its vulnerability: there had been an improvement in their resilience and their performance, as reflected in high levels of profitability, in the level of capital adequacy, and in a reduction in credit risk. These characteristics were of major benefit to the financial system and the economy as a whole during the crisis.

As described below, the effect of the global crisis on the Israeli economy and the financial system was relatively moderate. This was partly due to favorable cyclical factors prior to the crisis and its relatively short duration. However, it was mainly the result of a number of the economy's basic characteristics:

- ◆ Characteristics of the financial system in Israel: conservative management of the financial institutions, particularly the banking system (which is subject to tight and meticulous supervision), the underdeveloped inter-bank market, the lack of complex asset and securitization markets and a conservative mortgage market that also contributes to a stable housing market. As a result, excessive leverage, a real estate bubble and complex assets, all of which were major factors behind the global crisis, did not develop in Israel during the years prior to the crisis. Also contributing to this was the conservative conduct of households, which maintained a high rate of saving and avoided over-leveraging in general and with respect to mortgages in particular.
- ◆ The characteristics of the balance of payments (beyond the cyclical elements), including the continuing surplus in the current account, which was primarily the

result of the rise in national saving and the economy's balanced structure of foreign assets and liabilities.

- ◆ Credibility of the monetary policy and of the price stability environment.
- ◆ Credibility of fiscal policy based on fiscal discipline and the continuing and significant reduction in the ratio of debt to GDP.

b. Events and policy in Israel during the crisis

This section briefly describes events and policy in Israel during the crisis and is divided according to the three periods defined above, a time framework which as mentioned is used throughout the report.

(1) From the onset of the crisis in July 2007 until September 2008

As one might expect, the first signs of the global crisis in Israel appeared in its financial markets and at the start these signs were only partial and ambiguous. Already in the second half of 2007, volatility and risk spreads in the local financial markets increased, particularly in the case of bonds in the real estate industry, and the rise in the prices of financial assets came to a halt. The first part of 2008—until the worsening of the global crisis in September—was characterized by an intensification of some of the effects of the crisis on the financial markets, but also by reversals in the assessments regarding its effect on the economy. Thus, for example, the economy's risk premium as measured by the CDS spread continued to rise at the beginning of 2008 but declined in the middle of the year (see Figure 3.2): share prices lost about 20 percent of their value in the first quarter of 2008 but rebounded towards the middle of the year.

The reaction of the financial markets in Israel at this stage reflected, among other things, the assessments that the effect of the crisis on the economy would be small relative to those in the developed economies. This was manifested in, among other things, share prices, the real appreciation at the end of 2007 and the beginning of 2008, the continued flow of foreign investment into Israeli securities, and in the selling of investments by Israelis abroad and their transfer to Israel. Also contributing to this was the continuing rapid growth of the economy at the end of 2007 and during the first half of 2008. The prevailing perception at the time that the crisis would have only a small effect on Israel was also reflected in the 2009 budget approved by the government in August, which did not include any particular response to the crisis. However, tax revenues began to fall already in mid-2008, which was one of the earliest signs of the crisis' effect on real activity.

The trend in the Bank of Israel interest rate changed several times during this period. This occurred against the background of the moderate effect of the crisis on the financial

markets and continued rapid growth, which were accompanied by an increasingly inflationary environment, a sharp appreciation in the exchange rate and changes in the assessments of the expected effect of the crisis on the economy and its timing. Additionally, the Bank of Israel began purchasing foreign currency at the time, which was motivated by the need to increase foreign exchange reserves and later on by the sharp appreciation of the shekel as well.

Even before the crisis, the Bank Supervision Department worked to increase the resilience of the banking system, in part due to the recognition that during a period of prosperity preparations should be made for a slowdown. At the beginning of 2007, it advanced a three-year plan to implement the Basel II principles for upgrading the banks' frameworks for risk management, monitoring and corporate governance. In addition, it required the banks to adopt an upward path for capital adequacy that would lead them to a capital ratio of at least 12 percent by the end of 2009.

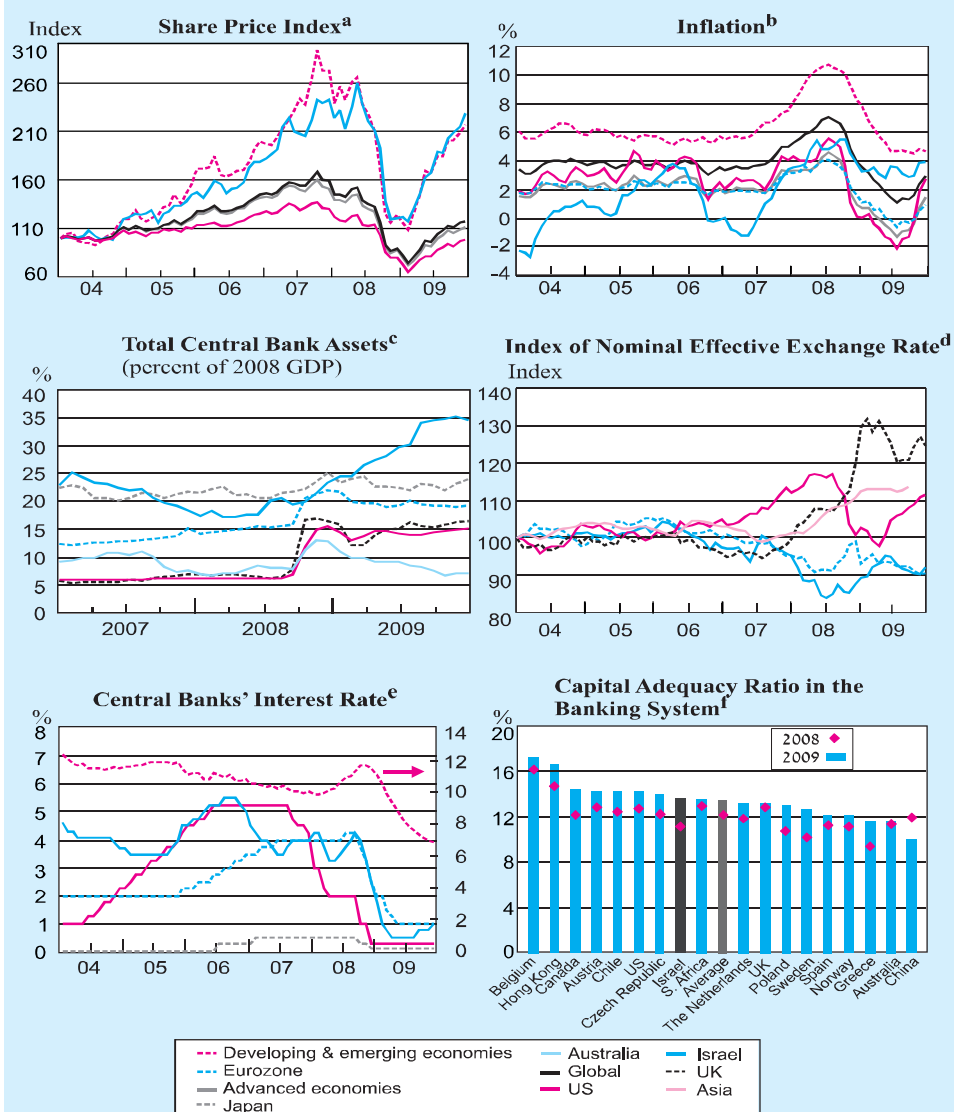
With the onset of the global crisis in the summer of 2007, the Bank Supervision Department concentrated on assessing the banks' exposure to the financial instruments that were at the core of the crisis and found that this exposure was limited. Starting from March 2008, with the crisis at Bear Stearns, monitoring of the banks was tightened and they were required to take extra precautions. These included the reevaluation of risks, strengthening of their capital, preparation of contingency plans to raise additional capital, etc. A clear example of the Bank Supervision Department's measures at that time was its actions that led Bank Hapoalim to reduce its holdings of certain MBS assets. The Bank Supervision Department took additional measures at that time which by September 2008 left the banking system with a low exposure to sophisticated foreign financial assets and reinforced it against the possibility of deterioration.

(2) The peak of the crisis: September 2008 until the end of the first quarter of 2009

The situation in Israel, both in the financial markets and in the real economy, changed dramatically during the last quarter of 2008 with the worsening of the global crisis following the collapse of Lehman Brothers (Figures 1.2 and 1.3). This had numerous manifestations in the financial markets: the prices of shares and corporate bonds fell sharply and volatility increased significantly; risk spreads in the credit market (both the bank and non-bank markets) rose sharply, thus raising the price of credit in the economy; the raising of capital by the business sector came to almost a complete halt; the economy's risk premium rose; the flow of financial investments by foreign residents became negative during the second half of 2008;³ and the profitability of the business

³ Without taking into account the purchase of Barr by Teva, in which the owners of Barr were allocated Teva shares.

Figure 1.2
Monetary and Financial Indicators, Israel and Abroad



^a Based on monthly average, in dollar terms, of groups of shares, "Advanced economies" include the following twenty-three countries: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Hong Kong, Ireland, Italy, Japan, the Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, the UK, and the US. The "developing countries" include the following twenty-two countries: Brazil, Chile, China, Colombia, the Czech Republic, Egypt, Hungary, India, Indonesia, Israel, Korea, Malaysia, Mexico, Morocco, Peru, the Philippines, Poland, Russia, South Africa, Taiwan, Thailand and Turkey. For Israel—the Tel Aviv 100; for the US—S&P; SOURCE: MSCI Barra and Yahoo Finance.

^b Inflation over the previous twelve months. The groups of countries are as per the IFS definition. SOURCE: IFS database.

^c Monthly average. SOURCE: Reserve Bank of Australia, IMF World Economic Outlook, and the Bank of Israel.

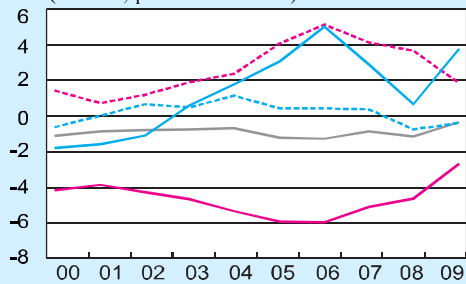
^d SOURCE: For data on Israel, Japan, the UK and the US—IFS; for Asia—IMF World Economic Outlook.

^e SOURCE: For Israel—the Bank of Israel; for the ECB, Japan and the US—Bloomberg; for the developing countries—the weighted average (the weights relate to size of GDP in 2008 in PPP terms) of the interest rates in Argentina, Brazil, Chile, Colombia, Latvia, Lithuania, Peru, the Philippines, Russia, South Africa, Thailand and Turkey.

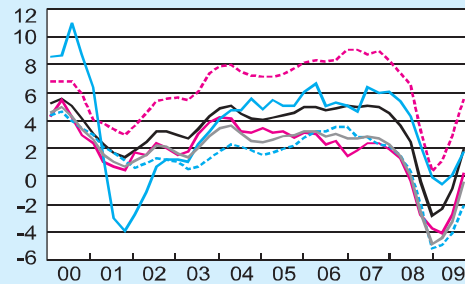
^f SOURCE: IMF and banks' published financial statements.

Figure 1.3
Indicators of Economic Activity in Israel and around the World,^a 2000-09

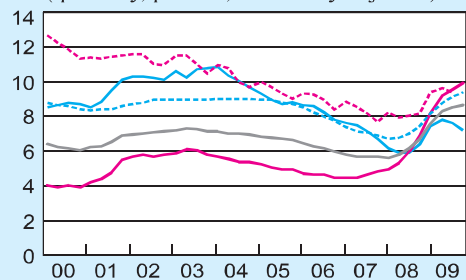
The Current Account of the Balance of Payments
 (annual, percent of GDP)



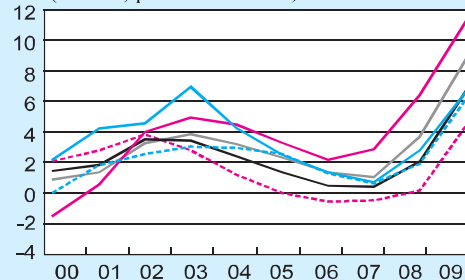
Rate of GDP Growth
 (quarterly, year-on-year change, percent)



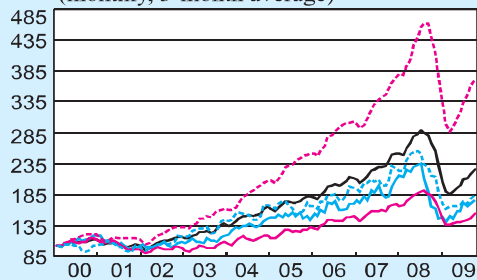
Unemployment Rate
 (quarterly, percent, seasonally adjusted)



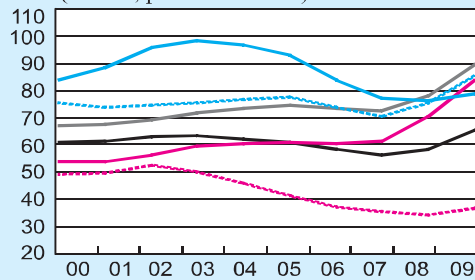
Budget Deficit^b
 (annual, percent of GDP)



Index of Goods Exports (Nominal)
 (January 2000 = 100)
 (monthly, 3-month average)



Gross Public Debt
 (annual, percent of GDP)



--- Developing & emerging economies — Global
 --- Eurozone — US
 — Advanced economies — Israel

^a The aggregates in all graphs are taken from the IMF World Economic Outlook, except for unemployment, for which the figure for the advanced economies is taken from the OECD database, and the figure for the developing countries is calculated from the weighted average (the weights relate to size of GDP in 2008 in PPP terms) of Argentina, Brazil, Bulgaria, Chile, Colombia, Estonia, Latvia, Lithuania, Malaysia, Peru, the Philippines, Russia, South Africa, Thailand and Turkey.

^b The figure for Israel is adjusted to conform with the international definition to enable the international comparison to be made.

SOURCE: For Israel--the Bank of Israel; international data--IMF World Economic Outlook 2010 and 2011, IFS database and OECD database.

sector, including that of banks and insurance companies, declined and the value of bank shares dropped sharply. Volatility also increased significantly in the foreign currency market and following a large appreciation in the first half of 2008, there was a major depreciation of the shekel in the second half, thus returning the exchange rate almost to where it was at the beginning of the year. This depreciation was in large part due to the intervention by the Bank of Israel in the market (as well as the strengthening of the dollar world wide) which thus helped to moderate the effect of the global crisis on Israeli exports. The changes in the capital markets reflected not only the actual deterioration of the situation but also the increased fears of a further worsening of the effect of the crisis on the economy and the financial system. There was a significant turn for the worse in real activity as well, and the economy moved from rapid growth to recession. Thus, during the last quarter of 2008 and the first quarter of 2009 growth was negative, such that GDP fell by 2–3 percent each quarter (seasonally adjusted annual rates).

The non-bank credit market was the most affected component of the local financial system and became the focus of risk in the system. This market was affected already prior to the peak of the crisis. The primary market shrank and during the second half of 2008 disappeared almost completely. Yields on corporate bonds and their risk spreads rose sharply, primarily in the second half of the year, and the dispersion of yields and volatility grew significantly. The increase in spreads encompassed all the industries and all the ratings and was particularly evident in the low ratings, particularly in the real estate industry, in which a significant part of the funds raised was used for investment abroad.

The strong reaction of the non-bank credit market was related to the concern that a significant part of the credit raised during the prosperous years would not be redeemed on time and that large companies might default. This concern was also driven by the concentrated structure of ownership and control in Israel which could have led to an expansion of the crisis from the real estate industry to other industries and even have affected the stability of the banks.

Part of the increase in yields in the corporate bond market was the result of the dramatic acceleration in redemptions from mutual funds and provident funds in 2008. This was related primarily to the transition to less risky investment channels in view of the increased uncertainty and the unusually negative yields achieved by provident funds in the second half of the year. As a result of the large withdrawals, the funds had to sell off assets in large quantities, including corporate bonds, thus increasing their yields. The possibility of a further increase in the redemptions of the provident funds, which would have exacerbated the deterioration in the financial markets and in particular the market for corporate bonds, and the fears among the public of a decline in the value of its pension savings constituted a major concern among policy makers at the end of 2008

and led to the announcement of a "safety net" as described below.

The last quarter of 2008 and the first quarter of 2009 constituted the peak of the crisis in Israel, with respect to both the actual situation and the fears and uncertainty, and accordingly policy response as well. It is important in this context to distinguish between developments viewed ex post and the situation as it was perceived in real time, particularly at the peak of the crisis. Although with hindsight the financial system in Israel withstood the shocks with relative success and none of the financial institutions collapsed, there were real fears at the time, including concerns for the stability of financial institutions and the proper functioning of the financial system.

Policy during this period was therefore conducted within a rapidly changing environment, a high level of uncertainty and fears of further deterioration, and in view of the fact that the origin of the crisis was in the financial markets (though by that time it had turned into a real crisis as well, highlighted by the fall in exports). Financial markets are characterized by short response times, the potential for overreaction and chain reactions, and high sensitivity to expectations and subjective perceptions. Therefore, the policy implemented during the crisis should be viewed not only against the background of actual developments, as known with hindsight, but also in view of the difficulty in knowing the actual situation in real time and the uncertainty and fears of a further deterioration that prevailed at the time.

Policies during this period focused on maintaining the stability and continued functioning of the financial system and the financial institutions, easing the liquidity shortage and preventing the creation of a liquidity and credit crunch, preventing deflation, mitigating the threat to real activity and preparations for dealing with an additional deterioration should that have been necessary. Policy had to balance the need for a quick and effective reaction with the desire to avoid steps with negative consequences in the long term.

The characteristics of the crisis and the goals of policy influenced the nature of the policy response, which was rapid and large scale and included broad intervention in the financial markets and the use of a wide variety of tools, including some unconventional ones. In addition, contingency plans were prepared in case of deterioration in the situation. A great deal of weight was put on monetary policy and its various tools—monetary expansion during the crisis was unprecedented—and on the actions of the Bank Supervision Department and other regulatory authorities. The use of active fiscal policy was more limited due in part to the lack of an approved budget, and it focused on the provision of guarantees and credit. The statements by policy makers during the crisis regarding their confidence in the resilience of the financial system, the policy steps being taken and their willingness to take additional steps were meant to calm the public and the markets and to prevent behavior that would exacerbate the situation.

Following are the main policy measures taken at this time:

- ◆ **Aggressive monetary expansion—interest rate cuts and additional tools:** Monetary policy played a central role in the policy response at this stage of the crisis. The Bank of Israel adopted a highly expansionary monetary policy and also expanded its use of other tools. The rate of interest was cut drastically—two of the cuts were carried out on unscheduled days—from 4.25 percent in September 2008 to 0.5 percent in April 2009, the lowest level ever reached and close to the floor of zero. During this period, the Bank took additional steps: at the end of 2008, it announced a number of monetary measures to improve liquidity and to reduce its cost, such as reducing the proportion of makam in absorbing excess liquidity; in February 2009, the Bank began purchasing government bonds in the secondary market in order to influence yields in long-term ranges as well.
- ◆ **Continued purchase of foreign currency:** The Bank of Israel continued to purchase foreign currency in the amount of \$100 million per day (the scope of purchases had been expanded already in July). This helped bring about a depreciation of the exchange rate and thus reduced the adverse effect of the crisis on exports. The importance of this intervention was underlined at this time by the fall in world trade and its implications for Israeli exports.
- ◆ **Statements regarding the stability of the banking system and the protection of depositors:** The Governor of the Bank of Israel declared that the banking system was stable and that the Bank of Israel was prepared to assist the banks with all the tools available to it and to the extent required, with the intention of protecting depositors, but that at the moment this assistance was not necessary. The Prime Minister emphasized at the beginning of a government meeting on October 12 that the banking system was very stable and that he had much confidence in it. The Minister of Finance declared that the government would stand behind the stability of the financial system and that although Israel does not have deposit insurance, the Bank of Israel and the government have essentially provided such insurance to the banks' depositors in all past cases.
- ◆ **Actions taken by the Bank Supervision Department:** Although the banks in Israel did not experience a liquidity crunch, the crisis emphasized the need for cautious management of liquidity risks. Therefore, the Bank Supervision Department tightened its reporting requirements with respect to this type of risk, monitored developments continuously, and intervened when necessary. For example, in October 2008, the Bank of Israel canceled the permit given to an Israeli bank to purchase a bank in East Europe.

The Bank Supervision Department at this time also focused on credit risks, the condition of the large borrowers, and the degree and quality of disclosure. It issued

instructions regarding disclosure requirements in financial reports, valuation of financial instruments and credit issues. Consequently, the banks provided wide disclosure regarding their exposure to risks and this increased public confidence in them.

The Bank Supervision Department during this period also placed special emphasis on shoring up the banking system's capital. The requirement to achieve a capital adequacy ratio of 12 percent was maintained in view of the course taken by the crisis and its effects on banks world wide, an analysis of the system's capital structure, and the results of stress tests. During 2008, the banking system increased its balance-sheet credit to the public significantly and there was concern that this increase might lower the quality of the system's credit. On the other hand, a capital adequacy ratio target of 12 percent at the end of 2009 was perceived as likely to constrain the expansion of bank credit and lead to a credit shortage. As a result, there were increasing calls to trim back the capital adequacy requirement. It should be emphasized that at that time there was much uncertainty with regard to the duration and intensity of the crisis. The decision to continue to strengthen capital adequacy was also a result of the concern that there might be an additional deterioration in the markets and in the repayment ability of large borrowers. An additional step to reinforce the system's capital was an announcement by the Bank Supervision Department that the payments of dividends by banks would require the approval of the Supervisor of Banks. This essentially prevented the distribution of dividends for that year and reinforced the system's capital.

Apart from monetary policy and the actions of the Bank Supervision Department, a variety of additional steps were taken to stabilize the financial markets and to ease the credit and liquidity constraints. Special emphasis was placed on the non-bank credit market and on dealing with the effects of the crisis on corporate bonds. Following are the main measures adopted:

♦ **A government "safety net" for pension savings**

On December 14th, 2008, the government announced a program (the "safety net") to protect part of the pension savings of individuals close to retirement whose pension savings had lost significant value during the crisis. The plan was intended to soothe public concern regarding the value of these savings, to halt the redemptions from the provident funds and to stabilize the corporate bond market. It followed the wave of redemptions from the funds and the concerns that further redemptions would exacerbate the situation. Unlike some other measures whose implementation was subject to long delays, the safety net was put in place with relative speed and thus helped to calm the markets and avoid further deterioration. The speed of

implementation also reduced the probability that the government would be required to actually implement the program.

◆ **Government guarantees to the banks for raising capital**

This program was created in view of the halt in the raising of capital in the capital market during the second half of 2008, the inability of the banks to satisfy all the demand for credit and the fact that they were being required to continue increasing their capital adequacy ratio in accordance with the trajectory specified by the Bank Supervision Department. The program was intended therefore to expand the supply of bank credit, build up the banks' capital and reinforce the stability of the system. In January 2009, the Ministry of Finance announced its plan to provide guarantees to the banking system in the amount of NIS 6 billion for raising capital. The plan encountered some problems and took a long time to set up and in the end the banks did not utilize the guarantees. Nonetheless, the very existence of the program demonstrated that the government was standing behind the banks and this contributed to their stability.

◆ **Creation of "Manof" funds**

In view of the freeze in non-bank credit and the expectation of large redemptions of corporate bonds, it was decided at the beginning of 2009 to create investment funds ("Manof funds") with the participation of the government and the private sector. The funds were intended to expand non-bank credit through the recycling of debt and debt settlements. There was little activity in the three funds that were created in early 2009 and following the recovery in the corporate bond market and the renewal of issues, no additional funds were created.

◆ **Setting up tools for debt settlements in the bond market.**

Since appropriate tools for dealing with a crisis had not yet been created in this market, the Israel Securities Authority initiated the appointment of "credit officers". Their role was to assist companies that had issued bonds and needed to negotiate debt settlements. This measure helped achieve the numerous debt settlements that were needed during 2009.

Additional measures to deal with the credit shortage included the expansion of funds for assistance to small and medium-sized businesses and to exporters. There were delays in the implementation of some measures and their criteria for granting assistance were complicated and not sufficiently flexible.

Fiscal policy

The response of fiscal policy to the crisis—even at its peak—was moderate in comparison to both the reaction of monetary policy in Israel and the reaction of fiscal policy in the developed countries. The intensification of the crisis occurred simultaneously with the

development of a political crisis in Israel and as a result it was at the height of the crisis that Israel lost the ability to approve the State Budget for 2009. As a result, the government was forced to operate until July 2009 on the basis of the 2008 budget,⁴ which was not formulated to deal with the crisis. However, the moderate reaction at that time also reflected the intentional caution of the government with respect to a hasty increase in expenditure. Nevertheless, the government allowed the tax revenue automatic stabilizers to operate to their full extent and these were significant, given the sharp drop in tax revenues. Spending-side automatic stabilizers were not activated at all, since the budget law in Israel does not allow such stabilizers.

A "stimulation plan" was approved at the end of 2008. This program, the "safety net" and additional measures approved at the beginning of 2009 constituted the main response of the government to the intensification of the crisis. Measures were adopted that could be implemented without the need to wait for the approval of a new budget, and policy focused on providing guarantees to ease credit constraints rather than increasing expenditure.

In conclusion, the policy undertaken, along with the factors described above, contributed to moderating the effect of the crisis on the economy and on the financial system and to the relatively quick recovery. The relatively mild effect of the crisis, together with the caution exercised in choosing the policy measures, also minimized the long-term costs of the policy response. In contrast to many developed countries, the public debt in Israel grew only slightly during the crisis and the government was not forced to purchase assets, among them "toxic" ones. This has contributed to the recovery of the economy and promotes medium-term growth. It also reduced problems of moral hazard which could have resulted from more active policies.

The intensification of the global crisis since September 2008 aggravated the effect on the economy and on the financial system while certain characteristics of the economy and the policy reaction worked to moderate its effect. The cumulative result was manifested in numerous areas, aside from those described above. Below we briefly mention a number of them.

The total quantity of credit to the non-financial private sector continued to grow during the crisis although at only a moderate rate. The availability of bank credit during this period eased the effect of the crisis on households and the business sector and emphasized the banking system's continued functioning, its role in the provision of credit during the crisis and the fact that the problem was concentrated in non-bank credit. Nevertheless, total credit to the business sector declined during this period and

4 According to the Law if the new budget has not been approved by the Knesset, the government may spend each month one-twelfth of the previous year's (price adjusted) budget.

the risk premium on credit to this sector rose significantly in 2008. Bank credit to households expanded rapidly both in 2008 and 2009 and, together with the high rate of private saving, helped to smooth consumption. In particular, the expansion in mortgages helped preserve the level of activity in residential construction. In many economies, the credit shortage contributed to a sharp drop in private consumption and in construction. The policy adopted in the financial markets, including the cut in the Bank of Israel interest rate to a particularly low level, made a not insignificant contribution to easing the credit shortage throughout the crisis. However, as mentioned, the continued normal functioning of the credit market at the height of the crisis and the avoidance of a credit crunch could not be taken for granted at that time and policy makers prepared for a possible deterioration and for the adoption of additional measures.

Although the stability of the banking system was maintained throughout the crisis and none of the banks went bankrupt, 2008 and the beginning of 2009 were a difficult period for the banks in Israel. During this period, their profits declined and their market values dropped sharply. In some banks the crisis led first to the realization of losses on mortgage-backed securities abroad. This was followed by a drop in the repayment ability of firms and households in Israel, which required an increase in loan-loss provisions and large write-offs. On the other hand, the ability of the business sector to raise capital in the non-bank market declined and most of the demand for credit shifted to the banks, as was reflected in, for example, the provision of bank credit to the real estate industry, which had previously been a heavy user of non-bank credit. At the same time, the banks were required to continue the process of adopting Basel II rules and to increase their capital adequacy ratios.

Aside from the pre-crisis factors which contributed to the resilience of the financial system in general and that of the banks in particular, several factors which were at work during the crisis itself contributed to the success of the Israeli banking system at this time: the steps taken by the Supervisor of Banks as described above, an expansionary monetary policy, the provision of government guarantees for the raising of capital by the banks (even though they were not utilized) and the declarations of the Governor of the Bank of Israel and the Minister of Finance that the public's deposits were assured.

During the crisis, the risk of the large exposure of the insurance companies to the capital market was realized. Their profits were seriously eroded and during part of the period they even suffered losses and their resilience was weakened. These losses, along with capital losses on their assets reduced the equity of the companies in 2008, and they acted to fill the gap by injecting Tier 1 capital from the parent company in return for an allocation of shares, by issuing subordinated capital notes etc.

As in the developed countries, exports and nonresidential fixed capital formation

dropped sharply, though in contrast private current consumption and investment in construction in Israel grew moderately. The drop in economic activity in Israel was concentrated in imports, while the decline in GDP was smaller. The decrease in activity led to a substantial reduction in tax revenues and to an increase in the public deficit and debt.

The main channel through which the crisis affected the real economy was the fall in demand for exports, which encompassed all the industries: manufacturing, services and tourism. Total exports of goods and services from Israel in the first quarter of 2009 were about 20 percent lower than in the third quarter of 2008.

The profitability of exports was also eroded due to the major appreciation of the shekel during 2007 and early 2008. In 2009, the shekel depreciated somewhat (on average), which was the result of opposing forces: a moderate decline in domestic relative to foreign demand and growth in the current account surplus worked towards an appreciation while the purchase of foreign currency by the Bank of Israel worked towards a depreciation. Some of the changes in the exchange rate in 2009 were apparently the result of changes in the assessment of Israel's relative resilience. Thus, at the beginning of the crisis, the Israeli economy was perceived as being quite resilient and this contributed to a real appreciation at the end of 2007 and the beginning of 2008 and there were even significant incoming capital flows by Israelis bringing capital back to Israel. The expectations that the economy would be affected by the crisis increased at the end of 2008, and together with the increased purchases of foreign currency by the Bank of Israel contributed to a real depreciation at the end of 2008 and beginning of 2009. Foreign investment in Israel also declined during this period. The real depreciation and the improvement in the terms of trade at the height of the crisis eased the situation of exporters.

Nonresidential fixed capital formation started to decline even prior to the intensification of the crisis and it fell for four straight quarters before stabilizing in the second quarter of 2009. This decline was also influenced by the fall in foreign direct investment in Israel and the financing difficulties—the increased cost of raising capital and tighter constraints on the provision of bank credit.

Households reacted to the crisis by reducing private consumption and increasing their rate of saving at the end of 2008 and the beginning of 2009. The high level of private saving, the low level of leverage among households prior to the crisis and the relatively cheap and available credit during the crisis—which was partly due to the expansionary monetary policy and the fact that the banking system continued to function normally—enabled the smoothing of current consumption. This was in contrast to the situation of households and the reduced supply of credit in many other countries, which exacerbated

the drop in private consumption. The sharp drop in the purchase of durables primarily affected imports while its effect on GDP was relatively small.

The labor market reacted quickly to the crisis. At the end of 2008 and beginning of 2009, there was a sharp drop in the demand for labor in the business sector. However, the drop in labor input was primarily in form of fewer work hours per employee. This flexibility allowed fewer layoffs so that the number of employed fell only slightly and the increase in unemployment (from a low of 5.9 percent in the second quarter of 2008 to 7.9 percent in the second quarter of 2009 (Figure 1.3)) was moderate in comparison with the situation in other developed countries. The fall in the real wage together with a stable level of labor productivity led to a decrease in unit labor costs. This contributed to the stabilization of corporate profits, which was particularly important in view of the credit difficulties.

The reaction of the labor market during this crisis was unusual in comparison to its reaction in previous recessions in Israel. The growth in the number of employees came to a halt at an early stage of the crisis, even before its real effects on the economy materialized (in early 2008), and work hours per employee declined rapidly as soon as the crisis started to have a real effect (at the end of 2008). This response was also notable in comparison to some of the developed countries, where the main reaction was a drop in the number of employees or where the reduction in employees' work hours was subsidized by the government.

Developments in the construction industry and the housing market in Israel during the crisis were noteworthy. Activity in the construction industry remained relatively unchanged. The housing market, which during the previous decade had experienced price declines and a low level of activity, actually saw an increase in demand and prices during the crisis. This was due partly to the expansionary monetary policy, and in contrast to the situation in other countries it thus had a stabilizing effect in Israel during the crisis.

The declining prices of raw materials, in particular oil, during the crisis improved Israel's terms of trade significantly and thus moderated the effect of the crisis on the economy. This improvement, together with the sharp decline in the volume of imports, also worked to increase the surplus in the current account significantly, which contributed to macroeconomic stability.

(3) The recovery: the second quarter of 2009 and subsequently

By the beginning of the second quarter of 2009, the crisis had passed its peak in Israel. As signs of recovery appeared abroad, a gradual recovery began in Israel as well, first in the financial markets and a short time later in real activity as well.

The recovery in the local financial market began in March 2009, along with that in the global markets. Thus, share and bond prices rose sharply and at higher rates than in the developed countries; the issue of shares increased; the issue of corporate bonds was resumed; and financial investment by foreign residents grew. There was a decrease in volatility in the markets, in the economy's risk premium and in spreads in the corporate bond market although they did not return to their pre-crisis levels. Total credit to the business sector shrank in 2009 despite the recovery in the non-bank market.

The long-term real rate of interest on government bonds declined in 2009 following its temporary rise at the peak of the crisis, and at the end of the year it reached a historic low. The short-term real rate of interest also reached a historic low and even became negative, reflecting the expansionary monetary policy. The low rate of interest and the near-zero yields on conservative investments also encouraged the public to take out new mortgages, particularly unindexed floating interest rate shekel mortgages, in order to purchase homes, some of them for investment purposes.

The corporate bond market recovered gradually, starting in the second quarter of 2009. Recovery began in the secondary market, in which volatility decreased and yields and risk spreads declined gradually. This facilitated the renewal of issues, which were now more selective, though less so as time went on. Despite the sharp rise in issues in 2009, their total remained significantly lower than prior to the crisis. The recovery in the market in 2009 occurred despite the fact that during the year the number of firms requiring debt renegotiation grew.

During 2009, there was a significant improvement in the financial ratios of the banks and insurance companies, which was due to the improvement in economic activity and in the capital markets, and to the increases in capital designed to meet regulatory requirements and even beyond that. The provident funds, which were severely hurt by the crisis, also recovered quickly in 2009 due to the rising capital markets.

After two quarters of decline in GDP, positive growth was recorded in the second quarter of 2009. The recovery accelerated during the second half of the year and was manifested in a rapid expansion in exports and private consumption, growth in employment and a decline in the rate of unemployment. By the end of 2009, GDP and private consumption were higher than their pre-crisis levels. The economy therefore had suffered from a short recession and its effect was moderate relative to those in the developed countries (Figure 1.3) and relative to the concerns that prevailed at the height of the crisis.⁵ However, exports, imports and investment were still much lower and the rate of unemployment was higher than on the eve of the crisis.

⁵ The effect on the Israeli economy was moderate also in comparison to the 2001–03 recession, during which GDP declined more than in the developed countries, partially due to the Intifada.

The renewal of growth was based on the start of the global recovery, the relatively favorable conditions of the economy, the fact that it had been affected only moderately by the crisis, and the expansionary monetary policy in Israel. Contributing to this on the supply side was the fact that firms and banks had not collapsed during the crisis and there were no massive layoffs. Thus, human capital was preserved and the need for rehiring of workers was minimal. Expansionary monetary policy and the renewal of corporate bond issues improved the availability of credit to the business sector. The rise in the value of financial assets, the low rate of interest and the improvement in the labor market contributed to the growth in private consumption. The high rate of private saving and the low rate of leverage among households also supported the rapid expansion of consumption with the improvement in consumers' expectations and their situation, just as they had helped in the smoothing of consumption during the crisis.

During 2009, the rise in housing prices, which had begun at the end of 2007, accelerated and the number of housing starts grew. The volume of housing sales grew significantly and it appears that a large proportion of the purchases were for investment purposes. These developments raised the question of whether a bubble had evolved in the real estate market in 2009 and stressed the challenge facing monetary policy during the exit from the crisis, in view of the particularly low Bank of Israel interest rate. An examination of the trends in housing prices shows that despite the sharp increases, there was no bubble in 2009.

Although with hindsight one can identify a process of acceleration in the recovery of the economy during 2009, at the time there was considerable uncertainty as to the robustness of the recovery and its sustainability. This uncertainty worked to constrain growth in employment and investment and influenced the gradual nature of the process to trim back monetary expansion.

The improvement in the Israeli and global economies, together with the aforementioned uncertainty with regard to the recovery, represented a challenge to the Bank of Israel. Thus, it had to fine-tune monetary policy to take into account these changes, an increased inflationary environment and the need to prevent the development of bubbles in asset prices, including those of real estate, without jeopardizing the fragile recovery and in the context of still very low interest rates world wide. Accordingly, in August 2009 the Bank of Israel began a gradual process of reducing the scope of monetary expansion. This process was carried out in three consecutive stages. First, the Bank announced that it was ceasing the purchase of government bonds; following that, in August, the intervention policy in the foreign currency market was modified, such that the daily fixed purchases were replaced by a policy of intervention in the event of unusual movements or disorderly conditions in the foreign exchange market; and finally, in September, the Bank began gradually raising the rate of interest.

During the first half of 2009, there was a substantial increase in unindexed variable interest rate shekel housing loans. Although this was found at the time to be negligible in terms of its effect on the stability of the banking system, the Supervisor of Banks issued a clarification to the banks that an increase in the shekel rate of interest would be liable to create problems in repayment, and they were therefore asked to exercise caution when marketing variable interest rate housing loans. In addition, the Bank Supervision Department continued the process of assimilating Basel II rules and the adoption of additional steps to improve risk management and to reinforce the system's capital.

The State Budget for 2009–10 was approved in July 2009 after a new government was formed. For the first time in Israel this was a two-year (in fact, one and a half year) budget. It was approved after the crisis had peaked and it had become clear that its effect on Israel was relatively moderate and there was no need for substantial fiscal stimulation. The deficit targets for these years were raised to match the predicted fall in tax revenues. The actual deficit in 2009 totaled about 5 percent of GDP, about one percent of GDP less than the updated ceiling. Due to the fear of a large drop in tax revenues as a result of the contraction in economic activity, certain tax rates were raised: VAT, the tax ceiling for paying National Insurance contributions, and taxes on cigarettes, fuel and vehicle purchases. The planned reduction of direct taxes was somewhat deferred.

As a result of some of the factors described above, the response of fiscal policy in Israel during the crisis was restrained in comparison to both monetary policy in Israel and the response of fiscal policy in developed countries. The result was only a moderate increase in the ratio of public debt to GDP (Figure 1.3), with minimal negative long-term effects produced by measures taken to deal with the crisis. This was manifested in fiscal policy during the crisis that was based primarily on automatic stabilizers. Thus, the government let the deficit grow as tax revenues fell, which resulted in a deviation from the original deficit ceiling. However, it substantially expanded the provision of guarantees, which did not require an actual increase in expenditure. Nonetheless, it is worth mentioning that in comparison to the past, the fiscal policy adopted during the last crisis, particularly at its peak, was an exception since in previous crises Israel was forced to reduce the deficit. This change was made possible in part by the continuing reduction in the public debt-to-GDP ratio during the years prior to the crisis.

4. LESSONS FROM THE CRISIS

The processes that led to the crisis, the events during the crisis and the policies adopted to deal with it have produced numerous lessons to be learned, which are relevant to all the areas of policy: policy directly concerning the financial system and its stability, monetary policy and fiscal policy. The process of drawing lessons from the crisis both in Israel and world wide is still ongoing, though some lessons have already been applied and are reflected in legislation, regulation and the conduct of authorities.

The lessons can be divided into two main categories: lessons for reducing the risk of a crisis developing, for its early detection and for reducing the vulnerability to it; and lessons for policy during a crisis and during the exit stage.

There are three main characteristics of the first category:

- ◆ A policy is needed for maintaining financial stability and reducing the risk of a crisis, which is based on an overall view of the financial system and all its components and the interrelationships among them. This approach is at the foundation of the policy for reducing systemic risk in the financial system, i.e., macroprudential policy, which is a main lesson from the crisis. Its importance is underlined by the severe effects that a crisis in the financial system may have on the economy as a whole.
- ◆ The crisis has highlighted the importance of high capital adequacy and the need to improve risk management in all the financial institutions—banks and non-banks—and in their monitoring. However, the most fundamental change that has resulted from the crisis is the increased understanding of the importance of regulation and monitoring of non-bank institutions, instruments and markets, both for their own sake and with regard to the exposure of the banks to the non-bank-related risks.
- ◆ The importance of sound macroeconomic policy: The experience of the various countries during the crisis has once again underlined the importance of maintaining over time both fiscal discipline and credible monetary policy that supports price stability.

The main lessons for policy during a crisis concern the need for a rapid and determined response in order to stabilize systemically important financial institutions, including non-bank institutions, and to inject them with liquidity, as well as the need for a rapid and broad response by monetary policy including a variety of quantitative tools. These lessons highlight the key role of the central bank in dealing with a financial crisis, alongside the measures that the government and other authorities should take.

Following are the main lessons for policy divided into the two aforementioned categories and a number of general lessons for policy management during a crisis. For further details, see Chapter 4. The discussion will be limited to lessons relevant to Israel.

a. Lessons for financial stability

(1) Minimizing the risk of a crisis developing and early detection of a crisis

1. Macroprudential policy: the importance of maintaining systemic financial stability

A policy is needed that strengthens the resilience of the financial system against shocks and mitigates the effect of shocks that originate in this system on the rest of the economy. It is not sufficient to ensure the stability of a particular financial institution or financial market; rather an overall perspective is needed of all the components of the financial system, i.e., banks, non-bank financial institutions, financial markets and payments and settlement systems, and the interrelationships among them. This policy should include the following: the development of tools for early detection of risks to the financial system, such as the development of bubbles in asset prices, overexpansion of credit and the excessive narrowing of credit spreads, and the improvement of the capability to deal with these risks; the identification of systemically important financial institutions, including non-bank institutions and the tightening of supervision over them (which is particularly important in Israel in view of the relative size of the local institutions and the degree of concentration); the imposition of pro-cyclical capital requirements and provisions in these institutions in order to strengthen their resilience during recessions and to restrain the expansion of credit and the growth in risk in times of prosperity; and the performance of stress tests for financial institutions and for the financial system as a whole in order to identify weak spots and to estimate their resilience during a crisis.

2. Banks

- ♦ **The importance of tight and meticulous bank supervision, comprehensive regulation of the banking system and a willingness to act if necessary:** Several features of the supervision of banks in Israel contributed significantly to the resilience of the banking system. The supervision of banks in Israel is characterized by tough ongoing inspections and the imposition of comprehensive and conservative regulation in many areas. These are manifested in, among other things, the scope of audits and the examination of business deals, sometimes even their approval in real time, as well as limits on exposure to a single borrower or group of borrowers, restrictions on exposure to particular industries and limits on the introduction of

complex instruments. The crisis in Israel and world wide has again demonstrated the importance of the willingness of the Supervision of Banks to act quickly and with determination when needed, including the modification of regulatory requirements in real time and intervention in specific business deals and in the operations of the banks.

- ♦ **The strengthening of the regulatory capital framework, corporate governance and the quality of risk management:** The level of capital in the banking system and its quality should be raised further in view of the regulatory developments world wide (such as from the Basel Committee and the Financial Stability Board) and there is a need to strengthen the banks' corporate governance and risk management, an area in which weaknesses also appeared in Israel. The Bank Supervision Department's activities in this context include the requirement to appoint a chief risk manager, as well as to maintain a risk management unit, the formulation of a compensation policy, the improvement of the functioning of the Board of Directors and the Executive, and preparing for the adoption of up-to-date international standards for the measurement and monitoring of liquidity risk.

3. Non-bank financial institutions

- ♦ **Monitoring of non-bank financial institutions and the formalization of the central bank's ability to supply them with liquidity when needed:** The global crisis has shown that the central bank may need to provide liquidity to non-bank financial institutions as well as the banks and to also serve as their lender of last resort. Therefore, there is a need to identify systemically important financial institutions and to tighten supervision over them. In addition, the circumstances and conditions under which the central bank may inject these institutions with liquidity should be defined and a formal framework for their ongoing reporting to the central bank should be created. The new Bank of Israel Law provides the legal infrastructure for this; however, additional fine-tuning of details is needed for practical implementation. Among other things, the Bank of Israel should formulate a policy regarding the collateral that it will accept against the provision of liquidity.
- ♦ **Improvement in capital adequacy and risk management in insurance companies in Israel:** In accordance with the announcement of the Commissioner of the Capital Market, Insurance and Savings, the instructions of the Solvency 2 Directive regarding insurance companies will be applied in Israel starting in 2012. The importance of this is highlighted by the marked growth in the role of these companies in the Israeli financial system and by the crisis which emphasized the contribution of a stable capital structure to the stability of financial institutions.
- ♦ **Pension savings:** The crisis has highlighted the problematic nature of the pension

savings industry and in particular provident funds, from which a large proportion of the accumulated savings can be withdrawn at short notice. In periods of uncertainty, withdrawals from the funds accelerate, thus increasing the pressure on the financial markets. The reform carried out in the industry in 2004 was intended to address this problem; however, it has been slow to take hold and was not sufficient to restrain withdrawals during the last crisis. There is a need, therefore, for additional measures, such as incentives for transferring accumulated funds from provident funds to pension funds from which money can be withdrawn only after retirement.

An additional problem brought to the fore by the crisis is that most of the money accumulated in provident funds is managed in general tracks, without any correspondence between the age of the saver and the level of risk implicit in his assets. A crisis in the markets is therefore likely to severely affect fund members who are close to retirement age. Hence, it is important to implement a reform at the earliest opportunity which will obligate the provident funds to maintain default tracks for investment, to which members will be channeled automatically according to their age.

4. Regulation of the financial markets

- ♦ **The corporate bond market:** This market constituted the major focus of risk in the financial system in Israel during the crisis. This was the result of its rapid development, which outpaced the creation of an appropriate infrastructure for the monitoring of credit risk in the financial institutions and was not accompanied by the development of a supervisory infrastructure and institutional constraints. As part of the lessons learned from the crisis, the Commissioner of the Capital Market tightened supervision on long-term institutional investors who are active in the non-bank credit market and issued instructions for the strengthening of their level of corporate governance and the improvement of their investment procedures for corporate bonds, in accordance with the recommendations of the Hodek Committee.⁶ The new instructions were in effect by the beginning of 2011 and they should improve the investment process. However, it is important that they be accompanied by an increased level of transparency with regard to the quality of the bonds even after they are issued and by close supervision of institutional investors. This will allow the early detection of any unbalanced growth in credit to high-risk sectors. The Israel Securities Authority has also made some regulatory modifications as a result of the crisis and it is promoting additional legislation that will, among other things,

⁶ The Committee for Establishing Parameters for Institutional Bodies' Investments in Nongovernmental Bonds, which submitted its report in February 2010.

increase the responsibility of bond trustees and upgrade corporate governance in companies that have issued bonds.

- ◆ **The derivatives market in Israel:** This market, which was at the core of the global crisis, hardly existed in Israel prior to the crisis. It is important to develop this market in Israel, though with caution and while implementing the lessons learned in other countries and creating an appropriate legal infrastructure. Among other things, it is important to develop a securitization market and a CDS market though they should be limited to simple products, and the transparency of the risk implicit in them should be ensured. There is a need to introduce both more stringent supervision of over-the-counter non-standard transactions and reporting requirements, in order to monitor the volume of such transactions and the types of exposure.

5. Regulatory authorities

- ◆ **Improvement in the structure of the supervisory authorities and the upgrading of coordination, cooperation and exchange of information among them;** It would be worthwhile concentrating the overall responsibility for financial stability in the Bank of Israel and to add to its responsibility the monitoring of the stability of all financial institutions. This is in view of, among other things, the need that arose in other countries for the central bank to provide liquidity to non-bank financial institutions and to act as the lender of last resort to them as well.

6. Additional lessons

- ◆ **Addressing excessive leverage and real estate bubbles at an early stage:** Unbalanced developments in the credit and real estate markets, including exceptionally high rates of growth of leverage and asset prices (and not just their levels), are a major risk factor in the creation of financial crises. They need to be addressed through a variety of policy areas: financial stability, supervision of the banks and monetary policy.
- ◆ **The structure of incentives in the financial system:** An important lesson from the global crisis is that the structure of incentives in the financial system encouraged excessive risk-taking. This was also the case in Israel, particularly in the non-bank credit market and in the activity of financial intermediaries. Measures are needed such that the structure of incentives, in particular among systemically important institutions, does not encourage excessive risk-taking. This includes the determination of appropriate standards for executive compensation. Accordingly, during 2009, the Supervisor of Banks and the Commissioner of the Capital Market required that the banks and institutional investors establish a compensation policy that rewards long-term performance. Additional measures should be considered if

the incentive structure continues to constitute a major risk.

- ◆ **Reducing concentration in the economy:** The high rate of concentration in the Israeli business sector in both real and financial activity and the control of a significant portion of economic activity by a small number of business groups increase systemic risk. Supervision of these groups should be reinforced and disincentives to form such groups should be created.
- ◆ **Rating companies:** The global crisis exposed many deficiencies in the conduct of rating companies and regulation in this area is currently being modified abroad. In Israel as well, the regulation of rating companies was not appropriate and they were not subject to any real supervision, apart from a number of rules set by the Commissioner of the Capital Market. The Israel Securities Authority is currently advancing legislation in line with the conclusions being drawn abroad, while new directives by the Commissioner of the Capital Market require institutional investors to design an independent process for evaluating investments.

(2) Addressing crises once they begin

- ◆ **During a crisis, institutions that represent systemic risk need to be dealt with immediately:** In such a situation, there is a need to act immediately and with determination in order to stabilize the financial system, including the stabilization of systemically important institutions. In addition, formal mechanisms should be created for the orderly liquidation of institutions that are not going to be stabilized. Frameworks should be created for resolving a situation in which a bank is in distress (a "resolution mechanism") and the legal framework should be amended in order to, among other things, expand the set of actions that the authorities may take when a bank is in such a situation. All of these measures should focus on ensuring the uninterrupted functioning of the institutions or the transfer of their activity to other institutions. This needs to be done without shielding the owners of the institutions from the drop in the value of their assets, so as to reduce the moral hazard that may result from stabilization measures.
- ◆ **Establishing frameworks for early intervention when there is concern of a bank in distress:** The legal framework for dealing with a bank in distress should be amended, while strengthening the powers of the Governor and the Supervisor of Banks with regard to early intervention when there is concern for a bank's stability.

b. Lessons for monetary policy

(1) Mitigating the risk of a crisis developing

- ◆ **The importance of the credibility of monetary policy:** The ability of the Bank of Israel to reduce the rate of interest and the interest rate gap with other countries to particularly low levels emphasizes the importance of maintaining price stability and monetary policy credibility during normal times. The reduction of interest rates world wide also contributed to this ability; however, without the credibility that had been built up over previous years, it would have probably been difficult for the Bank to maintain this policy throughout the crisis without undermining stability.
- ◆ **Considerations of financial stability should receive greater weight in monetary policy:** Monetary policy should not focus exclusively on price stability. It should also consider in a timely manner risks that are evolving in the financial system—including risks in the credit and real estate markets, perhaps in the context of a low-interest environment. The challenge of striking the balance between these considerations was highlighted in Israel during the exit from the crisis in view of the effect of the low interest rate on real estate prices.

(2) Addressing a crisis

- ◆ **Monetary policy has a major role to play in the rapid response to a crisis and in addressing it:** Under the appropriate circumstances, an aggressively expansionary monetary policy should be adopted. In this case, the speed of response and its intensity are highly important. Monetary policy can be implemented with a near-zero interest rate by including quantitative tools that can amplify its effect and reduce interest rates all along the yield curve. Monetary policy has been effective in dealing with the crisis, particularly in easing the credit and liquidity shortage and in preventing a slide into a deflationary spiral.
- ◆ **Purchase of government bonds by the Bank of Israel in the secondary market:** This measure was found to be effective and led to a certain decrease in yields on government bonds. The purchases did not undermine the credibility of the Bank of Israel since, among other things, the purchases were restricted to the secondary market and were perceived as an exceptional and temporary measure.
- ◆ **Intervention in the foreign currency market:** It is possible to intervene in this market over an extended period of time and on a large scale through the purchase of foreign currency (the feasibility of intervening through the selling of foreign currency is not symmetric). The intervention was instrumental in moderating irregular fluctuations in the exchange rate and in preventing an over-appreciation of the shekel during part of the period and thus apparently helped cushion exports from

the effect of the crisis.

- ◆ **The optimal size of foreign currency reserves:** The crisis led to a reassessment world wide of the optimal size of foreign currency reserves and emphasized the advantages in maintaining them at a high level. This is particularly true as markets become increasingly open to international capital flows, and in view of the size of these capital flows and the high level of exposure of financial institutions to foreign currency risk. The Bank of Israel's purchase of foreign currency, which began in March 2008, even before the intensification of the crisis, significantly increased its foreign currency reserves and thus reinforced the resilience of the economy to the crisis, apart from its contribution to moderating the appreciation of the shekel.

c. Lessons for fiscal policy

- ◆ **Increasing expenditure:** The experience accumulated both in Israel and abroad during the crisis shows that it was difficult for governments to increase public expenditure quickly, and that in the immediate run monetary policy has an advantage.
- ◆ **Guarantees:** Nevertheless, fiscal resources can play a central role even in the short run in alleviating the liquidity and credit shortage through the provision of guarantees.
- ◆ **The importance of maintaining fiscal discipline in normal times:** It has again been shown that fiscal policy's ability to respond in a crisis depends on the levels of the debt and the deficit during the previous period. During the crisis, the benefits of the improvement in Israel's fiscal situation in recent years became evident. During past crises in Israel, the yields on government bonds surged with the increase in the deficit and the government was forced to reduce it, i.e., to adopt a pro-cyclical policy. In contrast, during the present crisis, it was possible, due in part to the favorable fiscal situation, to allow the tax revenue automatic stabilizers to work unhindered with an accompanying increase in the deficit. The recent developments in Europe also emphasize the need to chart a downward path for the debt-to-GDP ratio. Therefore, the government should continue to maintain fiscal discipline and a downward path for the debt.

d. General lessons for policy management during a crisis

- ◆ **Speed of response:** The crisis illustrated the importance of the authorities' speed of response. This is needed to deal not only with actual developments but in some cases with changes in expectations and forecasts as well, even though they have not yet been realized.
- ◆ **Adopting a variety of measures:** A wide variety of measures may be required for

several reasons, including the high level of uncertainty in real time regarding the actual situation and the effectiveness of any particular measure; the need to deal with a large number of specific problems during a crisis, including some that the authorities do not deal with in normal times or in which it is unlikely to foresee that the involvement of the authorities would be required.

- ◆ **Long-term considerations and exit strategy:** Policy during a crisis should also take into account long-term considerations, including the implications for the size of the public debt and for the government's future liabilities due to guarantees that it has provided, as well as potential distortions resulting from the intervention in the markets. It is important to outline the conditions and the manner in which special intervention will be ended. Accordingly, intervention should focus on steps of a temporary nature and it is important that they be perceived as such by the public.
- ◆ **Early preparations for dealing with a crisis:** These should include: contingency plans; a legal infrastructure to be used by the regulatory authority during a crisis; an infrastructure to ensure operational capability during a crisis (such as payments and settlement systems), and simulations of crises to test the functioning of the authorities.

5. AFTERWORD

This report considers the period up until the end of 2009. However, the various effects of the crisis were still being felt both in Israel and abroad during the period since then and have remained at the center of economic policy.

The recovery of the global economy continues to be fragile and there remains much uncertainty as to its robustness and sustainability. This is reflected in, among other things, the caution exercised by developed countries in beginning to tighten expansionary policies, particularly monetary policy. Although some countries have significantly cut back their use of quantitative tools, most have abstained from raising the rate of interest, which has remained at very low levels. During this period, significant differences could be seen between countries with respect to the speed of recovery. The difference between emerging economies, most of which suffered less from the crisis and which returned to high rates of growth as the crisis waned, and the developed countries, most of which are experiencing a slow recovery, is particularly evident. Also evident is the rapid recovery in a number of developed countries, including Israel, which were also relatively resilient during the height of the crisis.

Problems in the financial systems of several leading advanced economies have yet to be resolved, and there are still significant risks to the system's stability. Many banks world wide are continuing to experience difficulties, while households and the business

sector in many countries are still going through an adjustment process, including deleveraging. The widespread debate world wide concerning the lessons from the crisis in general and the need for macroprudential policy in particular is still ongoing; however, no consensus has yet emerged regarding the practical implications of this conceptual framework and the implementation of the lessons is proceeding at a rather slow pace. Nevertheless, world attention has shifted to a large extent from the financial aspects of the crisis in the major developed countries, which were at the core of the crisis during the period 2007–09, to two other aspects: (a) Capital flows, particularly to some emerging economies, with the resulting pressures for an appreciation of their currencies, an issue which is also highly relevant for Israel. (b) The debt crisis in several European countries, which during part of 2010 was a major source of concern.

The significant differences between the emerging economies and most of the developed economies in the degree to which the financial crisis affected them and the rate of recovery from it led to the development of substantial differences between them in monetary policy during 2009 and even more so in 2010, as well as to large-scale capital flows to the emerging economies. These were accompanied by pressures for an appreciation of their currencies and in some cases also by a rapid rise in prices of additional assets. This raised concerns regarding the effect on their exports and the development of imbalances in domestic asset markets. Consequently, some of these countries began purchasing foreign currency in large quantities and in certain cases even intervening in capital markets in other ways (such as the imposition of restrictions or taxes on short-run capital flows). These steps raised concerns of a "currency war" and differences of opinion between them and some of the developed countries. In some sense, the global imbalances thus reappeared, though their characteristics differed from those prior to the crisis.

The debt crisis developed during 2010 in several European countries, particularly Greece, Ireland, Spain and Portugal. Although many countries increased their debt as a result of the policy they adopted during the global crisis, the source of the debt crisis in some of the aforementioned countries was not the global crisis itself, but rather their economic management in earlier years. Nonetheless, the global crisis exacerbated these problems and brought them to the fore. The implications of the debt crisis extended well beyond these countries due to the chain reactions that resulted, the exposure of the major countries in the euro area to the debts of these countries, the first systemic crisis with which they confronted the European Monetary Union, and the spotlight they have placed on the size of the public debt and its path in all European countries. As a result, the EU put together a first-of-its-kind assistance package for Greece, and subsequently for Ireland as well, and various governments adopted fiscal consolidation schemes to avoid such a crisis in their own countries.

These developments have important implications for Israel as well. The pressures for an appreciation and the accelerated rise in asset prices that emerging economies are confronting indicate that these problems, which have recently occupied the attention of policy makers in Israel, are not unique to Israel. The debt crisis in Europe created uncertainty regarding the persistence of the global recovery in general and in Europe in particular, which could have had significant implications for Israeli exports, had the crisis not been dealt with in a timely manner. The debt crisis has also underlined once again the importance of a downward path for public debt and therefore emphasizes the importance of adhering to the fiscal rules adopted by the government in 2009.

The Israeli economy has weathered the crisis with relative success. Its recovery is one of the most robust among the developed countries and it has not significantly increased its public debt during the crisis. Nonetheless, even after more than a year since the end of the period reviewed in this report, the economy still needs to cope with significant implications of the crisis. Apart from the lessons mentioned above, which are presented in greater detail in Chapter 4, the global developments in 2010, the pressures for currency appreciation, and the ongoing need to balance stimulating economic activity and dealing with an accelerated rise in real estate prices all present major challenges to the economy. One manifestation of this is the macroprudential measures adopted by the Bank of Israel during 2010 regarding bank credit for the purchase of housing, which were intended to restrain the rapid increase in housing prices, to prevent the development of a price bubble and to reduce the risk to the banking system in this respect. These measures include: a change in the rules for bank credit provided to purchasing groups; an increase in the allocation of capital against mortgages with a high rate of financing; and an additional increase in this allocation for variable-interest-rate loans with a high level of financing, which is primarily relevant for large loans granted to purchasers of a second apartment.

Chapter 2: Development of the Global Crisis

1. INTRODUCTION

The global crisis that erupted in 2007 was the worst since the Great Depression of the 1930s. It began as a financial crisis in the United States, but spread to other markets and to other countries, and quickly developed into a global economic crisis. The activity of the capital and credit markets was severely impaired, major financial institutions collapsed, the supply of credit worldwide decreased sharply, and confidence in the financial system was seriously undermined. GDP fell in almost all of the developed countries in 2009, world GDP fell by about half a percent, and, world trade collapsed at the greatest rate in modern economic history.⁷ Despite a slowdown, some developing countries, particularly China, continued to grow rapidly during the crisis, but this was insufficient to stabilize economic activity in the developed countries. As a result of exceptional policy measures, the crisis was contained, and recovery began earlier than expected: in the second quarter of 2009 some stabilization was evident, and in the second half of the year a slow process of recovery began in most countries.

The policy responses of governments and central banks throughout the crisis were unprecedented. The responses included exceptional steps, both in nature and scale, to prevent the worsening of the financial crisis, facilitate the continued functioning of the financial institutions and the markets, ease the liquidity and credit squeeze, and reduce their impact on real activity. The central banks in many developed countries adopted a particularly expansionary monetary policy—which, besides the sharp reduction of interest, sometimes even to an almost-zero level, included also direct involvement in markets on a wide scale through a variety of quantitative tools, including the purchase of government bonds and other financial assets. In some of the developed countries, the governments themselves also intervened in the financial system by providing guarantees, injecting capital into financial institutions, and dealing with toxic assets held by the institutions. Furthermore, many governments introduced fiscal programs for increasing demand.

The massive policy measures succeeded in stabilizing the financial markets and gradually restoring economic growth in developed countries, albeit at lethargic rates. The economic downturn was thus sharp but short-lived and it by no means approached the depth or length of the Great Depression. So the current crisis has become known as the Great Recession.

7 B. Eichengreen and K.H. O'Rourke (2009), A Tale of Two Depressions, VOX.

The fact that in retrospect the last crisis has turned out to be less severe than previously feared is not to be taken for granted; in the autumn of 2008 there were good chances that most of the world's financial system would suffer a total collapse and that the fallout for the real economy would indeed resemble the Great Depression. Due in part to the experience of the Great Depression, policymakers at the end of 2008 understood that they were acting at a historical juncture and were fully aware of the calamitous possibilities if measures were to fail.

Governments' sweeping reactions in conjunction with the decline in activity created large fiscal deficits and greatly increased the public debt in some of the developed countries (Figure 1.3). Concerns over the ramifications of this increase clouded the process of recovery in 2009, and became a major issue during 2010.

The years preceding the crisis were years of global economic prosperity enjoyed by most countries. Nevertheless, in a number of developed countries during those years, particularly the United States, several problems developed that ultimately led to the outbreak of the crisis. The roots of the crisis are described in the first part of the chapter.

Developments during the crisis itself and the policy responses are described in the second part of the chapter. We distinguish three major periods: the first, from the outbreak of the crisis in July 2007 to September 2008; the second, the severe worsening of the crisis that began with the collapse of Lehman Brothers in September, and reached its peak at the end of 2008 and the beginning of 2009; and the third, stabilization of the global situation and first signs of its hesitant recovery starting in the second quarter of 2009. These stages are well-illustrated in Figure 1.1, and, as mentioned, they constitute the time frame for analyzing global developments in this chapter (and for analyzing developments in Israel in the next chapter).

This chapter does not provide an exhaustive account of the global crisis. Its aim is to provide a basis for understanding the crisis and its lessons for Israel—the processes, the forces, and the time frame of the progression of the events world wide, which also dictated the sequence of events in Israel, as described in the next chapter. This chapter also does not discuss the lessons of the crisis throughout the world, even though some of them readily follow from the description of the sources of the crisis and its development. The lessons that are relevant for Israel are discussed in Chapter 4.

2. THE PERIOD PRIOR TO THE CRISIS—ROOTS OF THE CRISIS

The years preceding the crisis were ones of worldwide economic prosperity—rapid growth in many countries, whether developed, emerging, or developing, expansion of world trade and international capital flows, and a boom in the financial markets. In some of the developed countries, however, there were several interconnected developments,

among other things against the background of low interest-rate levels, which ultimately led to the outbreak of the crisis. These developments were particularly salient in the United States: a steep rise in asset prices, especially real estate, a decrease in the risk spreads in the financial markets to particularly low levels, accelerated and non-selective extension of credit, increasing financial innovation and rapid but unbalanced expansion of new financial instruments, a low rate of saving and a high and growing leverage of households, a large and persistent deficit on current account, and a slowing in the growth rate of the economy. Some of these also occurred in other developed countries, particularly the UK, Spain, and Ireland.

Underlying the crisis was the combination of excessive growth of credit—the cumulative total of business, household and government debt in the United States and other developed countries—and of the way in which it was managed, in other words, the functioning of the financial system in these countries. There are those who emphasize that the key role of the debt in creating the crisis is not unique to the recent crisis; on the contrary, this is the common denominator in most financial crises over hundreds of years.⁸ Others emphasize the nature of the crisis as a panic crisis leading to "a run on the banks," and that in this respect it is similar to previous crises. The uniqueness of the recent crisis is that the panic was created among firms and institutional investors and involved "repo" liabilities, as opposed to deposits of private individuals in the banks.⁹

The major aspects of the global economy in the years preceding the crisis are detailed below. As will be explained, they are all related to the sources of the crisis—the excessive growth of debt in the developed countries, and deficiencies in the conduct of their financial systems. These factors, however, which reflect deficiencies in the regulation and supervision systems as well as market failures, did not characterize all the economies in which the crisis developed to the same extent, and it is difficult to point to an unequivocal correlation between the structure of the regulation and supervision,

8 This is Reinhart and Rogoff's main argument. In their view, the common denominator underlying financial crises over several centuries has been the excessive growth of debt (of governments, banks, companies, or consumers), which carries greater risks than commonly perceived at times of prosperity. See: C. Reinhart and K. Rogoff (2009), *This Time is Different*, Princeton University Press, Princeton and Oxford.

9 This approach stresses the nature of banks as intermediaries taking upon themselves short-term liabilities against long-term assets. This is the source of the inherent vulnerability of banks to pressure to immediately realize their short-term liabilities on an exceptional scale ("a run on the banks"). In previous crises those who ran were ordinary depositors who simultaneously demanded to withdraw their deposits. In the present crisis those who ran were institutional bodies that refused to renew transactions of the sale of financial assets and their repurchase (repo). Over the years the supervisory authorities learned to cope with a run of the first type. At the outbreak of the recent crisis they were unprepared for a run of the second type. For details see: G. Gorton (2010), "Questions and Answers about the Financial Crisis," NBER Working Paper 15787, Feb. 2010.

the fiscal situation, or other factors in the various countries, and the intensity of the crisis they experienced.

(1) Problems in managing the financial system¹⁰

The rapid expansion of credit took place against the background of numerous problems in the conduct and structure of the financial system in the United States and other developed countries, in conjunction with regulatory malfunctions, the major ones being: a distorted incentive structure within financial firms and a lack of appropriate supervision, which contributed to excessive risk taking over the rising part of the business and credit cycle, and which nourished the development of the real estate bubble; the exaggerated development of the securitization market towards securitizing low-quality (sub-prime) mortgages, CDO, and CDO2,¹¹ the transfer of financial activity outside the banks' books (SIV);¹² excessive growth of the market for bond insurance instruments (CDS),¹³ in which risks were not properly priced; lack of supervision of investment banks, which operated with very high leverage rates, and with large exposures to "toxic" assets; and the banking system's reliance on short-term financing from the financial markets for financing the long-term credit that it provided.

The following is a brief account of some of the major malfunctions in the conduct of the financial system:

- ◆ The capital market was characterized by a high degree of innovation. In retrospect, however, it emerges that the management of risk and its monitoring both within the financial firms and by the supervisory authorities were deficient, because of the delay in the development of the risk-management tools, and the absence of a systematic approach to financial stability and systemic risks. Among other things, highly complex instruments were developed, which were difficult to understand, and the risk attributed to them was based on past experience that did not take into account extreme situations of the kind the system encountered during the crisis.
- ◆ The incentive structure encouraged the financial intermediaries to take excessive risks and to attract borrowers with an inferior repayment capability to the credit

10 This section summarizes the problems and is not intended as an exhaustive discussion of the lessons of the crisis for the functioning of the global financial system. For a more detailed discussion, with an emphasis on the Israeli financial system, see Chapter 4.

11 CDO (Collateralized Debt Obligation) is a bond backed by a portfolio of securities and/or debts. CDO² is a bond backed by a portfolio of CDOs.

12 Structured Investment Vehicle—a non-bank financial institution, and therefore not supervised, to which the banks transferred balance-sheet activity.

13 Credit Default Swap – an instrument of insurance against a default by the bond issuer. This market grew from about one trillion dollars at the beginning of the decade to about \$60 trillion on the eve of the crisis.

markets (moral hazard). In granting credit, banks did not fully consider the quality of the borrowers, because the attendant risk was not recorded in their books as a result of the securitization. However, because of guarantees given by the banks, the sale of mortgages did not completely divert the risk from them, and it returned to them when the system encountered the crisis. In retrospect, therefore, it turns out that the banks were exposed to innovative and "toxic" financial assets that ultimately found their way back into their balance sheets, and this exposure facilitated the spread of the crisis to the banking system. The increased exposure of banks in the United States to these assets was made possible, among other things, by the repeal, at the end of 1999, of part of the Glass-Steagall Act that separated the commercial and the investment banks.

- ◆ Extensive financial activity was carried out by unsupervised institutions (including "shadow banking"), and there was inadequate supervision of major components of the capital market, including investment companies, the derivative and mortgage markets, the hedge funds, and the monoline firms.¹⁴
- ◆ The rating companies: The problems in their conduct, beyond the conflicts of interest and the flawed incentive structure, were due also to the complexity of the new financial instruments, and to an incorrect assessment of the repayment capabilities of the new borrowers.
- ◆ The United States Federal Reserve System and the supervision of banks within it operated for many years on the principle of reducing preventive intervention in the financial system. In this view, transparency of the system is sufficient to ensure proper management by means of market discipline.
- ◆ The lack of a systemic perspective of the risks inherent in the various financial instruments. For example, securitization of the sub-prime mortgages involves several separate components, such as granting bank credit, securities activity, management of savings of institutional investors, etc. This securitization is therefore a package that extends into the areas of responsibility of various supervisory authorities. None of the authorities addressed the flaws, because from the narrow perspective of each of them, no improper activity occurred that would require their intervention.

¹⁴ Companies insuring investment in bonds. The insurance encouraged investors to purchase low-quality bonds on the assumption that their investment was guaranteed. The three largest companies in this field in the United States went bankrupt during the crisis.

The sub-prime market in the United States¹⁵

The excessive credit growth and the problems in the conduct of the financial system were most saliently reflected in the sub-prime mortgage market in the United States. This market provides mortgages for purchasing homes at a relatively high interest rate to borrowers whose profiles fall below the standard criteria. Although it was small relative to the overall market of mortgage-backed securities, it played a major role in the outbreak of the crisis, which at the beginning was even called "the sub-prime crisis." From there the crisis rapidly spread to other markets in the United States and Europe.

About 75 percent of housing mortgages in the United States are financed with money raised in the capital market by pooling¹⁶ mortgages and securitizing them. In the years prior to the crisis, the volume of security issues backed by sub-prime mortgages grew considerably, from \$160 billion in 2001 to about \$600 billion in 2005-06. The increase in demand for such securities coincided with a relaxation of the conditions for obtaining sub-prime mortgages, to the extent that borrowers could obtain a loan without producing proof of their repayment ability, and the risk premia on these assets reached unprecedented low levels. These developments were related to the rapid and continuing growth and the low rates of interest prevailing at the time, which increased the investors' tendency to take risks, as well as to the administration's policy of increasing the rate of home ownership among the low-income population. The growth in the supply of housing loans also contributed to the rise in real estate prices, which in turn encouraged further expansion of the supply of loans and the demand for them.

The business model used by the banks and the financial institutions was important in accelerating the rate of security issues. The model enabled them to expand their sub-prime activity without holding the credit risk that they created, which in turn reduced their incentive to monitor the borrowers' repayment capability. This contributed to the increase in the supply of loans to borrowers who could not repay them.¹⁷ Despite the securitization and the sale of the loans, the credit risk did not entirely disappear from the banks' balance sheets, and part of it returned to their books when the crisis erupted.

From the beginning of 2005, the rate of debtors who did not fulfill their undertakings grew considerably, and toward the end of 2006 it became clear that the repayment rate of mortgages given in 2006 was far below that of mortgages given in previous years.

15 For a detailed explanation of this market see the 2007 Bank of Israel *Annual Report*, Box 4.1, pp. 139-143.

16 Pooling—an amalgamation of several mortgages that serve as backing for the issue of a security; each investor in the security receives a proportionate share of the capital and interest payments on the mortgages bundled in the pool.

17 On this model (Originate and Distribute Model) and its role in the development of the crisis, see for example the Bank of England's *Financial Stability Report*, No. 22, October 2007.

The problem intensified because of the gradual, continuing rise in interest rates in the United States, and the decline in real estate prices from the middle of 2006. These trends particularly affected borrowers in the sub-prime market. They usually took a floating interest mortgage, with lower capital and interest payments at the beginning of the loan period, which made the loans more attractive at the beginning, but made it increasingly difficult for the borrowers to meet their commitments later on. At the beginning of 2007, several companies in the sub-prime industry experienced difficulties. However, up to that time the impact of the events in this market on other debt and capital markets was limited. Shortly thereafter, the crisis also spread to the Alt-A market, whose scale was similar to that of the sub-prime, and which provided mortgages to borrowers with a slightly higher repayment capability than those in the sub-prime category, but still low relative to regular ("prime") borrowers.

(2) Rate of saving and leverage

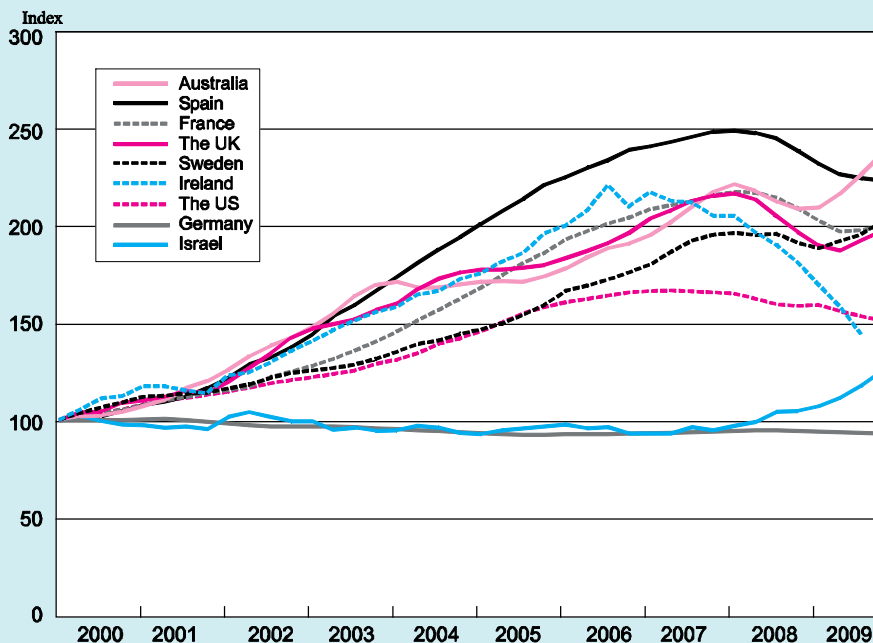
In the years preceding the crisis the rate of saving in many of the developed countries was low, and the rate of leverage high (Figure 3.1). Several factors acted to reduce households' rate of saving: the wealth effect spurred by the rising prices of assets—both financial and real estate—and the expectations of a further increase in their value, without households giving an appropriate weight to risks, and the low interest rate level. Additionally, the financial system disproportionately eased the conditions for granting credit, including to those households whose repayment capability was low. The low rate of saving and the growth in the households' debt served to increase both private consumption and the purchase of real estate. They thus supported several developments whose pace could not be sustained: the level of activity in the economies, an excessive increase in asset prices led by the development of a real estate bubble, and an ongoing deficit in the current account of the developed economies. As described below, these rates of saving and leverage exacerbated the crisis after it erupted: the low rate of saving made it difficult for households to smooth consumption during the crisis, an effect magnified by the credit squeeze resulting from the crisis in the financial system.

(3) The real estate bubble

In many, but not all the developed economies, house prices in the years preceding the crisis increased excessively (Figure 2.1), and a real estate bubble developed. This is not unique to the present crisis, for real estate bubbles were implicated also in several financial crises in the past. The development of the bubble, the problematic conduct of the financial system, and the flaws in the supervision and regulation systems that contributed to its development, as well as the ramifications of the bursting of the bubble, were particularly salient in the sub-prime market in the United States. It should be

emphasized, however, that the bubble developed also in other parts of the real estate market in the United States and in other countries, with escalation recorded in the prices of other financial assets, and even in the prices of raw materials world wide. This shows that the inflation of asset prices was not restricted to the real estate market, but was a broader development compatible with the fact that the basic factors underlying the crisis, as described above, reflected across-the-board problems beyond the problems that characterized the real estate market and the way it was financed. At the same time, it was particularly striking in the mortgage market, where, for example, mortgages were sometimes given in excess of 100 percent of the value of the house, on the assumption that the price of the house would continue to rise, and part of the mortgage thus served to finance current consumption. The asset price bubble may have also contributed to the development of the current account deficits of the developed countries and the global imbalances in two respects: (a) it reduced the saving rate—the asset price rise increased consumption (wealth effect) and therefore the deficit in the balance of trade;¹⁸ and (b) it

Figure 2.1
House Prices, 2000-09 (2000 = 100)



SOURCE: For Israel - based on Central Bureau of Statistics data; international data - OECD.

18 Support for this can be found in: D. Laibson and J. Mollerstrom (2010), "Capital Flows, Consumption Booms and Asset Bubbles: A Behavioural Alternative to the Savings Glut Hypothesis," NBER Working Paper No. 15759.

diverted investments—without the real estate bubble, some of the resources that were directed to investment in real estate thus contributing to the increase in the current account deficit might have been directed to purchasing assets abroad.

(4) Global imbalances

One of the major indications of low savings and the growth of debt in the developed economies was the "global imbalances". In the decade preceding the crisis many developed countries, especially the United States, continued to accumulate current account deficits (Figure 1.3). These deficits were financed by significant surpluses in the current accounts of emerging economies, particularly China, and the oil exporters that benefited from the sharp rise in oil prices. This attracted widespread attention even before the crisis, but there was no consensus regarding its persistence and the attendant risks. As mentioned, there is also no consensus as to the leading factor underlying this development: is it the forces that acted to increase the debt of developed markets, or those that acted to increase saving in emerging markets, thereby contributing, among other things, to the unbalanced increase of asset prices in the developed countries (an explanation that is consistent with the argument regarding their contribution to the low interest rate world wide).

(5) The low interest rate

The low level of interest rates world wide in the years prior to the crisis contributed, in conjunction with other factors mentioned above, to the increase in private consumption and the decrease in saving in the United States and other developed countries, as well as to the expansion of the real estate bubble and the rise in the risk level in financial investments because of the "search for yields." However, there is no consensus regarding the predominance of the level of the interest rate in bringing about the crisis. Some point to countries, such as Canada, which did not experience a crisis in spite of the low interest rate, thanks, among other things, to the quality of regulation and supervision of the financial system. Nor is there consensus regarding the reasons for this low level. Some attribute it mainly to the expansionary monetary policy adopted, primarily in the United States, in reaction to the previous recession at the beginning of the decade. Even though the central banks in the developed countries raised interest rates as the worldwide growth continued, their level was still low on the eve of the crisis (Figure 1.2). As opposed to this, there are those who attribute the low level of interest rates world wide to the excess supply of savings by the emerging economies and oil exporters, which contributed also to the global imbalances.¹⁹

¹⁹ A prominent proponent of this view is Ben Bernanke, the current Chairman of the Federal Reserve, who also coined the term "Saving Glut." See his speech of 10.3.2005 and other speeches as well.

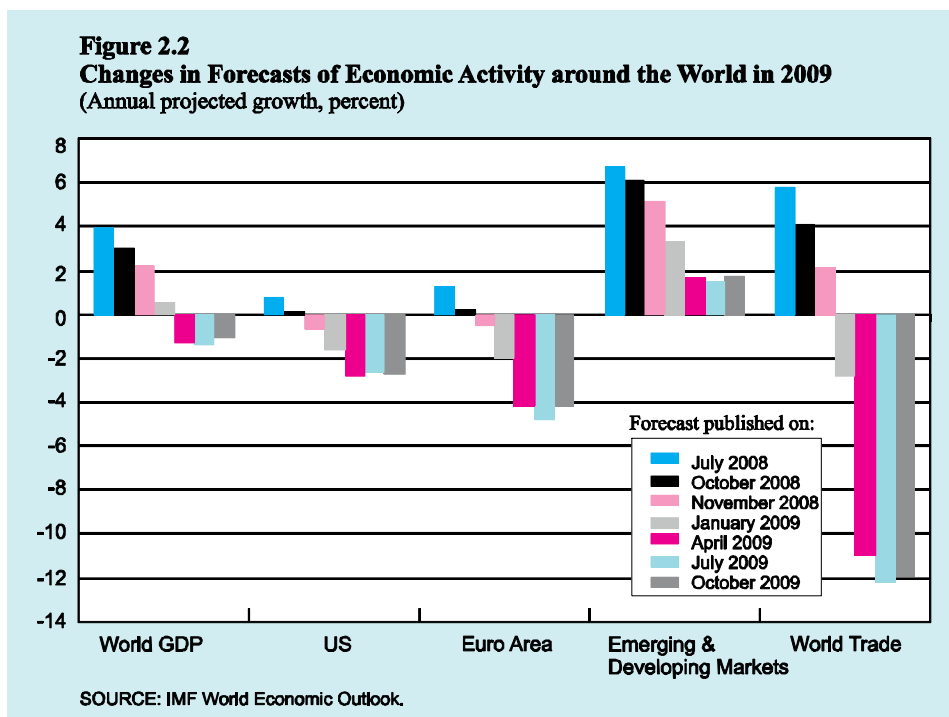
(6) The sharp rise in the prices of raw materials

In the years preceding the crisis, global prices of fuel, raw materials, and basic foodstuffs rose sharply, and the rise continued at the beginning of the crisis itself. Even though this was one of the salient features of the world economy on the eve of the crisis, and significantly affected inflation in the developed countries as well as the state of many developing economies, it was not of itself fundamental in creating the crisis. It was however relevant to the crisis in several respects: (a) some of the sharp rise in these prices turned out to have been part of a bubble, namely arising from asset oriented or speculative demand that did not reflect a real demand for the products themselves. This can therefore be seen as part of an inflation of prices that characterized many of the asset markets and that arose, among other things, from a search for yields against the background of the low interest rate; (b) because the developed countries are generally importers of fuels, the price increases increased the deficits on their current accounts²⁰ (and increased the surpluses of the oil exporters, part of which was directed to financing these deficits); and (c) the price increases fueled inflation in the developed countries, and therefore led some central banks to raise their interest rates. This process hastened the bursting of the asset price bubble, particularly in the sub-prime market in the United States.

3. THE PERIOD OF THE CRISIS

This section describes the development of the crisis and the policy reaction to it, divided into the three main periods mentioned above. The time line at the end of the report provides a graphic illustration of the sequence of events. However, in order to understand the intensity of the crisis, the fears, and the uncertainty as it developed, as well as some of the policy steps adopted, bear in mind that the events in this section, as elsewhere in this report, are described retroactively. Even though the crisis was severe, the actual events do not reflect the full extent of the fears that prevailed at the time. At various stages of the crisis there was extreme uncertainty about its future development, particularly its potential deterioration, and also, to a large extent, uncertainty about actual developments because of the inherent lag in the collection and processing of current data. Some illustration of the uncertainty and the repeated surprise about the severity of the crisis is given by the frequent updating of the growth forecasts published during the crisis (Figure 2.2). Extreme uncertainty surrounded also the effectiveness and the prospects of success of the various policy measures.

²⁰ The rise in oil prices underscored the need in some of the developed countries to reduce their dependence on oil. This awareness contributed to the fact that some of the fiscal expansion plans that were adopted during the crisis were designed to reduce the use of oil and encourage "green growth."



a. From the beginning of 2007 until the collapse of Lehman Brothers in September 2008

(1) The first half of 2007—the difficulties are focused on the sub-prime market

The first signs of the crisis appeared in February 2007, when several large financial institutions involved in providing sub-prime loans began to report losses, and in the first few months of the year several companies went bankrupt or ceased their activity in this field. The events in the housing market in the United States began to affect real activity: already in the first half of the year private consumption growth slowed significantly and the decrease in residential investment continued. Even though the growth rate in the United States fell sharply in the first quarter, it resumed its rise in the second quarter. The events in the sub-prime market had a limited effect on the other capital markets at this stage, and the situation was not perceived as particularly threatening, certainly not a serious crisis, and the authorities did not take any exceptional steps. The United States Federal Reserve avoided lowering its interest rate until September 2007, while the European Central Bank (ECB) continued gradually to raise its interest rate in the first half of 2007. The central banks of Japan and the emerging countries also adopted a contractionary monetary policy.

(2) The second half of 2007—the difficulties spread from the sub-prime to other markets; limited and hesitant intervention by the authorities

The crisis itself broke out in July 2007 with the beginning of major turbulence in the financial markets, especially in the developed countries. Increasingly, assessments indicated that the crisis in the sub-prime market could spread to other sectors and even affect real activity. While events in the first half of the year were focused on institutions that specialized in sub-prime, it now became clear that the exposure to these loans was far broader than had been assumed: many financial institutions, including commercial banks, investment banks, pension funds, and hedge funds both inside and outside the United States were exposed to these loans through their investments in debt instruments backed by these loans. The crisis took a turn for the worse in August 2007 when three hedge funds managed by the large French bank BNP collapsed. In September the British bank Northern Rock approached the Bank of England for an emergency liquidity loan, which necessitated an announcement by the British government of a sweeping guarantee of the bank's deposits in order to restore its customers' confidence. Reports continued in the fourth quarter of losses by banks and major companies in the debt instruments market because of their exposure to the sub-prime instruments. These developments sharply raised risk assessments and margins in the financial markets, substantially reduced the ability to raise capital or recycle debts at maturity, paralyzed the interbank money market, and created a severe credit squeeze for many financial institutions.

Against this background the central banks of the United States and other developed countries began to inject liquidity of hundreds of billions of dollars into the banking system. In particular, starting in August, the Federal Reserve and the ECB took several steps to increase liquidity and the Fed announced its intention to continue to provide as much liquidity as necessary (see details of the steps in the time line). At this stage, however, the authorities had not yet grasped the severity of the problem and the scale of the approaching crisis. As a result, the steps taken in the developed countries at that time were limited, and did not approach a broad, coordinated response as would be the case later on. This was reflected, among other things, in disagreements among central banks about the severity of the crisis. The Federal Reserve began to lower the interest rate rapidly—by one percentage point by the end of the year. The ECB contented itself with ceasing to raise the interest rate and left it unchanged until July of the following year. The Bank of England also did not think at the time that a significant crisis was at hand.

Against the background of these developments the growth rate in the developed countries slowed, especially in the United States,²¹ but growth still remained positive. In the emerging economies, particularly China and India, the rapid growth continued. Oil and commodity prices also continued to rise.

21 In retrospect the NBER dated the start of the recession in the United States at December 2007.

(3) The first quarter of 2008—the crisis worsens

In March 2008 the crisis took a further turn for the worse with the collapse of Bear Stearns, the fifth largest investment bank in the US. This quarter saw a sharp rise in investors' perceptions of risk, the credit squeeze continued, stock prices fell rapidly world wide, and risk premiums increased. The demand for government bonds of the developed countries increased as investors rushed to offload their risky assets in favor of more secure ones. The United States recorded negative growth in this quarter.

The deterioration of the situation and the escalation of fears were reflected in the sharp reductions of the interest rate by the Federal Reserve by a cumulative two percentage points during the quarter. One of the reductions was announced outside the pre-announced schedule. At the same time, further actions were taken in the United States to assist the financial sector and increase liquidity, and several expansionary fiscal measures were introduced. The adverse effect on Europe was far more moderate at this stage, and, as mentioned, the interest rate remained unchanged. Even in the emerging economies a certain slowdown was felt in the growth rate, but it still remained high.

Despite the worsening crisis, world oil and food prices continued to rise, among other things because of the strong demand in the emerging markets as well as speculative demand, which together created significant inflationary pressures. The combination of inflationary pressure and a slowdown of activity posed a dilemma for monetary policymakers.

(4) The second and third quarters up to mid-September 2008—the crisis continues but fears seem to be lessening

The difficulties in the financial markets and the slowdown in activity continued during this period, but fears about the crisis seemed to be dissipating, among other things, because newly published data on activity in the first quarter of 2008 were better than previously estimated. Fuel and raw material prices world wide also continued to rise in the second quarter, seemingly evidence of a high level of global activity.

The relative calm was also reflected in the updated forecasts of central banks and international institutions such as the IMF. According to the new assessments (published in July and later), the slowdown in activity would start later and would be less severe than had been thought. The prevailing view was that the risk of a global financial crisis and a severe recession had lessened.²²

The moderation of fears was reflected in monetary policy as well. The assessment of the decrease in risks and the continuing rise in prices of raw materials shifted the attention of monetary policy world wide back to the inflationary pressures. As opposed

22 See for example, Bank of Israel *Inflation Report* for the second quarter of 2008.

to the sharp interest rate reductions in the previous quarters, the Fed contented itself with one reduction (a moderate one-quarter percentage point) in the second quarter of 2008, and refrained from further reductions until September. However, it did expand the scale of several steps designed to increase liquidity in the economy (see the time line). The ECB even raised the interest rate in the third quarter for the first time in a year. Some emerging economies and non-euro European countries also raised interest in this period.

Despite the feeling of relief, the effects of the crisis were still evident in the financial and real markets. The ratings of several important financial institutions were lowered, and various banks in the United States seemed to be experiencing difficulties. A turnabout occurred in the third quarter with a fall in global fuel and food prices. At the same time the effects of the crisis were becoming more evident in Europe—negative growth was recorded in the euro area in the second quarter—and in the emerging markets. Furthermore, part of the relative improvement in the United States was apparently a result of the administration's stimulation program, and was therefore short-lived.

The crisis deepened again at the beginning of September with the need to rescue the mortgage agencies Fannie Mae and Freddie Mac, whose liquidity was based on raising short-term capital (certain steps for supporting them had already been adopted in July). These agencies could no longer finance themselves in the markets. In this case the Fed and the Treasury came to the assistance of the institutions in order to prevent a domino effect on other exposed financial institutions. The steps taken by the authorities temporarily stabilized the system, although at the price of increasing moral hazard.

b. Mid-September 2008 and the first quarter of 2009—the height of the crisis

In mid-September 2008 the crisis took a dramatic turn for the worse, transforming it into the most severe global crisis since the Great Depression of the 1930s. The deterioration began with the collapse of the Lehman Brothers investment bank. Like Bear Stearns, Lehman too was brought to its knees by the crisis of confidence in which it failed to raise short-term capital, but in this case the authorities did not produce a plan to rescue the bank, and it collapsed.²³ The ensuing panic paralyzed major parts of the financial system in the developed countries, including money markets, bond markets, and interbank credit markets, and banks ceased lending to each other and to business

23 The collapse of Lehman marked a turnabout in the crisis, and therefore aroused widespread discussion on questions related to its fall, such as: Could steps have been taken in good time to prevent the worsening of the crisis in general, and the collapse of the bank in particular? And, was it wise to allow the collapse or should the Fed have acted to rescue it, as it did afterward in rescuing other bodies?

customers. In short, liquidity dried up. The financial crisis was reflected in a sharp fall in the prices of most financial assets and real estate, alongside increases in risk margins, risk assessment, uncertainty and correlation among the global markets. Within a short period some of the largest and most important banks, investment houses, and financial institutions in the United States and other developed countries collapsed or were on the verge of collapsing;²⁴ only determined intervention by the governments and the central banks prevented the total collapse of the entire financial system. The worsening of the crisis was not uniform in all the developed markets. It was felt particularly strongly in the United States, the UK, and several other countries, while in certain countries, including Canada, Germany, and Australia, the ramifications were far more moderate.

As the crisis intensified, so did the policy response. In view of the destructive consequences of Lehman's collapse, the authorities in the developed economies made it clear that they would not allow further collapses of systemically important financial institutions. From then on, governments and central banks intervened rapidly and on an unprecedented scale to rescue some of the financial institutions or prevent their collapse, and took steps to guarantee the continued functioning of the financial system, to restore confidence, and to alleviate the liquidity pressures. These actions included the provision of guarantees for deposits and loans, the injection of capital into financial institutions (recapitalization), and various programs for removing "toxic" assets from the balance sheets of these institutions. In particular, the day following Lehman's filing for bankruptcy, the Fed announced an \$85 billion loan to AIG. The determination the authorities demonstrated in saving AIG, and the amount of the resources allocated for the purpose, well reflected the change in their perception of the severity of the crisis and in their willingness to act following Lehman's fall. Governments and central banks thus acted as lenders of last resort to the business and financial sector as a whole, and not only to the banking system. In extreme cases of insolvency the authorities even nationalized financial institutions, thereby in effect providing insurance for the public's deposits above and beyond the existing insurance. As a result of these actions, the balance sheets of the central banks in these countries grew considerably (Figure 1.2).

As noted, at this stage governments and central banks, mainly in the United States but also in other countries, acted on an enormous scale to save financial institutions. The Fed injected vast amounts of liquidity into these institutions by purchasing toxic assets, providing guarantees and other measures. At the beginning of October 2008 the United States approved legislation for setting up a fund of \$700 billion to purchase problematic

24 As an illustration see Figure 3.9, which shows the decline in the market value of selected banks world wide from June 2007 to January 2009.

assets from financial institutions.²⁵ In December the program was extended to assist additional sectors, and was thus later used to inject money into the car industry. In other countries as well, particularly in Europe, similar steps were taken to rescue banks. In January 2009 the UK published a comprehensive plan for rescuing the banks. In February 2009 the US Treasury announced a program for promoting financial stability (the Geithner Plan), which included extensive injection of capital into the financial markets, removal of toxic assets from the banks' balance sheets, and programs for easing access to credit. The time line at the end of the report illustrates the large number of steps taken by the authorities and their scale, particularly in the United States.

In addition to these steps, central banks at this time pursued an unprecedentedly expansionary policy, both in reducing interest (Figure 1.2) and in the use of quantitative tools. By December, the Fed had lowered the interest rate to 0 to 0.25 percent, and declared it would maintain this low level for an extended period. The ECB, contrary to its previous policy, also reacted by sharply lowering interest by 1.5 percentage points during the last quarter of 2008, and a further 1.75 percentage points in the first half of 2009 to a level of one percent. The scale of the monetary expansion in Europe, however, was smaller than in the United States. Many other central banks also lowered the interest rate during this period. In this context, particularly noteworthy was the announcement on October 8 of a coordinated lowering of interest by the central banks of the United States, Europe, Canada, and other countries. Besides lowering interest, the central banks of the United States and other countries continued the use of quantitative tools for monetary expansion, including the purchase of government bonds.²⁶ One of the reasons for using these tools was to counteract the fact that as the interest rate approaches zero, its effectiveness declines. Furthermore, programs of currency swaps were introduced between several major central banks. These programs were designed to increase the supply of dollars to meet worldwide demand, the dollar being perceived as a safe asset in view of the prevailing uncertainty. In particular it enabled central banks outside the US to supply dollars to their respective banking systems, which were having difficulties borrowing dollars in the markets.

The vigorous policy response succeeded in moderating the harm caused to the financial system, and in preventing its collapse. The policy helped to reduce panic in the markets and gradually led to a decline in interest and in the spreads, and to the stabilization of the markets toward the end of the first quarter of 2009.

In conjunction with the worsening of the financial crisis, its adverse effects on real

25 TARP (Troubled Asset Relief Program). Eventually, this fund was not much used.

26 In March 2009 the Fed announced its intention in the coming six months to purchase U.S. government bonds to the value of \$300 billion. This was in addition to purchasing mortgage-backed bonds, and bonds of the housing agencies to the order of one trillion dollars.

activity also escalated, and, as in the financial system, it also focused on the developed countries (Figure 1.3). According to IMF estimates, GDP in the advanced economies fell in the last quarter of 2008 by an annualized rate of 7.9 percent, and by a similar rate in the first quarter of 2009. World GDP fell by an annualized rate of 6.5 percent in the last quarter of 2008, and by 5.7 percent in the first quarter of 2009.²⁷

As the crisis worsened, international coordination was tightened and fiscal programs were activated on an unprecedented scale to spur real activity. In February Congress approved a \$787 billion economic stimulus plan. Japan and European countries also announced fiscal plans at this time for encouraging activity. These plans included both conventional and unconventional steps: individual support was given to industries that were particularly adversely affected, such as the car industry; R&D grants were increased; unemployment insurance was expanded, active labor market programs were set in motion, and in some countries the government subsidized the shift to a shorter working week to reduce layoffs; and tax benefits were given in some countries to encourage private consumption. Nevertheless, the increase in public consumption (salaries and procurement)—the classic tool of fiscal policy to stabilize demand—was not the major policy tool adopted at this time. Public consumption in the developed countries grew in 2009 by an average of only 2 percent. As described above, the major government reaction in some of the developed countries was that of intervention in the financial systems, in addition to the central banks' intervention.

World trade collapsed at the end of 2008 and the beginning of 2009 (Figure 1.3). The collapse can be explained largely by the fall in demand, particularly for investment goods and durables, but it seems that supply factors also played a part, particularly the credit squeeze. The magnitude of the decrease in world trade was in part also due to a marked increase in its elasticity with respect to GDP in the last decade.²⁸ However, even after accounting for all of these factors, the collapse of trade remains partly unexplained.²⁹ The collapse was reflected also in its sharp fall relative to GDP of the developed countries, a feature that had not been observed since the end of the Second World War. The flows of foreign direct investment, which were rather resilient in previous crises, decreased considerably, and the volume of loans between banks in different countries decreased.

The strong fall in global demand led to a sharp decline in the rate of inflation in the developed countries, and even to deflation in some of them. During the crisis world prices of fuel and raw materials dropped. Oil prices, which peaked at close to \$150 a

27 International Monetary Fund (2011), *World Economic Outlook Update*, January.

28 C. Freund (2009), "The Trade Responses to Global Downturns: Historical Evidence," World Bank Policy Research Working Paper No. 5015.

29 C. Cheung and S. Guichard (2009), "Understanding the World Trade Collapse," OECD Economics Department Working Papers No. 729.

barrel at the beginning of July 2008, fell toward the end of that year to close to \$30 a barrel. Prices stabilized in the first quarter of 2009. A somewhat smaller drop occurred in the prices of metals and agricultural commodities. The falling commodity prices acted to moderate the rate of inflation around the world, and to reduce global imbalances—the deficits or surpluses on current account of various countries (Figure 1.3).

The sharp fall in global demand and trade was now keenly felt in the emerging economies, which in the early stages of the crisis displayed relative resilience. Accordingly, some of these countries also began adopting expansionary monetary and fiscal policies, the most notable being the wide scale program instituted by China. As opposed to previous crises, however, the resilience of most of the emerging economies to the crisis was better than that of the developed economies, and, in general, they maintained financial stability, even though several eastern European countries experienced significant difficulties.³⁰ This development, known as "decoupling"³¹ of the emerging economies, was reflected in a more moderate blow to these economies during the crisis—some, as mentioned, continued to grow rapidly—and in a stronger renewal of growth in 2009. Factors contributing to the better coping of these economies with the crisis than in the past included an improvement in their fiscal position, the transition from deficits to surpluses in their current accounts, the transition to a flexible exchange rate regime, and an increase in their holdings of foreign assets. Besides these, the lower level of development of the capital markets in some of these countries reduced the extent of contagion of the financial malfunctions in the developed countries. The harm to the banking system in the developing countries, including the interbank market, was, therefore, far smaller, and they did not experience the severe credit squeeze of the developed countries. Admittedly, the rate of growth in the developing countries also fell significantly (Figure 1.3), but demand there was not supported by increased public consumption, as was the case in the developed countries.

30 International Monetary Fund (2009), *World Economic Outlook*, October, Box 1.2.

31 The term refers to a divergence (decoupling) between the performance of the emerging economies and that of the developed ones. In this view the dependence of the emerging economies on demand by the developed ones had greatly decreased. There were even those who argued that domestic growth in the emerging economies would create sufficiently strong demand for imports from the developed ones, which would moderate to a large extent the decline in the latter's activity. This turned out not to be the case.

c. The second quarter of 2009 until the end of 2009—moderation of the crisis, stabilization, signs of recovery, and doubts regarding its sustainability

The global crisis was severe but shorter than expected thanks to the vigorous policy reaction of governments and central banks world wide. After the crisis reached its peak in the last quarter of 2008 and the beginning of 2009, in March 2009 stock prices throughout the world began to rise, with capital being raised again by the issue of both bonds and stocks. During the second quarter the financial crisis moderated, risk margins declined, and a variety of indicators of the financial system showed improvement. The improvement in the financial markets continued in the second half of the year, and the immediate risks to the stability of the global financial system lessened. Real activity began to recover in the third quarter and gathered momentum in the last quarter. The recovery was also reflected in the renewed rise in fuel and raw material prices in the second quarter of the year, as well as in the renewal of international capital flows, including those to emerging markets.

The recovery of global growth reflected accelerated growth in Asian countries and stabilization or slow recovery in the developed countries. The recovery in the developed countries was largely based on the broad fiscal and monetary interventions. In the developing countries growth was fueled to a greater extent by the domestic demand of households and firms and a rise in commodity prices. In China, demand was supported also by extensive government programs for increasing demand through infrastructure construction, and investment in plants. The rate of contraction of GDP in the United States moderated significantly already in the second quarter, and growth turned positive in the third quarter following four consecutive quarters of negative growth. In Europe as well, positive growth, albeit minimal, was recorded in the third quarter though concerns regarding its sustainability increased, particularly in view of the substantial differences in the pace of recovery among EU members. As opposed to France and Germany, where growth was relatively rapid, GDP in the UK continued to contract in this quarter. Furthermore, bank losses in Europe continued to grow and to threaten stability.

In 2009 the central banks in the developed countries continued to maintain low interest rates and an expansionary monetary policy using quantitative tools. However, toward the end of 2009, the central banks of the United States and the EU declared an exit strategy from the monetary expansion of the crisis period, and some countries began to reduce the use of the unconventional tools. (The UK, on the other hand, decided on an additional round of bond purchases.) The central banks of two developed countries that were less affected by the crisis—Australia and Norway—even raised the interest

rate for the first time since the start of the crisis (as had the Bank of Israel). However, in several developed countries, primarily Japan, the fear of deflation persisted.

Despite the improvement in the state of the financial system and the renewal of global growth, the rate of growth remained relatively moderate and less than that characterizing emergence from recessions. Moreover, much uncertainty still remained regarding the sustainability of this growth and about the risks to the financial system, particularly in the developed countries. This uncertainty was fueled, among other things, by the dependence of these countries on exceptional monetary and fiscal intervention for their growth, and by the fears of the long-term ramifications of the substantial increase in public debt. The extensive policy reaction and the sharp decline in economic activity created massive government deficits in major developed countries such as the United States and the UK. The dangers inherent in large public debt were demonstrated during 2010 in several European countries, particularly Greece.³² The continuing weakness in the labor market, which hampers the expansion of private consumption, and the level of leverage of households and financial institutions, which remained high, also contributed to the aforementioned uncertainty. Against this background the condition of many banks remained precarious, and the erasing of bank debts and delays in payment continued to grow, as did the number of bankruptcies of local banks in the United States.

During the year, therefore, policymakers increasingly wavered between the fear of withdrawing too rapidly from the expansionary policy, which could have disrupted the recovery and even caused a renewed outbreak of the crisis, and the increasing recognition of the risks inherent in continuing this policy. Accordingly, policymakers made increasing use of statements or actual measures to emphasize their determination to reduce the intervention when conditions would allow this, but remained wary of sweepingly and rapidly abandoning it. As will be described in Chapter 3, striking the balance between these considerations was also a major challenge for policymakers in Israel toward the end of 2009.

The positive developments were also reflected in upward revisions of global growth forecasts. Thus, for example, in July 2009 the IMF revised its growth forecast upward for the first time in more than a year. The OECD also raised its forecast for the first time in two years.

³² These developments are outside the period of the present report. Furthermore, even though the crisis hastened the outbreak of debt crises in these countries, their source, in some of the countries, lies in their unbalanced fiscal policy in the years preceding the crisis.

Chapter 3: Israel's Economy and Economic Policy during the Crisis

1. THE STATE OF THE ECONOMY ON THE EVE OF THE CRISIS

The global crisis struck the Israeli economy after five years of rapid growth following the end of the previous recession (2001–03), coinciding with a global economic surge, an improvement in domestic security (during most of that time), and pro-growth macroeconomic policies. These circumstances were manifested in many favorable developments, some peaking in early 2008, shortly before the crisis began. They included vigorous economic activity, low unemployment, a surplus on the balance-of-payments current account, a high savings rate, a significant cumulative decrease in the public debt/GDP ratio, a bullish capital market, strong foreign direct investment, a declining domestic risk premium, improvement in the sovereign rating, strong business profitability, and an upturn in the banking system's resilience, to name only a few. Furthermore, unlike many developed economies, Israel did not generate a real estate price bubble. These factors, while unable to inure the domestic economy to the global crisis, positioned it at a relatively auspicious starting point.

The state of the economy on the eve of the crisis was a reflection of both cyclical and underlying structural factors. The fiscal situation, for example, combined the cyclical component of strong tax revenues with the structural component of a policy of strict fiscal discipline. The improved state of the banking system traced to cyclical profitability and also to the system's conservative and prudent conduct. The balance of payments reflected a cyclical upturn in exports coupled with the structural behavior of a high savings rate. The structural factors made the economy resilient by mitigating the effect of external shocks on the various domestic systems. The cyclical factors provided a cushion that, unlike the structural factors, did not have the effect of softening the blow—but since on the eve of the crisis the economy was in a favorable state in many respects, the situation in these respects remained tolerable and below crisis levels even after the blow landed.

Four groups of underlying structural factors contributed to the economy's strength and resilience in the course of the crisis:

- ◆ The credibility of monetary policy, coupled with a credible price stability environment;
- ◆ The credibility of fiscal policy, with the consolidation of fiscal discipline and the continuing significant decline in the public debt/GDP ratio;
- ◆ Characteristics of the balance of payments (over and beyond cyclical factors), including the continuing current account surplus and the balanced structure of the economy's external assets and liabilities;

- ◆ Characteristics of the domestic financial system: conservative behavior by financial institutions, especially banks; an undeveloped interbank market; the absence of complex assets; and a conservative mortgage lending market that also helped to keep the housing market in balance. These characteristics allowed Israel to avoid excessive lending, over-leveraging, a real estate bubble, problematic development of complex assets, and other features in the pre-crisis years that were among the main causes of the global crisis. Another contributing factor in this respect, evidently, was the cautious behavior of households, which maintained a high savings rate and avoided excessive leveraging, including that associated with mortgage borrowing.

In many senses, these underlying factors solidified steadily in the pre-crisis years. As described below, the credibility of the monetary policy became entrenched, the fiscal situation improved steadily, and, from 2003 onward, the current account was continually in surplus. During these years, measures were taken to improve the resilience of the financial system, especially the banking system, and, as stated, problematic developments were by and large avoided even as they accelerated abroad. However, some problematic developments in the system did occur, for example in corporate bonds. (For further discussion of the origins of the economy's resilience, see Section 6.)

Apart from these factors, the comportment and functioning of the business sector contributed to the ongoing growth that preceded the crisis, the economy's resilience during the crisis, and its rapid recovery. This sector made significant adjustments, in view of structural reforms that improved the business environment and reduced the government's micro-level involvement in the economy in the past two decades; it took far reaching efficiency measures during the recession at the beginning of the decade, and made good use of the years of global economic well-being that preceded the current crisis—as manifested in its role in entrepreneurship and innovation, growing integration into the global economy, efficiency processes, investments in physical capital and R&D, and consolidation of export markets. The frequent exposure of the business sector to shocks—political, economic, and security-related—may also have helped it to gain experience in coping with shocks and uncertainty and in developing relative buoyancy during crises. Another factor that helped the business sector to cope with the crisis was the absence of significant wage increases during the previous years of rapid growth.

On the brink of the crisis in early 2008, several processes climaxed that reflected the nature, durability, and strength of the growth that followed the previous recession. On the demand side, exports were central in the recovery at first, but the longer the growth lasted and solidified, the greater the contribution of private consumption became. On the supply side, there was a perceptible transition from a rapid cyclical upturn in productivity, reflecting an increase in utilization, to greater reliance on expansion of production factors—rapid growth in capital stock and employment—and, concomitantly, a slower

rate of productivity growth based on technological improvements. Thus, in early 2008 the output gap continued to narrow and excess demand abetted the creation of domestic inflation pressures (which were also fueled by upturns in global prices of fuel, food, and raw materials), currency appreciation, and a decrease in the current account surplus.

a. The labor market

The cyclical upturn was tellingly mirrored in the labor market: the unemployment rate fell swiftly, settling at an especially low 5.9 percent in the second quarter of 2008. The participation rate attained its highest level in Israel's history and rapid increases occurred in the number of persons employed, the employment rate, switching from part-time to full-time jobs, and hours worked per person employed. The surging labor market in the first part of 2008 was also reflected in prices in this market, as unit costs of labor increased and the growth rate of the nominal wage turned upward. The trickle-down of growth to disadvantaged population groups via the labor market toward the end of the upward cycle was manifested in the expansion of employment among the less schooled and in a decrease of the incidence of poverty in 2007 and the first half of 2008.

Apart from the cyclical upswing, the labor market has been experiencing several long-term processes in recent years that allowed it to cope with the decrease in demand for labor during the global crisis with no significant harm to employment: an appreciable increase in the proportion of persons with higher education and the development of dynamic export industries based on these workers, coupled with the gradual weakening of labor unions in recent decades. In addition, cooperation among some labor organizations, employers' organizations, and the government gathered strength, as reflected in the signing of labor accords in the spring of 2008 that assured industrial peace until the end of 2009, followed by the signing of the first package deal³³ in quite some time.

b. The balance of payments

On the eve of the crisis, the economy was in an especially strong condition in terms of its balance of payments. Since 2003, the current account had been consistently in the black against the background of long-term forces that favored the existence of such a surplus and the leading role of exports in the growth cycle, as exports continued to expand rapidly as late as the first quarter of 2008. In 2007 and early 2008, however, the current account surplus contracted due to the upturn in domestic excess demand, real appreciation, and the deteriorating terms of trade.

The ongoing current account surpluses were reflected in the state of external assets

³³ The deal included a cut in the vacation supplement due to public sector employees in 2009 and 2010. The government agreed, among other things, to introduce legislative changes that would expand employees' rights.

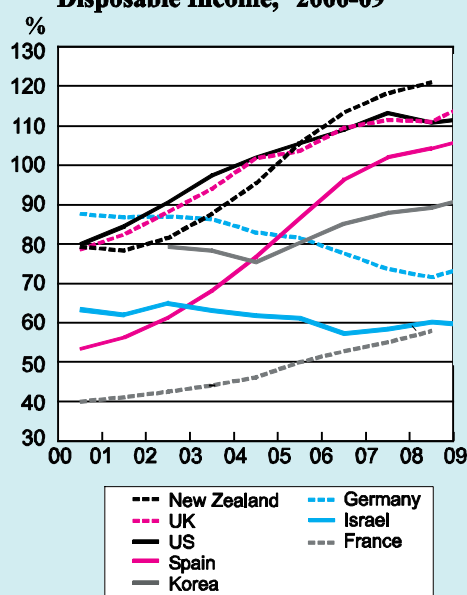
and liabilities. For several years, the economy's net external debt to the rest of the world has been negative and has been steadily becoming more so. Total net liabilities to abroad also decreased in recent years and became negative for the first time in 2008, meaning that Israel attained a net positive balance in domestic assets vis-à-vis the rest of the world (which increased in 2009). These surpluses constituted another source of economic resilience during the crisis because they absolved the economy from dependency on financing from abroad.

Capital inflows and outflows during the pre-crisis period were typified by large investment flows in both directions against the background of vigorous domestic and global markets, global trends including the upturn in capital flows to and from emerging markets, and structural changes in the domestic capital market. The large scale of foreign direct investment, focusing on high-tech export industries, stood out and continued to excel in the first half of 2008. Residents' direct investment abroad also increased and, among other things, investments in foreign real estate—a typically high-leverage, high-risk activity—were expanding conspicuously as the crisis neared.

c. Savings and leverage

The domestic saving rate was relatively high on the eve of the crisis, showing that the rapid growth in recent years was accompanied by a strong but measured upturn in private consumption and also by fiscal discipline. Coming out of the previous recession, the private savings rate posted a mainly cyclical increase that combined with an upturn in public savings to boost the national saving rate. Although the national and private saving rates began to decline in 2007, the overall saving rate on the eve of the crisis was higher than in the second half of the 1990s and in the developed economies. The household leverage rate was low by world standards (Figure 3.1) and the cautious behavior of households and the banking system in the boom years was further reflected in a decrease in the household credit burden (the

Figure 3.1
Ratio of Household Debt to
Disposable Income,^a 2000-09



^a Unlike in the rest of the world, the calculation of disposable income in Israel includes companies' profits, thus creating some downward bias in the ratio.

SOURCE: OECD, Central Bureau of Statistics and Bank of Israel.

ratio of credit to disposable income) in these years (notwithstanding a slight increase in 2007). To illustrate this point, outstanding credit to households in Israel was 58.6 percent of household disposable income at the end of 2008, basically unchanged from previous years. In the US, in contrast, this ratio climbed from 100 percent at the end of 2002 to 130 percent at the end of 2008.

d. The housing market

Israel, unlike many developed countries, avoided a housing price bubble in the pre-crisis years. Real estate bubbles were focal in the global crisis in many of these countries; indeed, they were one of the major causes of the crisis. The absence of this feature in Israel—residential construction even continued to increase during the crisis—was one of the sources of the economy’s resilience. Structural and institutional factors contributed to this, including characteristics of the domestic mortgage-lending market and the banks’ conservative conduct. This, however, does not fully explain the state of the construction sector in the years preceding the crisis: not only did the sector avoid a bubble but its sluggish level of activity in these years has not been fully understood.

One of the most salient aspects of the high-growth years preceding the crisis was the absence of real recovery in residential construction despite rapid domestic growth, a bullish capital market, an upswing in the value of the public’s assets, rapid increases in private consumption and nonresidential investment, falling financing costs, and a marked increase in external demand for domestic real estate. Housing construction activity appears even to have fallen short of the level warranted by the increase in the number of households. House prices in 2003–07 remained stable and actually edged downward relative to the Consumer Price Index, even though relative prices of construction inputs rose during that time.

e. Monetary policy

In the pre-crisis years, monetary policy in Israel was conducted against the background of a rapidly growing economy, global prosperity, and, during some of this period, gradual rate-hiking by major central banks abroad. Although the environment was very different from that in the crisis period, one may identify three features in monetary policy during those years that are of special interest in reviewing the policy during the crisis:

(a) The credibility of monetary policy was maintained and even reinforced during the pre-crisis years, even though inflation deviated from the target range much of that time. Evidence of this, among other things, is the fact that inflation expectations stayed within the target range most of the time even when actual inflation deviated from the range and even though, naturally enough, it took some time for policy to gradually nudge inflation back into the target. This credibility served the policy well during the crisis, as described below.

(b) Inflation was strongly affected by external factors—changes in global prices of fuel, raw materials, and basic food products. These changes posed a particular challenge to monetary policy due to their intensity and the acute uncertainty that accompanied them. In the crisis period, too, external factors and grave uncertainty were of definitive importance.

(c) The interest rate differential—the process of narrowing the differential between the Bank of Israel monetary rate and that of the Fed was lengthy, but by 2005 the differential had become very small. By the end of 2006, Israel's interest level fell below that of the US for the first time, and in the first half of 2007 this negative spread widened as never before. Longer term spreads (such as 10 years) also narrowed substantially. This development could not be taken for granted at the time; it was facilitated by, among other factors, the improved state of the economy, the cumulative success of fiscal and monetary policy, and the reinforcement of its credibility. Thus, before the crisis the economy demonstrated its ability—under appropriate circumstances and on the basis of the credibility that had been accrued—to maintain a zero if not a negative interest differential vis-à-vis developed countries. This ability was amply demonstrated at the peak of the crisis, when the Bank of Israel slashed its interest rate in tandem with the developed countries and then, like them, held it at the low level.

f. Fiscal policy

The country's fiscal situation improved materially and continually in the pre-crisis years: the government deficit fell steadily and attained a zero level in 2007. The public debt/GDP ratio declined from 99 percent in 2003 to 78 percent at the end of 2007, the lowest since the late 1960s. These attainments were coupled with a significant decrease in the public expenditure/GDP ratio and steadily falling tax rates. This appreciable fiscal improvement traced to ongoing fiscal discipline in recent years and rapid economic growth that induced a cyclical increase in tax revenues. The fiscal discipline was manifested, among other things, in adherence to the expenditure target despite the major upturn in tax revenues and pressures to expand civilian expenditure during those years. Furthermore, the sizable receipts from privatization in some of these years were channeled to reducing the debt and not to increasing current expenditure. The importance of the cyclical component in taxes became highly visible later on when the economy slid into recession, and tax revenues plunged. By developed countries' standards, the share of taxes in GDP in Israel was below average on the eve of the crisis, the public expenditure/GDP ratio was only a little higher, and the public debt/GDP ratio, although having fallen, remained high.

The downscaling of the public debt helped to lower government bond yields and to reduce the government's interest payments. It also contributed to a decrease in

Israel's risk premium, freed capital market sources for the business sector, and abetted important processes in this market that are explained below, including the development of non-bank credit and the recomposition of the public's portfolio. It also expanded the maneuvering ability of fiscal policy during the crisis.

g. The financial system

(1) Overview

In the boom years preceding the crisis, the capital market enjoyed prosperity, stability, and resilience to shocks as the risk attributed to Israel's economy declined and transformative processes in the domestic financial system gathered strength. The prosperity was reflected, among other things, in rising share indices and trading volumes, large corporate capital issues, and appreciation of the public's portfolio. It was abetted by rapid domestic growth and the global economic upturn, which increased the supply of savings by the public and nonresident investment, and boosted business demand for credit, which was also fueled by the low interest environment in Israel and abroad. The market demonstrated its stability and resilience during these years in several events that, unlike similar situations in the past, did not cause any significant dislocations in the financial markets. Among these: the political shocks associated with the disengagement from the Gaza Strip and northern Samaria (2005), the Prime Minister's illness (2006), Hamas' victory in the Palestinian Authority elections (2006), the Second Lebanon War (2006), and the deterioration of security in southern Israel and Operation Cast Lead (2008–09). In retrospect, this stability stood in stark contrast to the buffeting that the domestic capital market took in the recent crisis and underscores the separation that came about between this market's mild response to security and political events, even if local, and its sensitivity to significant economic shocks, even if of foreign provenance. This reflects, among other things, the globalization processes, including the stronger interrelations of capital markets around the world.

The decrease in the risk attributed to Israel's economy, occasioned by the developments described above, was reflected in a range of indicators. Apart from the declining ratios of public debt to GDP and of net external debt to GDP, indicators that directly measured the economy's risk also improved. Thus, the risk premium as measured via the CDS spread decreased until 2007 (Figure 3.2), the yield spread between shekel government bonds and US Treasury bonds narrowed, and the sovereign rating, issued by international rating agencies, was upgraded.

The changes in the financial system during these years were related to the system's ongoing adjustments to the many structural changes that were introduced in it, including many from previous years. These changes were typified by less government involvement in investors' decisions and in the supply of savings channels. The main changes included

the pension funds reform, the loosening of investment rules for institutional investors, and the harmonization of tax rates on different forms of capital income (Rabinowitz Committee). In 2005, the process of equalizing tax rates on foreign and domestic securities was completed and the implementation of the Bachar Committee's recommendations on the sale of banks' holdings in provident and mutual funds began. The market-maker reform, designed to make government bonds more tradable, induce greater nonresident involvement in this market, and enhance the market's competitiveness, got underway in 2006.³⁴

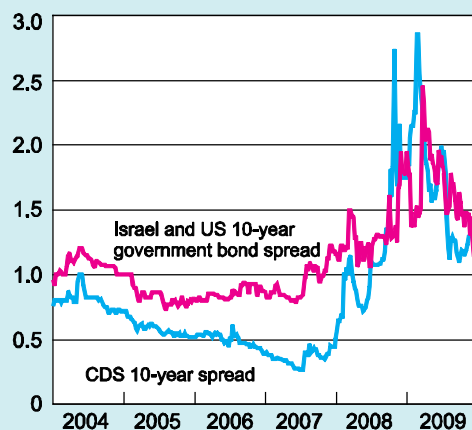
The downsizing of the public debt and, in particular, of government domestic issues, thereby freeing sources for business investment, was also immensely important.

These processes contributed to the development of new financial markets and instruments, especially in the field of nonbank credit, and to the enhancement of competition, as manifested in changes in the array of market players, the structure of the public's portfolio, and the financing of business activity. Amid the positive aspects of these processes, however, a discrepancy opened up between the pace of developments in the markets and the adjustment of the systems that regulate and supervise these markets and nonbank financial institutions, which were accounting for a growing share of financial system activity. This discrepancy made the domestic financial system more vulnerable to the global crisis.

(2) The array of players

The changes in the array of market players were manifested in the reduction of the banks' share in financial activity, both in managing the public's assets and in financing the business sector. The banks' place was taken mainly by institutional investors (pension and provident funds and insurance companies). Apart from the possibility of enhancing competition, these changes also made the market riskier for three main reasons: (a) the regulatory and supervisory infrastructure was not adequately adjusted to keep up with

Figure 3.2
Indicators for Israel's Risk Premium, 2004-09



SOURCE: Bloomberg and Bank of Israel calculations.

³⁴ For elaboration on the government bond market reform, see Box 4.1 of the 2006 Bank of Israel *Annual Report*.

the rapid increase in these investors' weight and importance. (b) the development of the institutional players' own credit risk monitoring mechanisms did not keep pace with the growth of their activity in these markets; accordingly, in issuing credit they usually relied almost entirely on the rating agencies, the functioning of which proved later to be problematic; (c) there is an inherent difference between institutional investors and banks: unlike bank credit, when institutional investors administer savings products for others (i.e., manage "other people's money"), it is the saver, not the institutional entity, that bears the entire credit risk; accordingly, the institutions' propensity to take excessive risks increases. The increasing competition among institutional investors aggravated this tendency and also their propensity to give priority to short-term yield considerations. Additional changes in the array of players included a further increase in the proportion of nonresident investors in the domestic capital market, especially the share and government bond markets, and a decline in the government's involvement in the capital market.

(3) The Bachar legislation

Although the declining share of banks in financial activity traces to a range of factors, the implementation of the Bachar Committee recommendations was one of the most prominent events in this context in recent years. The idea behind the reform was to reduce concentration and conflicts of interest in the financial system by requiring the banks, among other things, to divest themselves of holdings in mutual and provident funds. The reform focused on competition and consumer aspects, leaving related issues in risk supervision unsolved. Its implementation began in July 2005 and proceeded with unexpected speed. In retrospect, the rapid sale of the holdings, at high prices, did much to enhance the banks' profits and equity in 2006–07, improving their resilience on the eve of the crisis. Most of the holdings were sold to insurance companies; a smaller portion went to foreign investors. While the divestiture weakened the banks' dominance in financial activity—especially in managing long-term savings—it made the insurance companies much more dominant in this domain. The supervision of insurance companies specifically and of the nonbank financial system generally was not fully adjusted to the rapid developments in this field.

The Bachar reform established additional ways of preventing conflicts of interest in the capital markets. It required those active in the market to choose between dealing in financial and pension marketing, and offering consulting services in these respects. This, among other things, gave the banks an opportunity to enter the field of pension consulting after they sold off their provident fund interests. On the eve of the crisis, however, the reconstituted pension consulting industry was still in its infancy; accordingly, it is hard to determine how successful the reform has been in separating the consultancy

and marketing functions and preventing conflicts of interest. Furthermore, focusing on reducing conflicts of interest in the banking system, the reform did not resolve conflicts of interest in non-bank entities, which have become more important as the significance of these institutions has grown.

(4) The banks

Thus, from the standpoint of the banking system, in the pre-crisis years there was a combination of a convenient environment in view of the strong economy and growing competition in certain segments due to the structural reforms, and the need to adjust to the range of demands that the Bank Supervision Department presented in order to make the system more stable and less vulnerable.

The heady pre-crisis years were good for Israel's banks, even though the banking system faced growing competition and lost share in certain segments of financial activity. The banking system's resilience and performance improved during these years, as reflected in relatively strong profitability, capital adequacy, and a decrease in credit risks. The banks benefited from, among other things, an increase in demand for credit: economic activity grew vigorously enough for business sector demand for bank credit to expand despite the rapid increase in non-bank credit. Household demand for credit also grew. Competition with the banking system from non-bank credit substitutes developed mainly in the market of large business borrowers; in contrast, in household, small borrower and short-term credit the banks remained dominant and the banking system continued to be highly concentrated.

Apart from the effects of the structural changes on the banks' share in financial activity, the increase in competition from institutional players and its adverse effects on their revenues, occasioned among other things by the divestiture of their holdings in provident and mutual funds, apparently gave some of the banks a stronger incentive to seek alternative sources of revenue, including more activity abroad. Along with its advantages, the increase had the disadvantage of sizable risks, especially when the banks ventured into new areas of activity.

Despite the processes described above, Israel's banking system is noted for its conservatism. The banks' investments in complex securities and instruments such as Mortgage Backed Securities (MBS) and Structured Investment Vehicles (SIV), which were popular abroad in the pre-crisis era due to the thirst for high returns and low capital allocations, were relatively minor in Israel and atypical in domestic banks' activities. Furthermore, Israel's banking activity environment was not noted for financial innovation. Its capital market was characterized by the paucity or complete absence of complex instruments and relatively strong conservatism on the part of its players. Thus, repo transactions had just been introduced, securitization rules had not yet been formalized

in law—a situation that made transactions in the market impossible to perform—and the nonbank financial institutions had not yet digested the assets that they had acquired within the framework of the Bachar reform. In addition to its conservatism, the banking system is severely concentrated, its five large groups accounting for 95 percent of the system. This characteristic, in which the system's large banking groups are considered too big to fail in view of the banks' centrality in the financial system, has resulted over the years in the evolution of close and strict supervision of their activities.

The Bank Supervision Department has enjoyed relatively broad autonomy over the years for reasons including its location within the Bank of Israel. This autonomy allows it to supervise banking corporations closely and effectively. In this context, the Department applied restrictions relating to areas that carry relatively high concentrations of risk that may threaten the banking system's stability. Important examples of this kind of regulation are supervisory limits on single borrower and borrower group debt, constraints on the industry concentration of credit, and restrictions on issuing credit for the acquisition of controlling interests in corporations, to name only a few. As an outgrowth of this supervisory approach, the Department has applied the greatest caution in tackling the issue of securitization, thereby avoiding the encouragement of high-risk transactions that might have impaired the banks' stability when the financial crisis struck. In 2007, the Department began the process of implementing the Basel II recommendations on capital measurement and capital standards as a preliminary to their assimilation in Israel. In August 2007, a Real Time Gross Settlement (RTGS) system began to operate in Israel.

(5) The public's portfolio

The public's portfolio underwent several conspicuous structural changes in the pre-crisis years. As stated, the banks lost some of their share in financial intermediation to institutional investors. The proportion of nontradable assets (savings plans, bank deposits, and earmarked bonds) declined and that of tradable assets, which have no assured value at any time and vary in accordance with market fluctuations, increased. The proportion of government bonds declined and that of assets issued by the private sector (shares and corporate bonds) and foreign assets increased.³⁵ Taken together, these developments had the effect of diversifying the portfolio, spreading the risks,

³⁵ These developments originated in, among other things, the implementation of the Rabinowitz Committee recommendations to expand the tax base on various kinds of capital income and to harmonize the tax rates applying to them. Thus, in early 2003, the tax advantages of investing in bank saving plans were abolished. This induced large-scale withdrawals from these plans, most of which were transferred to mutual funds. When tax discrimination against investments abroad was abolished at the beginning of 2005, the institutional players' investments abroad increased substantially. For elaboration, see Box 4.3 of the 2006 Bank of Israel *Annual Report*.

and increasing the expected return and liquidity of the portfolio. However, they had the disadvantage of exacerbating the public's potential exposure to fluctuations in the value of its assets and to risk. The changes pertained not only to short-term savings but also to longer-term ones, including pension savings, and they reflected individuals' direct decisions only in part. The rest, a major portion, traced to the investment decisions of institutional players such as pension funds, provident funds, and insurance companies, which immediately before the crisis managed 30 percent of the public's portfolio. The composition of the portfolio was also influenced by the upturn in competition in the long-term savings industry and by the focus on showing short-term yields. Apparently, many savers were insufficiently aware of the changes that these events had caused to the risk of their savings. This was especially the case in the provident fund industry, where most money is managed in uniform tracks without any defined commitment to specific investment tracks.

(6) Sources of finance

The structural changes in the capital markets were also reflected in the composition of sources of business finance. The banks lost market share to nonbank sources, mainly institutional investors. The process of boosting the supply of nonbank credit was supported by changes in institutional investment rules that allowed these entities to buy more corporate bonds and by the downscaling of government debt and the issue of designated bonds, which prompted investors to seek alternative investment assets.

(7) Corporate bonds

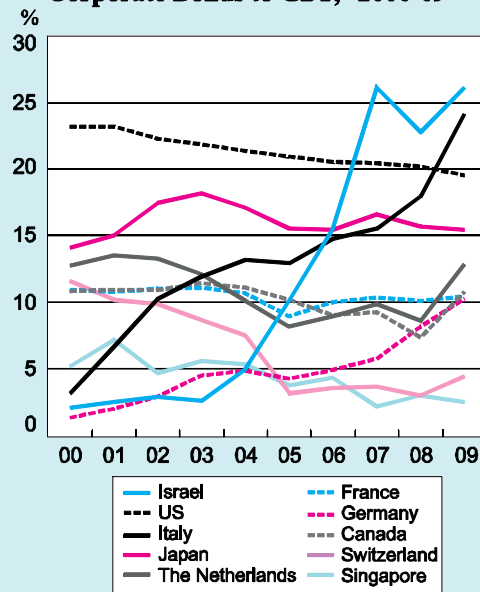
One of the most important developments in the capital markets during the rapid growth years was the accelerated growth of Israel's corporate bond market (Figure 3.3). For the business sector, these instruments offered an important alternative to bank credit; for investors, especially institutional investors, they presented a partial alternative to government bonds, the supply of which, as stated, had decreased. Even though theoretically both sides could also use shares as a substitute, bonds became a principal instrument in the raising of capital during the boom years. Thus, the proportion of bonds both in the financing of business activity and in the public's portfolio, including its long-term savings, increased vigorously. Their share of the portfolio surged within a few years from a negligible level to 11 percent at the end of 2007. The development of the non-bank credit market has important advantages, such as enhancing competition in the credit market and assuring broader diversification of credit risks. However, the failure to match this rapid development with an appropriate infrastructure within the institutional investors for the evaluation and monitoring of credit risks, a supervisory infrastructure, and institutional constraints on this credit raised the risk level of the

credit portfolio. Among other things, firms in Israel, unlike their counterparts abroad, were able to issue bonds without demonstrating the corporate governance that companies issuing shares to the public must display. The market evidently failed to fully internalize the latent risk in these developments and, accordingly, did not price it in. Further evidence of the problematic way in which corporate bonds developed was the large share of high investment grade series amid few medium investment grade series and a large proportion of unrated series, indicating poor transparency on the part of issuing companies, which magnified the danger of underpricing the risks. In the course of the crisis, the corporate bond market was dealt a severe shock and became the focal point of risk to the domestic financial system and a main culprit in the contraction of sources of finance for the business sector.

The development of real estate bonds in the pre-crisis years merits special attention, because these debentures became the focal point of risk in the domestic bond market during the crisis. Some 40 percent of bond issues in 2006–07 were associated with the real estate industry. This became possible because there was no limit to the amount of credit that an institutional player could make available to a single industry, in contrast to the single industry lending constraints that the banking system had to observe. At the end of 2007, some 50 percent of firms rated A and below were in the real estate industry. Furthermore, many of the issues were unsecured and were meant to finance real estate investments in countries where property prices were rising rapidly during those years. All this transpired without the ability to control the investing institution, a situation that would never have been countenanced in Israel's banking system. As described below, the widening of spreads during the crisis was far greater in real estate bonds than in any other industry's bonds.

As nonbank credit developed, the importance of rating companies also grew, for reasons including the acute reliance of nonbank entities on these companies' ratings

Figure 3.3
The Ratio of the Balance of Corporate Bonds to GDP,^a 2000–09



^a Bonds of domestic companies issued on the domestic market, excluding bank and insurance company bonds and structured bonds.

SOURCE: Based on BIS Quarterly Review, and IMF data.

as surrogates for their own investigation and monitoring of the credit risks. One of the main problems in this context is that the rating companies have a potential conflict of interest because their services are commissioned and paid for by the issuers of the bonds.³⁶ The crisis made the quality of the ratings of some corporate bonds a topic for discussion.

(8) Legislative adjustments

In the pre-crisis years, the authorities took several measures to regulate the activity of these markets, adjust the legislative and operating environment, and reduce the risks associated with the nascent structure of the financial system. Thus, the Ministry of Finance set rules for the strengthening of institutional entities' internal management, supervision, and control mechanisms, including directives for the improvement of risk management in issuing credit and the broadening of these entities' compulsory reporting to the public. In June 2007, a memorandum of understanding for cooperation and sharing of information among the institutions that supervise the financial system—the Bank Supervision Department, the Securities Authority, and the Commissioner of the Capital Market, Insurance, and Savings—was signed. The adjustment of the legislative environment included the Financial Agreements Law (2006), the Underwriting Law (2005), the decision in 2006 to adopt the International Financial Reporting Standards (effective 2008), and several statutes relating to supervisory authorities as part of the implementation of the Bachar Committee recommendations. These measures, however, failed to close the gap that had come about between the pace of implementing the reforms and market developments and the pace of regulatory and supervisory adjustment. This gap made the economy more vulnerable to the crisis.

2. ECONOMIC EVENTS DURING THE CRISIS³⁷

a. Main events in Israel's financial markets during the crisis

(1) Overview

The repercussions of the global crisis had highly visible implications for Israel's financial system. Naturally enough, the domestic financial markets responded to the crisis well before it affected the real economy. The markets' response mirrored the development of the crisis abroad in its various stages and the rising trajectory of its effects on the

³⁶ The problematic nature of rating companies' activities is not unique to Israel.

³⁷ This section describes events from the beginning of the crisis until its climax. The events during the recovery phase are described in Section 5.

domestic economy—both the actual ones and assessments and expectations about its future course.

As stated in Chapter 2, one may discern three main periods in the development of the global crisis: (1) from the time it erupted in July 2007 until the collapse of the Lehman Brothers investment bank in September 2008; (2) the steep downslide that began with the Lehman Brothers collapse and reached its worst in late 2008 and early 2009; (3) the bottoming out of the global situation and first indications of hesitant recovery, starting in the second quarter of 2009. These stages also establish the time frame for an understanding of developments in Israel. (See Figure 1.1 and the time line at the end of the report.)

The first phase of the crisis already presented itself in the second half of 2007 in increased volatility and risk spreads in the domestic financial markets and the arrest of the upward trend in the prices of financial assets. Notably, Israel's risk spreads compared with those in the rest of the world (such as CDS spreads, Figure 3.2) widened and the domestic risk spreads did the same, especially with regard to real estate related financial assets. The intensity of the response in Israel in this phase was moderate by the standards of many developed countries and corresponded to the intensity of the response in other emerging markets that had strong macroeconomic characteristics. Apart from the structural factors described above, this moderate response reflected, among other things, the rapid growth that prevailed at the time and the estimates of the intensity of the blow that the economy was expected to face.

In the first part of 2008—until the global crisis worsened in September—some of the effects of the crisis on the domestic economy and, in particular, on the financial markets intensified, and there were several reversals in estimations about the expected impact on the economy. For example, the sovereign risk premium (the CDS spread) continued to widen in early 2008 but receded in mid-year (before climbing steeply again). In the first quarter of 2008, shares lost 20 percent of their value but started rising again towards the middle of the year (Figure 1.2). Uncertainty about the expected damage to the economy was also reflected in monetary policy: in March–April, the interest rate was lowered due to concern about an upturn in damage to activity and the assessment that inflation risks were waning. In June, however, a process of raising the interest rate began due to an increase in inflation and inflation expectations. The continued rapid rise of energy and food prices abroad in the first half of 2008—inconsistent with a global recession—complicated the interest rate decision.

With the collapse of Lehman Brothers in mid-September 2008, the crisis took a dramatic turn both world wide and in Israel. This was manifested in the magnitude of the shocks, in the pace of events, and in the concerns as to what might happen in the financial and economic systems around the world. This turning point was also evident

in policy makers' recognition, world wide and in Israel, that in order to prevent an extreme deterioration of the situation and in spite of the high uncertainty they must act immediately, aggressively and unconventionally both in terms of the decision making time framework and the set of policy measures that they should consider and implement. (The policy response is described in detail in Section 3 below.)

The response of the markets in Israel to the escalation of the crisis was manifested in a wide range of developments during the last quarter of 2008: share and corporate bond indices tumbled, market volatility took a severe upward lurch, and risk spreads in the bank and nonbank credit markets surged, making credit more expensive. Corporate issues came to an almost total halt, the sovereign risk premium widened, foreign portfolio investment slowed and became negative in the second half of 2008,³⁸ and the profitability of the business sector, including banks and insurance companies, took a beating. Volatility in the foreign currency market also escalated; after appreciating vigorously in the first half of 2008, the NIS depreciated steeply in the second half of the year, almost returning to the beginning-of-year level. The Bank of Israel's intervention in the foreign currency market played an important role in the developments in this market during the crisis, as described in detail later in this chapter as well as in Chapter 4.

Although the development of the crisis abroad correlated strongly with that in Israel, the level of the correlation was not the same in all three stages (Figure 1.2). It was especially strong at the peak of the crisis (Stage 2), and more complex at the beginning of the crisis and in the recovery phase (Stages 1 and 3). Thus, in Stage 1, the effects of the crisis were evident in the financial markets but only partially and indecisively; the real effect materialized after a considerable lag; and even though the recovery of the domestic stock market in Stage 3 corresponded very closely to that abroad, the real recovery in Israel was faster and stronger than in the developed countries. Conversely, as the crisis worsened, the correlation between both the financial markets and real activity in Israel and abroad was very conspicuous. These differences were also manifested in the response of policy: in Stage 1, the response in Israel was milder than, and sometimes contrary to, that adopted abroad in view of differences in the economic situation at that time. In the exit phase, too, Israel's policy response was exceptional among developed countries: the Bank of Israel began to tighten monetary policy earlier and faster than did other developed countries. In contrast, at the peak of the crisis, Israel's policy in regard to the financial markets and that embraced by the developed countries were strikingly similar, despite the differences in the characteristics of the crisis. This was clearly reflected in the timing and extent of rate cutting.

38 Not including Teva's acquisition of Barr, in which Barr's principals received Teva shares.

Despite the jolt suffered by the domestic financial system, the Israeli money market and financial institutions, including the domestic banking system, displayed greater resilience than in other countries and their stability was not compromised. The share and corporate bond markets, however, reacted very powerfully, at least as much as in other developed and emerging markets and sometimes more so. This response reflected concern about the repercussions of the global crisis on the profitability of domestic firms and their ability to avoid default. The main blow was dealt to the non-bank credit market, which became the focal point of risk to the domestic financial system during the crisis. The negative response of the domestic market stood out among real estate companies, some of which, mainly those that did most of their business abroad, encountered financial difficulties.

The main reasons for the resilience of the domestic financial system relative to those abroad had to do with the state of the economy on the eve of the crisis and also with several characteristics of the financial system itself: the conservatism, comprehensive regulation, and close supervision of the banking system; the notable improvement in its resilience and capital ratios in recent years; the limited exposure of Israeli financial institutions to complex financial assets abroad; the absence of significant money and securitization markets, coupled with a conservative mortgage lending market; scanty involvement of foreign banks in domestic financial intermediation; and limited reliance of the domestic banking system on foreign sources, thereby reducing the risk of foreign contagion; and the low level of leverage among households, also manifested in the lack of a housing market bubble on the eve of the crisis.

Abetted by these factors, the over-lending and over-leveraging that were central to the development of the processes that brought on the global crisis (Chapter 2) did not develop in Israel, especially in its banking system. The exception in this context was, as stated, corporate bonds, especially those in real estate, which became the focal point of risk to the domestic financial system. Another important characteristic of the domestic system that helped make it less vulnerable to the crisis was the very small scale of the inter-bank market by foreign standards. This market played an important role in aggravating the crisis abroad: as banks became fearful of each other's resilience, they refused to lend to each other, causing banking systems to freeze up and causing credit shortages. Israel's inter-bank market was too small to allow such a mechanism to take shape and aggravate the domestic crisis. However, unlike other factors, the paralysis of the interbank market abroad was not one of the underlying causes of the crisis; instead, it merely helped to exacerbate the crisis once it came about. Furthermore, like several other characteristics of the domestic financial system that helped to soften the impact of the crisis on the system, even though the system benefited from the small scale of the interbank market in the current crisis, this is not necessarily a structural advantage that

should be sustained. Even if the inter-bank market had been more developed in Israel, there is no certainty that it would have worsened the crisis as happened abroad. This is because Israel's banks were in better condition than those abroad during the crisis—none collapsed—thus the menace of a market freeze-up was smaller.

All the above notwithstanding, it is important to note that the domestic banking system coped with several threats during this time, including concern about its exposure to the rest of the world via its deposits with foreign financial institutions, and its holdings of other assets that ex post proved to be risky, and concern about its exposure to large borrowers who were also active in the nonbank market.

It is important to distinguish between actual developments as viewed in retrospect and the situation as perceived by the public, the markets, and decision makers in real time. This relates especially to the peak of the crisis, starting in September 2008. Although Israel's financial system withstood the shock rather successfully and none of its institutions failed, this is seen only in retrospect. As the events were unfolding, there were real fears, including concern about the stability of the financial institutions; there was acute uncertainty about how the crisis would develop, how intensive it would be, and what it portended for the Israeli economy in general, and its financial system in particular. These concerns are important for understanding the policies adopted during the crisis and, in particular, their magnitude.

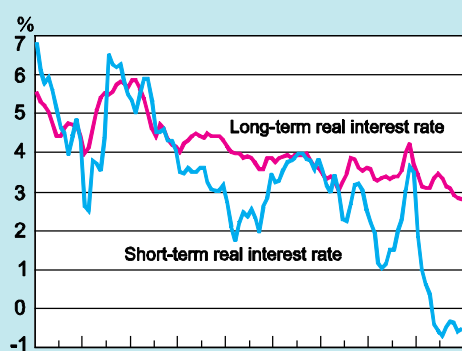
One may pinpoint exactly when the fears about the possible effects of the crisis on Israel escalated. As stated, the global crisis affected the domestic capital market in a limited way as early as late 2007 and with greater force in early 2008. At the time, however, the domestic economy was perceived as more resilient to the global crisis than were the developed economies. This perception was manifested, among other things, in the behavior of Israel's share indices relative to these markets, consumer and company surveys, real appreciation in late 2007 and early 2008, the continued inflow of foreign portfolio investment, the realization and repatriation of Israelis' investments abroad, and continued rapid economic growth in the first half of 2008.

From the last quarter of 2008 onward, however, as the global crisis escalated in the aftermath of the Lehman Brothers collapse, the domestic financial system also felt the crisis in full fury. The fears and uncertainties that prevailed in Israel at that time may be adduced from various risk indicators, e.g., the volatility and widening of spreads in the financial markets, the steep downturn in the value of banks' shares, exceeding the decline in the General Share Index, the mounting pressure for the creation of a safety net for pension savers, and the need for reassuring messages by policy makers, including statements about the government's commitment to the stability of the financial system and, in particular, of the public's bank deposits. Further evidence of the intensity of the fears that were dominant at the time may be found in the decline in the consumer

confidence indices and firms' expectations of activity in coming months,³⁹ and in deflation fears. All of these resounded rather powerfully in the capital markets, which by nature respond very rapidly to events and reflect not only the current situation but also expectations relating to the future. If so, the last quarter of 2008 and the first quarter of 2009 represented the peak of the crisis in terms of fears and uncertainties, and not only in respect of actual changes in the state of the financial system and real economic activity. Accordingly, the policy response at the time should be understood not just in view of actual developments, but also against the background of the fears that were prevalent then and preparations for the possibility of further deterioration.

Unlike previous crises, the real long-term interest rate on government bonds remained low in 2008, similar to its 2007 level, 3.5 percent on average (Figure 3.4). Several factors helped to maintain the low interest environment: the high level of private savings, which boosted demand for financial assets, especially low risk ones, in response to the upturn in uncertainty; globalization and capital flows, which strengthened the relation with low interest rates abroad; and government savings, which, even though much lower in 2008 than in 2007, remained positive and reduced the government's financing needs. Additionally, since the increase in the budget deficit was perceived as a reasonable cyclical response to the recession, it did not harm fiscal credibility. In contrast to the low level of real long-term interest on government bonds, which serves as a benchmark for rates on business lending, the risk premium for business credit increased steeply in 2008 and raised the cost of credit in the economy, in view of the upturn in risks and the deteriorating real situation of the business sector.

Figure 3.4
Long- and Short-Term Real Interest Rates,^a 2001-09



^a Short-term real interest rate—the average monthly yield on government CPI-indexed bonds with 1-2 years to maturity. Long-term real interest rate—the average monthly yield on government CPI-indexed bonds with more than ten years to maturity.

SOURCE: Bank of Israel.

(2) Credit to the non-financial private sector

Total outstanding credit to the nonfinancial private sector continued to increase during the crisis—by 5 percent in 2008 and by a modest 1 percent in 2009. The availability

³⁹ According to the Bank of Israel Companies Survey at the time. The survey is conducted by the Bank of Israel Research Department among some 700 domestic companies and businesses, eliciting a preliminary snapshot of the state of the economy.

of credit at this time, contrary to events in some developed countries, underscored the continued soundness of domestic banking activity, the banking system's role in supplying credit during the crisis, and the fact that credit problems during the crisis were mainly in nonbank credit. The availability of credit alleviated damage to the economy due to its importance for the conduct of both households and the business sector during the crisis. The policy adopted toward the financial markets did much to ease the credit difficulties during the crisis. At the time, however, the continued sound functioning of the credit markets in the midst of the crisis and the prevention of a credit squeeze could not be taken for granted. Thus, policy makers prepared for the possibility of another major downturn in this regard and prepared to take measures beyond those actually adopted.

(3) Household credit

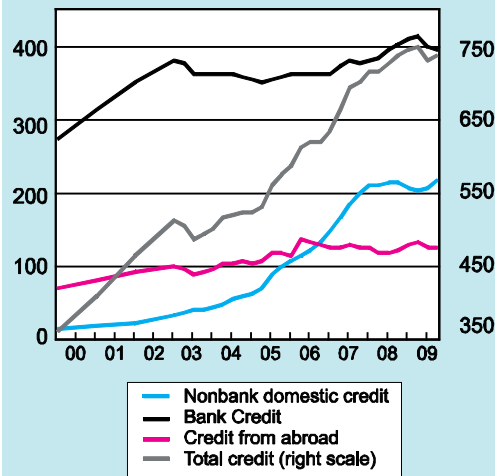
Household credit increased by 8 percent in 2008 and 7 percent in 2009, as bank credit—mortgage lending in the main—expanded rapidly and nonbank credit to households contracted. Apart from expressing the banks' sound condition and the expansionary monetary policy, the increase in bank credit reflected the low risk that the banks attributed to household lending. This low level of risk was abetted by the low rate of leverage among households and the relatively minor blow that the crisis dealt to their expected income. These factors allowed the banks to continue issuing cheap consumer credit during the crisis. The high private savings rate and regular supply of credit helped households smooth their consumption during the crisis and, in turn, propped up economic activity. The increase in mortgage lending was especially helpful in allowing residential construction activity—an industry that contributes much to domestic activity—to remain firm and even to increase moderately. In many other countries, in contrast, the credit shortage contributed to steep decreases in private consumption and construction activity.

(4) Business credit

A major source of concern during the crisis in Israel and abroad was the contraction of credit to the business sector. Against this background, one may understand many of the policy measures that were adopted or considered during the crisis, as described in Section 3 below. In practice, total outstanding credit (bank and non-bank) to the business sector hardly changed in 2008 relative to the previous year (Figure 3.5). The growth rate of outstanding credit did slow after three years of rapid growth, mainly in its nonbank segment, due to contraction of the supply of nonbank credit and the decrease in bond prices. Business lending by banks, in contrast, grew by 8 percent in 2008 and the share of this activity in total business lending rebounded after several years of uninterrupted decline. The continued sound functioning of the banking system and its ability to

increase its lending to the business sector during the crisis and compensate for the contraction of nonbank credit played an important role in coping with the crisis and easing the impact on the economy. Even so, the crisis did have some effect on the availability of credit. The Companies Survey showed that firms' financing constraint worsened in the second half of 2008, that the constraint became tighter as the prospective borrowing firms were smaller, and that it was stiffer in construction, transport, and commerce than in other industries. The credit supply constraint for business remained perceptible in early 2009 due to capital constraints on the banks and the upturn in risks; this constraint, however, eased during the year.

Figure 3.5
Outstanding Credit to the Business Sector, 2000-09
(NIS billion)



SOURCE: Bank of Israel.

(5) The corporate bond market

The segment of the domestic financial system that was hardest hit in 2008 and became the focal point of risk to this system was the nonbank credit market. This market had been developing at an accelerated pace in the pre-crisis years, as described above, but in so doing it became more vulnerable to external shocks and responded intensively to the upturn in risks and the materialization of some of these risks due to the global crisis. The primary market shrank and, in the second half of 2008, essentially disappeared. Prices of CPI-indexed corporate bonds plummeted by 17 percent, yields increased, and risk spreads widened, especially in the second half of the year and particularly among real estate firms (Figure 3.6).⁴⁰ The dispersion and volatility of yields increased significantly (Figure 3.7). Yields rose despite the Bank of Israel's rapid interest rate cuts in the last third of the year, as the cuts percolated into the credit market largely—but less than fully, due to the increase in risks—which offset some of the effect of the cuts on the costs of business finance.

At times the domestic market responded to the crisis more fiercely than in other developed economies. This was related to the fear that much of the credit that had

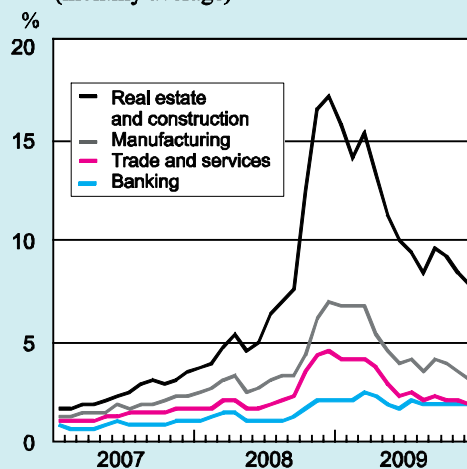
⁴⁰ For example, the corporate bond/government bond spread, which had narrowed from 1.5 percentage points in July 2005 to 0.75 percentage points in September 2006, widened to 6.7 percentage points in the last quarter of 2008 due to the crisis (all rates are averages).

been raised in the boom years would not be paid back on time and that large and important firms in the credit markets would default—a development that might have systemic implications. Another factor behind this fear was the concentrated structure of ownership and control in the Israeli economy, which presented the threat that the crisis would spread from real estate into other sectors and industries and even project onto the stability of the banking system.⁴¹ Lurking behind these concerns at the time, too, was the possibility of another downturn in the state of the economy due to its severe dependence on export markets and the almost total freeze of credit sources both in the domestic capital market and from abroad, and the assessment that the domestic banking system would be unable to meet all credit needs.

Some of the increase in corporate bond yields was also associated with the increase in the liquidity premium in this market due to the steep rise in 2008 in withdrawals from mutual funds specializing in "other bonds"⁴² and a smaller increase in withdrawals from provident funds. The acceleration of withdrawals was related mainly to investors' flight to safety in response to the increase in uncertainty and the negative returns that the provident funds posted in the second half of the year. This was due to a protracted increase in the component of risky assets in their portfolios in preceding years and inadequate awareness among investors that the portfolios managed for them by these funds had become riskier.

In response to the large withdrawals, the various funds had to realize assets, including corporate bonds, in large amounts, thereby contributing to the upward march of yields. Background factors in this matter were the low tradability of this market, due to

Figure 3.6
The Gap between Yields on
CPI-Indexed Corporate Bonds and
Yields on CPI-Indexed Government
Bonds^a, by Industry.
(monthly average)



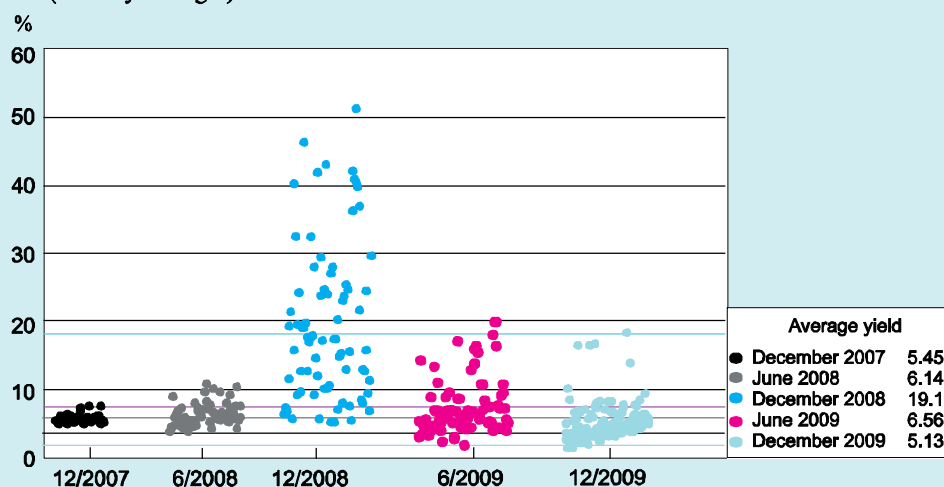
^a The gap is calculated as the gap between the weighted average yield to maturity on CPI-indexed corporate bonds, excluding convertibles, with a yield to maturity of up to 60 percent and with an average duration longer than six months, and the yield on Gallil-type government bonds with an average duration of five years.

SOURCE: Bank of Israel.

41 See K. Kosenko (2007), "Evolution of Business Groups in Israel: Their Impact at the Level of the Firm and the Economy," *Israel Economic Review* Vol. 5 (2), pp. 55-93.

42 Some 55 percent of assets managed by these funds were in corporate bonds at the end of 2007.

Figure 3.7
Dispersion of Yield to Maturity on A-Rated Corporate Bonds, 2007-09
 (monthly averages)

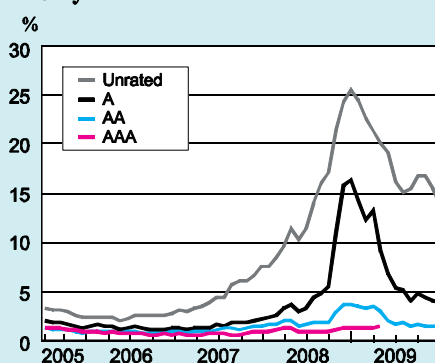


SOURCE: Bank of Israel.

structural problems of a large number of series with small market value and the lack of foreign investor activity, the large proportion of bonds in the funds' portfolios (11 percent and 40 percent among mutual and provident funds, respectively, in June 2008), and the funds' large share of the tradable corporate bond market (10 percent and 27 percent, respectively, in June 2008). While the growth of the mutual funds' exposure to corporate bonds in 2004–07 was the direct outcome of the investing public's choice, no direct relation of this kind yet existed at the provident funds. Hence, questions were raised regarding the contribution of the reforms in the provident fund industry—including the Bachar reform—to the increase in these funds' risk appetite.

The widening of spreads encompassed all industries and all rating levels and stood out in particular among the firms rated A and below (Figure 3.8), which accounted for 34 percent of the value of the corporate

Figure 3.8
The Gap between Yields on CPI-Indexed Corporate Bonds and Yields on CPI-Indexed Government Bonds, by Rating,^a
July 2005 to December 2009



^a The gap is calculated as the gap between the weighted average yield to maturity on CPI-indexed corporate bonds, excluding convertibles, with a yield to maturity of up to 60 percent and with an average duration longer than six months, and the yield on Gall-type government bonds with an average duration of five years.

SOURCE: Bank of Israel.

bond market at the end of 2007. The widening of spreads in this group, especially among unrated firms, began back in 2007, especially after the global crisis erupted in the middle of that year, and was indicative of the response of the domestic capital market in the earliest stages of the crisis, as stated.⁴³ The steep widening of spreads in this rating group as the global crisis worsened focused on the real estate industry but affected other industries as well, including manufacturing, commerce, and investment. This widening of spreads was exceptional relative to other rating levels and also, at times, relative to other economies such as the United States and Europe.⁴⁴ The dispersion of yields in this group was also very wide, creating a distortion in the revaluation method used by the Sha'arei Ribbit firm.⁴⁵

Some 60 percent of firms rated A and below are in the real estate industry and additional firms in other industries, such as investment, are also exposed to investment in real estate. Real estate investment is typified by very high rates of leveraging and some of its sources originated in money that had been raised in the domestic capital market before the crisis. Much of this money was invested in real estate projects abroad that involved further leveraging abroad. Due to the industry's high rates of leverage, the global credit shortage, and the fear (which had already begun to materialize) of a steep downturn in real estate prices, the spreads of firms from the industry widened precipitously, especially among firms that did most of their business abroad. This signaled the market's distrust of the ratings of firms in this group as well as grave concern about the solvency of many of them. In contrast, among firms in the highest rating groups—AA and above—the widening of spreads in Israel was much milder; it corresponded to the rate of increase in the US and Europe and in the financial industries was even lower than in the US.

The widening of spreads in the bond market traced not only to fear of firms' default but also to an upturn in the liquidity premium in the course of 2008, brought about by a domestic liquidity shortage. This shortage resulted from the large and fast realizations by the mutual and provident funds, due to the substantial withdrawals from them. However, most of the widening of spreads evidently occurred due to an increase in the credit risk

43 The Israeli share market responded differently. Share prices did decline in the middle of 2007 but rebounded later that year, whereas the widening of spreads was more continuous.

44 The comparison was performed between each rating level in Israel and the rating level two ranks lower in the U.S. and Europe (due to dissimilarities in the rating scales; see circular from the Commissioner of the Capital Market, Aug. 31, 2008).

45 This is the firm that the Ministry of Finance chose to determine the interest rates by which nontradable bonds should be revalued. Due to the wide dispersion of yields from September onward, the average interest rate that this company determined as the basis for the revaluation of these bonds was relatively high. This dealt a blow to good firms, those paying under-average interest rates, because it obligated investors to post capital losses on every investment in these firms. In early 2009, the Capital Market Division of the Ministry issued a circular that dealt with the problem.

premium and not in the liquidity premium. Furthermore, the widening of spreads in the corporate bond market seems to have surpassed the extent warranted by the increase in risk. This follows from the bankruptcy probabilities derived from the existing yield level, which suggested that extreme rates of bankruptcy were about to occur. Thus, the intensity of the crisis and fear of its implications for the domestic financial system seem to have amplified the uncertainty and, at times, caused the market to overreact.⁴⁶ One may find support for the assessment that the high yields on many series represented an overestimate of credit risks by citing the large extent of bond buy-backs by issuing companies. Many firms in diverse industries engaged in buy-backs during the year, indicating that the perception that the bonds were underpriced was widely held and was not restricted to just a few companies.⁴⁷

The worsening of firms' real and financial situation during 2008 was also manifested in the large number of rating downgrades during the year and the increase in bond defaults. In 2008, ninety-one tradable bond series were downgraded; their total market value was NIS 38 billion at year's end as against NIS 47 billion at the end of 2007. Most of the changes in rating pertained to series that had been issued by companies in the banking⁴⁸ and real estate industries and that had been rated AAA or AA on the eve of the downgrade.

Expected paybacks of nonbank credit in 2008—according to settlement schedules—were NIS 14.5 billion (principal and interest, not including structured and financial sector bonds). According to the outlooks at the end of that year, this sum was expected to increase to NIS 17.4 billion in 2009.

With less and less credit available and the macroeconomic situation deteriorating, the high yield levels seemed to reflect the fear that some of this amount would not be paid when due. This fear was supported at the time by the fact that 65 percent of expected paybacks in 2009 were of firms rated A and below and that 35 percent were of real estate companies. Furthermore, 75 percent of expected payback in the real estate industry in 2009 was attributed to bonds that had been trading in December 2008 at yields surpassing 15 percent, and nearly 50 percent of the series had yields exceeding 30 percent.

46 One may view this as a component of the panic that engulfed the global market and expressed itself in the domestic market as well.

47 For a detailed analysis of the increase in spreads see 2008 Bank of Israel *Annual Report* pp. 178-179.

48 Due to a large number of series issued by a small number of banks.

(6) The public's portfolio

Due to the crisis, the public's portfolio lost a steep 12.1 percent of its value in 2008⁴⁹ after three years of rapid 10 percent or faster annual growth. Most of the decline occurred in September and October as the global financial crisis worsened. The crisis also had a powerful effect on the composition of the portfolio: the weight of safer assets, such as government bonds and deposits, increased, and that of riskier assets, such as shares and corporate bonds, declined. Withdrawals from provident funds, which accelerated in the last third of 2008, were especially important in this context. The concern about further increases in these withdrawals, which would exacerbate both the deterioration in the financial markets and the public's concern about a decrease in the value of its pension savings, attracted special attention at this stage of the crisis among decision makers, the public, and the media. Consequently, at the end of 2008 the government announced the creation of a safety net for pension savings (described below).

The proportion of shares in the portfolio dropped sharply, from 23.9 percent at the end of 2007 to only 11.2 percent a year later, similar to the rate in the previous recession (2002–03). The proportional decline in shares was the outcome of a steep 46 percent falloff in prices after five years of consecutive increases and reflected expectations of a decrease in corporate earnings and an increase in risk estimates.

The proportion of investment abroad, which had been trending up until the global crisis began, fell by the end of 2008 to 10.8 percent of the portfolio compared with 13.1 percent in July 2007⁵⁰ due to falling prices and the realization of investments abroad. Households figured prominently in these realizations via their mutual funds, and provident funds also realized investments abroad, while pension funds continued to build up their investments abroad even during the crisis.

As the proportions of shares and investment abroad fell, those of unindexed assets climbed steeply in 2008 after trending down since 2005. The increase took place partly via investments in NIS money-market funds,⁵¹ which were first introduced in 2008. These funds accumulated NIS 28 billion in 2008 compared with NIS 37 billion in withdrawals from other funds, mainly those specializing in corporate bonds.

In contrast to the large withdrawals from corporate bond mutual funds, issuers of Exchange Traded Funds (ETFs) continued in Israel, as in other economies, to raise

49 Net of the government's liability to the "old" pension funds. Although this liability has been valid since 2003, when recovery arrangements for the funds were made, only in February 2008 were the funds instructed to record it as part of their assets. The balance of the liability varies from month to month; at the end of 2008 it was NIS 76.7 billion.

50 Some of the decrease was offset by the steep depreciation of the NIS against the USD in the second half of 2008.

51 See 2008 Bank of Israel *Annual Report*, Box 4.3, pp. 169–170.

money in 2008, in net terms, for instruments of this type that specialized in corporate bond investment—almost all of which took place in the first half of the year. It is hard to explain this accrual against the background of the huge withdrawals from mutual funds that specialized in the same investment vehicle; it may have been related to the very low management fees on ETFs relative to mutual funds.⁵² Additionally, against the background of the increase in risks, the public was more inclined to invest in index products, and ETFs offered a wider range of index investment vehicles than did mutual funds.

The share of tradable assets in the portfolio declined sharply during 2008, ending an uninterrupted five-year upward trend in the proportion of such assets. This development traced to a steep decrease in the prices of such assets (shares above all) and the reversion to accumulation in unindexed deposits. Liquidity in the financial markets decreased on this account, after many years of rising liquidity and tradability under the influence of structural reforms that encouraged the development of new market instruments at the expense of bank deposits and nontradable bonds.

(7) Financial institutions

The banks' profitability sustained considerable damage in 2008 as market risks materialized and the real economy turned sour. Insurance companies also experienced severe erosion of profitability and even posted losses in the third quarter of the year due to large exposure to market risks in their own (nostro) portfolios and a blow to commissions, which depend on their performance. To buttress their stability, the banks and the insurance companies took capital-bolstering actions in accordance with directives from the supervisory authorities. The provident funds managed to brace themselves for the higher level of withdrawals; they even increased their liquidity ratios toward year's end, albeit in tandem with large negative returns. As stated, unlike events abroad, none of Israel's financial institutions collapsed during the crisis and no direct bailout interventions were needed.

1. The banks

The crisis in 2008 and early 2009 was a difficult one for the banking system. The global financial crisis initially led to the realization of latent credit risks in financial assets that were traded in foreign markets (subprime mortgage loans and their securitization), each bank commensurate with its exposure. Afterwards, the payback capacity of domestic firms and households also decreased due to the decline of exports and domestic demand

⁵² The launching of corporate bond ETFs became a de facto possibility only in the beginning of 2007, when the Tel-Bond 20 index was introduced; two additional indices—Tel-Bond 40 and Tel-Bond 60—were launched at the beginning of 2008.

and falling prices of assets in Israel (financial) and abroad (financial and real estate). Concurrently, the ability to raise capital in the domestic corporate bond and share markets steadily decreased and most demand for credit switched to the banks. Against this background, the banks had to continue adjusting to and adopting the Basel II rules and, within this framework, to raise enough capital to bring their ratios of capital to risk assets to 12 percent.⁵³ The increase in capital was especially important in ensuring the banks' stability in view of widespread uncertainty about the magnitude of the crisis and the need to prepare for the possibility that it would get deeper and longer.

In this state of affairs, it was only natural that the banking system would move toward more conservative business policies—more investment in government bonds, more lending to households, higher risk and liquidity premiums in the pricing of financial intermediation, and less investment in foreign markets. In the midst of the crisis, there was concern that the banks might introduce stricter credit rationing,⁵⁴ and exploit the switching of demand to bank credit in order to charge a monopoly premium, thereby exacerbating the effect of the global crisis on the domestic economy.

Outstanding bank credit to firms and households increased in real terms in 2008 after a similar increase in 2007. Much of the bank credit that was made available to firms in 2008 went to companies in construction and real estate, an industry that until 2007 had been prominent among takers of nonbank credit, giving evidence of the switching of demand for credit to the banking sector. Unlike much of the nonbank credit to the real estate industry, which was given in order to finance activity abroad, the bank credit was issued for domestic real estate activity, which was easier to control and supervise.

The banks' profitability decreased markedly during the crisis for reasons including loan write-offs occasioned by the global crisis, some of which traced to their holdings of foreign mortgage-backed securities, and larger loan-loss provisions. However, the Israeli banking system remained profitable even during this period.

The crisis was also expressed in a decrease in the banks' market capitalization. Some of it probably originated in concern that the worsening of domestic and external demand would take a toll on firms' solvency. Although the decline in the banks' market capitalization was quite steep (as in the case of the large foreign banks listed in Figure 3.9), no commercial bank in Israel collapsed, in contrast to the foreign banks

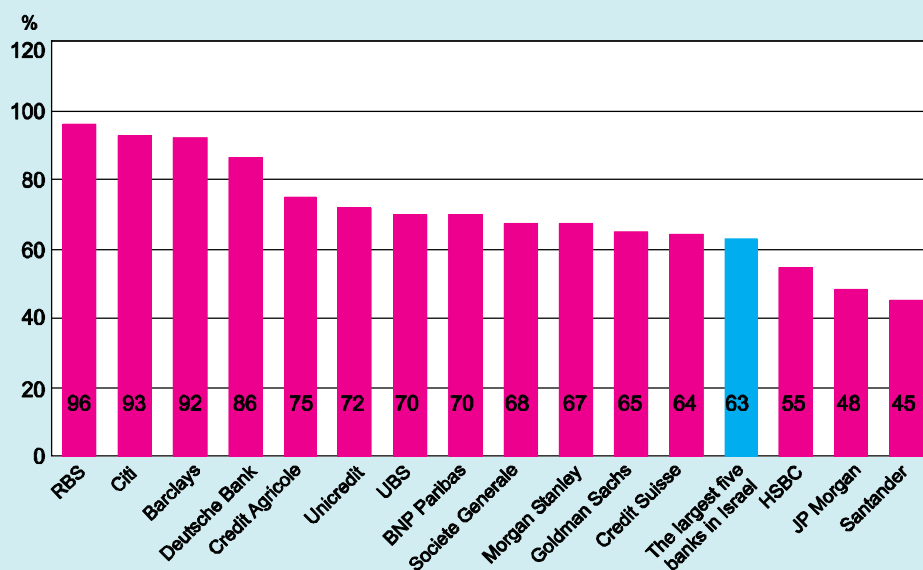
53 On top of this, the bank fees reform in 2008 forced the banks to re-price banking activities and reassess their reliance on fee revenues.

54 Stricter credit rationing could result in a situation in which a commercial bank refrains from financing (lending to) a project or a firm at market or even above-market interest. It happens when the borrower poses such a credit risk (possibility of default) that once it is taken into account, the profit expectancy of this credit is negative. Such a situation also comes about when a bank has incomplete information about the borrower's solvency or when it is very difficult to assess borrower risk while the borrower has more information on these than the bank does.

(including those shown in the figure), and the Israeli authorities did not have to provide direct emergency assistance in the form of capital injections. It is also noteworthy in this context that, in contrast to markets such as the US and the UK, Israel had not experienced an upward trend in housing and real estate prices in the pre-crisis years. In foreign markets, the reversal of this trend played an important role in the evolution of the global credit crisis.

The domestic banking system managed to maintain its functioning and stability during the crisis even though some of the risks, exacerbated by the crisis, are still prevalent (these are discussed below). Apart from the reasons for the greater resilience of the domestic financial system relative to that of its counterparts abroad (listed above), this success of the Israeli banking system is due to several factors:

Figure 3.9
The Decline in the Market Value of Banks in Israel and Selected Banks Abroad, June 2007 to January 2009



SOURCE: Bank of Israel calculations.

- ◆ **Relatively low exposure to toxic assets (MBS, etc.)** due to laggardly behavior by Israel's markets in adopting and using securitization tools for financial needs; a more conservative approach in banking supervision and early detection of the high latent risk of the Israeli banks' exposure to toxic foreign assets; and supervisory

directives ordering the banks to improve their capital adequacy⁵⁵ as part of their adjustment in recent years, even before the crisis began, to international standards and the application of the Basel II rules. The measures taken by the Bank Supervision Department before and during the crisis are listed below.

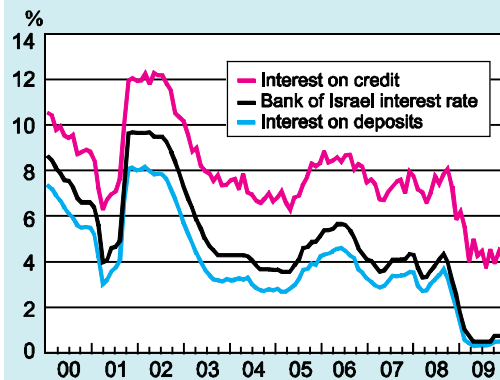
- ◆ **An expansionary monetary policy** that made liquidity and sources for financial intermediation available to the banks at low cost. Figure 3.10 illustrates the high correlation between the Bank of Israel's interest rate cuts during the crisis and the decline in interest on short-term bank credit.
- ◆ **The provision of government guarantees for the banks' capital raising** (even though they were not exercised) and statements by policymakers (the Prime Minister, the Governor of the Bank of Israel and the Minister of Finance) about the stability of the banking system and the assurance of the public's deposits, bolstering public confidence in the banks' ability to meet their undertakings (see details of statements in Section 3.3).
- ◆ **Bailout plans for developed countries' financial systems**, especially that of the US, indirectly helping the banks in Israel to maintain their stability.
- ◆ **The strong profitability of Israel's banks** in the pre-crisis years.

2. Insurance companies

The insurance companies' situation worsened during the crisis and they made losses in 2008. The crisis degraded the industry's resilience: in 2008, all large insurance companies lost equity relative to 2007 and their ratio of primary capital to total assets declined. The transition to losses and erosion of assets charged to equity created an equity deficit at some companies, which acted in various ways to make up the shortfall.

In the course of the crisis, the insurance companies' large exposure to the capital

Figure 3.10
The Marginal Rates of Short-Term Interest in Unindexed Bank Intermediation,^a 2000-09
(monthly data)



^a The average of the interest paid during the month on 1–3 month unindexed deposits and the average of the interest charged during the month on 1–3 month unindexed fixed-interest credit.

SOURCE: Banks' reports to the Bank of Israel.

⁵⁵ To improve its capital adequacy, a bank must reduce its exposure to high-risk assets and/or raise capital.

markets materialized, they suffered losses on their portfolios, and their exposure to credit risks increased. The severe dependence of the insurance companies' performance on the markets, which had escalated steadily as the reform processes moved ahead, stood out now. This development was influenced mainly by the growing share of tradable assets in profit-sharing life-insurance plans but was also affected by investments of the companies' own portfolios and the changeover to mark-to-market valuation of nontradable assets in the portfolio of profit-sharing insurance plans. Profit-sharing plans were less exposed than provident funds to the corporate bond market but were more exposed to investment abroad. The tumult in the global markets and the destabilization of financial institutions abroad also turned the spotlight on reinsurer risk.⁵⁶

3. Provident and severance pay funds

The process of banks' divestiture of holdings in provident funds to insurance companies and other managers was nearly completed by 2008. Assets of provident and severance pay funds declined steeply in 2008 due to a significant acceleration of withdrawals, especially from September onward, and negative returns on investments. Net accrual in provident funds in 2008 was negative at NIS 8.8 billion and the cumulative return was exceptionally negative at -15.4 percent.

The accelerated pace of withdrawals in 2008 was associated with the global financial crisis, which caused the prices of portfolio assets to plummet and prompted the public to seek safer investment channels. The provident funds, perceived as a solid long-term savings vehicle, had been increasing their exposure to risk in recent years, sometimes without members' awareness. For example, they acquired shares and corporate bonds and increased the proportions of these instruments in their portfolios at the expense of government bonds and deposits. Their exposure to leveraged investments in foreign real estate also increased and the correlation among their assets became stronger due to the strong correlation between share prices and corporate bond prices in times of crisis. Consequently, the funds posted exceptionally negative returns in the second half of 2008, causing the pace of withdrawals to quicken. The acceleration of withdrawals may also be traced to the cumbersomeness and uncertainty that accompanied the process of transferring funds' assets from banks to other managers whom the members had not chosen, in some cases involving transfers of one member's money to several different managers.

By late 2008, the possibility of an even larger wave of withdrawals from provident funds had become a major concern among policymakers. Such a development carried

⁵⁶ Reinsurers are large insurance companies abroad that assume some of the insurance risk in return for a premium.

the risk of exacerbating the downslide in the financial markets as the funds would have to realize more and more assets. In particular, it might degrade the corporate bond market and amplify the public's concern about the erosion of its pension savings—a concern that was already finding expression in pressure for the protection for savers. In mid-December, to assuage savers' concern and stanch the downslide in the markets, the government announced the creation of a safety net. Despite the limited nature of the protection offered, the announcement had a soothing effect on savers without exposing the government to excessive risk were it obliged to realize its commitments. (For discussion of the safety net, see Section 3.) Notably, there was no unanimity about the safety net measure at that time: some considered that the probability of a run on the funds was slight, for reasons including experience abroad, which showed that people are in no hurry to cash in their pension savings. Some were also concerned about the implications of the precedent and the potential burden on the government should it have to keep its word.

In 2008, the provident funds braced themselves for a larger wave of withdrawals than actually occurred and coped well with the acceleration that did take place. Despite the increase in withdrawals, the funds managed to improve their liquidity ratio⁵⁷ in the second half of the year by building up the proportion of liquid assets in their holdings. The crisis exposed problematic aspects of the provident fund industry; these aspects and the lessons to be learned from the crisis are discussed in Section 4.

b. Developments in domestic economic activity during the crisis

The impact on real domestic activity of the global crisis that erupted in July 2007 escalated gradually. At first, in the second half of 2007 and in early 2008, real activity suffered no visible effects, in contrast to some influences that had already become visible in the domestic financial markets, as described above. Brisk economic growth continued at this time. In the second half of 2008, however, a turnaround occurred: the economy began to slide into recession in view of the worsening of the global crisis and the increased severity of its impact on Israel. In the last quarter of 2008 and the first quarter of 2009, the economy posted negative growth rates of 2–3 percent (annual rates, seasonally adjusted). Growth resumed in the second quarter of 2009—coinciding with first indications of recovery abroad—and the pace of growth speeded up during the year. Thus, the economy experienced a shorter-lived recession and milder damage than did the developed countries (Figure 3.11) and also relative to the fears that were widely

⁵⁷ The ratio of liquid assets to liquid liabilities. Liquid assets are cash and current account deposits, *makam*, and tradable assets abroad.

held at the peak of the crisis.⁵⁸ This section describes developments in the real economy during the crisis. The period of growth preceding the crisis was described in Section 1; the recovery in the later part of 2009 is described briefly in Section 5.

Total uses declined steeply during the crisis in Israel, as in other countries (Figure 3.11). Like in the developed countries, exports and nonresidential investments slumped; unlike in these countries, however, current private consumption and residential construction investment continued to increase gently. The sectoral composition of the decrease in activity in Israel was such that it was manifested mainly in a downturn in imports; GDP was less affected. The contraction of activity dealt state tax revenues a serious blow and pushed the public deficit and debt upward.

(1) Exports

The main channel of pass-through from the crisis to the domestic economy was demand for Israel's exports, which decreased due to the collapse of world trade. All types of exports—manufacturing, services, and tourism services—shared in the contraction.⁵⁹ From the third quarter of 2008 to the first quarter of 2009, total exports of goods and services fell by 20 percent, matching the rate of decrease in global trade. The steep downturn in demand for capital goods in developed countries, which account for a relatively large share of Israeli exports, contributed to the adverse effect on goods exports. The blow to services exports—nearly 30 percent of Israel's exports (as against 22 percent on OECD average)—resembled the harm to goods exports and was slightly milder than the blow to such exports in other countries. However, prices of services exports dropped by less than did prices of goods exports.

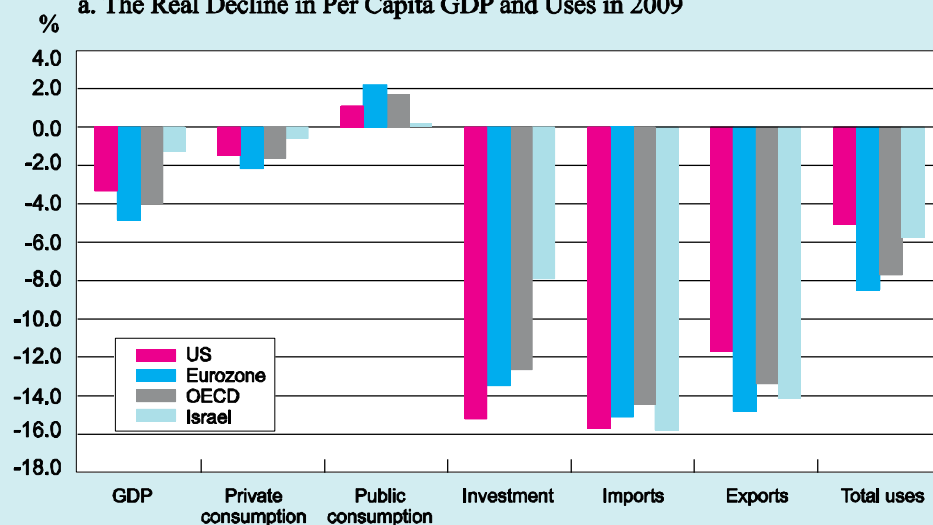
The decline in the demand for exports was a major channel through which the global crisis affected many economies throughout the world, particularly emerging and developing ones that are highly dependent on exports to the advanced economies. The US and Europe are the major markets for Israeli exports. This makes the comparison between two advanced economies—Australia and Canada—particularly interesting for illustrating the significance of the exports channel in Israel's case. These two countries are very similar in their institutional and regulatory structures, the resilience of their banking systems during the crisis, and their policy responses. Nonetheless, the effect of the global crisis on Canada was much stronger than on Australia. This was due to the predominant share of the US in Canada's exports, whereas East Asia accounts for a

58 The damage to the Israeli economy was also mild relative to the 2001–03 recession, which was deeper in Israel than in the developed countries, *inter alia* because of the Intifada.

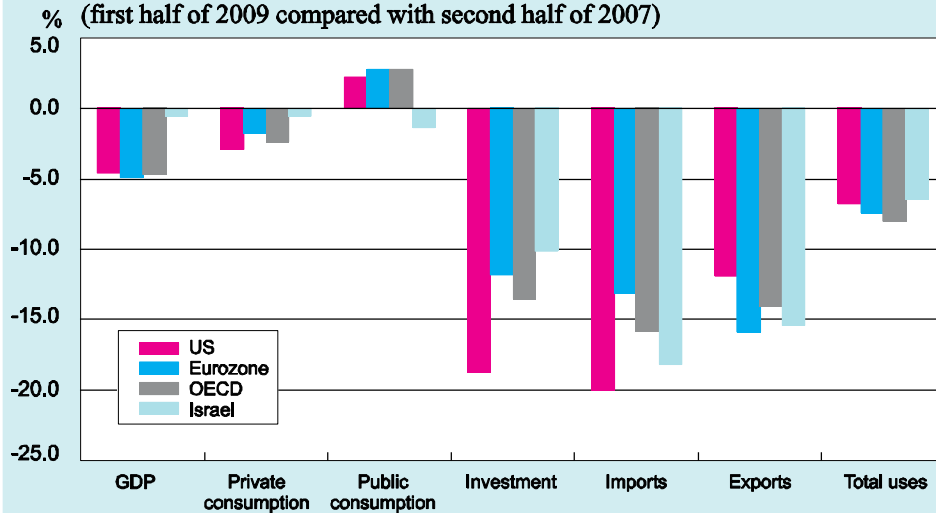
59 Only the electronic components industry posted a steep increase, due to the opening of Intel's new plant. Net of this factor, manufacturing exports fell even more steeply.

Figure 3.11
The Effect of the Crisis on Economic Activity, An International Comparison

a. The Real Decline in Per Capita GDP and Uses in 2009



b. The Real Decline in Per Capita GDP and Uses from Peak to Trough^a
 (first half of 2009 compared with second half of 2007)



^a The peak and trough were determined according to developments in the US, where the crisis started, although in Israel the peak was reached only at the beginning of 2008.

SOURCE: Central Bureau of Statistics, OECD and the Bank of Israel.

much larger share of Australia's exports and hence Australia's reliance on exports to the US is much smaller.

In addition to the decline in volume, the profitability of Israel's export industries lost ground due to steep currency appreciation in 2007 and early 2008. In 2009, the shekel depreciated slightly in real and nominal terms (on average) under the influence of two contrasting forces: the moderate decline in domestic demand relative to the rest of the world and the increase in the current account surplus, which had a pro-appreciation effect, and the Bank of Israel's purchases of foreign currency, which encouraged depreciation. Some of the changes in the real exchange rate in 2009 evidently originated in a mismatch of expectations between Israel and countries abroad about the intensity of the crisis: when the crisis began, the Israeli economy was perceived as more resilient as evidenced by share indices and consumer and company surveys. This discrepancy had a pro-appreciation effect in late 2007 and early 2008, during which Israelis generated large repatriation flows in their portfolios. Escalating expectations of damage to the economy in late 2008, coupled with foreign currency purchases by the Bank of Israel, helped to induce real depreciation in late 2008 and early 2009. This mid-crisis depreciation and the improvement in the terms of trade—even relative to other developed countries—improved export profitability and eased the burden on exporters when the crisis was at its worst.

(2) Investment

Domestic firms began to trim their investments in the second quarter of 2008. Over a period of four consecutive quarters, nonresidential investment declined at a cumulative rate of 15 percent, leveling off only in the second quarter of 2009. Total domestic investment contracted due to the decrease in fixed investment and a steep decline in inventory investment. A downturn in foreign direct investment contributed to the decrease.⁶⁰ Together with the decline in investment demand, the upturn in the cost of issuing in the capital markets and the toughening of constraints on obtaining bank credit at the beginning of the year made investment financing more difficult at this time.⁶¹

(3) Private consumption

Households reacted to the crisis by cutting their consumption in late 2008 and early 2009 and by placing a larger share of their disposable income, which had increased for reasons including cuts in direct taxes, in savings. The contraction of private consumption was

⁶⁰ See the 2009 Bank of Israel *Annual Report*, Box 2.1, pp. 56-60.

⁶¹ Evidence of the financing difficulties may be gleaned from reports in the Bank of Israel Companies Surveys in 2009.

also abetted by the depreciation of the public's assets due to falling prices in the global and domestic capital markets during the crisis and the increase in uncertainty about their future value. Some of the increase in savings may have reflected precautionary behaviour in view of the rising unemployment rate and the concomitant decrease in employment security among those employed.⁶² The public's fears were reflected, among other things, in a decline in the consumer confidence index, although milder in Israel than abroad. The decrease in private consumption was composed of a sharp downturn in purchases of durable goods, which are more responsive to changes in wealth, and only a minor decline in current per capita consumption. The high private saving rate, the low rate of household leveraging on the eve of the crisis, and the availability of relatively cheap credit during the crisis—furthered by the expansionary monetary policy and the fact that the banking system's functioning was not impaired—allowed households to smooth their current consumption. This contrasted with the plight of households and the contraction of credit supply in many other countries, which exacerbated the damage to private consumption there. The steep decrease in durables purchases affected imports in the main, while its effect on GDP was relatively weak.

(4) The labor market

The labor market responded rapidly to the fall in demand for goods. In late 2008 and early 2009, demand for labor by the business sector plummeted and claims for unemployment benefits increased swiftly. However, the contraction of labor input that began as early as mid-2008 focused on the reduction of hours per person employed. This flexibility made it possible to reduce layoffs; for this reason, in part, the number of employed persons hardly decreased and the unemployment rate rose moderately—from a trough of 5.9 percent in the second quarter of 2008 to 7.9 percent in the second quarter of 2009 (Figure 1.3), an increase that was also mild relative to that in other developed markets.⁶³ A certain increase in public-service employment also helped to attenuate the rise in joblessness. The limiting of layoffs also reduced the damage to private consumption and, accordingly, to economic activity. Labor productivity leveled off even though it usually falls during a recession. Nominal wages also stabilized but real wages eroded due to price increases. The combination of falling real wages and stable productivity reduced unit labor cost during the recession, a development that helped to stabilize corporate earnings and was especially important in the midst of a financial crisis that

62 For elaboration on the recession's effect on the household savings rate from 2008 onward, see the 2009 Bank of Israel *Annual Report*, Box 2.2, pp. 60–63.

63 The increase in unemployment in Israel was mild by OECD standards even when accounting for the fact that Israel's GDP declined less than that of the other developed countries. For elaboration, see the 2009 Bank of Israel *Annual Report*, Chapter 5.

included greater difficulty in obtaining credit. The erosion of real wages also helped to limit the increase in unemployment.

The labor market's response to the crisis—halting the growth of employment at an early stage of the crisis, even before substantive real effects on the economy were evident (early 2008), coupled with a rapid decrease in hours worked per person employed as soon as the crisis-induced damage materialized (last quarter of 2008)—was not typical of the previous behaviour of the Israeli economy and contrasted with the belated response of this market to the 2001–03 crisis. The cessation of hiring at the earliest stage of the crisis may be attributed to the gradual and foreseeable nature (in view of the crisis abroad) of the spillover of the financial crisis into the real domain.⁶⁴ The cutback in hours worked per person employed and the low rate of layoffs may be attributed to the sense of emergency in late 2008 and early 2009 and the uncertainty that prevailed at that time in regard to the intensity and length of the crisis. In such circumstances, employers prefer to avoid costs related to layoffs and re-hiring. The strong corporate profitability on the eve of the crisis and the erosion of real wages during the crisis also helped firms to maintain employment throughout the crisis. This pattern in the current crisis, however, should not be taken for granted. In some developed countries, the main response was a decrease in employment; in some the government subsidized the cutback in the number of hours worked per employee.⁶⁵

An analysis by gender, population groups, and region shows that the increase in joblessness during the crisis focused on populations that were well integrated into the labor market, which typically boasted low unemployment rates on the eve of the crisis. A large proportion of people in these sectors who lost their jobs were probably eligible for unemployment benefit because they had been working uninterrupted before the crisis. This factor, coupled with the relative strength of these population groups, mitigated the need for a counter-cyclical policy that would focus on disadvantaged population groups in the labor market.

(5) Housing

Construction and housing market activity developed in Israel in a very different way than the typical pattern in the developed countries, which was the source of the crisis there. Domestic construction, a relatively highly leveraged activity, did not change significantly. In late 2008 and early 2009, however, the number of transactions in this market dropped. It also seems that the financing difficulties worsened somewhat at

64 See Bank of Israel (2009), *Recent Economic Developments* No. 125.

65 For elaboration, see the 2009 Bank of Israel *Annual Report*, Chapter 5, p. 215.

the beginning of the year but this effect eased as the year progressed.⁶⁶ The housing market, typified in the last decade by falling real prices and a low level of activity, was characterized in 2009, contrarily, by rising demand and prices. Thus it had a stabilizing effect in Israel during the crisis, in contrast to its impact abroad.

(6) The terms of trade and the current account

The decrease in global demand for raw materials was manifested in falling prices during the crisis and, in particular, a steep decrease in fuel prices—improving Israel’s terms of trade considerably. This benefited the economy, increasing its disposable income, and thereby alleviating the effect of the global crisis on domestic activity and, especially, on private consumption. The combination of the improved terms of trade and the steep decline in the volume of imports also contributed to a marked increase in the surplus on the current account of the balance of payments, which enhanced macroeconomic stability. In this sense, Israel was an outlier among most countries: the crisis generally had a stabilizing effect on global imbalances—overall, the developing economies’ current account surpluses contracted and the developed countries’ current account deficits declined.

3. FINANCIAL MARKETS POLICY DURING THE CRISIS

The crisis period presented Israel’s policymakers with significant challenges, though not unique to Israel. The country had to cope with a rapidly changing environment, frequent changes in the assessment of the severity of the situation, substantial uncertainty, and concern about the possibility that the situation would get worse. These characteristics were amplified by the fact that the crisis focused on the financial markets, which typically respond more quickly than real markets, have the potential for more extreme reactions, including rapid chain reactions, and are highly sensitive to changes in expectations and sentiments above and beyond responding to actual events. Furthermore, the possibility of damage to the functioning of the financial markets and the stability of financial institutions carries grave potential implications for the economy at large, including its real activity. As described above, the policies adopted during the crisis cannot be understood solely against the background of actual events as are known to us *ex post*; they must also be contemplated in view of the difficulty of knowing the true state of the economy in real time, the fears and uncertainty about further worsening that prevailed at the time, and the extent of the potential damage to the economy if this were to happen.

⁶⁶ A government plan to provide building contractors with guarantees and loans was approved in June 2009 but was not used at all.

The crisis peaked, as stated, in the last quarter of 2008 and the first quarter of 2009, both in terms of fears and uncertainties and in terms of actual developments in the financial system and real economic activity. Accordingly, the policy response was also strongest at this time. (See time line at the end of the report.)

The policy goal was to maintain the stability of the financial system in general and the financial institutions in particular, ensure their continued functioning, alleviate liquidity difficulties and avert liquidity and credit crunches, prevent deflation, and attenuate the blow to real activity. At the same time, preparations for further deterioration had to be made in such a way that they would not exacerbate the fears and spread panic. In pursuing these goals, policy had to strike a balance between the need to respond quickly and effectively and the wish to avoid, as far as possible, steps that would have significant adverse implications in the long term.

The nature of the crisis and the policy goals affected the characteristics of the policy response. The response was rapid and broad, including major intervention in the financial markets, the use of a wide range of tools including exceptional ones, with the emphasis on tools that did not require legislation and complex approval processes. The toolbox of monetary policy—the monetary expansion during the crisis was unprecedented—and the actions of the various supervisory authorities were assigned much weight. Active fiscal policy was put to less intensive use for reasons including the lack of an approved budget, and it focused on the issue of guarantees rather than expanding direct budget expenditure. The policy response included much coordination and cooperation among authorities, and these features were widely publicized in order to enhance the public's confidence in policymakers and, thereby, mitigate fears of further deterioration. Moreover, contingency plans were drawn up in case such deterioration did occur.

Apart from the measures actually taken, policymakers made considerable use of public statements regarding their confidence in the solidity of the financial system, the measures they were taking, and their willingness to take further measures if necessary. The rhetoric—meant to calm the public and the markets, ease their concerns, and prevent behavior that might make things worse—reflected the importance that was attributed to influencing expectations and not only to responding to actual events. To the extent that the statements generate confidence among the public and in the markets, and affect behavior in the desired direction, they may mitigate the need for very costly measures.

The vigorous policy adopted helped to alleviate the blow to the economy and contributed to the relatively rapid recovery. Those outcomes, however, also originated in the foreign focus of the crisis, the state of the economy on the eve of the crisis, and additional factors that contributed to the resilience of the economy generally and the domestic financial system particularly, as described above. Also, the energetic policies adopted abroad—for example, steep rate cutting—made it easier to adopt an

expansionary policy in Israel, mitigated the loss of value of foreign financial assets held by Israeli financial institutions, and helped the recovery abroad begin earlier than expected, thereby shortening the crisis in Israel. For all these reasons, caution is warranted in assessing the extent of success of the policy in Israel and its role in the recovery. The limits of the success and the caution warranted are discussed at greater length in Chapter 4.

The fact that the economy in general and the financial system in particular were less badly affected in Israel than elsewhere, coupled with the policymakers' prudence in choosing their steps during the crisis, minimized the long-term costs of the policy response. In Israel, unlike in many developed countries, public debt increased only slightly during the crisis and the authorities did not buy up private assets, let alone "toxic" ones. This facilitated the economic recovery and supports growth in the medium term.

The transition from crisis to recovery presented policy challenges of its own. Policy had to strike a balance between supporting the consolidation of the recovery process in view of its fragility and lingering uncertainty, on the one hand, and the need to forestall inflationary pressures and unbalanced developments in the capital and real estate markets in a timely manner, on the other.

a. Monetary, liquidity, and financial market policies

(1) Monetary policy

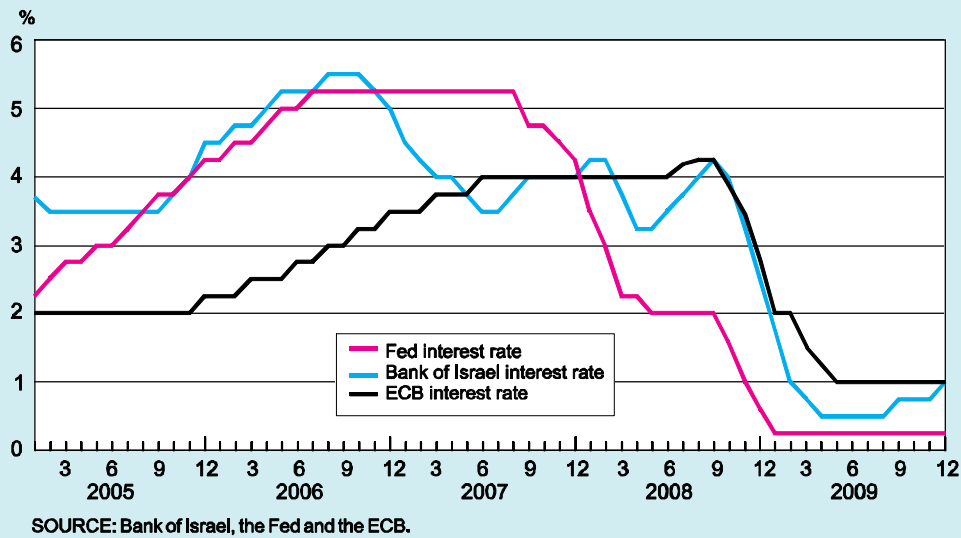
(a) The overall picture

Monetary policy in 2008–09 was managed in view of the specter of a global crisis of historical magnitude that began in the summer of 2007 and significantly worsened in the last quarter of 2008. Against this background, monetary policy was managed at this time amid the fear that the grave crisis would also deal Israel a powerful blow, due to Israel's being a small and open economy highly dependent on external demand and capital inflows. The channels that passed the damage through to the domestic economy were both real and financial: direct harm to exports and foreign investments as a result of the global slowdown, damage to domestic demand as a corollary of the steep decline in financial asset prices, and a credit and liquidity shortage induced by the upturn in assessments of risk. The possibility of direct damage to domestic financial institutions that held toxic foreign financial assets was also taken into account.

Monetary policy during the crisis period may be divided into three subperiods:

1. Up to August 2008—during this time, a dire financial crisis spread through the developed countries, especially the US and the UK, ending a lengthy period of growth

Figure 3.12
Short-Term Interest Rates in Israel, the US, and the Eurozone,
2005- 09
 (monthly averages)



from which Israel had been benefiting since 2003. Despite the turnaround abroad, however, the response of the domestic economy to the global crisis focused at this point mainly on the financial markets, while growth remained strong until the middle of 2008, accompanied by an increase in the inflation environment and steep currency appreciation. Against this background, monetary policy at this time was typified by frequent changes in the interest trend that were occasioned by changes in estimates of the scope, depth, and timing of the economic risks. At this time, too, the Bank of Israel began to use an additional tool—foreign currency purchases.

2. From September 2008 to April 2009—the global crisis crested at this time, prompting governments and central banks world wide to take unprecedented measures to stabilize the global economy. The repercussions of the crisis were well evident in Israel. The Bank of Israel responded to the steep downturn in the economic environment with unprecedented intensity by introducing a highly expansionary monetary policy, and expanding the use of additional tools in order to enhance the efficacy of its policy.

3. From the second quarter of 2009 onward—at this time, the global economy improved markedly but remained fragile and shrouded in heavy uncertainty. This period presented the Bank of Israel with the challenge of adjusting its monetary policy to the changing economic environment and the upturn in the inflation environment without adversely affecting activity and employment. Decisions were needed about the right

time to begin reducing the scale of the monetary expansion and about the pace and strength of the change. Thus, the extent of monetary expansion was maintained until August; from then onward, the Bank gradually reduced the monetary expansion, including adapting the use of special tools to the new situation and gradually raising the benchmark rate.

In retrospect, due to the vigorous policy measures invoked abroad and in Israel, the crisis caused less damage than the grim scenarios had foreseen and the recovery—both global and domestic—began earlier than had been foreseen at the beginning of the crisis. Since the Israeli economy was less badly hit than most developed countries and because its recovery began earlier, the Bank of Israel was one of the first central banks that began to raise its interest rate.

(b) Policy measures taken

1. Monetary policy until August 2008—frequent changes in interest policy

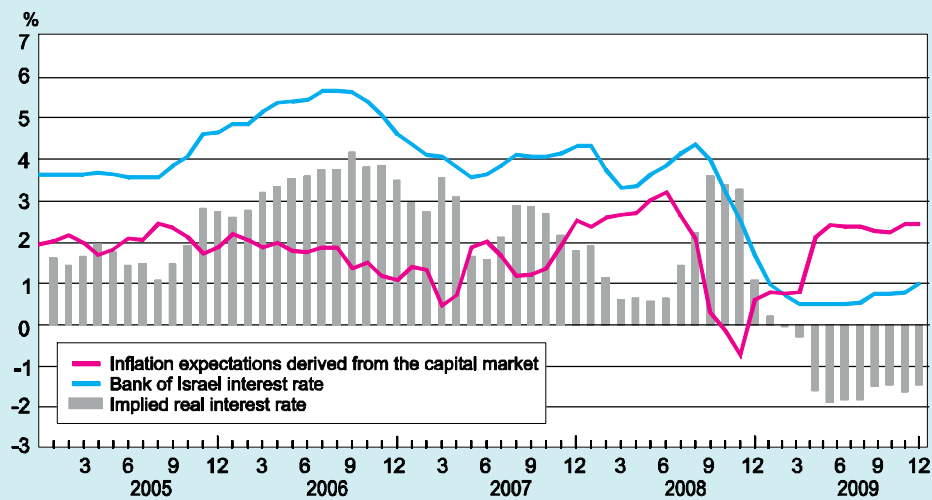
At this time, there was much uncertainty about how badly the global crisis would affect the domestic economy and when the blow would land. At the beginning of the year, the Bank of Israel believed that domestic activity and inflation would slow rapidly and powerfully in view of concern about an acute slowdown abroad and, particularly, in the US, and the continuation of strong pressures for appreciation, which brought the exchange rate in July 2008 to a record low of NIS 3.23 to the USD. These grim assessments of domestic real activity were also reflected in falling prices in the domestic financial markets and in an increase in Israel's risk premium.

Accordingly, the Bank of Israel lowered its rate in March and April 2008 by a cumulative 1 percentage point (two decreases of 0.5 percentage points), to 3.25 percent.⁶⁷ In March 2008 well before the escalation of the global crisis the Bank began purchasing foreign currency, initially to build up the foreign reserves. From July onward, with the NIS appreciating steeply, the Bank increased the pace of these purchases. This was in view of estimations that the global crisis would ultimately affect domestic real activity, and an overvalued currency would make it more difficult for the economy to cope with the repercussions of the crisis.

What happened in practice, however, was that the impact on the domestic economy was milder and more gradual than had been foreseen; the economy continued to grow rapidly even at the beginning of 2008, unlike other developed markets such as the US

⁶⁷ In January, before the intensity of the crisis became clear, the rate had been raised by 0.25 percentage points in response to the high domestic inflation environment.

Figure 3.13
Bank of Israel Interest Rate,^a Inflation Expectations,^b and Implied Real
Interest Rate, 2005-09
 (monthly averages)



^a Effective interest rate in Bank of Israel auctions.

^b For next twelve months; derived from the capital market.

SOURCE: Bank of Israel.

and Europe.⁶⁸ Furthermore, actual inflation did not slow and the expected inflation rate continued to rise. The high rate of inflation was due to both supply and demand factors, i.e., continued increases in the prices of imported intermediates and continued acceleration of demand. A turnaround that would bring inflation down sharply was expected in both factors, but the timing of this transition was highly uncertain. Therefore, from June to September 2008 the Bank of Israel was again forced to raise its rate, by an accumulative 1 percentage point to 4.25 percent (four consecutive monthly increases of 0.25 percentage points each). The increases were also consistent with the change in the exchange rate trend—from steep appreciation to steep depreciation.

2. Monetary policy at the peak of the crisis from mid-September 2008 (Lehman's collapse) to April 2009—vigorous monetary easing

With the extreme turn for the worse of the global crisis in September 2008 and the panic that ensued following the collapse of Lehman Brothers, the Bank of Israel acted rapidly, at times outside the usual time framework of the monetary decision making process. (See the time line at the end of the report.) In view of the circumstances, the Bank had

⁶⁸ Estimates of growth rates in GDP and uses of resources in the second quarter were not published until August.

to make forward looking decisions under extreme uncertainty without waiting for the arrival of actual data on the state of the economy—data that are published with a lag. A major goal of the Bank's measures at this stage was to stop the panic in Israel and restore confidence in the financial system

Thus, from October 2008 onward, the Bank applied a vigorous monetary policy that included steep rate cuts, two of which were at unscheduled times. Concurrently, the Bank continued buying foreign currency, and from February onward, as the rate-cutting process nearly exhausted itself, it also bought government bonds in order to enhance the effectiveness of the monetary policy and to affect long-term yields as well. The foreign currency and bond purchases gave the financial system a massive injection of liquidity and helped it cope with the repercussions of the crisis.

The steep interest rate cutting continued until April, with the rate being reduced from 4.25 percent in September 2008 to only 0.5 percent in April 2009, the lowest ever and not far from the zero bound. The interest rate was not lowered from 0.5 percent due to the assessment that at such low interest levels, the pass-through of the cuts to the lowering of bank lending interest would be weak. This is because the banks' profitability depends inter alia on the interest rate spread (between the lending rate and the deposit rate), and since this spread was not far from zero to begin with, the assessment was that another rate cut would be passed through less powerfully, if at all, to the loan market. (See Appendix A—Management of Monetary Policy at Zero Interest.)

The rapid and vigorous response of monetary policy during the crisis was required in view of the assessments regarding the grave potential implications of the crisis for the economy and considering that the fiscal policy response in Israel was much milder than abroad. These features of the monetary policy in Israel were also consistent with the sharp cuts in interest rates by major central banks abroad and additional steps that they took.

The expansionary monetary policy was consistent with all policy goals: the wish to support economic activity and allow business credit to expand again without endangering price and financial stability; this, in view of assessments that inflation, which had been relatively high on the eve of the crisis, would decline rapidly due to the decreases in energy and food prices and the global and domestic economic slowdown.

3. Monetary policy from the second quarter of 2009 onward—adjustment of policy to the new economic environment

During this period prices went up sharply in financial markets, risk spreads narrowed and there was growing evidence of a moderation, if not a halt, in the contraction of economic activity. This affected inflation expectations which rose sharply from the lower bound of the target range in April to its center and even higher up later on.

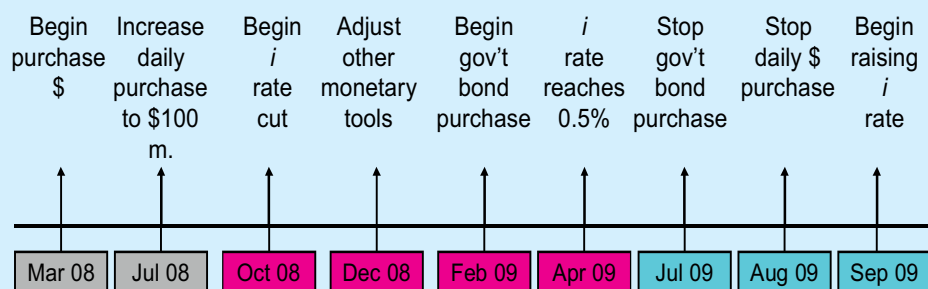
However, despite some indications of recovery, uncertainty about the global economy remained high and it was premature to determine whether a turnaround and the onset of a recovery had occurred. Concern about the sustainability of the recovery abroad originated, among other things, in assessments that the recovery was based on major government stimuli and would wane after the gradual removal of the stimuli due to the factors impeding recovery, including a high level of household leverage, labor market slack, a steep increase in the public debt, and the damage that the crisis had inflicted on financial institutions.

The onset of the recovery in Israel presented policy with a new challenge—to adjust the monetary expansion to the improvement in the economic environment and the upturn in the inflation environment while continuing to support the recovery, and to do so while central banks abroad continued to maintain very low interest rates. The policy challenge was how to adjust the pace and strength of policy changes so that they would not slow the recovery from the crisis but would also not abet inflationary pressures, harm the credibility of the inflation target regime, and have potentially negative implications for financial stability, e.g., the development of asset price bubbles. The adjustment of the monetary expansion became increasingly feasible as assessments of a turnaround in economic activity gathered strength, coupled with evidence of an upturn in the inflation environment.

The adjustment of policy to the new economic environment began in August 2009, when the Bank of Israel started gradually to roll back the powerful monetary expansion as the economic recovery gathered strength. Thus, the special tools were adjusted: in August, purchases of bonds were halted in accordance with the program and the policy of intervening in the foreign currency market was revised from regular purchases to intervention when warranted by economic conditions. Furthermore, a gradual process of increasing the interest rate ensued; from September 2009 to April 2010 the rate was raised four times by 0.25 percentage points each time, bringing it to 1.5 percent. The interest rate adjustments had to be applied gradually due to the low interest rates abroad, which were expected to remain low for some considerable time to come, since the interest rate differential affects capital flows and, in turn, the exchange rate.

Figure 3.14 describes the major changes in monetary policy over time, illustrating the three periods distinguished above: The measures in the foreign exchange market in the first period helped to prepare the economy for a crisis. The vigorous policy response at the peak of the crisis was reflected in the measures taken during the second period. The third period saw the adjustment of policy measures to the beginning of the recovery.

Figure 3.14
The Major Changes in Monetary Policy, 2008-09



(c) Adjustment of monetary tools to the crisis period

After cutting its rate several times and as the crisis approached its worst, the Bank of Israel announced in late 2008, as part of its expansionary monetary policy, a series of measures involving the use of additional monetary tools. These tools, too, were meant to improve domestic liquidity and lower its cost:

- ◆ **Reducing the share of makam in absorbing excess liquidity:** the Bank of Israel absorbs excess domestic liquidity in several ways, mainly via deposit auctions and makam. The absorption of liquidity via deposit auctions takes place only vis-à-vis commercial banks, whereas makam auctions are also open to the public. To diversify the public's ways of investing in the financial markets during the crisis, the Bank of Israel began, in January 2009, to reduce the share of makam in the absorption of excess liquidity and to increase the share of the deposit auctions. Its purpose in doing this was to redirect the public's excess liquidity, the portion of which would not be invested in makam, to other investment channels in the financial markets. Furthermore, absorption through deposits allows greater flexibility in setting the amount of absorption because it is for the very short term and can be adjusted daily. In September 2009, the Bank of Israel again raised the proportion of makam in the absorption of excess liquidity and reduced that of deposits. By this time, the financial markets had begun to improve.
- ◆ **Expressing willingness to offer banks longer-term loans:** to improve liquidity in the financial system, the Bank of Israel announced its willingness to lend the banks, in addition to the one-day and one-week monetary loans that they were allowed to take within the framework of monetary auctions, loans to longer terms as well. However, since the financial system had maintained liquidity surpluses during the crisis, the banks did not exercise the option of borrowing from the Bank of Israel to either short or long terms.

- ♦ **Narrowing the spread around the benchmark rate:** the Bank of Israel narrowed the interest rate corridor around the interest rate for the commercial banks at the credit window and the deposit window and adjusted it to the low level of interest during the crisis. In January 2009, the corridor was narrowed from ± 1 percent to ± 0.5 percent and, when the interest rate verged on zero, the corridor was narrowed further, to ± 0.25 percent from March 2009 onward. By means of the credit and deposit windows, banks are able to take daily loans from the Bank of Israel and make daily deposits with the Bank at interest rates lower than or higher than the Bank of Israel rate, as the case may be. By narrowing this spread, the Bank of Israel made it easier for the banks to manage their liquidity at this time of severe uncertainty by reducing the cost of using this instrument. During the crisis, the deposit window was not used more intensively than in ordinary times and the credit window was not used at all.
- ♦ **One-month repo auctions:** for several years, the Bank of Israel carried out repo auctions in order to develop the use of this important instrument in the domestic financial system, an accepted mechanism in other developed countries. The auctions were carried out in sums of NIS 2 billion per week to a one-week term and eligible participants were commercial banks, financial institutions, and mutual funds. During the crisis, the Bank of Israel decided to replace the one-week auctions with one-month auctions in order to inject longer-term liquidity into the financial system by means other than banking intermediation. After a two-month pilot, the Bank found that there was no demand for one-month auctions and reverted to the practice of one-week auctions. In August, the Bank also canceled the one-week auctions because other channels for conducting repo transactions had begun to develop.

(d) New monetary tools that were used during the crisis

1. Intervention in the government-bond market

On February 16, 2009, the Bank of Israel announced its intention to begin using an additional tool for the implementation of monetary policy—buying government bonds in the secondary market. At first, the purchases were made with no prior notice in regard to their size, but in March the Bank announced that the extent of the purchases would average NIS 200 million daily until the cumulative purchase totaled NIS 15-20 billion. The Bank decided to use this tool as its interest rate approached an especially low level. The purpose of this intervention was to enhance the efficacy of monetary policy by exerting direct influence on yields to longer terms, those of relevance in decisions on investments and purchases of durables. The bond purchases were necessitated by the steepening of yield curve slopes before the bond market intervention began as short-term yields fell steeply under the influence of the Bank of Israel's interest rate cutting

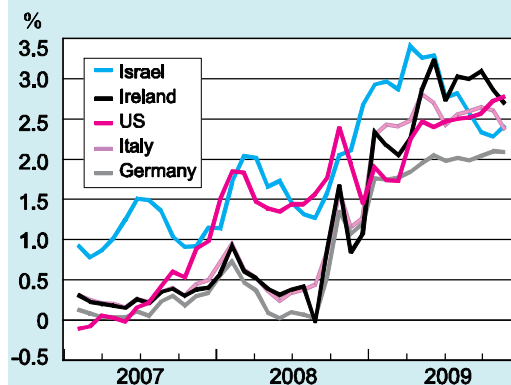
while longer-term yields declined less aggressively⁶⁹—making the slope of Israel’s curve higher than that of other countries (Figure 3.15). The bond purchases were meant to help bring down longer-term interest rates and, thereby, to ease domestic borrowing terms and support economic activity. This reflects the fact that the interest rates on government bonds serve as benchmarks for the pricing of corporate bonds and other lending interest rates; therefore, a decrease in their yields helps to reduce domestic borrowing costs and allows business and households to finance their activities more easily at a time of crisis.

In late July 2009, after the Bank of Israel completed the purchase of NIS 18 billion in government bonds—as had been planned in advance—the Bank announced that from August it would no longer buy government bonds and that it did not intend to sell the securities it had bought. The termination of these purchases was part of the rollback of the powerful monetary expansion that the Bank had been carrying out during the crisis, a process that also found expression in changes in the policy on foreign currency purchases in early August, as described below. As it adjusted the use of these special monetary tools, the Bank also began a process of gradually increasing the interest rate and adjusting it to the new economic environment. According to checks that the Bank performed, the bond purchases had lowered government bond yields by 30–40 basis points.

2. Intervention in the foreign-currency market

The development of the Bank of Israel’s intervention in the foreign currency market, like its use of other monetary policy tools, mirrored the main phases of the global crisis and its impact on the domestic economy. In the first stage of the global crisis, when the impact of the crisis on the economy remained mild and policy focused on preparing for possible ill effects, the foreign currency purchases (which had begun in March 2008 at \$25 million a day) were increased in July 2008 to \$100 million a day. The decisions

Figure 3.15
Slope of Nominal Yield Curve
in Selected Countries, 2007-09
(10-year yield minus 2-year yield)



SOURCE: Bloomberg, Kav-Manhe and Bank of Israel.

⁶⁹ This response is expected at a time of unusual rate cutting which is perceived as temporary.

on continued purchases in late 2008 and early 2009 were integrated into the extensive response of monetary policy to the worsening of the crisis. The policy change in August 2009 was integral to the rollback of the expansionary policy in view of the economic recovery.

After some 10 years of non-intervention in foreign currency trading, the Bank of Israel purchased foreign currency on March 13–14, 2008, because of a failure that it had identified in this market. The Bank defines several indicators as potentially useful in detecting a market failure, including intra-day volatility, spreads, and non-linear changes in the exchange rate. On March 13, several of these indicators suggested that such a failure had occurred, generally corroborating the judgemental assessment of the Governor of the Bank and the Monetary Forum. Consequently, the Bank decided to intervene in the market on a non-recurring basis, purchasing some \$600 million over those two days. Although this was the first intervention in about a decade, it did not signal a policy change in principle because for years the Bank had reserved the right to intervene in the market in the event of market failures or irregular activity, and had stated so publicly.

On March 24, 2008, the Bank of Israel began to purchase foreign currency as part of a program that aimed to build up the foreign reserves from \$29 billion at the end of February to \$35–40 billion. The decision to increase the reserves was made in view of the economy's needs, given rapid GDP growth in the preceding few years and Israel's growing integration into the global economy and financial system.⁷⁰ The decision to do this marked the implementation of a contingency plan that the Bank had devised several years earlier: since 2003, it was widely believed at the Bank that the level of the reserves should be raised. Such assessments had been gathering strength since then and were published widely, e.g., in the 2003 annual report of the Foreign Currency Department. The assessment in those years, however, was that increasing the reserves would clash with other goals of the Bank, i.e., price stability and the securing of the Bank's credibility. Under the circumstances that had come about in March 2008, however, there was a consensus that increasing the reserves was now consistent with, and even supportive of, the other policy goals. The timing of the implementation of this program—from the first quarter of 2008 onward—was chosen in view of the steep and continuing appreciation of the NIS, the belief that the global financial crisis that had begun in the summer of 2007 would also harm the domestic economy, and the awareness that an overvalued domestic currency would make it hard for the economy to cope with the repercussions of the crisis. From late March 2008 onward, the Bank of Israel purchased \$25 million in

⁷⁰ For a cross-country analysis of the Bank of Israel's foreign reserves, see Box 7.2 in the 2008 Bank of Israel *Annual Report*.

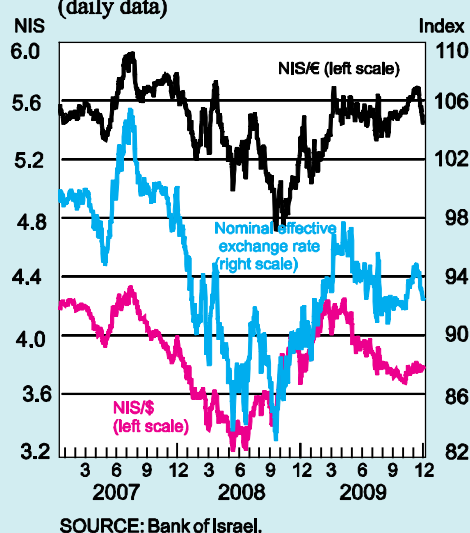
foreign currency each day. From July 2008 onward—against the background of steep NIS appreciation—the Bank stepped up its daily purchases to \$100 million.

In late 2008, the Bank of Israel announced that the desired level of the reserves was now \$40–44 billion, and in March 2009, by which time the reserves had attained the higher of these levels, it decided to continue buying \$100 million on daily average in the domestic foreign currency market. This time, due to the prolongation of the global crisis, it did not set a target for the level of the reserves. By the time the first indications of recovery became visible, the Bank of Israel had already begun to reconsider the continuation of the foreign currency purchases and their size. However, with

the strength and durability of the recovery clouded in uncertainty, the Bank decided to continue making the purchases for reasons including the need to avoid policy zigzags and the risk to the fragile recovery that might ensue if the purchases were halted prematurely. Thus, given the implications of the crisis for the domestic economy, the Bank used the foreign currency purchases as yet another monetary policy tool—in order to affect the exchange rate and, thereby, help the economy to cope with the crisis. This support was especially important due to the severe damage that the crisis had inflicted on exports, one of the main mechanisms by which the global crisis hurt the domestic economy. The intervention policy helped to alleviate abnormal fluctuations in the exchange rate and to thwart excessive appreciation of the NIS just as the recovery from the crisis, fraught with much uncertainty, was beginning.

In August 2009, the Bank of Israel changed its policy of buying a regular daily amount in USD to a policy of intervention only in cases of unusual exchange-rate fluctuations that were incompatible with the economy's fundamentals.⁷¹ This policy change was part

Figure 3.16
NIS/\$ and NIS/€ Exchange Rates,
and the Index of the Nominal
Effective Exchange Rate,
2007–09
(daily data)



⁷¹ The change in the policy on intervening in the foreign currency market was applied gradually in order to spare the market from shocks. Thus, on August 3, the Bank announced that it would operate in the foreign currency market in the event of unusual exchange rate fluctuations that were inconsistent with fundamentals or when the foreign-currency market was not functioning properly. Concurrently, it stated that it would continue to make its daily \$100 million purchases. On August 10, the Bank announced that, pursuant to the adoption of the new policy, it would terminate the regular daily purchases.

of the process of gradually withdrawing the exceptional policy measures that the Bank had adopted in response to the crisis—a process also manifested, as stated, in the Bank’s announcement in late July 2009 concerning the cessation of purchases of government bonds. Accordingly, the Bank encouraged those who were exposed to exchange rate volatility—exporters, importers, borrowers, lenders, and investors—to hedge against exchange rate risks by means of existing market tools and encouraged exporters to improve their competitiveness by improving their efficiency and seeking new markets.⁷²

Israel was not unique in intervening in the foreign exchange market during the crisis and upon emerging from it. Such intervention was evident in other countries, particularly those that are very open to capital flows, highly dependent on international trade, and significantly affected by the exchange rate. Singapore and Korea are two important examples. Since 1981 Singapore has focused its monetary policy on managing the exchange rate by intervening in the foreign exchange market. This policy was maintained throughout the crisis, during which Singapore’s exports fell sharply, and was augmented with a swap arrangement between Singapore and the Fed. In the years that preceded the global crisis Korea experienced large capital inflows, corresponding pressures for an appreciation of its currency, and a significant accumulation of foreign reserves. The deterioration of the global crisis in September 2008 affected Korea severely, and brought about a sharp depreciation of its currency. Consequently its central bank began selling substantial amounts of foreign reserves. However, these sales were discontinued at the end of 2008 when it became clear that they had not achieved the desired results, and because the bank was reluctant to erode the level of its reserves any further. Instead, Korea set up swap arrangements with the US, Japan and China. The similarity to Israel in terms of the very intervention in the foreign exchange market notwithstanding, these examples also illustrate important differences: Swap arrangements that played an important role in the efforts of several central banks to stabilize the markets were not required in Israel; additionally, the Korean experience emphasizes the asymmetry between the purchase and sales of foreign currency in terms of the sustainability of intervention in this market.

b. Additional measures taken to improve the state of the financial markets during the crisis

To cope with the crisis, a broad array of measures was invoked to stabilize the corporate bond market and deal with the standstill in the bank and nonbank credit markets. Most of the measures implemented were mutually supportive and synergetic. Some, as stated, combined attentiveness to the expectations and sentiments that affected the public’s behavior with the treatment of specific economic parameters.

72 See press release, Oct. 19, 2009: "The Bank of Israel’s Exchange Rate Policy."

The measures taken were the following:

1. Government aid for pension savers (safety net)

In 2008, long-term savings institutions posted negative returns of –18 percent in provident funds, for example. These extraordinary negative returns, occasioned by steeply falling prices in the financial markets due to the global crisis, brought on a wave of withdrawals from the provident fund industry that gathered speed in the last four months of 2008. This wave of withdrawals joined forces with withdrawals from mutual funds, especially corporate bond mutual funds. This outflow forced the funds to realize assets on a large scale, thereby exacerbating the downturns in the financial markets, including the corporate bond market.

To calm the public and halt the downslide in the domestic financial markets, the government announced on December 14, 2008, a program that created a safety net for some of the pension savings of older savers who were expected to begin drawing their pensions in the next few years and who lost a significant portion of their pension savings during the recent crisis. The pension money of most older savers in Israel is either not exposed to market risks or exposed only in a limited way because it has been accrued in "old" pension funds or defined-yield (DY) insurance plans or because the workers are entitled to a budgetary pension. Thus, the program was meant to deal only with the population of workers who were nearing pension age and benefit in only a limited way, if at all, from protected forms of pension savings.

The protection program for older savers' money was also meant to reinforce public confidence in pension savings, reduce the incentives to withdraw pension savings from long-term vehicles such as provident funds and help calm the markets.

In preparing the program, emphasis was placed on its potential budget implications and the wish to make it an applicable scheme that can be implemented without entailing the creation of a large apparatus. Below are the main provisions of the program as implemented:

- ◆ **The population entitled to protection of its pension savings:** persons who, on the date of implementation had reached age fifty-seven and whose total pension assets, from all sources, on the date of the exercise of the arrangement would be less than NIS 1.5 million.
- ◆ **Value of assets protected:** for insured persons whose total pension assets were less than NIS 1.25 million: up to NIS 750,000 less half of the value of their assured pension sources (budget pension, "old" pension fund, and DY insurance plan). For insured persons whose total assets were in the NIS 1.25-1.5 million range, protected assets would be NIS 600,000 less half of the value of saver's protected pension sources.

- ◆ **Protection was extended to money to be received in the future in allowance form only** and that was deposited by November 30, 2008, in unprotected pension-savings vehicles—provident funds, new pension funds, and defined-contribution (DC) insurance plans.⁷³
- ◆ **Extent of protection:** the government undertook to make up for the saver, on the date of exercise of the arrangement, the positive difference (if any) between the value of the savings that the saver had on the determining day, plus indexation differentials, and the actual value of the savings on the date of exercise or the value of the savings on the determining date plus changes in the benchmark index, whichever is higher. The use of a benchmark index is meant to express a reasonable return without excessive risks, and its purpose is to prevent excessive risk taking at the expense of the government.
- ◆ **Date of exercise:** savers may exercise the protection on the date when they reach retirement age or at the end of 2011, whichever is later.
- ◆ **Joining the program:** one may join the program without prior notice and decide at the time of exercise whether he is interested in receiving the protection.

In sum, the program was announced at the peak of the crisis, when uncertainty and fears of worsening of the crisis were highest. Abroad, too, governments took measures at that time to soothe their markets by guaranteeing the value of financial assets in various ways and on much larger scales (although not by protecting pension savings themselves). The relative speed of the response in this case was very important because the measure was meant to calm the markets as quickly as possible, before savers' fears could translate into a massive wave of withdrawals from provident funds. Such a wave might have caused further deterioration in the markets, including the corporate bond market, which was engulfed in a grave crisis to begin with. The fastest possible calming of the markets had the additional advantages of making it less likely that the government would have to honor its undertaking and reducing the cost of doing so if it were to become necessary. The program attained its goal—calming savers and the markets—in return for the government's assuming a risk that is unlikely to materialize and at a budget cost that did not threaten fiscal credibility.

2. Government guarantees for money raised by the banks

The standstill in borrowing in the capital market in the second half of 2008 and the fact that the banks could not meet the demand for credit led the government to offer guarantees for money raised by the banks. This process began to take shape in September

⁷³ According to estimates performed, the main relevant target group of the safety-net plan was those who saved via provident funds, since most savers via new pension funds and DY insurance plans were young.

2008 with the Bank of Israel, the Ministry of Finance and the Securities Authority acting in cooperation.

The main goals of the program were to increase the supply of bank credit, help the economy minimize the effects of the crisis on the availability of credit, make it easier for the private sector to continue to finance its business activities, and make credit sources available for companies and individuals so that economic activity could continue. In addition, encouraging borrowing was also intended to strengthen bank capital and maintain the stability of the system.

On January 19, 2009, the Ministry of Finance announced its plan regarding guarantees, intended to cover raising NIS 6 billion. The program was approved by the government and the Finance Committee.

At that stage the program encountered stiff opposition both from the banks, which in the end did not avail themselves of the guarantees, and from the institutional investors that exerted pressure for the premiums to be increased.

Some of the criticism leveled against the program was that it was too modest, and that NIS 6 billion was not enough to both strengthen capital and expand credit. Another point made was that a bank that joined the scheme would be marked as a bank whose financial stability was doubtful, as the guarantees would create a distinction between normal instruments and inferior ones (without a guarantee), and would be likely to create concern among those holding other liabilities. The banks also claimed that if they used the guarantees, this was likely to result in further government involvement in the form of the imposition of restrictions, and intervention in credit, wages, prices, etc., a view based on how other governments were intervening in their countries.

Despite the difficulties in formulating the guarantees program and the long time it took to iron out its details, it should be stressed that its very existence was instrumental in strengthening the banking system, as it demonstrated to the public that the government stood behind the banks, and boosted confidence in the system despite the fact that in the end the banks did not avail themselves of the program. Such a situation was not unique to Israel: In several other countries banks made only little use of special aid programs that were offered by the governments, but the very existence of these programs helped to stabilize the system. Thus for example, the banks in Norway used less than 10 percent of the specially established government fund for capital injections.

3. Establishment of leverage funds

In response to the freeze in the nonbank credit market during the crisis and the expectation of large redemptions of corporate bonds, a decision was made in early 2009 to set up investment funds ("leverage funds") with government and private-sector participation. The purpose of the funds was to expand the sources of nonbank credit by recycling

debt and managing debt settlements. The leverage funds were incorporated as limited liability entities in which the government and long-term institutional investors served as limited partners and the manager of the fund was the general partner. The financial sources for the funds' activity came from money that the Ministry of Finance undertook to invest in them along with investments to be made by long-term institutional players against participation units in the funds. The fund managers were chosen in competitive bidding and the winner was determined, among other things, on the basis of the leverage ratio offered in the bid—the highest ratio of the financial institutions' undertaking to invest in the funds to that of the government.

To attain the goal of the leverage funds, it was stipulated that the funds would be able to purchase bonds in the primary or secondary market and also to lend to firms, provided that more than 50 percent of their activity takes place in Israel. According to the arrangement, the government bears the first risk of the investment and is entitled to some of the profits, if any. The state's investment in the funds was programmed at NIS 5 billion; three funds were established with a government investment undertaking of NIS 1.1 billion and an investment three times as large by the financial institutions. According to the rules, the funds could use their financial resources to recycle debt, reschedule debt, and invest in troubled companies; however, their investments in the secondary market were limited to 20 percent. There was little activity in the three funds that were created in early 2009 and following the recovery in the corporate bond market and the renewal of issues, no additional funds were created.

4. Establishing tools for debt settlements in the bond market (appointment of credit officers and issuance of an opinion by the Director General of the Antitrust Authority)

The domestic corporate bond market experienced its first significant crisis in 2008, many firms defaulting and requiring debt restructuring proceedings. Since this market only began to develop in recent years, it lacked the appropriate tools—e.g., established debt restructuring proceedings for troubled firms—to contend with such a severe crisis. Therefore, the Securities Authority introduced a procedure for the appointment of credit officers whose function it would be to help firms to cope with difficulties in reorganizing their tradable debt. These officers were appointed by a bondholders' representative and interacted with the issuing company on behalf of all bondholders and also, at times, with additional creditors, all for the purpose of facilitating the conclusion of an efficient arrangement for the benefit of the bondholders and with their approval. A procedure for the appointment of credit officers was needed because, unlike the situation in bank credit, this kind of debt is dispersed among many lenders who sometimes act on the basis of conflicting interests; hence the importance of appointing a representative who,

with the bondholders' consent, represents the interests of a majority of creditors in negotiations with the issuing firm.

The formulation of a debt settlement requires cooperation and dialogue among the institutional investors who hold the debt, and it was feared that such cooperation might violate the Antitrust Law. To allow such cooperation to take place, the Director General of the Antitrust Authority issued an opinion in November 2008 and a clarification to the opinion in March 2009 for the purpose of allowing institutional investors to cooperate in modifying the terms of bonds that they hold—such as deferring the maturity date and converting debt into equity. The opinion limits cooperation among institutional investors in a way that dispels the fear that the cooperation would reduce competitiveness among institutional investors or give these investors information that is inaccessible to the investing public at large.

The credit officer appointment procedure and the published opinion were helpful in putting together the many debt settlements that were needed in 2009, in which fifty-six firms—17 percent of all firms that issued bonds—announced that they would be unable to meet their payback obligations on time and would require a debt settlement process.

5. Expansion of small- and medium-business relief funds and export fund

In view of the reduced availability of credit and the difficulty that small businesses faced in obtaining credit from the banking system, the government decided in early 2009 to increase its assistance to small businesses⁷⁴ by means of a government fund budgeted at NIS 200 million, to establish a fund for medium businesses,⁷⁵ also at NIS 200 million, and to make adjustments in the sole exporter fund including an allocation of NIS 77 million to the fund. Along with the government allocations, banks that submitted winning bids made additional resources of their own available to the borrowers, bringing the total sources available to the funds to some NIS 2 billion. By mid-2010 these funds had issued about NIS 2.2 billion in loans. Outstanding loans at that time totaled about NIS 1.5 billion.

6. Monitoring firms-at-risk that issued bonds

The crisis in the corporate bond market made it difficult for many firms to recycle bonds that they had issued to the public, creating the fear that large firms of potential systemic importance might default. Against this background, in early 2009 the Bank of Israel set up a team to examine the ability of bond issuing firms to meet their liabilities and the

⁷⁴ Businesses that have no more than seventy persons on their payroll and an annual turnover no greater than NIS 22 million in the previous year.

⁷⁵ Businesses with an annual turnover of NIS 22-100 million.

extent to which a default in this market might pose a systemic risk.

The firms examined were chosen according to the amount of nonbank debt that would fall due in 2009–10 and the yields at which their bonds were trading at the time of the examination.⁷⁶ The examination, testing a wide range of these firms' financial ratios, indicated that most of the firms would be able to meet their payback requirements in the review period by concluding debt settlements, selling assets, or taking more bank credit.

7. Testing of crisis scenarios involving financial institutions

As the economy braced for the crisis, several scenarios of possible crisis in the banking and nonbanking financial systems, including insurance companies and long-term savings institutions, were examined.

- ◆ **Banks:** several system-level scenarios were devised, including one concerning the effect of a default of a large borrower group on the domestic financial system and scenarios testing the banking system's capital adequacy.
- ◆ **Nonbank financial institutions:** a scenario of a possible crisis involving a large insurance company was examined. The assessment included testing the Bank of Israel's legal ability to answer a request for assistance from a nonbank entity, as well as the array of data that would be required to deal with such a request.

c. The policy of the Supervision of Banks

Introduction

The Bank Supervision Department is responsible, above all, for maintaining the stability and resilience of the banking system. To attain this objective, the Department uses a variety of tools and methods including close surveillance of banks' activity and risk management, audits, and the establishment of regulatory rules for proper banking management, reporting to the Department, and appropriate disclosure to the public. In doing so, the Department applies practices that are accepted abroad and others that it adapts to the circumstances in Israel.

To set forth a supervisory policy that will serve its objectives optimally, the Department reviews macroeconomic and market developments in Israel and abroad; this enables it to detect the development of focal points of risks to the banking system and individual banks.

During the crisis, the Department expanded and intensified its activity, toughening its audits of the banks and its surveillance of their activity and how they manage their

⁷⁶ The examination focused largely on firms that were expected to pay back more than NIS 100 million during these years and had bonds trading at yields of more than 8 percent.

risks, setting limits and regulation in regard to developments abroad, broadening and improving the disclosure requirements that banks must satisfy in their financial statements, determining new reports and extending existing reports to the Department in keeping with new focal points of risk that were detected, preparing action plans for the treatment of a failing bank, stepping up the dialogue with the banks, and strengthening cooperation with other departments in the Bank of Israel and with authorities outside it. The banking system coped with several threats during this time, including concern about its external exposure due to its deposits with foreign and other financial institutions and concern about its exposure to large borrowers who were also active in the nonbank market. One of the Department's most important actions at this time was its activity to bolster the banking system's capital adequacy as a cushion for the absorption of unforeseen losses.

The Department's activity is partly overt (mainly when it pertains to the banking system as a whole) and partly covert (mainly when it concerns a specific bank). Additionally, the Department can make policy directly by setting limits and issuing regulations or by applying moral suasion and sending messages to the banks. During the crisis, the use of information tools for supervisory activity and the maintenance of public transparency were extremely important in order to reinforce depositors' confidence in the banking system close to the time when events occurred and in light of the system's fragility. At that time, the Bank Supervision Department employed a wide range of tools, methods, and *modi operandi* to make appropriate policy and explain the Department's actions, in order to strengthen the banking system's resilience in light of concurrent developments.

(1) The Department's actions before the crisis developed

The Bank Supervision Department, due to its awareness that preparations for a downturn in the business cycle must be made in the expansion stage of the cycle, acted even before the crisis to enhance the resilience of the banking system.

In early 2007, the Department promoted a three-year project for the application and assimilation of the **Basel II** principles in Israel. This move, according to which the principles would be applied in the banking system and by the Department from December 31, 2009, upgraded banks' risk management, controls, and corporate governance. At the same time the Department adjusted its work methods in accordance with the changes in the risk management environment. This, in turn, propelled the domestic banking system to the levels required in the world's most advanced economies, and even though it is not clear whether this process was helpful in weathering the current crisis, it is expected to help the system to withstand future crises.

The Department's principal action in early 2007 that made a direct contribution to the banking system's resilience was the Supervisor's insistence that the banks adopt a rising

path of **capital adequacy** that would raise the capital ratio to at least 12 percent by the end of 2009. The banking system accepted this objective, aware of the importance of capital adequacy especially in boom times, after which a downturn is expected. This level of capital adequacy, the norm in the advanced economies, enhanced the banking system's ability to withstand the unforeseen changes that would originate in the materialization of risks.

(2) The Department's actions in July 2007–March 2008

When the subprime crisis erupted in the summer of 2007, its effects did not overlook Israel's financial system. The main effect originated in exposure to foreign markets, as a result of which the domestic capital market was affected by the steep decreases and severe volatility that characterized capital markets everywhere. At this time, the Bank Supervision Department focused on testing the exposure of the banking system to the financial instruments that underlay the crisis and **required detailed reports on the topic**. The banking system's exposure to these instruments turned out to be limited: there was minimal exposure to subprime instruments and a small but upward-trending exposure to asset backed financial instruments.

On November 21, 2007, the Supervisor sent a letter to the banks and credit card companies directing them to make **special disclosure, in their published financial statements as of September 30, 2007, and thereafter, of activity in asset-backed financial instruments**. This separate disclosure gave a better understanding of the effect of these instruments on the activities of Israel's banks. The format of the report was improved and expanded in the statements from December 31, 2007, in the light of actual experience.

As the crisis developed from the summer of 2007 onward, the Bank Supervision Department had to focus its attention on the banking system's exposures to foreign markets and their deposits in foreign banks. The Department examined economic developments in the world's markets on a daily basis, including by receipt of real-time updates, and braced for possible developments. On December 10, 2007, the Supervisor of Banks instructed the banks to hold **board discussions about exposures stemming from the US financial crisis**. For this purpose, the board was instructed to avail itself of comprehensive background material with which it could map the exposures. The material and the minutes of the board's discussions were passed on for the Department's review. In that letter, the Supervisor emphasized that the expansion of the crisis from an event confined to the US mortgage lending market into a liquidity crisis in the global financial markets, made redoubled caution and strictness in the management of banks' investments necessary. Accordingly, the board was instructed to re-examine its policy on investing in global financial markets, adjust its liquidity and risk management policies,

and review the suitability of its procedures in control, supervision, and auditing of the bank's offices abroad. The Bank Supervision Department then reviewed the actions that the banks took in this context.

(3) The Department's activity in March–August 2008

From March 2008 onward, when the Bear Stearns crisis erupted followed by the bailout of the Fannie Mae and Freddie Mac mortgage companies, the Bank Supervision Department tightened its surveillance and supervision of banks and credit card companies. This was expressed in the toughening of its inspections of banks, receiving additional and improving existing bank returns (relating, among other things, to exposure to foreign financial institutions), strict attention to proper disclosure in financial statements, and enhanced communication and dialogue with senior officers in the banking system. In light of the turmoil in the global and domestic financial markets, the uncertainty about the extent of its effect on the domestic economy, and the expectation of a slowdown in growth in 2008, the Supervisor sent a letter to the banks on April 13, 2008 on **their preparedness for changes in the business environment**. The banks were instructed to be doubly cautious and strict in all matters related to bank management, including a review of the banking group's targets, and to reassess the full range of risks, bolster capital, prepare contingency plans for the raising of capital, apply stress tests, etc. The Department received the minutes of banks' board discussions on this topic and examined the decisions adopted and the actions that accompanied them.

An examination by the Bank Supervision Department showed that Israel's banks, unlike some of their counterparts abroad, were not suffering from a liquidity shortage and even had liquidity surpluses during some of this time. This outcome was abetted by the successful outcome of the process initiated by the Bank of Israel of the entry of the NIS to the **CLS (continuous linked settlement) international system in May 2008**. This move, which had the effect of reducing the settlement risk in currency conversion transactions, was expected to improve the liquidity and efficiency of Israel's markets, strengthen relations between these markets and those abroad, and enhance the international status of Israeli banking.

Concurrently, the Department continued to examine **the banks' holdings in asset backed financial instruments** and the inherent risk in these activities. Its review of this matter led to Bank Hapoalim being directed to double its capital allocation on account of holdings in asset backed bonds for the purpose of calculating its risk weighted capital ratio, given the high risk of these holdings. In the aftermath of steep losses on securities of this type and in light of the Supervisor's requirement, in May 2008 the Bank Hapoalim group chose to realize its portfolio of holdings in these securities—an act that, in retrospect, saved the group from incurring considerable losses.

The Bank Supervision Department **tightened its monitoring of the publications and reports of international institutions** and leading supervisory authorities and central banks abroad and adopted new supervisory policies as and when necessary. On July 30, 2008, it published **a translation into Hebrew of the April 2008 report of the Financial Security Forum (FSF)** on improving the resilience of the market and the institutions.⁷⁷ The Department also passed the translation to the Capital Market, Insurance, and Savings Division of the Ministry of Finance and to the Securities Authority, within the framework of its cooperation with them, so that they, too, could review its recommendations in relation to their areas of responsibility. Pursuant to the monitoring of developments in foreign markets, the Supervisor, in a letter to the banks on August 18, 2008, clarified his demands in regard to **the banks' operations via their overseas offices**, including the setting of limits on permissible exposure to various segments of activity and other constraints meant to reflect the risk appetite relating to those overseas offices.

These actions left the banking system with a markedly low exposure to the crisis until September 2008, and strengthened the system in anticipation of the continued evolution of the crisis and the expected slowdown in real activity.

(4) The Department's actions in September 2008–April 2009

In September 2008, when the crisis took a turn for the worse with the collapse of the fourth largest investment bank in the United States, Lehman Brothers, the Bank Supervision Department had to reappraise the situation. The uncertainty in the markets and the steep decreases on the Stock Exchange (bonds and shares) were liable to cause, and did cause, heavy losses in the banks' portfolios on account of investments that had been perceived as low risk until then, including investments in securities of foreign banks and financial institutions, corporate bonds, and holdings in nonfinancial corporations. From September 2008, the state of domestic firms deteriorated considerably, projecting directly onto the banks' credit risk and being reflected, among other things, in loan-loss provisions in the banks' financial statements.

The uncertainty in the financial markets resulting from the Lehman Brothers collapse prompted the Bank Supervision Department and the Bank of Israel to take several immediate measures:

On September 17, 2008, **the Governor of the Bank of Israel, the Supervisor of Banks, and the CEOs of the largest seven banks** held a meeting in the context of the regular monitoring of the banking system. At the meeting, the Governor and the

⁷⁷ Financial Stability Forum, "Report of the Financial Stability Forum on Enhancing Market and Institutional Resilience," April 2008.

Supervisor reviewed recent developments in the global banking system, shared insights from the development of the crisis, and expressed their expectation of prudent and conservative conduct by the banking system in view of the escalation of the crisis.

Later that day, **the Governor and the Minister of Finance agreed on an outline for the activation of joint work teams and joint working procedures for the Ministry of Finance, the Bank of Israel, and the Securities Authority.** This cooperation was meant to permit seamless and uninterrupted surveillance of activity in the markets and of the financial institutions. It was also agreed that these work teams would report to the three supervisors, the Governor, and the Minister of Finance, and that the Supervisor of Banks would head the team charged with dealing with the financial system crisis.

Consequently, the Department set up ad hoc teams and reinforced those already existing. One team kept track of credit risk originating in firms that issued securities on the capital market, another examined liquidity risk, a third reviewed developments in credit and loan losses, and a fourth monitored exposures to foreign financial institutions.

A week or so later, on September 23, 2008, **the Governor appeared before the Knesset Finance Committee** and described the state of Israel's banking system. **The Governor stated** that the banking system was stable and that the Bank of Israel was prepared to help the banks as necessary with all the tools at its disposal to support customers with bank deposits—but that this was not necessary at the present time.

In October 2008, pursuant to the dialogue between the Bank of Israel and the Ministry of Finance, **the Minister of Finance** stated that the Government of Israel, to manifest its concern for the public's deposits and to maintain the public's confidence in the financial system, would stand behind the stability of the financial system, and noted that, even though Israel does not have deposit insurance, in all previous cases the Bank of Israel and the government had provided depositors with de facto insurance. The Prime Minister emphasized at the beginning of a government meeting on October 12 that the banking system is very stable and that he had much confidence in it.

These public statements played a very important role in bolstering the public's and the markets' confidence in the banking system. The importance of this matter was especially evident at this sensitive time, when any information or rumor might have triggered a downside given the fragility of the system, its relative resilience notwithstanding.

On September 28, 2008, in response to the expansion of the crisis in the markets and the need to broaden supervision and monitoring of the banks' exposure to the crisis, the Supervisor of Banks sent the banks a letter concerning **their preparedness for changes in the business environment.** The letter instructed the banks to report to the Bank Supervision Department in detail on **their exposure to foreign financial institutions,** including an immediate report on any foreign financial institution about which adverse indicators had come to light. This requirement was subsequently accompanied by a

demand for the disclosure of credit exposures to foreign financial institutions starting with the financial statements as of September 30, 2008. The banks were also instructed to check, map, and evaluate their exposures to entities directly or indirectly exposed to the crisis and that were not foreign financial institutions. Pursuant to this requirement, the banks sent the Department lists of large borrowers with high levels of exposure to the crisis.

The escalation of the financial crisis in September 2008 induced a broad liquidity shortage in the interbank credit markets and the money and bond markets in the US and the advanced economies. The banks in Israel, as stated, did not encounter a liquidity shortage due to both the structure of their assets and liabilities and the Bank of Israel's vigorous actions. The liquidity crisis abroad, however, underscored the need for prudent management of liquidity risk. Pursuant to international publications on the topic and developments in global markets, the Bank Supervision Department sent **a detailed and updated instruction to the banks to report on liquidity risk** to the Department, effective September 30, 2008. These reports enabled the Department to monitor liquidity risk closely and often.

Concurrently, the Department followed events abroad and their effect on domestic banks closely on a daily basis and intervened as necessary. In October 2008, the multinational bank Dexia ran into difficulties and needed emergency funding from the governments of Belgium and France. The Department examined the implications of this state of affairs for Dexia's subsidiary, Dexia Israel Bank. The parent company's troubles had no impact on the condition of its subsidiary in Israel because the main exposure of the subsidiary was to municipalities in Israel. However, the Department did have to counteract the spread of fears among domestic institutions in view of the rising uncertainty.

Practical intervention by the Bank of Israel took place in October 2008 amid the unfolding of unusual economic events in financial markets abroad, especially in Eastern Europe. Against the background of these developments, the Governor of the Bank of Israel canceled the permit that he had given Bank Hapoalim to acquire the Ukrainian bank, Ukrainian Innovation Bank. This prevented a further increase in Bank Hapoalim's⁷⁸ exposure to the crisis and underscored the need to reexamine Israeli banks' exposures to other countries.

78 Following this, as part of the chain of events in Bank Hapoalim and in order to safeguard depositors, investors, and the general public, and to maintain the public confidence in the banking system, the Bank Supervision Department acted to strengthen Bank Hapoalim and its management. In this framework and due to the resolve of the Governor of the Bank of Israel and the Supervisor of Banks, Mr. Danny Dankner's term as The Chairman of the Board of Directors of Bank Hapoalim was terminated in August of 2009.

At this time, the Department emphasized both the examination of credit risks and the soundness of large borrowers, and the level and quality of disclosure in the financial statements. In the context of this extensive activity, the Bank Supervision Department issued several circulars relating to disclosure requirements in the financial statements, the valuation of financial instruments, and credit policy, as detailed below:

On November 9, 2008, the banks were instructed to disclose in their financial statements any **decrease in value of securities available for sale**, starting with the statements as of September 30, 2008. This requirement was issued pursuant to a clarification from the Securities Authority about corporations that applied the IFRS (International Financial Reporting Standards), banking corporations, and credit card companies that held securities available for sale that had significant losses as yet unrealized.

On December 10, 2008, the Department sent out a circular concerning **disclosure of exposures to foreign countries** starting with the financial statements as of December 31, 2008; this reflected the awareness that the crisis might develop in a way that would lead to liquidity shortages and downgrading of sovereign credit ratings of various countries.

On December 18, 2008, the Department sent out a circular including guidelines and clarifications about **internal control of the assessment of fair value of financial instruments, measurement of fair value, and disclosure of the process used to determine fair value**, starting with the statements as of December 31, 2008. The purpose of the circular, issued on the basis of conclusions from inspections that the Department had conducted on the matter, was to provide guidelines and clarifications on how the Department expected boards of directors and management to act in regard to procedures for determining the fair value of financial instruments.

On January 1, 2009, the Supervisor sent out a letter about **credit policy—valuation of assets in certain countries and exposure to borrowers whose main activity is in these countries**. This letter, too, went out after the Department's examinations found that in a large number of cases, the valuation of assets in certain countries and the assessment of credit risk relating to borrowers who carried out most of their activity in these countries had not been taking adequate account of the significant element of uncertainty deriving from these countries' specific characteristics. Pursuant to this action, the Department examined **credit issued to finance the acquisition of controlling interest** and required banks to update the valuations of these firms and submit the valuations performed to independent review. This sent the banking system a clear message that the Department considers such credit high risk, especially due to the erosion of the market value of collateral provided, and that the management of this risk therefore entails a high level of prudence.

On January 11, 2009, pursuant to recommendations in the April 2008 FSF (Financial Stability Forum) Report, the Department issued a circular requiring **credible disclosure of risks** in accordance with best disclosure practices.

On March 1, 2009, the Supervisor sent out a letter on the topic of **depreciation of securities of other than a temporary nature**—in view of the depreciation of portfolio investments. The letter instructed the banks to recognize the non-temporary depreciation of securities during the reporting period, under certain conditions.

The Bank Supervision Department's actions in regard to inspections and disclosure requirements were intended to ease investors' uncertainty and enhance the public's confidence in the banks' financial statements and in the banking system. There is no doubt that the extent of disclosure that the banks made in their financial statements about their levels of exposure to risks that had increased due to the crisis bolstered the public's confidence in the system.

In the course of the crisis, the Bank Supervision Department placed emphasis on **reinforcing the banking system's capital** and the banks' risk management and corporate governance, all part of the assimilation of the Basel II principles and their application by the banking system and the Department. On December 2, 2008, as part of the Basel II project—which continued to move ahead in accordance with the work plan throughout the crisis period—the Department sent out a letter containing a proposed model for reporting on the Internal Capital Adequacy Assessment Process (ICAAP). To make sure that the banks and the Department would be ready to meet the requirements of Pillar 2 by the date on which Basel II goes into effect, it was decided that the banks must submit a draft ICAAP report before that date. In this report, the banks specified the capital adequacy that they must maintain in view of their risk profiles and their risk management method, in accordance with Pillar 2 of Basel II.

In the wake of this letter, on December 31, 2008, the Bank Supervision Department published, in accordance with predetermined schedules and after close and uninterrupted cooperation with the banking system, **a provisional directive for Basel II**—a framework for capital measurement and adequacy. The directive, effective December 31, 2009, upgrades the Israeli banking system and brings it into line with international standards. One cannot say that this action directly helped the banking system to withstand the current crisis, but it may have had indirect implications. Its main importance was its expected contribution to the system's resilience to future crises.

The Department continued to require that the banking system attain a **12 percent capital adequacy target** in view of the evolution of the crisis and on the basis of initial insights and lessons from the repercussions of the crisis for banking systems abroad, thorough analysis of the capital structure of Israel's banking system, and **stress tests** that examined the effect of changes in risk factors on the capital base. As stated, in

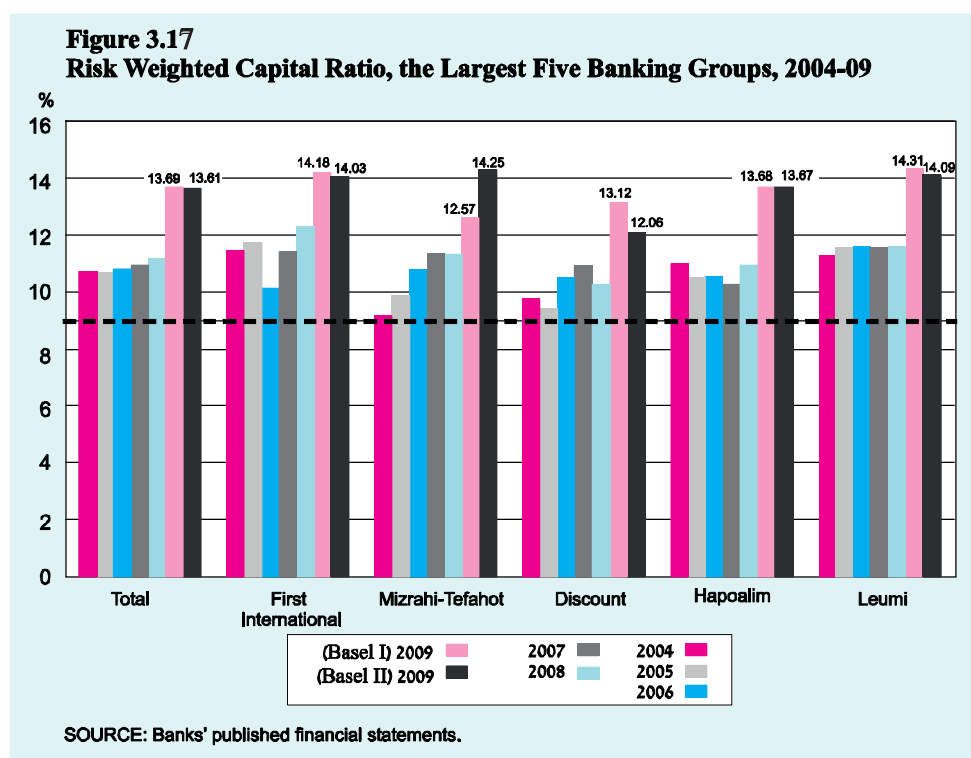
contrast to the trend in recent years, the banking system increased its balance sheet credit to the public by a notable 10 percent in 2008, surpassing the growth rate in 2007, which itself had been a record year for bank credit. The expansion of bank credit at such a meaningful rate despite the upturn in banking risks evoked supervisory concern that the banking system had been increasing its lending in response to pressures from the domestic market. On the other hand, the 12 percent capital adequacy target for the end of 2009 was perceived as a factor that might interfere with the expansion of bank credit and contribute to the development of a credit shortage. In this situation, governmental and public figures requested that the Bank Supervision Department lower the capital adequacy requirement. At this time, meetings were held between representatives of the Department, other authorities, and manufacturers' organizations to clarify the position of the Bank Supervision Department on the one hand, and to understand those of the market participants, on the other hand. It should be noted that uncertainty about the duration and intensity of the crisis was acute at that time, and the need to continue boosting capital adequacy also traced to concern about a further downturn in the markets and the solvency of large borrowers.

The requests to permit an increase in bank lending against the background of the capital adequacy requirements and the halt in borrowing in the capital market resulted in the formulation of **a government guarantees program for banks' raising of capital**. Although for various reasons the banks did not avail themselves of these guarantees, the government's very willingness to stand behind the banking system, with cooperation between the Ministry of Finance and the Bank of Israel, enhanced the banks' resilience to the development of the crisis (as explained in detail above). Concurrently, since the banking system was unable to meet the entire demand for credit on its own, programs to strengthen the nonbank credit market were also formulated.

The Bank Supervision Department acted to bolster the banking system's capital in several additional ways at this time: it took a strict approach toward sustaining the upward path of capital adequacy through the end of 2009, reviewing the individual banks' plans and monitoring their implementation closely throughout the process. It also determined that the dispensations incorporated into Basel II would be invoked in raising upper Tier 2 capital. Additionally, in conjunction with the Israel Securities Authority, the Department encouraged issues in terms of schedules and prospectus requirements.

As part of the Department's policy on the reinforcement of capital in the banking system, the Supervisor of Banks announced in January 2009 that any bank interested in distributing a dividend for 2008 must apply to him for authorization. This decision was taken after its implications had been studied. This procedure, linked to the Department's strict approach toward the banks' compliance with the internal capital adequacy targets, effectively prevented the distribution of dividends in the banking system for 2008 and,

by so doing, bolstered the system's capital and the public's confidence in the system and in the Supervision of Banks. To gauge the development of capital adequacy in the banking system, see Figure 3.17.



(5) The Department's actions since April 2009

On March 23, 2009, the Bank of Israel announced a cut in the interest rate for April, to 0.5 percent, so that the domestic economy could continue improving its ability to cope with the implications of the global crisis. This low level of interest, which remained unchanged until September 2009, necessitated a study by the Bank Supervision Department of the **implications for the banking system of the transition to monetary policy management in a near zero interest environment** with regard to profitability, the quantity of bank credit available to the public, banking spreads, etc.

At this time, the Bank Supervision Department received a growing number of requests to consider easing its supervisory restrictions in order to alleviate credit distress in specific sectors. In particular, this related to the implications of the crisis for credit for small businesses, the possibility of promoting supervisory actions that would support this sector, and also the encouragement of projects of national importance. The Department examined the regulatory restrictions in effect and decided to take several

steps. Its decisions were accompanied by thorough analyses of economic conditions and the state of the economy, ongoing cooperation with other ministries, and a dialogue with representatives of the industry.

On September 17, 2009, the Supervisor of Banks issued a circular that amended the existing directive concerning the **supplementary loan-loss provision**, insofar as this related to the calculation of exceptional indebtedness in the construction and real estate industry and allowed the expansion of credit for infrastructure projects that had reached their construction stage.

An additional dispensation was given in a letter from the Supervisor on May 14, 2009, relating to the calculation of a supplementary provision on account of debt for which the bank lacks an updated financial statement—**debts that were acquired in factoring transactions**.

Following the steep increase in **unindexed local currency floating rate mortgage loans** in the first half of 2009, the Department examined its implications for the banks. At that time, this practice was found to be negligible in terms of its effect on the stability of the banking system, but due to its significance for the consumer, especially at a time of rising interest rates, the Supervisor of Banks sent the banking system a clarification letter in August 2009. The letter noted that a rising path of local currency interest rates and hence of the monthly repayment might create repayment hardships for borrowers, and the banks should therefore exercise caution when marketing and granting floating rate mortgage loans. To manifest this caution, banks were urged to be attentive to the ratio of the monthly repayment to the borrower's current income also at a higher level of interest than the rate in effect when the loan was granted.

One of the lessons derived abroad from the evolution of the crisis concerns the role played by models for bonuses to banks' employees that prompted them to take excessive risks. These remuneration arrangements were one of the most conspicuous factors in bringing on the crisis; they encouraged excessive taking of short-term risks with little consideration of long-term ones. Pursuant to the adoption of the FSF report and to mitigate risks in the banking system, the Supervisor of Banks issued a letter on April 5, 2009, concerning the banks' remuneration policies. The banks were instructed to adopt an appropriate remuneration policy by December 31, 2009, to be determined by the board of directors in accordance with principles set forth by the Supervisor. The principles included the alignment of incentives with the profitability of the entire organization and the long-term goals of the bank, and a guideline to the effect that incentives should not encourage risk taking beyond the bank's risk appetite and should be based on risk adjusted earnings. The banks were also instructed to subject the remuneration policy to strict supervision and control procedures. The Bank Supervision Department closely monitored the banks' compliance with these guidelines and is continuing to do so.

The Department continued to act to update the banks' **disclosure and measurement requirements relating to exposures to foreign countries and measurement of fair value, disclosure of fair value, and detecting and presenting decreases in value that are of a non-temporary nature**. On June 7, 2009, the Department, in accordance with the schedules, published a **draft outline for the adoption of the IFRS** by the banks, which until then had been operating under American disclosure and measurement standards. The outline distinguishes between the adoption of international standards relating to core issues in banking business and those relating to non-core matters.

Concurrently, the Department continued to emphasize **the adoption of the Basel II rules by the deadline set forth and the reinforcement of the system's capital**. In a letter on August 20, 2009, the Supervisor instructed the banks to set and meet internal capital targets for the interim period until the completion of a comprehensive Supervisory Review and Evaluation Process (SREP) in terms of both Basel I and Basel II.

At this stage, the effect of the crisis on real domestic activity became highly evident. Failures in the corporate bond market and the Africa-Israel Company's debt settlement were accompanied by actions to reinforce capital and continued emphasis on **credit risk and risk management**. On October 12, 2009, the Supervisor sent out a letter concerning **emphases in credit-risk management**, urging the banks to make special reference to the financial condition of sensitive borrower groups. The banks were asked to perform a comprehensive review of their credit portfolios in order to detect borrowers with certain specific characteristics (high leverage, etc.). Then the banks were asked to examine several additional characteristics of these borrowers: rating, debt restructuring, strengthening of collateral, inclusion in watch lists, classification, and provision. Every action plan on the topic required approval of the board of directors and examination by the Bank Supervision Department.

Pursuant to supervisory proceedings that the Department performed to strengthen the banks' credit-risk management, a letter was sent to the banking system on December 10, 2009, concerning **lessons of the financial crisis in regard to credit risk management**. The letter listed points of emphasis that the banks were to consider in testing credit risk, including leveraged financing beyond the industry norm, and reliance on personal guarantees.

The Department's emphasis on management of credit and other risks, as part of the lessons that were being learned all over the world, found expression in its demand for **the appointment of a chief risk officer and the maintenance of a risk management function**. On December 22, 2009, as part of the adoption of the Basel II rules in Israel and in keeping with the instructions of the Basel Committee and the Committee of European Banking Supervisors (CEBS), the Supervisor determined that an independent

risk management function is needed in order to strengthen the bank's ability to understand its risks and assure their prudent management. The Supervisor's instructions established principles that a bank should invoke in having a chief risk officer and a risk management function and specified their status, duties, and attendant responsibilities.

The Department went about these actions in continual dialogue with the banking system and other professionals in Israel and abroad. In his public appearances at this time, the Supervisor of Banks stressed the need to continually strengthen the banks' risk management and internal control systems, the importance of sound corporate governance in safeguarding the public's trust and confidence in the banking system and, above all, the importance of the functioning of the board of directors and senior management. Concurrently, he emphasized the importance of improving financial regulation and supervision as a key factor in making a system failure event less likely and of encouraging the capital market and developing the nonbank credit market as adjuncts to a stable banking system.

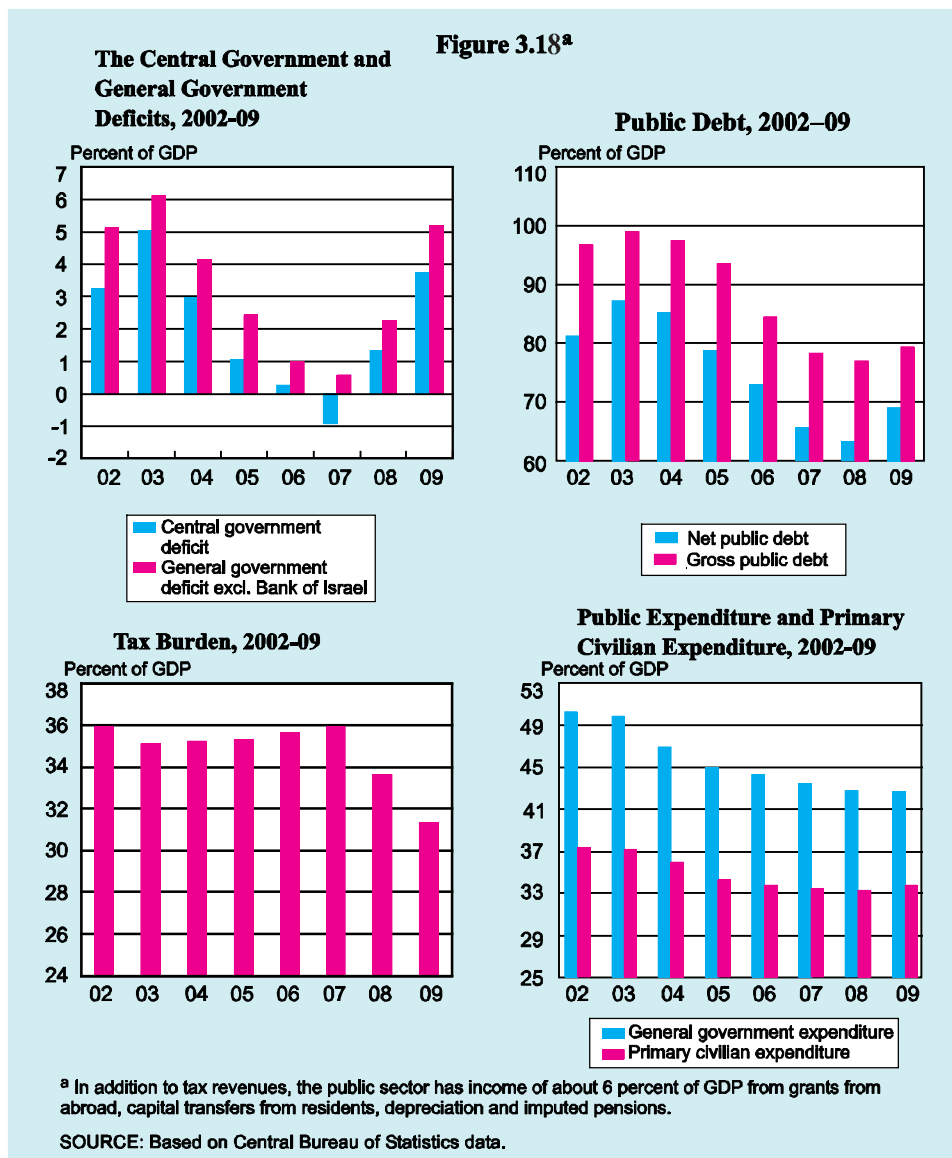
4. FISCAL AND REAL POLICY DURING THE CRISIS

Fiscal policy in Israel responded more mildly to the crisis than did monetary policy and more mildly than fiscal policy in the developed countries. It was moderate relative to monetary policy due to the characteristics of the crisis and the policy goals, which, as stated, focused on keeping the financial system stable and preventing liquidity and credit shortages rather than stimulating demand. It was moderate relative to other countries' fiscal response (Figure 1.3) due, among other things, to the relatively mild and short-lived damage that the crisis caused in Israel. The scale and composition of the response were to a large extent also affected by the inability to approve a new budget as the crisis was worsening. Fiscal policy was reflected in only a modest increase in the public debt/GDP ratio; this minimized the adverse long-term implications of the way the crisis was tackled in many developed countries and improved Israel's situation relative to other countries in these respects.

Fiscal policy during the crisis relied mainly on tax revenue automatic stabilizers. The government allowed the deficit to increase commensurate with the decline in tax revenues—letting the original deficit ceiling be overshoot—and confined itself to a small increase in expenditure that was covered by a countervailing increase in tax rates. In contrast, it increased its guarantees to various players significantly, a policy that did not entail an upturn in actual expenditure but reflected the government's willingness to assume greater risks. Several tools that were considered at the peak of the crisis and ultimately not put to use might have had very significant budget implications had the crisis worsened. Even though the steep decrease in tax receipts during the crisis

attenuated the blow to activity, it underscored the vulnerability of receipts to the level of activity and the latent risk that this posed to the deficit.

Even though by limiting itself to the aforementioned policy, the government may look passive compared with those in other countries, its policy during the current crisis in comparison with previous domestic crises—in which policy was typically procyclical⁷⁹—proved exceptional in exactly the opposite direction. In the 2001–03



79 M. Strawczynski and J. Zeira (2007), "Cyclicality of Fiscal Policy in Israel," *Israel Economic Review*, Vol. 5 (1), pp. 47-66.

recession, for example, the government had to adopt a procyclical policy of steep spending cuts. A different policy became possible this time for reasons including the fiscal discipline that had been displayed in recent years and the steady lowering of the public debt/GDP ratio; it also underscored their importance.

In retrospect, one may say that the fiscal policy adopted during the crisis was appropriate in view of the extent of the damage to the economy, on the one hand, and did not burden the economy so badly as to impede the resumption of growth, on the other hand. Even though the deficit grew during the crisis (Figure 3.18), the interest on the government debt did not increase. Although the public debt did rise by 2.5 percent of GDP in 2009—the first increase after five years of steady declines—the upturn was mild in comparison with the intensity of the crisis and the increases in debt in other countries. One of the outcomes of the mildness of the fiscal response, however, was that most of the burden of coping with the crisis was passed on to monetary policy.

Analysis of fiscal policy during the crisis points to three main periods in which there was a considerable although not perfect overlap between the development of the crisis and developments in the political system that affected the government's ability to respond.

(1) Until the worsening of the global crisis in September 2008

Tax receipts began to falter by the middle of 2008, sending one of the clearest and earliest indications of the domestic effects of the global crisis even before the crisis worsened in September—effects that, as said, were also visible in the capital markets. Accordingly, this decline activated the automatic stabilizers of fiscal policy at a relatively early stage of the crisis. However, the damage of the crisis to the economy was still perceived as very mild; in terms of fiscal policy, this was manifested in the 2009 budget that the government approved in August 2008, which included no special preparations for the crisis; the budget proposal at that time projected a GDP growth rate of 3.5 percent in 2009.

(2) From the worsening of the global crisis in September until the approval of the budget in July 2009

The worsening of the crisis coincided with the development of a domestic political crisis: the resignation of the Prime Minister in September and the calling of early elections. Thus, precisely as the global crisis peaked and its effects on the economy intensified, Israel tumbled into a situation of a transition government and inability to steer the 2009 state budget through the Knesset. For this reason, the government had to operate until July 2009 on the basis of the 2008 budget, which had not been designed to cope with the

crisis.⁸⁰ However, the moderate response at that time also reflected deliberate caution on the government's part against a hasty increase in expenditure. Furthermore, there was considerable government underspending in the first quarter of 2009 (due to large debt paybacks that had been planned in advance). Ex post, given the mildness of the blow to the economy, the economy may have come out ahead due to the government's difficulties in increasing its spending—and its deficit—at that time. Moreover, since the crisis in Israel turned out to be short-lived, even had the government increased its spending at that time, the utility of this move would probably have been limited in view of the lagged effect of such a policy. However, there is no certainty that avoiding a spending increase was the optimal policy in view of the state of affairs as it appeared in late 2008 and early 2009—a tableau that, as stated, resulted in the large-scale use of other policy tools in which policy makers had more latitude. The limited extent of the fiscal response in Israel also stood out in view of the magnitude of the stimulus packages that many developed countries were approving at the time.

At the end of 2008, the Knesset Finance Committee approved the Acceleration Plan. This plan, the safety net, and several other measures approved in early 2009, constituted the government's main response to the worsening of the crisis. They reflected its approach and the constraints occasioned by the early elections, on the one hand, and the characteristics of the crisis, on the other hand. Accordingly, the measures adopted were those that could be applied quickly without having to wait for the passage of a new budget, and the policy focused not on increasing direct expenditure but on providing guarantees to alleviate credit difficulties and ensure the functioning of the financial markets.⁸¹ The provisional tax deferment measures incorporated into the plan and the increase of the budget of the Chief Scientist were in fact also meant to alleviate financing difficulties. Several measures, however, were designed to support demand directly and deal with the labor market. The extent, implementation, and practical significance of some of these measures were limited.

The main fiscal policy measures that were approved in response to the worsening of the crisis (the Acceleration Plan and additional measures⁸²) are listed below. Those relating to the capital market and the increase in guarantees for business were described in detail in previous sections of this chapter; accordingly, they are listed below without detail. These measures aside, the government acted to calm the markets by making

80 According to the Law if the new budget has not been approved by the Knesset, the government may spend each month one-twelfth of the previous year's (price adjusted) budget.

81 Apart from their being suited to the nature of the crisis, guarantees are not included in the budget expenditure ceiling and could be provided without passing a new budget.

82 Including several measures unveiled after the Knesset Finance Committee approved the Acceleration Plan.

statements about its commitment to the stability of the financial system; these, too, were discussed at greater length above.

♦ **Capital market** (see details above)

- Establishing investment funds to stimulate the nonbank credit market ("leverage funds");
- Offering state guarantees for banks' capital issues in order to expand lending;
- Appointing credit officers to deal with problematic debts.

♦ **Guarantees and loans for business** (see details above)

- Small businesses: enlarging the Small Business Loan Fund;
- Medium sized businesses: establishing a new Medium Business Loan Fund;
- Individual exporter fund: redefining the purpose of the Individual Exporter Marketing Fund to allow such exporters to borrow for any purpose and not only for the financing of marketing expenses ("all-purpose credit").

♦ **Safety net**

- Assuring the pension for certain individuals under certain conditions (see details above).

♦ **Dispensations in rescheduling tax payments and supplier guarantees**

- Expanding the population of those who report and pay Value Added Tax on a bimonthly basis instead of a monthly basis to small businesses with turnover of up to NIS 15 million per year. This arrangement went into effect on January 1, 2009, as an ad hoc provision.
- Expanding the population of those in service industries that pay VAT on a cash basis to small businesses with turnover of up to NIS 15 million per year. This arrangement went into effect on January 1, 2009, as an ad hoc provision.
- Reducing suppliers' guarantees to the government by NIS 800 million.

♦ **Infrastructure**

Increasing spending authorization in the 2009 budget for infrastructure projects. Tenders in the sum of NIS 10 billion were to be issued by March 2009 in order to move up the performance of projects despite the inability to pass an annual budget. In practice, this measure had no real significance.

♦ **R&D and vocational training**

- NIS 200 million for the reinforcement of vocational training and retraining;
- An NIS 700 million increase in the budget of the Chief Scientist, including the establishment of a biotechnology investment assistance fund and special assistance for the establishment of R&D centers in peripheral areas.

◆ **Stimulating the construction industry**⁸³

This industry has two characteristics that motivated special attention on assisting it: its acute dependency on credit and its intensity in domestic activity. Thus, the construction industry was at especially high risk due to the nature of the crisis, and the encouragement of its activity creates high added value for the economy and employment. Most relief measures for the construction industry focused on alleviating financing difficulties—some by addressing credit issues directly and others via dispensations in various payments due to the state. Most of the measures were aimed at residential construction activity and the construction of non-prestige dwellings.

- Credit: putting up NIS 200 million in guarantees as a complement for contractors' equity so that contractors could to meet the banks' requirements for supplemental capital in view of the crisis.
- Provisional dispensations in the remittance of permit fees to the Israel Lands Administration (ILA) on account of supplemental building.
- Postponing VAT payments on account of renting residential dwellings that are completed but not yet sold.
- A thirty-day extension of the deadline after the date of winning an auction for payment to the Ministry of Construction and Housing and the ILA on account of development and land for residential use.
- Spreading out developers' payments to ILA on account of land allocations for industrial, commercial, and hotel purposes.
- Release of Sales Law guarantees—giving the ILA extra resources to allow it to speed up the issue of lease agreements to home buyers. The purpose was to accelerate the release of contractors' Sales Law guarantees and, thereby, to make it easier for them to obtain bank credit.
- Release of some contractor guarantees to the Ministry of Construction and Housing.
- Expediting approval of invoices and reducing days of credit for payments to contractors by the state.
- Expediting the treatment of large-scale residential projects that met statutory availability requirements.
- Lowering minimum prices in ILA land auctions.

◆ **Encouragement for nonresident investors**

- Lowering the tax on dividends from foreign firms under certain conditions.
- Tax exemption for interest on bonds listed on the Tel Aviv Stock Exchange when paid to a nonresident.

83 For a list of the relevant measures, see Ministry of Finance press release, January 28, 2009.

- Exemption for nonresident investors upon the sale of securities in Israel.

♦ **Labor market**

- As part of the Acceleration Plan, it was decided to bolster vocational training and retraining at an outlay of NIS 200 million, create an incentive to replace foreign workers with Israelis in nursing, and pilot the replacement of foreign workers in agriculture.
- In March 2009, the Ministry of Finance and the National Insurance Institute concluded an agreement to ease the terms for receiving unemployment benefits. The dispensations were set forth as an ad hoc provision that expired in February 2010. The easier terms, set to go into effect only after the unemployment rate exceeded 7.5 percent, included shortening the qualifying period for eligibility for the benefits and extending the maximum duration of benefits for unemployed persons up to age 35.⁸⁴ The agreement was implemented in June 2009; by the time it expired in February 2010, some 12,000 unemployed persons benefited from it, at a cost of NIS 100 million.⁸⁵

(3) Since passage of the budget in July 2009

In July 2009, the Knesset passed the 2009–2010 state budget into law.⁸⁶ Importantly, even though much uncertainty remained about the pace and durability of the recovery abroad, the crisis had crested by then and it had become clear that Israel had been only moderately affected and did not need significant fiscal expansion to cope with it. It is true that the new government, no longer bound to the 2008 budget, had greater latitude, but the situation was very different at this stage from that facing the decision-makers when the crisis was in full swing. Thus the government avoided a significant increase in spending, and the share of public expenditure in GDP in 2009 remained as in 2008 (Figure 3.18).

Within the framework of the new budget, the deficit targets for 2009 and 2010 were adjusted upward to 6 percent and 5.5 percent of GDP, respectively, on account of the expected decrease in tax revenues. This decision reflected the government's policy—to allow the automatic stabilizers to operate but not to increase the deficit beyond this by spending more. Eventually, the deficit in 2009 (total, excluding net issue of credit) was

84 According to the new and easier terms, a worker is entitled to unemployment benefits for a short time if he worked at least nine full months—instead of twelve months as the law states—in the eighteen months preceding the submission of the claim. The maximum term for the receipt of unemployment benefits, conditional on the unemployed person's age, was extended by 20 percent.

85 See National Insurance press release, March 1, 2010.

86 The first two-year budget in Israel and anywhere. For further discussion, see the 2009 Bank of Israel *Annual Report*, p. 250.

about 5 percent of GDP—about 1 percent of GDP lower than the modified ceiling. The deficit in 2010 was about 1.8 percent of GDP lower than the ceiling.

On the expenditure side, the government decided to allow a nonrecurring 1.35 percent increase in its spending for the years 2009 and 2010 beyond the limits established in law, which stood at 1.7 percent in real terms. This increase, adding up to NIS 3.2 billion in each of the years, was set aside mainly for supplements on account of the Economic Plan.⁸⁷ It was decided that net of the increases, government expenditure would grow starting in 2011 at a real annual pace of 1.7 percent. The government also resolved to increase the 2009 budget of the Israel Investments Center, including the R&D budget, while allocating NIS 700 million for the Encouragement of Capital Investments Law. This allocation was largely unused because the map of National Priority Areas was not approved until December 2009. Similarly, the budget for infrastructure development, including peripheral areas, was increased. After the budget passed, the government did not utilize the entire increase in what remained of 2009: its underperformance even grew slightly in the third quarter and was almost eliminated in December.

The passage of the budget also included an agreement between the government and the Histadrut, a package deal in which vacation pay in the public sector would be halved in each of the years 2009 and 2010. The government undertook to remit the amount saved, around NIS 2 billion, to a fund to assist troubled enterprises, chiefly in peripheral areas (the fund was not used in 2009) and to reinforce mechanisms of protection for business-sector employees.⁸⁸

The government's response to the crisis by direct action in the labor market in order to alleviate the plight of jobseekers was limited. The main step in this direction was the easing of terms for the receipt of unemployment benefits, which was decided on, as stated, in March. Thereafter, it was decided to introduce several programs for the vocational training of technicians, practical engineers, and tourism and construction workers; programs for the retraining of graduates for work in nursing and teaching; and a program to encourage the hiring of Israelis in nursing jobs. These programs had only limited success due to the timing or the eligibility conditions attached to them. For example, only two employers applied for the program that subsidized the placement of employees on unpaid leave because the economic recovery had already begun by the time this program went into effect (July 2009). In addition to these measures, the government continued to pursue other steps that were designed to encourage weak

87 An economic plan that the Finance Ministry had presented in April in order to stanch the recession and restore domestic growth.

88 For details, see the 2009 Bank of Israel *Annual Report*, Chapter 5.

population groups to join the labor force.⁸⁹

Due to concern about a major loss of tax revenues on account of the downturn in activity and to avoid overshooting the 6 percent of GDP deficit limit in 2009, the government raised several tax rates—a temporary increase of 1 percentage point in VAT, to 16.5 percent, and raised the upper limit of income on which National Insurance contributions are made. These measures were to remain in effect until the end of 2010.⁹⁰ The government also increased the taxes on cigarettes, fuel, and the purchase of motor vehicles and slightly deferred the scheduled lowering of personal and corporate direct tax rates. The tax hikes were meant to cover the non-recurring increase in expenditure. In contrast, the continued cutting of direct tax rates (corporate and personal income tax) at the beginning of 2009 was part of a long-term program already under way.

The development of tax revenues during the crisis is of particular interest for several reasons: the fiscal policy based itself largely on the automatic stabilizers and not on a higher level of expenditure; the crisis underscored the sensitivity of tax revenues to the business cycle; and the changes in revenues accurately mirrored the economy's entry into recession and the beginning of recovery.

Tax revenues as percent of GDP fell by 2.4 percentage points in 2009 on the heels of a similar downturn in 2008 (Figure 3.18), showing that the short-term elasticity of tax revenues with respect to activity is greater than one. The decrease in tax collection was due to the slump in activity; the contribution of the changes in statutory tax rates was marginal only. This is because the reductions of the direct tax rates at the beginning of 2009 were almost totally offset by the raising of tax rates that went into effect with the passage of the budget in mid-year.⁹¹

Overall, tax revenues contracted in 2009 by 6.6 percent in real terms relative to 2008. The real decrease in direct tax collection was steeper, 9 percent⁹², following a similar rate of decline in 2008. Direct tax revenues continued to fall in the first half of 2009, leveled off in the third quarter, and increased in the fourth quarter, corresponding to the recovery of activity during the year.

Corporate tax receipts declined sharply—typical of times of economic downturn (in Israel and elsewhere). Corporate tax receipts slumped in 2009 by 19 percent in real terms due to the decrease in earnings. Even though corporate tax accounts for only a small portion of tax receipts, it is the most dominant component in terms of its effect

89 These steps were part of an ongoing government policy that began long before the crisis. For details, see the 2009 Bank of Israel *Annual Report*, Chapter 5.

90 In January 2010, the government lowered the VAT rate to 16 percent.

91 The elasticity of tax revenues in Israel during the crisis is discussed in the 2009 Bank of Israel *Annual Report*, Box 6.2.

92 Net of legislative changes, the real decrease in direct tax revenues in 2009 was 6.8 percent.

on the short-term development of the tax burden, since the acute cyclicalities of these receipts seriously amplifies the cyclicalities of the tax burden—as observed in 2009 in many developed countries. However, some of the decline in corporate tax revenues during the crisis reflected significant non-recurring receipts on the eve of the crisis due to the sale of provident and pension funds as part of the Bachar Reform. Receipts of taxes on wage also fell in 2009, corresponding to an additional decrease in the rate of taxation on labor at the beginning of 2009 and the erosion of the real average wage that year.

The effect of the crisis on the economy was also mirrored in indirect tax revenues. These decreased from the third quarter of 2008 until the first quarter of 2009, followed by an upturn due to the onset of the recovery of activity and the raising of the VAT rate in July.⁹³ In Israel the collection of VAT as a percent of its potential⁹⁴ (the compliance rate) is cyclical, increasing the elasticity of tax receipts to GDP.

5. ECONOMIC DEVELOPMENTS UPON EMERGING FROM THE CRISIS

a. Developments in the financial markets and financial system

The domestic financial market began to recover in March 2009, in tandem with its counterparts abroad.⁹⁵ Share and bond prices rose steeply, far outpacing the performance of similar instruments in developed countries and slightly outperforming those in emerging markets. The volume of share issues increased, corporate bond issues resumed after having frozen at the peak of the crisis, and foreign portfolio investment grew. Business sector profitability, including that of banks and insurance companies, improved. Volatility in the markets, the sovereign risk premium, and corporate bond spreads declined, although not to their pre-crisis levels. Total business credit contracted in 2009 despite the recovery of the nonbank market.

The real long-term yield on government bonds fell again in 2009 after a temporary upturn in the last quarter of 2008, when the crisis was at its worst, and settled at a historical low of 2.8 percent at the end of 2009 (Figure 3.4). The real short-term rate

93 The exceptional increase in indirect tax receipts in the third quarter of 2009 traced to the preemptive purchasing of motor vehicles ahead of foreseen legislative changes ("green taxation").

94 The ratio of net VAT receipts divided by the VAT rate in that quarter to private consumption. For an expanded discussion of the method, see J. Brondolo (2009), "Collecting Taxes during an Economic Crisis: Challenges and Policy Options," IMF Staff Position Paper 09/17.

95 Such is the case when the share indices are expressed in USD terms. In NIS terms, the domestic recovery began in January.

also receded to a historical low and became negative from May onward, reflecting the Bank of Israel's expansionary monetary policy. The continued decline in long-term real interest during 2009 was related mainly to the decrease in long-term interest abroad due to the global recession, the expectation of low domestic growth rates, and the strong credibility of fiscal policy as Israel, unlike other countries, ended the year with a deficit below the ceiling. The Bank of Israel's deep interest rate cuts in the first quarter of the year and its intervention in the bond market during part of the year also contributed to the decrease in long-term yields. Finally, the decrease in the sovereign risk premium and the increase in private savings, which encouraged demand for portfolio assets, also supported the continued downward movement of interest.

(1) Corporate bonds

The corporate bond market, which as stated suffered a severe impact and was the hardest hit due to the crisis abroad, recovered gradually in 2009. The background for this development was a decrease in assessments of risk in Israel, like those abroad, and forecasts of a recovery in real activity. The secondary market recovered first, volatility diminishing and yields and risk spreads declining gradually. The decline in yields focused on firms that the market considered capable of meeting their liabilities, whereas the more leveraged firms, which had a higher probability of default, continued to trade at high yields.

The decrease in yields in the secondary market allowed the flow of issues to resume. Firms raised NIS 42 billion gross during 2009, including NIS 16 billion by banks—initially for highly rated firms only (AA and better) but later for lower rated firms as well.⁹⁶ Despite the steep increase in issues in 2009, the total was far below the exceptional levels in the pre-crisis years of 2006 and, especially, 2007;⁹⁷ spreads were wider; and the role of long-term institutional investors in the primary market was taken over by mutual funds. Additionally, the share of unrated firms and real estate firms in total issues fell steeply⁹⁸ but the proportion of issues without contractual stipulations or demands to meet financial standards remained very high, in contrast to the situation in other developed markets and the norm in bank credit.⁹⁹

The recovery of the corporate bond market in 2009 took place even though more and more companies announced during the year that they would be unable to pay back older

⁹⁶ Net capital raised in 2009 (including banks) was NIS 31 billion.

⁹⁷ Nonbank corporate bond issues were NIS 43 billion and NIS 73 billion in 2006 and 2007, respectively.

⁹⁸ Even though the proportion of real estate issues began rising again at the end of 2009.

⁹⁹ See Hodek Committee report (February 2010).

debt and would require debt settlement proceedings. The extent of debt settlements that were executed or in progress in 2009 came to 6.7 percent of corporate debt, 80 percent of the total relating to firms in the real estate industry. The recovery of the market prevented an even steeper decline in lending to the business sector in view of the downturn in bank credit, thereby supporting the fragile recovery of the real economy.

(2) Financial institutions

The financial ratios of Israel's financial institutions—banks and insurance companies—improved notably in the course of 2009 pursuant to the improvement in the real economy, the surging capital markets, and the deliberate increases in their capital in order to satisfy if not surpass regulatory requirements. The banks' capital adequacy ratio climbed to a record 13.5 percent, approximating the ratio among banks in Israel's reference group; their profitability rose steeply; and credit risk remained stable. Despite the rebound of activity and stronger demand, bank credit did not increase in 2009 because the upturn in lending to households was canceled out by less lending to firms. The insurance companies also improved their capital ratios considerably, surpassing that required by the Commissioner of the Capital Market at the end of 2009 although still smaller than the requirements under the Ministry of Finance's new regulations, which constitute an interim stage in the implementation of the Solvency 2 directives in Israel. The steep increases in the capital markets contributed to a sharp upward turn in insurance companies' profitability and demonstrated how strongly the companies' performance depends on the markets.

The provident funds, which were badly hit during the crisis and suffered large-scale withdrawals, recovered quickly in 2009, due to steeply rising prices in the capital markets. The price increases allowed the funds to post strong positive returns and boost their assets managed even though the withdrawal trend continued, albeit at a much slower pace.

(3) Business-sector debt

Total business sector debt declined slightly in 2009 relative to the previous year due to less credit from banks, a mild expansion of tradable bonds in Israel, and a decrease in credit from abroad, which accounts for less than 20 percent of total business sector debt. This development, coupled with the narrowing of the gap between corporate and government bonds, the resumption of issues, the decrease in the average cost of bank credit, and a falloff in the cost of raising sources, support the assessment that the contraction of credit reflected a downturn in demand occasioned by the slowdown in activity, whereas the credit supply constraint, which impeded business sector expansion at the beginning of the year, became less onerous later on. Capital raising via domestic

share issues (net of private allocations) contracted in 2009 by about half relative to the 2008 level and was composed entirely of issues by solid firms, mainly in the second half of the year.

(4) The portfolio

The stabilization of the global financial system and expectations of real recovery mitigated risk assessments and allowed the quest for higher yields to resume world wide and in Israel as well. The main background factor in this matter was the interest rate, which was kept very low all year long in order to prop up the real recovery. Consequently, 2009 was characterized by increased demand in the public's portfolio for riskier investment vehicles such as shares, corporate bonds, and investments abroad at the expense of low risk forms of investment such as bank deposits and corporate bonds. This development, reflecting the pass-through of monetary policy to support of activity, was manifested in the resumption of corporate bond issues, the slowing of withdrawals from provident bonds, and the movement of money from money funds—the preferred investment instrument in 2008—to corporate bond or government bond funds (in the latter case, funds that also hold a certain percentage of their assets in other instruments, such as shares or corporate bonds). The value of the public's portfolio at the end 2009 was 20 percent higher than a year earlier and 10 percent above the peak attained in the middle of 2008, before the crisis worsened. The value of cash and bank deposits was basically unchanged at the end of 2009 from the end-2008 level, whereas the value of shares in the portfolio advanced by 90 percent and that of corporate bonds (tradable and nontradable) grew by 40 percent.

The low interest level and the zero yields on solid investment vehicles also encouraged the public to take new mortgage loans, mainly in non-indexed domestic currency and at adjustable rates, for the acquisition of dwellings, some for investment purposes.

Household credit increased in 2009 as mortgage loans grew swiftly and other credit increased more moderately. Since the upturn in mortgage lending did not keep up with the rate of increase in the value of transactions in the housing market, total household debt (not only in mortgage loans) relative to disposable income remained stable and actually decreased slightly in 2009; this ratio was low in Israel relative to the average among developed countries.

b. Changes in domestic economic activity upon emerging from the crisis

The domestic economy began to recover in the second quarter of 2009. After two quarters of falling GDP, growth was positive that quarter and accelerated as the year progressed. The recovery trend in the second half of the year was reflected in strong

growth rates of exports and private consumption, increases in GDP and employment, and a downturn in the unemployment rate. By the end of 2009, GDP and private consumption had surpassed their pre-crisis levels but exports, imports, and investment remained substantially lower and the unemployment rate higher than their pre-crisis levels. The recovery was based on the beginning of a recovery—albeit slow—abroad, relatively strong domestic fundamentals, and the expansionary domestic monetary policy.

The rapid recovery was supported by the economy's fundamentals and its having avoided major damage during the crisis. On the supply side, it was helped by the absence of corporate and bank collapses during the crisis and by the lack of massive layoffs, meaning that human capital had not been adversely affected and there was less need for an expensive and relatively lengthy process of rehiring. The expansionary monetary policy and the resumption of corporate bond issues enhanced the availability of credit to the business sector.

Even though in retrospect one may state that the recovery process gathered momentum and was consolidated in the course of 2009, it is important to stress that in real time there was much uncertainty about the very fact of recovery and its strength, both in Israel and abroad. This uncertainty was reflected, among other things, in the updating of domestic and foreign growth outlooks and, posed a special challenge to monetary policy, which had to strike a balance between supporting the recovery and responding in good time to inflation pressures that might arise during the recovery. Uncertainty also had a dampening effect on the increase in employment during the recovery, and, coupled with excess production capacity that had come about during the crisis, made firms rather cautious about resuming investment; nonresidential investment increased only moderately in the second half of 2009.

From the second quarter of 2009 onward, consumers' expectations improved and private consumption—including current consumption, which is oriented to domestic product—moved ahead smartly, in contrast to developments in developed countries. The recovery of consumption preceded that of exports slightly, mirroring the superior situation of the domestic economy relative to the rest of the world during the crisis. At year's end, per capita current consumption actually surpassed the pre-crisis peak. The expansion of private consumption was powered by the resumption of growth in the value of portfolio assets during 2009, coupled with a falloff in the risk that individuals attributed to these assets, the low interest rate, and the improvement in the labor market. The combination of strong private savings and low household leverage supported the rapid expansion of consumption in tandem with the improvement in consumers' expectations and their economic situation, just as they had helped to smooth consumption during the crisis.

Even though the steep decrease in exports stopped in the second quarter of 2009, a meaningful recovery did not begin until the third quarter of the year, in accordance with the recovery of world trade. Unlike the rest of industrial exports, those of low-tech industries increased much more slowly during the emergence from the crisis than the rate of increase in global trade in these products. This was in part due to the real currency appreciation, to which low-tech exports are especially sensitive, in the second half of the year. Exports of services, including those of tourism, also recovered in the second half of 2009.

The recovery process in the second half of 2009 was also mirrored in an upturn in demand for workers. This led to a modest increase in employment, a mild downturn in unemployment, upward movement in hours worked per person employed, and a modest increase in the nominal wage. However, real wages eroded due to price increases, which may have facilitated the expansion of employment just as it attenuated its contraction during the crisis.

The upward movement of housing prices that began in late 2007 accelerated in the second quarter of 2009; overall, housing prices went up by 20 percent during 2009, an exceptional rate by past standards. The volume of housing transactions increased vigorously, evidently in major part due to purchases for the portfolio (i.e., for investment) in quest for an alternative return, rather than purchases of a place in which to live. Housing starts, however, did not increase during this time. Consequently, the question of whether a bubble had developed in the real-estate market during 2009 arose; this sharpened the challenge that monetary policy faced as the economy was emerging from the crisis with especially low Bank of Israel interest rates. An examination of the development of housing prices shows that despite their steep increase, there was no bubble in 2009. At least some of the upturn in prices reflected the effect of the low interest rate on the demand for housing and not a significant deviation of housing prices from the level explained by the fundamentals of supply and demand, including interest.¹⁰⁰

6. ORIGINS OF THE RESILIENCE OF ISRAEL'S ECONOMY

As described in this chapter, the effect of the global crisis on the Israeli economy was milder than on most developed countries, as reflected, among other things, in the level of activity and the stability of the country's main financial institutions. Such was the case even though the basic characteristics of the Israeli economy, especially in its sectoral composition, are those of a developed economy and even though the developed

100 For further discussion, see Box 3.2 in the 2009 Bank of Israel *Annual Report*.

countries are the main destinations of Israel's exports.

The mildness of the damage to the economy was partly due to the unexpectedly short duration of the crisis and its timing, after five years of continuous growth, at the end of which the unemployment rate had fallen to a twenty-year low and business sector earnings, especially in the banking system, had reached a peak. Ultimately, however, the resilience of the economy during the crisis traced to several of its underlying characteristics. Although they were mentioned in various places in this chapter, the main ones should be repeated briefly due to their importance.

1. A conservative financial system and tight supervision: the country's financial institutions and, especially its banking system were behaving conservatively on the eve of the crisis. The banks had diversified their portfolios effectively among different industries and between the private and the business sectors, and the financial institutions had only a slight exposure to "toxic" foreign assets. The existence of an effective regulatory directive regarding limits on exposure to a single borrower or group of borrowers and restrictions on exposure to particular industries contributed to lowering credit risk concentration within banks' credit portfolios and to lowering the risk exposure of the banking system as a whole. In addition, the rapid treatment of the toxic assets held by the banking system coupled with the increase in capital adequacy ratios contributed to its reliability. A comparison of Israel's financial development with that of other countries¹⁰¹ shows that the market in Israel is more developed than in most developing economies but less so than in most developed countries. Furthermore, the level of capital market supervision in Israel relative to other countries is higher than the Israeli market's relative level of development.

2. A balanced housing market and a conservative mortgage lending market: the housing market behaved with relative stability during the crisis, even though it is highly leveraged on both the supply and demand sides. Housing prices in Israel had been steady in the pre-crisis years, in contrast to steep upturns that were typical of developed countries. House prices relative to rent levels and relative to the average wage—ratios that signal the existence of a bubble—also remained stable during these years, whereas in other countries they spurted ahead at rates surpassing anything that market fundamentals could explain. Precipitous declines in housing prices and housing

101 E. Dorrucchi, A. Meyer-Cirkel, and B. Santabarbara (2009), "Domestic Financial Development in Emerging Economies—Evidence and Implications," ECB Occasional Paper 102, April, and N. Roubini and A. El Said (2009), "This Time It's Different: Transmission of the Global Financial Crisis to Emerging Market Economies and the Domestic and International Policy Response," World Economic Forum.

investment were essential components of the crisis in the US and other developed countries.

The different behavior of Israel's housing market traces to several structural and institutional factors. The mortgage lending market in Israel comports itself more conservatively than that of other developed countries, especially the US, and credit risk in this market is even lower than that in business credit. The lack of a securitization market for housing loans leaves the risk of mortgages in the banks' hands, giving them an incentive to inspect prospective borrowers painstakingly and maintain a low loan-to-value (LTV) ratio (up to 70 percent only) in mortgage lending.¹⁰² The soundness of Israel's mortgage banks and borrowers allowed the mortgage banks to respond to the increase in demand. Thus, the volume of mortgage lending increased significantly when the interest rate on such loans fell to a trough—giving evidence of the pass-through of monetary policy in this industry.

3. Strong private savings and low household leveraging: on the eve of the crisis, Israel's private savings rate was high (26 percent of private disposable income in 2007), its rate of household leverage was low by world standards, and credit risk in the banking system (excluding housing) was much lower among households than vis-à-vis the business sector. This allowed the banks to continue providing cheap consumer credit during the crisis, so that the credit/consumption ratio remained stable. The combination of strong private savings and a regular supply of household credit allowed households to avoid a sharp cut in consumption, thereby sparing Israel from the steep falloff in private consumption that many other economies experienced.

4. Current account surplus: Israel amassed large surpluses on the balance of payments current account during the rapid growth years, chiefly due to the increase in national savings. Thus, when the crisis erupted the economy was not dependent on external financing.

5. A balanced structure of assets and liabilities: the difference between total assets of the economy abroad and total liabilities was relatively small when the crisis began. Net liabilities in the third quarter of 2008 were only 4 percent of GDP. Furthermore, the Israeli portfolio abroad is conservative relative to the composition of the country's liabilities. The assets portfolio is intensive in government bonds while the liabilities portfolio is intensive in riskier assets such as shares and direct investments, meaning

¹⁰² The LTV ratio is unlimited from the supervisory standpoint but a high ratio entails a larger capital requirement.

that the assets portfolio has an element of insurance. Some of the disparity traces to the high level of foreign reserves kept by the Bank of Israel, which are invested in liquid and conservative instruments. The structural disparity between assets and liabilities was significant and, on the eve of the crisis, the economy's assets in debt instruments surpassed the external debt (gross) by \$47 billion. During the crisis the value of liabilities declined more than the value of assets.

6. Credibility of the fiscal system: public expenditure increased at a modest pace during the rapid growth years. Thus, budget deficits contracted and the debt/GDP ratio fell steadily to 77 percent. Much credibility was amassed during these years because the policy had met the spending and deficit targets, thereby helping to lower the risk premium and improve the sovereign risk rating. The accumulated credibility allowed the automatic stabilizers to act during the crisis and obviated the need for government initiated measures to halt the increase in the deficit in order to head off adverse fiscal expectations. Fiscal policy during these years also helped the development of the surplus on the balance of payments current account.

7. A credible price stability environment: in the past decade, Israel has had a lower inflation rate than the norm among developed countries. The consolidation of credibility in monetary policy and the stable inflation environment in recent years made it possible to apply a highly expansionary monetary policy without risking policy credibility. This, in turn, made it possible to stress the prevention of harm to real activity and the maintenance of financial stability during the crisis by steep cuts in the interest rate and quantitative easing via purchases of government bonds and foreign currency. Evidence of the credibility of the policy is the relatively narrow range in which inflation expectations varied: the fluctuations to one year expectations were much smaller than those of actual inflation and expectations to medium and long terms remained within the target range throughout 2009.

Table 3.1
Economic Developments 2007-09

	2007				2008				2009			
	I	II	III	IV	I	II	III	IV	I	II	III	IV
GDP ^a	6.0	5.9	5.3	6.2	6.3	3.5	1.0	-2.0	-2.8	1.5	3.7	4.9
Unemployment	7.7	7.5	7.2	6.8	6.2	6.0	6.0	6.4	7.5	7.9	7.7	7.2
Exports excluding diamonds ^a	20.2	7.5	7.7	14.5	41.3	-2.6	4.9	-19.5	-32.5	-4.8	10.8	33.9
Private consumption ^a	9.6	2.1	7.5	2.2	8.9	-3.9	2.5	-3.7	-2.2	9.2	6.3	8.0
Civilian imports (excluding ships, planes and diamonds) ^a	16.5	23.2	7.3	18.2	15.4	-7.1	-0.7	-9.3	-40.5	1.8	14.4	7.9
Fixed investment ^a	8.2	16.3	51.7	-10.5	10.0	-5.7	-11.5	-2.1	-13.6	-0.1	3.1	-7.1
Current account of the balance of payments ^b	1.1	3.1	0.6	-0.5	0.6	-0.1	0.8	0.6	2.2	1.4	1.0	2.6
Real effective exchange rate ^c	0.7	-0.8	2.4	-2.1	-6.2	-4.3	-1.4	-1.1	4.8	2.5	-4.5	0.8
Nominal effective exchange rate ^c	-0.2	-1.4	3.9	-2.7	-6.6	-4.0	-0.3	-0.3	4.4	3.5	-2.9	0.4
Foreign currency purchases ^d	0.0	0.0	0.0	0.0	0.7	1.2	5.2	5.0	5.4	5.0	7.8	1.4
Inflation ^e	-0.2	1.2	1.3	1.1	0.1	2.2	2.0	-0.6	-0.1	2.3	1.3	0.5
One-year forward inflation expectations ^f	1.3	1.1	1.7	1.5	2.5	2.8	2.7	-0.3	0.7	1.9	2.3	2.4
Bank of Israel interest rate ^g	4.00	3.50	4.00	4.00	3.75	3.50	4.25	2.50	0.75	0.50	0.75	1.00
Interest on overdrafts ^h	9.8	9.6	10.1	10.2	10.3	9.5	10.1	9.5	8.0	7.8	7.9	8.3
Change in Tel Aviv 100 index ⁱ	7.9	10.8	0.7	4.0	-19.6	6.4	-18.6	-29.8	18.1	20.3	15.8	14.8

^a Percent volume change in annual terms, seasonally adjusted.

^b Seasonally adjusted, \$ billion.

^c Percent change during the quarter. A negative figure indicates appreciation.

^d Total purchase, \$ billion.

^e During the quarter, in annual terms.

^f Quarterly average.

^g Published rate, last month in quarter.

^h Quarterly average, nominal, in annual terms.

ⁱ Change during quarter, percent.

SOURCE: Based on Central Bureau of Statistics and Tel Aviv Stock Exchange data.

Table 3.2
Main Stability Indicators of Israel's Financial System, 2006-09

	(percent)			
	2006	2007	2008	2009
A. The domestic environment				
Government debt/GDP ratio (end of year)	82.3	75.8	75.1	77.6
Net external debt/GDP ratio (end of year)	-21.1	-23.9	-22.6	-27.0
Private credit/GDP ratio (end of year)	135.5	142.1	142.2	136.5
Business-sector credit/product ratio (end of year)	132.1	140.1	139.1	131.2
Household credit burden (credit/disposable income ratio) (end of year)	58.9	60.7	62.5	61.7
Israel's risk premium (the CDS spreads, annual average)	0.31	0.22	0.98	1.57
Yield gap between 10-year government shekel bonds and 10-year US T-bonds (annual average)	1.52	0.94	2.24	1.83
B. Financial assets				
Risk indices (annual averages)				
Implied volatility of:				
Exchange rate	7.3	9.3	15.1	13.7
Tel Aviv 25 share price index	21.1	21.2	33.8	32.1
Actual volatility of:				
Exchange rate	5.3	7.0	14.6	10.4
General share price index	13.0	14.1	24.2	18.6
Prices and yields				
Change in NIS/\$ exchange rate (during the year)	-8.2	-9.0	-1.1	-0.7
Change in effective exchange rate (during the year)	0.0	-3.1	-10.1	4.3
Change in general share price index (during the year)	5.4	23.3	-46.4	78.7
Yield to maturity of 5-year unindexed government bonds (annual average)	6.1	5.2	5.2	3.9
C. Resilience of the financial system				
The banking system (end of year)				
Risk-weighted capital ratio	10.8	11.0	11.1	13.7
Ratio of balance sheet credit risk to GDP	79.0	80.6	84.3	79.7
Ratio of problem loans to total balance sheet credit	8.4	6.2	7.1	6.6
Insurance companies (end of year)				
Core capital/assets ratio	---	6.0	3.9	5.8
Share of risk assets in total assets	---	42.6	32.5	41.5
Provident funds^a (end of year)				
Share of liquid accounts in total liabilities	52.3	56.5	57.0	58.4
Ratio of liquid assets to liquid liabilities	22.6	18.4	23.2	28.7
Market liquidity				
Change in total daily turnover in the markets (during the year)	27.1	42.7	4.6	-3.8
Bid-ask spread in NIS/forex market (annual average)	0.08	0.08	0.11	0.10

^a Including central severance pay funds and advanced study funds.

SOURCE: Based on IMF data and data of the Capital Markets, Insurance and Savings Division of the Ministry of Finance, and the Tel Aviv Stock Exchange.

APPENDICES

Appendix A: Monetary Policy with a near-Zero Nominal Interest Rate

The main policy tool that central banks use is the nominal short-term interest rate that they charge commercial banks for short-term loans that they extend to them or pay for deposits that the commercial banks deposit with the central bank. This rate influences the rates that banks charge or pay their customers and the rates that are set in the financial markets. Cutting the interest rate on central bank sources stimulates real activity in several ways and encourages domestic demand for investment and private consumption.

During the crisis, central banks around the world slashed their declared interest rates and in many economies this rate approached its lowest bound—zero. In Israel, too, the rate was lowered rapidly to 0.5 percent by April 2009. The Bank of Israel examined the question whether a further rate cut, to zero, would help to stimulate domestic activity.

The Bank concluded that further cuts might have only a small effect on the domestic cost of credit and that the decrease that might be expected in credit cost would be smaller than the extent of the cut in the interest rate, if any. This is because the interest that banks were paying depositors verged on zero even before the rate cut, and a decrease in lending interest without a parallel decrease in deposit interest rates would reduce the banking spread and, therefore, would almost certainly not take place or would take place to a limited extent only.

When the central bank rate is zero, and monetary expansion is still needed to stimulate economic activity, policymakers may resort to several complementary tools:

First, the central bank can influence inflation expectations and, in turn, the expected real interest rate. It can encourage the formation of inflationary expectations by declaring that it will keep its rate low for an extended period of time, especially beyond the horizon that the public expects. Such a statement, insofar as it is credible, will have a downward effect on real interest rates all along the yield curve.

Another instrument that can be used is the purchase of long-term government bonds. Yields on long-term bonds are positive even when the short-term interest rate is around zero. The purchase of long-term bonds by the central bank lowers these yields and indirectly affects the cost of raising capital by the private sector, since government bond yields serve as a benchmark for corporate bond yields. The decrease in long-term interest also stimulates demand for consumption and investment.

A third instrument is the purchase of foreign currency by the central bank, which induces depreciation. Depreciation bolsters exports and diverts domestic demand to domestic goods. Furthermore, the depreciation is expected to raise the inflation rate and, by so doing, to push real interest rates down.

All of these actions help to increase liquidity in the markets. The excess liquidity is not harmful as long as economic activity remains sluggish, inflation remains low, and the fiscal expansion does not require a substantial increase in public debt. As the economy recovers, however, the excess liquidity may cause a major increase in inflation. Therefore, it is important to determine the right time to restrain the monetary expansion, so that it does not start too early, damaging the economic recovery, but also not too late, bringing on an undesired increase in inflation.

Appendix B: The Bank of Israel Program for the Government's Handling of the Crisis (March 2009)

In March 2009, the Bank of Israel presented policy recommendations for the government on how to cope with the crisis.¹⁰³ The program was published ahead of the formation of the new government; at this time, the crisis was still in full force and there was much uncertainty about its intensity, duration, and effect on the economy, but the Acceleration Plan had already been approved and a range of measures had been taken to stabilize the financial system, as described above. Accordingly, the program focused on recommendations relating to fiscal policy and the treatment of real aspects, although it also discussed further proposals in the financial domain.

The purpose of the plan was to mitigate the effects of the crisis on activity, employment, and welfare while minimizing the adverse effects on the economy's long-term objectives. To this end, the plan defined desired principles for policy measures and recommended steps in accordance with their compliance with these principles and their contribution to the attainment of the objectives.

(1) The principles of the program

- ◆ **Scale and diversification**—preparations should be made for measures on a broad scale in view of the possibility of a severe effect on the economy. The measures should be diversified due to uncertainty about the effectiveness of each and in order to cope simultaneously with as many aspects as possible.
- ◆ **Immediacy**—the measures needed are such that can be applied swiftly and simply and that will affect economic activity in the short run. Such measures should not entail lengthy preparations in terms of planning, legislation, and approval processes and should avoid, as far as possible, bureaucracy and complicated conditions that would impair their applicability and impede the response of the target populations (all of which, without infringing on sound administration and long-term policy).

¹⁰³ Bank of Israel Research Department, *Israel and the Global Crisis: Policy Recommendations to the Government*, March 2009.

- ◆ **Effectiveness**—the greatest possible effect on domestic activity (minimizing the spillover into imports, having a strong effect on employment—activity oriented to labor or human capital) and small offset—measures unlikely to be canceled out by individuals' behavior.
- ◆ **Flexibility and modularity**—the intervention should be flexible enough in terms of duration, scope, and composition that it can be adjusted to changes in the state of the economy and the extent of the crisis as these become clear over time. In particular, it was recommended to prepare alternatives for a milder recession than the one expected and for an extreme worsening of the crisis. This principle was very important due to the severe uncertainty that existed about how the crisis would develop and how it would affect the economy. Even though in retrospect the damage to the economy was mild, it was correct at the time to prepare contingency plans for the real economy as well—and not only for the financial sector—in the event of further deterioration.
- ◆ **A view to the post-crisis future**—it was emphasized that the measures chosen should be those that would pose the smallest possible threat to long-term objectives and to achievements that had been made in the pre-crisis years, especially in the fiscal domain and in price stability. Accordingly, the requisite program must be fiscally sustainable, especially with regard to an increase in the public debt. Thus, measures of temporary nature were preferred, along with those involving earlier performance of expenditures already planned. It was stressed that the program should include a clear exit strategy, i.e., the conditions under which it would be terminated, and should be non-recurring, reflecting its nature as an exceptional intervention in response to an exceptional crisis. Additionally, the measures and the recording of expenditure on their account must be transparent.

In accordance with these principles, the steps relating to the financial sector (many of which were already being applied by that time) were augmented with measures for the labor market and tools to stimulate domestic demand. Some of these tools, targeting the real economy, were meant to boost demand and expand employment in industries that are intensive in domestic activity, such as government ministry projects and steps relating to the construction industry. In contrast, it being known that the government cannot influence demand in export oriented industries, the measures proposed in regard to these industries focused on maintaining employment and human capital and creating infrastructure so that they would be able to respond rapidly to the upturn in demand abroad once such an upturn would take place. Thus, for example, substantial allocations for R&D were proposed. The measures relating to the labor market were designed to serve the goals of employment, sustaining demand, welfare considerations, and also long-term objectives of integrating weak population groups into the labor market. Some

of the measures were important not only in terms of their direct effect but also in their ability to influence expectations, mitigate individuals' and firms' uncertainty, and show that policymakers were indeed taking action to tackle the crisis and, thereby, to help mitigate fears among the public and in the markets. For example, the easing of terms for unemployment benefits might lessen individuals' propensity to increase their savings rates due to fear of losing their jobs, thereby helping to stimulate demand at the present time.¹⁰⁴

The program placed special emphasis on the establishment of a budget framework that would strike the balance between supporting aggregate demand and maintaining fiscal credibility and the long-term fiscal targets. For this reason and in view of the fiscal credibility that had been amassed in the pre-crisis period, it was emphasized that the automatic stabilizers should be allowed to operate, i.e., that the deficit should be allowed to increase beyond the previously set maximum in accordance with the decrease in tax revenues.¹⁰⁵ The implementation of the measures included in the program was expected to increase government spending by NIS 5 billion and the deficit by 0.5 percent of GDP beyond what the automatic stabilizers would have done.¹⁰⁶ Since the proposed increase in expenditure would be based on non-recurring measures and earlier-than-planned spending, its expected effect on spending in coming years would be slight; therefore, fiscal credibility probably would not be harmed. However, the program also stated that if in the course of events it turned out that credibility was being eroded and the cost of financing had risen exceptionally, measures to lower the deficit would be taken at once. Furthermore, it was recommended that along with adopting the program, the government should adopt a fiscal rule for the medium term that would lower the debt/GDP ratio and demonstrate its commitment to return to such a path at the end of the crisis.

104 In practice, it was decided that the terms for receiving unemployment benefits would be eased only when the rate of unemployment exceeds 7.5 percent. This undermined the possibility that easing the terms might support aggregate demand.

105 The new budget that was passed in July 2009 and the raising of the deficit ceiling for 2009–10 did reflect this principle: the deficit ceiling was raised commensurate with the expected decrease in tax receipts.

106 The plan expected the combination of this increase in spending and the effects of the automatic stabilizers to result in a deficit of 5.8 percent of GDP in 2009. With the approval of the budget in July 2009, the deficit ceiling for that year was indeed raised to 6 percent of GDP but the increase was meant only to match the effects of the downturn in tax receipts. The budget also allowed an increase in spending but its effect on the deficit was canceled out by tax hikes. Ultimately, the deficit in 2009 came to about 5 percent of GDP.

(2) The main measures that the program proposed in respect to the real economy¹⁰⁷

a. Tools relating to the labor market

1. Reducing the number of foreign workers and replacing them with Israelis;
2. Expanding the Earned Income Tax Credit program (the "negative income tax") to the entire country;
3. Prolonging eligibility for unemployment benefits and easing the terms of the qualifying period. (An agreement between the Ministry of Finance and the National Insurance Institute in this matter was implemented in June 2009);
4. Expanding welfare-to-work programs, including the Israeli "Wisconsin Plan";
5. Expanding vocational training;
6. Establishing a state funded program of unpaid leave at enterprises in peripheral areas that encounter temporary distress (implemented only in July 2009 on a negligible scale).

b. Manufacturing and exports

1. Increasing the budget of the Chief Scientist (beyond the increase included in the Acceleration Plan);
2. Expanding the foreign trade risk insurance program.

c. Infrastructure, construction, and other nonrecurrent projects

1. Increasing infrastructure investment on the basis of criteria specified in the program, including a focus on public transport projects and projects on which on-site work can begin immediately; employment in these projects should be restricted to Israelis only;
2. Alleviating financing problems in integrated public/private infrastructure projects;
3. Revitalizing public areas in prime tourism locations and city centers (urban development);
4. Nonrecurrent government ministry projects that satisfy the criteria specified in the program, including earlier implementation of existing multiannual programs in the education system;
5. Earlier performance of computerization programs at government ministries;
6. Expediting the relocation of army bases to the Negev.

¹⁰⁷ The program described each of these measures in detail, including an estimate of its cost and a discussion of its advantages, drawbacks, and risks.

d. The construction industry

The recommendations focused on measures already included in the Ministry of Finance's Acceleration Plan, as specified above.

e. The financial sector

In regard to the financial sector, many measures had been considered and adopted before the program was published. Thus, the program merely surveyed them and offered remarks or specific proposals to improve them. This aside, the program included a proposal of assistance for the venture capital market. For a detailed description of the measures relating to the financial sector, see above in this chapter.

Chapter 4: Lessons from the Crisis

1. INTRODUCTION

There are a large number of lessons to be learned from the processes that led to the crisis, the developments during the crisis, and the policies adopted to deal with it. They can be divided into two main groups: lessons for reducing the risk of similar crises in the future, for the early identification of crises, and for reducing the vulnerability to crises; and lessons for policy and conduct during a crisis and upon emerging from it.

The lessons of the crisis relate to all areas of policy, including policy related directly to financial stability and the financial system, monetary policy and fiscal policy. Furthermore, a major lesson to be learned—regarding policies to prevent crises in particular—is that an overall strategy for maintaining financial stability and reducing the risk of a crisis must encompass all these policy areas. The need for an overall view of the stability of the financial system, that includes all its components and the interactions among them, is also at the core of macro-prudential policy. This policy framework for the reduction of systemic risk in the financial system is emerging as one of the main lessons of the crisis.

Although the effects of the crisis were relatively moderate in Israel and even though many of the problems encountered abroad were not present in the Israeli financial system, it is important to take advantage of the lessons being learned in other countries, and to learn from the mistakes of others. While the lessons being discussed abroad are numerous and diverse, the discussion below is restricted to those which are most relevant to Israel.

We are still in the midst of the process of drawing lessons from the crisis both in Israel and abroad. Certain lessons are already being implemented through legislation, regulation and the conduct of authorities. However, there remain many unresolved questions and there is still no consensus as to the lessons to be drawn.

The importance of drawing lessons from the experience of both Israel and other countries and, more crucially, implementing them, is underlined by the fact that the moderate and short-lived effect of the crisis in Israel can only partly be attributed to domestic policy. Thus, for example, sound macroeconomic policy in recent years supported the growth of the economy. However, the fact that the crisis hit the economy at the peak of the business cycle, which made the crisis easier to confront was to a large extent coincidental. The high savings rate of households, which helped mitigate the effects of the crisis, is not necessarily a result of policy; and even though the

regulation of the banks contributed significantly to the stability of the banking system, the latter was also the result of the banks' relatively conservative conduct concerning mortgages, among other things. Additionally, the inter-bank market in Israel remains underdeveloped, and markets for complex assets, which were at the core of the crisis abroad, have not yet developed in Israel. Furthermore, without underestimating the success of the policy adopted in Israel during the crisis, it is important to remember that the problems it faced were less severe than those faced by many of the developed economies. All this calls for modesty and caution in evaluating the success of policies adopted in Israel, and stresses the need to avoid complacency with regard to drawing lessons and implementing them. Some of the required measures, primarily in the area of financial stability, including the need to improve supervision of the management of savings by financial institutions, were well known prior to the crisis and the need for them was emphasized in various reports at that time. However, the required measures were not implemented in a timely manner, and this exposed the Israeli financial system to significant risks during the crisis. The effects of those risks could have been much worse than they actually were.

The causes of a future crisis and its characteristics are liable to be significantly different from those of the last crisis. Therefore, it is important to look beyond the lessons implied directly by the particular characteristics of this crisis. This applies to the design of mechanisms for the early detection of processes that could lead to a crisis and for dealing with them in a timely manner, as well as to the creation of an infrastructure for crisis management. Naturally, some of the lessons drawn from the recent crisis, as well as certain measures that were taken during the crisis and that proved effective, will be irrelevant to a different type of crisis.

The main lessons are:

a. Reducing the risk of a crisis and its early detection

(1) Macro-prudential policy

- ◆ **The importance of maintaining systemic financial stability (macro-prudential policy):** A policy is required for strengthening the resilience of the financial system to shocks and reducing the effect of shocks in this system on the real economy. It is not sufficient to ensure the stability of a particular financial institution or of a particular financial market; rather an overall approach is required that includes all the components of the financial system and the interactions among them. This policy should include: the development of tools for the early detection of risk to the

financial system, close monitoring of systemically important financial institutions, and the adjustment of regulatory requirements and incentives.

(2) Banking supervision

- ◆ **The importance of maintaining close and thorough supervision of the banks, comprehensive regulation of the banking system and a willingness to intervene when necessary:** Supervision of the banks in Israel is characterized by rigorous ongoing inspections, the imposition of comprehensive and conservative banking regulations and a high level of control both with regard to financial reporting and disclosure to the public and with regard to consumer-related regulation. These characteristics play a major role in strengthening the resilience of the banking system.
- ◆ **Adjustments to the bank regulation and supervision system:** This includes the continued strengthening of the regulatory capital framework, as well as the improvement of corporate governance and the mechanisms for risk management and monitoring.

(3) Non-bank financial system

- ◆ **Improving the regulation and supervision of non-bank financial institutions:** Including the adjustment of capital, liquidity and leverage requirements, as well as special adjustments to be made in the pension savings and provident fund sector.
- ◆ **Improving the regulation of financial markets:** Closer monitoring of the corporate bond market, striking the appropriate balance between bank and non-bank credit and the regulation of the interactions between them.
- ◆ **The derivatives market in Israel:** This market, which was at the core of the global crisis, hardly existed in Israel prior to the crisis. It is important that this market be developed here, albeit cautiously, while applying the lessons learned abroad, and creating an appropriate legal infrastructure. Among other things, it is important to develop a securitization market and a CDS market, while at the same limiting them to simple products and ensuring their transparency.

(4) Monetary policy

- ◆ **Considerations of financial stability need to receive greater weight in monetary policy:** Monetary policy should not focus solely on price stability and the level of economic activity. It should also pay attention to evolving risks in the financial system in a timely manner, including, for example, in the areas of credit and real estate in view of low interest rates.

(5) Structure of supervisory authorities

- ◆ **Improving the structure of supervisory authorities and strengthening coordination, cooperation and exchange of information among them:** It would be desirable to concentrate the overall responsibility for financial stability within the Bank of Israel and to extend its responsibility to the supervision of the stability of all financial institutions. This is partly due to the need that arose world wide for central banks to inject liquidity into non-bank financial institutions as well. This demonstrated the central bank's role as lender of last resort (LOLR) for these institutions as well. The legal environment should be adjusted to allow the Bank of Israel to supervise these institutions and to serve as their lender when needed.

(6) Major risk factors in the credit and real estate markets

- ◆ **Addressing excessive leverage and real estate bubbles at an early stage:** Unbalanced developments in the credit and real estate markets constitute one of the main risk factors in the evolution of financial crises. They need to be dealt with through a variety of policy areas: financial stability, bank supervision and, as mentioned, monetary policy as well.

b. Dealing with a crisis once it has developed

(1) Dealing with financial institutions

- ◆ **Dealing with systemically important financial institutions:** When the stability of the financial system is at risk, immediate and firm measures should be taken to stabilize systemically important institutions, and to ensure the continued functioning of the payments and settlement systems of those institutions, to prevent the spread of the crisis to other institutions as far as possible.
- ◆ **Injection of liquidity into the financial system:** The injection of liquidity by the central bank into the banks and non-bank institutions emerged as one of the main tools for dealing with the crisis, and also has implications for the leading role that central banks should play in managing financial crises.
- ◆ **Establishment of arrangements for early intervention when there is concern that a bank is in distress:** Examination of the existing legal framework, while strengthening the authority of the Governor of the Bank of Israel and the Supervisor of Banks with respect to early intervention when there is concern for the stability of a bank, and the formalization of procedures for disclosure to the public in cases when discreet intervention is required.
- ◆ **Establishment of a resolution mechanism when a bank is in distress:** Examination of the legal framework and expansion of options for action by the authorities when a bank is in distress, as well as obtaining legal clarity.

(2) Monetary and fiscal policy

- ◆ **Monetary policy has a central role to play in the rapid response to a crisis:** In certain circumstances, rapid and determined monetary expansion is called for; it is possible to extend the use of monetary policy when the interest rate is close to zero, and if needed, quantitative tools can be included to amplify its effect and to reduce interest rates all along the yield curve; monetary policy is effective in dealing with the crisis, particularly in easing credit and liquidity shortages, the maintenance of positive inflationary expectations and the prevention of entering a deflationary spiral.
- ◆ **The role of fiscal policy:** It is difficult to increase public expenditures both rapidly and wisely and the effectiveness of such an increase is limited in the immediate run, when monetary policy has the advantage. As the crisis continues, fiscal policy may play a larger role. Nonetheless, fiscal sources can play an important role in the short term in reducing liquidity and credit shortages through the provision of guarantees.
- ◆ **The quality of fiscal and monetary policies prior to a crisis influences the ability to implement them during the crisis:** The ability to pursue effective fiscal and monetary expansion during a crisis depends on the fiscal situation prior to it and on the credibility of monetary policy. Therefore, it is important to persevere in the reduction of the debt-to-GDP ratio and in maintaining price stability over time.

(3) Exit strategy

- ◆ **Long-term considerations and exit strategy:** Policy during a crisis must also take into account long-term considerations, including the effect of policy measures on the size of the public debt, on the government's future obligations due to guarantees it has provided, and on potential distortions as a result of intervention in the markets. It is also important to set down the conditions and manner in which special intervention will end.

(4) Early preparations

- ◆ **Preparations for dealing with a crisis:** These should include contingency plans, the preparation of a legal and operational infrastructure for the authorities, and simulation of emergencies.

2. LESSONS FOR FINANCIAL STABILITY POLICY

The financial system in Israel did not suffer from most of the difficulties that appeared in the global financial system, partly due to the tight regulation of the banking system. The focus of the local crisis was primarily in the financial markets, particularly in the

non-bank credit market, which developed at unprecedented rates prior to the crisis (even compared to those in other countries), and in the market for long-term savings. Nonetheless, the drawing of conclusions relevant to the Israeli economy should not focus only on the solutions of the specific problems that arose in the local financial system, but also on the lessons being learned from the crisis in other countries as well.

The conclusions to be drawn from the crisis can be divided into two categories: those that are related to early detection of crises and the creation of an infrastructure for preventing future crises, and those related to the management of a crisis once they have already developed. Following is a list of conclusions according to this division:

a. Lessons related to the early detection of crises and reducing the risk of a crisis developing

(1) Macroprudential (hereafter: MaP) policy:

- ◆ The global financial crisis increased the awareness of the **importance of maintaining the stability of the financial system**. It is not sufficient to simply ensure the stability of the individual institutions in the financial system or of any individual financial market but rather an integrative approach is required to the financial system as a whole, including banks, non-bank institutions, financial markets and the payments and settlement system, as well as the interactions between the financial system and the real economy.
- ◆ The crisis also brought to the fore the **interaction between price stability, financial stability and macroeconomic stability**. Monetary policy that focuses only on the achievement of price stability is not sufficient to ensure financial stability and economic stability, and in order to support the attainment of these objectives monetary policy should take a more pro-active approach and should deal with evolving risks in the financial system at an early stage. These include, for example, risks that develop as a result of imbalances in the financial system, or from channels of contagion between financial institutions, or the failure of a major institution.
- ◆ **Financial stability should be maintained through MaP policy**, which focuses on the relations between financial institutions, markets and the real economy and whose goal is ensuring the resilience of the financial system to shocks.¹⁰⁸ This is accomplished through:
 - **Development of tools that will enable the early detection of developing risks in the financial system and the early response to these risks.** One of the dangers

¹⁰⁸ BIS, Committee on the Global Financial System (2010), *Macroprudential Instruments and Frameworks: A Stocktaking of Issues and Experiences*, May.

to financial stability is the development of bubbles in asset prices, primarily real estate and shares. A rapid expansion of credit can also signal the development of a bubble and/or the over-contraction of credit margins, in particular if this occurs in sectors with a high degree of leverage relative to the past or relative to the base assets. Therefore, it is necessary to develop tools for monitoring the development of risks in the financial system, such as, for example, close monitoring of changes in asset prices, the liquidity situation in the markets and in financial institutions. Early detection of these risks and early response will prevent the situation from deteriorating.

- **Expanded supervision and close monitoring of systemically important financial institutions (SIFI)** (institutions that are too large, highly connected or important to be allowed to fail): One of the conclusions drawn from the crisis world wide is the need to tighten the supervision of systemically important financial institutions, and in some cases even to impose stricter restrictions and requirements on them than those applicable to other financial institutions (e.g., capital or liquidity requirements, limits on compensation). The legal infrastructure for the takeover and liquidation of large institutions that are in distress (Resolution Mechanism) should also be prepared (see details below). In Israel the Bank Supervision Department has closely monitored the large banks for a considerable time, but the question should still be addressed of whether special restrictions should be imposed on them. In addition, it should be examined whether there are non-bank institutions of systemic importance, and if so supervision over them should be tightened. This lesson from the crisis is a very important one for Israel's economy in light of the size of the domestic financial institutions and the concentrated structure of the financial system.
- **Creation of disincentives for the creation of new institutions that are too big to fail:** The global trend is to work towards the creation of incentives that will prevent the development of additional financial institutions that are too big to fail since they are liable to undermine the stability of the financial system as a whole if they encounter difficulties, and there is also moral hazard that increases their tendency to take on excessive risk. In Israel, which is a small open economy, it is unclear whether the implementation of this conclusion will in fact contribute to greater stability in the financial system since a financial institution that is considered large by local standards does not even come close to the size of financial institutions abroad that are a cause of concern. In addition, large financial institutions by local standards in general benefit from economies of scale, a more stable capital structure and a higher level of corporate governance than smaller institutions. With respect to the concentrated local banking system, it is possible that another large bank

would indeed contribute to reducing concentration and increasing competition. Therefore, it should be determined whether the conclusions being drawn world wide on this issue are relevant to Israel in view of the size and structure of the local financial system, and appropriate rules should then be determined for this system.

- **The execution of stress tests for financial institutions (bank and non-bank) and for the financial system as a whole:** The objective of stress tests is to understand the weak points of the financial institutions and the financial system as a whole and to assess their resilience to crisis situations. The execution of stress tests on an ongoing basis will make it possible to identify the weak points of the local financial system and of potentially unstable financial institutions ahead of time. The early identification of institutions that may become distressed will make it possible to deal with weaknesses before a lack of confidence develops among the institution's depositors. The intensity of the last crisis provides an indication of the stress scenarios that should be taken into account.
- **Imposing pro-cyclical capital requirements and provisions for financial institutions:** The financial crisis increased the awareness of the need to find policy tools that will moderate the fluctuations of the business cycle. The goal of the variable capital requirements is to create capital "storehouses" during periods of prosperity which can be used during recessions. Thus, the capital requirements during periods of prosperity will be higher than those during periods of recession. The gradual building up of capital storehouses during periods of prosperity strengthens the protection of each of the financial institutions and that of the financial system as a whole. In addition, such a requirement also limits the over-expansion of credit and the increase in risk during periods of prosperity, and thus reduces the risk of pressure being created during recessions.¹⁰⁹
- **Monitoring of real corporations that are significant to the financial system:** Increased monitoring of large real corporations including business groups which, if their stability were undermined, could affect the stability of the financial institutions. To this end, there is a need for the development of tools for the analysis and identification of risk in non-financial companies, particularly real corporations with a high degree of leverage.
- **The development of tools that will enable the implementation of a MaP policy to deal with risks that have developed in the financial system,** such as the imposition of various restrictions on the credit markets in order to deal with

¹⁰⁹ BIS (2010), "Countercyclical Capital Buffers: Exploring Options," BIS Working Paper No. 317, July.

developing imbalances within them. It is worthwhile mentioning in this context that although the term MaP has existed since the 1970s, there is still no agreed-upon definition of the tools for implementing such a policy and in addition, the policy tools are in continual development. In addition, the experience with the use of these tools in order to value their effectiveness accurately is still insufficient. Therefore, use of MaP policy tools needs to be accompanied by close supervision and monitoring in order to ensure that they are indeed effective and that they are attaining the goal for which they were implemented.¹¹⁰

(2) Regulation and supervision of banking institutions

One of the greatest concerns during the crisis was the failure of a financial institution, which had it happened, would have affected overall financial stability. When this involves a banking institution, the effect is liable to be more rapid and its results to be more adverse since it is an institution that accepts deposits and the risk of contagion in the system is high. Banks are characterized by a sensitivity to market failures, a relatively high degree of leverage, exposure to liquidity risks, and the existence of moral hazard. In light of the above, it is very important to be prepared to identify threats to the banking system before they emerge and to strengthen the supervisory and regulatory framework. As a result of the Israeli financial system's unique characteristics and the centrality and concentration of the banking system, this conclusion is particularly relevant.

The Israeli economy has weathered the financial crisis well relative to other countries. One of the main reasons for this is the resilience and stability of the banking system during the crisis:

- ♦ **Close and meticulous supervision of the banks, comprehensive regulation of the banking system and the will to act and intervene as necessary:** The supervision of banks in Israel is characterized by a high level of active supervision of banking activity, the imposition of comprehensive and conservative banking regulations and the maintenance of broad control both with respect to rules of financial reporting and disclosure to the public and with regard to bank-consumer relations. There is no doubt that these characteristics play a major role in strengthening the resilience of the banking system. Thus, there is **a high level of involvement and a deep familiarity with banking activity**, which is accomplished through, among other things, widespread audits in the field, the examination and approval of transactions in real time, insistence on appropriate standards of underwriting, investigation and auditing with respect to the fulfillment by the banks of regulations and supervisory

110 J. Caruana (2010), "Macroprudential Policy: Working Towards a New Consensus," Speech by BIS General Manager, BIS, April.

directives, ongoing contact with key figures in the bank, and a direct link with the senior executive and the Board of Directors.

- ◆ **Comprehensive and conservative banking regulation:** The policy of bank supervision in Israel can be characterized as conservative. This can be seen in the imposition of comprehensive restrictions and the gradual entry into processes of innovation. Within this framework, significant restrictions are placed on exposure to a single borrower or group of borrowers, on industry exposure (including the real estate industry), on credit for the purchase of controlling interests, provisions according to the extent of arrears on mortgages, restrictions on the introduction of inferior complex instruments, etc. The reflection of this policy is a conservative banking system that finances its activity primarily through deposits from the public and is only marginally dependent on lines of credit from abroad, structured financial instruments and other sources in the market. There is no doubt that this conservative policy and the limits imposed on the banking system have made a significant contribution to reducing the exposure of the banks to risk factors that developed during the crisis.
- ◆ **Disclosure to the public and preservation of a high level of transparency and reliability in financial reporting:** The Bank Supervision Department closely and consistently examines the accounting policies implemented by the banks in order to ensure that they properly understand the transactions they enter into and the risks involved in them, and that an accounting policy is being implemented which follows accepted accounting practices and the highest standards of conservatism, caution and transparency. The authority and responsibility of the Bank Supervision Department in the regulation of financial accounting rules and disclosure were found during the crisis to be essential in maintaining a high level of transparency and reliability in real time. Examples include the comprehensive and early disclosure requirements (introduced in September 2007) for asset-backed financial instruments, the identification and presentation of declines in the value of available-for-sale securities, the exposure to foreign countries, and the measurement and disclosure of fair value. Policy in the areas of measurement and disclosure to the public proved to be critical during the crisis and contributed to market discipline, as well as strengthening the confidence of the public and of investors.
- ◆ **Databases and reporting to the Bank Supervision Department:** With the development of the crisis and as part of the dynamics of worldwide events, the Bank Supervision Department quickly issued requirements for the reporting of new data and qualitative information that were critical in the evaluation of the level of bank risk. The new rules for reporting to the Bank Supervision Department led to an improvement in the flow and processing of information in the banks and they

were one of the main factors in the improvement of managerial information in their possession. The crisis led to an improvement in the database possessed by the Bank Supervision Department and simultaneously to an improvement in the database used in decision making by the banks.

- ◆ **Consumer regulation of the banks:** The consumer regulation of banks in Israel is stricter than that in the US and most other Western countries. The strict disclosure requirements alongside the involvement in the design of mortgage products, when necessary, has prevented the development of misleading practices that led, in the US and other countries, to the provision of credit beyond the ability and the original desire of the borrower. These practices harmed the borrowers when the conditions of the market changed and they encountered repayment difficulties. The preventative intervention of the Bank Supervision Department in this context signaled the Israeli mortgage market that the regulator is not tolerant of expensive credit being presented as if it were cheap but rather that it supports the rationalization of the market.
- ◆ **The Supervision of Banks' will to act as necessary:** A significant number of the conclusions from the present crisis were arrived at in other countries as a result of previous crises. One of the main insights regarding the supervision of the banks is the central importance of its will to act at the correct moment in time and with the appropriate determination and intensity, i.e., the adjustment of regulatory requirements, the introduction of measurement, disclosure and reporting requirements, loan-loss provisions, capital requirements, requirements for risk management, monitoring, and intervention (sometimes at the transaction level). In many cases, the actions of the Bank Supervision Department are liable to meet opposition, whether from the banks or from other interested parties. Nonetheless, the determination of the regulator to intervene when necessary is essential in strengthening the confidence of the public, the decision making processes and corporate governance in the banks and, as a result, in the reduction of risk exposure. There is no doubt that the broad control imposed by the Bank Supervision Department in Israel and its willingness to intervene when necessary contributed significantly to the economy's ability to weather the crisis.
- ◆ **Strengthening of the regulatory capital framework:** As part of the approach described above, the Bank Supervision Department made clear to the banks even before the crisis began that it would be worthwhile for them to adopt a strategy for capital adequacy which would increase their capital ratio to at least 12 percent by the end of 2009. As part of this policy, the Bank Supervision Department monitored and when necessary intervened in the processes by which the banks met this target. As a result of the financial crisis, there developed a global awareness of the need for raising the level of capital and its quality in the banking systems world wide. As part of the

process of strengthening the regulatory capital framework, the BCBS¹¹¹ (hereafter: the Basel Committee) published an advisory document in December 2009 on this subject. The Bank Supervision Department is monitoring the developments in the global process and is introducing adjustments within the regulation and supervision of the Israeli banking system as required by the circumstances. As part of this effort, the recommendations of the Basel Committee will be considered and adopted as needed. These include: increasing the quality, consistency and transparency of the capital base; improving the risk coverage of the capital framework; determining a leverage ratio of equity relative to total assets as an additional measure, alongside the capital adequacy ratio; and the reduction of pro-cyclicality together with the creation of counter-cyclical capital buffers.

In order to clearly state the Bank Supervision Department's expectations of the banks during the period up until the publishing of the Basel Committee's final recommendations, it published a bulletin in June 2010 on capital policy for the interim period. Within this framework, the Supervisor of Banks required that the banks submit a formal plan to the Bank Supervision Department according to which the ratio of core capital to risk assets would be raised to at least 7.5 percent by the end of 2010.

♦ **Strengthening of corporate governance and the quality of risk management:**

Corporate governance in the banks is highly important to the stability of the financial system and the strengthening of public confidence in it. One of the reasons for the intensity of the crisis and the collapse of some banks was deficient corporate governance. This included: boards of directors, as well as members of the Executive, that did not fulfill their main function in self-supervision and failed to provide an independent opinion; banks that adopted dangerous credit policies which were based on short-term profits; the management of risk in the banking system world wide which failed as a result of banks' actions that were not in line with their risk appetite; and the use of compensation schemes that encouraged excessive risk-taking.

The Bank Supervision Department identified weaknesses in corporate governance among the banks in Israel as well, such as in the management of risk due to complex financial instruments and in the functioning of the board of directors. During the crisis, the banks suffered losses on their portfolio of mortgage-backed securities (MBS), and their decision making processes were not in line with the standards of corporate governance. These cases required determined supervisory involvement in order to reduce risk exposure, through, among other things, high capital requirements on the MBS portfolio, whose level of risk was observed to be high, and intervention

111 Basel Committee on Banking Supervision.

in inappropriate decision making processes. These actions signaled to the banks that the position of the Bank Supervision Department required that emphasis be placed on proper standards of risk management.

Simultaneously with the assimilation of the Basel II project in Israel during the last two years and the drawing of conclusions from the financial crisis, the Bank Supervision Department has worked in various ways to raise the priority of proper and effective corporate governance. As part of the lessons learned from the crisis, the Bank Supervision Department demanded the appointment of a Chief Risk Officer in each bank and the fulfillment of the function of risk management by the banks in order to strengthen their ability to understand risk and to ensure cautious risk management. Furthermore, the Bank Supervisor directed the banks to adopt an appropriate compensation policy according to formal criteria. One of the main areas that needs to be dealt with is a change in emphasis in the work of the board of directors and the Executive. As part of the efforts in this area during the past two years, the Bank Supervision Department is formulating an amendment to the Directives of Proper Conduct of Banking Business dealing with the board of directors. These efforts are consistent with Basel II recommendations and require ongoing monitoring and follow-up of actual implementation and of the development of risk.

As a result of the crisis in the financial markets, the cautious management of liquidity risk has become increasingly important. The advisory documents of the Basel Committee deal with the international standards for the measurement and monitoring of liquidity risk. It recommends uniform quantitative indices for all banks that will enable liquidity risk to be monitored. The Bank Supervision Department is studying the published drafts and intends to adopt them with appropriate changes when they become final recommendations.

(3) Regulation and supervision of non-bank financial institutions

- ◆ **Development of a methodology for central bank monitoring of non-bank financial institutions and tools for the provision of liquidity:** During the last crisis, we learned that there may be a need for the central bank to provide liquidity also to non-bank financial institutions that are systemically important to the system's stability. To this end there is a need to identify systemically important institutions and to develop a methodology for monitoring these institutions. On top of this there is a need to see whether and in what circumstances the central bank might need to provide liquidity to these institutions and to formalize and develop a process for providing such liquidity. This follows the recent passing of the new Bank of Israel Law which formalizes the process from a legal point of view. In addition, in order

for the central bank to assist a non-bank financial institution there must be direct and continuous reporting from these institutions to the central bank. The legal basis for the receipt of such information was also included in the new Bank of Israel Law; however, the type of information needed to make such decisions promptly and with full transparency still needs to be determined.

- ◆ **Adoption of the Solvency 2 directives with regard to insurance companies in Israel:** As early as July 2008, the Commissioner of the Capital Market, Insurance and Savings in the Ministry of Finance notified the insurance companies of his intention to implement the Solvency 2 directives close to the timetable set by the EU, i.e., mid-2012. The crisis emphasized the importance of this step in Israel as it drew attention to the contribution of stable capital to the stability of the financial institutions. Furthermore, adoption of the directives is likely to enhance the risk management system, control, and corporate governance in insurance companies.
- ◆ **The pension savings sector:** One of the problems in the pension savings sector which was brought to the fore by the crisis is that most of the funds accumulated in it are managed in general tracks without the fund member being aware of the level of risk adopted by the fund and without taking into consideration the characteristics of each saver and the risk profile that is appropriate to him. Thus, the savings of fund members who are close to retirement are managed together with those of younger fund members, thereby exposing the older members to excessive market risk. Therefore, another crisis in the markets, such as that in 2008, may significantly reduce the pension savings of fund members close to retirement age without their having the opportunity to benefit from a future recovery in the market.

In order to solve this problem, the Ministry of Finance is promoting the adoption of a model similar to the one existing in Chile since 2002 ("The Chilean Model"). According to this model, the managers of the pension savings will be allowed to manage a limited number of default investment tracks that are tailored to the age of the fund member. Fund members will be designated automatically to investment tracks according to their age: older fund members will be designated to a default investment channel containing more solid assets, and fund members who already receive a pension will be assigned to the most conservative investment channel. The designation to default investment tracks will be automatic without any action required from the saver; however, he will have the option of choosing a specialized track or a different default channel.

The proposal by the Ministry of Finance for the designation to default investment tracks is expected to moderate the potential harm during a crisis to savers who are close to retirement age, as occurred during the last crisis. However, since the proposal will apply to all the accumulated assets in the funds, it may affect the demand for

specific assets such as shares or corporate bonds, and is therefore expected to be implemented gradually over a number of years.

(4) Regulation of the financial markets

- ♦ **The corporate bond market:** The market for corporate bonds in Israel has developed rapidly in recent years and it constituted one of the focuses of risk to the local financial system during the crisis. The reason for this is that the rapid development of the market took place before financial bodies had developed an appropriate infrastructure for the evaluation and monitoring of credit risk, and without the simultaneous development of a supervisory infrastructure and institutional limits on this type of credit. As part of the lessons learned from the crisis, the Commissioner of the Capital Market has tightened the regulations on institutional long-term investors who are active in the non-bank credit market and has issued directives to strengthen their level of corporate governance, including, among other things, the requirement to appoint a risk manager. In addition, the Commissioner of the Capital Market issued new directives in July 2010 that are meant to improve the procedures for investment by institutional investors in corporate bonds, in accordance with the recommendation of the Hodek Committee. The new directives define the documents to be submitted and the analysis to be performed prior to making an investment; they define the obligation to register untradable bonds that were purchased by an institutional investor at the Registrar's Office; they impose a reporting requirement on corporations that are not obligated to report according to the Securities Law as a condition for an investment by an institutional investor; and they specify desirable characteristics of bonds in which institutional investors invest, including covenants. Most of the new directives went into effect in October 2010 and it appears they will indeed improve the procedure for investment in corporate bonds. However, it is important that the new directives be accompanied by increased transparency with regard to the quality of bonds even after their issue, as well as by close supervision of institutional investors who purchase bonds through the implementation of macroprudential supervisory policy. The objective is to identify an unbalanced expansion of credit to sectors or industries at risk and to halt such expansion at an early stage. The Commissioner of the Capital Market should be provided with legislative tools to induce the managers of long-term savings to reduce specific exposures (such as by means of requirements for an increase in capital as a result of the identification of excessive exposure).

Concurrently with the activity of the Commissioner of the Capital Market, the Israel Securities Authority has also made modifications to its directives as a result of the lessons learned from the crisis, including the imposition of designated reporting requirements on companies that issue bonds to debt holders, as well as the

publishing of an outline that facilitates the efforts of credit officers in order to arrive at debt arrangements in the bond market. In addition, the Israel Securities Authority is working to pass legislation to increase the responsibility of bond trustees and to upgrade corporate governance in companies that have issued bonds to the public. The Securities Authority is also working to pass the Rating Companies Law which will increase the transparency of the rating model and will formalize the activities of the rating companies.

◆ **Bank credit and non-bank credit and the interaction between them:**

- The crisis demonstrated that despite the existence of a non-bank credit market alongside bank credit, which results in a wider dispersal of credit risk in the economy, there is interdependence between the two credit sectors, and a failure in the non-bank credit market can also expose the banks to risk and even reduce their ability to control and maneuver.
- In a situation of borrower insolvency, it is more difficult to arrive at an arrangement when a problematic borrower has debt in two credit markets, and in any case an arrangement with the banking system is easier than one with institutional investors. As part of the lessons learned from the crisis, steps have been taken that simplify the process of arriving at an arrangement in the capital market. Examples include the procedure initiated by the Israel Securities Authority for the appointment of "credit officers," and the auditing standard issued by the head of the Israel Anti-Trust Authority which allows institutional investors to cooperate in the formulation of debt arrangements.
- The non-bank and bank credit markets develop differently at different stages of the business cycle and therefore it is important that they exist in parallel in order to ensure a dependable source of credit to the business sector. Thus, non-bank credit markets in general react more rapidly to changes in the economic situation and precede the reaction of the banking system. In 2008, at the height of the crisis, the non-bank credit market was in a total freeze while the prudent management of the banks made it possible for them to continue providing credit to the business sector, taking into account a broader range of considerations. In contrast, during the exit from the crisis in 2009, the non-bank credit market recovered more rapidly and constituted a substitute for the banking system, which was still in the stage of absorbing the shock. The differential responses to shocks facilitated the availability of credit to the business sector and made it easier for it to weather the recession.
- The financing of entrepreneurial real estate projects through credit from the capital market exposes the financing body to excessive risk. In Israel, as opposed to the norm in developed capital markets in other countries, widespread use was made

of the bond market prior to the crisis as a tool for obtaining credit to finance entrepreneurial projects abroad. In other countries, it is the norm that such projects are almost always financed using bank credit provided gradually according to the progress of the project and with close supervision and monitoring of its progress. In this manner, the lender's risk is reduced.

- ♦ **The derivatives market in Israel:** The derivatives market was at the center of the global crisis, but in Israel it hardly existed prior to the crisis. Despite this, it is important to develop the market in Israel as well, although this should be done gradually and with caution and using the many lessons learned world wide. Among other things, it is important to develop a securitization market and a CDS market that will facilitate better risk management; however, this should only involve the development of simple products. The needed legal infrastructure should be created and should bring about increased transparency and standardization. The settlement of these assets in a central settlement system should be encouraged. The supervision and regulation of non-standard over-the-counter (OTC) transactions should be tightened and reinforced. Finally, it is important to require the recording and reporting of these transactions, in order to facilitate the monitoring of their volume and the types of exposure.

(5) The regulatory structure and coordination among supervisors

- ♦ **The structure of the supervisory authorities and coordination between them:** The need to reexamine the optimal structure for supervision in Israel was evident even before the crisis, in view of the reforms carried out in Israel's financial system in recent years and the increase in the share of non-bank financial institutions in financial intermediation. This need became more acute during the crisis against the background of weaknesses revealed in the existing supervisory structure, and primarily the need that arose for improved coordination mechanisms, exchange of information and cooperation between the various supervisory authorities and between them and the central bank. This is to be viewed against the background of, among other things, the need that arose world wide for central banks to provide liquidity to non-bank financial institutions as well. A team set up by the Bank of Israel at the beginning of 2008 set out to determine the optimal structure of regulatory authorities in Israel and following are their main recommendations:
 - A transition from a sectoral structure of supervisory authorities to a functional one (i.e., according to objectives), which will be based on the three objectives that are the norm world wide: stability of the financial system, stability of financial institutions and sound business management.
 - The concentration of overall responsibility for financial stability in the Bank of Israel: This includes the responsibility for all financial institutions which are not

currently under the direct supervision of the Bank of Israel, in addition to its current responsibility for the stability of the financial system as a whole and for the banks. This responsibility should be accompanied by the provision of appropriate tools and authority.

- An examination of the optimal method for separating the supervision of the stability of financial institutions from the supervision of their business management. For example, a complete institutional separation between the supervision of the stability of financial institutions and the supervision of their business management (Netherlands, Australia), a separate reference for consumer protection regarding the financial institutions (proper disclosure, bank-consumer relations) and the supervision of proper business conduct (conflicts of interests, transparency etc.).
- Close coordination and cooperation between the entities responsible for the financial system, particularly the Ministry of Finance and the Bank of Israel, through both formal and informal arrangements. These arrangements will strengthen the ability of the supervisory authorities to attain their goals, primarily with respect to the preparation for crises.

The adoption of the above recommendations would bring about an improvement in the supervision of the financial system since they provide a solution to the main weaknesses in the Israeli supervisory structure. Among other things this includes: (a) strengthening of the supervision of the stability of insurance companies, provident funds and pension funds which are currently under the supervision of a regulator who reports to the Minister of Finance, and there is concern, at least in theory, regarding the independence of his position; (b) the possibility of an overall view of the financial system that will facilitate the identification of systemic risks and the reduction of those risks, while at the same increasing coordination between the authorities; and (c) better handling of a crisis due to the lessons learned from the last crisis and in view of the Bank of Israel's status as lender of last resort (LOLR) for the banking institutions and under certain conditions for other financial institutions as well and as the body responsible for the payments and settlement system.

- ♦ **Preventing the possibility of regulatory arbitrage between countries and within the economy:** The globalization process and the increased scale of capital flows into and out of the economy have made it increasingly important that regulation in Israel be similar to that in other countries in order to prevent regulatory arbitrage. In addition, the goal should be to apply similar regulations to similar activities, to identical instruments and to processes that are common to sectors supervised by the local regulators, which will prevent discrimination and the possibility of a regulatory gap. This includes, for example, the imposition of advanced capital requirements on financial institutions, the implementation of advanced risk management processes

in all institutions that provide credit and detailed disclosure requirements for all institutions that manage the public's money.

(6) Additional lessons

- ◆ **The structure of incentives in the financial system:** One of the important lessons learned from the global crisis was that the structure of incentives in the financial system suffered from a moral hazard failure and encouraged market participants to take excessive risks. This also applies to Israel's financial system, and in particular to the non-bank credit market and to the activity of financial institutions. The latter, for example, whose income depends on the extent of new issues and the size of the portfolios they manage, did not properly monitor the quality of the bonds issued. As a result the non-bank credit market could accelerate in an unbalanced manner, while the entire credit risk was borne by the funds' members. The whole incentive structure in the domestic financial system should be examined against this background, and steps should be taken such that should not encourage excessive risk taking.
- ◆ **Specification of standards for the compensation of managers:** One of the factors that accelerated the development of the global crisis was the system for compensating managers in financial corporations. This system was based on short-term performance and the lack of "punishment" for losses. This created an incentive to take on excessive risk. In light of these failures, in April 2009 the Supervisor of Banks required that the banks adopt an appropriate compensation policy based on, among other things, long-term profitability and which does not encourage excessive risk taking. In the same way in November 2009 the Commissioner of the Capital Market required the institutional investors to adopt compensation systems based on long-term performance. At the same time there is a need to consider requiring traded financial companies to obtain the approval of the compensation policy also from minority shareholders who do not represent the controlling interests. In financial institutions that are systemically important, consideration should be given to additional regulatory intervention if the system of compensation continues to be a focus of risk.
- ◆ **Reducing concentration in the economy:** The Israeli economy suffers from a high degree of concentration in the business sector, both in the real and financial spheres, and a small number of business groups control a significant share of Israel's economic activity. (Thus, for example, 20 business groups control 25 percent of the publicly traded companies and about 50 percent of their market value.) The high level of concentration increases systemic risk in the financial system, since those controlling groups constitute the largest risk groups for the banks and a collapse of a large business group could create a shock in the banking system. The solution

to this problem, introduced at the beginning of the previous decade, was to place limits on the exposure of the banks to a single borrower or to a group of borrowers. However, despite these restrictions, the existence of large business groups increases moral hazard and systemic risk in the financial system. Therefore, the supervision and regulation of the large business groups should be strengthened and disincentives should be created to discourage the formation of additional such groups.

- ◆ **Rating companies:** The global crisis exposed numerous deficiencies in the work methods of the rating companies and modifications are now being made in the regulation of these companies. In Israel, as well, there was no appropriate regulation and the rating companies were not subject to real supervision by any statutory body, apart from the Commissioner of the Capital Market who determined the rules for approving a rating company and gave approval to institutional investors to use only the rating of companies that had received his approval. In view of the growing importance of the rating companies in the Israeli economy as a result of the rapid development of the corporate bond market and the failures in this market, the Israeli Securities Authority is pushing through legislation in the spirit of recommendations being formulated world wide with the appropriate modifications for the Israeli economy. Thus, for example, the draft legislation specifies that the transparency of the rating process will be increased in order for it to be subject to monitoring, in parallel to the new requirements of the Capital Market Division which require financial institutions to develop an independent evaluation process of investments. With regard to the rating of structured products, even though this market is still not developed in Israel, it is important that guidelines for the rating of structured products already be formulated. This includes the requirement that rating be done only if the rating company has sufficient information on the base assets of the structured asset and that it will be possible to easily identify that rating as that of a financial instrument.
- ◆ **Increasing investment in the public's financial education:** Increasing the investment in financial education is likely to contribute to greater rationalization of the public's financial decisions. In addition, in certain cases, greater protection of investors by the government is needed against undesirable behavior on the part of financial intermediaries.

b. Lessons for dealing with crises once they have developed

- ◆ **When the stability of the financial system is at risk, immediate and firm measures should be taken to stabilize systemically important institutions, and to ensure the continued functioning of the payments and settlement system of**

those institutions, in order, as far as possible, to prevent the spread of the crisis to other institutions. The decision not to rescue Lehman Brothers during the crisis and the effects of the collapse of a bank of that size on the financial system as a whole demonstrated that during a crisis a broad view should be taken of the whole financial system, including the effects of the collapse of single financial institution on the whole system. It is important to ensure the continued functioning of systemically important institutions, and in the event of a failure to ensure that deposit holders in those institutions do not suffer, and that the shareholders pay the price of the failure. To that end there must be appropriate arrangements (a resolution mechanism) that would enable the regulators to intervene promptly in the event of the failure of a financial institution.

- ◆ **Creation of a resolution mechanism for a bank in distress:** in order to be able to react fast to a bank in distress, there is a need to form a wider legal framework enabling measures for supporting the financial system, and actions against shareholders. The existing legal framework in Israel for dealing with a bank in distress is not in line with global developments—it is not sufficiently detailed, does not provide for alternative resolution mechanisms, etc. Therefore, the powers of the Governor and the Supervisor of Banks in the case of a bank in distress need to be clearly defined and expanded, together with the clarification of the legal situation. At the same time, action by the banks is required to create mechanisms, contingency plans and response measures in the event of failure (creation of a "living will").
- ◆ **In dealing with crises, preference should be given to measures that do not threaten long-term stability:** The assumption needs to be that, at the end of the day, the system will return to normalcy and therefore, preference should be given, as much as possible, to measures that do not threaten the long-term stability of the financial system. For example, as part of the introduction of a safety net in Israel, a policy mix was chosen that contributed to short-term stability without significant expected costs in the long term.
- ◆ **Avoiding intervention in the corporate bond market was revealed to be a wise decision:** Although direct intervention in the secondary bond markets could have led to an earlier recovery of the market, this could have had negative effects on the market, such as deviations from the correct pricing of assets and the increased moral hazard in the financial system. In addition, the intervention might have involved a decision as to which bonds would be involved. This would have exposed the Bank of Israel to criticism and would have unnecessarily involved it in debt arrangements that were emerging in the market by the very fact that it was holding specific bonds. Such intervention would have also impeded the development of the debt restructuring process, which had been lacking in the local bond market and

which developed during the crisis. In any case, when there is no immediate danger to financial stability, it is preferable not to intervene hastily and to give the market time to recover on its own, primarily in view of the fact that financial markets react quickly to changes in economic forecasts, and the moment a positive turnaround is expected they recover rapidly.

- ◆ **Injection of liquidity into the financial system:** One of the main tools for dealing with a financial crisis is the injection of liquidity by the central bank into the financial system—both banks and non-bank financial institutions—and therefore the central bank must be the central player in the management of financial crises. The fact that the local financial system benefited from liquidity surpluses during the crisis made it easier for the economy to deal with the crisis although in certain stages these liquidity surpluses were not manifested in the willingness of the banks to provide additional credit to the business sector.
- ◆ **Use of additional policy tools such as the purchase of bonds and a safety net:** During the crisis, use was made of unconventional policy tools. It is important to carry out an in-depth analysis of the effects of these tools and their effectiveness in order to put them to use in the future as needed, quickly and efficiently. In addition, policy tools that were used in other countries should be looked at in order to determine their appropriateness to the local economy.
- ◆ **Creating arrangements for early intervention for a bank in distress:** An examination of the existing legal framework in Israel for dealing with a bank in distress (Clause 8-8N of the Banking Ordinance) shows that this legislation, which was passed in 1969, is not sufficiently clear in some cases and in other cases is limited and inappropriate to the developments in the banking industry since the ordinance went into effect. In view of the unique position of banking corporations, the Israeli legislative branch, like those in other countries, chose a special legislative regime for a bank in distress, which deals with problems of liquidity, management and compliance, and insolvency. However, the existing legislation is not suited to the current possibilities for dealing with banks in distress, which makes it more difficult for the Bank of Israel and the Bank Supervision Department to take effective action. As a result, the following should be considered:
 - Strengthening of the authority of the Governor and the Supervisor of Banks with regard to early intervention when there is concern for a bank's stability. Strengthening of their authorities at an early stage is likely to prevent a deterioration of the situation of the bank.
 - Regulation of disclosure to the public for banks that are also subject to disclosure obligations under the securities laws. In the situation that currently exists, a bank, which is a public corporation, is required to report to the public immediately

regarding an event or issue that deviates from the bank's normal business activity. The law does not provide a solution for cases in which there is concern for a bank's stability that require regulatory action (such as the injection of liquidity by the Bank of Israel). Reporting in this situation may lead to a lack of public confidence in the failing bank, to the withdrawal of deposits and the inability of the central bank to save the bank in a discreet manner and restore its stability and thus protect the assets of the public. Furthermore, during the crisis, there were instances in which the Israel Securities Authority made a request for disclosure to the public with respect to various requirements that the Supervisor of Banks had presented to certain banks. This area also needs to be formalized.

- ◆ **Bank of Israel policy regarding collateral:** The Bank of Israel needs to formulate a clear policy as to the collateral that it is permitted to accept in order to secure credit. This policy was reconsidered during the crisis and against the background of global developments. The policy should be revised in a way that is appropriate to the characteristics of the financial system and to the need for providing liquidity to the banking system and other financial institutions during periods of calm and periods of stress.
- ◆ **The contribution of deposit insurance arrangements to financial stability in a crisis:** The global crisis showed that deposit insurance is insufficient to calm depositors, and in a crisis an announcement is required by the authorities that those with bank deposits will not suffer. The Bank of Israel and the Ministry of Finance issued such an announcement during the recent crisis although there was no apparent risk to the stability of the banks in Israel, and it played an important role in calming depositors.
- ◆ **Issue of guarantees to ensure the ability of the banks to raise capital:** During the last crisis, the government issued a guarantee for the raising of capital by the banks in order to facilitate the expansion of bank credit to the business sector and at the same time to strengthen bank capital. Although in practice, the banks did not make use of these guarantees, this policy instrument is important in that it reinforces the confidence of the public in the government's support of the banking system. The existence of a contingency plan for the provision of guarantees of this type makes it possible to issue the guarantees quickly when needed.
- ◆ **Media activity and public relations:** During the crisis and due to the need to respond quickly and simultaneously on several fronts, the press releases and clarifications to the public in real time were highly important. This included, for example, the issue of the Bank of Israel's commitment to supporting depositors and its statements regarding the stability of the banks. These announcements helped reduce uncertainty and reinforce the public's confidence in the financial system and

the various bodies that are responsible for maintaining its stability. It is important that the announcements by these bodies all carry coordinated and uniform messages. This contributes to a sense of cooperation and coordination among the authorities and reinforces the confidence of the public. Another lesson learned is that maintaining a continuum of steps over time accompanied by suitable announcements contributes to a sense that the authorities are continuously taking action and that crisis management is under control.

◆ **Simulation and preparations for the management of crises**

- **There is a need to develop appropriate tools for dealing with crises:** Since financial crises will continue to occur in the future, preparations should be made at an early stage in order to be able to deal with and thus minimize the damage they cause. In the last crisis, we saw that the effect on the financial system can be enormous and there is the danger of contagion between institutions and between markets once the crisis gains momentum. Thus, it is important to be prepared at an early stage for possible crisis scenarios and to prepare contingency plans and a toolbox in order that the actions to deal with the next crisis are focused and rapidly put into use. As part of this process, consideration should be given to the tools used world wide during the last crisis and the degree to which they are appropriate to the Israeli economy. One of those tools, which should also be developed here in Israel, is the ability of the central bank to serve as the lender of last resort for non-bank financial institutions as well. The contingency plans need to also include a detailed plan for public relations and the handling of the media, including joint announcements to encourage calm which will serve as evidence of the cooperation and coordination between the various authorities. In this framework, relations between other financial regulators and the Bank of Israel should be tightened.
- **Examination of the infrastructure for ensuring operational capability and the formalization of infrastructure for activity during a crisis:** One of the most important lessons learned from the crisis is that when a financial institution is in distress it is important to continue the operation of its payment and settlement system in order to prevent the spread of the crisis to other institutions. Within this framework, the existing infrastructure and its suitability for operating during a crisis should be examined.
- **Simulation of an emergency:** As an extension of the exercises held by the Bank of Israel that simulated the collapse of a bank, additional exercises should be held in cooperation with other authorities and the banking system. The exercises should also simulate stress situations following a security crisis or a natural disaster (such as an earthquake).

- **The reporting format during an emergency:** In view of the manner in which the crisis developed in Israel, the current format for reporting in an emergency should be reexamined, including critical data from the banking system, the markets and other authorities needed by the Bank of Israel in real time.
- ♦ **It is important to maintain coordination and cooperation among the regulators and between the government and the Bank of Israel in order to ensure the normal functioning of the financial system during periods of calm and all the more so during a crisis:** Coordination and the exchange of information between the various supervisory authorities is also necessary in times of calm, particularly given the existing structure of supervisory authorities. Since each supervisory authority accumulates information on the entities supervised by it and since there is interaction between the supervised entities, the exchange of information between regulators will contribute to obtaining a fuller picture of the situation and to the quality of decision making. The importance of coordination and exchange of information becomes even more important during a crisis which is characterized by rapid and extreme capital flows and it is important that up-to-date information be obtained. Since some of the dynamic of a crisis is related to the psychological aspect of the public's loss of confidence in the financial markets and policy makers, coordination between the authorities will contribute to the reinforcement of confidence in the financial system during a crisis and to the moderation of extreme capital flows. Consideration should be given to formalizing this cooperation through legislation.¹¹² The need for such coordination also exists with respect to additional aspects of policy management during a crisis and they will be discussed in Section 5 below.
- ♦ **Performance of stress tests on financial institutions during a crisis:** The goal of the stress tests for a crisis is to identify the ability of exposed financial institutions to weather a crisis and their weak points, as well as quantifying the capital injections needed to rescue the institutions, and to identify insolvent institutions.

3. LESSONS FOR MONETARY POLICY

Monetary policy played a central role in dealing with the crisis both in Israel and around the world. As part of this policy, measures were taken that were unconventional both in character and magnitude. Apart from the reduction in the interest rate, these included quantitative tools and intervention in a variety of markets. Accordingly, a number of important lessons have been learned, beyond the very experience gained regarding the feasibility and benefits of such monetary expansion. Other lessons concern the unique

¹¹² As exists for example in Australia and Canada.

challenges facing monetary policy at the stage of recovering from the crisis.¹¹³

It is important to note the lessons for monetary policy also regarding the period leading up to the crisis. These lessons stress the interaction between monetary policy and policies for maintaining financial stability, as well as the role of monetary policy in preventing processes that are liable to bring on a crisis. These relationships were also discussed above in the context of MaP policy.

a. Lessons about the connection between monetary policy in normal periods and the evolution of the crisis

(1) Over-expansionary monetary policy as one of the causes of the crisis

One of the most important lessons learned from the processes that led to the global crisis concerns the role of monetary policy in preventing crises. There are those that claim that expansionary monetary policy world wide, particularly the maintenance of the US interest rate at too low a rate for too long a period, was among the causes of the crisis through its contribution to the inflation of asset prices, particularly those of real estate, and a "search for yield" that brought with it an increased willingness to take on risk. This calls for increased awareness of the link between monetary policy and financial stability and the possibility of bubbles evolving. It is worth mentioning that there is no consensus among economists regarding this claim and that this development did not occur in Israel during the years preceding the crisis. Nonetheless, this challenge has been underlined in Israel, primarily in the context of the effects of the low interest rates on real estate prices, particularly during the exit from the crisis.

(2) The framework for monetary policy: a flexible inflation target policy

The possibility that monetary policy world wide contributed to the development of the crisis raises the question of whether it is correct to continue a flexible inflation target policy regime, which is also the current regime in Israel.¹¹⁴ It is commonly believed by central banks around the world, including in Israel, that in general this regime withstood the test during the crisis.¹¹⁵

Nonetheless, the crisis has demonstrated the need to improve the framework of monetary policy with respect to the importance of considerations related to the stability

¹¹³ Lessons regarding the optimal mix of monetary and fiscal policy during a crisis are discussed in Section 4.

¹¹⁴ This question also arises with respect to the management of monetary policy during the crisis itself. This is discussed below.

¹¹⁵ See, for example, S. Dale (2009), "Inflation Targeting: Learning the Lessons from the Financial Crisis," Remarks at the Society of Business Economists' Annual Conference, London, June 23.

of the financial system and the potential development of "bubbles" in assets prices. Some argue that the global crisis demonstrated the problematic nature of monetary policy that focuses on the stability of prices for goods and services and on the level of economic activity, and does not sufficiently take into consideration financial stability, particularly the growth in credit and rising asset prices.

Indeed, a flexible inflation target policy, by definition, should ideally take into account all the factors that are expected to influence inflation and economic activity, including asset prices and factors connected to financial stability. However, the very occurrence of the crisis may provide evidence that the policy actually adopted world wide did not attribute sufficient weight to these considerations.

It is therefore correct to continue conducting a flexible inflation target policy. However, the weight attributed to considerations of financial stability should be increased and the relevant policy tools should be improved. These tools include the use of additional policy measures apart from the interest rate, when unreasonable deviations in asset prices are observed. In other words, a synthesis is required between monetary policy and MaP policy, which was discussed at length in the previous section.

Although these broad insights regarding the inclusion of considerations of financial stability within monetary policy are widely accepted, there is still much discussion world wide regarding the appropriate tools for implementing them, particularly the use of the interest rate to deal with problems of financial stability and to prevent the development of bubbles in assets prices.¹¹⁶ In Israel, this has been manifested recently in the considerations behind the Bank of Israel's decisions to raise the interest rate, which took into consideration the rapid and persistent rise in the price of housing. The functioning of the financial system depends on several factors: the structural framework of the system, the set of incentives in the markets and the quality of regulation and supervision. Addressing these issues will ease the burden on monetary policy with regard to the financial system and will improve its ability to maintain price stability and support employment and sustainable growth. For example, improved regulation of non-bank credit and long-term savings will reduce the potential damage if asset prices drop sharply, and will thus allay the concern regarding such a situation. This illustrates the link between monetary policy and MaP policy.

¹¹⁶ The attention given this issue is reflected in the speeches of officials from many of the central banks. For example: L. Svensson (2009), "Flexible Inflation Targeting: Lessons from the Financial Crisis," Sveriges Riksbank; A. Posen (2009), "Finding the Right Tool for Dealing with Asset Price Booms," Bank of England; D. Kohn (2010), "Monetary Policy in the Crisis: Past, Present and Future," Federal Reserve Board.

(3) The importance of the credibility of monetary policy

The ability of the Bank of Israel to adopt such an expansionary monetary policy, reducing the interest rate and the interest differential relative to other countries to particularly low rates, and maintaining them over time, illustrates the importance of maintaining price stability and the credibility of monetary policy in normal times. The sharp worldwide reduction in interest rates as a result of the crisis contributed to this situation; however without the establishment of credibility in previous years (and the improving credibility of fiscal policy), the Bank would probably not have been able to maintain such policy during the crisis without jeopardizing price stability and financial stability.¹¹⁷ This credibility was reflected in, among other things, the longer-term expectations of inflation (with a horizon of, for example, 10 years) that remained within the target range or close to it throughout the crisis. In the past, the Bank was forced to raise the interest rate in times of crisis, such as the crisis at the beginning of the decade, in the absence of such credibility.

(4) The desirable size of foreign currency reserves

Some argue that the crisis has underlined that in determining the amount of reserves, more weight should be given to the exposure of systemically important financial institutions to foreign currency denominated liabilities (beyond the conventional reference to such indicators as GDP or scale of imports). This would allow the central bank to extend emergency foreign currency credit to these institutions if needed. Singapore's deposit guarantee scheme during the crisis is noteworthy in this context. The guarantee, which covered both domestic and foreign currency deposits in banks and other financial institutions, was backed by Singapore's foreign currency reserves.

b. Lessons for conducting monetary policy during a crisis and upon emerging from it

As mentioned, a particularly expansionary monetary policy was pursued during the crisis, including the use of a wide variety of unconventional tools. A number of lessons relate to monetary policy as a whole, and it is important to view the various measures as components of an overall framework. Other lessons are specific to each of the measures.

An overall view of monetary policy and tools during the crisis offers the following lessons:

¹¹⁷ However the steep declines in interest rates abroad also supported the rate cuts in Israel. Too large a spread between domestic and global rates could force an over-evaluation of the shekel.

(1) Monetary policy framework: a flexible inflation target policy

As mentioned, the question of the validity of the monetary policy framework also arose with respect to the management of policy during the crisis itself. In this case as well, it is commonly accepted that the framework withstood the test presented by the crisis. A flexible inflation target policy is committed to maintaining price stability while at the same time it is forward-looking and takes into consideration the expected developments in the economy, not just the actual developments, and allows flexibility in bringing inflation back to the target in order to support economic activity and financial stability. This approach provided the Bank of Israel and other central banks with a useful framework for the discussion of policy measures during the crisis and the communication of that policy to the public. Thus, for example, supporting credit markets and moderating the rise in the cost of credit in view of the increased perception of risk in the markets was one of the main goals of the Bank of Israel's monetary policy during the crisis. The policy framework allowed a rapid response to developments and its communication to the public when, for example, the interest rate was reduced on an unscheduled date. It is important to create a framework of communication with the public since a better understanding of policy measures by the public increases the policy's credibility, and thereby its effectiveness.¹¹⁸

This regime is also expected to be beneficial while emerging from the crisis. In view of inflationary risks during the recovery process, in part due to the policy measures taken during the crisis, the commitment of the central banks to inflation targets should anchor inflation expectations and thus assist in maintaining price stability. Thus, as part of the Bank of Israel's considerations to start the process of scaling back the monetary expansion during the second half of 2009, the risks involved in a continued expansion were discussed, including the effect of a low interest rate on the leverage of households and firms, and on asset prices, particularly the price of housing.¹¹⁹

During the crisis, it was important to use all available tools in order to reduce the interest rate for various terms, i.e., all along the yield curve, and to support expectations

118 On the advantages of an inflation target regime and the experience of numerous countries that adopted this regime, see, for example: C. Freedman and D. Laxton (2009), "Why Inflation Targeting?" IMF Working Paper No. 09/86 and S. Roger (2009), "Inflation Targeting at 20: Achievements and Challenges," IMF Working Paper No. 09/236.

119 The increase in asset prices is one of the transmission mechanisms of expansionary monetary policy during the crisis. However, some argue that a particularly expansionary monetary policy over time, followed by a "search for yield," raises the risk of price increases that are not explained by fundamentals. Such a situation is liable to endanger financial stability and in the more distant future will have a negative effect on economic activity. An examination of the housing market in Israel showed that there was no bubble in housing prices at that time. Nonetheless, the low interest rate during the crisis probably contributed to the increase in the price of housing. For further detail, see Box 3.2 in the 2009 Bank of Israel *Annual Report*.

for the continuation of an expansionary policy over time, for as long as necessary. During the exit from the crisis, it is important to adjust the path of the interest rate to the recovery in economic activity and in the financial markets and also to the inflationary environment. At the end of 2009, the Israeli economy was only at the beginning of the recovery process and its sustainability depended greatly on the persistence of the global recovery. Therefore, the process of adjusting the interest rate had to be moderate and cautious in order to reduce the risk of harming the recovery. On the other hand, too late an adjustment of the interest rate is liable to result in a deviation from the inflation target range. The challenge facing the Bank of Israel was to strike the balance between these considerations.

(2) The intensity of the response

One of the main lessons from the crisis is that the intensity of the response of monetary policy, and of its various tools, should be commensurate with that of the crisis or of the feared crisis. This will ease, to whatever extent possible, the credit and liquidity shortages and will help maintain positive expectations of inflation, as well as reducing the harm to the economy in general and the paralysis in the financial system in particular. Although it is important to take into account the negative effects of overreacting, the risks of under-reacting, including an extreme shortage of credit and liquidity and a slide into a deflationary spiral, are worse.

(3) The speed of the response

The crisis has illustrated the importance of the speed of policy response. This is true of economic policy in general (see below) and monetary policy in particular. The two reductions in the interest rate by the Bank of Israel on unscheduled dates demonstrated the possibility of a rapid response of monetary policy and its importance. A rapid response is needed not only for actual events, but is sometimes important also in the case of changes in expectations and assessments, even before events have actually occurred.¹²⁰

(4) Additional tools, besides the interest rate, are available to the Bank for the conduct of monetary policy

The use of various tools during the crisis proved that the Bank indeed has additional tools available for conducting monetary policy, apart from the interest rate, including quantitative tools. These tools are needed primarily when various prices, such as financial margins, deviate from equilibrium. They contribute to the monetary expansion and to the reduction in interest rates all along the yield curve, which becomes increasingly

¹²⁰ Such a policy that seeks to precede events is often referred to as being "ahead of the curve."

important when the Bank's interest rate approaches zero. Similarly, intervention in the foreign currency market may be required in view of deviations of the exchange rate from equilibrium. Beyond these contributions, the use of a variety of tools has a number of advantages, as will be described below.

(5) The use of a variety of tools makes it possible to pursue a number of goals apart from monetary expansion itself

Apart from their contribution to monetary expansion, the use of additional tools makes it possible to achieve additional goals or to affect specific markets, beyond what is possible using only the monetary rate of interest. These include: the purchase of foreign currency, which also assisted in slowing the appreciation of the shekel and thus reduced the harm to exports; the purchase of bonds which also helped reduce the rate of interest for longer terms; and the reduction in the share of makam in absorbing excess liquidity, which was meant to shift the public's excess liquidity to investment in business sector assets. In selecting additional tools, therefore, the additional objectives of the Bank should be taken into consideration.

(6) The gradual introduction of policy measures over time demonstrates that policy makers are working continuously to confront the situation

The various policy measures were not implemented all at once. Thus, for example, the reduction in the interest rate was carried out in a number of stages; the daily amounts of foreign currency purchases (and the targeted amount of reserves) were revised several times; and the Bank announced new measures on various occasions. The dispersion of policy measures over time was largely the result of the uncertainty regarding the intensity of the crisis, and therefore the scale of the response was modified according to the accumulated information or to the updated forecasts. Nonetheless, the gradual manner of introducing the measures was important in itself, apart from what was dictated by the uncertainty. It enabled the Bank to announce from time to time additional measures that it was adopting. Thus, the public was exposed not only to a continuum of news—or concerns—regarding the (deterioration of) the situation, but also to a sequence of actions taken by the Bank. The sequencing of policy measures over time strengthens the public's perception that policy makers are closely monitoring developments and are acting continuously to deal with them. This contributes to maintaining calm in the markets and to strengthening the confidence in policy makers.

(7) Communication with the public may enhance the effectiveness of policy measures

As described in Chapter 3, policy makers made significant use of announcements during the crisis. This included announcing the steps that they were taking and their willingness to take additional steps. This was also true with regard to monetary policy and was manifested in, among other things, announcements and press releases that accompanied the relevant policy measures, such as the reductions in the interest rate and the purchase of foreign currency and bonds. Apparently, this conduct contributed to publicizing the steps that were taken and to explaining the policy trajectory and its goals, as well as influencing expectations, and strengthening the feeling that the Bank was closely monitoring the situation and reacting accordingly. The lesson to be learnt: media management is an integral part of conducting monetary policy (particularly, but not exclusively, during a crisis), and combining it with actual policy measures can be very beneficial. Thus, for example, the implementation of policy measures contributed to the credibility of the statements regarding the willingness to take action, while the increased media exposure of the steps taken together with the declarations of officials sharpened the message that the Bank was working continuously to deal with the crisis. It also assisted in conveying that message to audiences that were not familiar with the technical details of the policy measures.

Apart from the above lessons regarding monetary policy as a whole, there are lessons to be learned regarding specific policy measures, as follows:

(1) The level of the interest rate and the interest rate differential between Israel and other countries

The developments during the crisis have demonstrated that the Bank of Israel has the ability in the right circumstances to maintain a very low rate of interest over time, as well as a very low interest rate differential relative to other countries. This is a recent development. In the past there was concern that a very low interest rate gap would lead to a massive export of capital, to a significant depreciation of the shekel and inflation. The change in this situation reflected, among other things, the credibility of monetary policy which has increased in recent years, and the improvement in the management of fiscal policy. With that said, the particularly low level of the interest rate in Israel during the crisis was also facilitated by the low interest rates abroad and the expansionary monetary policies adopted there. The interest rate differential between Israel and other countries had actually been lower previously (for example, with the US in 2007).

An additional lesson is that monetary policy can still be effective even when the nominal interest rate is close to zero, and that monetary expansion is possible in such

circumstances for some time through complementary measures, such as the quantitative tools used during the crisis. The knowledge accumulated in Israel and world wide during the crisis should serve to formulate an overall approach to the management of monetary policy when the interest rate is close to zero, including the use of additional tools as an integral part of this policy. (For additional discussion of monetary policy with a nominal interest rate close to zero, see Appendix A to the previous chapter.)

(2) The purchase of government bonds by the Bank of Israel in the secondary market

- ◆ Under the right circumstances, the use of this tool is likely to be effective. Thus, analysis carried out in the Bank of Israel showed that the purchases led to a drop in the yield on government bonds by 30 to 40 basis points.
- ◆ These purchases did not affect the credibility of the central bank in general or the credibility of its commitment "not to print money" in particular. This may partly be due to the fact that the purchases were carried out only in the secondary market and were not intended to finance the government deficit, and indeed they were perceived by the public as an extraordinary measure justified by the crisis and by the fact that similar policies were being used abroad. Furthermore, the Bank quickly terminated the use of this tool at an early stage of the recovery, before it changed its policy on purchasing foreign currency and before it started raising the interest rate. The use of this tool for too long a period could affect the government's decisions on the scale and composition of raising debt.

(3) Intervention in the foreign currency market

- ◆ It is possible to intervene in the foreign currency market over a considerable period of time and on a large scale through the purchase of foreign currency. This conclusion applies to the purchase of foreign currency but not its sale, and is not necessarily symmetric, particularly because the amount of foreign currency that the Bank can sell is limited by the level of reserves it possesses.
- ◆ The intervention contributed to moderating unusual volatility in the exchange rate. Hence, under the right circumstances, it can be used as an effective tool in dealing with market failures and irregularities in its operation.
- ◆ The intervention can influence the exchange rate for a considerable period of time. Thus, the intervention policy contributed to preventing an over-appreciation of the shekel during the crisis and the exit from it, and thus it appears to have moderated the shock to the exports sector and to the economy in general. Research carried out at the Bank of Israel shows that the intervention by the Bank led to a depreciation of the shekel, an effect which reached its peak in August 2008 following the expansion

of purchases of foreign currency. At that point, the deviation of the actual exchange rate from its forecast level (which related to a no intervention situation) reached 10.5 percent. At the end of 2008, the effect of the Bank's intervention on the exchange rate began to wane and during the first half of 2009 the gap between the actual exchange rate and the rate expected in the absence of intervention by the Bank had closed. The gap opened again after the policy change in August 2009 in which the Bank shifted to variable rather than fixed purchases of foreign currency. From then until December 2009, the rate of change in the exchange rate was above its forecast rate every month.¹²¹

(4) Additional policy tools used during the crisis

As described in Chapter 3, the Bank of Israel announced additional monetary measures to improve liquidity at the end of 2008.¹²² The actual use of these tools by the banks and other institutions in the financial system was limited, partly due to other steps taken to increase liquidity that had been successful. Therefore, the question arises of whether there is a place for such policy measures. It is important to present policy tools of this type during a severe crisis even if they turn out to be underutilized. The reasons for this include the following:

- ◆ The very declaration of the policy measures demonstrates to the markets the degree to which the Bank is willing to act in order to provide liquidity and this has a calming effect on expectations and on the markets, even if not all the liquidity being offered by the Bank at that point is actually needed.
- ◆ These measures should be viewed as part of the overall policy to deal with the crisis. As described above, this overall policy enables the central bank to announce additional measures from time to time and in this way to demonstrate that it is working continuously to deal with the crisis. This contributes to public confidence in policy makers and calms the markets.
- ◆ During a crisis, the level of uncertainty is particularly high, also among policy makers. In these circumstances, the risks of aggravating the liquidity shortage are greater than those of creating excess liquidity. Accordingly, the proposal of additional policy tools should be viewed as a precautionary measure, which tends to reduce the former type of risk. An additional advantage that is likely to be gained from the very proposal of these liquidity measures is that the extent of their actual usage allows policy makers

121 A. Sorezcky (2010), "Did the Bank of Israel Influence the Exchange Rate?" Bank of Israel Discussion Paper No. 2010.10.

122 These included an expression of willingness to provide the banks with longer-term loans, the reduction of the margin around the Bank of Israel interest rate and monthly repo tenders.

to gauge the liquidity situation in the markets. Nonetheless, it is important to ensure that their lack of usage is due to the lack of demand for additional liquidity rather than their being unsuitable to the needs of the market.

(5) Lessons from the crisis with regard to the econometric models

Econometric models, particularly those with a structural (and not just statistical) emphasis, are one of the main tools for the management of monetary policy in an inflation target regime. Since changes in the interest rate do not immediately affect the rate of inflation or real activity, it is important to base monetary policy on the forecasts of these variables and not only on their past development. Accordingly, many central banks refer to their monetary policy regime as Inflation Forecast Targeting.

The models are used for three main purposes: understanding the economic forces that have operated in the past and quantifying them, formulating forecasts, and analyzing policy alternatives. For example, these models can be used to analyze how alternative paths for the interest rate will affect the inflation forecast, and thus they can be used to assist policy makers in choosing the path that leads to an optimal balance among the various policy targets.

During the crisis, the models were used to help determine the required extent of unconventional intervention (which is not parameterized in the model) in view of the zero bound for the rate of interest. This was done using simulations for inflation and GDP in which the interest rate is constrained by the zero bound, and no other policy tools (such as the purchase of bonds or foreign currency) are utilized. At the height of the crisis, these simulations indicated a negative rate of inflation together with a significant negative effect on GDP.

The models were also useful during the crisis in analyzing the expectations channel of interest rate policy. During the crisis, and even after the beginning of the recovery, many central banks made unconventional statements regarding the expected path of the interest rate. For example, as early as mid-2009, the Fed declared that it would not raise the interest rate until the end of that year. This reflected the perception that in the transmission mechanism of the interest rate, there is a major role not only for the short-term interest rate, but also for the entire expected path of the interest rate in coming years (i.e., longer-term interest rates). Simulations of the model in which the interest rate at the end of the crisis was held at a level lower than that required by the model made it possible to analyze how the Bank of Israel's declarations of its future intentions would reduce the current effects of the crisis.

It is important even during a crisis to continue the close monitoring of the standard variables that monetary policy is concerned with and reacts to, i.e., the deviation of

inflation from its target and the level of economic activity relative to potential GDP. The econometric models assisted in demonstrating the fact that even in a crisis it is important to adjust monetary policy according to the developments in these variables. Thus, when policy makers in Israel saw that in mid-2009 inflation was higher than the target and the output gap was not negative as in the rest of the world, the Bank of Israel became the first central bank to raise the interest rate.

In retrospect, the models also helped quantify the contribution of the sharp interest rate reductions to alleviating the effects of the crisis on the economy. At the beginning of 2010, a number of ex-post simulations were performed at the Bank of Israel for counterfactual scenarios, in which the question examined was what would have happened if the Bank of Israel had not lowered the interest rate from 3.25 percent to 0.5 percent during 2009. In other words, the model was used to demonstrate how a different interest rate response by the Bank of Israel would have influenced the economy during the crisis. The simulations indicated that the reduction in the interest rate contributed 1.6 percent to growth and 3.4 percent to inflation during 2009.

Despite the abovementioned benefits from the models during the crisis, several inherent weaknesses limited their usefulness during this period:¹²³

- ◆ The interactions between financial variables (such as asset prices and the credit market) on the one hand and inflation and economic activity on the other are not handled well by these models. Since the crisis originated in the financial markets, the ability of the models to explain the development of the crisis is probably limited.
- ◆ During the crisis, the Bank of Israel rate of interest was reduced almost to the zero bound. Since the models are linear and symmetric, they are not designed to include a constraint on the ability to reduce the interest rate to below zero, and to account for the asymmetric risks arising from approaching this constraint (such as a deflationary spiral).
- ◆ As the rate of interest approached the zero bound, such that it was no longer possible to use the interest rate as a main policy tool, the Bank of Israel (like other banks world wide) began using other tools, i.e., the purchase of bonds and foreign currency. Since these do not appear in the models as policy tools, it was not possible to use the existing models to analyze and quantify the mechanism through which these tools affected the economy.
- ◆ The parameters of the models were estimated using data that represent normal business cycles. It is reasonable to assume that the elasticities of the economy were different during the crisis, which made it difficult to use the models during that

123 Most of these weaknesses also characterize models used by other central banks and are not unique to the Israeli economy or the Bank of Israel.

period. For example, the effect of a given reduction in the rate of interest during the crisis probably differs from that during normal times.

What lessons need to be learned for the future with respect to the use of the models? Not all the problems described above can be solved. Econometric models can only be estimated using past developments and therefore one cannot prepare models ahead of time with elasticities for the economy in outlier periods. Nonetheless, a number of steps need to be taken:

- ◆ The integration of the financial sector within the main models needs to be improved. This will improve the understanding of the transmission mechanisms from monetary policy to various areas of the economy and will make it possible to examine issues of financial stability, such as the effect of the interest rate on the total amount of credit and on the degree of leverage. During the last three years, a number of developments in academic research which make it possible to add financial frictions and housing markets to existing models have begun to trickle down to the models of the central banks.¹²⁴
- ◆ The use of quantitative tools (such as the purchase of bonds or foreign currency), a topic that has been neglected until now in academic research, needs to be added to the framework of DSGE models (the most common type of model among the central banks and in academia).¹²⁵ There are almost no studies in which models of this type include channels through which the purchase of foreign currency affects the exchange rate and thereby the rest of the economy, and through which the purchase of bonds affects the economy's long-term interest rates and through them the rest of the economy (which is also true of any other quantitative measure used by the central bank). Nonetheless, it is important to remember that even if models are developed that include these channels, there is no certainty that they can be used to quantify the effects. Such quantification requires a sufficient database that makes it possible to carry out an empirical econometric analysis (purchases of bonds continued for only two quarters, while the purchase of foreign currency has continued since 2008 though for much of the period they were in the form of fixed daily purchases).

124 See, for example: L. Christiano, R. Motto and M. Rostagno (2010), "Financial Factors in Economic Fluctuations," ECB Working Paper No. 1192; A. Gerali, S. Neri, L. Sessa and F. Signoretti (2010), "Credit and Banking in a DSGE Model of the Euro Area," Banca D'Italia Working Paper No. 740.

125 Initial works in this area are: V. Curdia and M. Woodford (2010), "The Central-Bank Balance Sheet as an Instrument of Monetary Policy," Mimeo: Prepared for the 75th Carnegie-Rochester Conference on Public Policy, April 16-17; J. Benes, A. Berg, R. Portillo and D. Vavra (2009), "Modeling Sterilized Interventions and Balance Sheet Effects of Monetary Policy," Mimeo: Prepared for the Central Bank Macroeconomic Modeling Workshop 2009, Jerusalem, October 28-29.

4. LESSONS FOR FISCAL POLICY

a. Policy to reduce risk and increase resilience

The importance of maintaining fiscal discipline and reducing the debt-to-GDP ratio

Awareness of the importance of these was high even before the crisis and, as mentioned, in Israel there was a significant improvement in this area in the years prior to the crisis. The lessons of the crisis underline their importance precisely because they emphasize their benefits. As described in Chapter 3, Israel was forced to employ a pro-cyclical fiscal policy in previous crises, which involved the reduction of the deficit in periods of crisis that amplified the decline in demand.¹²⁶ In contrast, during the current crisis, it was possible—due in part to the improved fiscal situation—to allow the tax revenue automatic stabilizers to come fully into play, increasing the deficit in line with the drop in tax revenues. Recent developments abroad, particularly in some European countries, also emphasize the importance of fiscal discipline and first and foremost the need for a downward future path of the debt-to-GDP ratio with the exit from the crisis. In certain situations, the importance of this path exceeds that of the level of the debt (as a percentage of GDP). Hence, it is important to continue to adhere closely to fiscal discipline, which should involve a clear and continuous path for reducing the debt.

At the beginning of 2010, a new fiscal rule was adopted by the government which determines a ceiling for expenditure derived from the long-term rate of growth and the progress in reducing the ratio of the debt to GDP, while maintaining the deficit targets. Following this rule will ensure the reduction of the debt-to-GDP ratio and its implementation is consistent with the lessons of the crisis. However, in the absence of faster growth than in recent decades, it will only be possible to meet the deficit targets by reducing the growth of expenditure relative to the rule or by a more moderate reduction of taxes than the planned path of reductions.

b. Fiscal policy for dealing with a crisis

(1) The desired mix of fiscal and monetary policy

The policy mix in Israel during the crisis leaned to a large extent towards monetary policy, whose response was broader and more pronounced than that of fiscal policy. As mentioned, this was only partly the result of an intentional policy, and partly the result

¹²⁶ In some cases it was also due to the fact that lack of fiscal discipline was itself the source of the crisis.

of political circumstances and the lack of an approved budget. In retrospect, this mix was appropriate to the characteristics of the crisis and the magnitude of its effect on the economy. The decision-making process and the implementation of monetary policy are quicker than in the case of fiscal policy and therefore the emphasis on monetary policy was consistent with the need for a rapid response and the short duration of the crisis and even facilitated a rapid change in the direction of policy with the beginning of the recovery. The moderate fiscal response in Israel also prevented a significant increase in the public debt, in contrast to many other countries. However, in a longer crisis, wider fiscal intervention might have been needed in Israel as well. The Bank of Israel did not have to use all the tools at its disposal, which also involve not insignificant costs and at least in the case of one major tool, i.e., the interest rate, the Bank came close to exhausting its potential intensity.

(2) It is difficult to increase public expenditure rapidly

The experience abroad as well as in Israel (beyond the constraints that resulted from the lack of an approved budget) shows that governments found it difficult to rapidly increase their expenditure on public consumption or public investment to boost aggregate demand. Therefore, in order to rapidly increase demand or when the crisis is short-lived, greater weight should be given to monetary policy measures or other fiscal measures.¹²⁷ However, as a crisis persists and monetary expansion is exhausted, expanding public investment is likely to become increasingly important in encouraging activity.¹²⁸

A significant part of the difficulty in rapidly increasing expenditure is a result of the inherently lengthy processes for decision making, approval by various bodies, the planning of projects, inviting of tenders, etc. The time required for actually executing budget expenditure should therefore be an important consideration in the choice of programs. The response time can be somewhat shortened by preparing contingency plans for measures or projects that will be available for implementation when needed; by early implementation of programs that were designated for implementation in coming years; and by accelerating implementation of existing programs, including government finance for adequate and readily available projects in local authorities, which had been constrained by budget considerations. It is also possible to accelerate the implementation of certain expenditures by modifying the design of policy measures or by establishing

127 Such fiscal measures may include steps to directly encourage private consumption (a temporary increase in transfer payments to specific population groups with a high marginal propensity to consume, or raising the disposable income of low-paid workers through earned income tax credit - negative income tax) or the provision of guarantees (see below).

128 In contrast, it is worthwhile avoiding fiscal expansion through a general increase in transfer payments.

automatic mechanisms for activating them.

(3) The implementability of measures and the pace of implementation

During the crisis, the implementation of many of the measures which had already been decided on was slow and cumbersome or was subject to complex conditions that reduced the response rates of the target populations. The mechanisms for implementing decisions should be improved. Programs should be simple and accessible so as to encourage the response of target populations rather than deter them.

(4) Automatic mechanisms

It is worth considering the creation of automatic mechanisms for the activation of certain measures to deal with a significant drop in activity. Such mechanisms will be activated automatically when certain threshold conditions are fulfilled, avoiding the need for long and cumbersome processes of decision making, legislation and implementation. Thus, for example, it is possible to decide ahead of time that business assistance funds (such as loan funds) will be increased or their conditions will be relaxed in certain circumstances. Apart from improving response time, the very existence of these mechanisms may reduce fear of recession among individuals and firms and thus help in preserving economic activity.

(5) Priority to public expenditure that leverages private expenditure

A considerable part of public expenditure in response to the crisis (both in Israel and world wide) was designated for measures that required direct expenditure by the business or household sector. Such measures should be given priority due to their ability to leverage the public expenditure into a much larger aggregate expenditure. Examples from the period of the crisis include the provision of guarantees whose realization was dependent on expenditure by the beneficiaries, or on the provision of complementary credit by the business or financial sectors, as well as incentives in some countries for the purchase of new cars. Clearly, these policy measures need to be adjusted to the conditions of the domestic economy. For example, a program to encourage private consumption needs to focus on a product or activity that has high domestic added value. Despite their advantages, it should be noted that unlike other types of public expenditure, the scale of implementation of the above measures is completely dependent on the response of the target populations—without which they are not of much use.

(6) Fiscal intervention in the form of granting guarantees

One of the lessons learned from the fiscal policy implemented in Israel and world wide during the crisis is that fiscal intervention does not have to take its "classic" form,

i.e., an increase in expenditure, in order to shore up demand directly (by increasing public expenditure or transfer payments). The most prominent component which is consistent with the financial nature of the crisis was the use of fiscal tools for the provision of guarantees and the alleviation of the credit shortage, that is, for addressing the financial aspects of the crisis.¹²⁹ This type of intervention can be effective in certain circumstances, particularly in view of the problems that arose in the functioning of the financial markets. Designing this tool in advance will allow its timely implementation when needed, which will improve the policy's response time. However, it also involves not insignificant risks, such as moral hazard. In Israel, the use of guarantees during the crisis was quite limited, both in the scope of guarantees offered by the government and in the rate of utilization by the entities to which the guarantees were offered.

Apart from the guarantees offered explicitly, implicit guarantees also played an important role. These were not part of any defined program, legislation or government decision but were implied by the statements of policy makers (such as the declarations that the banks' depositors would be protected) or by the common belief among the public that the government would not allow the collapse of any major institution.

The credibility of guarantees, whether explicit or implicit, is of critical importance. Apart from the importance of calming the public and maintaining the function of the financial markets, a higher level of credibility increases the probability of preventing panic and collapse and this will spare the need to realize guarantees and the related costs of doing so.¹³⁰ The following, among other factors, are likely to increase this credibility: (a) a low debt-to-GDP ratio that enhances the ability of the government to provide the necessary resources to fulfill its commitments when necessary; (b) The existence of a broad political/public consensus for providing guarantees and their anchoring in legislation, and a formalized and transparent approval process. This reduces the likelihood that guarantees might over time become the source of a political/public debate or that the commitment to them might decline due to a change in government. It appears that the existing legal framework in Israel for the provision of guarantees is in line with needs and strikes the right balance between allowing enough flexibility for the authorities to provide guarantees during a crisis, and the checks against overuse of this measure. Thus, government guarantees are subject to a ceiling (10 percent of the current budget). Since the actual scope of the guarantees was far less than this ceiling, the

129 In other countries, though not in Israel, through the purchase of financial assets and through the direct support of firms as well.

130 For example, the creation of a safety net for pension savings helped to calm the public and to halt the redemption of provident funds without the government having to actually realize guarantees. For additional details, see Chapter 3.

government had space to maneuver amounting to about NIS 10 billion.¹³¹ The ceiling relates to direct guarantees and therefore creates a clear limit on them. Nonetheless, there is a lack of clarity or flexibility regarding the definition of these guarantees, as well as regarding implicit guarantees.

(7) The scope of fiscal intervention

The broad fiscal response in other countries greatly increased their public debt and exposed them to significant risks, as well as threatening their recovery from the crisis. Recently, several European countries were even forced to take steps for fiscal consolidation out of fear of another crisis due to the increase in their debt. In Israel, the fiscal response to the crisis was moderate and debt only increased a little. Nonetheless, the lesson with respect to the risks involved in an exaggerated fiscal response during a crisis is valid for Israel as well.

(8) The sensitivity of tax revenues

The crisis demonstrated that tax revenues in Israel are highly sensitive to a fall in economic activity, beyond the average for the OECD countries. Although this increases the effect of the automatic stabilizers, at the same time it exacerbates the fiscal situation during a slowdown, particularly during a crisis, and needs to be taken into account in the formulation of fiscal policy and the forecasting of tax revenues. One of the implications is the danger of a relatively large increase in the public debt during a crisis, which on its own justifies maintaining a lower debt-to-GDP ratio during normal periods. This sharp drop in tax revenues should be taken into account in considering the declining path for tax rates. The sensitivity of tax revenues to a drop in economic activity may perhaps be attenuated by changing the tax mix; however, it is not certain that this is desirable since it may reduce the effectiveness of the automatic stabilizers.

131 Essentially, the government's room to maneuver is even larger since it has the right to decide on a ceiling of up to 25 percent of the regular budget for a period of up to 18 months. However, specific approval is required from the Finance Committee for each guarantee.

5. GENERAL LESSONS FOR THE MANAGEMENT OF ECONOMIC POLICY DURING A CRISIS

a. Principles for policy management during a crisis

(1) Strengthening the public's confidence in the economic leadership

Public sentiment and concerns play a central role in the public's reactions during a crisis and accordingly they affect how the economy weathers it. Therefore, it is important to create a feeling among the public that there is an economic leadership capable of making decisions and implementing them, and that it is conducting policy with a comprehensive point of view and a steady hand. Strengthening the public's confidence in this leadership and in its control of the situation will help in calming the markets and the public and will moderate negative developments both in the financial markets and in the real economy. Each of the lessons listed below is important on its own for the management of policy during a crisis. Beyond that, they should be viewed as part of the overall framework for reinforcing public confidence in the economic leadership.

(2) Speed of response

The crisis demonstrated the importance of the ability of authorities to react quickly to developments both by means of declarations and the adoption of appropriate policy measures. This ability is particularly important during a crisis in which financial markets play a major role due to the speed of response in these markets. A clear example of the importance of the speed of response was the announcement of a safety net. Not only did the declaration halt the wave of redemptions from provident funds, its timely manner essentially eliminated the need to realize the guarantees offered.

One of the ways to increase the speed of response, which was used during the crisis, is to focus on tools that do not require legislation and complex approval processes. This is accomplished by, among other things, the use of policy measures that are already within the power of the statutory authority to implement, such as monetary policy tools and policy measures within the authority of the Supervisor of Banks, the Israel Securities Authority or the Commissioner of the Capital Market within the Ministry of Finance.

(3) Gradual implementation of policy measures

The dispersal of policy measures over time creates a continuum of policy measures taken by the authorities, which contributes to the public's feeling that policy makers are monitoring developments closely and taking action continuously. Accompanied by suitable public announcements this sequence of actions also contributes to the public's perception that the measures taken over time are not incidental but rather are part of a

calculated and comprehensive policy. Moreover, a gradual approach is desirable when there is a high level of uncertainty as to the development of the crisis, its intensity and its duration (as happened during the current crisis) and allows the adjustment of policy measures to the changing situation or forecasts. As described above, such a spread of policy measures over time was characteristic of both monetary and financial stability policy during the crisis.

(4) Adopting a variety of measures

A wide variety of measures may be required for several reasons, including the high level of uncertainty in real time regarding the actual situation and the effectiveness of any particular measure; the need during a crisis to deal with a large number of specific problems, including some that the authorities do not deal with in normal times or in which it is unlikely to foresee that the involvement of the authorities would be required.

b. Taking into account long-term considerations

Policy during a crisis must also take into account the long-term implications for the period following the exit from the crisis. In choosing policy measures, there should be a balance therefore between their contribution to relieving distress in the short run and minimizing long-term damage. In particular, attention should be paid to the long-term effects of the following:

- ◆ Growth of the public debt as a result of the increase in the deficit during the crisis.
- ◆ The risk of a future increase in the public debt if the government is forced to realize guarantees that were provided during the crisis.
- ◆ Policy measures that are liable to encourage risk-taking in the future (moral hazard).
- ◆ Intervention in the markets that might lead to distortions over time.
- ◆ Policy measures that are liable to make it more difficult to reduce the scope of intervention when the economic situation justifies it.

The negative long-term effects can be reduced by the following steps:

- ◆ Policy should preferably include an "exit strategy" defining under what conditions intervention will be terminated. In practice, it is difficult to define these conditions ahead of time in a specific and accurate manner and it is all the more difficult to designate a target date in view of the uncertainty regarding the duration of the crisis. In this context, it is worth mentioning that the Bank of Israel declared ahead of time that the government bond purchases would end when the accumulated purchases reached a pre-stated amount. Although this declaration limited the scope of the intervention ahead of time, it did not link its termination to the situation of the economy.

- ◆ The policy measures should be of a temporary nature and it is important that they be perceived as such by the public. In the fiscal realm, for example, expenditure programs should be adopted that do not create ongoing expenditure commitments beyond the period of the crisis, but should be one-time projects and the earlier implementation of expenditure that was planned in any case.
- ◆ Automatic mechanisms: These were discussed above as means of accelerating the implementation of particular measures as soon as the economy enters a crisis. These mechanisms can also be used to reduce intervention rapidly, particularly budget expenditure, when the time comes. This also gives credibility to the temporary nature of the measures.
- ◆ Policy makers should identify, at as early a stage as possible, the date on which it is possible to start reducing the scope of the intervention program without harming the recovery process. In practice, this is a complex challenge due to the uncertainty in real time regarding the sustainability of the recovery and its vulnerability to a premature scaling back of intervention. This complexity has been manifested in the caution used in many countries regarding the scaling back of monetary expansion in face of the hesitant recovery in economic activity. The reduction in intervention has been carried out gradually, by reducing the quantitative intervention as a first step; many countries have not yet started to raise the interest rate from its near-zero level. The Bank of Israel first cut back the use of quantitative tools by halting the purchase of bonds and changing the intervention policy in the foreign currency market, and at a later stage began gradually raising the interest rate.
- ◆ Authorities should adopt concrete measures that will indicate their commitment to achieving long-term goals when the crisis ends. An example is the adoption of a fiscal rule that includes a path for debt reduction, such as the one that the government adopted at the beginning of 2010 (see above).

c. Preparations in advance for dealing with a crisis¹³²

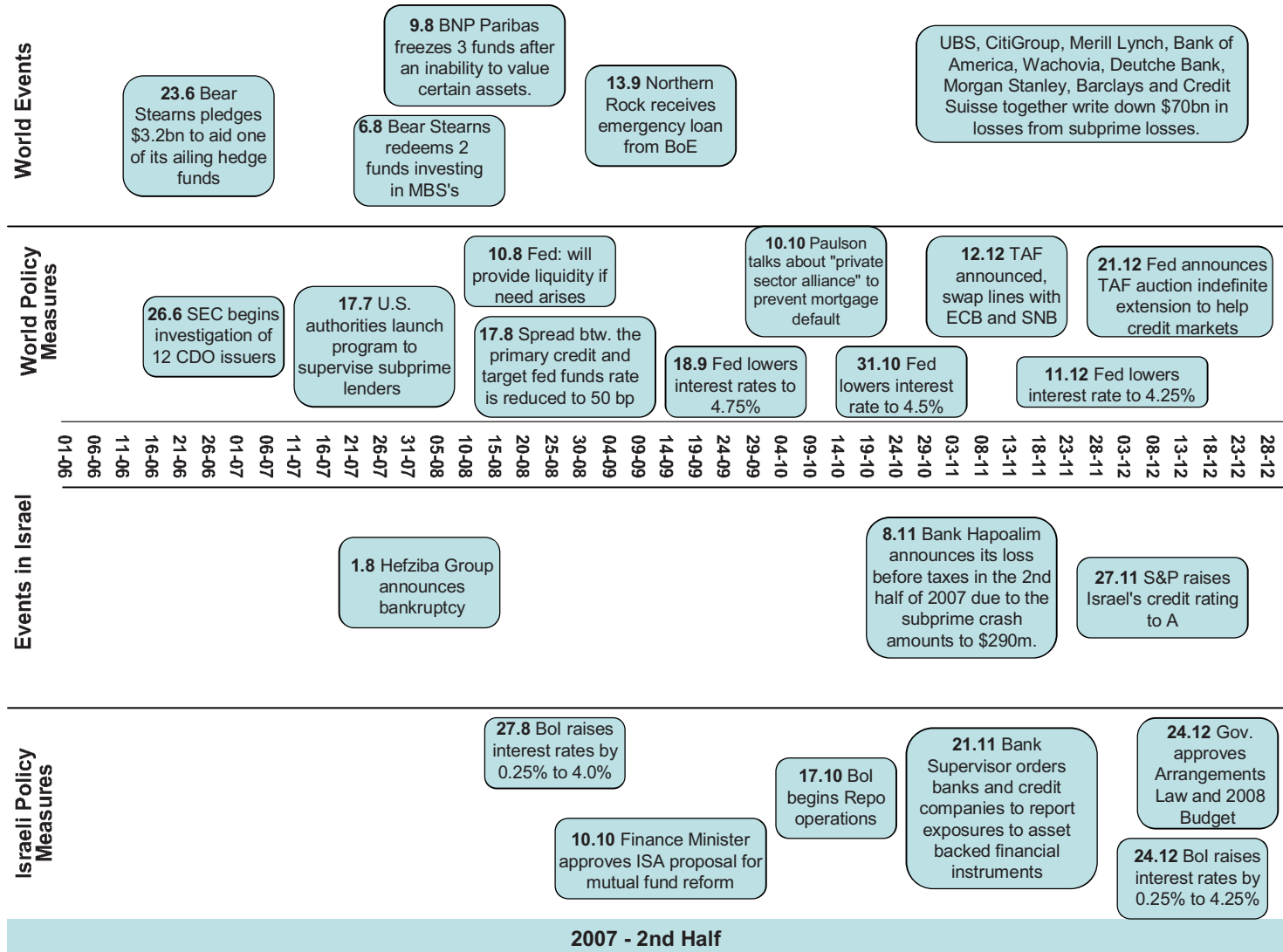
The goal of such preparations is to improve policy makers' handling of a crisis. These preparations should include:

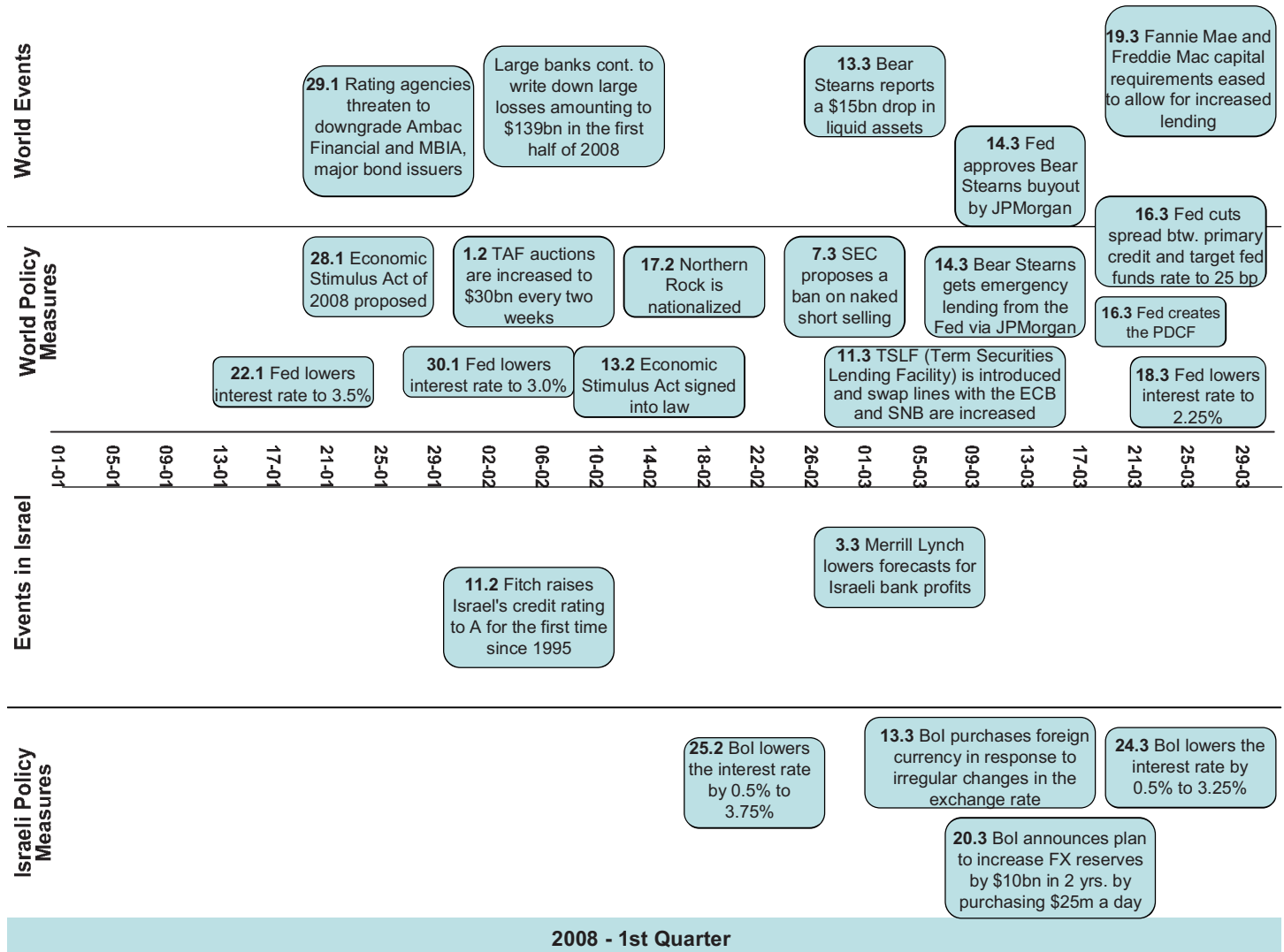
- ◆ **Preparation of contingency plans** for measures that may be needed under certain conditions. Their preparation ahead of time allows an in-depth discussion of alternatives and their expected effects, as well as ranking them and designing them in detail. Their availability will allow a quicker response during a crisis. A wide variety

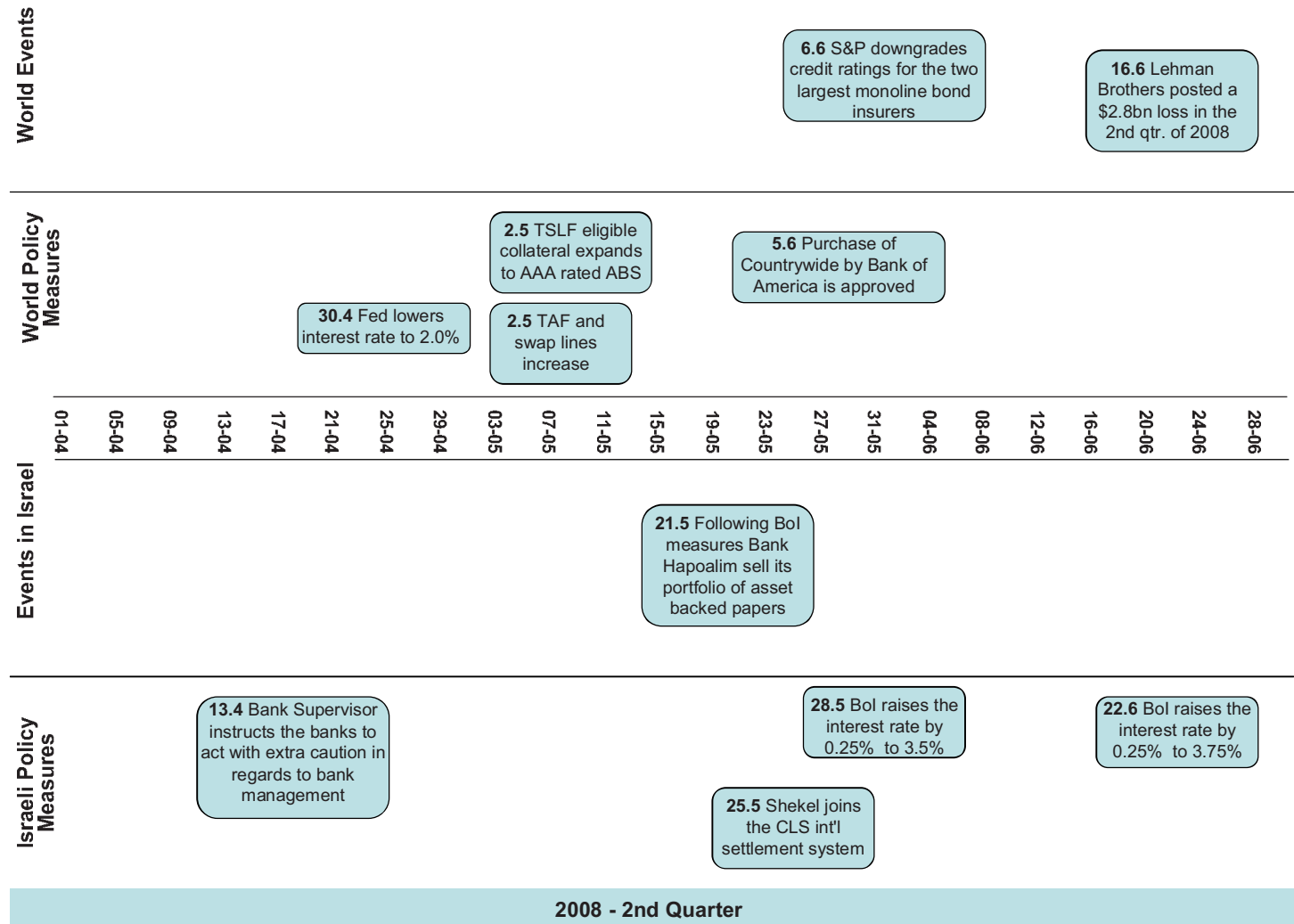
¹³² For additional details regarding early preparations in the areas of financial stability in general and supervision of the banks in particular, see Section 2 above.

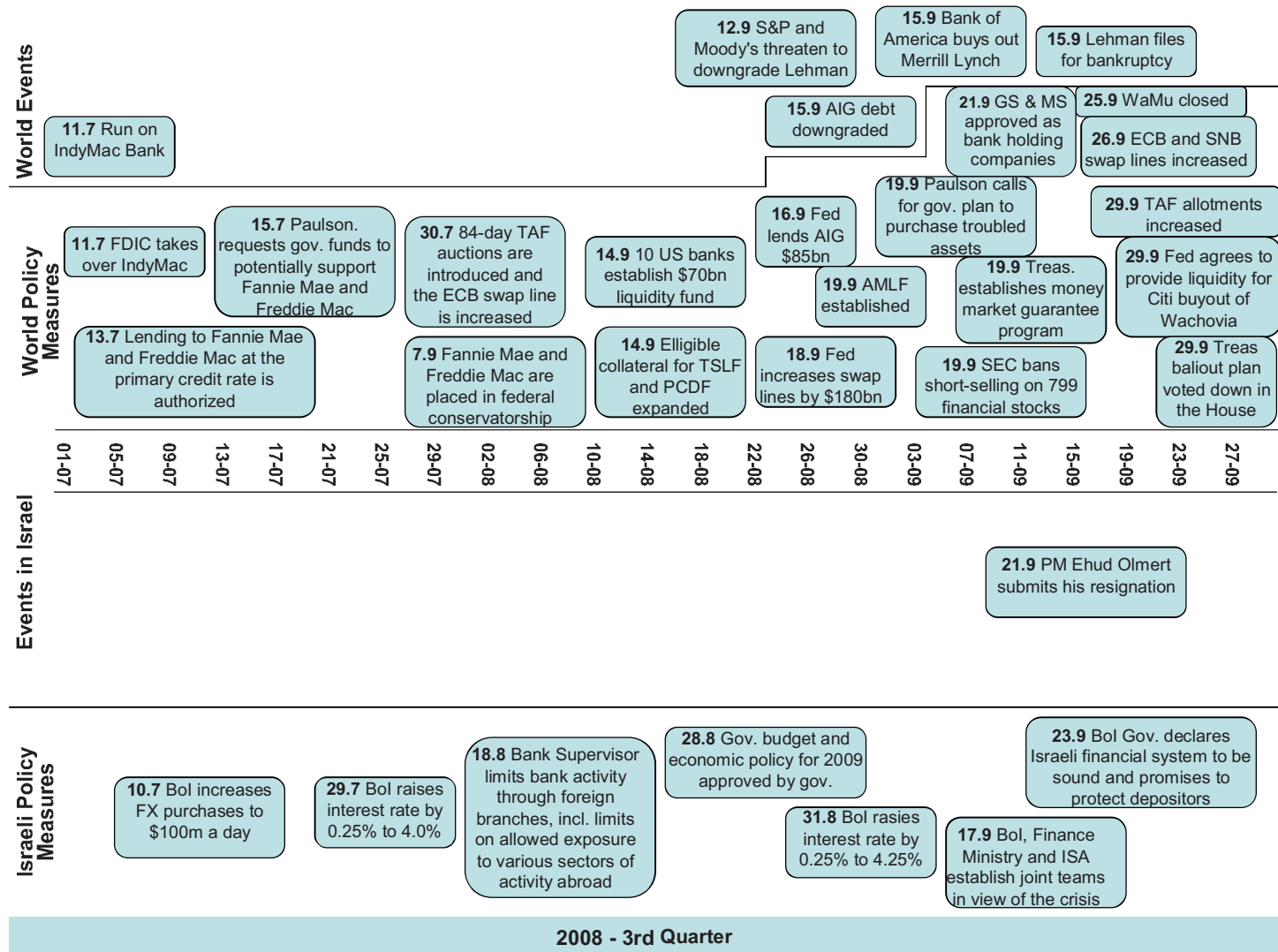
of emergency plans should be prepared, from which the most appropriate can be chosen according to circumstances. However, it is obviously not possible to prepare plans for all possible scenarios and therefore additional plans need to be prepared during the crisis itself or existing plans need to be modified.

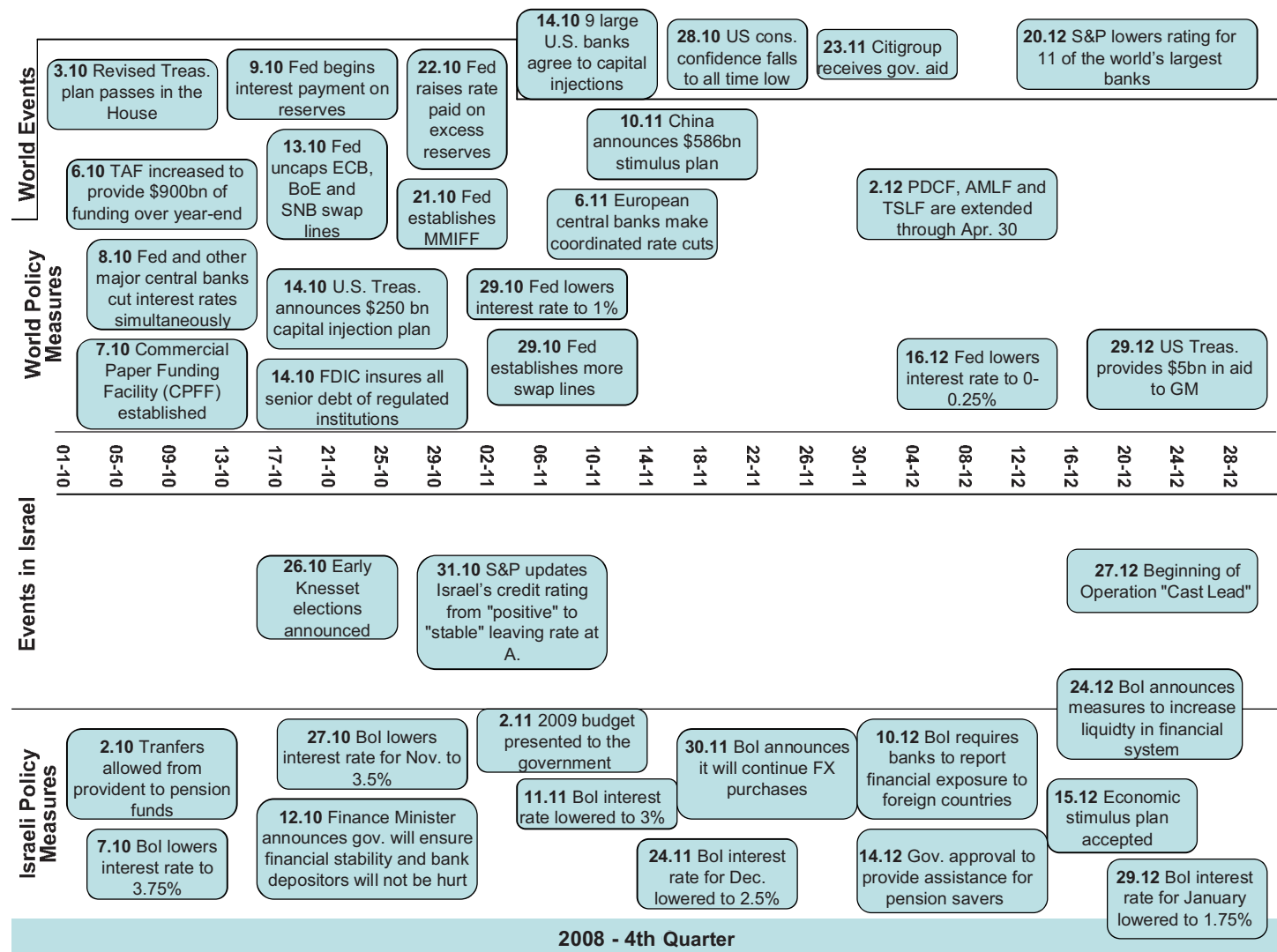
- ◆ **Preparation of a legal infrastructure for the regulatory authorities during a crisis:** Such adjustments are difficult to make quickly and therefore it is particularly important to prepare the legal infrastructure ahead of time.
- ◆ **Databases:** The gathering of data on the credit market and the derivatives market should be improved, as should the monitoring of the foreign currency market.
- ◆ **Simulations and organizational preparations:** As mentioned above, it is important to carry out simulations of the functioning of the authorities in emergency situations, such as a financial crisis. The goals of the simulations are: to improve the functioning of the relevant professionals in real time, to test the degree to which the infrastructure is appropriate to emergency situations, to expose deficiencies, and to tighten cooperation among the various bodies. The simulations also help in raising complex issues that are likely to arise in real time and to provide decision makers with experience in solving them. As described above, the Bank of Israel carried out several simulations prior to the crisis in order to test its preparedness for an emergency. It should also be noted that prior to the crisis the Bank of Israel underwent a comprehensive reorganization. This reorganization contributed, among other things, to the Bank's functioning during the crisis.
- ◆ **Maintaining flexibility in the labor market:** The flexibility in the Israeli labor market has proved extremely valuable for the economy during the crisis. It was manifested in a wide spread reduction of hours worked per worker substituting for layoffs (such as a four-day work week, see Chapter 3). This flexibility allowed the burden to be shared more equally among workers, made it easier for firms to struggle through the crisis, and helped preserve human capital which supported the renewal of growth with the recovery of demand abroad. Labor market flexibility was also reflected in the agreement of public sector workers to a temporary wage cut, which was instrumental in adjusting fiscal policy to the circumstances (a similar agreement to an even larger wage cut was obtained in the previous recession). These features of the labor market, including the trust between labor unions, the private employers, and the government, facilitate cooperation at times of crisis and should be preserved.

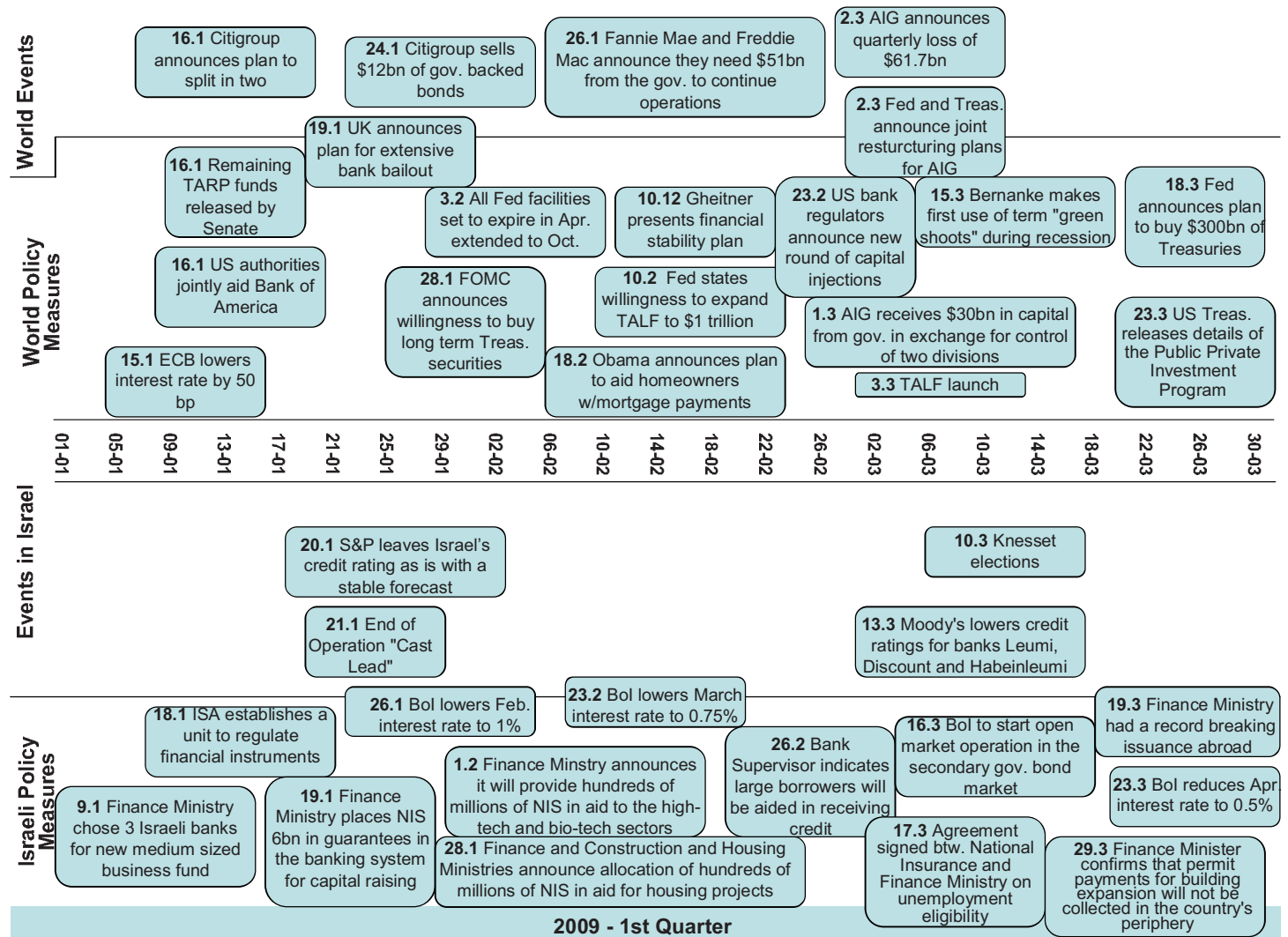


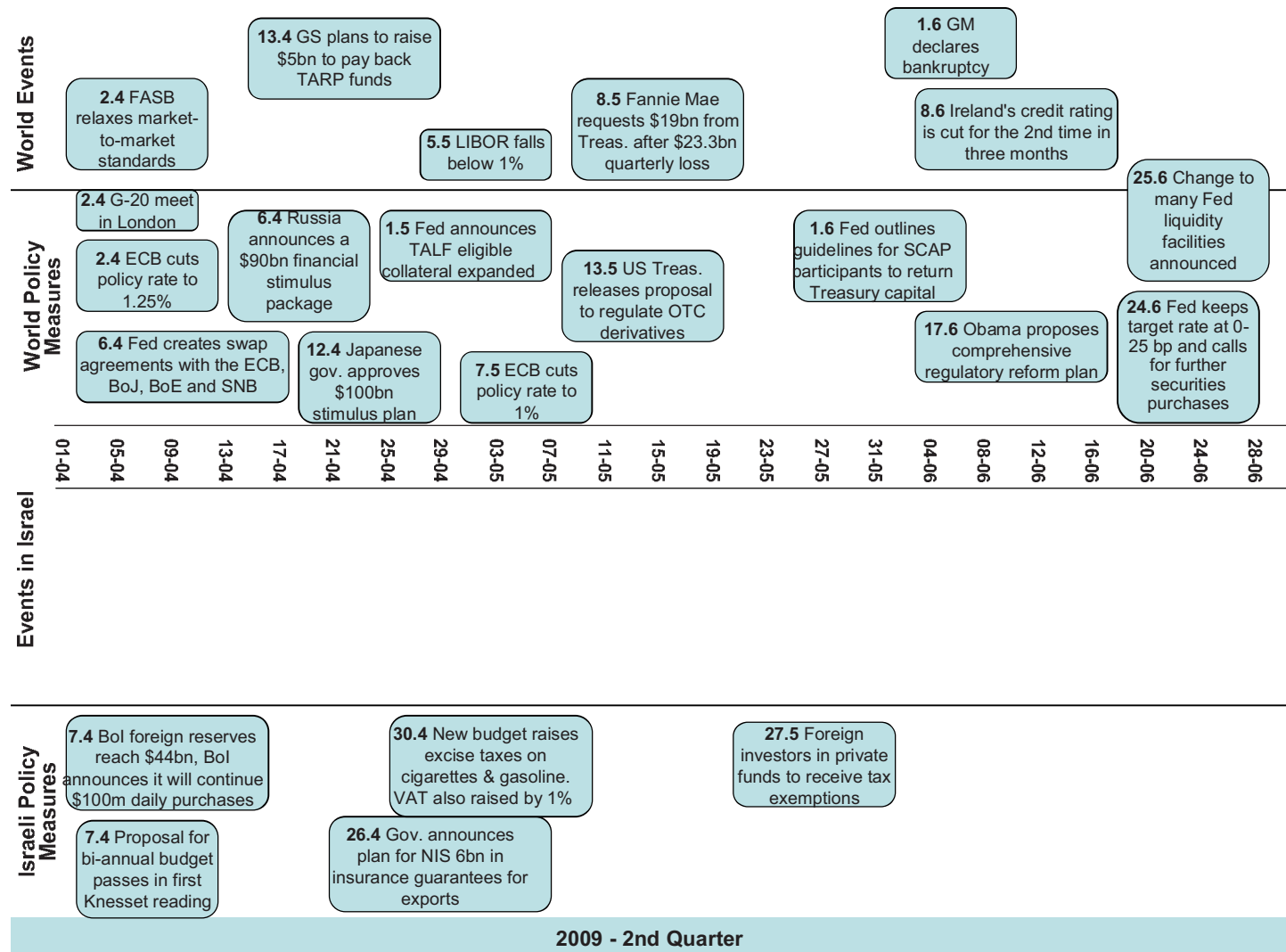


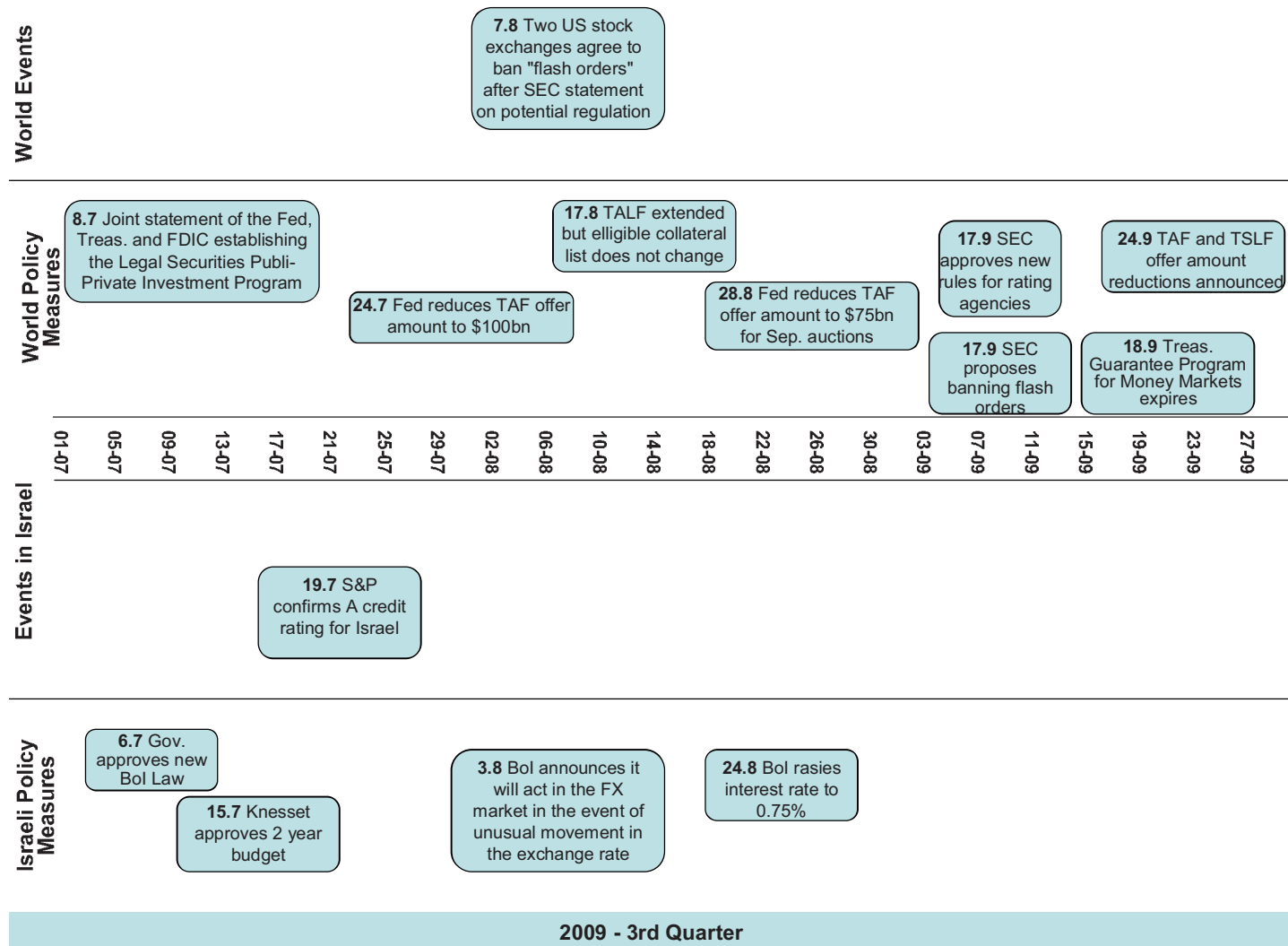


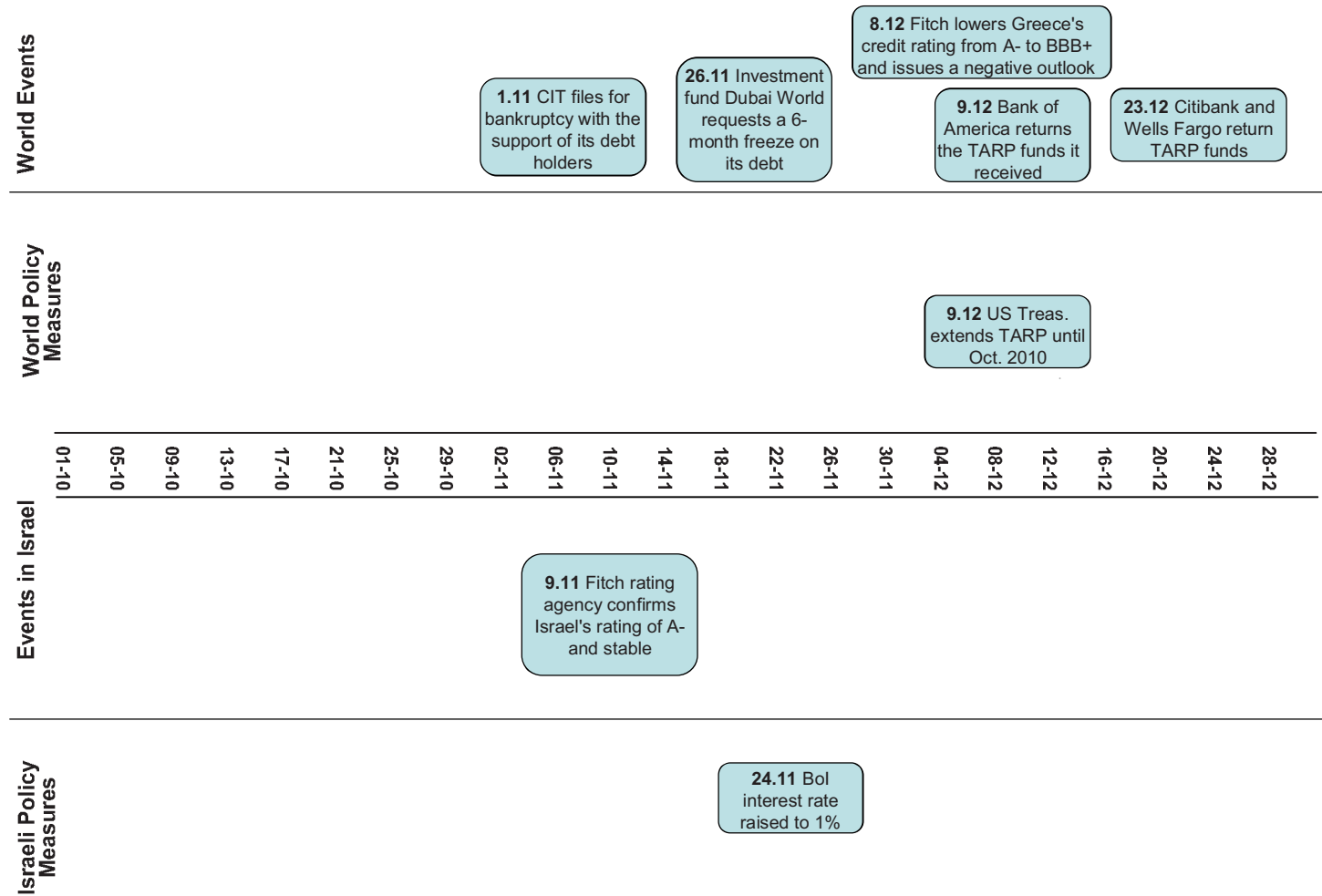












Source: Federal Reserve Bank of New York and the Bank of Israel

2009 - 4th Quarter